Environmental Assessment for the Proposed Delta River Special Recreation Management Area Plan and East Alaska Resource Management Plan Amendment

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1.0 INTRODUCTION

1.1 Document Structure

The Bureau of Land Management (BLM) has prepared an Environmental Assessment (EA) for the Delta River Special Recreation Management Area (SRMA) Plan and associated East Alaska Resource Management Plan (EARMP) Amendment. The EA will propose alternative management strategies for the Delta River SRMA and discloses the potential environmental impacts that would result from the alternatives. The EA is intended to facilitate decision making based on an understanding of the environmental consequences of the alternatives, and is used to determine whether the preparation of an environmental impact statement is required. Decisions made in this planning process will be incorporated into a subsequent revision of the 1983 Delta Wild and Scenic River (DWSR) Management Plan. The EA contains the following sections:

- ***Introduction:*** Includes information on the history of the project proposal, the purpose and need for the project, issues identified from public and internal scoping, and decisions that will be made for achieving the purpose and need.
- ***Proposed Action and Alternatives:*** Provides a description of current management, the BLM's proposed action for future management, as well as alternative methods for achieving the stated purpose.
- ***Affected Environment:*** Describes the existing natural environment and provides information regarding recreational use trends and visitor use within the Delta River SRMA.
- ***Environmental Impacts:*** Describes the environmental effects of implementing the proposed action and other alternatives; organized by issues identified during public and internal scoping.
- ***Consultation and Coordination:*** Provides a list of preparers and agencies consulted during the development of the EA.
- ***Bibliography:*** Contains references to documents used in the preparation of the EA.
- ***Appendices:*** Provides more detailed information to support the analysis presented in the EA.

1.2 Background

The Alaska National Interest Lands Conservation Act (ANILCA, P.L. 96-487, Sec. 603(47) December 2, 1980) established the upper stretch of the Delta River and all of the Tangle Lakes and Tangle River as a component of the Wild and Scenic Rivers System, to be administered by the Secretary of the Interior through the BLM. Subject to valid existing rights, ANILCA classified and designated approximately 18 miles of the Delta River as a "recreational" river and approximately 20 miles as a "wild" river pursuant to the Wild and Scenic Rivers Act (WSRA. P.L. 90-542). ANILCA also designated, but did not classify, 24 miles of the Tangle Lakes and Tangle River as a component of this system. The classification of these additional 24 miles as "scenic" was done in the original 1983 DWSR Management Plan.

By classifying various segments of the DWSR as either "wild", "scenic", or "recreational", Congress mandated that these segments be administered according to the following objectives in Section 2 (b) of the WSRA:

Wild: "Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

Scenic: "Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."

Recreational: "Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past."

ANILCA Sec. 605 (d) directed the Secretary of the Interior to establish detailed boundaries, prepare a management plan, and present this information to Congress by December 2, 1983. In response to these

directives, the BLM developed the 1983 DWSR Management Plan, which established detailed boundaries and developed general management policies for the DWSR corridor.

Since 1983, the BLM has managed the DWSR corridor consistent with the WSRA, ANILCA, and the 1983 DWSR Management Plan. Management efforts have focused on monitoring use levels and visitor impacts within the river corridor and developing strategies to mitigate visitor impacts. Registration boards at boat launches, random river user surveys and river corridor overflights have been used to document visitation levels and user trends. The BLM patrols the river at least three times per year, picking up litter, burying or disposing of human waste, inventorying and monitoring campsite impacts, and making public contacts to provide information regarding low impact camping, rules and regulations. A detailed inventory of river surveys, campsite monitoring documentation, overflight history, and public comments has allowed the BLM to track visitor use trends and to identify impact issues that have developed within the river corridor since the completion of the original 1983 DWSR Management Plan.

1.3 Planning Area

The DWSR is one of a few road-accessible rivers in the state of Alaska, and less than a 6 hour drive from Fairbanks (pop. 83,000) and Anchorage (pop. 260,000). The DWSR corridor shares the same boundary as the Delta River SRMA. Access to the Delta River is along the Denali Highway, approximately 21 miles west of Paxson and the Richardson Highway, or 114 miles east from Cantwell and the Parks Highway. Lands within the Delta River SRMA are primarily unencumbered BLM lands, except for a few private inholdings and a portion of the river corridor that has been determined to be a navigable waterway, managed by the State of Alaska.

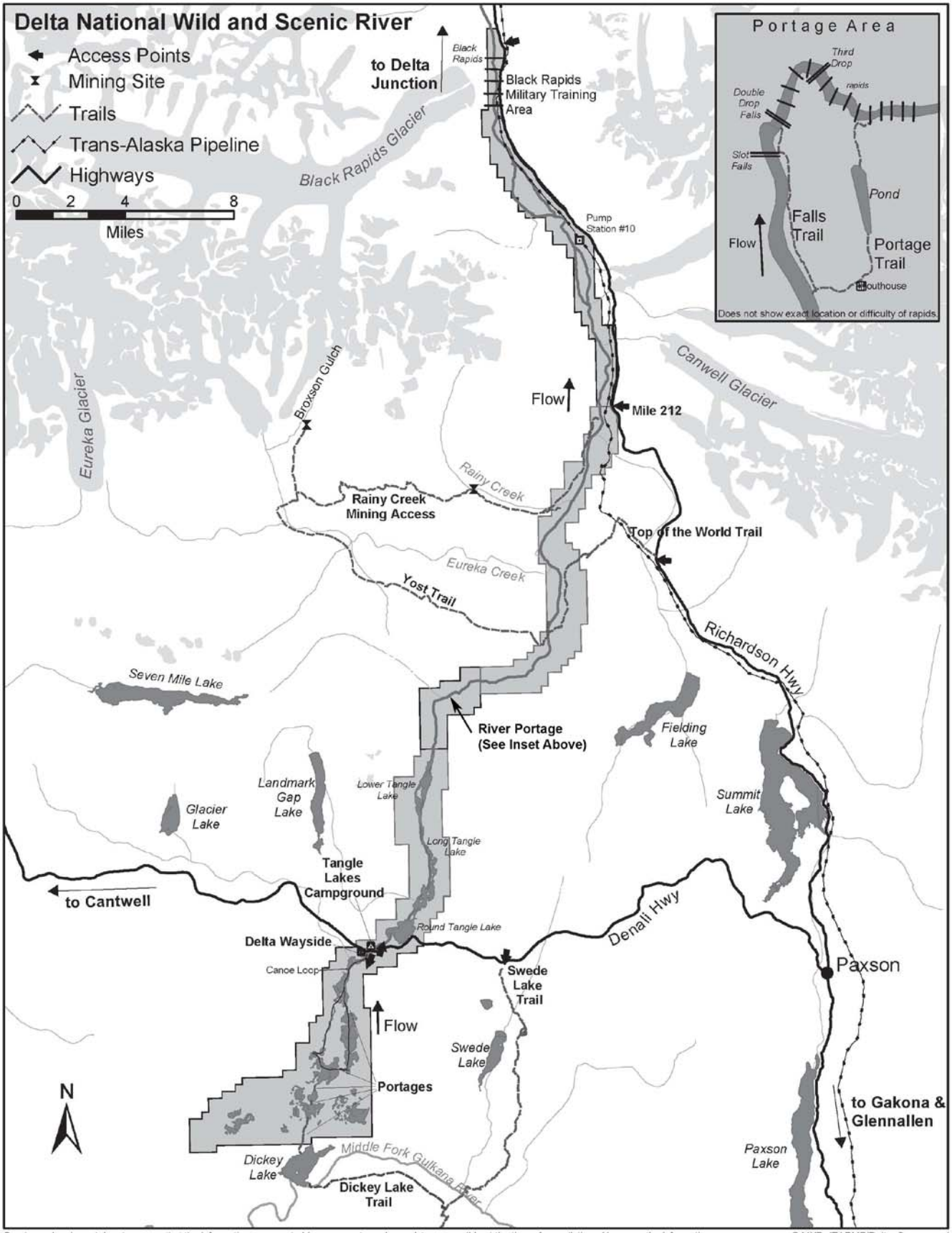
A navigability determination for the DWSR corridor was completed by the BLM in February 2010, and most of the DWSR corridor was determined to be nonnavigable, except for approximately 10 miles of the river located between the confluences of Garrett Creek and Phelan Creek. The lands underlying the navigable section within the river corridor fall under state jurisdiction, below the ordinary high water marks. The BLM acknowledges the State of Alaska's authority to manage between the ordinary high water marks within this section, which includes the water column and most unvegetated beaches and gravel bars. The BLM navigability determination is included in the administrative record located at the Glennallen Field Office.

Table 1: Acreage and Designated River Miles by WSR Classification

Acreage* and Designated River Miles	Acres	Designated River Miles
Total Acreage* and Total Designated River Miles	44617	62
Private Inholdings	30	N/A
Wild Classification	12352	20
Scenic Classification	23892	24
Recreational Classification	8343	18

* The State Of Alaska owns the submerged lands of the Delta River below the ordinary high water line where the river has been determined navigable.

Map 1: Delta Wild and Scenic River Vicinity Map



Great care has been taken to ensure that the information represented is as accurate and complete as possible at the time of compilation. However, the information displayed on this map is intended to be used for graphic representation only. Questions regarding information displayed should be directed to BLM GFO at (907) 822-3217.

G:MXDs/EARMP/Delta_Survey.mxd
TL Dec. 2004

1.4 Purpose and Need for Action

On September 7, 2007, the Record of Decision was signed for the EARMP. The EARMP is a comprehensive land use plan that guides management activities on all BLM managed lands within the Glennallen Field Office boundaries. After the completion of the EARMP in 2007, the BLM determined that the 1983 DWSR Management Plan needed to be updated to reflect recent decisions that were made in the EARMP, and to address current and future issues in the river corridor that had developed since 1983.

The EARMP designated the DWSR corridor as a SRMA. This SRMA designation requires the completion of an implementation plan that describes specific recreation management actions within the planning area. Subsequent to the development of the EARMP, the BLM developed new recreation land use planning requirements (following the Benefits Based Management (BBM) process) that were not included in the EARMP. This new guidance requires specific recreation-related land use allocations and the development of recreation management zones (RMZ) for each SRMA. Although the EARMP did identify four RMZs within the Delta River SRMA, further review and study has shown that an additional RMZ and associated RMZ boundary changes may be necessary to reflect current recreational use patterns. Therefore, as part of developing the SRMA plan, the EARMP must be amended to make these decisions.

The original 1983 DWSR Management Plan developed management objectives for the river corridor and recognized that Sections 1(b) and 10(a) of the WSRA mandate that a wild and scenic river be administered to protect and enhance certain “outstandingly remarkable values” that were the basis for the original designation. However, the 1983 DWSR Management Plan did not clearly identify and define the outstandingly remarkable values (ORVs). As part of this planning process, ORVs will be clearly identified and a management strategy will be developed to enhance and protect the ORVs. This will help to ensure that current and future activities within the river corridor are compatible with, and do not negatively affect, the identified ORVs for the river corridor.

New decisions that will be made as part of the Delta River SRMA Plan and EARMP Amendment will be analyzed in this EA. These decisions will apply to recreation management and only for BLM managed lands within the DWSR corridor and Delta River SRMA. Recreational decisions made in this plan will be incorporated into a subsequent revision of the 1983 DWSR Management Plan. Decisions made in the EARMP for other resources within the planning area will not be changed and will also be incorporated into the revised DWSR Management Plan.

1.5 Decisions to be Made

The BLM will identify numerous decisions during the development of the Delta River SRMA Plan and EARMP Amendment in accordance with Land Use Planning (LUP) Guidance (BLM LUP H 1601-1, Appendix C), SRMA Planning Guidance (BLM LUP H 1601-1, Appendix C), and WSR Planning Guidance (BLM M-8351). Decisions to be made are described below:

For BLM lands within the Delta River SRMA, implementation decisions will:

- Develop management actions that will be the basis for the creation of Special Rules for the river corridor in accordance with 43 CFR 8351.2-1.
- Develop management decisions for off highway vehicle (OHV) use, including the closure of unauthorized OHV routes not designated in the EARMP, establish weight limitations for OHV use, and develop OHV trail management and maintenance prescriptions.
- Designate nonmotorized trails and establish associated management and maintenance prescriptions for nonmotorized trails.
- Develop management decisions for airplane landings and the potential for new airstrip construction.
- Develop management decisions for motorized boating use.
- Establish decisions to manage private and commercial use as directed in WSR planning guidance; including group size, length of stay, and user capacity.
- Establish limitations on chainsaw use, fireworks, caching of supplies and recreational shooting.
- Prescribe the level and scope of future facility developments, including potential property acquisition opportunities.

- Guide the development of interpretative and educational materials while focusing marketing efforts to specific recreational activities.
- Prescribe adaptive management actions to address issues associated with litter, human waste, fire rings, campsite impacts, and visitor use limitations.
- Prescribe monitoring actions to ensure that management objectives are being achieved.

For BLM lands within the Delta River SRMA, LUP Amendment decisions will:

- Apply recreation planning guidance as directed in the BLM LUP Handbook 1601-1, Appendix C.
- Identify RMZs and corresponding recreation niches within each RMZ.
- Develop recreation management objectives for the specific recreation opportunities to be produced and the outcomes to be attained (activities, experiences and benefits).
- Prescribe recreation setting character conditions required to produce recreation opportunities and facilitate the attainment of both recreation experiences and beneficial outcomes.
- Describe an activity planning framework that addresses recreation management, marketing, monitoring, and administrative support actions (e.g., visitor services, permits and fees, and appropriate use restrictions) necessary to achieve stated recreation management objectives and setting prescriptions.

In addition to these implementation and land use planning decisions, the BLM will identify Outstandingly Remarkable Values (ORV) and associated management objectives for the DWSR corridor. ORVs are not a land use allocation or an implementation decision, but rather a finding based on a study/inventory process to determine what values or characteristics make the river worthy of special designation and protection. Chapter 2.2.1 describes the identified ORVs and associated management objectives.

1.6 Scope of the Analysis and Planning Criteria

During the scoping process, the BLM identified the following planning criteria to guide the LUP Amendment:

1. The plan amendment will be consistent with the standards and guidance set forth in the Federal Land Policy and Management Act, the National Environmental Policy Act, the Council on Environmental Quality's implementing regulations, the National Historic Preservation Act, the Wild and Scenic Rivers Act, the Migratory Bird Treaty Act, ANILCA, and other Federal laws, regulations, and policies as required;
2. the plan amendment will comply with Section 810 of ANILCA, as well as other subsistence and land use decisions;
3. the plan amendment will recognize valid existing rights;
4. the plan amendment will only affect the public lands managed by the BLM in the Delta River SRMA (as defined in the EARMP);
5. the BLM will work cooperatively with the State of Alaska and other Federal agencies, Native corporations, Tribes, and Municipal governments. Collectively, these entities have additional jurisdiction by law or special expertise;
6. public participation by interested groups and individuals will be encouraged throughout the planning process;
7. wildlife habitat management will be consistent with Federal and Alaska Department of Fish and Game (ADF&G) objectives and mandates;
8. any OHV trail designations within the planning area will be completed in accordance with ANILCA Sections 810, 811, and 1110, Department of Interior regulations at 43 CFR 36.11 and 43 CFR 8342, and applicable state law;
9. the BLM will make all possible attempts to ensure that its management prescriptions and planning actions complement other plans and planning efforts in the area;
10. the BLM will, to the extent possible, use current scientific information, research, new technologies and the results of resource assessments, monitoring and coordination to determine appropriate management strategies that will enhance resource values;
11. the plan amendment and associated implementation plans prepared by the BLM will conform to the Bureau of Land Management H-1601-1 Land Use Planning Handbook: "Appendix C, Program-Specific and Resource-Specific Decision Guidance and Supplemental Program Guidance Manual for Recreation and Visitor Services"; and

12. the plan amendment will only address recreation management and will supersede only those sections of the existing EARMP that relate to management of the Delta River SRMA. The plan will conform to all other decisions made in the EARMP.

1.7 Land Use Plan Conformance

The EARMP and the Federal Land Policy and Management Act of 1976 (FLPMA) provide the overall long-term management direction for the Glennallen Field Office. FLPMA is the primary authority for the BLM's management of public lands. It provides overarching policy by which BLM public lands will be managed and establishes provisions for land use planning, land acquisition and disposition, administration, land use authorizations, designated management areas, and the repeal of certain laws. In particular, Sec. 202 (a) requires the Secretary of the Interior, with public involvement; to develop, maintain, and when appropriate, revise land use plans. Management actions identified in this EA are consistent with the goals and decisions identified in the EARMP:

EARMP Recreation Goal M-1: Manage recreation to maintain a diversity of recreational opportunities. (Approved RMP, page 34)

EARMP Recreation Allocation M-2: Delta Wild and Scenic River Corridor Area: Objectives are to maintain existing recreation opportunities with an emphasis on managing for a primitive experience in the portion of the WSR Corridor classified as "wild;" managing to protect VRM Class 1 viewshed; OHVs would be restricted to the two designated trails (Top of the World, Rainy Creek) from May 15 to October 16 or when there is less than an average of 12 inches of snow or 6 inches frost; snowmachine use will not be limited; recommend limitations on motorized use on the Tangle Lakes; no public use cabins will be considered; general visitor use and commercial use limits will be established in implementation-level planning; the Tangle Lakes Campground will be renovated; the river take-out at mile 212 on the Richardson Highway would have increased signage; acquisition of one of the area lodges may be considered. (Approved RMP, page 35)

EARMP Implementation Planning M-4: Implementation plans will be done for each SRMA. These plans will describe specific objectives for each area, based on the objectives outlined above as well as benefits-based analysis conducted for each area. Implementation plans will include travel management and describe specific trail limitations and designations. Implementation plans will include facility maintenance and construction plans, based on guidance described above. Implementation plans, where necessary and as described above, will determine general visitor use or commercial limits. These will be based on achievement of SRMA objectives. If necessary, assessment of visitor recreation experiences, tolerance for impacts, and benefits will be conducted through user surveys or benefits-based analysis. (Approved RMP, page 39)

EARMP Monitoring M-5: Monitoring of recreation resources will continue to occur throughout the planning area with emphasis placed on developed recreation sites and SRMAs. Monitoring will include regular patrols to check on signing, visitor use, recreation use-related impacts, and user conflicts. Monitoring on the Delta Wild and Scenic River will be described in the revised river management plan for the river. Monitoring will include litter, human waste, fire rings, camp encounters, campsite condition and trend, water quality, visitor use and commercial permits. (Approved RMP, pages 39-40)

1.8 Relationship to Laws, Regulations, Statutes, and other Policies

In addition to the EARMP and FLPMA, the BLM must follow other laws, regulations, and statutes as appropriate:

1.8.1 National Environmental Policy Act of 1969 (NEPA)

The National Environmental Policy Act of 1969 requires that the BLM analyze the environmental effects of activities it authorizes on the public lands to determine whether they will have a significant effect on the quality of the human environment, 42 U.S.C. §4332. Management direction for BLM NEPA compliance is found in the BLM Land Use Planning Handbook H-1601-1 and the BLM NEPA Handbook H-1790-1.

1.8.2 Wild and Scenic Rivers Act of 1968 (WSRA)

The management of the DWSR corridor must be consistent with the WSRA. The WSRA created the Wild and Scenic Rivers System (WSRS) and established a framework that provides federal protection for certain free-flowing rivers, with the intent of preserving these rivers as free-flowing and managing their immediate environments in such a manner as to protect and enhance the outstandingly remarkable values that were the basis for their inclusion in the WSRS. The WSRA provides guidance for developing and implementing any proposed management actions within the river corridor. Interpretation and management direction of the WSRA for the BLM is provided through the Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management Manual (1993, BLM M-8351).

1.8.3 Alaska National Interest Lands Conservation Act of 1980 (ANILCA)

ANILCA established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including subsistence and special access considerations. The BLM is required by ANILCA, Title VIII, Section 810 to consider any potential impacts to subsistence activities, resources, or subsistence access from the proposed action and alternatives. These impacts are discussed in an ANILCA Section 810 Evaluation Report (Appendix 8.2). In addition, Title XI of ANILCA outlines detailed procedural requirements to authorize new transportation and utility systems within CSUs, and provides special access considerations for traditional activities and access to inholdings.

Specific procedural requirements must be followed to close or restrict access to subsistence resources (ANILCA Section 816), or to restrict access for traditional activities within CSUs. Closure procedures for access provisions under Title XI have been codified in 43 CFR 36.11(h). These closure procedures allow the federal land manager to restrict access in a CSU if the agency determines that such uses would be detrimental to the resource values of the area.

1.9 Public Involvement

A Notice of Intent to initiate the planning process was published in the *Federal Register* on April 10, 2008. This marked the beginning of the scoping process for the planning effort. As part of scoping, the BLM identified preliminary issues and planning criteria that were published in the *Federal Register* Notice of Intent. A letter and scoping bulletin was sent to more than 1,300 parties on the Glennallen Field Office contact list, comprised of individuals, local and national organizations, Native tribes, villages, and corporations, and state and federal agencies who had expressed interest in the Delta River planning process or BLM Alaska planning efforts. The scoping bulletin was also posted on the BLM website and publicized through local venues including the Copper River Record, Delta Wind, and the statewide "What's Up" list serve. Public service announcements aired over KCHU, KDHS and KCAM.

Scoping comments were accepted for 60 days, beginning July 15, 2008 and ending on September 15, 2008. A total of twenty comments were received during the public scoping comment period. After a detailed analysis of these comments, a scoping report and comments table were prepared and were made available on the Delta River planning website. These documents may be viewed on the internet at: http://www.blm.gov/pgdata/content/ak/en/prog/planning/east_alaska_plan/East_AK_Delta_River_EA_Amend.html

After analysis of the scoping comments, management alternatives were developed and effects were analyzed in a Draft EA. The Draft EA was then released for public comment from March 23-May 6, 2010. Letters detailing the availability of the Draft EA were sent to more than 1,300 parties on the Glennallen Field Office contact list, and were posted on the BLM website and publicized through local venues including the Copper River Record, Delta Wind, Anchorage Daily News, Fairbanks News Miner, and the statewide "What's Up" list serve. Public service announcements aired over KCHU, KDHS and KCAM. A total of 68 comments were received on the Draft EA; these comments and associated BLM responses are included as Appendix 8.4 of the Final EA.

In addition to the scoping and public comment period associated with the Draft EA and NEPA requirements, the BLM also conducted focus group meetings and administered a recreational river survey that were used as preplanning tools during the preparation of the formal NEPA planning process.

1.9.1 Benefits Based Management (BBM) Planning

Traditional approaches to recreation planning have focused on developing and maintaining recreational opportunities and facilities by providing programs, services, and implementing use restrictions. Users gain certain benefits or outcomes from these experiences, but are disconnected from the planning process. BBM is a new approach that identifies the primary activities, experiences, and benefits through an interactive process with focus groups and stakeholders who have a vested interest in the area. After these values are identified, specific setting prescriptions and implementation actions are prescribed for Recreation Management Zones (RMZ) to enhance or maintain the identified outcomes (activities, experiences, and benefits). Additional information on the BBM process can be found in Appendix 8.1.

The Glennallen Field Office conducted a series of focus group meetings in February 2007 during the BBM planning process. Discussion at these meetings focused on how people used the area, their primary purpose for using the area, and their opinions on desired future conditions and management options for the area. Stakeholders included representatives from local subsistence user and hunting groups, motorized access groups, environmental and conservation groups, Native tribes and corporations, and other state and federal agencies. Seven meetings were held and a total of 78 people attended. Comments obtained from these meetings, including desired activities, experience, benefits, setting prescriptions, and implementation actions, are included in the administrative record located at the Glennallen Field Office.

1.9.2 Delta River Recreation User Survey

To prepare for the revision of the river management plan, a river recreation survey was developed and administered by Research Confluence and Consulting of Anchorage, Alaska in 2005 as a method of obtaining river users' opinions on a variety of issues, management actions, and preferences within the DWSR corridor. The overall study objectives were to describe the current users on the Delta River, examine the impacts they experience on their trips and their tolerances for those impacts, and to assess the public acceptability of management actions that might be used to address impacts or conflict problems. A summary of results from the 2005 Delta River Recreation Survey is included in the administrative record located at the Glennallen Field Office.

1.10 Resources and Issues for Analysis

Resources and issues for analysis have been identified that will help guide the formation of alternatives for the NEPA process. Resources and issues will be analyzed if they are potentially significant and if they lead to a basis for a reasoned choice among the alternatives. Resources and issues were identified based on an evaluation of the 1983 DWSR Management Plan, 2005 Delta River Recreation User Survey, BBM planning meetings conducted in February 2007, internal BLM concerns, and comments received during the scoping process.

As a result of internal and external scoping, the following resources and issues were identified as requiring further analysis: Climate Change, Cultural Resources, Fisheries, Lands and Realty, Natural Quiet and Natural Sounds, Recreation Resources, Scenic Resources, Soil Resources, Subsistence, Travel Management, Vegetation, Water Quality, Wilderness Characteristics, and Wildlife.

1.9.1 Climate Change

- Effects of recreation management decisions to contributing causes of climate change.

1.9.2 Cultural Resources

- Effects to cultural resources from recreational facility development and campsite management decisions.
- Effects to cultural resources from OHV management decisions.
- Effects to cultural resources from identifying ORVs.

1.9.3 Fisheries

- Effects to fisheries habitat from OHV trails and OHV river crossings.
- Effects to fisheries habitat from motorized boating decisions.
- Effects to fisheries resources from identifying ORVs.

1.9.4 Lands and Realty

- Effects of recreation decisions on access to State lands, private land parcels, and mining operations that are located adjacent to the DWSR corridor.
- Effects of potential property acquisition by BLM in the DWSR corridor.

1.9.5 Natural Quiet and Natural Sounds

- Effects of recreation decisions on natural quiet and natural sounds present within the DWSR corridor.

1.9.6 Recreation Resources: Facilities and Visitor Management

- Effects of proposed recreational facility developments on the natural and primitive character of the DWSR.
- Effects of the proposed user capacity management decisions on a user's ability to have positive recreational experiences within the DWSR corridor.
- Effects of proposed recreation management decisions regarding litter, human waste, fire rings, and educational/interpretational information on a user's ability to have positive recreational experiences within the DWSR corridor.
- Effects of proposed BBM decisions on preserving a diversity of recreational experiences within the DWSR corridor.
- Effects to recreation resources from identifying ORVs.

1.9.7 Scenic Resources

- Effects of proposed recreational facility developments on scenic resources.
- Effects of travel management decisions on scenic resources.
- Effects to scenic resources from identifying ORVs.

1.9.8 Soil Resources

- Effects of OHV management decisions on soil resources.
- Effects of campsite management decisions on soil resources.

1.9.9 Subsistence

- Effects of the proposed recreation management decisions to subsistence use of fish and wildlife in the DWSR corridor.

1.9.10 Travel Management

- Effects of travel management decisions on the natural and primitive character of the DWSR corridor and on preserving a diversity of recreational experiences.

1.9.11 Vegetation

- Effects of OHV management decisions on vegetative resources.
- Effects of campsite management decisions on vegetative resources.
- Effects of decisions regarding the use of firewood gathering on vegetative resources.

1.9.12 Water Quality

- Effects to water quality from potential contaminants as a result of motorized boating and human waste disposal decisions.
- Effects to water quality from potential sedimentation sources including designated campsites, OHV trails and OHV river crossings.

1.9.13 Wilderness Characteristics

- Effects of management actions on wilderness characteristics, including naturalness, solitude, and primitive and unconfined recreational opportunities that are found within the DWSR corridor.

1.9.14 Wildlife

- Effects of OHV travel management decisions to moose and caribou.
- Effects of motorized boating and airplane landing decisions to land birds and waterfowl.
- Effects of recreation decisions on human and bear interactions.
- Effects to wildlife resources from identifying ORVs.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative Formulation and Description

Alternatives were developed to address the range of issues that were discussed in Chapter 1. Alternative 1 is the No Action Alternative. The No Action Alternative provides a baseline for comparison with the other alternatives, and describes the current management scenario. Alternative 2 is the proposed action. This alternative balances resource uses with resource protection, while still providing for high quality recreational experiences. Alternative 3 provides management for high density experiences, and emphasizes recreation facility development and increased maintenance to address higher impact levels. Alternative 4 provides management for low density experiences, requiring more restrictions on use or types of recreation behavior.

2.2 Management Actions Common to Alternatives 2, 3, and 4

Management actions developed for Alternatives 2, 3, and 4 assume that sufficient funding and personnel would be available for implementation of the proposed management actions.

2.2.1 Outstandingly Remarkable Values (ORV) and Management Objectives

The ORVs and associated management objectives described below will not change in any of the alternatives. ORVs are not a land use allocation or a management action, but rather a finding based on a study/inventory process of what values or characteristics that make the river worthy of special protection. Management guidance for the establishment of ORVs can be found in Section 1(b) of the WSRA and in the BLM Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management Manual (1993, BLM M-8351). The identification of ORVs is a critical step in developing the revised DWSR Management Plan. ORVs describe why a river is important enough to be designated and managed as a unit of the WSRS and what combinations of resource conditions and visitor experiences will best protect and enhance these values. Clearly defined management objectives address how these conditions and experiences can be achieved. ORVs are typically identified in a study prior to the designation of a WSR. The DWSR was designated as a component of the WSRS in ANILCA, but the ORVs were not identified in the legislation. In this case, ORVs have been identified from historical study reports and documentation of management activities at the time of designation. The proposed ORVs were identified based on a review of previous documents prepared for the Delta River and its environs[1].

Criteria for identifying ORVs has been developed by the Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC) in its guidelines for implementation of the WSRA. The IWSRCC consists of representatives of the four wild and scenic rivers administering agencies: the BLM, National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service. In these guidelines, the IWSRCC has established two criteria that must be satisfied for a characteristic to be included as an ORV:

1. The value must be river related. To be considered river related, a value must:
    - Be located in the river or on its immediate shorelands (generally within ½ mile on either side of the river) *and*
    - Contribute substantially to the functioning of the river ecosystem *or*
2. Owe its location or existence to the presence of the river. The value must be rare, unique, or exemplary in a regional or national context. To be considered rare, unique, or exemplary, a value should be a conspicuous example from among a number of similar values that are themselves uncommon or extraordinary.

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[1] The Wild and Scenic Rivers Act (WSRA).
Alaska National Lands Interest Conservation Act (ANILCA).
"Delta River: A Wild and Scenic River Analysis", Bureau of Outdoor Recreation, March 1976.
"Draft Environmental Statement: Proposed Designation of the Delta River as an Element of the National Wild and Scenic Rivers System, Heritage Conservation and Recreation Service, 1978.
"Delta River: A Wild and Scenic River Analysis", Heritage Conservation and Recreation Service, February 1978.
"Delta River Management Plan", Bureau of Land Management, December 1983.
"Soil Survey of the Delta River Area, Alaska", Mark H. Clark, 2005.

The proposed ORVs for each classification segment of the DWSR corridor are included in Table 2, and are common to all alternatives in this planning effort. The WSR classification segments are displayed in Map 2 on Page 16.

Table 2: Proposed Outstandingly Remarkable Values by WSR Classification

WSR Classification	Proposed Outstandingly Remarkable Values
Wild Segment (32% of the WSR corridor/ 20 Designated River Miles)	Recreation, Scenic, Cultural, Fisheries
Scenic Segment (39 % of the WSR corridor/ 24 Designated River Miles)	Recreation, Scenic, Cultural, Wildlife
Recreational Segment (29% of the WSR corridor/ 18 Designated River Miles)	Recreation, Scenic

Following is a more in-depth discussion of the proposed ORVs listed above. Management objectives for each are also described:

2.2.1.1 ORV-Recreation

Within all WSR classification segments, the DWSR corridor provides outstandingly remarkable opportunities for a diversity of recreational experiences in a setting dominated by natural scenery and landscapes. The DWSR is one of a few easily-accessible Wild and Scenic Rivers in the State of Alaska, providing both day use and overnight boating opportunities. A wide range of outstanding recreational opportunities attract people of all ages and abilities to the DWSR corridor where individuals, families, and groups have historically established traditional family ties with the area. Some segments of the river corridor provide outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in a natural, undisturbed environment. Other segments provide a remote setting for recreational activities such as wildlife viewing, fishing, hunting, trapping, camping, hiking, snowmachining, skiing, photography, OHV travel, and a variety of water for both the floater and motorized boater. Boating opportunities include both lake paddling and river paddling on clear and glacial water stretches, challenging whitewater, and exceptional opportunities for both day use and extended overnight backcountry excursions.

Management Objectives (all WSR classification segments):

- Preserve the river and its immediate environment in its natural condition while seeking to maintain a diversity of recreational experiences.
- Manage to maintain a primitive and semiprimitive recreational experience on specific segments of the river where visitors have opportunities for solitude.
- Manage recreational activities and facilities to maintain or enhance the undeveloped character of the river and surrounding environment.
- Ensure adequate instream flows to accommodate recreational opportunities.

2.2.1.2 ORV-Scenic

Within all WSR classification segments, the DWSR corridor provides unmatched and outstandingly remarkable scenic opportunities. The DWSR is flanked by both the low, rolling tundra hills of the Amphitheatre Mountains and the high, rugged snow covered peaks and ridges of the Alaska Range, providing high quality scenic vistas. The river and surrounding hills provide undisturbed views of the river canyon, waterfalls, channelized riverbeds, tributaries, granite rock outcroppings and glacial alluvial processes. There is a scenic interface of river, rock, tundra, and spruce dominated forest within the river corridor. Photographic opportunities are nearly limitless with snow, water, rock, and vegetation interspersed over rolling hills, mountains, and deep river valleys.

Management Objectives (all WSR classification segments):

- Management activities will retain and seek to enhance the existing character of the landscape and Class I Visual Resource Management (VRM) viewshed within the river corridor.
- Improvements to recreational facilities within the river corridor will remain rustic and will be developed to harmonize with the natural surroundings of the area.

2.2.1.3 ORV-Cultural

The DWSR corridor contains outstandingly remarkable cultural resources within the *wild* and *scenic* classification segments, including portions of a 226,660 acre National Register Archaeological District created in 1971. The Tangle Lakes Archaeological District (TLAD), managed by the BLM, contains approximately 25,677 acres within the DWSR corridor, with nearly 280 recorded archaeological sites (Bowers 1989), representing a roughly continuous history of human occupation from more than 10,000 years ago through the recent past. Almost all of the earliest known sites in the region are within the designated river corridor and hundreds of other sites are expected to exist within these areas (West 1981; Bowers 1989; Jangala et al 2009). Together, these factors make that portion of TLAD within the DWSR corridor nationally significant as one of the densest areas for early Holocene archaeology in the North American Sub-Arctic (Bowers 1989). Evidence of this prehistoric occupation can still be found within close proximity to many common campsites along the river corridor. The area also remains culturally significant for the Copper River Basin's natives, the Ahtna Athabascans (Kari and Tuttle 2005; Jangala et al 2009). The river corridor contains dozens of recorded Ahtna names and was likely a long term travel and trading route between the Copper River Basin and the Tanana Valley. The Tangle Lakes are considered by the Ahtna to be the ancient origin place of one of their oldest clans.

Management Objectives (Wild and Scenic classification segments):

- Manage activities within the DWSR corridor to preserve cultural values that contribute to its primitive character.
- Inventory areas within the DWSR corridor that have not received previous archaeological surveys for additional historic and archaeological sites, as well as places of religious and cultural importance for local native peoples.
- Manage dispersed campsites and trails within the river corridor to eliminate erosion and minimize bare ground to reduce potential for disturbance of archaeological sites.
- Increase public knowledge of the significance of TLAD and the fragile nature of artifacts and archaeological sites that may be found within the river corridor to reduce looting or vandalism.

2.2.1.4 ORV-Fisheries

Within the *wild* classification segment, the DWSR provides outstandingly remarkable habitat for a resident, world-class Arctic grayling fishery. Few rivers anywhere in the world can match the quality and quantity of the Arctic grayling fishery in the DWSR. Results of recent abundance estimates for Arctic grayling in the *wild* classification segment indicated the 17 km study area had one of the greatest densities ever recorded for a population of Arctic grayling ≥ 270 mm length (Gryska, in preparation).

Management Objectives (Wild classification segment):

- Manage designated campsites and social trails to reduce soil compaction, soil erosion, sedimentation, and riparian vegetation loss and damage.
- Maintain and restore elements of the sediment regime including timing, volume, rate, and character of sediment input, storage, and transport.
- Maintain water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.
- Maintain or enhance the physical integrity of the aquatic system including shorelines, streambanks, and bottom configurations.
- Maintain instream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.
- Maintain and restore the species composition and structural diversity of plant communities in riparian areas.

- Maintain habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.
- Cooperate with partner and research agencies in existing and future fish population monitoring, habitat assessment, habitat restoration, and research projects that are consistent with management objectives.

2.2.1.5 ORV-Wildlife

Within the *scenic* classification segment, the DWSR provides outstandingly remarkable wildlife viewing and photographic opportunities for a diversity of wildlife species. Migratory birds and waterfowl use the river corridor and the surrounding lakes as nesting areas. Trumpeter swans, a BLM sensitive species, nest in the wetlands of the Upper Tangles. Bald eagles frequent the area to nest and hunt for fish and various waterfowl. Grizzly bears frequent the lowlands to fish and to hunt where moose drop their calves. Moose inhabit the lowlands in the summer while generally wintering at higher elevations in the surrounding hills. The *scenic* classification segment is also within the historical migratory path of the Nelchina caribou herd. Up to 34,000 caribou travel through the area each year in an annual migration to and from the calving grounds farther west. This exceptional combination of pristine habitat and wildlife contribute substantially to the functioning of the river ecosystem. Moreover, a unique tradition of subsistence use allows rural hunters to harvest moose and caribou in the river corridor, following long-held traditions passed on through thousands of years.

Management Objectives (Scenic classification segment):

- Maintain or enhance wildlife habitat for migratory birds and waterfowl.
- Protect habitat for Trumpeter swans, a BLM sensitive species.
- Reduce potential sources of disruption for the migration and wintering of the Nelchina Caribou Herd.
- Ensure sound wildlife management for continued subsistence opportunities.
- Minimize human-bear encounters by encouraging visitors to use Leave No Trace camping techniques.

2.3 Alternative 1 -- No Action Alternative

In this alternative, current management would continue on the Delta River, guided by the 1983 DWSR Management Plan and the EARMP. ORVs and related management objectives would not be identified, and no decisions to manage use levels and associated impacts of recreational use would be made. BBM actions, including adaptive management standards and indicators, would not be implemented within the river corridor. Management options to address issues that were identified during scoping would be limited, and the management strategy would lack clear management goals and objectives to address impact issues within the river corridor. The no action alternative would not meet the objectives stated under *"Purpose and Need for Action"*, which include the development of a Delta River SRMA Plan and associated LUP Amendment.

2.4 Alternative 2 -- Proposed Action Alternative

The proposed action alternative is the BLM's preferred alternative. The BLM proposes to adopt the following BBM recreation objectives for the DWSR corridor, and the described indicators, standards, and adaptive management actions in Chapter 2.4.2.

2.4.1 Alternative 2 -- Benefits Based Management (BBM) Actions

The BLM has developed specific BBM goals and objectives to address key issues identified during the initial planning studies for the Delta River SRMA, including specific indicators, standards, and adaptive management actions to address impacts associated with recreational use. The BBM planning process involves identifying distinct Recreation Management Zones (RMZs) for the entire Delta River SRMA, each having a specific recreation niche, or specialty, that serves the primary recreational market being targeted within each zone. The development of RMZs within the Delta River SRMA is a recreation allocation decision, based on the primary recreational activities that occur within different areas of the river corridor.

In some cases, RMZ boundaries do not exactly match the WSR classification category (wild, scenic, and recreational) boundaries (Map 2). However, RMZ decisions will be consistent with WSR classification categories described in Section 2(b) of the WSRA and BLM WSR Planning Guidance (BLM M-8351).

The Recreation Opportunity Spectrum (ROS) has been adopted by the BLM as a tool for describing the existing recreational setting character and for prescribing the desired recreational setting character (BLM LUP H 1601-1, Appendix C) for each RMZ. The ROS provides a framework for classifying the diversity of recreational opportunities on public lands to accommodate a wide range of recreational users and activities. Typically, the ROS is divided into six major classes: urban, rural, roaded natural, semiprimitive motorized, semiprimitive nonmotorized, and primitive. Along this continuum, physical, social, and managerial conditions vary. One ROS class will be applied to each RMZ to help define the actual experience setting that will facilitate the desired outcomes for each RMZ. Proposed RMZs and targeted ROS experience settings for the Delta River SRMA are included in Tables 3 and 4 and Map 2.

Table 3: Alternative 2 - Delta River SRMA Proposed Recreation Management Zones and Acreages

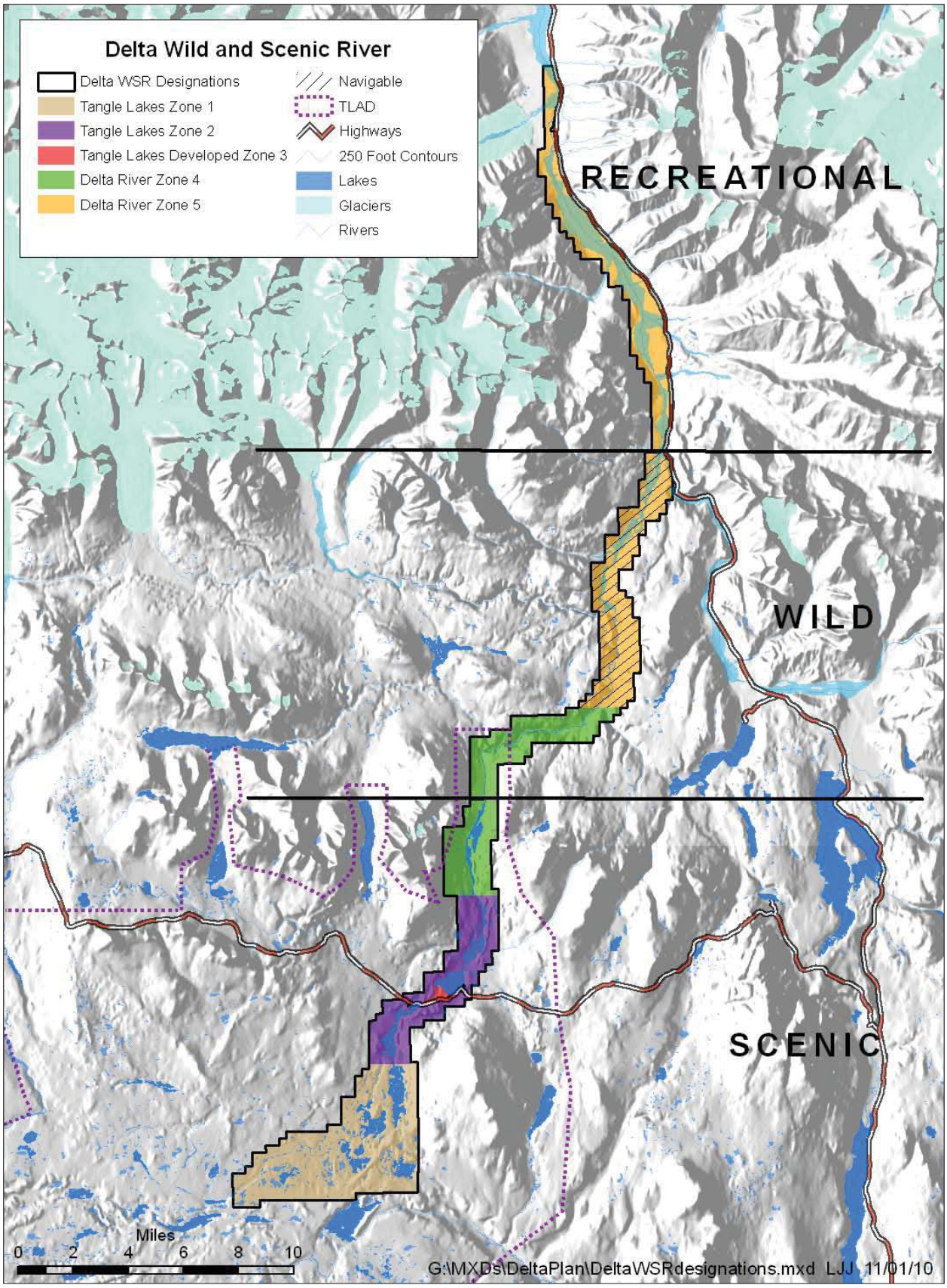
Proposed Recreation Management Zone (RMZ)	Acres	River Miles (approx.)
Tangle Lakes Zone 1	13362	12
Tangle Lakes Zone 2	6603	8
Tangle Lakes Developed Zone 3	248	1
Delta River Zone 4	8309	11
Delta River Zone 5*	16065	30

* The State Of Alaska owns the submerged lands of the Delta River below the ordinary high water line where the river has been determined navigable.

Table 4: Alternative 2 - ROS Experiences by Proposed RMZ

Recreation Management Zone	ROS Experience to be Managed For	Definition of Experience
Tangle Lakes Zone 1	Semiprimitive nonmotorized	Area is characterized by a high degree of naturalness. Concentration of users is low to moderate, but solitude is still possible. Area is free of motorized roads and trails, but some motorized boating use is present, limited by physical terrain features. Vegetation and soils are predominantly natural, but some impacts exist at campsites. Management presence is subtle and limited, absent of any facilities.
Tangle Lakes Zone 2	Semiprimitive motorized	Area is characterized by a predominantly naturally appearing environment. Concentration of users is moderate, and solitude is sometimes difficult to find. Motorized uses are common. Sights and sounds of the road system may or may not be dominant, but all portions are near motorized activities. Vegetation and soils are predominantly natural, but some impacts exist at campsites.
Tangle Lakes Developed Zone 3	Roaded Natural	Area is characterized by a moderate degree of naturalness, within sight and sounds of humans. User concentrations may be high in popular recreational sites, such as waysides, campgrounds, and water access points. Basic facilities exist for user convenience and safety, with a moderate level of management presence. Area is accessible by paved or gravel roads to conventional motorized vehicles.
Delta River Zone 4	Primitive	Area is characterized by an essentially unmodified natural environment, managed for primitive attributes and solitude. Concentration of users is very low and evidence of use is minimal. Sights and sounds of the road system are nonexistent and area is remote. Facilities are rustic and built for resource protection only. There is little or no evidence of motorized use, including OHV trails.
Delta River Zone 5	Semiprimitive motorized	See description for Tangle Lakes Zone 2.

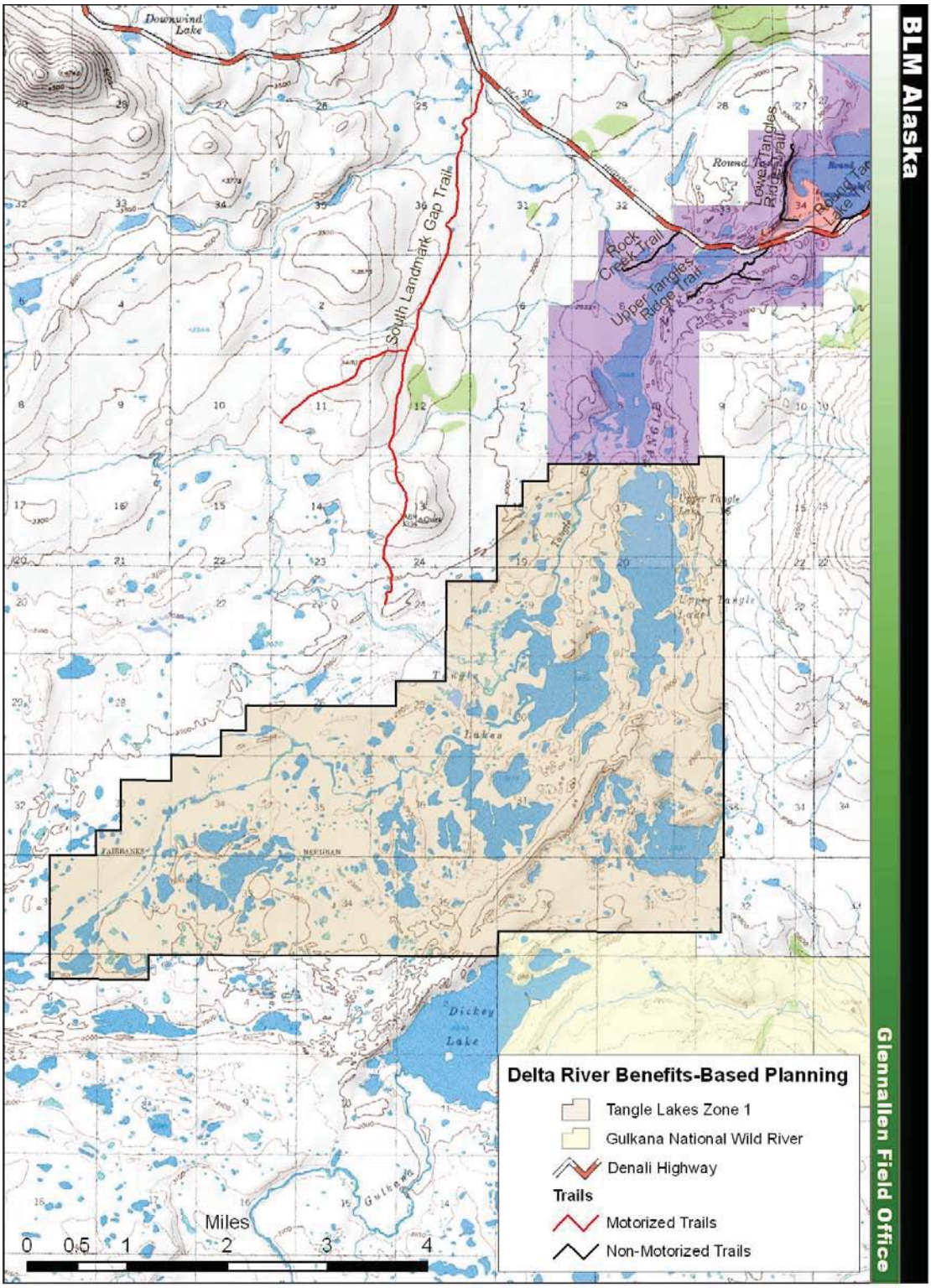
Map 2: Alternative 2 - Delta River SRMA Proposed Recreation Management Zones and WSR Designations



2.4.1.1 Alternative 2 -- Tangle Lakes Zone 1

Tangle Lakes Zone 1 is accessed from the DWSR Wayside and includes the southern portion of the Upper Tangle Lakes system to the extent of the river corridor boundary (this zone does not include the first lake and portage of the Upper Tangles, which is located in Tangle Lakes Zone 2). The zone is located entirely within the TLAD and contains approximately 13,362 acres of BLM lands.

Map 3: Tangle Lakes Zone 1



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Alternative 2 – Tangle Lakes Zone 1

EARMP AMENDMENT LAND USE PLANNING DECISIONS	
PRIMARY MARKET STRATEGY	**PRIMARY MARKET**
Destination	Nonmotorized boaters and hikers from Alaska

NICHE DECISION
The unique features of this zone allow for visitors to engage in diverse recreational activities in a semiprimitive environment that becomes more primitive as you travel further from the Denali Highway, while remaining relatively close to facilities that provide easy access to the zone.

MANAGEMENT OBJECTIVE DECISION
The primary focus within the zone will be to manage and provide opportunities for nonmotorized lake boating, dispersed hiking and wildlife viewing activities. Recreational emphasis will be on providing a semiprimitive nonmotorized experience in an easily accessible, naturally appearing landscape.

PRIMARY TARGETED OUTCOMES		
Activities	**Experiences**	**Benefits**
• nonmotorized lake boating • dispersed hiking • wildlife viewing	• enjoying solitude, natural quiet and natural sounds • learning about nature and wildlife	• greater self-reliance and confidence • closer relationship with the natural world

OUTCOMES TO BE AVOIDED		
Activities	**Experiences**	**Negative Benefits**
• Unauthorized OHV use • Motorized boating • Airplane landings	• loss of solitude and ability to view wildlife • loss of cultural history caused by resource damage • reduced natural quiet and natural sounds	• increased mental tension and stress with loss of solitude • decreased relationship with the natural world • loss of naturalness and increased disturbance to area resources

SETTING CHARACTER DECISION -- SEMIPRIMITIVE NONMOTORIZED		
Physical	**Social**	**Administrative**
Remoteness: The zone will be managed for a semiprimitive nonmotorized experience, with opportunities for a more primitive experience as you travel further from the Denali Highway. **Naturalness:** The zone is natural in appearance, but may be within site of the Denali Highway and developed facilities. Conditions become more primitive as you progress further south. **Facilities:** 15 primitive campsites will be designated for overnight use. Portage trails between the lakes will remain unimproved.	**Contacts:** Manage for 4-6 encounters per day on the weekend and 2-4 encounters per day during the week. **Group Size:** Manage for an average group size of 3-5 people. **Evidence of Use:** Minor evidence of use, including slight vegetation trampling at campsites and on portage routes will be expected.	**Mechanized Use:** Decisions regarding mechanized use are described below under *Travel Management.* **Management Controls:** Agency personnel will conduct field patrols approximately three times per season. **Visitor Services:** River patrol crews will make contact with lake and river users.

DELTA SRMA IMPLEMENTATION DECISIONS	
Management	**Adaptive Management Actions:** Actions described in Chapter 2.4.2 for the management of litter, human waste, fire rings, campsite impacts, and private/commercial user capacity will be adopted. Impact levels will be monitored; if standards are exceeded, management actions will be implemented as described. **Special Recreation Permits (SRP):** Commercial group sizes will be limited to 10 people per campsite. Commercial guides will be required to use designated campsites and portable toilets. Competitive events may be authorized based on compatibility with specified ORVs for the zone. **Travel Management:** Tangle Lakes Zone 1 is located entirely within the TLAD. Special Rules for the TLAD limit OHV travel to designated OHV trails from May 16 - October 15, or until such time that adequate snow cover or ground frost is present to protect archeological resources. There are no existing designated OHV trails within the zone. Unauthorized OHV routes will be closed and rehabilitated. Signs that identify OHV use limitations will be used to reinforce TLAD trail restrictions. The BLM will monitor visitor use to ensure the protection of resources and compliance with TLAD trail restrictions. Education and enforcement will be used to help limit the proliferation of unauthorized trails. Portage trails between the lakes will remain unimproved and trail maintenance will only be used to prevent resource damage and trail proliferation, using native materials (e.g. rocks, spruce) and primitive trail construction methods. Trail reroutes or closure of spur trails within the portage areas may be used to prevent the proliferation of redundant trails. If trail proliferation does occur, rock cairns or unobtrusive signage may be used to mark the portage routes. Public use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will be allowed throughout the zone. The BLM will recommend the use of certified weed-free forage and bedding for pack animals and dog mushing. Motorized boating and airplane landings will be discouraged, but not prohibited, unless monitoring shows that adverse impacts are occurring to recreational, wildlife, riparian and/or water quality resource values within the management zone. Upon a finding that any of these resource values are being adversely affected as a result of motorized boating or airplane landings, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h). New airstrips will not be authorized within the management zone. **Facilities:** There will be no developed facilities within the zone. Public use cabins will not be considered for development. The absence of facilities is a characteristic that makes this zone unique, providing solitude in a natural, primitive setting. **Education and Interpretation:** Information will be developed to inform and educate visitors about current river resource conditions, rules and regulations, recreational opportunities, and Leave No Trace low impact camping techniques. River crews will make contact with users to educate low impact camping and river ethics. The primary goal within this zone is to provide interpretation of area resources through self discovery.
Marketing	Recreational opportunities within the zone will be marketed by providing information on the BLM website and in BLM brochures. User groups, communities, volunteers, and other interested parties may help to monitor and maintain river resources through partnerships and special events.

Monitoring	The BLM will assure that BBM outcomes and objectives are being met and setting prescriptions are being maintained through the administration of BBM visitor satisfaction surveys. Monitoring and periodic assessments for impacts to recreational, wildlife, riparian and/or water quality resource values will be conducted within the management zone using the following guidelines to establish baseline information with which to quantify possible adverse impacts during the life of the plan: Recreational Resources: Recreational monitoring will be conducted to determine the level of motorized boating and airplane landings. Monitoring will be conducted through the administration of river user surveys, river overflights, and river patrols to determine if motorized boating use or airplane landings are occurring, and to quantify the level of use. Wildlife Resources: Periodic assessments of wildlife habitat will be performed to ensure a diversity and abundance of waterfowl and migratory birds. The effects of human disturbances on breeding, nesting, and productivity of trumpeter swans and other migratory birds will be considered, and breeding bird surveys will be conducted periodically to assess occupancy and productivity. The BLM will also develop and participate in research partnership efforts to gain a better understanding of the effects of human disturbance to sensitive status birds and their habitat. Riparian Resources: Habitat assessments will be completed to evaluate the physical condition of the riparian and wetland areas. Using established BLM protocols, proper functioning condition (PFC) assessments will be performed to determine if riparian and/or wetland vegetation is being adversely affected by motorized boating and airplane landings. The desired condition for riparian and wetland vegetation is to maintain diverse age-class distribution and composition, presence of species that indicate the maintenance of riparian/wetland soil moisture characteristics, deep-rooted riparian species, vigorous riparian vegetation, adequate vegetative cover to protect streambanks and dissipate energy during high flows, and communities with an adequate source of coarse and/or large woody material. Water Quality: Water quality baseline data will be periodically collected to assess possible adverse impacts, including monitoring for petroleum hydrocarbons resulting from motorized boating and/or airplane landings. Using an adaptive management approach, the BLM will monitor and evaluate whether identified standards are being maintained for litter, human waste, fire rings, private and commercial user capacities and campsite impacts. Monitoring will be conducted using river patrols, river surveys, and visitor registration. Management actions (described in Chapter 2.4.2) will be implemented in response to monitored conditions.
Administrative	Special Rules for the river corridor will be developed in accordance with 43 CFR 8351.2-1 to codify the following administrative restrictions: **Travel Management:** The use of snowmachines and OHVs will only be allowed during periods of adequate snow cover (at least 6” of ground frost or 12” of snow cover). **Group Size:** Group sizes will be limited to a maximum of 10 people per campsite. Groups in excess of 10 people per campsite must obtain written authorization with special stipulations from the BLM.

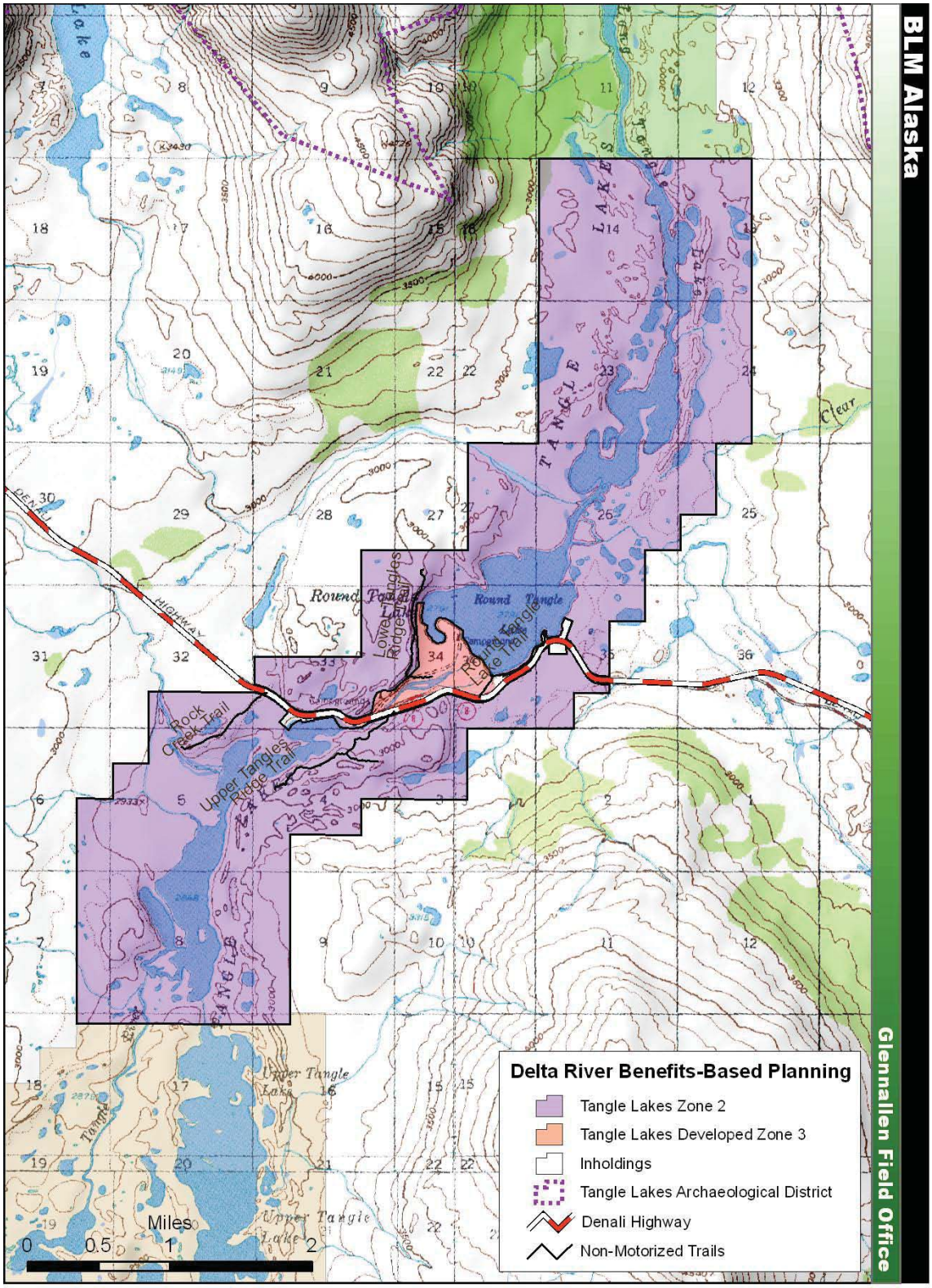
Administrative	**Occupancy and Use:** Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used when camping within 200 feet of the river or lake shoreline. Dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping methods. **Chainsaw Use and Firewood Gathering:** The use of chainsaws for campsite firewood will be prohibited. Only dead and down wood may be used for campfires. The cutting of green trees and vegetation will not be allowed. **Recreational Shooting:** The recreational discharge of weapons (i.e. target shooting or "plinking") will be prohibited. It is prohibited to discharge a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of a residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge. The use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies. Enforcement of violations of this prohibition will depend upon the discretion used by authorized law enforcement personnel. **Fireworks:** The use of fireworks will be prohibited. **Supply Caching:** The caching of supplies will only be allowed through written authorization with special stipulations from the BLM. **Disposal of Human Waste:** Proper disposal of human wastes per Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020 will be required[2]. Commercial guides will be required to use portable toilets.

[2] *Human waste shall not be disposed of on state-owned shorelands (such as gravel bars and sand bars), in accordance with AS 46.03.800 - 810. On all lands including state, federal and private, human waste may be disposed of in a cathole at least 100 feet away from the ordinary high water mark of streams, rivers, or lakes in accordance with Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020.*

2.4.1.2 Alternative 2 -- Tangle Lakes Zone 2

Tangle Lakes Zone 2 includes the first lake and portage area of the Upper Tangle Lakes (accessed from the DWSR Wayside), Round Tangle Lake, and portions of Long Tangle Lake. The zone is located entirely within the TLAD and contains approximately 6,603 acres of BLM lands.

Map 4: Tangle Lakes Zone 2



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Alternative 2 – Tangle Lakes Zone 2

EARMP AMENDMENT LAND USE PLANNING DECISIONS	
PRIMARY MARKET STRATEGY	**PRIMARY MARKET**
Destination	Motorized and nonmotorized boaters and hikers from Alaska National and international visitors traveling the Denali Highway

NICHE DECISION
The zone provides opportunities for visitors to engage in easily accessible, water-based recreational experiences on the lake system, and developed trail hiking opportunities in the surrounding uplands, while located relatively close to campground and wayside facilities.

MANAGEMENT OBJECTIVE DECISION
The primary focus within the zone will be to manage and provide opportunities for motorized and nonmotorized lake boating and developed trail hiking activities. Recreational emphasis will be on providing a semiprimitive motorized experience offering social group and family affiliation opportunities in an easily accessible, naturally appearing landscape.

PRIMARY TARGETED OUTCOMES		
Activities	**Experiences**	**Benefits**
• hiking • motorized lake boating • nonmotorized lake boating	• learning about nature • physical exercise	• improved health/fitness • closer relationship with the natural world

OUTCOMES TO BE AVOIDED		
Activities	**Experiences**	**Negative Benefits**
• Unauthorized OHV use	• loss of cultural history caused by resource damage • negative impacts to scenery and natural landscapes	• increased levels of use from easier access • loss of naturalness and increased disturbance to the area resources

SETTING CHARACTER DECISION – SEMIPRIMITIVE MOTORIZED		
Physical	**Social**	**Administrative**
Remoteness: The zone will be managed for a semiprimitive motorized experience with a low to moderate concentration of users. **Naturalness:** The zone is natural in appearance, but within site of the highway and developed facilities. **Facilities:** 25 primitive campsites will be designated for overnight use. There will be one unimproved portage trail located between the first and second lakes of the Upper Tangles. Four nonmotorized hiking trails will be designated and developed within the zone.	**Contacts:** Manage for 6-10 encounters per day on the weekend and 4-6 encounters per day during the week. **Group Size:** Manage for an average group size of 4-6 people. **Evidence of Use:** Minor evidence of use, including slight vegetation trampling at campsites and on hiking trails will be expected.	**Mechanized Use:** Decisions regarding mechanized use are described below under *Travel Management*. **Management Controls:** Agency personnel will conduct field patrols approximately three times per season. **Visitor Services:** River patrol crews will make contact with lake and river users. Brochures will be available and interpretive information will be provided at the boat launches.

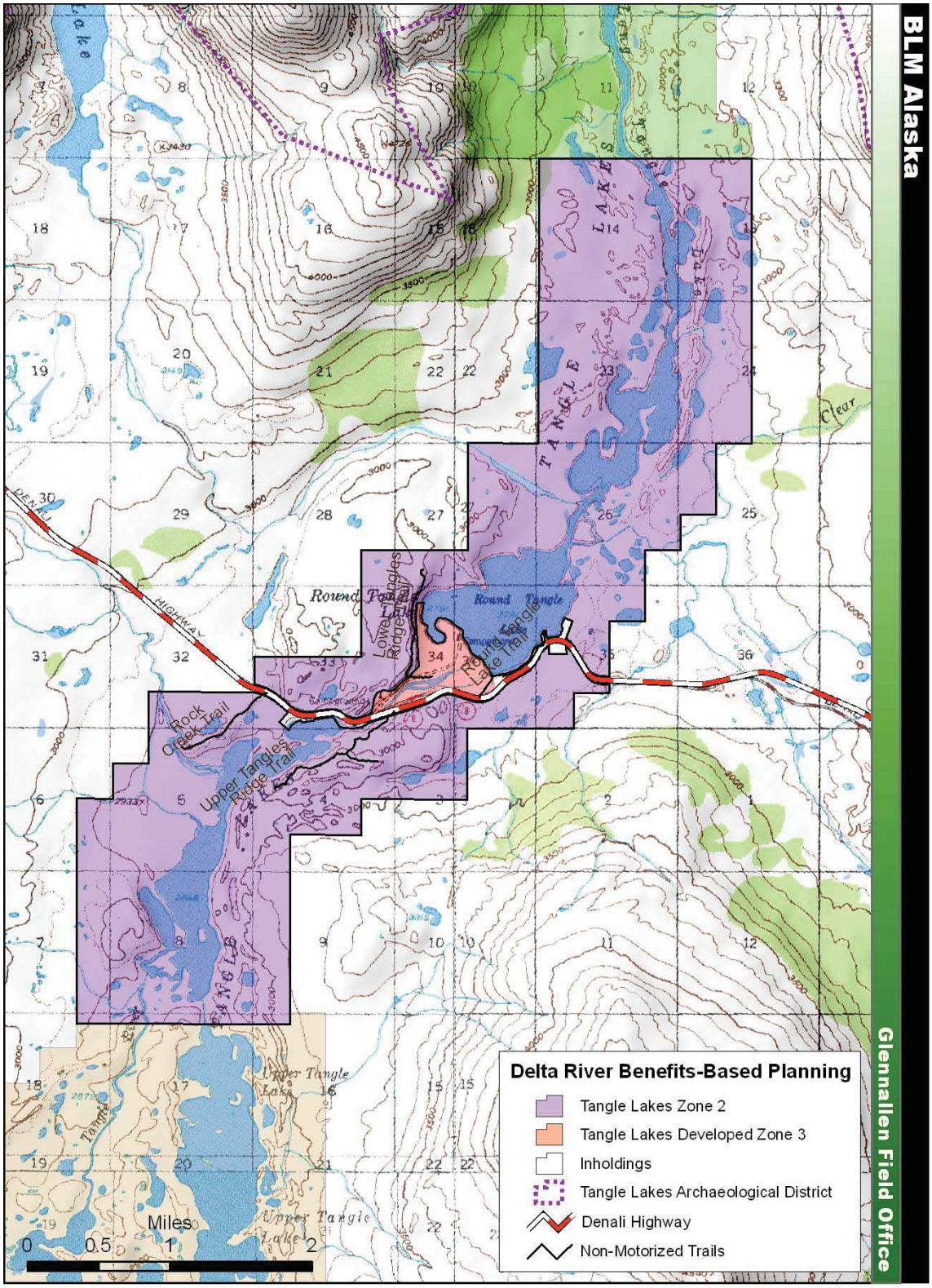
DELTA SRMA IMPLEMENTATION DECISIONS	
Management	**Adaptive Management Actions:** Actions described in Chapter 2.4.2 for the management of litter, human waste, fire rings, campsite impacts, and private/commercial user capacity will be adopted. Impact levels will be monitored; if standards are exceeded, management actions will be implemented as described. **Special Recreation Permits (SRP):** Commercial group sizes will be limited to 10 people per campsite. Commercial guides will be required to use designated campsites and portable toilets. Competitive events may be authorized based on compatibility with specified ORVs for the zone. **Travel Management:** Tangle Lakes Zone 2 is located entirely within the TLAD. Special Rules for the TLAD limit OHV travel to designated OHV trails from May 16 - October 15, or until such time that adequate snow cover or ground frost is present to protect archeological resources. There are no existing designated OHV trails within the zone. The Round Tangle Lake Trail and a trail at Mile 22 Denali Highway North are unauthorized OHV trails and will be closed to OHV use and rehabilitated. Signs that identify OHV use limitations will be used to reinforce TLAD trail restrictions. The BLM will monitor visitor use to ensure the protection of resources and compliance with TLAD trail restrictions. Education and enforcement will be used to help limit the proliferation of unauthorized trails. A designated hiking trail system will be developed within the zone. Trails will be designated as nonmotorized, and interpretive panels may be installed to educate users about the archaeological significance and subsistence lifestyles of the area. Designated nonmotorized hiking trails will include the Lower Tangles Ridge Trail, Rock Creek Trail, Upper Tangles Ridge Trail, and the Round Tangle Lake Trail. Public use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will be allowed throughout the zone, but not on developed hiking trails. The BLM will recommend the use of certified weed-free forage and bedding for pack animals and dog mushing. The portage trail located between the first and second lakes of the Upper Tangles will remain unimproved and trail maintenance will only be used to prevent resource damage and trail proliferation, using native materials (e.g. rocks, spruce) and primitive trail construction methods. If trail proliferation does occur, rock cairns and signage may be used to mark the portage route. There will be no restrictions on motorized boating or airplane landings. New airstrips will not be authorized within the zone. The BLM will monitor water quality (including petroleum hydrocarbons) within the zone. If measured petroleum hydrocarbon levels exceed State water quality standards, the BLM will consider restrictions to meet the standards. **Facilities:** There will be no developed facilities within the zone. Outhouses will not be constructed along the portage, and public use cabins will not be considered for development. **Property Acquisition:** The BLM will consider the acquisition of private parcels for sale within the zone for inclusion into the DWSR corridor. In the event that future land acquisition proposals are being considered in the DWSR corridor, a public meeting will be held in the affected area to solicit public comments on the proposal. **Education and Interpretation:** Educational and interpretive materials will be targeted to help develop an understanding of subsistence lifestyles, cultural awareness, natural resource protection, recreational opportunities, and the need for use restrictions. Interpretive panels will be developed for nonmotorized trails to promote a better cultural and natural resource awareness of the area. River crews will make contact with river users to discuss Leave No Trace river ethics.

Marketing	Recreational opportunities within the zone will be widely marketed and will include information on the BLM website, brochures, and interpretive displays. Marketing of this zone helps to support local area businesses and private enterprises. User groups, communities, volunteers, and other interested parties may help to monitor and maintain river resources through partnerships and special events.
Monitoring	The BLM will assure that BBM outcomes and objectives are being met and setting prescriptions are being maintained through the administration of BBM visitor satisfaction surveys. Using an adaptive management approach, the BLM will monitor and evaluate whether identified standards are being maintained for litter, human waste, fire rings, private and commercial user capacities and campsite impacts. Monitoring will be conducted using river patrols, river surveys, and visitor registration. Management actions (described in Chapter 2.4.2) will be implemented in response to monitored conditions.
Administrative	Special Rules for the river corridor will be developed in accordance with 43 CFR 8351.2-1 to codify the following administrative restrictions: **Travel Management:** The use of snowmachines and OHVs will only be allowed during periods of adequate snow cover (at least 6" of ground frost or 12" of snow cover). The use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will not be allowed on the Lower Tangles Ridge Trail, Rock Creek Trail, Upper Tangles Ridge Trail, and the Round Tangle Lake Trail. **Group Size:** Group sizes will be limited to a maximum of 10 people per campsite. Groups in excess of 10 people per campsite must obtain written authorization with special stipulations from the BLM. **Occupancy and Use:** Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used when camping within 200 feet of the river or lake shoreline. Dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping methods. **Chainsaw Use and Firewood Gathering:** The use of chainsaws for campsite firewood will be prohibited. Only dead and down wood may be used for campfires. The cutting of green trees and vegetation will not be allowed. **Recreational Shooting:** The recreational discharge of weapons (i.e. target shooting or "plinking") will be prohibited. It is prohibited to discharge a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of a residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge. The use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies. Enforcement of violations of this prohibition will depend upon the discretion used by authorized law enforcement personnel. **Fireworks:** The use of fireworks will be prohibited. **Supply Caching:** The caching of supplies will only be allowed through written authorization with special stipulations from the BLM. **Disposal of Human Waste:** Proper disposal of human wastes per Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020 will be required. Commercial guides will be required to use portable toilets.

2.4.1.3 Alternative 2 -- Tangle Lakes Developed Zone 3

Tangle Lakes Developed Zone 3 includes the Tangle Lakes Campground, DWSR Wayside, and portions of the Tangle River that flow through the developed facility areas. The zone is located entirely within the TLAD and contains approximately 248 acres of BLM lands.

Map 5: Tangle Lakes Developed Zone 3



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Alternative 2 -- Tangle Lakes Developed Zone 3

EARMP AMENDMENT LAND USE PLANNING DECISIONS	
PRIMARY MARKET STRATEGY	**PRIMARY MARKET**
Destination	National and international visitors traveling the Denali Highway

NICHE DECISION

The zone provides opportunities for visitors to engage in day use activities and overnight camping in an easily accessible, developed recreation setting with a moderate level of BLM management presence. Close proximity to the Denali Highway and commercial services provides limited amenities and assistance if needed.

MANAGEMENT OBJECTIVE DECISION

The primary focus within the zone will be to manage and provide opportunities for developed overnight camping and fishing activities in BLM facilities that are easily accessible from the Denali Highway. Recreational emphasis will be on providing a roaded natural experience offering social group and family affiliation opportunities within a partially modified, naturally appearing landscape.

PRIMARY TARGETED OUTCOMES

Activities	Experiences	Benefits
• developed camping • fishing	• spending time with family and friends • experiencing cultural history	• social interaction with other visitors • stronger ties with family and friends

OUTCOMES TO BE AVOIDED

Activities	Experiences	Negative Benefits
• Unauthorized OHV use in the Tangle River and developed facilities	• reduced natural quiet and natural sounds • loss of cultural history caused by resource damage • negative impacts to scenery and natural landscapes	• decreased relationship with the natural world • loss of naturalness and increased disturbance to the area resources

SETTING CHARACTER DECISION – ROADED NATURAL

Physical	Social	Administrative
Remoteness: The zone will be managed for a roaded natural experience, where other users are routinely expected, but privacy is still possible within designated campsites. **Naturalness:** The zone is partially modified by gravel roads, recreation facilities, and evidence of adjacent private property, but this does not overpower the natural features of the surrounding landscape. **Facilities:** Facilities within the zone will include the campground, wayside, two boat launches, and interpretive sites.	**Contacts:** Manage for a high level of encounters with other visitors within the developed facilities. People are generally present at campsites, but distant enough to prevent interactions. **Group Size:** Manage for group sizes not to exceed 10 people per designated campsite. **Evidence of Use:** Most areas are gravel surfaced for erosion control. Worn soils and trampled vegetation may be present in isolated locations along the banks of the Tangle River, and in some areas throughout the developed facilities.	**Mechanized Use:** Decisions regarding mechanized use are described below under *Travel Management*. **Management Controls:** Volunteer campground hosts will be present at the Tangle Lakes Campground and DWSR Wayside. Agency and law enforcement personnel will be periodically present within the campground and wayside. **Visitor Services:** Brochures will be available and interpretive information will be posted throughout the developed facilities.

DELTA SRMA IMPLEMENTATION DECISIONS	
Management	**Litter:** Litter receptacles will be provided in the developed facility areas. Campground hosts will provide education regarding proper litter disposal. **Human and Pet Waste:** The BLM will require the proper disposal of human and pet wastes per ADEC and CFR 8365 regulations that address litter and solid waste disposal, water pumping restrictions, and other sanitation issues. **Fire Rings:** Metal fire rings will be provided in designated campsites and picnic areas in the developed facilities. **Campsite Impacts:** A planned redesign of the Tangle Lakes Campground will develop and designate campsites to limit the unauthorized creation of campsites that is causing vegetation damage. A separate EA will analyze site-specific considerations related to the campground redesign. Campsites that are not designated will be closed and rehabilitated. Walk-in campsites from the campground to locations along Round Tangle Lake and the Tangle River may be considered for development. **Private and Commercial User Capacity:** Campground use will be self-limiting due to restrictions on the number of people and vehicles per site. A campsite map will be developed that will display 45 designated campsites that are available on a first-come, first-serve basis to the public. **Special Recreation Permits (SRP):** Commercial group sizes will be limited to 10 people per campsite. Competitive events may be authorized based on compatibility with specified ORVs for the zone. **Travel Management:** Tangle Lakes Developed Zone 3 is located entirely within the TLAD. Special Rules for the TLAD limit OHV travel to designated OHV trails from May 16 - October 15, or until such time that adequate snow cover or ground frost is present to protect archeological resources. There are no existing designated OHV trails within the zone. Unauthorized OHV routes will be closed and rehabilitated. Signs that identify OHV use limitations will be used to reinforce TLAD trail restrictions. The BLM will monitor trails to ensure the protection of resources and compliance with TLAD trail restrictions. Education and enforcement will be used to help limit the proliferation of unauthorized trails. Public use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will be allowed throughout the zone. The BLM will recommend the use of certified weed-free forage and bedding for pack animals and dog mushing. Motorized boating has never been observed, nor is it practical in the Tangle River; being naturally restricted by very shallow river conditions and river width. Airplane landings are not practical in the developed facilities due to the lack of suitable airstrips. There will be no formal restrictions on motorized boating or airplane landings, although they will be monitored and highly discouraged for safety reasons. Restrictions would be considered in the future if needed to prohibit these uses in the Tangle River and developed facilities within the management zone. New airstrips will not be authorized within the zone. **Facilities:** Future facility developments may include the construction of a wayside at the campground entrance that would provide day use services with parking facilities, outhouses, picnicking facilities, interpretive panels, and walking trails along the Tangle River. After the redesign of the campground, user fees will be implemented for overnight use. Public use cabins will not be

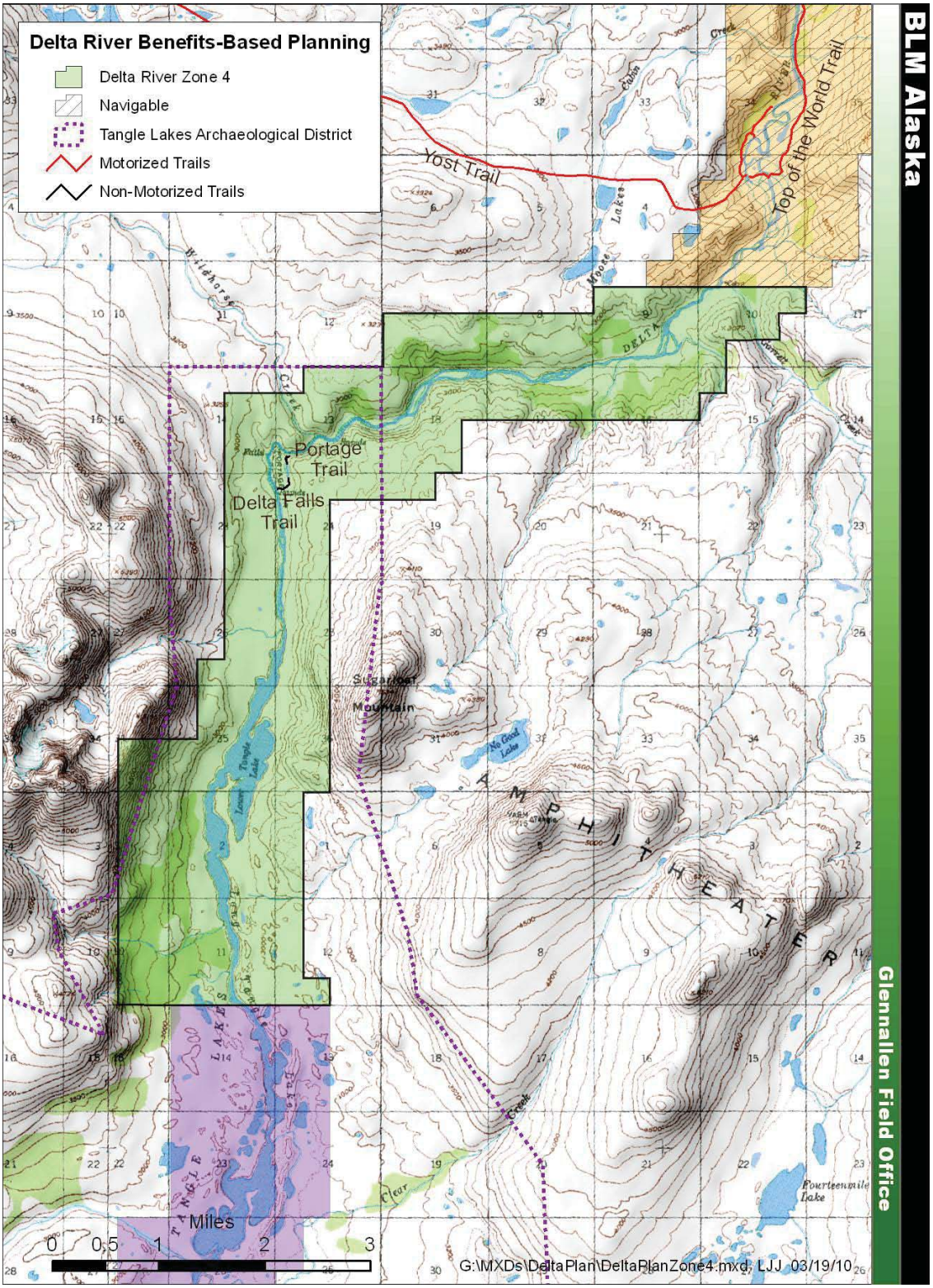
Management	considered for development. Boat launch facilities will include boater registration kiosks, river survey boxes, and interpretive panels. The installation of an educational river portal facility or portable toilet cleanout facility would be considered if a permit system is implemented and if portable toilets are required by river and lake users in the future. **Property Acquisition:** The BLM will consider acquisition of private parcels for sale within the zone for inclusion into the DWSR corridor. In the event that future land acquisition proposals are being considered in the DWSR corridor, a public meeting will be held in the affected area to solicit public comments on the proposal. **Education and Interpretation:** Educational and interpretive panels will be provided to promote a better cultural and natural resource awareness of the area. Materials will be targeted to help develop an understanding of subsistence lifestyles, cultural awareness, natural resource protection, recreational opportunities, and the need for use restrictions. Leave No Trace education will be emphasized with presentations at the boat launches and by providing interpretive materials throughout the developed facilities.
Marketing	Recreational opportunities within the zone will be widely marketed and will include information on the BLM website, brochures, and interpretive displays. Marketing of this zone helps to support local area businesses and private enterprises. User groups, communities, volunteers, and other interested parties may help to maintain river resources through partnerships and special events.
Monitoring	The BLM will assure that BBM outcomes and objectives are being met and setting prescriptions are being maintained through the administration of BBM visitor satisfaction surveys. Volunteer campground hosts will provide information and education and provide a point of contact for user input and suggestions. Registration and comment cards will be provided for visitors to express their concerns or appreciation. Law enforcement staff will periodically patrol the facilities to provide enforcement of rules and regulations, and will assure that measures are in place to enforce administrative restrictions. Maintenance and management oversight will be provided on a routine basis. Periodic and annual safety inspections will be conducted for all developed facilities.
Administrative	Supplemental Rules for the developed facilities will be developed in accordance with 43 CFR 8365 to codify the following administrative restrictions: **Travel Management:** The use of snowmachines and OHVs to travel cross country will only be allowed during periods of adequate snow cover (at least 6” of ground frost or 12” of snow cover). The use of OHVs within the Tangle River will be prohibited. OHV use will only be allowed for ingress and egress to the developed facilities on gravel travel routes designated for motorized travel. The use of OHVs within the developed facilities, other than for ingress or egress, will be prohibited. **Group Size:** Group sizes will be limited to a maximum of 10 people and 2 vehicles per designated campsite (one of which may be a recreational vehicle). Groups in excess of 10 people may camp in the designated group camping areas. **Occupancy and Use:** Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used within the campground. Overnight camping will be prohibited at the DWSR wayside day use facility. Unoccupied, overnight parking of vehicles will be allowed at the wayside to preserve overnight access to the Upper Tangle Lakes.

Administrative	**Chainsaw Use and Firewood Gathering:** Firewood collecting will be prohibited within the developed facilities or along the Tangle River. Firewood must be brought from outside the river corridor. The use of chainsaws for cutting campsite firewood will be allowed in the developed facilities. **Recreational Shooting:** The recreational discharge of weapons (i.e. target shooting or “plinking”) will be prohibited. It is prohibited to discharge a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of a residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge. The use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies. Enforcement of violations of this prohibition will depend upon the discretion used by authorized law enforcement personnel. **Fireworks:** The use of fireworks will be prohibited. **Disposal of Human and Pet Waste:** Proper disposal of human wastes per ADEC regulations will be required. Pet waste, including pack animal wastes, must be properly disposed of and any campsites cleaned of animal waste prior to vacating the campsite.

2.4.1.4 Alternative 2 -- Delta River Zone 4

Delta River Zone 4 includes the upper Delta River from Long Tangle Lake to the confluence of Garrett Creek, containing approximately 8,309 acres of BLM lands. The southern portion of the zone is located within the TLAD.

Map 6: Delta River Zone 4



Alternative 2 -- Delta River Zone 4

EARMP AMENDMENT LAND USE PLANNING DECISIONS	
PRIMARY MARKET STRATEGY	**PRIMARY MARKET**
Destination	Nonmotorized boaters and hikers from Alaska

NICHE DECISION
The zone provides opportunities for visitors to engage in primitive recreational experiences that are characterized by solitude, self reliance, and tranquility in an undisturbed natural environment.

MANAGEMENT OBJECTIVE DECISION
The primary focus within the zone will be to manage and provide opportunities for nonmotorized river boating and fishing activities. The zone will be managed to protect and enhance the qualities and characteristics that are found within a primitive environment. Recreational emphasis will be on providing for a primitive nonmotorized experience in an undisturbed, naturally appearing landscape.

PRIMARY TARGETED OUTCOMES		
Activities	**Experiences**	**Benefits**
• nonmotorized river boating • fishing	• enjoying solitude • escaping everyday responsibilities and social pressures • having time to reflect	• relief of mental tension and stress • closer relationship with the natural world

OUTCOMES TO BE AVOIDED		
Activities	**Experiences**	**Negative Benefits**
• Unauthorized OHV use • Motorized boating • Airplane landings	• loss of solitude • reduced natural quiet and natural sounds	• increased mental tension and stress with loss of solitude • loss of naturalness and increased disturbance to area resources • decreased relationship with the natural world

SETTING CHARACTER DECISION – PRIMITIVE NONMOTORIZED		
Physical	**Social**	**Administrative**
Remoteness: The zone will be managed for a primitive nonmotorized experience with a very low concentration of users. **Naturalness:** The zone is extremely natural in appearance and sights or sounds of the road system are nonexistent. **Facilities:** 20 primitive campsites will be designated for overnight use. At the river portage, two trails and one outhouse will be maintained. Warning signs will be limited to those necessary to ensure user safety. The boater registration kiosk and survey box will be removed, and the outhouse will be removed if portable toilets are required in the future.	**Contacts:** Manage for 2-3 encounters per day on the weekend and 0-2 encounters per day during the week. **Group Size:** Manage for an average group size of 2-4 people. **Evidence of Use:** Minor evidence of use, including slight vegetation trampling at campsites and on portage routes will be expected.	**Mechanized Use:** Decisions regarding mechanized use are described below under *Travel Management*. **Management Controls:** Agency personnel will conduct field patrols approximately three times per season. **Visitor Services:** River patrol crews will make contact with river users.

DELTA SRMA IMPLEMENTATION DECISIONS	
Management	**Adaptive Management Actions:** Actions described in Chapter 2.4.2 for the management of litter, human waste, fire rings, campsite impacts, and private/commercial user capacity will be adopted. Impact levels will be monitored; if standards are exceeded, management actions will be implemented as described. **Special Recreation Permits (SRP):** Commercial group sizes will be limited to 10 people per campsite. Commercial guides will be required to use designated campsites and portable toilets. Competitive events may be authorized based on compatibility with specified ORVs for the zone. **Travel Management:** Portions of Delta River Zone 4 are located within the TLAD. Special Rules for the TLAD limit OHV travel to designated OHV trails from May 16 - October 15, or until such time that adequate snow cover or ground frost is present to protect archeological resources. There are no existing designated OHV trails within the zone. Unauthorized OHV routes will be closed and rehabilitated. Signs that identify OHV use limitations will be used to reinforce TLAD trail restrictions. The BLM will monitor visitor use to ensure the protection of resources and compliance with TLAD trail restrictions. Education and enforcement will be used to help limit the proliferation of unauthorized trails. Portage trails will be maintained to prevent resource damage and trail proliferation, using native materials (e.g. rocks, spruce) and primitive trail construction methods. Trail reroutes or closure of spur trails within the portage areas may be used to prevent the proliferation of redundant trails. If trail proliferation does occur, rock cairns and signage may be used to mark the portage routes. Additional nonmotorized trails may be designated and developed in the future in the Garrett Creek drainage. Public use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will be allowed throughout the zone. The BLM will recommend the use of certified weed-free forage and bedding for pack animals and dog mushing. Motorized boating and airplane landings will be discouraged, but not prohibited, unless monitoring shows that adverse impacts are occurring to recreational, fisheries, riparian and/or water quality resource values within the management zone. Upon a finding that any of these resource values are being adversely affected as a result of motorized boating or airplane landings, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h). New airstrips will not be authorized within the management zone. **Facilities:** Facilities will include one outhouse and two portage warning signs. Portage warning signs will remain discrete, but noticeable. The existing boater registration kiosk and survey box will be removed, and the outhouse will be removed if portable toilets are required in the future and a portable toilet cleanout facility is developed. Public use cabins will not be considered for development. The absence of facilities is a characteristic that makes this zone unique, providing solitude in a natural, primitive setting. **Education and Interpretation:** Information will be developed to inform and educate visitors about current river resource conditions, rules and regulations, recreational opportunities, and Leave No Trace low impact camping techniques. River crews will make contact with users to educate low impact camping and river ethics. The primary goal within this zone is to provide interpretation of area resources through self discovery.
Marketing	Recreational opportunities within the zone will be marketed by providing information on the BLM website and in BLM brochures. User groups, communities, volunteers, and other interested parties may help to monitor and maintain river resources through partnerships and special events.

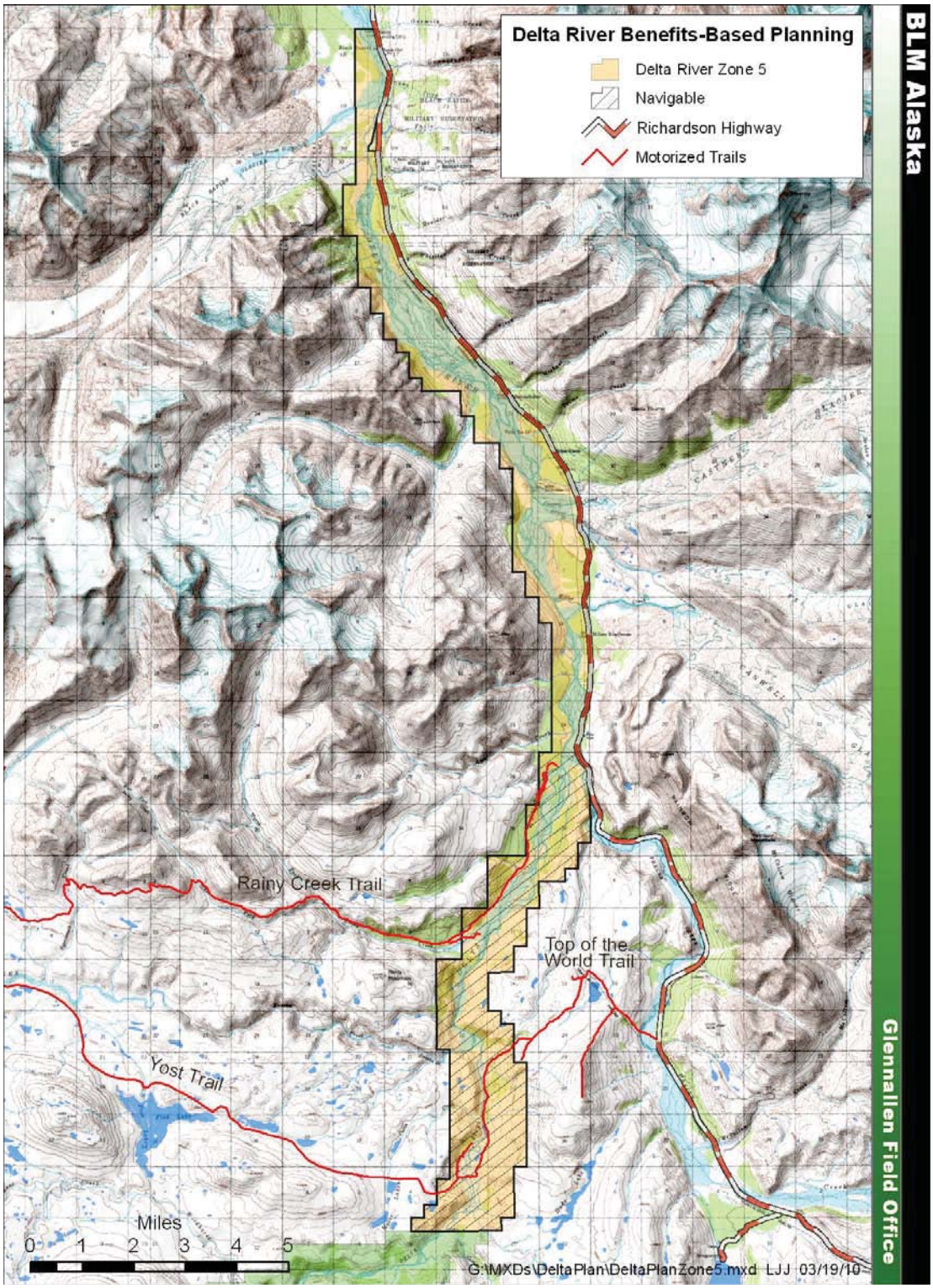
Monitoring	The BLM will assure that BBM outcomes and objectives are being met and setting prescriptions are being maintained through the administration of BBM visitor satisfaction surveys. Monitoring and periodic assessments for impacts to recreational, fisheries, riparian and/or water quality resource values will be conducted within the management zone using the following guidelines to establish baseline information with which to quantify possible adverse impacts during the life of the plan: Recreational Resources: Recreational monitoring will be conducted to determine the level of motorized boating and airplane landings. Monitoring will be conducted through the administration of river user surveys, river overflights, and river patrols to determine if motorized boating use or airplane landings are occurring, and to quantify the level of use. Fisheries Resources: Stock assessment monitoring of Arctic Grayling will be considered based on risk analysis and future adaptive management practices to ensure that motorized boating and/or airplane landings do not adversely affect the high Arctic grayling population densities. Stock assessment will include distribution and population abundance of Arctic grayling in the watershed. Fish inventories and distribution of other fishery resources will be performed for future land use activities in the watershed on an as-needed basis. The BLM will also develop and participate in research partnership efforts to gain a better understanding of the Delta River ecology and hydrology. Riparian Resources: Habitat assessments will be completed to evaluate the physical condition of riparian and wetland areas. Using established BLM protocols, proper functioning condition (PFC) assessments will be performed to determine if riparian and/or wetland vegetation is being adversely affected by motorized boating and airplane landings. The desired condition for riparian and wetland vegetation is to maintain diverse age-class distribution and composition, presence of species that indicate the maintenance of riparian/wetland soil moisture characteristics, deep-rooted riparian species, vigorous riparian vegetation, adequate vegetative cover to protect streambanks and dissipate energy during high flows, and communities with an adequate source of coarse and/or large woody material. Water Quality: Water quality baseline data will be periodically collected to assess possible adverse impacts, including monitoring for petroleum hydrocarbons resulting from motorized boating and/or airplane landings. Using an adaptive management approach, the BLM will monitor and evaluate whether identified standards are being maintained for litter, human waste, fire rings, private and commercial user capacities, and campsite impacts. Monitoring will be conducted using river patrols, river surveys, and visitor registration. Management actions (described in Chapter 2.4.2) will be implemented in response to monitored conditions.
Administrative	Special Rules for the river corridor will be developed in accordance with 43 CFR 8351.2-1 to codify the following administrative restrictions: **Travel Management:** The use of snowmachines and OHVs will only be allowed during periods of adequate snow cover (at least 6” of ground frost or 12” of snow cover). **Group Size:** Group sizes will be limited to a maximum of 10 people per campsite. Groups in excess of 10 people per campsite must obtain written authorization with special stipulations from the BLM.

Administrative	**Occupancy and Use:** Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used when camping within 200 feet of the river or lake shoreline. Dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping methods. **Chainsaw Use and Firewood Gathering:** The use of chainsaws for campsite firewood will be prohibited. Only dead and down wood may be used for campfires. The cutting of green trees and vegetation will not be allowed. **Recreational Shooting:** The recreational discharge of weapons1 (i.e. target shooting or "plinking") will be prohibited. It is prohibited to discharge a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of a residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge. The use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies. Enforcement of violations of this prohibition will depend upon the discretion used by authorized law enforcement personnel. **Fireworks:** The use of fireworks will be prohibited. **Supply Caching:** The caching of supplies will only be allowed through written authorization with special stipulations from the BLM. **Disposal of Human Waste:** Proper disposal of human wastes per Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020 will be required. Commercial guides will be required to use portable toilets.

2.4.1.5 Alternative 2 -- Delta River Zone 5

Delta River Zone 5 includes the lower Delta River, downstream of the Garrett Creek confluence to the end of the river corridor at Black Rapids. The zone contains approximately 16,065 acres of BLM lands. The navigable portion of the lower river corridor, located between the confluences of Garrett Creek and Phelan Creek, is owned by the State of Alaska below the ordinary high water marks.

Map 7: Delta River Zone 5



Alternative 2 -- Delta River Zone 5

EARMP AMENDMENT LAND USE PLANNING DECISIONS	
PRIMARY MARKET STRATEGY	**PRIMARY MARKET**
Destination	Motorized and nonmotorized boaters and OHV users from Alaska

NICHE DECISION
The zone provides opportunities for visitors to engage in motorized and nonmotorized recreational experiences within a naturally appearing landscape on the lower Delta River and surrounding uplands within the zone.

MANAGEMENT OBJECTIVE DECISION
The primary focus within the zone will be to manage and provide opportunities for visitors to engage in motorized and nonmotorized river boating and motorized OHV use on designated OHV trails. Recreational emphasis will be on providing a semiprimitive motorized experience in a naturally appearing landscape.

PRIMARY TARGETED OUTCOMES		
Activities	**Experiences**	**Benefits**
• motorized river boating • nonmotorized river boating • OHV use	• spending time with family and friends • teaching and developing outdoor skills • enjoying scenery and natural landscapes	• greater self-reliance and confidence • closer relationship with the natural world • gaining and developing outdoor skills

OUTCOMES TO BE AVOIDED		
Activities	**Experiences**	**Negative Benefits**
• OHV use off designated trails • OHVs larger than 2000 lbs. GVW	• negative impacts to scenery and natural landscapes • loss of cultural history caused by resource damage	• less self-reliance and confidence • decreased relationship with the natural world • loss of naturalness and increased disturbance to the area resources

SETTING CHARACTER DECISION – SEMIPRIMITIVE MOTORIZED		
Physical	**Social**	**Administrative**
Remoteness: The zone will be managed for a semiprimitive motorized experience, with a low to moderate concentration of users. **Naturalness:** The zone is natural in appearance, but may be within site of the Richardson Highway, OHV trails, or developed facilities that are located along the Richardson Highway. **Facilities:** Six primitive campsites will be designated for overnight use. A river takeout caution sign, boater registration kiosk, and river survey box will be located at the Mile 212.5 takeout on the Richardson Highway.	**Contacts:** Manage for 3-5 encounters per day on the weekend and 1-3 encounters per day during the week. **Group Size:** Manage for an average group size of 4-6 people. **Evidence of Use:** Minor evidence of use, including slight vegetation trampling at campsites, will be expected. OHV trails will be evident from the river in the surrounding viewshed.	**Mechanized Use:** Decisions regarding mechanized use are described below under *Travel Management*. **Management Controls:** Agency personnel will conduct field patrols approximately three times per season. **Visitor Services:** River patrol crews will make contact with river users and river surveys will be available at the Mile 212.5 Richardson Highway takeout.

DELTA SRMA IMPLEMENTATION DECISIONS	
Management	**Adaptive Management Actions:** Actions described in Chapter 2.4.2 for the management of litter, human waste, fire rings, campsite impacts, and private/commercial user capacity will be adopted. Impact levels will be monitored; if standards are exceeded, management actions will be implemented as described. **Special Recreation Permits (SRP):** Commercial group sizes will be limited to 10 people per campsite. Commercial guides will be required to use designated campsites and portable toilets. Competitive events may be authorized based on compatibility with specified ORVs for the zone. **Travel Management:** Designated OHV trails include the Top of the World/Yost Trail and the Rainy Creek Trail. Two unauthorized OHV trails at the confluence of Eureka Creek will be closed to OHV use and rehabilitated. Trail maintenance activities, including trail hardening and the creation of trail reroutes, may be used on designated OHV trails to eliminate trail braiding and resource impacts. Signs that identify OHV use limitations will be used to reinforce trail restrictions. The BLM will monitor trails to ensure the protection of resources and compliance with trail restrictions. Education and enforcement will be used to help limit the proliferation of unauthorized trails. Nonmotorized trails may be designated and developed in the future in the Eureka Creek drainage. Public use of pack animals, mechanized travel (e.g. mountain bikes) and dog mushing will be allowed for dispersed use throughout the zone and on the Top of the World/Yost and Rainy Creek Trails. The BLM will recommend the use of certified weed-free forage and bedding for pack animals and dog mushing. There will be no restrictions on motorized boating or airplane landings. New airstrips will not be authorized within the zone. The BLM will monitor water quality (including petroleum hydrocarbons) within the zone. If measured petroleum hydrocarbon levels exceed State water quality standards, the BLM will consider restrictions to meet the standards. **Facilities:** Facilities at the Mile 212.5 Richardson Highway takeout will include a boater registration kiosk, river survey box, and takeout warning sign. Access points to the river downstream of Black Rapids will remain unimproved. Public use cabins will not be considered for development. **Education and Interpretation:** Information will be developed to inform and educate visitors about current river resource conditions, rules and regulations, recreational opportunities, and Leave No Trace low impact camping techniques. River crews will make contact with users to educate low impact camping and river ethics. The primary goal within this zone is to provide interpretation of area resources through self discovery.
Marketing	Recreational opportunities within the zone will be marketed by providing information on the BLM website and in BLM brochures. User groups, communities, volunteers, and other interested parties may help to monitor and maintain river resources through partnerships and special events.
Monitoring	The BLM will assure that BBM outcomes and objectives are being met and setting prescriptions are being maintained through the administration of BBM visitor satisfaction surveys. Using an adaptive management approach, the BLM will monitor and evaluate whether identified standards are being maintained for litter, human waste, fire rings, private and commercial user capacities, and campsite impacts. Monitoring will be conducted using river patrols, river surveys, and visitor registration. Management actions (described in Chapter 2.4.2) will be implemented in response to monitored conditions.

DELTA SRMA IMPLEMENTATION DECISIONS	
Administrative	Special Rules for the river corridor will be developed in accordance with 43 CFR 8351.2-1 to codify the following administrative restrictions: **Travel Management:** OHVs must remain on designated OHV trails, and will not be allowed to operate off designated trails for any purposes (including game retrieval), except during periods of adequate snow cover (at least 6 inches of ground frost or 12 inches of snow cover). All OHVs will be limited to 2000 lbs. Gross Vehicle Weight (GVW). OHV restrictions apply to all users, including rural residents engaged in subsistence uses (defined in ANILCA Section 811). Exceptions to the 2000 lb. GVW limitation may be permitted on a case-by-case basis for access to active mining claims via the Rainy Creek Trail and for rural residents engaged in subsistence uses who obtain prior authorization from the BLM, Glennallen Field Office. Prior authorization may be obtained in person, by mail, and by phone from the BLM Glennallen Field Office. **Group Size:** Group sizes will be limited to a maximum of 10 people per campsite. Groups in excess of 10 people per campsite must obtain written authorization with special stipulations from the BLM. **Occupancy and Use:** Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used when camping within 200 feet of the river or lake shoreline. Dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping methods. **Chainsaw Use and Firewood Gathering:** Chainsaw use for the cutting of campsite firewood will be allowed, including the cutting of down and standing dead wood at least 200 feet from the river's edge. The cutting of green trees and vegetation will be prohibited. Chainsaws may be used for personal firewood and houselog gathering only through written authorization with special stipulations from the BLM. **Recreational Shooting:** The recreational discharge of weapons1 (i.e. target shooting or "plinking") will be prohibited. It is prohibited to discharge a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of a residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge. The use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies. Enforcement of violations of this prohibition will depend upon the discretion used by authorized law enforcement personnel. **Fireworks:** The use of fireworks will be prohibited. **Supply Caching:** The caching of supplies will only be allowed through written authorization with special stipulations from the BLM. **Disposal of Human Waste:** Proper disposal of human wastes per Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020 will be required. Commercial guides will be required to use portable toilets.

2.4.2 Alternative 2 -- Adaptive Management Actions

An adaptive management approach involves predicting the outcomes of actions based on current knowledge, monitoring to learn about the impacts of management actions, and then using the results to adjust management actions. Adaptive management focuses on learning and adapting, through partnerships of managers, scientists, and other stakeholders to create and maintain sustainable resource systems (Adaptive Management: The US Department of the Interior Technical Guide, Williams, B. K., R. C. Szaro, and C. D. Shapiro, 2007).

Adaptive management is used to prescribe the desired conditions for resources and visitor experiences for a given area by:

- Selecting specific indicators (i.e. qualities that reflect the overall condition) for resource and visitor experiences.
- Setting quantifiable standards against which the indicator is measured.
- Monitoring conditions on-the-ground.
- Management actions are triggered and implemented when standards are not being met.
- Continually improving and adjusting the program based on knowledge gained over time.

In some cases, if a management action fails to address unacceptable impacts; subsequent phases of management actions would be initiated to meet those standards. Between each set of phased management actions, monitoring would occur before moving to the next phase. If conditions improve over time, management actions can be reassessed and adapted to maintain desired conditions.

Adopting standards and management actions corridor-wide, rather than by each recreation management zone, helps to prevent confusion to the river user when specific management actions are implemented, and allows the BLM to standardize educational and outreach efforts targeted at reducing the levels of impact and educating the public about new management actions. (Management actions within Tangle Lakes Developed Zone 3 will not be dependent upon an adaptive management approach of monitoring indicators and standards. Management actions within this zone affect the developed facilities, and will be instituted immediately as part of the developed facility supplemental rules and regulations).

For RMZs 1, 2, 4, and 5, selected indicators, standards, and phased management actions are identified. Phase 1 management actions will be implemented immediately upon plan approval. If monitoring results indicate that the standard is exceeded over the specified timeframe, Phase II management actions will be implemented as described. Monitoring will continue to occur for the specified time period before moving to the next subsequent phase, and management actions from the previous phases may continue, depending on effectiveness. If conditions improve in a particular phase and meet prescribed standards, management actions will continue as prescribed for that phase, and will not revert back to the previous phase. Although the management actions were developed to be mutually exclusive and independent of each other, similar management actions for different impact issues may be triggered by the monitoring results of one impact issue, but not the other. In this case, the prescribed management actions for the affected impact issue would apply to both impact issues.

The following adaptive management actions will be implemented on a corridor-wide basis within all recreation management zones (except for Tangle Lakes Developed Zone 3).

2.4.2.1 Litter

Indicator: Percentage of designated campsites at which litter occurs.

Standard: Less than 20% of designated campsites (13 sites) have litter present.

Monitoring: The monitoring of litter will be conducted by river patrol crews, recording the number of designated campsites visited and the number of these campsites with litter present, throughout the entire season. Percentages for each trip will be averaged for the season. If the standard is exceeded for two consecutive years (20% or more of campsites monitored have litter present), phased management actions will be implemented.

Phase I: Maintain existing BLM cleanup patrols (3 per season) and provide Leave No Trace (LNT) information at the boat launches and on the BLM website. Conduct visitor contacts at the boat launches and on the river, stopping at occupied campsites to educate proper litter

disposal. Develop a volunteer program with commercial guides, local communities and river users to assist with cleanup and monitoring needs. Involve user groups, volunteers, and other interested parties to help maintain resources through partnerships and special events.

Phase II: Add one additional BLM cleanup patrol (4 per season). Continue volunteer and educational component described under Phase I actions.

Phase III: Dismantle all fire rings, require all users to use fire pans and remove ash from the river corridor. (This action would address the problem of litter left behind in fire rings, which accounts for almost all of the litter found in the river corridor).

2.4.2.2 Human Waste

Indicator: Percentage of designated campsites that human waste (or toilet paper) is present.

Standard: Human waste present at less than 10% of designated campsites (7 sites).

Monitoring: The monitoring of human waste will be conducted by river patrol crews, recording the number of designated campsites visited and the number of campsites with visible human waste or toilet paper present, throughout the entire season. Percentages for each trip will be averaged for the season. If the standard is exceeded for two consecutive years (10% or more of campsites monitored have human waste or toilet paper present), phased management actions will be implemented.

Phase I: Maintain existing BLM cleanup patrols (3 per season) and provide LNT information at the boat launches and on the BLM website. Require commercial guides to use portable toilets. New outhouses will not be constructed. Conduct visitor contacts at the boat launches and on the river, stopping at occupied campsites to educate proper human waste disposal. Develop a volunteer program with commercial guides, local communities and river users to assist with cleanup and monitoring needs. Involve user groups, volunteers, and other interested parties to help maintain resources through partnerships and special events. Increase educational efforts by conducting LNT workshops with groups such as the Boy Scouts of America, Copper River Watershed Project and the Wrangell Institute for Science and Environment. Publicize current state laws and regulations regarding the proper disposal of human waste: *Human waste shall not be disposed of on state-owned shorelands (such as gravel bars and sand bars), in accordance with AS 46.03.800 - 810. On all lands including state, federal and private, human waste may be disposed of in a cathole at least 100 feet away from the ordinary high water mark of streams, rivers, or lakes in accordance with Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020.*

Phase II: Add one additional BLM cleanup patrol (4 per season). Continue volunteer and educational component described under Phase I management action.

Phase III: Require all users to use portable toilet systems and carry out human waste and toilet paper. The outhouse at the Delta River portage will be removed once a portable toilet cleanout facility is developed for waste disposal.

2.4.2.3 Fire Rings

Indicator: Number of fire rings per designated campsite.

Standard: Less than 20% of designated campsites (13 sites) with more than one fire ring.

Monitoring: The monitoring of fire rings will be conducted by river patrol crews, recording the number of designated campsites visited and the number of campsites with greater than one fire ring, throughout the entire season. Percentages for each trip will be averaged for the season. If the standard is exceeded for two consecutive years (20% or more of campsites monitored have greater than one fire ring), phased management actions will be implemented.

Phase I: River patrol crews would dismantle all but one fire ring per site and encourage the use of portable fire pans. The cutting of standing trees and the use of chainsaws for campsite firewood will be prohibited. Require the use of only dead and down firewood for campfires.

Phase II: Dismantle all fire rings and require all campers to use fire pans and remove ash from the river corridor. Continue restrictions related to wood cutting and collection.

2.4.2.4 Private and Commercial User Capacity

Indicator: Number of user days that groups are required camp within sight or sound of other campers (camp encounter), pass up occupied designated campsites (camp competition), or share designated campsites due to campsites being occupied.

Standard: Less than 20% of total user days annually

Monitoring: Monitoring will be conducted through the administration of river surveys, overflights, and field patrols to document evidence of camp encounters, camp competition, and camp sharing. River surveys would be available at the launch sites and distributed during river patrol trips. Questionnaires would define and tally camp encounters, which would then be expressed as a weighted percentage (based on all river users for that season compared to river survey responses). If the standard is exceeded for two consecutive years (20% or more of total user days that groups are required to camp within sight or sound of other campers (camp encounter), pass up occupied campsites (camp competition), or share campsites (due to campsites being occupied), phased management actions will be implemented.

Phase I: Designate campsites and develop a campsite map that will allow users to select campsites that will minimize camp encounters and camp competition. Prohibit the use of chainsaws for campsite firewood in RMZs 1, 2, and 4 and recreational shooting in all RMZs to reduce noise related camp encounters. Limit group size to 10 people maximum per campsite. Groups in excess of 10 people per site must obtain written authorization that may include special stipulations from the BLM. Monitor number of permitted commercial use permits and designate campsites for commercial groups. Development of additional campsites may be considered to accommodate increased use, especially in high concentration areas to relieve pressure on heavy use sites and to minimize camp encounters. Locations for new campsites would be chosen that would minimize camp encounters based on location and terrain.

Phase II: Institute a voluntary registration system for overnight trips. Potential voluntary systems could include a reservation board and a web-based registration system. Users plan their trip by reserving campsites on the board or on the web. Other users would be able to see available campsites and plan their trips accordingly. Use of the campsites would be first come, first served. These measures would enable visitors to avoid high use days and reduce campsite competition.

Phase III: Continue the voluntary registration system defined in Phase II, but registration would become mandatory, with no use limits or user fees.

Phase IV: Limit the number of overnight trips launching per day by implementing a mandatory permit system. A mandatory permit system would be developed through a public process consistent with existing laws, regulations, and policies.

2.4.2.5 Campsite Impacts

Indicator: Percentage of bare ground disturbance and density of social trails and satellite sites at designated campsites. Bare ground is determined using photopoint monitoring techniques and GPS analysis. All designated campsites were inventoried in 2006 and categorized as “heavy”, “moderate”, and “light” impact sites, depending on the level of bare ground disturbance, social trails, and satellite sites.

Standard: **Heavy impact sites:** These sites are heavily impacted (more than 66% of campsite area is impacted down to mineral soil), with more than one satellite site and social trail. Rehabilitation at these sites would be difficult without total rest for years; high use levels in these areas might also result in the creation of new campsites if these were closed.

Standard: no increase in bare ground on the river bank and no increase in satellite sites or social trails from the existing condition.

Moderate impact sites: These are sites where passive rehabilitation or rest could make a large difference. Current area of bare ground is smaller than heavy impact sites, but has the potential to spread (between 34% and 65% of campsite area is impacted down to mineral soil). Moderate impact sites have up to one satellite site and one social trail.

Standard: less than 66% bare ground disturbance and no more than one satellite site or social trail.

Light impact sites: These are sites that are hard to find, even with a map, and have very little bare ground disturbance (between 0% and 33% of campsite area is impacted down to mineral soil). There are no associated satellite sites or social trails. These sites have the most potential for rehabilitation to their original, natural condition.

Standard: less than 33% bare ground disturbance and no new satellite sites or social trails.

Monitoring: A complete baseline inventory was conducted on all campsites in 2006, which consists of detailed sketches, measurements, inventory forms and digital photos of all sites. This information is supplemented with GPS data and estimates of bare ground at each campsite using photopoint monitoring techniques. Monitoring for newly developed campsites will occur annually. Measurement of existing designated campsites to determine trend in bare ground, satellite sites, and social trails will occur every five years. Phased actions will occur based on non-compliance with standards for each campsite category or change in site categorization level after five year monitoring period.

Phase I: Implement group size limit of 10 people per designated river campsite. Groups in excess of 10 people per site must obtain written authorization that may include special stipulations from the BLM. Designate campsites and develop a campsite map. Development of additional campsites may be considered in high concentration areas to relieve pressure on heavy use campsites and to minimize camp encounters. Campsites will be monitored for distance from active eagle nests. If occupation of a campsite is causing disturbance, (i.e. adults displaced from nest, repeatedly leaving eggs or nestlings) the campsite will be closed.

Heavy impact sites: Close developing satellite sites and social trails using natural materials (e.g. trees, rocks, root wads, brush) to discourage use. Increase in bare ground on the riverbank will be minimized using passive rehabilitation, funneling use into one area. Native materials may be used to create natural steps to help prevent riverbank erosion.

Moderate impact sites: Use passive rehabilitation to halt expansion of core area and bare ground disturbance. Developing satellite sites and social trails will be discouraged using natural materials and passive rehabilitation.

Light impact sites: Same as described for moderate impact sites. If not indicated on the designated campsite map, or if it is newly developed site, close the campsite using passive rehabilitation and natural materials to block site visibility from the river.

Phase II: Groups in excess of 10 people will be prohibited in all designated river campsites.

Heavy impact sites: If satellite sites or social trails continue to develop, close them to allow for rest and rehabilitation by using physical barriers and signage.

Moderate impact sites: Where passive rehabilitation described under Phase I is not effective, temporarily close these campsites until bare ground has revegetated within site categorization standards.

Light impact sites Where passive rehabilitation described under Phase I is not effective, close designated campsites. Rehabilitate inactive or newly damaged sites using passive rehabilitation techniques until bare ground has revegetated.

2.5 Alternative 3

Alternative 3 provides management for high density experiences, and emphasizes recreation facility development and increased maintenance to address high impact levels. Alternative 3 has been developed to address scoping comments related to the desire for increased access and less use restrictions within the river corridor.

Outstandingly Remarkable Values and associated management objectives would be adopted as described in *"Management Actions Common to Alternatives 2, 3, and 4."* The RMZ boundaries, market strategy, niche and management objective decisions, primary targeted outcomes, and setting character decisions for each RMZ in Alternative 2 were developed based on information obtained during the BBM planning process meetings described in Chapter 1.9.1. Alternative 3 has been developed to retain these targeted BBM outcomes for each RMZ, but implementation framework decisions have been changed to provide for high density experiences, increased access, and facility development.

2.5.1. Alternative 3 -- Tangle Lakes Zone 1

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 12 people per campsite, instead of 10. Commercial groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM. Commercial groups will not be required to use portable toilets.

Travel Management

There will be no restrictions on motorized boating or airplane landings. Portage trails will be marked and identified with signage and improved access will be provided through trail construction and maintenance activities using native materials (e.g. rocks, spruce).

Facilities

Developed day use facilities with metal fire rings and picnic tables will be installed at heavy use campsites. Public use cabins will be considered for development.

Education and Interpretation

River crews will focus efforts on cleanup and maintenance of campsites, portages, and facilities rather than educational outreach efforts.

Marketing: Same as Alternative 2, except recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

There will be no restrictions on motorized boating or airplane landings.

Group Size

Group sizes will be limited to 12 people per campsite under Phase II campsite and user capacity management actions. Groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM.

Chainsaw Use and Firewood Gathering

Chainsaw use for the cutting of campsite firewood will be allowed, including the cutting of standing dead wood at least 200 feet from the river's edge. The cutting of green trees and vegetation will be prohibited.

2.5.2 Alternative 3 -- Tangle Lakes Zone 2

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 12 people per campsite, instead of 10. Groups in excess of 12 people per site must obtain written authorization that may include special stipulations from the BLM. Commercial groups will not be required to use portable toilets.

Travel Management

The Round Tangle Lake Trail and Mile 22 Denali Highway North Trail will be open to OHV use and designated as OHV trails. The portage trail will be marked and identified with signage and improved access will be provided through trail construction and maintenance activities using native materials (e.g. rocks, spruce).

Facilities

One outhouse and a boater registration kiosk will be installed at the first portage of the Upper Tangles. Developed day use facilities with metal fire rings and picnic tables will be installed at heavy use campsites. Public use cabins will be considered for development.

Education and Interpretation

River crews will focus efforts on cleanup and maintenance of campsites, portages, and facilities rather than educational outreach efforts.

Marketing: Same as Alternative 2, except recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Group Size

Group sizes will be limited to 12 people per campsite under Phase II campsite and user capacity management actions. Groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM.

Chainsaw Use and Firewood Gathering

Chainsaw use for the cutting of campsite firewood will be allowed, including the cutting of standing dead wood at least 200 feet from the river's edge. The cutting of green trees and vegetation will be prohibited.

2.5.3 Alternative 3 -- Tangle Lakes Developed Zone 3

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 12 people per campsite, instead of 10.

Facilities

User fees would be implemented for the use of campground, boat launches, and for overnight parking at the DWSR Wayside. Public use cabins will be considered for development. An educational river portal facility or portable toilet cleanout facility will not be considered for development.

Marketing: Same as Alternative 2, except recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Group Size

Group sizes will be limited to 12 people per campsite, and 3 vehicles per campsite (one of which may be a recreational vehicle). Groups in excess of 12 people may camp in the designated group camping areas.

2.5.4 Alternative 3 -- Delta River Zone 4

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 12 people per campsite, instead of 10. Commercial groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM. Commercial groups will not be required to use portable toilets.

Travel Management

There will be no restrictions on motorized boating or airplane landings. Portage trails will be marked and identified with signage and improved access will be provided through trail construction and maintenance activities using native materials (e.g. rocks, spruce).

Facilities

Facility developments will include an outhouse, river survey box, portage warning signs, and boater registration kiosk. Public use cabins will be considered for development.

Education and Interpretation

River crews will focus efforts on cleanup and maintenance of campsites, portages, and facilities rather than educational outreach efforts.

Marketing: Same as Alternative 2, except recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

There will be no restrictions on motorized boating or airplane landings.

Group Size

Group sizes will be limited to 12 people per campsite under Phase II campsite and user capacity management actions. Groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM.

Chainsaw Use and Firewood Gathering

Chainsaw use for the cutting of campsite firewood will be allowed, including the cutting of standing dead wood at least 200 feet from the river's edge. The cutting of green trees and vegetation will be prohibited.

2.5.5 Alternative 3 -- Delta River Zone 5

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 12 people per campsite, instead of 10. Groups in excess of 12 people per site must obtain written authorization that may include special stipulations from the BLM. Commercial groups will not be required to use portable toilets.

Travel Management

OHV trails at the confluence of Eureka Creek will be open to OHV use and designated as OHV trails.

Facilities

Metal fire rings and picnic tables would be installed at heavy use campsites. Public use cabins will be considered for development.

Education and Interpretation

River crews will focus efforts on cleanup and maintenance of campsites, portages, and facilities rather than educational outreach efforts.

Marketing: Same as Alternative 2, except recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

OHVs will be allowed to travel off designated trails for game retrieval, and there will be no weight limitations for OHV use.

Group Size

Group sizes will be limited to 12 people per campsite under Phase II campsite and user capacity management actions. Groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM.

2.5.6 Alternative 3 -- Adaptive Management Actions

2.5.6.1 Litter

Standard would not change from Alternative 2. Phase I and II management actions would be the same as Alternative 2. Under Phase III management actions, all users would be encouraged to pack out litter through education, but would not be required to use firepans to reduce litter in firerings.

2.5.6.2 Human Waste

Standard would not change from Alternative 2. Phase I management actions would be the same as Alternative 2, except commercial guides would not be required to use portable toilets. Under Phase II management actions, one outhouse would be added in RMZ 2, located at the first portage in the Upper Tangles. The outhouse located at the river portage in RMZ 4 would remain and be maintained for use. River crew would add one additional cleanup patrol and continue educational efforts. Under Phase III management actions, all users would be encouraged to pack out human waste through education, but not required.

2.5.6.3 Fire Rings

Standard would not change from Alternative 2. Phase I management actions would be the same as Alternative 2, except that the cutting of standing dead wood and chainsaw use for the cutting of firewood for campsites would be permitted. Under Phase II management actions, metal fire rings would be installed at heavy use sites and sites with multiple fire rings. Firepans would not be required.

2.5.6.4 Private and Commercial User Capacity

The encounter standard would be relaxed from “less than 20% of total user days” to “less than 40% of total user days”, allowing for higher encounter levels before management actions are initiated. Under Phase I management actions, additional campsites would be developed within the river corridor. Campsites would be designated and a campsite map would be developed. Recreational shooting would be prohibited. Under Phase II management actions, a maximum group size limit of 12 people per campsite would be implemented. Groups in excess of 12 people per site must obtain written authorization that may include special stipulations from the BLM. Under Phase III management actions, a voluntary registration system would be created, and users would be encouraged to register, but not required. Under Phase IV management actions, the voluntary registration system would progress to a

mandatory registration system. There would be no Phase IV management action of implementing a formal mandatory permit system.

2.5.6.5 Campsite Impacts

Standard would not change from Alternative 2. Under Phase I management actions, existing campsite documentation efforts would continue and campsites would be designated and a campsite map would be developed. Campsites would be developed in new areas and existing moderate and heavy impact campsites would be hardened and expanded to accommodate larger groups and increased use levels. Light impact campsites would be allowed to become moderate impact sites before hardening and expansion. Under Phase II management actions, the maximum group size limit would be 12 people per campsite, instead of 10. Groups in excess of 12 people per site must obtain written authorization that may include special stipulations from the BLM. Under Phase II management actions, campsites would be maintained, and rehabilitation, rest, or closure would only be used if resource damage (i.e. erosion, sedimentation) is occurring at campsites. Campsites would then be rehabilitated using passive rehabilitation and signage to discourage use.

2.6 Alternative 4

Alternative 4 was developed to address scoping comments related to the desire to preserve primitive and semiprimitive environments within the river corridor, and to retain and enhance existing wilderness characteristics, natural quiet and natural sounds. Alternative 4 proposes more restrictions on use or types of recreation behavior to provide management options for low density recreational experiences.

Outstandingly Remarkable Values and associated management objectives would be adopted as described in "*Management Actions Common to Alternatives 2, 3, and 4*." The RMZ boundaries, market strategy, niche and management objective decisions, primary targeted outcomes, and setting character decisions for each RMZ in Alternative 2 were developed based on information obtained during the BBM planning process meetings described in Chapter 1.9.1. Alternative 4 has been developed to retain these targeted BBM outcomes for each RMZ, but implementation framework decisions have been changed to provide for low density experiences with less facility development.

2.6.1. Alternative 4 -- Tangle Lakes Zone 1

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 8 people per campsite, instead of 10. Commercial groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM. Competitive events will not be authorized.

Marketing: Same as Alternative 2

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

All recreational motorized boating will be prohibited. Motorized boating for subsistence use and access for traditional activities (described in ANILCA Sections 811 and 1110) will be limited to 15 horsepower motors, and airboats and hovercraft will be prohibited. All airplane landings will be prohibited, except for emergency operations.

Group Size

Group sizes will be limited to 8 people per campsite. Groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM.

2.6.2 Alternative 4 -- Tangle Lakes Zone 2

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 8 people per campsite, instead of 10. Commercial groups in excess of 8 people per site must obtain written authorization that may include special stipulations from the BLM. Competitive events will not be authorized.

Travel Management

Only the Lower Tangles Ridge Trail will be developed and designated as a nonmotorized trail.

Education and Interpretation

Interpretive displays will not be installed on nonmotorized trails.

Marketing: Same as Alternative 2

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

All motorized boating will be limited to 15 horsepower motors, and airboats, hovercraft and personal watercraft (jetskis) will be prohibited. All airplane landings will be prohibited, except for emergency operations. The use of pack animals and mechanized travel (mountain bikes) will not be allowed on the Lower Tangles Ridge Trail.

Group Size

Group sizes will be limited to 8 people per campsite. Groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM.

2.6.3 Alternative 4 -- Tangle Lakes Developed Zone 3

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Campsite Impacts

Walk-in campsites from the campground to locations along Round Tangle Lake and the Tangle River will not be considered for development.

Special Recreation Permits

Commercial group sizes will be limited to 8 people per campsite, instead of 10. Competitive events will not be authorized.

Facilities

Facility developments will be limited to the campground renovation only. User fees would be implemented for the use of campground only.

Marketing: Same as Alternative 2

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

All motorized boating on the Tangle River will be prohibited. All airplane landings will be prohibited, except for emergency operations.

Group Size

Group sizes will be limited to 8 people per campsite, and 2 vehicles per campsite (one of which may be a recreational vehicle). Groups in excess of 8 people may camp in the designated group camping areas.

Chainsaw Use and Firewood Gathering

The use of chainsaws in the developed facilities will be prohibited. Only dead and down wood may be used for campfires. The cutting of green trees and vegetation will be prohibited.

2.6.4 Alternative 4 -- Delta River Zone 4

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 8 people per campsite, instead of 10. Commercial groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM. Competitive events will not be authorized.

Travel Management

Additional nonmotorized trails would not be developed in the future in the Garrett Creek drainage.

Facilities

All existing facility developments would be removed. The outhouse will be removed if portable toilets are required in the future and a cleanout facility is developed.

Marketing: Same as Alternative 2

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

All recreational motorized boating will be prohibited. Motorized boating for subsistence use and access for traditional activities (described in ANILCA Sections 811 and 1110) will be limited to 65 horsepower motors, and airboats and hovercraft will be prohibited. All airplane landings will be prohibited, except for emergency operations.

Group Size

Group sizes will be limited to 8 people per campsite. Groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM.

2.6.5 Alternative 4 -- Delta River Zone 5

EARMP Land Use Planning Decisions:

Same as Alternative 2

Delta SRMA Implementation Decisions:

Management: Same as Alternative 2, except:

Special Recreation Permits

Commercial group sizes will be limited to 8 people per campsite, instead of 10. Groups in excess of 8 people per site must obtain written authorization that may include special stipulations from the BLM. Competitive events will not be authorized.

Travel Management

Additional nonmotorized trails would not be developed in the future in the Eureka Creek drainage.

Facilities

No facility developments will be identified. Takeout warning sign would be removed at the Mile 212.5 Richardson Highway takeout.

Marketing: Same as Alternative 2

Monitoring: Same as Alternative 2

Administrative: Same as Alternative 2, except:

Travel Management

OHVs will be required to park out of sight of the river. All motorized boating will be limited to 65 horsepower motors and airboats and hovercraft will be prohibited. All airplane landings will be prohibited, except for emergency operations.

Group Size

Group sizes will be limited to 8 people per campsite. Groups in excess of 8 people per campsite must obtain written authorization that may include special stipulations from the BLM.

2.6.6 Alternative 4 -- Adaptive Management Actions

2.6.6.1 Litter

Standard would not change from Alternative 2. One additional crew patrol would be added under Phase I management actions, instead of Phase II. Firepans would be required as a Phase II management action, instead of Phase III. Educational component described in Alternative 2 would occur in all management phases.

2.6.6.2 Human Waste

Standard would not change from Alternative 2. Phase I management actions would be the same as Alternative 2. The use of portable toilets would be required under Phase II management actions, instead of Phase III. The outhouse at the Delta River portage would be removed when the installation of a portable toilet cleanout facility is developed. Educational component described in Alternative 2 would occur in all management phases.

2.6.6.3 Fire Rings

Standard would not change from Alternative 2. Phase I and Phase II management actions would be the same as Alternative 2.

2.6.6.4 Private and Commercial User Capacity

The encounter standard would be changed from “less than 20% of total user days” to “less than 10% of total user days”, allowing for lower encounter levels before management actions are initiated. Phase I management actions would include developing a campsite map, designating campsites, implementing a group size limit of 8 people per campsite, and prohibiting the use of chainsaws and recreational shooting in all RMZs. Groups in excess of 8 people per site must obtain written authorization that may include special stipulations from the BLM. Under Phase II management actions, the voluntary registration system would be eliminated, and would be replaced by a mandatory registration system. A mandatory permit system would be implemented during Phase III, instead of Phase IV. No new campsites would be created within the management zone under any management scenario.

2.6.6.5 Campsite Impacts

Standard would not change from Alternative 2. Phase I management actions would be the same as Alternative 2, except that no new campsites would be created and group size would be limited to 8 people per campsite, instead of 10. Groups in excess of 8 people per site must obtain written authorization that may include special stipulations from the BLM. Under Phase II actions, management actions would be the same as Alternative 2, except groups in excess of 8 people would be prohibited in designated river campsites.

3.0 AFFECTED ENVIRONMENT

A description of the affected environment provides a baseline for the comparison of environmental impacts presented in Chapter 4.

3.1 River Corridor Description and General Setting

The Delta River watershed is located in the heart of the Alaska Range, draining an area of about 150,000 acres, and contains a network of 160 miles of streams and more than 20 lakes. The Tangle River flows through and connects several lakes in the Tangles Lakes system, then drains into the Delta River, running clear until its confluence with Eureka Creek where it becomes a braided, glacial river. The Delta River then flows north through the Alaska Range and joins the Tanana River, which ultimately flows into the Yukon River and Bering Sea.

The terrain around the Tangle Lakes is predominantly tundra-covered rolling hills with glacial features that include moraines, esker ridges, and numerous kettle ponds. Gravel benches above many of the lakes indicate that the lake was at one time about 50 feet higher than the current level. The land adjacent to the lower Delta River corridor includes steep alluvial slopes, rock cliffs, and spectacular geologic features. Elevations average 2,800 feet at the Tangle Lakes, after which the drainage falls 650 feet in 51 river miles. The planning area is located within the continental climate zone of interior Alaska. The seasons are characterized by long, severe winters and short, mild summers. Winter temperatures generally range from -40° F to +30° F, with summer temperatures ranging from 35° F to 70° F, with occasional highs exceeding 80° F. Mean annual snowfall is approximately 110 inches. Short summer showers occur frequently in the area. The autumn freeze usually occurs in October, and the spring thaw normally comes in late May or early June.

The Richardson Highway parallels the Delta River from Phelan Creek to the northern river corridor boundary which terminates just downstream of Black Rapids. The highway is within site from the river throughout this portion. The utility corridor paralleling the Delta River in this portion was established as a route for the Trans Alaska Pipeline System (TAPS). Subsequent uses of the utility corridor may include additional pipelines and power transmission lines.

3.2 Affected Resources and Issues for Analysis

The following is a list of resources and issues that have been identified as possibly being affected by the proposed action and alternatives. Affected resources and issues will be analyzed if they are potentially significant and if they lead to a basis for a choice among the alternatives. The following discussion of the affected environment is based on the issues identified in Chapter 1. The impacts of the proposed action and alternatives, including cumulative effects related to these issues, are discussed in Chapter 4.

3.2.1 Climate Change

The Intergovernmental Panel on Climate Change (IPCC) recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations” (IPCC 2007). Evidence is emerging that climate warming in Alaska can be linked to changes occurring in the structure and function of terrestrial ecosystems throughout the State of Alaska. Long term datasets indicate increasing annual mean temperature and annual precipitation (Hinzman et al. 2005). Through many complex interactions on a regional and global scale, the lower layers of the atmosphere experience a net warming effect. From 1954 to 2003, the average annual atmospheric surface temperatures in the Alaska region have risen, ranging from 2 to 3 degrees Celsius. Observed changes include warming of permafrost, increased water temperature, altering of the ranges of some species, and changes in disturbance regimes like fire and insect outbreaks in Alaska (McGuire 2003). Other observations include an increase in river discharge with the spring runoff occurring earlier and a decrease in snow cover by 5-10% since 1972. All of these changes are attributed to an increase in overall global temperature (ACIA 2005).

Much of the discontinuous permafrost in Alaska is both warm and ice-rich, making it highly susceptible to thermal degradation if regional warming continues. In the slightly warmer regions of the subarctic, the

permafrost is thinner or discontinuous. As permafrost becomes even thinner, proportions of groundwater input to streams will increase, and the proportion of surface runoff will decrease, increasing river and lake temperatures and altering chemical properties (Hinzman et al. 2005). On a localized scale, changes to permafrost and increasing groundwater input may lead to increased river bank erosion and increased impacts to trails due to permafrost melting. In permafrost free areas, surface soils can be quite dry because infiltration is not restricted, impacting ecosystem dynamics and increasing fire frequency.

Climate change may contribute to changes in stream systems, such as flow, temperature, and turbidity. Climate change affects the water cycle through variation in snow pack, runoff timing, and changes to total runoff volumes. Hydrological processes impacted by degrading permafrost include gradual or catastrophic drainage of lakes (Yoshikawa and Hinzman, 2003), increased winter stream flows (Bolton et al., 2000), decreased summer peak flows (Bolton et al., 2000), and changes in stream water chemistry (Petrone et al., 2000). Changes in runoff volumes and timing may result in an increase of surface soil erosion beyond current levels, increasing stream sedimentation, erosion, or alteration of stream channels. Changes in climate can also influence the timing and length of seasons, including changes in ranges, abundances, phenology (timing of an event such as breeding), morphology and physiology, community composition, biotic interactions and behaviors. Changes are being seen in all different types of taxa, from insects to mammals, in North America as well as on many other continents.

3.2.2 Cultural Resources

The Native Alaskan and Euro-American prehistory and history of the Northern Copper River Basin, specifically the Tangle Lakes and the DWSR corridor, has been archaeologically and historically investigated by a variety of researchers since the late 1950's. The result has been a relatively rich picture of the area's prehistory and history based upon one of the largest and densest cluster of archaeological sites in this part of Alaska. Many of these sites, and almost all of those within the Tangle Lakes Archaeological District (TLAD), are considered to be eligible for the National Register of Historic Places as contributing properties to the archaeological district. That portion of the DWSR within the TLAD is one of the densest areas for late Pleistocene and early Holocene archaeological sites in the North American Subarctic, making the area significant for answering questions about the poorly known early peoples who migrated to Alaska (Bowers 1989).

The Tangle Lakes and the DWSR corridor have several commonly recognized Ahtna Athabascan placenames, some of which are significant to the Ahtna as trail and travel markers, as well as ties to their ancestors (Kari and Tuttle 2005). Because of the extensive use of the area by the Ahtna historically, as well as the commonly recognized prehistory of the area, the region remains important to the Ahtna as a place that is a tie to some of their most distant ancestors. For example, the southern portions of the Tangle Lakes are understood as the origin place for one of their oldest clans, and has a frequently told clan origin story associated with the area. Any organized use of, or development of the Tangle Lakes and upper DWSR corridor, could affect areas that have religious and cultural importance to the Ahtna.

Cultural resource sites in the planning area include prehistoric and historic trails, temporary camps, habitation sites, game spotting vantage points, butchering sites and stone procurement locations. These sites include a variety of stone tools from several time periods, including wedge shaped microblade cores, core tablets, microblades, leaf shaped biface knives, notched cobbles, and side notched projectile points. Other common stone implements found in the area include end scrapers, large bifaces, exhausted cores and lithic reduction debitage.

3.2.2.1 Cultural Resources Concerns Related to Recreational Activities

Although the Delta River and Tangle Lakes region has received a large portion of the archaeological work conducted by the BLM, the area also has large inventory gaps. Little is known about prehistoric subsistence and travel patterns between the Copper River Basin and the Tanana Valley to the north. Archaeological surveys within the Tangle Lakes and along the upper Delta River in 2007 and 2008 (Jangala et al 2009) yielded a large number of newly discovered sites that hint at the importance of the region for past subsistence and long distance travel.

Beyond gaps in inventories and archaeological knowledge, there are three major threats and one minor threat to cultural resources within the planning area. Since the addition of the TLAD to the National Register of Historic Places in 1972, there has been an increase in both OHV use and trail impacts to

archaeological sites in this area. These increases have removed some of the vital vegetative cover from the thin, fragile soils covering several recorded sites spanning virtually the entire Holocene. In response to this problem, the BLM has used experimental trail hardening materials in those areas with wet soils that are not able to withstand the weight and traffic to which they have been exposed. The trail hardening would also attempt to discourage the user-created braided trail patterns that have developed in these wet areas. The BLM has also increased signage along both designated and non-designated trails.

The second threat to heritage resources within the region is the natural decay and disturbance of sites. There are several cabins and cabin remains that have naturally decayed and collapsed, with no possibility of reconstruction. Other prehistoric archaeological sites along bluff faces are threatened by natural erosion and calving of large portions of unstable bluff faces.

The third threat to cultural resources in the region is vandalism and looting. There have been two known looting incidents in the TLAD. The BLM is attempting to lessen the risk of looting and vandalism through periodic monitoring.

The fourth threat to cultural resources has been the unintentional disturbance of archaeological sites by recreational camping. Several archaeological sites along Long Tangle and Lower Tangle Lakes are used as camping spots by river users. The majority of these users do not recognize the archaeological remains beneath these camps, and there has not been a problem with artifact collecting. However, the expansion of these campsites has the potential to uncover sites that are currently buried and covered by vegetation, exposing them to soil erosion and loss of archaeological context and National Register significance.

3.2.3 Fisheries

The clear water of the Delta River from the Upper Tangle Lakes to the confluence with Eureka Creek supports only resident fish species. Resident fish species use this section of the Delta River for migration, spawning and rearing. Species include: arctic grayling (*Thymallus arcticus*); lake trout (Salvelinus namaycush); round whitefish (Prosopium cylindraceum); burbot (Lota lota); and long nosed suckers (Catastomus catastomus) (Carlton, 1976). Arctic grayling are considered the most widespread and prevalent species within the drainage. Arctic grayling constitute the majority of the sports catch (BLM 1983).

The high quality of the fish habitat of the clear water Delta River is a basic factor contributing to the productivity of the river's fisheries. The river drainage contains a good mixture of gravelly riffles for spawning, rocky bottom runs for summer arctic grayling habitat, deep water areas for overwintering, and pools, backwaters, and lakes for rearing. The productivity of the river's fisheries creates excellent fishing opportunities for recreationists and anglers who use the river.

3.2.3.1 Resident Fish Populations

The arctic grayling (*Thymallus arcticus*) is common throughout Alaska. According to a preliminary survey by the Alaska Department of Fish and Game, the Delta River supports a very healthy, world class, resident arctic grayling population. The arctic grayling is widespread throughout the clear water system focusing on free flowing reaches of runs and riffles. It has been observed that large arctic grayling typically take up positions just below the falls in the swifter moving currents. Arctic grayling spawn early in the spring, immediately after breakup (James E. Morrow, 1983). Arctic grayling eggs hatch in two to four weeks and immediately migrate into deep pools and protected areas for rearing (Vincent-Lang, et al, 1990).

The lake trout (*Salvelinus namaycush*) are widely distributed in Alaska and northern North America. On the Delta River clear water system, the lake trout spawns in the lakes in the fall starting in early September (ADF&G biologist, professional judgement). Eggs hatch in early spring (March) and most growth of the young fry occurs during the summer when food sources are abundant. Lake trout are not considered to be migratory.

The round whitefish (*Prosopium cylindraceum*) are found throughout mainland Alaska (James E. Morrow, 1983). On the clear water of the Delta River, spawning occurs in late September through October (ADF&G biologist, professional judgement). Eggs hatch in the early spring and growth rates of the fry

vary depending on location and food conditions. It is not known if round whitefish are migratory, but it is suspected that they are not.

The burbot (*Lota lota*) are abundant through most of Alaska. Burbot are winter spawners, laying their eggs in early February. Fry are hatched in May, with variable growth rates during the summer. Migration for burbot is unknown.

The longnose sucker (*Catostomus catostomus)* are present throughout Alaska (James E. Morrow, 1983). Spawning for the longnose sucker begins in early May and eggs are laid in late May and early June. Fry are hatched starting in the middle of June and growth rates correlate with available food supply. Migration of the longnose sucker is unknown.

None of these species are commercially used. Arctic grayling and lake trout are a specific target sport fish species for fishing guides and recreational fishermen. Lake trout and burbot may be vulnerable to potential overharvesting.

3.2.3.2 Fisheries Concerns Related to Recreational Activities

The primary management concerns related to fisheries are sedimentation caused by OHV trails and river crossings, and bank erosion and river bed disturbance caused by motorized boating. The Top of the World Trail is the only designated OHV trail accessing and crossing the Delta River directly through the river channel in the clear water portion of the river corridor. It is primarily used by OHVs during hunting season, and crosses the river a few miles above Eureka Creek. OHV trails that parallel the river and OHV river crossings can adversely affect riparian vegetation, rate of erosion and sedimentation, and streambank stability in sensitive riparian areas that are vital fisheries habitat. Damage to riparian areas from OHVs can last for years and sedimentation in streams can damage fish habitat downstream from the original disturbance. Unauthorized trails that parallel the river and stream crossings typically have insufficient drainage structures and sometimes negotiate steep slopes, resulting in physical impacts to streambanks and riparian vegetation, uncontrolled runoff, and are a point where sediment from the trail is introduced into the river.

Removing the vegetative cover, altering the natural topsoil, or changing the shape of the slope can increase the potential for erosion, increase runoff, and create more sediment in waterbodies. The main factors influencing erosion rate include the volume and velocity of runoff from precipitation, the rate of precipitation infiltration through the soil, the amount of plant cover, the slope length or the distance from the point of origin of overland flow to the point of deposition (EPA 1997). Accelerated erosion occurs whenever the soil surface is disturbed. Sediments created by accelerated erosion clog streams and fill lakes and impair the water holding capacity. Erosion decreases the productive value of the soil as well as reducing the quality of the waters that receive the sediment. These changes can lead to decreased survival of fish in the egg and alevin stages; decreased density, biomass, and diversity of aquatic insects; and decreased primary production (Cordone and Kelley 1961; Cooper 1965; Van Nieuwenhuyse 1983; Webber and Post 1985; Lloyd and others 1987; Buhl and Hamiltion 1990).

Riparian vegetation condition directly influences the condition, quality, and maintenance of aquatic habitat. Riparian plants filter sediments and nutrients, provide shade, stabilize streambanks, provide cover in the form of large and small woody debris, produce leaf litter energy inputs, and promote infiltration and recharge of the alluvial aquifer (Orth and White 1993; Wesche 1993). As a result of these functions, spawning beds for fish and microhabitats for macroinvertebrates remain relatively free of damaging fine sediment deposits. Riparian vegetation reduces sedimentation of pools, thereby maintaining water depths and structural diversity of the channel. Base flow levels are augmented throughout the year by the slow release of water stored in aquifers. Complex off-channel habitats, such as backwaters, eddies, and side channels, are often formed by the interaction of streamflow and riparian features such as living vegetation and large woody debris. These areas of slower water provide critical refuge during floods for a variety of aquatic species and serve as rearing areas for juvenile fish.

Increased turbidity and sedimentation from erosion can inhibit site-feeding capacity and spawning success of Arctic graying. All members of the biotic community have the potential to be affected. Potential effects of sedimentation on benthic macroinvertebrates, which are prey species for Arctic grayling, include: interference with respiration, and interruption of filter-feeding insect's capability to secure food. A more important impact to benthic invertebrates would be smothering of physical habitat by

increased sediment loads. A loss of interstitial space in the substrate would be highly detrimental to burrowing species. A decrease in abundance could be expected in these situations. In subarctic environments, where fish depend on summer food sources to grow and reproduce, a reduced prey base may preclude fish from directing energy towards spawning.

Direct threats to Arctic grayling from sediment include changes to physical habitat, subsequent decreased reproductive success, and loss of rearing habitat. Physical habitat changes from sediments are most often attributed to finer size particles. Developing eggs can be smothered and newly hatched fry can be killed by sediment that prevents emergence from spawning gravels and interferes with respiration. Developing fish eggs and larvae need a constant supply of cold, oxygen rich water which flows through the interstitial spaces in stream gravels. Embedded sediments fill these interstitial spaces and limit essential winter habitat used by juvenile fish for cover from predators, ice scour, and high velocity stream flows. The filling of pools with sediment further limits overwintering sites for juvenile and adult fish.

Motorized boating increases have the potential for bank erosion and sedimentation into the river, resulting in a reduced quality of fisheries habitat. The bank stabilizing function of streamside vegetation not only helps reduce erosion and influence channel morphology, but also acts to supplement instream cover by the development of undercut streambanks and by providing overhanging vegetation. Well vegetated stream channels and stable streambanks help reduce turbidity and channel scouring resulting from high runoff rates and, in turn, can enhance primary production. In cold regions, well vegetated stream channels help reduce the formation of aufeis (ice formed by the overflow of water onto existing ice). Aufeis can decrease primary productivity, delay riparian plant growth, increase erosion, tie up water in the form of ice during critical low flow periods, and cause the formation of new stream channels due to channel blockage (Churchill 1990; Michel 1971; Slaughter 1990).

Motorized boat usage on the DWSR is believed to be low, of the 560 boats observed on overflights from 2000 to 2004, 25% were motorized. However, the majority (71 %) of boating occurring in RMZ 5 is motorized; additionally the highest densities of Arctic graying (≥ 270 mm length) ever recorded were recently documented in RMZs 4 and 5 (Gryska, in preparation). The erosion of streambanks and lake shorelines caused by excessive boat wakes may pose a number of harmful effects on the aquatic environment. Wakes or waves generated by passing boats strike streambanks and shorelines with surprising force and wash away the soil and vegetation as wave energy is dissipated on the beach. A number of factors contribute to the size of a wake or wave generated by a moving boat. Among these are the size of the channel being traversed, distance from the shore, vessel speed, the condition and shape of the propeller, passenger load, and hull shape.

Damage caused by a wake is directly related to its height. Boat wakes are found to increase in amplitude with increasing boat size. Comparisons of streamflow and boat wake energy suggest that, in larger channels, boat wakes only make up 2-5% of the total energy dissipated annually against the banks. In smaller channels, the roles are reversed, and streamflow makes up only 2-5% of the annual energy dissipated, demonstrating that boat wakes in smaller channels may constitute far great energy on smaller channels than larger channels. Turbidity measurements clearly demonstrate that boat wakes are capable of dislodging sediments from the banks. Peak values of suspended sediment concentrations far outweigh the ambient load of the river and are found to increase with increasing wake height (Hill et al., 2002). Currently there is no data available for bank erosion rates and sedimentation from motorized boating on the DWSR.

3.2.4 Lands and Realty

3.2.4.1 Access

Access issues discussed in this section apply to minerals access and right-of-way authorizations for the transportation and utility corridor (PLO 5150). Access issues related to travel management and subsistence are discussed under their own general headings.

3.2.4.1.1 Mineral Access

The area has a history of mining beginning with the discovery of gold in Valdez Creek in 1903. Historic mining activities and associated trails dating from circa 1900 have been documented in the planning area. Mining interest has continued to this day, as there are federal and state mining claims on Rainy Creek

and further west in the Eureka Creek drainage and Broxson Gulch. For a description of trails in the DWSR corridor that have been historically used for mining access, refer to the Travel Management description for the Top of the World/Yost Trail and Rainy Creek Trail in Chapter 3.2.10.2.

3.2.4.1.2 Transportation and Utility Corridors

The Transportation and Utility Corridor, withdrawn by PLO 5150 in December of 1971, is primarily identified with the Trans Alaska Oil Pipeline System (TAPS), but is also reserved as a utility and transportation corridor in aid of programs for the U.S. government, as well as the State of Alaska. Future pipeline needs (such as a natural gas pipeline) could be accommodated along this existing route. Application for a right of way in the Transportation and Utility Corridor would require the appropriate level of site-specific analysis, and would be considered using the criteria described in Title XI of ANILCA.

In accordance with the provisions of the WSRA and Title XI of ANILCA, new transportation and utility systems may be permitted within WSR corridors. ANILCA Sections 1104 and 1105 provide applicable standards for granting such authorizations. In addition to the consideration of the factors set forth in Section 1104 (g) (2), such an authorization would be granted if (1) it is in the public interest; and (2) it would be compatible with WSR values for which the subject river involved was established. Any road crossings of the river would be subject to an evaluation consistent with Section 7 of the WSRA.

3.2.4.2 Property Acquisition

There are approximately 30 acres of private lands within the DWSR corridor. If these parcels become available for sale, the BLM may submit funding requests through the Land and Water Conservation Fund (LWCF) to acquire lands. The LWCF program provides funding for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities, and stimulate investments in the protection and maintenance of recreation resources throughout the United States. The EARMP specified that the DWSR corridor would be an emphasis area for the acquisition of private lands through purchase or exchange for the purposes of long-term Federal management and retention. The only private parcels located within the DWSR corridor are in the vicinity of the Tangle Lakes Campground and DWSR Wayside, adjacent to the Denali Highway. In the past, these parcels have been available for sale and the BLM has considered purchasing these parcels through the LWCF program, but formal LWCF proposals have not been submitted.

3.2.5 Natural Quiet and Natural Sounds

By definition, noise is a human-caused sound and may be considered unpleasant, depending on the individual "listening" to the sound, and what the individual is doing when the sound is heard (i.e., working, playing, resting, sleeping). While performing certain tasks, people expect and accept certain sounds. For instance, if a person works in an office, sounds from printers, copiers, and typewriters are generally acceptable and not considered unpleasant or unwanted. By comparison, when resting or relaxing, these same sounds are not desired. The desired sounds during these times are referred to as "natural quiet," a term used to describe ambient (outdoor) natural sounds, without the intrusion of human-caused sounds. Natural quiet can be essential in order for some individuals to achieve a feeling of peace and solitude.

3.2.5.1 Existing Noise Sources

Noise resulting from human activities primarily occurs during the summer months in the developed facilities, but also in areas where OHV use and motorized boating are common throughout the river corridor. Noise associated with visitor use typically involves talking or yelling, setting up camp, the use of chainsaws, rifles, and other camp amenities (generators, radios, etc.), OHV use, aircraft use, and motorized boating. Noise of this type varies greatly depending on group size and group demographics. Noise from motor vehicles is "loudest" immediately adjacent to the roadways, but due to generally low background sound levels, can be audible a long distance from these areas. Atmospheric conditions (such as wind, temperature, humidity, rain, fog, and snow) and topography can significantly affect the presence or absence of motor vehicle noise. Logically, noise levels will be "loudest" where and when activity levels are the greatest and nearest to the area.

Noise associated with aircraft occurs from different types of aircraft that are used within and adjacent to the river corridor. Occasionally, floatplanes will land on the larger lakes within the river corridor for the purpose of transporting fishermen and hunters. The BLM uses fixed wing airplanes to monitor visitor use and wildlife. Helicopters are occasionally used by State agencies and the BLM for logistical support in various resource projects; and helicopter use related to mining activities located adjacent to the river corridor has been increasing in recent years. The US Air Force conducts military flight operations in the FOX Military Operations Area (MOA), which is located adjacent to the river corridor, for military flight activities such as air combat tactics, transition, formation training, and aerobatics.

3.2.5.2 Existing Natural Sounds

Natural sounds within the DWSR corridor result from natural sources such as waterfalls, flowing water, animals, and rustling leaves. Some people seek this type of solitude, and are concerned that additional sources of noise may change this experience, and that certain areas should be managed to preserve existing natural quiet and natural sounds.

3.2.6 Recreation Resources

The Record of Decision for the EARMP identified specific management decisions for recreation resources in the planning area. These management decisions will serve as a guideline for new decisions that will be made to ensure conformity with the EARMP. These decisions can be found in Chapter 1.7 Land Use Plan Conformance.

3.2.6.1 General Recreation Setting

The Tangle Lakes Campground at Mile 21 on the Denali Highway provides developed camping facilities and boat launch access to the lower Tangle Lakes and Delta River. A day use area and boat launch is also located at the DWSR Wayside at Mile 22 on the Denali Highway. This boat launch provides access to the Upper Tangle Lakes and Tangle River. A one mile portage from Upper Tangle Lakes to Dickey Lake provides access to the floatable headwaters of the Gulkana River drainage. Two commercial lodges in the area provide food, gas, and lodging.

Aside from the developed facilities that are located adjacent to the Denali Highway, there are no other developed facilities within the river corridor. The BLM maintains only one outhouse on the entire river system, located at the Delta River portage. Dispersed campsites can be found along the river and lakes; a BLM inventory in 2005 identified 66 dispersed campsites. With the exception of a few campsites on the Tangle Lakes and lower Delta River, campsites are infrequently used, and traces of use are minimal. Within the river corridor, the BLM manages two designated OHV trails. Floatplanes occasionally land on some of the larger lakes in the Tangle Lake system.

3.2.6.2 Recreation Activities and Use

Prior to construction of the Denali Highway in the early 1950's, the DWSR corridor was not easily accessible to highway vehicles. Recreation use of the area began in earnest in 1952, with the construction of the Denali Highway, and after the development of two private lodges and the Tangle Lakes Campground. Use increased substantially in the 1970’s in response to the nearby construction of the TAPS. Recent use is primarily by Alaska residents, although out-of-state visitation has increased. Local community dependence on lands within the DWSR corridor has strong ties to the utilization of the region's hunting and fishing resources. In addition to the resident population, regional urban populations also depend on river resources to pursue recreational activities.

Common recreational activities include fishing, hunting, trapping, berry picking, wildlife viewing, photography, boating, hiking, camping, snowmachining, and OHV travel. Hiking and camping opportunities are abundant, as relatively sparse vegetation and gravelly soils along exposed esker ridges help to facilitate dispersed hiking and camping opportunities. The majority of recreational use occurs near the lakes and on the river, with smaller numbers entering the lower river corridor by OHV.

The Delta River and Tangle Lakes provide exceptional fishing opportunities for arctic grayling and lake trout. Wildlife and bird habitat are also an important aspect within the river corridor, providing abundant hunting, trapping, and wildlife viewing opportunities. Some commonly sought after species include

moose, caribou, bear, grouse and ptarmigan, ducks, beaver, fox, wolf, marten, lynx, muskrat, and mink. Migratory birds, waterfowl, and raptors are found throughout the lakes and river, providing visitors with opportunities for viewing and photography. Primary subsistence uses of the area include moose and caribou hunting, spearing whitefish, and gathering berries.

The Delta River and Tangle Lakes provide opportunities for both motorized and nonmotorized boating. Motorized boating occurs primarily on the lakes adjacent to the developed facilities, and to a lesser extent on the lower river between Phelan and Garrett Creeks. Nonmotorized boating occurs throughout the entire system, as most lakes and the river can be traveled in a relatively short amount of time (2-3 days).

3.2.6.3 Visitor Characteristics

The following data regarding visitor characteristics and preferences was developed from the 2005 Delta River Recreation User Survey (Whittaker and Shelby, 2005):

- **Group Size:** Average group size was 4 for Delta River "through trip" groups and 3 for Upper Tangles groups, motorized boating groups, and OHV groups.

- **Season of Use:** Lake users reported taking most trips during June, July and August; Delta "through trip" users primarily in July, and lower Delta River motorized boaters and OHV users in August and September. This data is consistent with overflight use data conducted by the BLM.

- **Residency:** 97 % of reported Delta River users were Alaska residents.

- **Trip Length:** The median trip length for lake and "through trip" river users was 3 days. The median trip length for lower Delta River motorized boaters was 6 days, while Top of the World OHV users reported a median trip length of 2.5 days.

Users were also asked to identify the most important activities they engaged in while on their trips. The top rated reasons for nonmotorized users were oriented towards "non-consumptive" backcountry recreation in primitive settings (areas providing naturalness and solitude). In contrast, motorized users rated fishing and hunting ("consumptive recreation") much higher. Both groups rated "being with friends and family" very important, but the least important attribute among both groups was "meeting other river users," which suggests that while friend and family groups are acceptable, minimizing interaction and competition between other user groups is desired.

Users were asked to compare different types of experiences that are available on various segments of the river with the type of experience that they think should be provided, using the following experience descriptions:

- **Primitive Setting:** Where one expects to find solitude, very few traces of previous use, no motorized use or OHV trails, and no development.

- **Primitive Motorized Setting:** Similar to primitive setting, but motorized use may occur and OHV trails may occasionally be visible.

- **Semiprimitive Setting:** Where one expects to meet few other groups, but solitude is still possible, particularly at camps. There is little or no motorized use or OHV trails, occasional evidence of previous use, and a few developments such as trails or outhouses.

- **Semiprimitive Motorized Setting:** Similar to a semiprimitive setting, but motorized use may occur and OHV trails may occasionally be visible.

- **Undeveloped Recreation Setting:** Where one expects to meet other groups and solitude is difficult to find. There is motorized use; OHV trails are visible at several locations, evidence of previous use at many sites, and developments such as trails and outhouses.

Results for all users surveyed are shown in Table 5. The river corridor was divided into four different segments, each representative of river settings that are present in the DWSR corridor. **Bolded** entries

indicate segments where reported experiences have higher use and development than preferred experiences (indicating a potential overuse situation):

Table 5: Available and preferred types of "experience settings" for different river segments

Non-motorized users		
Segment	Available setting (majority response)	Preferred setting (majority response)
Upper Tangle Lakes	**Semiprimitive**	**Primitive**
Lower Tangle Lakes	**Primitive Motorized**	**Primitive**
Upper Delta River	Primitive	Primitive
Lower Delta River	Primitive	Primitive
Motorized users		
Segment	Available setting (majority response)	Preferred setting (majority response)
Upper Tangle Lakes	Semiprimitive Motorized	Semiprimitive Motorized
Lower Tangle Lakes	Primitive Motorized	Primitive Motorized
Upper Delta River	**Primitive Motorized**	**Primitive**
Lower Delta River	**Semiprimitive Motorized**	**Primitive Motorized**

Major findings from this data include:

- Users generally recognize there are different opportunities provided on various segments, and that these differences are desirable.
- In general, there appears to be a continuum of opportunities from the primitive, nonmotorized end of the spectrum to the semiprimitive, motorized end.
- In general, differences between reported and preferred experiences are greater for nonmotorized users, indicating they are more sensitive to higher use densities, development, or motorized use.
- Motorized users recognized that the Upper Delta River offers nonmotorized opportunities at present, but slightly fewer prefer that situation.
- Motorized users prefer slightly more primitive settings than they reported, but they do not generally support nonmotorized versions of more primitive settings.
- The data indicates that at current use levels, users' abilities to experience a primitive or semiprimitive river trip on certain segments are being impacted.

3.2.6.4 Visitor Use Trends

The BLM utilizes different methods to estimate visitor use levels on the Delta River. Sources include voluntary visitor registration kiosks, post use reports required from commercial permittees, river overflights on random days; traffic counters at developed facilities; supplemented by visual observations and river user surveys. Annually, the BLM submits the number of "visits" at each recreational site, trail, facility, etc. in the Recreation Management Information System (RMIS) visitor use system.

Table 6 depicts reported annual RMIS visitor use for the DWSR corridor. These numbers are the best estimates available; accurate visitor use data is difficult to obtain in remote, relatively low use areas with low compliance registration data. Each number represents total "visits" to the particular area or site, and each "visit" represents one primary activity by one person (boating, fishing, etc.) within the river area:

Table 6: Historical Visitor Use Data: Reported Number of Annual Visits

Year	Delta River	Upper Tangles Lake Use	Lower Tangles Lake Use	Tangle Lakes Campground	DNWSR Wayside
1970	100				
1972	300				
1975	457				
1976	396				
1977	450				
1978	500				
1979	449				
1980	634				
1981	240				
1982-85	no data				
1986	600				
1987	1620			15876	13392
1988	1068			12480	17755
1989	260			13213	11248
1990	858			15150	12479
1991	863			15150	12479
1992	768			18114	14008
1993	658			21000	10800
1994-96	no data			no data	no data
1997	830	2168	2343	16000	15300
1998	645	2130	2785	14834	14468
1999	737	1865	3493	17070	10989
2000	525	2349	3013	15486	9890
2001	738	2356	3592	9882	7457
2002	717	1657	2759	11761	6349
2003	706	1723	2465	11480	9350
2004	537	1764	2516	12560	9054
2005	763	1530	3128	14543	5638
2006	633	2150	2782	16427	7557
2007	659	1849	3033	15737	7440
2008	603	1677	2267	14969	7245
2009	559	1482	3223	16244	7958

The BLM believes that the original methods used to determine visitor use resulted in overestimations in earlier years. As methods used to calculate visitor use have been refined, use numbers have decreased accordingly. Use estimates for the Delta River were very high during the years 1987-88, and from 1970-97, visitor use was not split between river segments; consequently the total visits for the Upper Tangles and Lower Tangle Lakes are unknown. However, the visitor use trends do demonstrate relatively stable use patterns, with cyclical fluctuations in visitor use (most likely associated with gas prices, weather, economy, hunting opportunities and availability of game, etc).

The number of boaters and OHV users has increased statewide as watercraft and OHVs are more available and affordable today than in the past. As statewide population increases in the future, visitor use within the river corridor may increase, and more specifically, boating and OHV activities on some river segments may increase. Annual fluctuations in visitor use are often dependent on weather, gas prices, and other factors. While motorized boating and OHV use is considerably less than on the Gulkana River, it has been slowly increasing due to a change in Federal Subsistence hunting regulations that allow residents of Delta Junction to participate in the Federal Subsistence hunt. Feature stories in local publications and the internet have also drawn attention to the area.

Overflight information helps to characterize visitor use throughout the river corridor during the summer use season. This use season remains relatively constant every summer, as the ice on the lakes does not recede until early June and most all documented river use ends by late September, with the close of subsistence caribou season on September 30. Specific observations related to overflight data include:

- Visitor use is generally higher on the Lower Tangles and upper Delta River in July and August; and higher on the lower Delta River and Upper Tangles in August and early September.
- Nonmotorized boats account for more than 65% of boats on lake segments; 80% or more on the river upstream of Eureka Creek; but only 29% on the lower river below Eureka Creek.

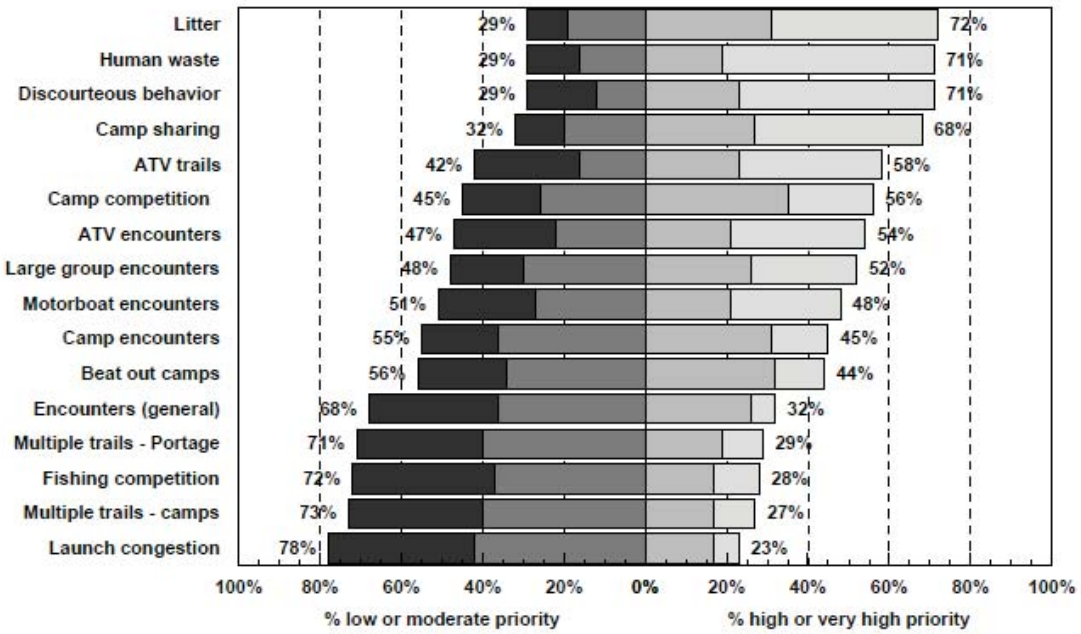
- On the lake segments, 19 to 35% of the days had no boating use, and on the main river segments this was true for 45 to 65% of the days (97% on Black Rapids segment).
- Highest use levels are on the lake segments (particularly Round Tangle Lake), with boats observed on 65% to 80% of the days when overflights occurred. In contrast, use was observed on 35% to 54% of the days on the main river segments (and only 3% on the Black Rapids segment). This is consistent with the number of respondents reporting lake vs. river use in the Delta River User Survey, as well as with RMIS use estimates.
- On the lakes, the average is 3-4 nonmotorized craft and 1-2 motorized boats per flight. On the river segments, the average is 2-5 nonmotorized boats and 1-3 motorized boats per flight. These use estimates are roughly consistent with encounter data in the river user survey, which suggested encounter rates of 2-6 groups per day.
- Nonmotorized use levels are higher in July on most segments except for the upper Delta, which is higher in August. Motorized use on the Upper Tangles and lower Delta River is higher in August and September (coinciding with the hunting season). On Round Tangle Lake, Lower Tangle Lake, and the upper Delta River, motorized use is higher in July.
- Of the 560 boats observed on overflights from 2000 to 2004, 422 or 75% were nonmotorized, and 138 or 25% were motorized.
- OHV use was observed on 6 out of 37 flights (16% of days), and the number of OHVs rarely exceeded 2 per observation. Nearly all of the observed OHVs were near the lower river (Top of the World Trail); and OHVs were never observed during June or July.

3.2.6.5 Recreation Management Concerns

The 1983 DWSR Management Plan recognized the need to determine the amount and type of use that the DWSR corridor could perpetually sustain without impairing its scenic and primitive character, or causing unacceptable change to the experience of the user. The 1983 DWSR Management Plan also discusses the need for determining a “carrying capacity” for the river. Carrying capacity has been defined as the level of use beyond which impacts exceed acceptable levels specified by standards (Shelby & Heberlein, 1986). The actions identified in Chapter 2 of this EA incorporate an adaptive management approach to address visitor use issues and carrying capacity. The alternatives identify standards for different impacts on the river and associated management actions if standards are exceeded. The following section discusses these impacts that are associated with recreational use.

In Figure 1, the 2005 Delta River User Survey rated visitor use impacts within the river corridor and their level of priority to river users.

Figure 1: 2005 Delta River User Survey: Respondents’ priorities among different impacts



These results portray the following:

- Litter and human waste were rated among the highest priorities.
- Camp competition, camp sharing, and camp encounters (camping within sight or sound) were relatively higher priorities than “beat out” camps. This may suggest that users are more concerned about getting a camp to themselves, rather than the actual conditions at camps.

3.2.6.5.1 Group Sizes

Regardless of the fluctuation in estimated visitor use figures since 1983, there is evidence of an increase in both state population and out-of-state visitation over the past two decades. Most importantly, some of the data shows that on some segments of the river, current use levels are causing unacceptable change to the experience of the user and impacting the natural and primitive character of the river (refer to Table 5 on page 63).

Large groups can impact the recreational experiences of smaller groups, and campsites cannot always sustain larger groups, causing resource damages including expansion of bare ground, vegetation trampling, creation of social trails and satellite sites, and congestion at the river portages. Data from the 2005 Delta River User Survey regarding reported and tolerable group sizes includes the following:

Figure 2: Statistics regarding largest reported and tolerable group sizes

Segment	Mean	Median	Typical range[1]	% "don't care"	Percentage reporting...	
					≤12	≤20
Reported largest group sizes	7.8	5	4 to 9	--	82	96
Largest tolerable group sizes	8.1	7	4 to 10	16%	86	98

3.2.6.5.2 Litter

Most concentrations of litter occur in the firerings at dispersed campsites, but can be found scattered at any point along the river, especially at heavily used camping areas. The BLM river crew floats the entire system three to four times per year, and each trip usually results in 2-3 garbage bags of litter. There are garbage receptacles located in all of the developed facilities and boat launches, and interpretive information is provided that includes Leave No Trace minimum impact camping information. Monitoring information compiled from river patrols from 2006-2009 show that litter was present at approximately 135 campsites of 562 campsites monitored during this time period. This equates to an average of approximately 24% of campsites having litter from 2006-2009.

3.2.6.5.3 Human Waste

Current overnight use estimates for the Delta River float trip estimate annual use at approximately 500 people per year. With trip lengths averaging about three days, and people producing approximately 0.5 pounds of solid waste per day (*Better Boater Bathrooms: A Sourcebook for River Managers)*, about 750 pounds of waste is estimated to be deposited along the river each year. While methods of disposal vary (including the use of outhouses, catholes, and some portable toilet systems), much of this waste remains visible to other users. BLM river crews clean up the most obvious areas that contain human waste. Outhouses along the river can help address some of these problems if users know about and use them. Outhouses also pose a logistical and maintenance challenge on the Delta River. Given the high water table and occurrence of permafrost in the area, outhouses are very hard to install. Once installed, they also require regular maintenance (cleaning and relocation when the pit is full). Currently there is one outhouse located at the Delta River portage. There are also vault toilets at the Tangle Lakes Campground and the Delta Wayside.

River users have indicated a strong intolerance for human waste. According to the 2005 Delta River survey, this is an issue where the current level of impact exceeds the level of tolerance. Monitoring information compiled from river patrols from 2006-2009 show that human waste was present at approximately 82 campsites of 562 campsites monitored during this time period. This equates to an average of approximately 15% of campsites having human waste present from 2006-2009.

3.2.6.5.4 Fire Rings

River patrols by the BLM have documented multiple fire rings at some existing campsites. River crews dismantle all but one fire ring per site, but many times these are reconstructed in different places within the campsite. Multiple fire rings at campsites increase the amount of charcoal and unburned waste, and affect the appearance and cleanliness of the sites. The unburned waste may be swept into the river during high flow events, resulting in litter accumulation in the water column. Rocks and soils are permanently scarred, and sites with multiple fire rings are difficult to rehabilitate. Monitoring information compiled from river patrols from 2006-2009 show that multiple fire rings were present at approximately 26 campsites of 562 campsites monitored during this time period. This equates to an average of approximately 5% of campsites having multiple fire rings from 2006-2009.

3.2.6.5.5 Chainsaw Use

The use of chainsaws to cut standing trees and woody debris for firewood has become an issue within the river corridor. The use of chainsaws on the lower river is increasing, and as a result, more standing trees and large woody debris from the riverbed and campsites are being cut for firewood. The use of chainsaws also creates noise disturbances within the river corridor, detracting from a quiet, primitive experience. Restrictions on the use of chainsaws to cut firewood can reduce the volume of wood used for firewood and can result in increased woody debris in the river and bank stabilization which is important for fish habitat.

3.2.6.5.6 Recreational Shooting

The recreational discharge of weapons (i.e. target shooting or “plinking”) within the river corridor presents a safety concern to the public and may disturb users who are seeking solitude and natural quiet. In addition to the campgrounds and launch facilities where users congregate, there are numerous users along the river fishing, camping, and boating.

3.2.6.5.7 Campsite Impacts

Campsites along the river are dispersed sites and have formed over the years as use on the river has increased. There are currently 66 inventoried campsites within the river corridor. There are 27 campsites on the Upper Tangles, 19 campsites on the Lower Tangles, and 20 campsites on the upper and lower Delta River. Impacts at campsites include vegetation trampling; soil compaction; multiple fire rings; trees cut for firewood, tent poles, and meat racks; and social trails leading to satellite campsites. Of 66 campsites within the entire river corridor, about 10 are considered heavily impacted (greater than 66% bare ground disturbance). These occur at popular areas such as the outlet of Long Tangle Lake, on the lower river in the vicinity of Garrett Creek, and along the Top of the World OHV trail. Aside from the physical impacts to river resources, impacted camps can also affect a users’ ability to have primitive experiences on the river.

3.2.6.5.8 Campsite Encounters

“Encounters”, the number of contacts with other *groups* per day, has been a focus of backcountry recreation researchers for 30 years. The consistent finding has been that backcountry users prefer contact with less than about 4 to 5 other parties per day in order to have high quality “wilderness,” “primitive,” or “backcountry” experiences (Vaske et al., 1986). Recreationists have more tolerance for encounters during the day than at night when they are camping.

Several studies, including the 2005 Delta River User Survey, suggest that camping-related encounters have greater effects on user perceptions of crowding than river encounters. Accordingly, campsite encounters can be used as a crowding-related indicator (Whittaker, 1989). In relation to the number of campsites within each river segment, survey data shows that users are willing to pass up campsites approximately 20% of the time before it begins to negatively affect their recreational experience. Users on the Delta River were asked to report encounter levels for various segments, as well as their preferences and tolerances for encounter levels. Figure 3 summarizes statistics for each river segment:

Figure 3: Reported, preferred, and tolerable group encounters per day by river segment

Segment	Mean	Median	Typical range[1]
Reported encounters			
Upper Tangles	5.0	3.0	2 to 5
Lower Tangles	6.1	3.0	2 to 8
Upper Delta	2.7	1.0	0 to 3
Lower Delta	2.9	1.0	0 to 3
Preferred encounters			
Upper Tangles	3.3	2.0	0 to 4
Lower Tangles	3.8	2.0	0 to 4
Upper Delta	2.9	1.0	0 to 3
Lower Delta	2.9	1.0	0 to 3
Tolerable encounters			
Upper Tangles	10.0	6.0	4 to 10
Lower Tangles	10.7	6.0	4 to 10
Upper Delta	6.3	4.0	2 to 10
Lower Delta	5.6	3.5	2 to 6

Survey data from the 2005 Delta River User Survey shows impact levels for camp encounters at or approaching preferred levels on certain segments of the river. More specifically:

- For the lake segments, reported encounters were higher than preferred encounters. For the river segments, reported encounters were nearly equal to preferred encounters, indicating that encounters on the river segments are approaching a point that is not desirable.
- For all segments, reported encounters were significantly lower than tolerances.

3.2.6.5.9 Commercial Activities

Commercial use levels within the river corridor are very low compared to private use. The BLM currently authorizes one commercial outfitter within the river corridor under a Special Recreation Permit (SRP), and has developed mitigation measures to protect river resources from impacts caused by activities associated with commercial groups. Typically, commercial groups have larger group sizes than private groups, and SRP regulations allow the BLM to limit group sizes, trip durations, and activities of commercial groups. In the 2005 Delta River User Survey, there was support (66%) among nonmotorized users for limiting commercial use, and there was more support than opposition among motorized users.

3.2.6.5.10 Facility Development

In 2006, the DWSR Wayside was reconstructed to accommodate increased day use from Denali Highway travelers passing through the river corridor. These renovations included the development of new parking facilities, interpretive walkways and information panels, and reconstruction of the existing boat launch. In 2011, a renovation of the Tangle Lakes Campground is planned. Designated campsites, roadways, and parking facilities will be developed and interpretive panels will be installed throughout the campground.

Survey results indicate that most river users do not support substantial portage area improvements such as outhouses, trail signs, bridges, etc., although there was majority support for improving the main portage trail with native materials and for rehabilitating spur trails. River users were opposed to removing

the portage warning signs and the outhouse. Most participants in the BBM meetings supported a redesign of the Tangle Lakes Campground that preserves the rustic nature of the natural surroundings, and that it should not be overdeveloped like many other campgrounds in the state.

3.2.6.6 Recreation Opportunity Spectrum (ROS)

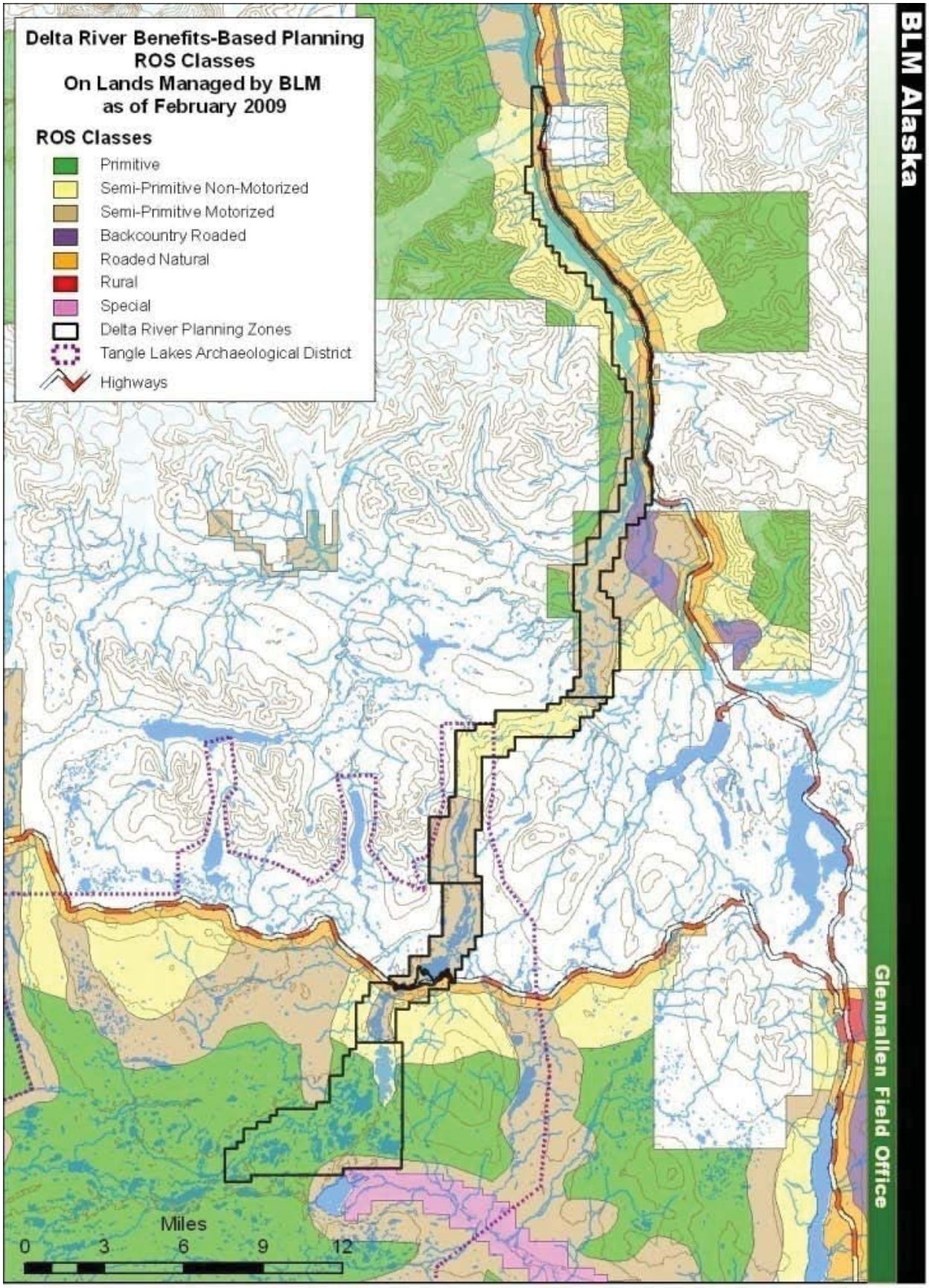
In preparation for the EARMP land use planning effort in 2003, the Glennallen Field Office conducted an inventory of existing recreational opportunities available across the district using the Recreation Opportunity Spectrum (ROS) classification system. The ROS is a framework for classifying and defining different types of outdoor recreation environments, activities, and experience opportunities. ROS classifications help define existing types of recreational opportunities, and management actions can be developed that can be used to maintain or change ROS classifications.

The EARMP designated the DWSR corridor as a SRMA, with objectives to maintain the existing recreation opportunity spectrum classes that were identified during the ROS inventory that was conducted in 2003. These ROS classes included the primitive, semiprimitive nonmotorized, semiprimitive motorized, and roaded natural ROS classes within the river corridor, with an emphasis on managing for a primitive experience in the portion of the DWSR corridor classified as “wild”. ROS classes that were identified during this inventory are depicted in Map 9.

Table 7: Selected Recreation Opportunity Spectrum (ROS) Class Descriptions

ROS Class	Description
Primitive	Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. No summer motorized trails exist although seasonal motorized use occurs at a low density. Sights and sounds of the road system are nonexistent and area is remote. Human built structures are few and far between or are inconspicuous. Vegetation and soils remain in a natural state.
Semiprimitive Nonmotorized	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is more accessible than an area in a primitive class, but is free of motorized trails and roads. Sights and sounds of the road system are more prevalent than in the primitive class, but less prevalent than in the roaded natural or backcountry roaded classes. Vegetation and soils are predominantly natural but some impacts exist.
Semiprimitive Motorized	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. Area is accessible to specialized OHVs but is generally not accessible to most four wheel drive vehicles. Sights and sounds of the road system may or may not be dominant. Some portions of the area may be distant from road systems, but all portions are near motorized trails. Vegetation and soils are predominantly natural but localized areas of disturbance may exist.
Roaded Natural	Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of humans. Resource modification and utilization practices are evident, but harmonize with the environment. Concentration of users is low to moderate, and rustic facilities may exist for user convenience and safety. The area is accessible to conventional motorized vehicles and roads are maintained on a regular basis. Sights and sounds of the road system are evident and traffic levels may be highly variable. Areas of localized vegetation and soil impacts exist. User concentrations are low to moderate but may be high in popular recreational sites such as waysides, trailheads, and water access points.

Map 8: Recreation Opportunity Spectrum (ROS) Classes within the Delta River Corridor



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3.2.6.7 Benefits Based Management (BBM) in the EARMP

Note: For a more complete overview on the BBM planning process, including required land use allocation decisions, management actions, and processes, refer to Appendix 8.1.

The EARMP designated the DWSR corridor as a SRMA. During the preparation of the EARMP, new BBM planning process guidelines were still in development. As a result, only some of the required land use planning allocation decisions that were specified in the new BBM guidelines were implemented. The BLM identified four RMZs and developed a market strategy for the entire SRMA, but did not identify the prescribed setting character and activity planning framework. Appendix 8.1 displays the BBM decisions that were made in the EARMP for the Delta River SRMA.

After completion of the EARMP, the new planning process requirements for BBM were established in the BLM Land Use Planning Handbook, H-1601-1. As a part of this planning process, recreation planners determined that the four existing RMZs were not entirely representative of the current recreational opportunities that are available. For this planning process, focus group meetings helped determine the need for changes to existing RMZ boundaries; primary activities, experiences, and benefits for each RMZ; prescriptions that would promote the desired activities, experiences and benefits; and management actions that form the basis for the activity planning framework. As part of developing the new Delta River SRMA plan, the EARMP must be amended to make the recreation allocation (i.e., land use planning) decisions that were not made in the EARMP, and to make changes to the RMZs and management objectives that were specified in the EARMP.

3.2.7 Scenic Resources

The 1983 DWSR Management Plan describes scenic resources that are found within the DWSR corridor: “The quality of scenery in the Tangle Lakes and Delta River area can be surmised from the previous description of topography. Photographic opportunities are nearly limitless with snow, water, rock, and vegetation interspersed over rolling hills, mountains, and valleys in a manner which provides viewing pleasure equal to the best Alaska has to offer.” Scenic qualities were recognized as exemplary in 1983, and a quarter century later, still remain one of the most important resource values in the river corridor. Scenic quality is an essential component of most recreation activities.

In 2003, a visual resources inventory of the DWSR corridor and adjacent lands was conducted. Through spatial analysis of overflight information using GIS software, on-the-ground observations, scenic quality ratings, distance classes, viewshed analysis, sensitivity classes, and specialist input, VRM inventory and management classes were developed. The entire DWSR corridor was specified as a Class I Visual Resource Management (VRM) viewshed, with the primary objective of retaining the existing character of the landscape. Class I VRM objectives state that “The level of change to the characteristic landscape should be low, and management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture that are found in the predominant natural features of the characteristic landscape”.

3.2.7.1 Scenic Resources Concerns Related to Recreational Activities

The major disturbances to the viewshed in the DWSR include recreational facilities, dispersed campsites and trails. Facilities developed within the DWSR corridor since 1983 have been targeted at decreasing impacts such as visible human waste (outhouse), vegetation trampling or soil compaction (portage construction), human safety (warning signs at portage and takeout), and increased Denali Highway visitor use (DWSR wayside reconstruction). New facilities have been designed to conform to Class I VRM standards to minimize visual impacts within the river corridor.

Approximately 10 dispersed river campsites have are heavily impacted and evident to the casual observer. Visual impacts come from bare ground and river access points that are out of place with the natural vegetation cover present along most of the river. Trails leading from the riverbank to campsites can become eroded, further impacting scenic resources.

OHV trails that are visible from the river corridor include the Top of the World Trail and two unauthorized OHV trails in the Eureka creek drainage. Unauthorized spur trails have also been created by users to reach the ridge tops from the developed facilities in the vicinity of the Tangle Lakes Campground and

DWSR wayside. The proliferation of unauthorized trails can lead to unsustainable trail systems that can change the visual characteristics of the landscape. In some areas, because of wet and muddy conditions, trail braiding has reached a width of 100-300 feet.

3.2.8 Soil Resources

In the Tangle Lakes area, the DWSR corridor consists of glaciated intermountain basins dominated by porous, gravelly, glacial outwash deposits. Landforms include hills, pitted outwash plains, kettle lakes, and sinuous eskers. Surface drainage patterns are not well established, and only a few of the lakes within the area are connected by streams. Soils immediately adjacent to the Tangle Lakes, Tangle River, and upper Delta River generally consist of a thin mantle of loess over glacial outwash or till and organic materials. Along the clear water section of the river, the banks are considered stable with highly developed riparian vegetation capable of withstanding extreme winter ice events and spring and summer high water events. Once the river becomes glacial, the banks become highly susceptible to erosion due to higher river velocities, high sediment loads, gravelly bank materials, and unstable riparian vegetation.

3.2.8.1 Soil Resources Concerns Related to Recreational Activities

The primary concern related to soil properties and OHV use is the development of unauthorized OHV trails. Unauthorized OHV trails are not maintained by the BLM, and can result in additional trail proliferation and river crossings, potentially impacting soil resources through vegetation loss, soil compaction, soil erosion, and bank instability. Currently, there are four unauthorized OHV trails within the DWSR corridor. Continued use of unauthorized trails will lead to further braiding and erosion, and may contribute to increased sediment in the river. Designated OHV trails within the river corridor (Top of the World and Rainy Creek Trails) are less of a concern because they receive trail maintenance to prevent negative impacts to soil properties.

Concentrated visitor use on the river has increased the potential for vegetation trampling, soil compaction, and soil erosion, especially immediately adjacent to the river. The BLM monitors bare ground at campsites along the river. So far, trampling impacts are limited to vegetation loss and soil compaction within the campsites. Little riverbank erosion is occurring, although the potential for increased riverbank erosion is possible, especially with increased visitor use.

3.2.9 Subsistence

The DWSR corridor is a federal subsistence hunting area and provides exceptional opportunities for caribou and moose harvest. Access to subsistence hunting opportunities is primarily through boating on the river and by using both motorized and nonmotorized trails described in the *Travel Management* section. Other subsistence activities that take place within the river corridor include firewood gathering, berry picking, and trapping.

3.2.9.1 Federal Subsistence Management History

ANILCA provides the basis for federal management of subsistence uses on federal public lands in Alaska under Title VIII. Title VIII §811 states that “rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands” and permits “appropriate use for subsistence purposes” of “snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation.” Subsistence management regulations for the harvest of fish and wildlife on federal public lands are codified in 50 CFR Part 100.

The 1992 Record of Decision on Subsistence Management for Federal Public Lands in Alaska formally established the federal subsistence management program in Alaska under the US Fish and Wildlife Service, Office of Subsistence Management (OSM). The BLM Glennallen Field Office (GFO) was delegated authority to manage and issue federal subsistence hunting permits within its jurisdiction. GFO administers subsistence permits to federally-qualified rural residents for Game Management Unit (GMU) 13. GMU 13 is further subdivided into four subunits. The DWSR is located in GMU 13B. Since 1992, an average of 59% of the federally harvested moose (Fig. 4) and 97% of federally harvested caribou (Fig. 5)

in GMU 13 came out of GMU 13B. In 2008, GFO issued 1124 moose permits and 2536 caribou permits, which constituted 75% of all federal subsistence permits issued in Alaska (OSM, 2009).

Figure 4: Reported harvests for federal moose hunts RM 313 and RM 314 from 1992 to 2009.

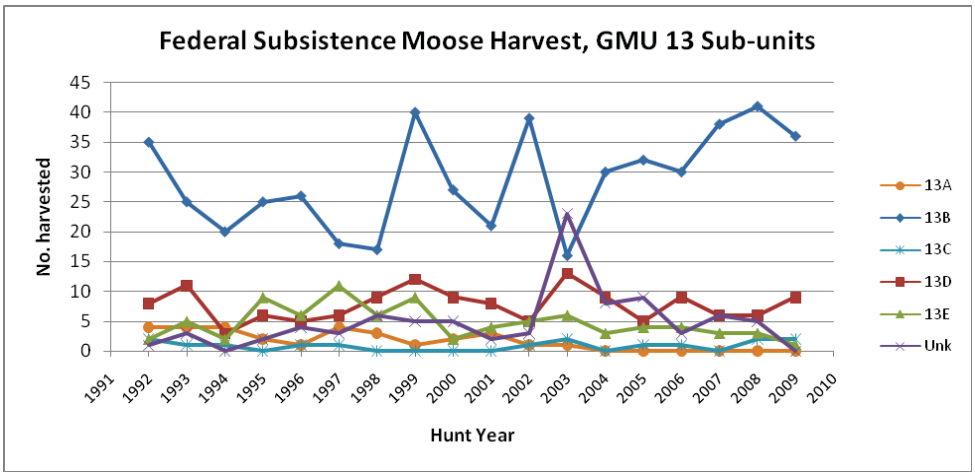
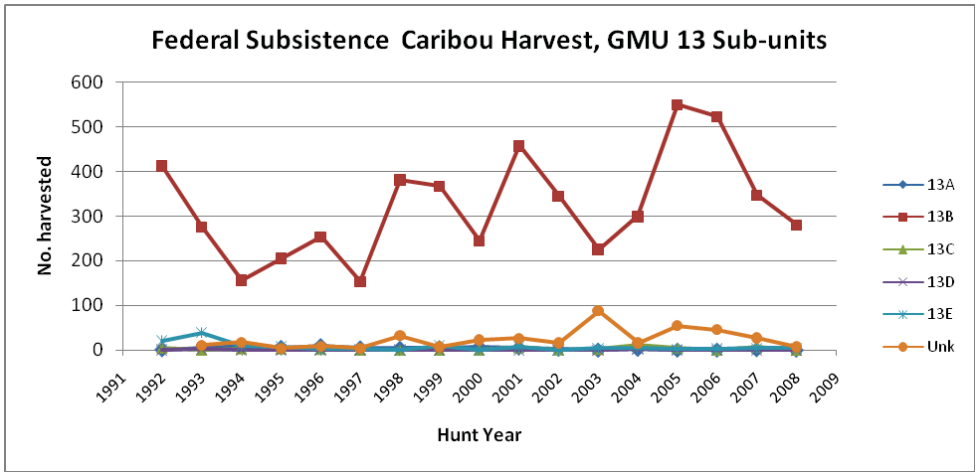


Figure 5: Reported harvests for federal caribou hunts RC513 and RC514 from 1992 to 2008.



3.2.9.2 Subsistence Management Concerns Related to Recreational Activities

Subsistence management concerns related to recreational activities generally involve OHV use and the loss of animal refugia. As technology improves and OHV users are able to reach areas that were previously inaccessible, the number of unauthorized trails may increase. Although the immediate benefit of this type of activity is easy access to the river corridor, the long term effects to subsistence resources may include increased habitat fragmentation, loss of animal refugia and degraded trail conditions.

3.2.10 Travel Management

Travel Management is a comprehensive program that addresses all types of access and transportation activities within the DWSR corridor including motorized, nonmotorized, mechanized, and animal powered modes of transportation.

3.2.10.1 History

Prior to the discovery of gold in the Valdez Creek area, access to the DWSR corridor was historically driven by subsistence activities. Trails within the river corridor provided a route for the Ahtna people to access seasonal hunting opportunities. After the discovery of gold in the Valdez Creek area, these same

trails provided overland access to miners coming from Valdez. The trail to the Maclaren River and Valdez Creek mining areas would eventually become the Denali Highway, completed in 1957. After completion of the Parks Highway in 1972, use levels on the Denali Highway dropped significantly.

The advent of the four wheeled OHV in the early 1990's changed access to the Alaska backcountry. OHVs soon replaced larger vehicles as the primary means of access to hunting, fishing, or recreational destinations throughout Alaska. In the TLAD, the designation of trails and the prohibition of cross-country OHV travel to protect archaeological resources were instituted in the early 1980s.

3.2.10.2 Motorized Trails Description

3.2.10.2.1 Rainy Creek Trail

The Rainy Creek Trail was developed in 1971 to access Federal and State mining claims on Rainy Creek, and is primarily used during the winter months by miners to haul supplies for use during the summer mining season. There has been limited use of this trail for recreational OHV or subsistence purposes, due to the difficulty of crossing the fast moving river with OHVs, which would require using a boat to ferry OHVs and equipment across the river. The Rainy Creek Trail is approximately 10 feet wide and is set back from the river, running through upland spruce vegetation and cover, making it very difficult to see from the river. The Rainy Creek trail is regularly maintained by owners of mining claims on Rainy and Eureka Creeks. Estimated visitor use on this trail in 2009 was approximately 50 OHV users, related primarily to mining access.

The 25 mile trail begins on the west side of the Delta River across from the Phelan Creek pipeline access bridge, which is located at Mile 211 on the Richardson Highway. Miners generally park on the gravel bar, transporting supplies across the river, over the ice, using large sleds pulled by heavy equipment. The trail then runs south along the river for approximately four miles, before turning west along the south side of Rainy Creek. After turning west up Rainy Creek, the trail continues along the West Fork of Rainy Creek, over the pass to the Eureka Creek drainage, and into Broxson Gulch. This portion of the trail was constructed in 1994 to avoid having to use the Top of the World/Yost Trail, which was the historic mining access route to Eureka Creek. The Rainy Creek Trail extension was made to avoid resource damage at the Top of the World/Yost Trail river crossing.

3.2.10.2.2 Top of the World/Yost Trail

The historic Yost Trail was an east-west trending trail connecting the Richardson Highway with the Eureka Creek Mining District, ending near the confluence of Specimen Creek and Eureka Creek. The BLM now calls it the Top of the World Trail. Historically, this trail was used to move mining equipment and to access mining claims, and may date to the early 1900's. In 1994, the BLM authorized the construction of an alternate route to the Eureka Creek drainage, which is now an extension of the Rainy Creek Trail. After the extension of the Rainy Creek Trail, the old Yost Trail receives only occasional use by hunting parties, primarily during subsistence hunting season.

The Top of the World Trail is the most commonly used OHV trail in the DWSR corridor. This trail begins at Mile 205 of the Richardson Highway. The trail heads west, crosses Phelan Creek over a pipeline access bridge, and follows the TAPS pipeline for approximately 2 miles. The next 1.5 miles has numerous boggy and degraded sections of trail where OHV use has created significant trail braiding and large "muckholes". After wet weather, many of these "muckholes" can be challenging to cross, and a defined main trail can be difficult to follow. At mile 3.5, the trail descends into the river corridor down a steep drainage, with numerous ruts, braids, and "muckholes" that have developed due to poor trail construction. Eventually, the trail meets the Delta River, where it abruptly turns south and improves dramatically in quality, running parallel with the river for approximately three miles, terminating at the river's edge. This portion of the trail is in generally good shape with well drained soils. At approximately 8 miles, the trail fords the Delta River.

The river crossing is difficult, and requires crossing three separate river braids, ending at a deep pond created by a beaver dam. After the beaver pond, the trail heads southwest for 0.6 miles up a steep hill with sections of severe washouts and subsequent braiding. There is a spur off of this trail that accesses a former cabin site. Occasionally, OHVs are transported upriver by jet boat and stage at this former cabin site to access the trail without having to cross the river channel. Once on the ridge top overlooking the

Delta River, the trail continues northwest outside the river corridor, and follows the historic Yost Trail, towards the Eureka Creek drainage. From this point the trail shows little signs of recent use by OHVs, presumably due to the difficult river crossing. Eventually, the trail crosses the outlet stream of Fish Lake, before arriving at Eureka Creek. High water volume in Eureka Creek presents an unlikely and dangerous OHV crossing. Total length of this trail is approximately 8 miles to the Delta River, and 25 miles to Eureka Creek. Estimated visitor use on this trail (within the DWSR corridor) in 2009 was approximately 150 OHV users.

3.2.10.2.3 Eureka Creek Trails

In 2006, two new unauthorized trails, measuring approximately 0.5 miles each within the river corridor, were discovered proceeding up the western ridge, immediately to the south of the Eureka Creek confluence with the Delta River. The only way to access these trails is to ferry OHVs upstream by boat, staging at the large gravel bar at the Eureka Creek confluence. These new trails are significantly rutted, and after an archaeological inspection, one was determined to be running directly across two archaeological sites (Jangala et al 2009). One of these sites is a rare buried site that may contain intact stratigraphic context and dateable materials. The site may be eligible for the National Register of Historic Places for its potential to contribute to knowledge about prehistoric uses of the river corridor. This trail was immediately closed to protect these archaeological sites. The combined estimated visitor use on both of these unauthorized trails in 2009 was approximately 15 OHV users.

3.2.10.2.4 Round Tangle Lake Trail

The unauthorized Round Tangle Lake Trail begins at a small paved pullout at Mile 20.8 of the Denali Highway, which is the site of the original Tangle Lakes Campground. A gravel road heads northeast to the shore of Round Tangle Lake, and becomes an OHV trail as it contours northeast around the lake, close to the lakeshore. At .6 miles the trail reconnects with the highway just across from the Tangle Lakes Inn. The trail continues along the highway shoulder for approximately 75 feet, and then continues as a foot trail to a small peninsula, ending back at the lakeshore. Total length of this trail is approximately 0.8 miles. This trail provides access to Round Tangle Lake and multiple fishing sites along the lakeshore. The initial gravel road has large potholes and deep puddles of standing water. The rest of the trail is in good condition with well drained soils, and only small sections are wet and muddy after prolonged rain. Estimated visitor use on this unauthorized trail in 2009 was approximately 50 OHV users.

3.2.10.2.5 Mile 22 Denali Highway North Trail

This unauthorized trail starts at MP 22 North on the Denali Highway. The trail begins in an old gravel pit, and narrows into a rutted and muddy OHV trail, contouring between the edge of a small lake and steep esker ridge. The trail eventually peaks out at approximately .8 miles, and was most likely developed as a hunting lookout. This unauthorized trail has been determined to be running directly across one archaeological site (Jangala et al 2009). This site is a rare buried site that may contain intact stratigraphic context and dateable materials. The site may be eligible as a contributing property for the TLAD for its potential to contribute to knowledge about prehistoric uses of the river corridor. This trail was immediately closed to protect this archaeological site. Estimated visitor use on this unauthorized trail in 2009 was approximately 15 OHV users.

3.2.10.3 Nonmotorized Trails Description

3.2.10.3.1 Lower Tangles Ridge Trail

This foot trail begins 100 feet to the west of the register stand at the entrance to the Tangle Lakes Campground. In the summer of 2008, extensive work was done on this trail to reduce the impacts of trail proliferation and tread sloughing that was occurring from user created spur trails originating from the Tangle Lakes Campground. The trail has been repaired using proper trail construction methods, and is now a distinguishable single track trail for the first 0.25 miles as it climbs the ridge above and west of Round Tangle Lake. Once on the ridge, the trail forks with one branch heading southwest, and the other to the north. The northern spur ends after approximately 1 mile. The other spur heads southwest, and ends on the Denali Highway near the DWSR Wayside. This trail is an exceptional candidate for an interpretive/nature walk with informational signage regarding the cultural/ natural/geological realms and

history of the region. Total length of this trail is approximately 1.9 miles. Estimated visitor use on this trail in 2009 was approximately 1300 users.

3.2.10.3.2 Rock Creek Trail

This foot trail begins at Mile 22 South of the Denali Highway, and proceeds south into the Upper Tangle Lakes area. After a steep 50 foot elevation gain, the trail levels on a ridge and continues to the south, accessing the Rock Creek drainage. It is also possible to gain access to the ridge by walking down a closed gravel road until the lake is almost reached, and then heading up a steep game trail that connects with the trail above on the ridge. The last 0.1 mile of this trail is very steep and rocky as it drops down to Rock Creek. From this point, cross country travel is a possibility as the terrain is open and offers relatively easy travel. This trail offers outstanding views of the surrounding area. It provides access to fishing or hiking near the Rock Creek inlet into the Upper Tangle Lakes. The Rock Creek Trail is in excellent condition once the initial hill is surmounted and the ridge is gained. The initial steep section of trail leading up to the ridge may benefit from tread leveling, steps, and water control features. The rest of the trail is well drained with surface types ranging from mixed fines, cobbles, and tundra mat. The steep hill near the end of the trail could be very challenging or impossible for some hikers. This trail is a candidate for improvement measures and possibly as an interpretive walk. Total length of this trail is approximately 1.3 miles. Estimated visitor use on this trail in 2009 was approximately 500 users.

3.2.10.3.3 Upper Tangles Ridge Trail

This foot trail begins at Mile 21 on the Denali Highway; 100 feet to the east of the Denali Highway Bridge that crosses the Tangle River. After a steep 75 foot elevation gain, the trail levels and follows the ridge south into the Upper Tangles. The first 0.25 miles of trail are somewhat overgrown and prone to sloughing, as the trail closely follows the edge of a steep bluff. Braids exist in this area as a result of hikers avoiding the brush and exposed sections. Atop a prominent hill after about 0.75 miles, the trail splits to the east and west. The eastern trail is not commonly used and ends after 0.25 miles. The western spur continues along the esker ridges above the Upper Tangle Lakes, proceeding southwest, eventually ending atop a small hill. From this point, cross country travel is a possibility as the terrain is open and offers relatively easy travel. The trail is well drained with surface types ranging from mixed fines, cobbles, and tundra mat. Sloughing of the trail sections within the first 400 yards of trail should be remediated by simply rerouting the trail to avoid the steep ridge. Double tracks and braids should be closed to minimize impacts. This trail is a candidate for improvement measures and possibly as an interpretive walk. Total length of this trail is approximately 1.5 miles. Estimated visitor use on this trail in 2009 was approximately 150 users.

3.2.10.4 OHV Use and Characteristics

The DWSR corridor is a federal subsistence hunting area and the primary purpose for OHV use within the river corridor is for large game hunting. Very little recreational OHV use has been documented on any of the OHV trails in the river corridor. For most subsistence and sport hunters, these trails serve as the only means of access into the area. The BLM issues federal subsistence hunting permits for both moose and caribou to local rural residents. These permits are limited to local rural residents and there is a slow upward trend based on a slowly increasing population in the Copper Basin. For example, in 1990, when the federal subsistence hunting program started, there were 593 permits issued for moose and has increased about 3% per year to 1,077 permits in 2006. The trend for caribou permits is similar.

Although current OHV use is relatively low, BLM data shows an increasing trend in motorized use across the Glennallen Field Office. In a five year period (2002-2006), overall OHV use within the TLAD increased approximately 5% per year. This is based on the five year use figures from trail counters, trail register sheets, and visual observations. Given the knowledge of increasing OHV use throughout the rest of the district, and the potential for resource damages caused by increased OHV use, OHV use characteristics were documented in the 2005 Delta River User Survey. Results indicate the following:

- Results show that most non-OHV users don’t even know OHV trails exist within the corridor, and less than a third actually has had encounters with OHVs.
- Most OHV users reported using 4-wheelers (90%), while some users reported using tracked rigs (10%).

- Approximately 33% of Top of the World Trail OHV users used a motorized boat to ferry OHVs upriver.
- Average OHV group size was three people, with duration of 2.5 days trip length.
- OHV users within the river corridor reported that low and medium level OHV impacts were acceptable, but that severe impacts were unacceptable. In contrast, most non-OHV users felt that only minimal OHV impacts were acceptable.
- OHV users within the river corridor felt that no additional OHV management is necessary in the corridor, and that access is more important than reducing impacts. In contrast, most non-OHV users felt that OHV use should be intensely managed within the river corridor, even if it reduces access.
- Most current OHV users in the river corridor strongly disagree that OHV use is a "social values conflict" (the notion that actual encounters are the problem, and "some places simply should not have any motorized use"). In contrast, 8 of 10 of the non-OHV users agree with this idea.
- A majority of all users felt that the BLM should improve OHV trails to minimize places with unacceptable impacts using geoblock, planking, and water bars.
- In general, most OHV users appear to believe that potential biological impacts are the primary concern; if those are low, they do not appear to have much concern about whether OHV use changes the primitive nature of the setting. In contrast, most non-OHV users appear concerned about experiential impacts, as well as biological ones.

3.2.10.4.1 EARMP OHV Decisions

The EARMP designated the DWSR corridor as "limited" to OHVs. The EARMP directed that "OHVs would be restricted to designated trails (Top of the World Trail and Rainy Creek Trail) from May 15 to October 16, or when there is less than an average of 12 inches snow or 6 inches frost. These designated trails are existing routes, and will not limit access into the area for subsistence hunting or access to mining claims. This decision does not preclude the future consideration of the development of motorized or nonmotorized trails, if consistent with protection of the outstandingly remarkable values of the river corridor. If additional trails are considered for designation in the future, they would be located to minimize resource damage, maintain primitive and semiprimitive recreation experiences, and facilitate the maintenance of designated trails". The EARMP also directed that each area designated as "limited" to OHVs would have an implementation level plan completed, showing a complete inventory of trails in the area, specific resource concerns or conflicts, and specific designated trails and conditions of limitations (seasonal, weight, or vehicle class, etc). These plans would describe the tools necessary for implementation (method of signing specific trails, trailhead development, education/interpretation, map production, and law enforcement) and would identify and prioritize specific maintenance needs, as well as opportunities for trail development or loops, both motorized and nonmotorized.

3.2.10.5 Motorized Boating Use and Characteristics

3.2.10.5.1 Use Characteristics

Motorized boating occurs throughout most reaches of the Delta River corridor, and is limited in certain areas by a combination of water depth and geography. In 2009, motorized boating use throughout the entire river corridor was estimated to be approximately 968 users. The vast majority of motorized boating occurs on the Tangle Lakes, adjacent to the developed facilities. These lakes receive many different types of use, ranging from smaller horsepower motors attached to canoes to large jet units, with occasional inboard units as well. For the most part, these larger boats are restricted to the lakes in the immediate vicinity of the developed facilities due to the shallow waters of Long Tangle Lake. In recent years, especially during subsistence hunting season, motorized boats have ventured up the Tangle River into the Upper Tangle Lakes. Safety concerns have surfaced with increased use of the canoe loop route since nonmotorized floaters proceeding down the Tangle River can be met by motorized boats that must maintain speed to stay on step, leading to high potential for collisions. Occasionally, motorized boaters (typically with small, detachable 5 to 15 horsepower motors) will portage their boats and motors across the first portage of the Upper Tangles to access the second lake on the other side of the portage.

Motorized boating on the Lower Tangles is also limited by geography, as shallow reaches between lakes often impede travel. The first shallow reaches beyond Round Tangle Lake can typically be navigated by motorized craft, but the shallow reach between Long Tangle Lake and Lower Tangle Lake is nearly impossible to negotiate. Documented use of motorized boats is very rare beyond this point.

Motorized boating is less common on the lower Delta River than the Tangle Lakes, primarily due to the difficulty of negotiating the shallow, braided channels of the broad Delta River floodplain. The water in this stretch is glacial water, and the river is severely channelized, making motorized possible by only very experienced operators. The geography and water levels in this section may help to naturally limit motorized boating during the summer floating season, but motorized boating still occurs during the subsistence hunting season. Motorized boats are usually launched at the Mile 212.5 Richardson Highway takeout, and travel upstream to the vicinity of Garret Creek, where dispersed campsites along the river are often occupied by motorized boating groups during hunting season. Travel upstream beyond Garrett Creek is difficult due to shallow water depths, but use has been documented by the BLM. In all cases, motorized boats cannot proceed upriver beyond the Delta River portage, due to a series of large waterfalls in the canyon. Motorized boats seldom travel downriver from the Mile 212.5 Richardson Highway takeout for many of the same reasons described above. The large, glacial delta is difficult to navigate, the highway is very close to the river on the east side, and on the west side the rugged mountains of the Alaska Range effectively limit access to most recreational opportunities.

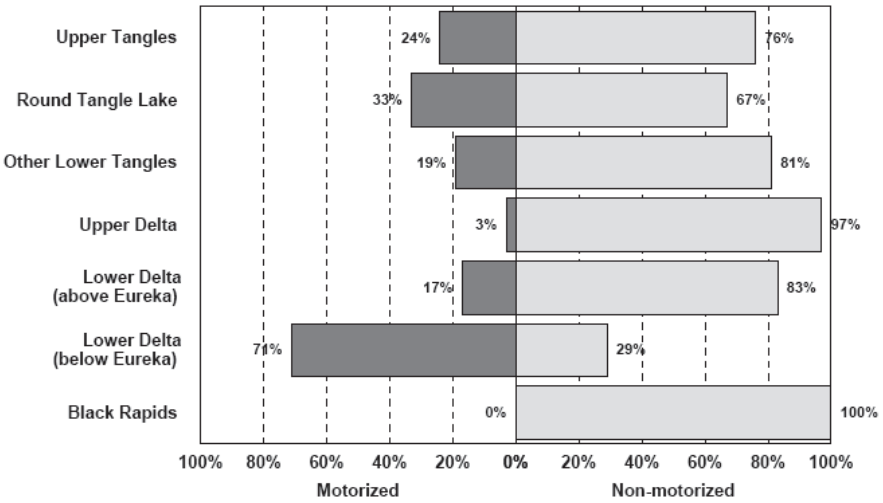
3.2.10.5.2 Management Policy and Legislative Controls

BLM policy on “wild” segments of WSRs states: “Motorized travel on land or water could be permitted, but it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area.” However, Title VIII of ANILCA, § 811 allows for the “appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation”, and Title XI § 1110 allows for the “use of snowmachines, motorboats, airplanes, and nonmotorized surface transportation methods” within Conservation System Units for traditional activities, also subject to reasonable regulations. Title XI of ANILCA § 1110 allows for the temporary or permanent closure of such activities if the appropriate managing federal agency finds that such use would be detrimental to the resource values of the area.

3.2.10.5.3 2005 Delta River User Survey Data

In the 2005 Delta River User Survey, respondents who use motorized boats to access the Tangle Lakes or Delta River were asked to describe boat type, length, and horsepower. Of those who reported any motorized boating use, 33% use jet boats, 31% use propeller driven boats, 23% use kickers on rafts or canoes, 3% use air boats, and 10% use other types of motorized boats. On the Lower Delta, jet boat use is most common (83%) although 17% use propeller driven boats. Boats typically ranged from 14 to 22 feet long, with a median length of 18 feet. Horsepower ranged from 20 to 350, with a median of 115 horsepower. On the Upper Tangles, 39% of respondents use kickers on canoes or rafts, 32% use propeller driven powerboats and 14% use jet boats. On the Lower Tangles, 27% use kickers on canoes or rafts, 45% use propeller driven powerboats, 27% use jet boats, and the rest were classified as “other.” Most lake motorized boats were less than 18 feet long (median length was 15 feet) and 57% were less than 15 horsepower (the current recommended BLM limit). However, other boats had as much as 115 horsepower. Relative proportions by segment (Figure 6) show that 67% to 100% of boats were nonmotorized, except for the Lower Delta below Eureka Creek.

Figure 6: Proportion of motorized and nonmotorized craft by segment, 2000-2004



Additional river user survey data related to motorized and nonmotorized boating from the 2005 Delta River User Survey indicates the following:

- A majority of motorized users (59%) supported restrictions on the use of personal watercraft (jetski and hovercraft), while 91% of nonmotorized users supported this restriction.
- Motorized users were generally united in opposing total motorized prohibitions, but some motorized users believed that larger motorboats may not be necessary on some lakes, or that not all lakes may be appropriate for motorized use. Small proportions (15%) of motorized users support motorized restrictions below the shallow reach downstream of Long Tangle Lake, while 37% supported a 15 horsepower restriction below Round Tangle Lake.
- Regarding the relative ranking of specific reasons for motorized boating restrictions, motorized users rated discourteous behavior at the top of their list. Safety and potential biophysical impacts were also rated highly for motorized users.
- Nonmotorized users, in contrast, rated noise, the notion that motors are inappropriate in some places, and ensuring the availability of nonmotorized experiences as their most important reasons to limit motorized use.
- Temporal zoning options (e.g. no motorized use outside of hunting season) and spatial zoning options (e.g. no motorized use on the Upper Delta), were strongly opposed by most motorized users.

3.2.10.5.4 Overflight Observations

The BLM uses river overflights as one source of estimating visitor use on the Delta River. The resulting information is accurate enough to gauge use trends for different segments through use seasons and over several years. The BLM flew the DWSR corridor on 37 occasions from 2000 through 2004, spacing overflights relatively evenly from June through early September. Observers counted the number of boats of various types (motorboats, driftboats, canoes, kayaks, rafts, personal watercraft, etc.) for each segment. This technique provides an accurate count of boats, but it does not attempt to count groups or the numbers of people. Of the 560 boats observed on overflights from 2000 to 2004, 422 or 75% were nonmotorized and 138 or 25% were motorized. Figure 7 displays the average number of boats per river segment (on days that any were observed) on overflights from 2000 to 2004:

Figure 7: Average number of boats per river segment (on days that any were observed)

	Upper Tangles	Round Tangle	Other Lower Tangles	Upper Delta	Lower Delta (above Eureka)	Lower Delta (below Eureka)	Black Rapids
Non-motorized boats	3.8	3.6	4.3	4.5	1.7	2.0	1.0
Motorized boats	1.9	2.1	1.9	2.0	3.4	1.7	--

3.2.10.6 Nonmotorized Boating Use and Characteristics

Nonmotorized boating occurs throughout the entire system, as most lakes and the river can be traveled in a relatively short amount of time (2-3 days). In 2009, nonmotorized boating use within the DWSR was estimated to be approximately 2904 visitors. There are essentially three different boating options available on the Delta River:

1. Upper Tangle Lakes:

   Boat launch facilities at the DWSR wayside provide access to the Upper Tangle Lakes system. Motorized boaters are primarily confined to the first lake of the Upper Tangles, unless they carry their boat and motor across the first portage to the second lake. Occasionally, motorized boats travel up the shallow Tangle River to Mud Lake. Nonmotorized craft typically travel through the first lake, then portage to the second lake. At the southern end of the second lake, another portage provides access to a third lake (Mud Lake). From here boaters generally travel northwest into the Tangle River or south to Dickey Lake.

2. Delta River:

   Boat launch facilities at the Tangle Lakes Campground provide access to the Lower Tangle Lakes and Delta River. Round Tangle Lake, adjacent to the campground and boat launch, is primarily used for day use activities, by motorized and nonmotorized boaters. Those wishing to access the upper Delta River can continue north through the Lower Tangle Lakes. The first nine miles of this trip cross through three of the Lower Tangle Lakes, which are all connected by shallow channels of slow moving water. Motorized boats generally do not proceed beyond the shallow constriction of Long Tangle Lake. Eventually, the river begins to flow north out of Lower Tangle Lake, carving its way through the Amphitheater Mountains and the foothills of the Alaska Range. It is 20 miles from the outlet of Lower Tangle Lake to the takeout point located at Mile 212.5 on the Richardson Highway.

   The first few river miles are shallow and rocky, Class I-II water. Following this first section, there is a portage around a series of waterfalls on the east side of the river. The river portage is marked with yellow caution signs on both sides of the river. Below the falls and portage, the river narrows and the velocity increases significantly for the next two miles of Class II rapids. The next 12 river miles are slow, meandering, Class I water. At the confluence of Eureka Creek, the river changes from clear water to silty glacial water. The last 7 river miles are often shallow and braided, with numerous channels and gravel bars. The water is swift and generally Class II. Motorized boats use this section of the river, and generally travel between Phalen and Garrett Creeks. Almost all floaters take out just below Phelan Creek at Mile 212.5 on the Richardson Highway. The exact takeout location varies from year to year due to changes in the river channel. Parking is available adjacent to the river, and the takeout is marked with a large yellow caution sign. The vehicle shuttle from the Tangle Lakes Campground launch point to the river takeout is 49 miles on the Richardson and Denali Highways.

3. Lower Delta River:

   The Richardson Highway parallels the Delta River from Phelan Creek to the northern river corridor boundary, which terminates just downstream of Black Rapids Glacier near the confluence of One Mile Creek. Experienced boaters sometimes continue approximately 18 river miles downstream, past the Black Rapids Glacier. The river becomes very swift with typical glacial river characteristics and is rated Class III-IV. There are no designated takeout points for this portion of the DWSR, but the Richardson Highway parallels the river in numerous locations.

3.2.10.7 Aviation

The use of airplanes within the DWSR corridor is limited because there are no existing airstrips. Airplane landings in the developed facilities (RMZ 3) have never been observed by the BLM, likely due to the lack of suitable landing areas. Occasionally, floatplanes will land on the larger lakes within the river corridor for the purpose of transporting fishermen and hunters. In the Upper Tangles there are numerous lakes, both inside and outside the river corridor, that provide opportunities for float plane landings. In 2009, it was estimated that approximately 2-4 airplane landings occurred in the Upper Tangles. Dickey Lake, located adjacent to both the Delta and Gulkana WSR corridors, provides access to the headwaters of both river systems. Occasionally, float planes also land on the Lower Tangle Lakes. In 2009, it was estimated that approximately 4-6 airplane landings occurred in the Lower Tangle Lakes. Float planes seldom, if ever, land on the narrow river column, due to shallow water conditions and lack of large gravel bars. The BLM uses fixed wing aircraft to monitor visitor use along the river corridor. Approximately 8 flights occur each summer. In addition, trumpeter swan and bald eagle productivity studies are conducted using fixed wing aircraft.

Helicopters are occasionally used by State agencies and the BLM for logistical support in various resource projects. Helicopter use related to mining activities located adjacent to the river corridor has been increasing in recent years. The BLM has worked with these mining companies in the past to limit the occurrence of helicopters flying parallel to the river corridor, and has requested that these flights cross the river corridor quickly and as seldom as possible.

In 1997, the Federal Aviation Administration and United States Air Force, after conducting an Environmental Impact Statement, issued a Record of Decision that, in part, modified the boundaries of

the Fox Military Operations Area (MOA) to exclude the DWSR corridor. A MOA is a Special Use Airspace designated for non-hazardous military flight activities such as air combat tactics, transition, formation training, and aerobatics. The new boundaries of the FOX MOA were situated on the western boundary of the Delta River, and include portions of the Denali Highway to the west of the river corridor. The average daily military aircraft operations in the Fox MOA is estimated to be 16 aircraft operations per day in a routine flying day and up to 80 aircraft operations per day during specialized training. The Air to Ground Level (AGL) for the FOX MOA is 5000 feet.

In January 2011, the scoping period for a new Environmental Impact Statement was initiated by the United States Air Force to expand the FOX MOA and to create a new Paxson MOA that would encompass the entire DWSR corridor and lands to east and west of the river corridor, with a reduced AGL of 500 feet and additional sorties per day. The BLM has and will continue to work with the FAA and United States Air Force to discuss the potential effects to recreational users by low level overflights within and/or adjacent to the river corridor.

3.2.10.8 Winter Use

The DWSR corridor is used during the winter months for trapping and late season subsistence hunting, as well as recreational use. Winter use within the DWSR corridor is relatively low, primarily consisting of snowmachining, snowshoeing, dog mushing, and cross-country skiing. In 2009, it was estimated that approximately 100 users participated in snowshoeing, dog mushing, and cross-country skiing within the river corridor. Snowmachine use primarily occurs on the Denali Highway, as snow conditions in the uplands are marginal (windblown, shallow snow cover) and open water leads exist between many of the lakes in the river corridor. In 2009, it was estimated that approximately 500 users participated in snowmachining within the river corridor; primarily pass through users on the Denali Highway. Respondents at the BBM meetings indicated that they had not seen a noticeable increase in wintertime use. They identified “more regulation” or “loss of access” as the biggest potential threat to wintertime use in the DWSR corridor. The EARMP directed that snowmachines may be temporarily limited to designated trails to minimize disturbances to heavy concentrations of wintering moose within the river corridor, but limits have not been implemented.

3.2.10.9 Animal Powered Recreation

Animal powered recreation occasionally occurs within the DWSR corridor. In most cases, this involves the use of horses and pack stock to explore the surrounding hills and countryside, and dog sled teams that are used in the winter, primarily on the Denali Highway. During the BBM meetings held in 2007, there were some participants who said they used horses and pack stock in the Garrett Creek drainage and throughout the lower river corridor. The BLM has never visually observed horses or pack stock being used in the backcountry within the river corridor, but on a few occasions groups have camped at the Tangle Lakes Campground with horses and pack stock. These groups usually tow their horse trailers to the campground, set up a temporary corral, distribute hay within the campsite, and ride their horses throughout the developed facilities and along the Denali Highway. In 2009, it was estimated that approximately 10 users participated in animal powered recreation within the river corridor. The primary concerns associated with animal powered recreation in the DWSR corridor is the possibility of introducing invasive and/or noxious weeds in hay used for horse fodder, as well as straw used to bed down sled dogs during the winter, and animal feces left behind in the developed facilities.

3.2.10.10 Mechanized Travel

Mechanized travel refers to the use of mountain bikes, wheelchairs, and other modes of non-gasoline powered assisted travel. Mechanized travel occurs primarily in the developed facilities and on the Denali Highway, and has never been documented in the uplands or backcountry areas. In 2009, it was estimated that approximately 100 users participated in mechanized travel within the developed facilities. Mechanized travel would be difficult on designated OHV trails due to degraded trail conditions, but would be possible on more developed trails, such as those that are located adjacent to the Denali Highway.

3.2.11 Vegetation

Within the DWSR corridor, vegetation reflects differences in slope, aspect, soils, elevation, moisture availability, and the presence or absence of permafrost. Vegetation cover types range from herbaceous

and scrub communities (Alaska Vegetation Classifications IIC and IIIA; Viereck 1992) in the upper Tangle Lakes area to needleleaf forests and woodlands, and mixed forests (Alaska Vegetation Classification IA, and IC, Viereck 1992) in the lower reaches of the river. Vegetation in the Tangle Lakes area includes low shrub birch/lichen, mesic shrub tundra, tussock tundra and open taiga. Permafrost occupied sites are commonly represented by cottongrass tussock and dwarf birch-ericaceous scrub vegetation. Alpine communities are interspersed with patches of lichen. Sparse patches of trees are found at elevations below 3,100 feet including white and black spruce, balsam poplar and alder. Many people travel to the Tangle Lakes area to pick blueberries. Other berries found in the area include crowberry, alpine bearberry, low bush cranberry, high bush cranberry, and red currant.

The abundant shrubs cover types in the river corridor are dominated by dwarf birch, willows and alder. A number of herbs, grasses, mosses, and sedges are also found throughout the area. Plant communities along the mid and lower sections of the river corridor include riparian scrub on flood plains with open spruce-poplar-alder forests occupying higher floodplains and lowland sites along the river, and some mid slopes of hillsides adjacent to the river. Understory plants are varied and abundant. Grasses are the dominant herbaceous species. Fireweed, bistort, alpine azalea, rose, horsetails, ferns, mosses, lichens, Labrador tea, cassiope, mountain-avens, burnet, and shrubby cinquefoil are among the many other plants found in this area.

Currently the vegetation cover types along the Delta River provide diversity to fulfill healthy habitat needs for fish and wildlife along the river. Forestry practices are allowed within Special Recreation Management Areas. Within the DWSR commercial logging is not permitted, and minimally permitted firewood gathering occurs on a personal use basis. Wildfires have a limited affect on landscapes and plant communities of the Delta River Area. Evidence of fire, such as charcoal, is rarely observed in area soils. Based on preliminary findings of a 2009 rare plants inventory conducted on the Upper Tangles and Delta River by the Alaska Natural Heritage Program (Carlson 2006), no rare plants or BLM Sensitive Status Species of plants were found or documented at sites visited.

3.2.11.1 Invasive, Non-native Plant Species

The introduction and spread of non-native invasive plants (weeds) in Alaska has become a concern. Invasive plant species are more prevalent in urbanized areas and along travel corridors where vehicles transport seeds throughout Alaska. Weed control efforts to date have been primarily concentrated on increasing public awareness and prevention. There are currently 14 plant species on the State of Alaska Restricted Noxious Weeds lists, of which none are found within the DWSR. An inventory of non-native invasive plants within the Delta River corridor was conducted during the summer of 2008 by the University of Alaska Anchorage Natural Heritage Program (Cortez-Burns 2009). This assessment found the river corridor relatively free from non-native invasive plants. Only the BLM Tangle Lakes Wayside boat launch was found to hosts small infestations of invasive plants, all of which rank low for aggressiveness and are listed below:

- common plantain, *Plantago major*
- annual bluegrass, *Poa annua*
- chickweed, *Stellaria media*
- pineapple weed, *Matricaria discoidea*
- common dandelion, *Paraxacum officinale*

None of these species were present in percent covers greater than 20% and none are considered to be capable of invading undisturbed native vegetation in Alaska, except for the common dandelion, which is widespread across the state and possibly hybridizes with native dandelion. These infestations are prioritized for control and eradication.

3.2.11.2 Vegetation Management Concerns Related to Recreational Activities

The primary management concerns related to vegetation resources and recreational use are the development of unauthorized OHV trails, vegetation trampling at river campsites, and the introduction of invasive weeds. Unauthorized OHV trails are not maintained and can result in additional trail proliferation, potentially impacting vegetative resources through vegetation loss and compaction. Visitor use along the river has resulted in the development of dispersed campsites. Vegetation trampling is evident at almost all of the campsites along the river, ranging from slight trampling to the removal of all

vegetation cover and soil compaction, resulting in bare ground. Vegetation impacts also include cutting of live trees for firewood, game poles, or tent poles. Noxious and invasive weeds may be more prevalent near settled areas, but their populations are suspected to be increasing in remote areas as well. OHV use (especially summer and fall use), communication sites, right-of-way development, hiking and climbing, trail construction, nonmotorized recreational activities, and utility systems or other development activities could result in increased infestations of noxious or invasive plant species (CNIPM 2001).

3.2.12 Water Quality

The DWSR can be characterized as a free-flowing river with excellent water quality. There are numerous examples of pristine natural conditions, including cascading waterfalls, seasonally continuous rapids, meandering river oxbows, and an active flood regime. Largely intact hydrologic processes create a diversity of exceptional hydrologic features, and contribute to the integrity of river-related ecosystems. The DWSR is a clear water river from the headwaters near Dickey Lake to the confluence with Eureka Creek. From Eureka Creek to the end of the corridor boundary, the river becomes heavily laden with glacial sediment. The free-flowing nature of the river, adequate volume, and relatively protected watershed generally provides superior water quality.

Information from the U.S. Geological Survey, the Environmental Protection Agency, the University of Alaska and the State of Alaska does not indicate that there are any system-wide concerns at the present with water quality in the Delta River. BLM water quality monitoring on the Delta has been minimal and has consisted of samples taken with uncalibrated BLM water quality instruments at various clear water locations between 2000 and 2003. Measurements of dissolved oxygen, turbidity, pH, temperature, and specific conductivity indicate water quality is within state standards and well within the ability to sustain healthy fisheries as indicated by a recent ADF&G Arctic grayling study.

Turbidity on the Delta River clear water system is somewhat influenced by natural processes. The upper portion of the corridor is a wide valley with a highly interconnected and stable low gradient lake and river system. The stream channel is stable due to the presence of cohesive bank materials and developed riparian vegetation. Once below the falls, where the Delta River crosses the Denali fault, the river valley is more constricted on both sides by a mountain lined valley, resulting in gradient and water velocity increases. The river occasionally splits into two or more braids, but the channel is stable and the riparian vegetation is well developed. The valley gradually opens up and the clear water system slows and meanders. Within the clear water section, the sediment supply and bed load contributions during high water events is relatively low. Once below Eureka Creek (the first glacial tributary), the Delta river becomes turbid and braided with the intrusion of glacial sediment from tributary glacier creeks and high mountain snow melt. Major glacial tributaries include: Eureka Creek, Rainy Creek, Phalen Creek, and Black Rapids Glacier.

3.2.12.1 Water Quality Concerns Related to Recreational Activities

Water quality concerns are related to human waste disposal, petroleum hydrocarbons from boat motors, OHV use and campsite use. Human waste is disposed of in a variety of manners, dependent on river users, outdoor skills and river ethics. Increased use and improper human waste disposal methods could potentially impact water quality. Although there has been no water quality testing done for fecal coliform on the Delta River, the BLM assumes the levels for fecal coliform would conform to State water quality standards. The State of Alaska currently has regulations prohibiting the disposal of human waste within 100 feet of the ordinary high water mark of a lake or river.

Some amount of the fuel that enters into boat motors is discharged into the water unburned. Numerous studies have documented the effects of outboard motor exhaust and related pollution from fuel leakage, although most apply to contained water environments, (e.g. lakes and marinas). Considerably less work has examined the impacts of these pollutants in rivers. Even in existing, “closed system” studies, toxic effects on aquatic organisms are generally minimal because 1) the amount of pollution is often small compared to the volume of water; and 2) most hydrocarbons are volatile and quickly dispersed. (The Effects of Motorized Watercraft on Aquatic Ecosystems, Asplund, 2000). The current federal water quality standard adopted by the State of Alaska for petroleum hydrocarbons, oils, and grease in waterbodies is: “Total aqueous hydrocarbons in the water column may not exceed 15 ug/l. Total aromatic hydrocarbons in the water column may not exceed 10 ug/l. There may be no concentrations of petroleum hydrocarbons, animal fats, or vegetable oils in shoreline or bottom sediments that cause

deleterious effects to aquatic life. Surface waters and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration."

The Top of the World Trail is the only designated OHV trail that crosses the clear water section of the river corridor, a few miles above the Eureka Creek confluence; erosion is highly evident on both the eastern and western hillsides adjacent to the Top of the World Trail. Unmanaged trails and river crossings in this clear water section has the potential to impact water quality by contributing sediment to the river. Visitor use on the river has increased the concern for potential bank erosion and increased sedimentation caused by bank trampling. The BLM monitors bare ground at campsite access points along the river. So far, trampling impacts are primarily limited to vegetation and soil compaction, although some erosion is occurring at popular campsite areas.

3.2.13 Wilderness Characteristics

There are no designated wilderness areas or wilderness study areas within the planning area, but there are areas that possess the sufficient size requirements (at least 5000 acres), outstanding opportunities for solitude or a primitive and unconfined recreation experience, and high levels of naturalness; attributes commonly referred to as wilderness characteristics. Areas having wilderness characteristics are most often present in primitive and semiprimitive nonmotorized ROS classification areas. ROS classification areas for the DWSR corridor are discussed in Chapter 3.2.6.6.

The BLM maintains an inventory of all lands under its jurisdiction, pursuant to Section 201 (a) of the Federal Land Policy and Management Act of 1976 (FLPMA):

> Sec. 201. [43 U.S.C. 1711] (a) The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands.

As required by law, the BLM must maintain inventories of lands under its jurisdiction, including lands with wilderness characteristics. Also, consistent with FLPMA Section 202 and other applicable authorities, the BLM must consider the wilderness characteristics of public lands when undertaking its multiple use land use planning and when making project-level decisions.

In accordance with FLPMA Sections 201 and 202, an inventory for the presence of wilderness characteristics has been completed to determine if the DWSR corridor possesses wilderness characteristics. This inventory is incorporated by reference and can be found in the Administrative Record located at the BLM Glennallen Field Office. Through this inventory process, Tangle Lakes Zone 1 and Delta River Zone 4 were found to possess wilderness characteristics.

Tangle Lakes Zone 1 was found to possess wilderness characteristics because it was determined to provide the necessary size requirement, outstanding opportunities for solitude or a primitive and unconfined recreation experience, and high levels of naturalness. Tangle Lakes Zone 1 appears natural and is affected primarily by the forces of nature. Any work of human beings is substantially unnoticeable. Vegetative screening, topography and distance between designated campsites offer seclusion and reduce the presence of the sights, sounds and evidence of other people in the area. The predominant recreational activities in this area include nonmotorized lake boating and hiking. There is little evidence of motorized use, except for the use of small kicker motors that are used to travel on the lakes within the zone. There are no BLM developed facilities located within the zone. The absence of facilities within this zone is a characteristic that makes this zone unique, providing solitude in a natural, primitive surrounding.

Tangle Lakes Zone 2 was not found to possess wilderness characteristics because it was determined to lack outstanding opportunities for solitude or a primitive and unconfined recreation experience. The use of motorized watercraft occurs frequently throughout the summer within this zone, with use increasing substantially during the Fourth of July season and subsistence hunting season (August 1-September 30). Nonmotorized users sometimes find themselves competing for space and solitude with other motorized users, or vice versa, and social conflict issues between motorized and nonmotorized users are present within this zone. Developed hiking trails within the zone have concentrated users to specific routes that

help to protect natural resources, but also reduce solitude and the feeling of being unconfined in a trail-less environment. The Denali Highway is almost always in view, and the larger lakes within the zone do not offer much vegetative and topographic screening that would provide the seclusion needed to reduce the presence of sights, sounds and evidence of other people in the area.

Tangle Lakes Developed Zone 3 was not found to possess wilderness characteristics because it was determined to lack the size requirement and outstanding opportunities for solitude or a primitive and unconfined recreation experience. At only 248 acres, Tangle Lakes Developed Zone 3 has been highly modified by gravel roads and recreational facilities. The work of human beings is substantially noticeable, as roadways, developed campsites, boat launches, interpretive panels, and outhouses are located within the zone. Vegetation and soils within the zone have been greatly altered, with large areas of impacted vegetation and bare ground disturbance commonly associated with high use recreational facilities. Solitude is difficult to find in the developed facilities due to the presence of highway vehicles, recreational vehicles, generators, and large groups that are situated relatively close together.

Delta River Zone 4 was found to possess wilderness characteristics because it was determined to provide the necessary size requirement, outstanding opportunities for solitude or a primitive and unconfined recreation experience, and high levels of naturalness. Delta River Zone 4 is characterized by an essentially unmodified natural environment. There is little or no evidence of motorized use, including OHV trails. Sights and sounds of the road system are nonexistent; vegetative screening, topography and distance between designated campsites offer seclusion and reduce the presence of the sights, sounds and evidence of other people in the area. The prevailing recreational use is nonmotorized boating, with associated hiking, hunting, and wildlife viewing activities. There is little evidence of motorized use, as shallow water and topography limit the occurrence of motorized boats entering the zone. Aside from the rustic facilities located at portage area, there are no other BLM facilities within the zone. The absence of facilities within this zone is a characteristic that makes this zone unique, providing solitude in a natural, primitive surrounding.

Delta River Zone 5 was not found to possess wilderness characteristics because it was determined to lack outstanding opportunities for solitude or a primitive and unconfined recreation experience. Mining access occurs throughout the year; it is not uncommon to experience heavy machinery either crossing directly through the river corridor or travelling on the Rainy Creek Trail. In the northern portion of the zone, the Richardson Highway and Trans Alaska Pipeline System are almost always in view, lacking vegetative and topographic screening that would provide the seclusion needed to reduce the presence of sights, sounds and evidence of other people in the area. The use of motorized watercraft and OHVs occur within this zone throughout the summer season, increasing during subsistence hunting season (August 1-September 30). Nonmotorized users sometimes find themselves competing for space and solitude with these motorized users, and care must be taken in the narrow, braided portion of the zone to reduce the potential for swamping or collisions with passing motorboats.

3.2.14 Wildlife

The DWSR corridor supports large and small mammals and furbearers, birds and waterfowl, numerous insects, and an amphibian. Wildlife composition and density vary by season and by habitat type along the river. Large mammals that may be encountered within the DWSR corridor include moose (*Alces alces*), caribou (*Rangifer tarandus*), and bears (*Ursus americanus* and *U. arctos*). Since the DWSR corridor is also a federal subsistence hunting area, these large mammals are hunted by qualified residents for food and other traditional uses. Moose taken along the Delta River constituted approximately 29% of successful federal subsistence moose hunts in GMU 13 in 2008. Moose populations are monitored closely by the Alaska Department of Fish and Game (ADF&G) in several count areas. Count area 5 includes portions of the Delta River and averaged 1393 moose within 846 square miles between 1990 and 2007 (ADF&G), and is generally stable.

Caribou from the Nelchina Caribou Herd (NCH) migrate in large numbers in the spring and fall as they travel to and from winter and summer grounds, often crossing the Delta River near the foothills of the Alaska Range. The NCH population is below the target set by ADF&G of 35,000 animals as of 2008. However, active management efforts by the ADF&G are in place to facilitate an increase in the moose and caribou population. Caribou move in large numbers across the DWSR corridor, and these sightings

provide recreationists and hunters a spectacular close-up view of one of North America's greatest natural animal movements.

Small mammals and furbearers also utilize the DWSR corridor and are of interest to local trappers, subsistence users, and other carnivores including resident raptors. Harvest efforts for furbearers including wolves (*Canis lupus*), marten (*Martes americana*), and lynx (*Lynx canadensis*) typically follow the price of fur. Resident raptors depend on small mammals for food in the winter. The population of small mammals and furbearers is generally stable in the DWSR corridor.

Migratory birds and waterfowl can be seen on the river and lakes within the DWSR corridor. Spring migration brings approximately 130 species of birds into Alaska, a portion of which likely cross the DWSR corridor and may even stopover in nearby lakes. The DWSR corridor provides nesting and rearing habitat for numerous waterfowl and other migratory birds. Some songbirds take advantage of the abundant supply of insects that emerge in the spring. These insects not only provide essential forage for birds, but are also important food sources for fish. Fish, in turn, become essential food for bears and bald eagles.

There are no birds or mammal species within the Delta River watershed that are listed by the U.S. Fish and Wildlife Service as threatened or endangered. The presence of six species of birds and one species of mammal that BLM Alaska considers sensitive species are suspected to occur within the Delta River watershed, but are undocumented.

3.2.14.1 Wildlife Management Concerns Related to Recreational Activities

There are three major concerns related to recreational activities in the DWSR corridor. These concerns are OHV use, motorized boating, and human-bear interactions. Human activity along the DWSR corridor is likely to increase as recreational demands grow and technology advances. Impacts from increased OHV use by hunters and recreationists may further fragment moose and caribou habitat. Increased human visitation may also affect migratory birds and waterfowl that nest along the river and lakes of the DWSR corridor. Areas that were previously inaccessible to boaters may become accessible using shallow-drive boats. Motorized boats and airplane landings in these areas may cause harassment to nesting waterfowl and other wildlife. Increased human traffic can interfere with nesting waterfowl and may cause wildlife to expend energy in avoidance or stress-induced behavior. Another concern resulting from increased human activity in the DWSR corridor is bear-human interactions. Current levels of bear encounters appear to be low, although documentation of such encounters is sporadic and not well recorded. However, with increased human presence, the likelihood of human-bear interactions in the future may increase.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

The analysis of environmental impacts associated with each action alternative is required by BLM planning regulations and by the Council on Environmental Quality (CEQ) regulations implementing the NEPA. Environmental impacts are described by resource or issue, and include direct, indirect, and cumulative effects of the alternatives. The type and level of effects that could result from implementing the alternatives have been identified using the information provided in Chapter 3, which provides a description of the current condition of the environment. This chapter describes the predicted consequences, or potential effects, from implementing the alternatives described in Chapter 2. Effects analysis and conclusions are based on interdisciplinary team knowledge, information provided by the BLM or other agency experts, pertinent literature review, and professional judgment.

4.2 Planning Assumptions

The BLM developed planning assumptions described in this chapter to facilitate the analysis of potential environmental impacts. These assumptions set guidelines and project, with a reasonable degree of confidence, projects, actions, or developments that could occur within the planning area during the life of the plan. Most of the assumptions explain the increase in use expected during the life of the plan, which is approximately twenty years. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative described in Chapter 2.

4.2.1 Climate Change

There is growing global concern, which is based on current scientific research, about the potential effects of greenhouse gas emissions on global climate. Through many complex interactions on regional and global scales, the lower layers of the atmosphere are experiencing a net warming effect. Potential effects of global climate change in Alaska include increased precipitation, decreased snow cover, rising river flows, rising sea levels, thawing of permafrost, changes in fire frequency and severity, changes in wetlands, and shifts in the distribution of wildlife (ACIA 2004). The level of effects related to climate change within the planning area during the life of the plan is unknown and will vary depending upon the specific resource of concern.

Global climate change will continue to occur during the life of the plan, and effects may be seen at localized levels that are primarily evident in changes to soils and vegetation composition, water quality, and wildlife habitat. Soils will be affected primarily as a result of decreased permafrost, with subsequent impacts on evapo-transpiration, runoff, and sedimentation. Global warming has the potential to cause land cover changes in high latitude regions through both vegetation replacement and increasing frequency of vegetation disturbance. Water quality could be impacted by thermokarst development and changes in water temperature resulting from global warming. Climate change may also result in increased stress on some species of wildlife, and habitat quality or availability may decrease slightly for some species, while other species may see an increase in the availability of habitat due to changes in vegetation associated with climate change.

4.2.2 Lands and Realty

The BLM expects to manage portions of the PLO 5150 Transportation and Utility Corridor, and future maintenance on the Trans-Alaska Pipeline System will likely occur during the life of the plan that may require additional land use authorizations for temporary staging areas or gravel pads needed for maintenance and construction activities. There will likely be an increased demand to utilize the PLO 5150 Transportation and Utility Corridor for additional utilities or infrastructure needed to support a natural gas pipeline spur route from Delta Junction to Glennallen. In addition, future mineral development on state lands adjacent to the river corridor may generate increased demand for access or right-of-way authorizations associated with road construction or powerline development.

4.2.3 Mineral Development

Exploration focused on deposits of rare metals (nickel and platinum group elements) has occurred in areas north of the Denali Highway and adjacent to the DWSR corridor. Geologic information indicates that the area has a high potential for a significant discovery of platinum group elements. Pure Nickel, Inc. is exploring for these metals within a 280-square mile area that includes both sides of the DWSR corridor. This area includes both State and Federal mineral claims. The State of Alaska completed two comprehensive land-use plans for the area. Both plans kept the area open for mining, and future large-scale mining is possible. If exploration leads to the discovery of an economically viable deposit, the deposit will likely be developed only through underground mining (not open-pit) techniques. If so, a mine could be developed in a similar manner as the Pogo Mine (about 38 miles northeast of Delta Junction). Surface disturbance will vary depending on mine design, construction of roads, power line corridors, selection of tailing disposal method, and other factors. The Pogo Mine has a permitted disturbance of 425 acres plus a 40-mile road to the site. Road building, airstrips, and associated material sites account for the largest surface disturbance followed by mine, mill, tailings disposal site, and camp facilities.

While most of these disturbances would occur on State lands adjacent to the DWSR corridor, it is possible that some road construction or power lines could place possible demands for access or right-of-way authorizations across the river corridor. In addition, overflights associated with mineral development activities will likely increase during the life of the plan. It is also possible, given the size of the exploration area, that any such development would occur without crossing or even being visible from the corridor. The minimum time between identifying a viable ore body and development is over a decade. Thus, even if exploratory drilling makes a significant find, it will be a minimum of 10 years before development would occur, assuming a mine is economically and environmentally feasible.

4.2.4 Recreation Resources

Overall demand for the recreational use of public lands within the DWSR corridor is likely to increase during the life of the plan. “Household survey data confirm that participation and consumption in outdoor recreation are an important part of life in Alaska. Rates and intensity of participation among Alaskans are higher than for residents of the lower 48, and these rates of participation can be expected to remain higher over the next 20 years. Between 2000 and 2020, the population of Alaska is expected to increase by about 28 percent. Projected increases in participation and consumption for most activities can be expected to keep pace with projected population growth in Alaska (roughly 1.5 percent per year over the 20-year period). The five activities that show the greatest growth in the absolute number of times Alaskans are likely to participate in them are scenic driving, biking, bird and wildlife viewing, recreational vehicle camping, and fishing. Roads and waterways, therefore, will continue to be heavily relied on for outdoor recreation” (Recreation and Tourism in South-Central Alaska: Synthesis of Recent Trends and Prospects, Brooks, Haynes, 2001).

In addition to potential recreation product shift as a result of increased tourism and state population, user conflicts may also increase, especially in areas with both motorized and nonmotorized opportunities. “The increase in many activities in some areas is increasing interactions among participants, which is causing conflict among resident and nonresident participants. One implication, however, is that as levels of use increase, all participants will experience crowding and some degrading of the recreation experience; for residents, this will seem to be (or will be) a conflict with tourism. There is potential for, perhaps even the likelihood of, increasing conflict among recreation users seeking widely divergent experiences” (Recreation and Tourism in South-Central Alaska: Synthesis of Recent Trends and Prospects, Brooks, Haynes, 2001).

Wilderness characteristics (naturalness, solitude, and primitive and unconfined recreation), natural quiet and natural sounds, and high quality scenic resources are expected to remain in demand from local residents and visitors who want to experience the primitive and unspoiled nature of the planning area. Businesses that depend on tourism will value natural landscapes for their excursions (e.g. ecotourism, guided hunting, and fishing) and will favor an area that possesses scenic views, undeveloped landscapes, and open spaces.

Recreational activities within the DWSR corridor that are expected to increase during the life of the plan are those related to travel management and activities associated with increased tourism and improved facilities and highway access. In addition to travel management opportunities (discussed in Section 4.2.6), changes would be most probable in the following recreational activities:

4.2.4.1 Facility Use and Developed Camping

The BLM anticipates that the demand for the use of the developed recreational facilities within the DWSR corridor will increase by approximately 30% above current use levels during the life of the plan, based on projections of future population and recreational growth in Alaska. The renovation of the Tangle Lakes Campground will account for the greatest immediate increase in facility use and developed camping opportunities. The use of BLM developed facilities would increase even higher if the Denali Highway is paved in the future. The recent addition of new State of Alaska facilities on the Denali Highway may attract increased highway tourism and tour bus use through the planning area. "The level and location of many (perhaps most) activities will depend on the development of infrastructure...a potentially large source of future use may come from changes in the transportation infrastructure and possible changes in methods and patterns of nonresident use. Capacity limits at access points, therefore, are likely to be an increasing concern for recreation management" (Recreation and Tourism in South-Central Alaska: Synthesis of Recent Trends and Prospects, Brooks, Haynes, 2001). If infrastructure and access to the Denali Highway is improved during the life of the plan, use could increase substantially higher than the projected 30% increase based on population growth.

4.2.4.2 Dispersed River/Lake Use, Undeveloped Camping and Group Sizes

Dispersed river and lake use will increase during the life of the plan, and undeveloped campsites located along the lakeshores and riverbank will receive more visitor use as a result. In 2009, estimated facility use was 24,202 total visitors, of which approximately 3,872 visitors (16% of total developed facility users) used the lakes and river for boating activities. Of these users, approximately 45% (1,742 users) are estimated to camp overnight, using undeveloped campsites in the river corridor. Assuming the same participation rate in river and lake use, projected increases in facility use over the life of the plan would result in an increase of approximately 6% (105 users) above current overnight campsite use on the lakes and river.

Group sizes for river and lake use are determined by the BLM based on voluntary registration data located in the developed facilities at the boat launches. Even though compliance rates are generally low (traffic counter results show that approximately 20% of users register), the BLM can make group size assumptions based on information from those who do register. The most recent 2009 data portrays the following results:

Year	Total Registered Groups	Groups of ≤ 8 People	Groups of 9-10 People	Groups of 11-12 People	Groups of > 12 People
2009	118	112 (94.9%)	2 (1.7%)	2 (1.7%)	2 (1.7%)

Assuming overnight use on the lakes and river increases by approximately 6% during the life of the plan, 1,847 overnight river and lake users would be expected. Using this planning assumption of overnight visitor use and the data in the above table, if a maximum group size of 8 was implemented, approximately 5.1% of overnight river and lake users (94 users) would be affected annually. If a maximum group size of 10 was implemented, approximately 3.4% of overnight river and lake users (63 users) would be affected annually. If a maximum group size of 12 was implemented, approximately 1.7% of overnight river and lake users (31 users) would be affected annually.

4.2.4.3 Fishing

"Alaskans fish at a greater rate and more often than in any other state. Many factors contribute to the overall quality of sport fishing. Certain factors, such as weather and other environmental conditions, are beyond the effective control of fishery managers. Other factors, however, such as onsite facilities, degree of congestion, and fish stocks available for harvest are controllable and can significantly influence the

fishing experience. Analysis of the demand for sport fishing in Alaska indicates that site quality is an important determinant of angler behavior" (A Nested Logit Model of Recreational Fishing Demand in Alaska, Cars, Hanemann, Wegge 2009).

Fishing as a recreational activity is expected to increase in certain areas of the DWSR corridor during the life of the plan. These increases would be proportionate to increases in developed facility use as a result of facility improvements and upgraded access to the area, web based marketing, and new roadside angler guides, particularly in RMZs 2 and 3. BLM campground registration data from 2009 displays 1119 registered groups; of which 504 groups participated in fishing. This equates to approximately 45% of registered users participating in fishing activities. As facility use increases, fishing activities will also increase accordingly. Assuming the same participation rate, projected increases in facility use would result in an increase of approximately 14% above current fishing use levels during the life of the plan.

4.2.4.4 Hiking

Hiking is a recreational activity that is projected to increase during the life of the plan. These increases would be proportionate to increases in developed facility use as a result of facility improvements and upgraded access to the area, web based marketing, and new roadside hiking guides, particularly in RMZ 2. BLM campground registration data from 2009 displays 1119 registered groups; of which 482 groups participated in hiking activities. This equates to approximately 43% of registered users participating in hiking activities. As facility use increases, hiking demand will also increase accordingly. Assuming the same participation rate, projected increases in facility use would result in an increase of approximately 13% above current hiking use levels during the life of the plan. The demand for additional developed hiking trails adjacent to the developed facilities in RMZ 2 will likely increase as a result.

4.2.4.5 Special Recreation Permit (SRP) Applications

SRP applications are primarily dependant on the health of the tourism industry in Alaska. "In the United States, demographic and economic projections suggest continued growth in demand for services related to recreation and tourism" (Neimi and Fifield 2000, World Travel and Tourism Council website). In Alaska, "Among wildlife-related activities, participation by visitors (tourists) is greater than that of residents, and is expected to increase faster (based on higher rates of projected population growth in the lower 48 states). If true, for bird and wildlife viewing, tourists will outnumber Alaskans by more than 10 to 1 by the year 2020. Although not as dramatic, the growth of tourist anglers also is expected to exceed that for in-state anglers by about 50 percent. At the same time, continuing evolution and competition in the commercial recreation and tourism sector will, itself, contribute to innovation and efforts to explore, and create, market opportunities. The result likely will be continued increases in demand for management decisions that support commercial activities. Competition within the commercial sector and competition between commercial users and the general public will continue and will increase" (Recreation and Tourism in South-Central Alaska: Synthesis of Recent Trends and Prospects, Brooks, Haynes, 2001).

On average, over the last ten years, the BLM has permitted 1-2 annual SRP applications for commercial activities within the DWSR corridor. Population and tourism growth may result in additional SRP applications during the life of the plan, especially for guided fishing and bird/wildlife viewing. Two private lodges adjacent to the river corridor are currently for sale, and the presence of newly upgraded BLM developed camping facilities with highway access and the robust health of the arctic grayling fishery in the DWSR corridor may contribute to additional SRP applications in the future. Based on these contributing factors, this growth is projected to be in the range of 2-3 additional SRP applications during the life of the plan.

4.2.5 Subsistence

Planning assumptions for subsistence include potential changes in demographics of eligible applicants. Subsistence users who have customary and traditional use of caribou in the DWSR are those users who are rural residents of Units 11, 12 (along the Nabesna Road and Tok Cutoff Road, milepost 79-110), 13, 20D (except Fort Greely), and Chickaloon. Rural residents of Units 13, 20D (except Fort Greely), Chickaloon, and Slana have customary and traditional use of moose in the DWSR. The pool of federal

subsistence permit applicants has remained relatively stable between 1998 and 2009; on average, there were 951 and 2,525 permits issued for moose and caribou, respectively. However, there are different communities that contribute to the pool of applicants.

Community demographics change over time. Delta Junction is one of these communities that contribute significantly to the pool of applicants. The US Census Bureau estimated a 13% increase in population size of Delta Junction between 2000 and 2009 (Population finder, http://factfinder.census.gov, accessed 29Sep2010). There is a concurrent 41% increase in the number of caribou permits issued between 2000 and 2009. However, other eligible communities are experiencing population declines due to out-migration because of poor fishing seasons, reduced state spending, and the lure of urban lifestyles and job opportunities (Copper River Knowledge System, Ecotrust, 2001). These shifts in demographics between eligible communities appear to balance out so that the pool of subsistence hunting permit applicants remains relatively stable.

4.2.6 Travel Management

It is anticipated that the demand for all types of access, both motorized and nonmotorized, will gradually increase over the life of the plan. Modes of access that will increase will depend on a variety of factors, including overall population trends statewide, design and technology improvements, economic conditions, and affordability of motorized conveyances. Nonmotorized access methods may have a more direct correlation with overall population trends and are less affected by economic conditions due to the affordability to participate in activities (hiking, biking, canoeing, etc.). Motorized access activities typically require more economic commitment due to ever-changing technology, design, and market affordability factors. Typically, in low economic climates, nonmotorized uses will increase, whereas motorized uses will increase as the economy improves.

4.2.6.1 Airplane Landings

It is anticipated that airplane landings (i.e. floatplane use) will remain relatively stable over the life of the plan. The BLM documents approximately 3-4 floatplane landings on Round Tangle Lake and 1-2 floatplane landings in the Upper Tangle Lakes annually.

4.2.6.2 Animal Powered Recreation

Animal powered recreation occasionally occurs within the DWSR corridor. In most cases, this involves the use of horses and pack stock to explore the surrounding hills and countryside, and dog sled teams that are used in the winter, primarily on the Denali Highway. There is no relevant data to suggest that these types of uses will increase, as the use of pack animals and dog teams typically have historical family ties and the nature of these activities require more time, involvement and expense than other access options.

4.2.6.3 Mechanized Use

Mechanized travel refers to the use of mountain bikes, wheelchairs, and other modes of non-gasoline powered assisted travel. Mechanized travel occurs primarily in the developed facilities and on the Denali Highway, and has rarely been documented in the uplands or backcountry areas. Mechanized travel would be difficult on designated OHV trails due to degraded trail conditions, but would be possible on more developed trails, such as those that are located adjacent to the Denali Highway. It is anticipated that mechanized uses would increase in the developed facilities in accordance with increased tourism, commercial ventures, and overall statewide population, but the inaccessibility of the upland areas and the proposed trail restrictions would effectively limit mechanized travel outside of the developed facilities.

4.2.6.4 Motorized Boating

A report from the National Survey on Recreation and the Environment (NSRE) found that approximately 28.6% of Americans aged 16 and older participated in motorized boating activities in the years 1999-2000 (U.S. Department of Agriculture, US Forest Service, 2000). Motorized boating use levels in the DWSR corridor are relatively consistent with this National average. BLM overflight information obtained from 78

overflights of the river corridor during the years 2000-2010 displays 1051 total watercraft observed; of which 264, or 25%, were motorized.

There are a variety of factors that may affect the future growth rate of motorized boating in the DWSR corridor. Changes in design and technology (i.e. shallow tunnel hull designs) may enable users to range into areas that were once thought of as inaccessible due to shallow water. Two stroke engines will continue to be replaced by the more fuel efficient, powerful, and quieter 4 stroke engines. Changing economic conditions may affect use levels; motorized users who live in local communities near the planning area will likely be less affected by economic conditions when compared to users who must travel longer distances.

In estimating the future growth rate of motorized boating use levels in the DWSR corridor, the BLM factors projected increases in facility use and the current percentage of motorized boating use in the DWSR corridor. An increase in motorized boating use would likely be proportionate to increases in developed facility use as a result of improvements and upgraded access to the area, web based marketing, and new roadside travelling guides, particularly in RMZ 2, where facilities are available to launch motorized craft. Participation rates in various recreational activities are determined by the BLM based on voluntary registration data located in the developed facilities. Even though compliance rates are generally low (traffic counter results show that approximately 20% of users register), for the purposes of this planning assumption, the BLM will assume that activity participation rates would remain constant, regardless of the number of overall users.

Using the most recent voluntary registration data from 2009, approximately 16% (3,872 visitors) of the total campground and wayside users (24,202 total visitors from traffic counters) participated in boating activities. Of this 16% of registered boating users, overflight data from 2005-2010 shows that approximately ¼ of these boaters (or 4% of total campground and wayside users) are motorized boating users (968 visitors). As facility use increases in the future, boating activities will be assumed to increase proportionately. Assuming the boating participation rate remains constant at 16% overall, the projected increases in facility use of 30% over the life of the plan would result in 31,462 total visitors, of which 1258 visitors would participate in motorized boating (4% of total campground and wayside users); an increase of 290 motorized users compared to 2009. This represents 5.2% of the 2009 total campground and wayside users. The net result is a 1.2% increase in motorized boating participation based on 2009 total user visitation. In addition to this increase of 1.2% based on population growth, other factors previously discussed (technological improvements, affordability factors, societal changes, etc.) may also contribute to additional motorized boating use, but exact estimates are difficult to quantify. As a management planning assumption, overall growth of 2%-5% in motorized boating use from current levels would be expected during the life of the plan.

4.2.6.5 Nonmotorized Boating

Nonmotorized boating, in particular canoeing, constitutes the majority of all boating in the DWSR corridor. “Paddle sports have been a growing boating activity for several years; with an estimated 48-52 million Americans participating in paddle sports and their various forms annually” (National Survey on Recreation and the Environment, US Forest Service 2004). A study by the Outdoor Industry Foundation found that “...the 2005 National population participating in canoeing was 9.3%. Canoe participation rates were generally higher than other non-motorized boating activities. Canoeing is the most popular non-motorized boat activity nationally; the average national canoeist participated between 4 and 8 days per year” (Active Outdoor Recreation Participation Study, 2005).

Using the same methodology and 2009 campground registration data displayed above for motorized boating, overflight data shows that approximately ¾ of these boaters (or 12% of total campground and wayside users) are nonmotorized boating users (2,904 visitors). As facility use increases in the future, boating activities will be assumed to increase proportionately. Assuming the boating participation rate remains constant at 16% overall, the projected increases in facility use of 30% over the life of the plan would result in 31,462 total visitors, of which 3775 visitors would participate in nonmotorized boating (12% of total campground and wayside users); an increase of 871 nonmotorized users compared to 2009. This represents 16% of the 2009 total campground and wayside users. The net result is a 4% increase in nonmotorized boating participation compared to 2009 total user visitation. In addition to this increase of 4% based on population growth, other factors previously discussed (technological improvements,

affordability factors, societal changes, etc.) may also contribute to additional nonmotorized use, but exact estimates are difficult to quantify. As a management planning assumption, overall growth of 5%-10% in nonmotorized boating use from current levels would be expected during the life of the plan.

4.2.6.6 Nonmotorized Winter Use

Nonmotorized winter use within the DWSR corridor is relatively low; documented uses include snowshoeing and cross-country skiing. Skiing primarily occurs on the Denali Highway, but with difficult access and marginal conditions (windblown, shallow snow cover, open water leads between the lakes), future use increases are not anticipated and nonmotorized winter use is projected to be stable throughout the life of the plan.

4.2.5.6.7 OHV Use

Documented OHV use within the DWSR corridor has been relatively stable. Most of the planning area is closed to OHV use under TLAD OHV trail regulations, and the few designated OHV trails within the river corridor have been used primarily during the fall hunting season. Documented recreational OHV use outside of hunting season has been low, and future projections of OHV use on these designated trails would be primarily based on statewide OHV growth statistics and the emergence of motorized OHV advocacy groups throughout the state, including military members of the US ARMY Morale, Welfare, and Recreation Program, which may contribute to more localized OHV use in the area. Most of the increased OHV use statewide during the life of the plan will occur in other areas with more OHV trails, but the Top of the World Trail within the DWSR corridor would likely see a portion of this increased use, primarily from residents of the Copper River Valley, Delta Junction and Fairbanks. The BLM estimates that OHV use will increase in the planning area by approximately 5%-10% during the life of the plan, primarily as a result of trail improvements to the Top of the World Trail. Without continued trail maintenance and OHV use limitations, this trail may deteriorate through braiding and rutting, eventually becoming impassible and likely causing OHV users to seek alternate routes that will increase surface disturbance in the area.

4.2.6.8 Snowmachine Use

Snowmachine use primarily occurs on the Denali Highway, as snow conditions in the uplands are marginal (windblown, shallow snow cover) and open water leads exist between many of the lakes in the river corridor. The DWSR corridor is not a destination for snowmachine use because of these limiting factors, and most of the use that does occur in the area is related to subsistence caribou hunting when the Nelchina Caribou Herd is wintering in the river corridor. Snowmachine use is not anticipated to increase from current levels during the life of the plan.

4.3 Direct and Indirect Impacts

Direct effects result from activities planned or authorized by the BLM and occur at the same time and place. Indirect effects are caused by these actions and occur later in time, or farther removed in distance, but are still reasonably foreseeable. Effects will be described as having a beneficial effect (the resource or condition is enhanced/benefitted, or the user group's activity and/or experience is enhanced), no change (no change or little to no effect), or not a beneficial effect (adverse effect).

4.3.1 Climate Change

4.3.1.1 Effects of recreation management decisions to contributing causes of climate change within the DWSR corridor.

Alternative 1 (No Action Alternative):

Recreational activities that produce greenhouse gas emissions result from the operation of gasoline powered engines; and include activities such as the use of OHVs, snowmachines, aircraft, generators, and motorized boats. At current visitor use levels, it is not expected that the overall contribution of greenhouse gas emissions related to these activities would adversely affect climate, resulting in either local or global warming or climate change, when compared to total greenhouse gas contributions

worldwide. Furthermore, anticipated increases in motorized recreational activities during the life of the plan would not be enough to adversely affect climate within the planning area.

Alternatives 2 (Proposed Action), 3 and 4:

The effects from all of these alternatives are substantially similar related to the contributing causes of climate change. Because Alternatives 2 and 4 target recreational management toward nonmotorized experiences in RMZs 1 and 4 and have more restrictions on OHV use, the greenhouse gas emissions in these alternatives are expected to be less than the emissions in Alternative 3. However, on both a local and global scale, while any greenhouse gas emissions are considered to have a negative effect on climate (resulting in global warming and climate change), these incremental emissions are considered extremely minor and would not adversely affect climate within the planning area.

4.3.2 Cultural Resources

4.3.2.1 Effects to cultural resources from recreational facility development and campsite management decisions.

All Alternatives:

All planned ground disturbing activities, including facility development, require compliance with Section 106 of the National Historic Preservation Act of 1966. This compliance reduces the possibility of impacting sensitive cultural resources. If a National Register of Historic Places listed or eligible site has been or is likely to be impacted by any planned or unplanned activities, then the BLM will determine the appropriate mitigation strategy for that site in consultation with the Alaska State Historic Preservation Officer as well as any affected Federally Recognized Tribes.

Alternative 1 (No Action Alternative):

Archaeological sites, or Ahtna culturally important locations, that could be impacted by unmanaged campsite and social trail growth, are more likely to have their National Register significance or traditional importance adversely affected under this alternative because there are fewer management actions aimed at curbing campsite or social trail growth and proliferation. There are sixteen archaeological sites and one culturally important location that co-occur with known campsites in the river corridor. The average group size for the Delta River through-trip is 4 people; Upper Tangles is 3 people. Even with the current average group sizes being relatively low, archaeological impacts at campsites can occur. It is possible to have these seventeen locations, some of which are listed on the National Register of Historic Places as contributing properties for the Tangle Lakes Archaeological District, irreparably impacted through the loss of vegetation and consequent soil erosion. Pedestrian trampling, fire pit construction and cathole digging can lead to vegetation loss and soil erosion, which can damage or destroy stratigraphic context. Pedestrian trampling and erosion can also result in crushing or breaking of artifacts, as well as exposing fragile organic artifacts or cultural features to weathering or decomposing organisms.

There are also many known, as well as undiscovered, cultural resource locations in areas along the river, which may be attractive to modern campers because of gentle slopes, favorable aspects, and access to water. These sites haven't yet been affected by modern camping because of the availability of more obvious campsites. However, more competition for campsites may result in increased impacts from new campsite development and erosion on previously undisturbed archaeological or culturally important sites.

Alternatives 2 (Proposed Action), 3 and 4:

Compared to Alternative 1, Alternatives 2, 3, and 4 will reduce adverse impacts to buried archaeological resources or culturally important locations that co-occur with campsites because these alternatives designate campsites and control campsite expansion and soil erosion through campsite management actions that are based on the monitoring of bare ground standards.

Alternative 2 limits group sizes to 10 people per campsite and closes developing satellite sites and social trails, limiting negative effects to associated cultural resources. During the life of the plan, a group size

limitation of 10 people would exclude approximately 6 larger groups annually, reducing the potential for adverse archeological impacts that are associated with campsite expansion as a result of large groups.

Alternative 3 would be more likely to adversely impact cultural resources that co-occur with existing campsites, since heavily and moderately used campsites would be developed, hardened and expanded to accommodate increased use and a larger group size of 12. Additional satellite campsite and social trail development under this alternative would also have a greater likelihood for eroding soils and negatively impacting archaeological sites, when compared to Alternatives 2 and 4. During the life of the plan, a group size limitation of 12 people would exclude approximately 3 larger groups annually, resulting in a higher potential for adverse archaeological impacts when compared to Alternatives 2 and 4 that have smaller group size limitations.

Alternative 4 would have the highest probability of protecting cultural resources since additional campsites would not be expanded or hardened, satellite campsites and social trails would be closed and prescribed group sizes (8 people per site) would be less than Alternative 2. During the life of the plan, a group size limitation of 8 people would exclude approximately 12 larger groups annually, having the highest potential among all alternatives to reduce adverse archaeological impacts associated with campsite expansion as a result of large groups.

4.3.2.2 Effects to cultural resources from OHV management decisions.

All Alternatives:

For all alternatives, OHVs are required to stay on designated trails in the TLAD. There are no designated OHV trails in the portions of the TLAD that occur within the planning area, and the use of OHVs is only allowed during periods of adequate snow cover or ground frost. Thus, potential adverse impacts to cultural resources from OHV use are not expected in the TLAD under any alternative.

Alternative 1 (No Action Alternative):

Unauthorized OHV trails have the potential to adversely impact cultural resources, and at least one known archaeological site at Mile 22 Denali Highway North Trail and two known archaeological sites at the confluence of Eureka Creek are currently being impacted. OHV use on unauthorized trails causes rutting, which strips protective vegetation and mechanically disturbs soils, resulting in soil deflation and loss of stratigraphic context for buried archaeological remains. This is likely to negatively affect the National Register significance of these sites and result in the loss of irreplaceable information important to the knowledge of the area's prehistory. OHV use also allows the public to more easily access the backcountry which may lead to looting and vandalism of more obvious cultural resources.

Alternatives 2 (Proposed Action) and 4:

Under Alternatives 2 and 4, the requirement to stay on designated trails, a 2000 lb. GVW limit on OHVs, and the closure of unauthorized trails will reduce adverse effects to archaeological resources by protecting soils and vegetation that covers both known and unknown archaeological sites. The closure of two unauthorized OHV trails in RMZ 5 and one unauthorized OHV trail in RMZ 2 will protect three known archeological sites that are currently being adversely impacted by OHV use.

Alternative 3:

Under Alternative 3, the designation of two additional OHV trails near the confluence of Eureka Creek in RMZ 5 and the Mile 22 Denali Highway North Trail in RMZ 2 is likely to adversely impact three known archaeological sites, as well as an unknown number of undiscovered cultural resources. OHV traffic at current levels in these areas is likely to adversely affect the National Register significance of these sites and result in the loss of irreplaceable information important to the knowledge of the area's prehistory. This activity can also contribute to additional adverse impacts, including looting and vandalism of more obvious cultural resources. OHV use is expected to increase approximately 5-10% during the life of the plan. Most of this increased use would likely occur on the Top of the World Trail in RMZ 5, increasing the potential for adverse impacts to two known archaeological sites in the Eureka Creek drainage.

4.3.2.3 Effects to cultural resources from identifying ORVs.

Alternative 1 (No Action Alternative):

ANILCA did not identify ORVs for the DWSR. It is a purpose of this planning effort to do so. The specific effects of not identifying ORVs to cultural resources are difficult to quantify, but would be primarily the same as the effects described for Alternative 1 throughout Chapter 4.3.2.

Alternatives 2 (Proposed Action), 3 and 4:

Proposing Cultural resources as an ORV in the *Wild* and *Scenic* river classification segments will have a beneficial effect by increasing public awareness about the ancient human use of the river corridor and the sensitivity of archaeological resources. Cultural resources will also be given extra protection beyond existing cultural resource laws since the WSRA requires all authorizations to be compatible with protecting the ORVs.

4.3.3 Fisheries

4.3.3.1 Effects to fisheries habitat from OHV trails and OHV river crossings.

Alternative 1 (No Action Alternative):

OHV trails that parallel the river and stream crossings can adversely affect riparian vegetation, rate of erosion and sedimentation, and streambank stability in sensitive riparian areas that are vital fisheries habitat. Unauthorized OHV trails that parallel the river and stream crossings typically have insufficient drainage structures and sometimes negotiate steep slopes, resulting in physical impacts to streambanks and riparian vegetation, uncontrolled run-off, and sedimentation. Damage to riparian areas from OHVs can last for years and sedimentation in streams can damage fish habitat downstream from the original disturbance. Direct threats to Arctic grayling from sediment include changes to physical habitat, subsequent decreased reproductive success, and loss of rearing habitat. Physical habitat changes from sediments are most often attributed to finer size particles. Developing eggs can be smothered and newly hatched fry can be killed by deposited sediment that prevents emergence from spawning gravels and interferes with respiration. Developing fish eggs and larvae need a constant supply of cold, oxygen-rich water which flows through the interstitial spaces in stream gravels. Embedded sediments can fill these interstitial spaces, limiting essential winter habitat used by juvenile and adult fish for cover from predators, ice scour, and high-velocity stream flows.

Under Alternative 1, trails would continue to be managed under the EARMP, which limits OHV use to two designated OHV trails (Top of the World and Rainy Creek Trails). Alternative 1 allows users to travel off designated trails for game retrieval and does not establish GVW restrictions or close unauthorized OHV trails. This would lead to a potential for adverse effects caused by streambank destabilization, riparian vegetation loss, erosion, and sedimentation from unauthorized and unpermitted trails that parallel or cross clear water portions of the Delta River. However, a recent Delta River Arctic grayling study in this area showed that the density of Arctic grayling (between 240 and 270 mm in fork length) to be the greatest population ever observed among published density estimates for Alaskan riverine Arctic grayling (Gryska 2009). This study suggests that OHV use under current management has had no effect on the population of Arctic grayling in the Delta River. Based on the planning assumption of a 5-10% increase in OHV use over the life of the plan, the BLM does not expect a significant impact to fisheries habitat from OHV use under Alternative 1.

Alternatives 2 (Proposed Action) and 4:

Alternatives 2 and 4 would close and rehabilitate four unauthorized OHV trails in the DWSR corridor. Closing and rehabilitating unauthorized OHV trails will help to prevent the unmanaged proliferation of trails crossing and paralleling the river. Limiting OHV use to designated trails and river crossings would ensure that trails and crossings are located in appropriate, sustainable locations to minimize damage to sensitive fisheries habitat. Additionally, a GVW restriction of 2000 lbs. would reduce the potential for soil compaction and the development of mud holes and rutting caused by larger OHVs. Alternatives 2 and 4

would have the highest potential among all alternatives to reduce stream destabilization, riparian habitat degradation, erosion and sedimentation that could potentially be deposited into the river during heavy rainfall or during spring run-off.

Alternative 3:

Under Alternative 3, there would be four additional designated OHV trails, no GVW limitations on OHV use, and OHVs would be allowed to travel off designated trails for game retrieval. This would increase the potential for streambank destabilization, riparian habitat degradation, erosion, and sedimentation into the river when compared to Alternatives 2 and 4, with possible adverse effects to fish habitat from increased OHV use on four additional designated OHV trails.

4.3.3.2 Effects to fisheries habitat from motorized boating decisions.

Alternative 1 (No Action Alternative):

Under Alternative 1, motorized boating is managed under the 1983 DWSR Management Plan, which recommended a limitation of 15 horsepower motors within the scenic classification segment and no other limitations on motorized boating throughout the rest of the river corridor. The erosion of streambanks and lake shorelines caused by excessive boat wakes pose a number of harmful effects on the aquatic environment. Wakes, or the waves generated by passing boats, strike streambanks and shorelines with surprising force and wash away the soil and vegetation as wave energy is dissipated on the beach. A number of factors contribute to the size of a wake or wave generated by a moving boat. Among these are the size of the channel being traversed, distance from the shore, vessel speed, the condition and shape of the propeller, passenger load, and hull shape. The absence of restrictions or targeted management actions to reduce or limit the use of motorized boats would increase the potential for adverse effects to fisheries habitat relative to Alternatives 2 and 4. However, impacts to fisheries habitat under current management practices have not risen to the level of resource concern, nor does the BLM expect it to during the life of the plan, based on the anticipated increases in motorized boating use discussed in Chapter 4.2 (Planning Assumptions).

Alternative 2 (Proposed Action):

Alternative 2 proposes to manage RMZs 1 and 4 for nonmotorized experiences. Periodic assessments of fishery resource values would be performed in RMZ 4 to determine if motorized boating is detrimentally affecting fishery resource values. Upon a finding that fishery resource values are being adversely affected, an ANILCA closure procedure would be considered to limit motorized boating use in RMZ 4. Although the increase in motorized boating use during the life of the plan is only expected to be approximately 2-5% above current levels, periodic assessments will allow the BLM to protect the fishery resource while refining motorized boating use estimates. The implementation of these management actions will help to protect fisheries habitat in RMZ 4, where concentrations of Arctic grayling occur at record densities. This would have an overall beneficial effect to fisheries resources.

Alternative 3:

Alternative 3 emphasizes motorized boating use with no restrictions, allowing for similar levels of motorized boating as Alternative 1. Alternative 3 would have a greater potential for adverse effects to fisheries habitat caused by streambank destabilization, erosion, and sedimentation from unrestricted motorized boating when compared to Alternatives 2 and 4.

Alternative 4:

Alternative 4 proposes the greatest restrictions on motorized boating within all RMZs by limiting certain types of uses altogether and by establishing horsepower restrictions. This would result in the greatest protection of fisheries habitat compared to all other alternatives.

4.3.3.3 Effects to fisheries resources from identifying ORVs.

Alternative 1 (No Action Alternative):

ANILCA did not identify ORVs for the DWSR. It is a purpose of this planning effort to do so. The specific effects of not identifying ORVs to the fisheries resource are difficult to quantify, but would be primarily the same as the effects described for Alternative 1 throughout Chapter 4.3.3

Alternatives 2 (Proposed Action), 3 and 4:

The effects of proposing Fisheries as an ORV in the *Wild* river classification segment will be beneficial by protecting a world-class Arctic grayling fishery and habitat. Few rivers anywhere in the world can match the quality and quantity of the Arctic grayling fishery in the DWSR. The Fisheries ORV and WSRA management objectives will help to protect sensitive riparian areas, the river's free-flowing character, instream flow, water quality, and important fisheries habitat. The Fisheries ORV is consistent with the National Fish Habitat Action Plan because it is designed to contribute to maintaining or restoring the watershed over the long term.

4.3.4 Lands and Realty

4.3.4.1 Effects of recreation decisions on access to State lands, private land parcels, and mining operations that are located adjacent to the DWSR corridor.

All Alternatives:

Authorized rights-of-way include the PLO 5150 Transportation and Utility Corridor, which is primarily identified with the Trans Alaska Oil Pipeline System (TAPS), but is also reserved as a utility and transportation corridor for future pipeline or electrical transmission needs. In accordance with the provisions of the WSRA and Title XI of ANILCA, new transportation and utility systems may be permitted within WSR corridors. ANILCA Sections 1104 and 1105 provide applicable standards for granting such authorizations. In addition to the consideration of the factors set forth in Section 1104 (g) (2), such an authorization would be granted if (1) it is in the public interest; and (2) it would be compatible with WSR values for which the subject river involved was established. This procedural review would mitigate potential adverse effects from authorizing future transportation and utility systems proposals within the DWSR corridor, and would apply to all alternatives.

Alternative 1 (No Action Alternative):

Current management under Alternative 1 provides for access to state lands, private land parcels, and mining operations adjacent to the river corridor. There are no motorized boating restrictions, and the only restriction to OHV use is the requirement to use designated trails (Top of the World and Rainy Creek Trails) within the river corridor. These trails provide access to state lands and mining operations that are located adjacent to the river corridor.

Alternatives 2 (Proposed Action) and 4:

Alternatives 2 and 4 provide management actions to promote nonmotorized recreational experiences within RMZs 1 and 4, but this does not affect access to state lands, private lands, or mining operations because there are no active mining claims, state lands, or private land within RMZs 1 and 4. Lands adjacent to RMZs 1 and 4 are state-selected lands and current access via foot and the Landmark Gap OHV trail will not change. OHV management actions in RMZ 5 will not limit access to state lands or mining operations because trails that have been traditionally used to access these areas will remain open to OHV use. The closure of four unauthorized OHV trails (Round Tangle Lake Trail, Mile 22 Denali Highway North Trail, and two Eureka Creek Trails) will not adversely affect access to state lands, private lands, or mining operations because they are not trails that have been traditionally used to access these areas.

Alternative 3:

Same as Alternative 1, except four additional OHV trails would be designated open to OHV use. Two new OHV trails in the Eureka Creek drainage would increase access to state lands west of the DWSR corridor. The other two trails in the vicinity of the Denali Highway are short, user created spur trails off the Denali Highway, and would not substantially benefit access to state or private lands if designated open to OHV use.

4.3.4.2 Effects of potential property acquisition by BLM in the DWSR corridor.

All Alternatives:

The EARMP specified that the DWSR would be an emphasis area for the acquisition of private lands through purchase or exchange for the purposes of long-term Federal management and retention. Under all alternatives, property acquisition within the river corridor would be considered by the BLM when private lands are available for purchase. This would have a beneficial effect on recreation resources, as all private lands within the river corridor are located adjacent to the Denali Highway, and if acquired by the BLM, would be managed consistent with the objectives prescribed for RMZ 2. Adverse effects of property acquisition include a negative public perception of the BLM acquiring more land for long term federal ownership that would otherwise be available for private ownership, as these parcels are the only parcels not owned by the BLM, and are located adjacent to the Denali Highway, providing easy access for private development.

4.3.5 Natural Quiet and Natural Sounds

4.3.5.1 Effects of recreation decisions on natural quiet and natural sounds present within the DWSR corridor.

Alternative 1 (No Action Alternative):

Under Alternative 1, artificial noise sources associated with recreational use would persist due to the lack of management actions that would reduce contributing causes of noise. Without any limitations on group size, user capacity, chainsaw use, recreational shooting, and the operation of gasoline powered engines, artificial noise will increase commensurate with increases in visitor use. Anticipated increases in visitor use during the life of the plan would result in additional artificial noise, particularity in RMZs 2 and 3, where most of the projected increased visitor use is likely to occur. As a result, some users in RMZs 2 and 3 may be displaced to other RMZs, thereby reducing user expectations to experience natural quiet and natural sounds in those RMZs as well. This would have an overall adverse effect on natural quiet and natural sounds within the river corridor when compared to all other alternatives, since the other alternatives would prescribe various management actions that would reduce some aspects of artificial noise.

Alternative 2 (Proposed Action):

Alternative 2 will manage for nonmotorized recreational experiences in RMZs 1 and 4, having a beneficial effect of reducing artificial noise sources when compared to Alternatives 1 and 3, which provide for higher levels of motorized boating and airplane landings. Artificial noise associated with OHV use would decrease with the closure of four unauthorized OHV trails in RMZs 2 and 4. Implementing a group size limitation, user capacity limitations, and restrictions on recreational shooting and chainsaw use would have a beneficial effect of preserving natural quiet and natural sounds in all RMZs, as compared to Alternatives 1 and 3, which do not limit the use of chainsaws and allow for larger group sizes and a higher threshold for user capacity limitations.

Alternative 3

Alternative 3 would not prescribe limitations on the use of motorized boats or airplane landings, and OHV use would be allowed on four additional trails, having the overall effect of producing more artificial noise when compared to Alternatives 2 and 4. A larger group size limitation of 12, higher user capacity

thresholds and no restrictions on the use of chainsaws in this alternative would result in more artificial noise in all RMZs, adversely affecting natural quiet and natural sounds. Cumulatively, the anticipated increases in motorized uses during the life of the plan would result in more artificial noise when compared to Alternatives 2 and 4.

Alternative 4

Effects would be the same as Alternative 2, except Alternative 4 proposes more limitations on motorized boating within the river corridor, a smaller group size limitation of 8, and lower user capacity thresholds. Consequently, Alternative 4 would have the greatest beneficial effect on preserving natural quiet and natural sounds when compared to all other alternatives.

4.3.6 Recreation Resources

4.3.6.1 Effects of proposed recreational facility developments on the natural and primitive character of the DWSR.

All Alternatives:

In all alternatives, the Tangle Lakes Campground will be renovated, reducing adverse impacts (ground compaction, creation of satellite campsites, cut trees, etc.) to vegetative resources by establishing designated campsites. The designation of campsites at the campground will also benefit the natural and primitive character of the river corridor. Anticipated increases in facility use of 30% during the life of the plan would be mitigated with the redesign of the Tangle Lakes Campground. The number of available, designated campsites will nearly double, and the campground layout will be designed to accommodate this anticipated increased visitor use.

Alternative 1 (No Action Alternative):

Under Alternative 1, the overall scope and a long term plan for future facility developments within the river corridor would not be identified. Facility developments (campsites, outhouses, boater registration kiosks, etc.) tend to attract increased use, exacerbating impacts associated with ground compaction, creation of new satellite sites and social trails and vegetation trampling. Without any group size limitations or river campsite management standards, the potential exists for increased impacts to river campsites. Heavy use sights and signs of human impacts detract from the natural and primitive character of the river corridor.

Alternative 2 (Proposed Action):

Alternative 2 identifies the scope and a long term plan for future facility developments, with the primary goal of preserving natural setting characters that have been prescribed for each RMZ. Proposed facility management actions in Alternative 2 include removing the outhouse, river survey box, and boater registration kiosk at the river portage in RMZ 4. These facilities tend to attract increased use, exacerbating impacts from ground compaction, creation of satellite sites and social trails, and vegetation trampling. Group size limitations and campsite management actions will reduce the potential for campsites to grow larger, and as a result, bare ground expansion and riverbank erosion will decrease. Campsites with substantial riverbank erosion will be rehabilitated, improving the natural and primitive character throughout the river corridor. In RMZ 5, new facilities will be added at the river takeout, including a river survey box, takeout warning signs, and a boater registration kiosk. These facilities will reduce the naturalness and primitive character of this area when compared to the absence of any facilities, but these facilities will be located next to the parking area where signage and user facilities are generally expected for convenience and safety.

Alternative 3:

Under Alternative 3, one new outhouse and boater registration kiosk would be constructed in the Upper Tangles (RMZ 2), and a river survey box, boater registration kiosk, and increased river warning signage would be installed at the Delta River portage (RMZ 4) and Mile 212.5 Richardson Highway takeout (RMZ

5). These types of sites tend to attract concentrated visitor use, resulting in vegetation trampling, ground compaction, and increased social trails and satellite sites. These impacts may be highly visible and detract from the natural and primitive character. In addition, the placement of permanent fire rings and picnic tables is proposed at heavy use sites throughout the river corridor. Permanent metal fire rings encourage the building of larger fires, which on upland sites can lead to additional tree cutting. Larger group size limitations and campsite management actions under this alternative will increase the potential for river campsites to grow larger more quickly, and bare ground compaction, vegetation trampling, and riverbank erosion will be greater when compared to Alternatives 2 and 4.

The installation of river survey boxes, takeout warning signs, and boater registration kiosks will reduce naturalness and primitive character, but would also be beneficial by increasing visitor safety and visitor use data collection. These facilities will be located in areas already impacted by concentrated use, and are generally expected for convenience and visitor safety. This alternative would provide for more comprehensive river use data collection, and increased river user safety when compared to all other alternatives.

Alternative 4:

Alternative 4 seeks to preserve natural and primitive character by limiting future facility developments to the Tangle Lakes Campground renovation and by removing all signs and existing river facilities in RMZs 1, 2, 4, and 5. The removal of the outhouse and facilities at the river portage and the potential for rehabilitation or closure of heavily impacted campsites would have a beneficial effect of reducing associated impacts (ground compaction, damaged vegetation, litter, etc.). No other facilities would be proposed, and consequently, this alternative is most beneficial in maintaining natural and primitive character when compared to all other alternatives. The elimination of all river signage, boater registration kiosks, and river survey boxes would enhance natural and primitive character, but would also have the adverse effect of reducing the collection of important visitor use information and reducing visitor safety with the removal of river warning signs.

4.3.6.2 Effects of the proposed user capacity management decisions on a user's ability to have positive recreational experiences within the DWSR corridor.

Alternative 1 (No Action Alternative):

Alternative 1 offers no strategies to reduce social impacts from increased visitor use. Data discussed in Chapter 3 (Figure 3) shows that current visitor use levels have resulted in encounter levels that are approaching, or have already exceeded, preferred encounter rates. Table 5 shows that on some segments of the river, the preferred setting is more primitive than the available setting that currently exists. Anticipated increases in visitor use during the life of the plan would primarily be associated with the developed facilities (RMZ 3), but a portion of this increased use will be evident on the lakes and river system (RMZs 1, 2, 4, and 5). As unmanaged visitor use levels increase, social impacts that exceed user preferences, and possibly user tolerances, can be expected. This would result in a lower visitor experience quality rating, and would change the type of experience offered on some river segments and during some visitor use seasons, particularly within RMZs 1 and 4. Lower quality or a change in expected recreational experiences may displace users to other river segments, visitor use seasons, or other areas entirely. Higher use levels will also create increased social conflicts among users, particularly between motorized and nonmotorized users.

Alternative 2 (Proposed Action):

Alternative 2 would manage increased visitor use on the lakes and river by implementing an adaptive management approach, based on the level of camp encounters, camp sharing, and camp competition for overnight use. An encounter standard of "less than 20% of user days that groups are required to camp within sight and sound, pass up occupied designated campsites, or shared designated campsites due to campsites being occupied" is the preferred encounter rate, based on the 2005 Delta River User Survey (Whittaker and Shelby, Delta National Wild and Scenic River, 2005, pg.64). Survey data shows that river users are willing to pass up campsites approximately 20% of the time before it begins to negatively affect their recreational experience. Encounter rates have not been documented on the Delta River, but given

the relatively low use levels and number of available campsites, it is believed that the encounter rate for overnight use is currently less than 5%.

The prescribed adaptive management approach would be implemented in phases, requiring two consecutive years of exceeding the standard before the next phase is implemented. Phase I includes designating campsites, providing a campsite map, and a group size limitation of 10 people per campsite (larger groups would still be allowed with written authorization). Designating campsites and providing a campsite map would allow users to choose campsites to reduce camp encounters and camp competition and would help to control the development of user-created campsites. A group size limitation would help reduce social impacts (noise, congestion at portages, appearance of “tent cities”, etc.) commonly associated with large groups. Considering the current low use levels and assuming an encounter rate of 5%, it would require an increase of at least four times (400%) as many users over two consecutive years to proceed to Phase II (voluntary registration system), eight times (800%) to proceed to Phase III (mandatory registration system), and twelve times (1200%) to proceed to Phase IV (mandatory permit system).

An adaptive management approach based on encounter standards would benefit a user’s ability to have positive recreational experiences while addressing increased use levels within the river corridor that are anticipated during the life of the plan. Adverse effects of implementing a user capacity management system would be primarily associated with the displacement of users who are not willing to participate in voluntary registration systems and who would perceive a mandatory permit system as limiting their right to guaranteed access to public lands.

Alternative 3:

Alternative 3 allows for higher encounter standards (less than 40% of user days) and larger groups sizes (group size limitation of 12), and delays efforts to implement management actions that would address encounter impacts. Allowing higher encounter standards would begin to degrade some recreational experiences, and may result in the displacement of users who are seeking more primitive recreational experiences, particularly in RMZs 1 and 4. With higher encounter standards, use levels on the river would continue to rise until they leveled off at a point where users were being displaced due to overcrowding and encounter impacts exceeding user tolerances. This would have an adverse effect on some user’s ability to have positive recreational experiences and for the BLM to meet prescribed setting characteristics. Users who are not seeking primitive recreational experiences would be more likely to use the river corridor, as the experience setting would shift towards the semiprimitive and roaded natural recreational opportunity spectrum experiences.

Alternative 4:

Management actions proposed in Alternative 4 are primarily the same as Alternative 2, except that Alternative 4 prescribes lower encounter standards (less than 10% of user days) and smaller group sizes (group size limitation of 8), and accelerates efforts to implement management actions that would address encounter impacts. The lower encounter standard and smaller group sizes would reduce overall users within the river corridor, resulting in fewer impacts to campsites and less displacement of users who are seeking more primitive recreational experiences when compared to all other alternatives. Adverse effects of implementing a user capacity management system would be primarily associated with the displacement of users who are not willing to participate in voluntary registration systems and who would perceive a mandatory permit system as limiting their right to guaranteed access to public lands.

4.3.6.3 Effects of proposed recreation management decisions regarding litter, human waste, fire rings, and educational/interpretational information on a user’s ability to have positive recreational experiences within the DWSR corridor.

Alternative 1 (No Action Alternative):

Under Alternative 1, there is no specific strategy to address the management of litter, human waste, and fire rings. As a result, social impacts continue to occur within the river corridor. Campsites with excessive litter, human waste, and multiple fire rings detract from the natural and primitive character of the river corridor, and adversely affect a user’s ability to have positive recreational experiences. The lack of a

clearly defined educational and interpretational emphasis has made it difficult to increase LNT educational awareness, resulting in behaviors that approach or have exceeded user tolerances for these impact issues.

Alternative 2 (Proposed Action):

Alternative 2 would manage litter by implementing an adaptive management approach, with actions that include increased education (Phase I), additional cleanup patrols (Phase II), and the requirement to use firepans and the removal of ash and unburned litter (Phase III), if standards are exceeded for two consecutive years between each phase. Almost all of the litter found within the river corridor is partially burned material left behind in fire rings, which can be greatly reduced by implementing a firepan requirement. Users will be less likely to burn waste in a firepan, resulting in cleaner campsites and a more positive recreational experience. Increased education and cleanup patrols are methods that are less intrusive and are generally well received by users. A firepan requirement may displace some users who are not willing to pack out their own litter and ash to other areas that do not have firepan requirements. Preliminary monitoring conducted from 2006-2009 has shown that approximately 24% of campsites monitored have had litter present. At current visitor use levels, the proposed litter standard of 20% has already been exceeded, and it is likely that additional cleanup patrols (Phase II) will need to be implemented in the near future if increased education is not effective.

Human waste is an issue that has obvious health and safety considerations and a majority of respondents in the 2005 Delta River User Survey rate the presence of human waste and toilet paper as having the greatest impact to their recreational experience. Past monitoring of human waste shows that current levels already exceed user tolerances (10%), resulting in potential health and safety considerations and reducing positive user experiences. Alternative 2 would manage human waste by implementing an adaptive management approach, with actions that include increased education and requiring commercial guides to use portable toilets (Phase I), additional cleanup patrols (Phase II), and a portable toilet requirement (Phase III), if standards are exceeded for two consecutive years between each phase. Management actions are designed to reduce levels of human waste, all of which would have a beneficial impact to recreational experiences. Increased education and cleanup patrols are generally well received by users. A portable toilet requirement and the eventual removal of the outhouse at the river portage may displace some users who are not willing to pack out their own wastes to other areas that do not require portable toilets. Preliminary monitoring conducted from 2006-2009 has shown that approximately 15% of campsites monitored have had human waste present. At current visitor use levels, the proposed human waste standard of 10% has already been exceeded, and it is likely that additional cleanup patrols (Phase II) will need to be implemented in the near future if increased education is not effective.

Alternative 2 would manage multiple fire rings by implementing an adaptive management approach, with actions that include dismantling all but one fire ring per site and increased education (Phase I), and the eventual requirement to use portable firepans (Phase II), if standards are exceeded for two consecutive years between each phase. Rock fire rings promote the cutting of larger fuels than would be required with the use of portable firepans, and leave unsightly scars in campsites that are nearly impossible to rehabilitate. Firepans use smaller pieces of wood, resulting in less vegetation damage, ground scarring, blackened rocks, and litter left behind in fire rings. Wildfire potential is higher with rock fire rings than with firepans, since fires must be completely extinguished before packing away the firepan and leaving camp. Increased education and cleanup patrols are generally well received by users. A firepan requirement may displace some users who are not willing to carry a firepan to other areas that do not have firepan requirements. Preliminary monitoring conducted from 2006-2009 has shown that approximately 5% of campsites monitored have had multiple fire rings. At current visitor use levels, it is likely that increased education would be effective to maintain the proposed fire ring standard of 20%, and that a firepan requirement would be unlikely in the future unless visitor use levels increase significantly during the life of the plan.

The implementation of a well defined educational/interpretational program will have a beneficial effect of increasing LNT educational awareness throughout the river corridor. This will help to reduce behaviors that threaten to exceed user tolerances for these impact issues, and will help to promote a better understanding of the archaeological significance and subsistence lifestyle opportunities that are present within the river corridor.

Alternative 3:

Actions to address litter in Alternative 3 are the same as same as Alternative 2, except that firepans would not be required, and educational efforts would be used to reduce impacts. Increased education and cleanup patrols are methods that are less intrusive and are generally well received by users, but if education is not effective, litter would continue to accumulate at campsites, having an adverse effect on recreational experiences.

Actions to address human waste in Alternative 3 emphasize education, but portable toilets would not be required. One outhouse would be added in RMZ 2. This additional outhouse would help to alleviate human waste concerns in RMZ 2, but would not address human waste at other locations in the river corridor. Outhouses are very difficult to maintain and result in additional adverse impacts to vegetation, including trampling, social trails, and satellite sites in the vicinity of the outhouse. Fewer users would be displaced by not having a portable toilet requirement, but if education is not effective, the presence of human waste at river campsites would persist, having an adverse effect on recreational experiences.

Actions to address multiple fire rings in Alternative 3 emphasize education, but do not require the use of firepans, and allow chainsaws and the cutting of standing dead trees. Wildfire potential will be higher with rock fire rings than with firepans, and rock fire rings will lead to increased vegetation damage, ground scarring, blackened rocks, and litter left behind in fire rings. Fire scarring will continue to persist at campsites if education is not effective, and more trees will be cut within the river corridor, leaving stumps that will reduce scenic qualities. Fewer users would be displaced without a firepan requirement, but negative impacts would still occur at campsites, having an adverse effect on recreational experiences.

The effects of implementing a well defined educational/interpretational program are the same as Alternative 2.

Alternative 4:

Methods used to address litter, human waste, and fire rings in Alternative 4 are the same as Alternative 2, except that management actions will occur sooner if monitoring shows that standards are being exceeded. Effects would be the same as Alternative 2. It is likely that more users would be inconvenienced by the requirements for portable toilets and fire pans.

The effects of implementing a well defined educational/interpretational program are the same as Alternative 2, except that interpretive displays would not be installed on nonmotorized trails. This would have a beneficial effect of creating the most primitive and pristine environment, but users would not be able to gain an awareness and understanding of archaeological resources and subsistence lifestyles in the river corridor.

4.3.6.4 Effects of proposed BBM decisions on preserving a diversity of recreational experiences within the DWSR corridor.

Alternative 1 (No Action Alternative):

The absence of BBM recreation decisions in Alternative 1 does not satisfy current BLM recreational planning requirements. BBM is a recreational planning approach that the BLM used to guide the Delta River SRMA planning process. The effects of not using the BBM planning approach are approximately the same as Alternative 1 for the various resource areas throughout Chapter 4.

Alternatives 2 (Proposed Action), 3 and 4:

Alternatives 2, 3 and 4 would maintain a diversity of recreational experiences in the Delta River SRMA by implementing the proposed BBM decisions and creating five distinct RMZs. The creation of RMZs helps to ensure that specific activities, experiences and benefits are targeted for management and that specific ROS classes are applied to each RMZ, providing for a diversity of recreational opportunity spectrum experience settings that include the primitive, semiprimitive nonmotorized, semiprimitive motorized and roaded natural settings. Without the designation of RMZs, there is nothing to guide management

activities towards beneficial outcomes, possibly leading to user displacement due to the loss of recreational diversity.

4.3.6.5 Effects to recreation resources from identifying ORVs.

Alternative 1 (No Action Alternative):

ANILCA did not identify ORVs for the DWSR. It is a purpose of this planning effort to do so. The specific effects of not identifying ORVs to recreational resources are difficult to quantify, but would be primarily the same as the effects described for Alternative 1 throughout Chapter 4.3.6.

Alternatives 2 (Proposed Action), 3 and 4:

Proposing Recreation as an ORV throughout all river classification segments will be beneficial by ensuring that recreational management is based on clearly defined objectives; providing a foundation for future planning, management, and monitoring of recreational activities within the DWSR corridor. Management objectives will seek to provide a diversity of recreational experiences, while preserving the river in its immediate, natural environment. Protections provided by the WSRA will ensure that ORVs are maintained and enhanced for future generations.

4.3.7 Scenic Resources

4.3.7.1 Effects of the proposed recreational facility developments on scenic resources.

All Alternatives:

Under all alternatives, the Tangle Lakes Campground will be renovated to address resource impacts to soils and vegetation and to meet the current demand of recreational use. Areas with impacted vegetation and soils will be revegetated, campsites and gravel travel routes will be defined for vehicular travel, and facilities will harmonize with the surrounding environment. All of these actions will benefit scenic resources.

Alternative 1 (No Action Alternative):

Alternative 1 would not establish group size limitations or river campsite management objectives, and the potential would be high for unmanaged river campsites to grow larger, increasing bare ground disturbance and riverbank erosion. The average group size for the Delta River through-trip is 4 people; Upper Tangles is 3 people. Even with the current average group sizes being relatively low, impacts at campsites are evident. Heavy use sights with substantial riverbank erosion can detract from scenic qualities due to the visibility of impacts from the river.

Alternative 2 (Proposed Action):

Under Alternative 2, actions identified for river campsite management and a group size limitation (10) would reduce the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce riverbank erosion, bank trampling, social trail development, satellite sites, and bare ground expansion within campsites, benefitting scenic resources. During the life of the plan, a group size limitation of 10 people would exclude approximately 6 larger groups annually, reducing the potential for adverse scenic impacts associated with campsite expansion as a result of large groups. The potential for impacts to scenic resources would be less than Alternatives 1 and 3, but slightly higher than Alternative 4, due to differences in campsite management actions and a larger group size limitation in this alternative.

Alternative 3:

Alternative 3 would also identify management actions for river campsite management and group size limitations, but the group size would be larger (12) and campsite management actions would allow for the creation of additional campsites. Existing heavy and moderate impact sites would be hardened and

expanded to accommodate larger groups and increased use. Light and moderate impact sites may develop into heavy impact sites, adversely affecting scenic resources. During the life of the plan, a group size limitation of 12 people would exclude approximately 3 larger groups annually, resulting in a higher potential for adverse scenic impacts associated with large groups when compared to Alternatives 2 and 4 that have smaller group size limitations. One additional outhouse in RMZ 2 is proposed. This outhouse could be located out of sight of the river; however, secondary effects of outhouses include increased use adjacent to the outhouse, with associated impacts resulting in ground compaction, social trails and satellite sites, and vegetation trampling. These secondary effects are highly visible and would adversely impact scenic resources.

Alternative 4:

Under Alternative 4, actions identified for river campsite management and a smaller group size limitation (8) would minimize the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce riverbank erosion, bank trampling, social trail development, satellite sites, and bare ground expansion within campsites. During the life of the plan, a group size limitation of 8 people would exclude approximately 12 larger groups annually, having the highest potential among all alternatives to reduce adverse scenic impacts associated with campsite expansion as a result of large groups. Elimination of the outhouse at the river portage and associated visual impacts (bare ground, trampled vegetation, social trails), combined with the potential for the rehabilitation or closure of heavy use campsites would have a beneficial effect on scenic resources. The elimination of all river signage, boater registration kiosk, and river survey boxes would enhance scenic resources along the river, resulting in a more primitive viewshed, but would also have the adverse effect of reducing the collection of important visitor use information and decreasing visitor safety with the removal of river warning signs.

4.3.7.2 Effects of travel management decisions on scenic resources.

Alternative 1 (No Action Alternative):

Under Alternative 1, the only designated OHV trails within the river corridor are the Top of the World and Rainy Creek Trails. All other OHV trails existing within the river corridor are unauthorized. The unauthorized proliferation of OHV trails has the potential to adversely impact scenic resources because trail braiding results in large areas of erosion and vegetation disturbance that was not present before these trails were pioneered, particularly on hillsides where trails access the river. In addition, the absence of designated nonmotorized trails has resulted in numerous user-created hiking trails adjacent to the developed facilities. Rather than having defined, designated nonmotorized trails that tend to concentrate use to one particular area, the current situation of spur trails accessing many of the ridges within the viewshed has resulted in adverse impacts to scenic resources.

Alternatives 2 (Proposed Action) and 4:

Alternatives 2 and 4 propose the closure and rehabilitation of four unauthorized OHV trails. The amount of area that would be protected by closing four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). This will benefit scenic resources by protecting the viewshed from further visual impacts, while allowing these unauthorized trails to rehabilitate to their natural condition. Limiting OHV use to designated trails would ensure that OHV trails are located in appropriate, sustainable locations to minimize damage to scenic resources. A GVW restriction of 2000 lbs. would reduce potential impacts to scenic resources, as soil compaction and the shear forces caused by larger OHVs can alter hydrologic patterns and increase erosion and sedimentation. This alternative reduces the potential for stream destabilization, riparian habitat degradation, and a reduction in erosion and sedimentation from OHV use, benefiting scenic resources. The designation of nonmotorized trails will concentrate use to established trails that are designed in a sustainable manner, with consideration for protecting scenic resources. Trail spurs will be closed and rehabilitated, improving overall scenic qualities within the viewshed.

Alternative 3:

Alternative 3 provides increased opportunities for OHV use by designating four additional OHV trails, not establishing GVW restrictions, and allowing travel off of designated trails for game retrieval. The amount of area affected by the four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and

5). These actions would adversely affect scenic resources by creating additional impacts commonly associated with OHV use, such as trail scarring, rutting, and braiding, altering the scenic viewshed. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur. The designation of nonmotorized trails will benefit scenic resources by concentrating use to established trails that are designed in a sustainable manner, with consideration for protecting scenic resources. Trail spurs will be closed and rehabilitated, improving overall scenic qualities within the viewshed.

4.3.7.3 Effects to scenic resources from identifying ORVs.

Alternative 1 (No Action Alternative):

ANILCA did not identify ORVs for the DWSR. It is a purpose of this planning effort to do so. The specific effects of not identifying ORVs to scenic resources are difficult to quantify, but would be primarily the same as the effects described for Alternative 1 throughout Chapter 4.3.7.

Alternatives 2 (Proposed Action), 3 and 4:

The effects of proposing Scenic Resources as an ORV in all river classification segments will be beneficial by ensuring that scenic values are considered in future proposed developments within and adjacent to the river corridor. Site-specific NEPA analysis would address the potential effects to scenic resources when a proposed development actually occurs, and mitigation measures would be identified that protect and enhance the Scenic Resources ORV.

4.3.8 Soil Resources

4.3.8.1 Effects of OHV management decisions on soil resources.

Alternative 1 (No Action Alternative):

Under Alternative 1, the only designated OHV trails within the river corridor are the Top of the World and Rainy Creek Trails. All other OHV trails currently present within the river corridor are unauthorized trails. Unauthorized OHV trails have a high potential to adversely impact soil resources as a result of erosion, sedimentation, and compaction. The most serious and permanent impact from OHVs is soil erosion, with water being the primary displacement mechanism. While soil compaction may recover to some degree during periods of non-use, erosion usually continues once started. Most OHVs have powerful motors and deeply treaded tires. When the tires spin, they displace large amounts of soil quickly, removing vegetation and soils that can create or accelerate rutting. This is especially evident on steep slopes and wetland crossings. The displaced soil often finds its way into waterways, resulting in increased turbidity and sedimentation. This can negatively impact water quality and numerous aquatic organisms. Alternative 1 does not formally identify and rehabilitate unauthorized OHV trails, and consequently, would adversely impact soil resources.

Alternatives 2 (Proposed Action) and 4:

Alternatives 2 and 4 propose the closure of four unauthorized OHV trails, OHV limitations of 2000 lbs. GVW, and the requirement to stay on designated OHV trails. The amount of area that would be protected by closing four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). Limiting OHV use to designated trails would preserve existing OHV access while ensuring that trails are located in appropriate, sustainable locations to minimize damage to soil resources. A GVW restriction of 2000 lbs. would reduce potential impacts to soil resources, as soil compaction and the shear forces caused by larger OHVs can create mud holes that alter hydrologic patterns and increase erosion and sedimentation. Adverse impacts to soils under this alternative would be less than under Alternatives 1 and 3.

Alternative 3

Alternative 3 provides increased opportunities for OHV use by designating four additional OHV trails, not establishing GVW limitations, and allowing travel off of designated trails for game retrieval. Effects to soils would be the same as Alternative 1. The amount of area affected by the four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). Since there would be more trails open to OHV use, it is anticipated there would be the greatest adverse impacts to soils under this alternative. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur.

4.3.8.2 Effects of campsite management decisions on soil resources.

Alternative 1 (No Action Alternative):

Alternative 1 would not establish group size limitations or river campsite management actions, and the potential would be high for bare ground disturbance, soil compaction, riverbank erosion, and the development of social trails and satellite sites within unmanaged river campsites. The average group size for the Delta River through-trip is 4 people; Upper Tangles is 3 people. Even with the current average group sizes being relatively low, soil impacts at campsites are evident.

Alternative 2 (Proposed Action):

Under Alternative 2, actions identified for river campsite management and a group size limitation (10) would minimize the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce riverbank erosion, bank trampling, social trail development, satellite sites, bare ground disturbance and soil compaction within campsites. During the life of the plan, a group size limitation of 10 people would exclude approximately 6 larger groups annually, reducing the potential for adverse soil impacts associated with campsite expansion as a result of large groups. The potential for adverse impacts to soil resources would be less than Alternative 3, but slightly higher than Alternative 4, due to differences in campsite management actions (creation of additional campsites) and a larger group size limitation in this alternative.

Alternative 3:

Alternative 3 would also identify actions for river campsite management and a group size limitation, but the group size would be larger (12) and campsite management actions would allow for the creation of additional campsites. Existing heavy and moderate impact sites would be hardened and expanded to accommodate larger groups and increased use. Light and moderate impact sites may develop into heavy impact sites, leading to increased adverse soil impacts including bare ground disturbance, soil compaction, and trampling as a result of larger groups and additional campsites. During the life of the plan, a group size limitation of 12 people would exclude approximately 3 larger groups annually, resulting in a higher potential for adverse soil impacts when compared to Alternatives 2 and 4 that have smaller group size limitations.

Alternative 4:

Under Alternative 4, actions identified for river campsite management and a smaller group size limitation (8) would minimize the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce riverbank erosion, bare ground disturbance and soil compaction. Additional campsites would not be created under this alternative, and associated soil impacts (bare ground, compaction, and trampling), combined with the potential for rehabilitation or closure of heavy use campsites, would have a beneficial effect on soil resources. During the life of the plan, a group size limitation of 8 people would exclude approximately 12 larger groups annually, having the highest potential among all alternatives to reduce adverse soil impacts associated with campsite expansion as a result of large groups.

4.3.9 Subsistence

4.3.9.1 Effects of the proposed recreation management decisions to subsistence use of fish and wildlife in the DWSR corridor.

Subsistence use of fish and wildlife is a protected activity within the DWSR corridor (ANILCA Title VIII, 50 CFR §100.3.c). The BLM Glennallen Field Office has delegated authorities to implement regulations and manage permits for subsistence uses within the DWSR corridor. The BLM is required by ANILCA Title VIII, Section 810 to consider any potential impacts to subsistence activities, resources, or impacts to access for subsistence activities from the alternatives. These impacts are discussed in a Section 810 Evaluation Report. The complete Section 810 Evaluation for this plan can be found in Appendix 8.2.

4.3.10 Travel Management

4.3.10.1 Effects of travel management decisions on the natural and primitive character of the DWSR corridor and on preserving a diversity of recreational experiences.

All Alternatives:

Management regarding the use of pack animals, mountain bikes (mechanized travel), snowmachines, and dog mushing will not change in any of the alternatives. These uses rarely occur within the river corridor and current impacts are low, offset by the positive benefit of maintaining a diversity of recreational experiences. As discussed in Chapter 4.2 (Planning Assumptions), these uses are not expected to increase significantly during the life of the plan. If the use of snowmachines, mechanized travel, pack animals or dog mushing becomes a natural resource or social conflict problem, these uses may be limited through site-specific trail restrictions developed in the future.

Alternative 1 (No Action Alternative):

Under Alternative 1, the continuation of current OHV management practices would have adverse impacts to the natural and primitive character of the river corridor. Trail braiding, erosion, and vegetation damage is occurring on the Top of the World Trail and at the confluence of Eureka Creek; evidence of OHV use that is inconsistent with protecting the natural and primitive character of the river corridor.

Motorized boating is limited by the existing BLM recommendation of 15 horsepower motors on the Tangle Lakes. Otherwise, motorized boating in the DWSR corridor is only limited by natural barriers in the river. Technological advancements in motorized watercraft during the life of the plan may lead to increased access in areas that are currently limited by shallow water and natural barriers. This alternative does not regulate motorized boating use, leading to increasing social conflict issues and adversely affecting the opportunity for a diversity of nonmotorized recreational experiences.

Airplane landings within the river corridor occasionally occur on some of the larger lakes and are primarily associated with the transportation of hunters and fisherman. Noise caused by airplane landings may adversely affect some users seeking solitude and natural quiet, and those expecting a nonmotorized experience may be disrupted by airplane landings. Airplane landings rarely occur in the narrow river channel since there are few areas suitable for airplane landings.

Travel by foot has potential impacts to vegetation and soils, occurring primarily in pristine areas when groups do not spread out and disperse, and when social trails develop within and around river campsites. These adverse impacts have occurred on hillsides adjacent to the developed facilities and at river campsites throughout the river corridor. Impacts to vegetation and soils include erosion, increased sedimentation, and trail scarring, adversely affecting natural and primitive character.

Alternative 2 (Proposed Action):

Alternative 2 will limit the use of OHVs to two designated trails (Top of the World and Rainy Creek Trails), except during periods of adequate snow cover or ground frost. Alternative 2 proposes the closure of four unauthorized OHV trails, OHV limitations of 2000 lbs. GVW, and the requirement to stay on designated

OHV trails. The amount of area that would be protected by closing four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). Limiting OHV use to designated trails will help prevent unauthorized trails while maintaining existing traditional access routes for recreational and subsistence users, resulting in less adverse impacts to the surrounding primitive and natural character. The 2000 lb. GVW limitation is unlikely to affect recreational or subsistence users since vehicles larger than 2000 lbs. GVW have rarely been observed within the river corridor.

Alternative 2 proposes to manage RMZs 1 and 4 for nonmotorized experiences. Targeted management for nonmotorized uses would help to maintain the natural and primitive character found within these RMZs, and would provide additional opportunities for solitude and a greater diversity of recreational experiences. These management actions would also help to mitigate possible adverse social effects caused by the anticipated increased motorized boating use during the life of the plan. Although this increased use is expected to be low (approximately 2-5%), and aircraft landings are expected to be stable throughout the life of the plan, targeting nonmotorized experiences in RMZs 1 and 4 will allow the BLM to promote a diversity of experiences while refining visitor use estimates. The allowance of motorized boating and airplane landings in RMZs 2 and 5 will not have adverse effects to recreational user experience and expectations due to the close proximity of the Denali and Richardson Highways and developed facilities. Users seeking solitude and natural quiet are less likely to be displaced due to associated noise and motorized activity in areas where this is the general expectation.

Alternative 2 will manage foot travel by designating four nonmotorized trails. Formal, maintained hiking trails will provide sustainable routes of travel, with easy access from the Denali Highway and developed facilities. Duplicate and parallel routes will be reduced, enhancing the natural and primitive character of the river corridor. Possible adverse effects from the designation of nonmotorized trails may include increased use levels in these areas, reducing the remote nature and sense of adventure for some people if use levels exceed their expectations. Social trails associated with designated river campsites will be monitored and management actions will help to limit the proliferation of additional social trails at river campsites, having a beneficial effect on natural character and primitive recreational experiences.

Alternative 3:

Alternative 3 will designate four additional OHV trails. The amount of area affected by the four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). OHVs would be allowed to travel off designated trails for game retrieval, and there would be no GVW limit on OHV use. Allowing OHV use on more trails would adversely impact natural and primitive character through increased trail activity. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur.

Alternative 3 does not restrict motorized boating use. Unlimited motorized boating throughout the river corridor will impact the natural and primitive character of the river corridor, particularly in RMZs 1 and 4. Nonmotorized boaters seeking natural quiet and solitude will become displaced, and the available diversity of recreational experiences will be less than Alternatives 2 and 4. Expected increases in both nonmotorized and motorized boating use during the life of the plan, while relatively minor, would further increase these social conflict issues.

Under Alternative 3, airplane landings will not be restricted. Although aircraft landings are expected to remain stable throughout the life of the plan, short-term adverse effects on users seeking solitude, natural quiet, and nonmotorized primitive experiences may occur, temporarily reducing the diversity of recreational experiences within the river corridor for these users.

Effects caused by foot travel will be the same as Alternative 2, except that social trails associated with designated river campsites would increase because management actions to limit social trail development would not be implemented unless resource damage is occurring. This would lead to increased adverse impacts to natural and primitive character when compared to Alternatives 2 and 4.

Alternative 4:

OHV proposals in Alternative 4 are the same as Alternative 2, except that OHV users would be required to park out of sight of the river. This would maintain a more primitive experience along the lower river corridor, benefiting nonmotorized users who are seeking solitude and wilderness characteristics. Adverse effects would include the potential for increased impacts to vegetation and soils where OHVs would be required to park off the trail, particularly in designated river campsites.

Alternative 4 proposes the greatest restrictions on motorized boating within all RMZs by limiting certain types of uses altogether, and by establishing horsepower restrictions. Some motorized boaters would feel excluded from the ability to have any positive recreational experiences because of motorized boating restrictions proposed under this alternative. Conversely, other motorized boaters might feel that the quality of their experience would improve because of the elimination of airboats, hovercraft, and jetskis, and through additional horsepower restrictions. Nonmotorized boaters would realize their full expectations regarding natural quiet and solitude in RMZs 1 and 4.

Prohibiting airplane landings for both recreational and subsistence purposes will limit the ability to access these areas, particularly during hunting season. This would result in a loss of recreational diversity within the DWSR corridor. Users seeking natural quiet, solitude, and a nonmotorized primitive experience would fully realize their expectations with regards to airplane landings within the river corridor. Airplane landings in RMZ 3 have never been observed by BLM due to the lack of suitable landing areas, therefore there would be no effect.

Alternative 4 proposes the designation of only one nonmotorized trail. This would help to maintain a more primitive experience, benefiting users who are seeking solitude and remoteness, but the overall footprint of trail impact areas would increase as use levels increase, adversely affecting natural and primitive character. Effects from the management of social trails in designated river campsites would be the same as Alternative 2.

4.3.11 Vegetation

4.3.11.1 Effects of OHV management decisions on vegetative resources.

Alternative 1 (No Action Alternative):

In Alternative 1, the only designated OHV trails within the river corridor are the Top of the World and Rainy Creek Trails. All other OHV trails currently present within the river corridor are unauthorized trails. The use of OHVs on unauthorized trails can adversely impact pristine upland and riparian vegetation. Impacts may include crushing, breaking, and trampling of vegetation, reducing the capacity to naturally regenerate, increased soil compaction that will stress plants and associated roots, resulting in impaired growth and/or die back. Unauthorized trails under this alternative would continue to exhibit degradation of vegetative resources from continued use and proliferation. Erosion, especially on steep slopes, can prevent the natural reestablishment of vegetation. OHV use on unauthorized trails can also disturb natural conditions in soils and vegetation, facilitating the introduction and spread of noxious weeds. OHVs not only create the disturbance conditions favoring the introduction of non-native invasive weeds, they also act as a vector to carry and spread the weed seeds themselves. A 2008/09 Non-native plant survey of established campsites, trail crossings and river access/egress points determined that the DWSR corridor remains largely weed free, and the few infestations that exist are discrete and belong to weakly invasive species, or species that are widespread in Alaska for which eradication is no longer a realistic goal.

Alternatives 2 (Proposed Action) and 4:

Alternatives 2 and 4 propose the closure of four unauthorized OHV trails, which will protect vegetative resources from additional adverse impacts, while allowing these unauthorized trails to rehabilitate to their natural condition by facilitating re-growth and recovery. The amount of area that would be protected by closing four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). OHV limitations of 2000 lbs. GVW and the requirement to stay on designated OHV trails will further limit

adverse impacts to vegetation and potentially limit the spread of invasive weeds to existing authorized trails. Adverse impacts to soils under this alternative would be less than under Alternatives 1 and 3.

Alternative 3:

Alternative 3 provides increased opportunities for OHV use by designating four additional OHV trails, not establishing GVW limitations, and allowing travel off designated trails for game retrieval. The amount of area affected by the four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). Effects to vegetation would be similar to Alternative 1. This alternative would result in the continued proliferation of unauthorized OHV trails, and has the highest potential for the spread of invasive weeds. Since there would be more trails open to OHV use and travel would be allowed off designated trails for game retrieval, it is anticipated there would be the greatest adverse impacts to vegetation under this alternative. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur.

4.3.11.2 Effects of campsite management decisions on vegetative resources.

Alternative 1 (No Action Alternative):

Alternative 1 would not establish group size limitations or river campsite management actions, and the potential would be high for adverse impacts to vegetative resources. Impacts may include crushing, breaking, and trampling of vegetation, reducing the capacity to naturally regenerate, as well as increased soil compaction that will stress plants and associated roots, resulting in impaired growth and/or die back. The average group size for the Delta River through-trip is 4 people; Upper Tangles is 3 people. Even with the current average group sizes being relatively low, vegetation impacts at campsites are evident.

Alternative 2 (Proposed Action):

Under Alternative 2, actions identified for river campsite management and a group size limitation (10) would minimize the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce adverse impacts to vegetation described in Alternative 1. During the life of the plan, a group size limitation of 10 people would exclude approximately 6 larger groups annually, reducing the potential for adverse vegetation impacts that are associated with campsite expansion as a result of large groups. The potential for impacts to vegetation would be less than Alternative 3, but slightly higher than Alternative 4, due to differences in campsite management actions (creation of additional campsites) and a larger group size limitation in this alternative.

Alternative 3:

Alternative 3 would also identify management actions for dispersed river campsites and a group size limitation, but the group size would be larger (12) and campsite management actions would allow for the creation of additional campsites. Existing heavy and moderate impact sites would be hardened and expanded to accommodate larger groups and increased use. Light and moderate impact sites may develop into heavy impact sites, leading to increased adverse vegetation impacts (described in Alternative 1) as a result of larger groups and the creation of additional campsites. During the life of the plan, a group size limitation of 12 people would exclude approximately 3 larger groups annually, resulting in a higher potential for adverse vegetation impacts when compared to Alternatives 2 and 4 that have a smaller group size limitation.

Alternative 4:

Under Alternative 4, actions identified for dispersed river campsite management and a smaller group size limitation (8) would minimize the potential for light and moderate impacted sites to become heavy impacted sites, and would provide actions to reduce adverse impacts to vegetation described in Alternative 1. Additional campsites would not be created under this alternative, and associated vegetation impacts, combined with the potential for rehabilitation or closure of heavy use campsites, would have a beneficial effect. During the life of the plan, a group size limitation of 8 people would exclude approximately 12 larger groups annually, having the highest potential among all alternatives to

reduce adverse vegetation impacts associated with campsite expansion as a result of large groups. This alternative would have the least adverse impacts to vegetative resources of all alternatives.

4.3.11.3 Effects of decisions regarding the use of firewood gathering on vegetative resources.

Alternatives 1 (No Action Alternative) and 3:

Alternatives 1 and 3 contain no actions to manage the use of vegetative resources for campsite firewood. The cutting of standing dead trees and the use of chainsaws would continue to be allowed, leading to an increase in number of visible tree stumps and a gradual reduction of vegetative canopy cover immediately adjacent to river campsites.

Alternative 2 (Proposed Action):

Alternative 2 would require the use of only dead and down trees for campsite fires and the use of chainsaws would be prohibited for campsite firewood in RMZs 1, 2, and 4. This would likely reduce the number of visible tree stumps adjacent to river campsites, reduce adverse effects to natural quiet, and maintain the over-story vegetative cover immediately adjacent to river campsites. The use of chainsaws would be permitted in RMZ 3 to cut firewood brought from outside the river corridor. This may adversely affect natural quiet for some users, although unlikely given the frequent use of generators and motorized vehicles within the developed facilities. The use of chainsaws in RMZ 5 would be allowed for the cutting of dead and down wood and standing dead at least 200 feet from river's edge. This would benefit users in RMZ 5 by having more access to campsite firewood, but would likely have an adverse effect over time as increased visitor use may ultimately reduce the availability of dead and down wood, leading to increased cutting of live trees once dead and down wood supplies have been exhausted.

Alternative 4:

Alternatives 4 would prohibit the use of chainsaws within the developed facilities in RMZ 3. This would likely benefit users by reducing adverse effects to natural quiet, but would have no effects on visible stumps and vegetative cover immediately adjacent to the developed facilities because of the lack of existing vegetation within RMZ 3. Alternative 4 would require the use of only dead and down trees for campsite fires and the use of chainsaws would be prohibited for campsite firewood in RMZ's 1, 2, 4, and 5. This would likely reduce the number of visible tree stumps adjacent to river campsites, reduce adverse effects to natural quiet, and maintain the over story vegetative cover immediately adjacent to river campsites.

4.3.12 Water Quality

4.3.12.1 Effects to water quality from potential contaminants as a result of motorized boating and human waste disposal decisions.

All Alternatives:

Effects to water quality from motorized boating are difficult to quantify because of the relatively low use levels in the DWSR corridor. Numerous studies have documented the effects of outboard motor exhaust and related pollution from fuel leakage, although most apply to contained water environments, (e.g. lakes and marinas) and were conducted in controlled experimental settings. Considerably less work has examined the impacts of these pollutants in rivers. Even in existing, "closed system" studies, toxic effects on aquatic organisms are generally minimal because 1) the amount of pollution is often small compared to the volume of water; and 2) most hydrocarbons are volatile and quickly disperse (The Effects of Motorized Watercraft on Aquatic Ecosystems, Asplund, 2000). Actual hydrocarbon levels in river systems such as the Delta River depend on many factors: number of powerboats, locations used, timing of use, engine types, engine sizes, engine speeds, river flow rates during usage, etc.

However, a study in Alaska (Kenai River Hydrocarbon Assessment Final Report, 2004) found that powerboat releases caused petroleum hydrocarbons in the Kenai River to approach, and sometimes exceed, state water quality standards. Measureable petroleum hydrocarbons in the Kenai River were

observed whenever over 100 powerboats were present, and levels approached or exceeded state water quality standards when approximately 400 motorboats were present. In documented overflights between 1995 and 2010, the highest number of motorized craft in the DWSR corridor on any recorded day was 22; even on the busiest days (holiday weekends, hunting season), the number of motorized craft rarely exceeds 8-10 boats.

Periodic water quality assessments have been conducted within the river corridor and current levels of motorized boating have not resulted in detectable impacts to water quality. Figure 7 in Chapter 3 shows that the highest average number of motorized craft per day to be 3.4 craft, far below peak use levels documented in the "Kenai River Hydrocarbon Assessment Final Report". Motorized boating use levels for 2009 were estimated at approximately 968 users, or 387 craft (average group size of 2.5 people per group obtained from voluntary registration data). Anticipated increases in motorized boating use during the life of the plan are estimated at approximately 1-5% and would not likely result in adverse impacts to water quality, although periodic assessments and continued recreational monitoring proposed in Alternative 2 would be beneficial to ensure that these planning assumptions have not been exceeded.

Under Alternatives 1 and 3, motorized boating would only be limited by natural constraints within the river (rock gardens, low water, narrow and shallow channels) and by continuing the current BLM recommendation of a 15 horsepower limitation on the Tangle Lakes, likely producing similar motorized boating use levels, although not anticipated to be enough to adversely affect water quality. Alternative 2 proposes to manage RMZs 1 and 4 for nonmotorized experiences, likely resulting in less motorized boating use than Alternatives 1 and 3. Compared to the other alternatives, petroleum hydrocarbons released into the water and associated adverse effects would be less under Alternative 2 than Alternatives 1 and 3, but more than Alternative 4. Alternative 4 proposes the greatest restrictions on motorized boating by limiting certain types of uses altogether, and by establishing seasonal limitations and horsepower restrictions. As a result, petroleum hydrocarbons released into the water would be less under Alternative 4 than all other alternatives.

Alternative 1 (No Action Alternative):

Human waste impacts would be largest under Alternative 1. Use increases are likely to be slightly higher than all other alternatives due to the absence of user capacity limitations and group size limitations. The potential for increased human waste and associated water quality impacts (presence of fecal coliform) is higher, although still expected to remain within state water quality standards.

Alternative 2 (Proposed Action):

Alternative 2 would set standards for human waste management at designated campsites, based on user tolerances. When standards are exceeded, management actions would be implemented, including increased education, requiring guides to carry portable toilets, and ultimately requiring all users to carry portable toilets. Beneficial effects of this proposal would be a decrease in the amount of improperly disposed human waste. Consequently, the potential for human waste (fecal coliform) to enter the river and adversely affect water quality would decrease, thereby benefitting water quality.

Alternative 3:

Alternative 3 would also set standards for human waste management at designated campsites, but does not require river users to utilize portable toilet systems if standards are being exceeded. In addition to one existing outhouse, another outhouse would be installed in RMZ 2. As a result, the occurrence of improperly disposed human waste on the river would be higher than Alternatives 2 and 4, especially in areas without any outhouses nearby.

Alternative 4:

Effects of human waste disposal are generally the same as Alternative 2, except that portable toilets would be required sooner if standards are exceeded. Relatively, the potential for adverse effects to water quality resulting from contaminants would be less under this alternative than all other alternatives.

4.3.12.2 Effects to water quality from potential sedimentation sources including designated campsites, OHV trails and OHV river crossings.

Alternative 1 (No Action Alternative):

Erosion and sedimentation contributions from campsites would be greatest under this alternative (which has no substantial management actions to limit those impacts). In addition, OHV crossings would continue to proliferate, with substantial potential for point source sedimentation during runoff or heavy rainfall. These sediment sources could adversely impact water quality, at least in localized parts of the river (e.g. Top of the World Trail river crossing).

Alternative 2 (Proposed Action):

Alternative 2 manages campsites based on levels of impact at campsites. Over time, these management actions would help to prevent active erosion and sedimentation into the river caused by bank trampling, benefiting water quality. This alternative develops a management strategy for OHV trails and OHV river crossings. Crossings would be permitted based on the location of the crossing in a “hardened” area that would help to minimize sedimentation. The requirement for OHVs to stay on designated trails and a 2000 lb. GVW limitation would help to minimize unauthorized trail development and the potential for sedimentation from poorly located trails and larger vehicles accessing the river column. Four unauthorized trails would be closed and allowed to revegetate. The amount of area that would be protected by closing four unauthorized trails totals approximately 2 acres (1 acre each in RMZs 2 and 5). These actions would help to reduce sedimentation into the river, thereby benefiting water quality.

Alternative 3:

Alternative 3 prescribes campsite management actions that would allow for the creation of additional campsites and the proposed group size limit is larger (12) than Alternatives 2 and 4. Existing heavy and moderate impact sites would be hardened and expanded to accommodate larger groups and increased use. These actions would result in a higher potential for bank trampling and point source sedimentation, thereby increasing potential adverse effects to water quality. Four additional trails in the DWSR corridor would be open for OHV use, with no GVW restrictions and an allowance to travel off designated trails for game retrieval. Under this alternative, it is likely that unauthorized trail proliferation would continue to occur, including unauthorized river crossings, with a high potential for point source sedimentation during runoff or heavy rainfall. The absence of GVW restrictions would allow larger vehicles to cross through the clear water river corridor, increasing sedimentation. These sediment sources would have a high potential to adversely impact water quality. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur.

Alternative 4:

Alternative 4 prescribes many of the same campsite rehabilitation measures as Alternative 2, except that some heavy use sites would potentially be closed, and group sizes would be smaller (8). Closure of heavy use sites and smaller group sizes would minimize sedimentation caused by bank trampling. These actions would help to reduce sedimentation into the river, thereby benefiting water quality. Effects related to OHVs would be the same as Alternative 2.

4.3.13 Wilderness Characteristics

4.3.13.1 Effects of management actions on wilderness characteristics, including naturalness, solitude, and primitive and unconfined recreational opportunities that are found within the DWSR corridor.

Alternative 1 (No Action Alternative):

Under Alternative 1, visitor use within the river corridor would be allowed to increase without any user capacity or group size limitations. Increased visitor use would lead to additional resource impacts

throughout the river corridor, including vegetation trampling, bare ground disturbance, social trails, and satellite sites, adversely impacting naturalness and opportunities for solitude. Social conflicts related to increased visitor use would persist, especially between motorized and nonmotorized users, and opportunities for solitude and primitive and unconfined recreational experiences would decrease as visitor use increases over time. Under Alternative 1, the absence of motorized use restrictions, including unrestricted motorized boating and airplane landings, would adversely affect opportunities for solitude and unconfined recreational experiences. OHV use would continue on unauthorized trails, and users who are seeking areas with wilderness characteristics would likely be displaced to other areas.

Alternative 2 (Proposed Action):

The proposed management actions in Alternative 2 would seek to preserve two specific areas within the DWSR corridor that would be managed for a primitive and semiprimitive nonmotorized experience. RMZs 1 and 4 have been identified as possessing wilderness characteristics, and a targeted nonmotorized management approach in these RMZs would help to preserve the identified wilderness characteristics. The remaining RMZs would be managed for different activities, experiences, and benefits, providing a greater diversity of recreational experiences throughout the river corridor. Both motorized and nonmotorized users would have specific areas targeted for these different opportunities, reducing social conflicts associated with this user conflict pattern.

A group size limitation and encounter standards to address user capacity would help to ensure that visitor use does not exceed tolerable limits, allowing for continued opportunities for solitude and a primitive unconfined recreational experience in RMZs 1 and 4. Chainsaw use would not be allowed in RMZs 1 and 4, where expectations for solitude are the highest among all management zones. Unauthorized OHV trails would be monitored, and if discovered, closed and rehabilitated to preserve the high level of naturalness that is present in RMZs 1 and 4. Public use cabins would not be considered anywhere within the river corridor, and limited facility and portage trail development would harmonize with the natural surroundings. As a result, the proposed implementation actions in Alternative 2 would benefit the wilderness characteristics identified in RMZs 1 and 4.

Alternative 3:

Under Alternative 3, the adverse effects to wilderness characteristics in RMZs 1 and 4 are the greatest, primarily due to the absence of OHV use restrictions. OHV's would be allowed to operate off designated trails and there would be no weight restrictions for OHV use. Unrestricted OHV use would adversely affect opportunities for solitude and unconfined recreational experiences in these areas. Naturalness would be adversely impacted by unrestricted OHV use as OHV trails would likely be pioneered into RMZs 1 and 4 from adjacent management zones, negatively impacting vegetation and soils. Users who are expecting to find wilderness characteristics in RMZs 1 and 4 would likely be displaced to other areas.

Group sizes would be the largest under this alternative, and encounter standards would be relaxed to a 40% encounter rate, allowing for higher encounter levels before management actions to address user capacity are initiated. Anticipated increases in visitor use during the life of the plan, combined with increased marketing of the area to a wider audience, would further intensify this effect, particularity in RMZs 1 and 4, thereby reducing opportunities for solitude. There would be more facility development in RMZs 1 and 4 under Alternative 3, including developed day use facilities, public use cabins, new campsites, and increased development at the river and lake portages. Increased facility development would adversely affect naturalness and solitude when compared to all other alternatives. Chainsaw use would be allowed in Alternative 3 in RMZs 1 and 4, adversely impacting solitude.

Alternative 4:

The proposed implementation actions in Alternative 4 would provide the most beneficial effects to the identified wilderness characteristics in RMZs 1 and 4 when compared to all other alternatives. Motorized boating, airplane landings, and OHV limitations are the most restrictive in Alternative 4; consequently, Alternative 4 would preserve more opportunities for solitude and primitive and unconfined recreational experiences in RMZs 1 and 4 when compared to all other alternatives. Group sizes would be the smallest under this alternative and the user capacity encounter standard would be the most restrictive at a 10% encounter rate, initiating management actions that would address user capacity sooner than the

other alternatives. Chainsaw use would not be allowed within RMZs 1 and 4, where expectations for solitude are the highest among all management zones. OHVs would not be allowed to park within sight of the river, and unauthorized OHV trails would be monitored, and if discovered, closed and rehabilitated to preserve the high level of naturalness that is present in RMZs 1 and 4. Public use cabins would not be considered anywhere within the river corridor, and all existing facility developments in RMZs 1 and 4 would be removed, thereby increasing naturalness.

4.3.14 Wildlife

4.3.14.1 Effects of OHV travel management decisions to moose and caribou.

All Alternatives:

OHV restrictions within the Tangle Lakes Archaeological District (TLAD) limit OHV travel to designated trails. Approximately 45% of the planning area is located within the TLAD; this portion of the TLAD has no identified designated OHV trails, therefore there would be no effect to moose and caribou from OHV use within this portion of TLAD within the river corridor.

Alternative 1 (No Action Alternative):

Under Alternative 1, OHVs would still be allowed to travel off designated trails for game retrieval outside of the TLAD. Approximately 18,800 acres (55%) of the planning area is affected, most of which is in RMZ 5 (16,065 acres). As a result, unauthorized trail proliferation may continue in these areas outside of the TLAD. The effects of OHV use on vegetation and soils increase with the amount of use, especially on active trails; <50 passes per year causes loss of vegetation and soils subsidence (Happe et. al. 1998). Two authorized, designated trails currently access RMZ 5. These trails are the Top of the World Trail and Rainy Creek Trail. The Top of the World Trail accesses the southern portion of RMZ 5, while the Rainy Creek Trail accesses the middle portion of RMZ 5. The northern half of RMZ 5 parallels the Richardson Highway for approximately 27 miles; access to this area could be directly from the highway. Impacts of OHV use to moose and caribou in RMZ 5 include potential habitat fragmentation, disruption of their activity, and disturbance during movement from one area to another. Wildlife utilizes different areas of the DWSR as refugia. Increased disturbance from OHV use may result in site abandonment and increased stress. At current use levels this impact may be negligible, but may increase with additional OHV use on unauthorized trails.

Alternatives 2 (Proposed Action) and 4:

Under Alternatives 2 and 4, four unauthorized OHV trails will be closed and OHVs will not be allowed to travel off designated trails for game retrieval, except during periods of adequate snow cover. The closure of unauthorized trails and the requirement to stay on designated trails may reduce potential habitat fragmentation in RMZs 4 and 5. These management actions would also help to mitigate possible adverse effects caused by anticipated increased OHV use during the life of the plan. In the TLAD, where RMZs 1, 2, 3, and portions of 4 are located, OHVs are already limited to designated trails due to archaeological resource impacts. Within these RMZs, there are no designated OHV trails, and impacts to moose and caribou will have no effect.

Alternative 3:

Under Alternative 3, four additional trails would be designated for OHV use and OHVs would be allowed to travel off designated trails for game retrieval. Under this alternative, unauthorized trail proliferation would continue, increasing the potential for habitat fragmentation. At current use levels this impact is negligible, but may increase with additional OHV use on unauthorized trails. Anticipated increases in OHV use of 5-10% during the life of the plan would compound these effects, particularity on the Top of the World Trail in RMZ 5, where most of the projected increased OHV use is likely to occur.

4.3.14.2 Effects of motorized boating and airplane landing decisions to land birds and waterfowl.

Alternatives 1 (No Action Alternative) and 3:

In general, research has shown the potential for prolonged disturbances to adversely impact nesting or fledgling success of a variety of land birds. Waterfowl and land birds are susceptible to disturbances from human activity, and prolonged disturbance can lead to nest abandonment. The DWSR corridor provides excellent nesting habitat, especially in RMZs 1 and 4 because of the abundance of small lakes, emergent vegetation and low visitor use levels. Bald eagle nest monitoring shows a stable trend in nesting sites throughout the DWSR watershed. Trumpeter swans, considered a sensitive species by BLM, and other waterfowl are known to nest in the Tangle Lakes area.

Current disturbance levels from motorized boating and airplane landings may not have adverse effects on these birds. However, population increase, technological advancements, economic pressure, and other societal changes may result in increased river use. Increased motorized boating and airplane landings may increase the number and the quality of interactions between humans and land birds and waterfowl. Wakes from motorized boats can disturb shore nesting birds. Noise from motorized boats and airplanes may also disturb nesting birds. Because Alternatives 1 and 3 have no limitations on motorized boating and airplane landings, the potential exists for increased disturbance to nesting waterfowl and land birds with increased human visitation, especially in RMZ 1 in the Upper Tangles where large concentrations of waterfowl and trumpeter swans are known to nest.

Alternative 2 (Proposed Action):

Alternative 2 would potentially benefit nesting land birds and waterfowl by managing for nonmotorized experiences in RMZs 1 and 4. Within these RMZ, trumpeter swans and other waterfowl are known to nest. Motorized boating creates larger wakes and more noise than nonmotorized boating, potentially causing nest abandonment and disruption of feeding and fledging activities. Managing for nonmotorized experiences and discouraging motorized boating and airplane landings may help to lessen potential disturbances to young chicks as they emerge from the nest.

Current recreational uses do not show an apparent negative impact on nesting waterfowl. Even with the projected increase in recreational use, it is still unlikely to have a significant effect on nesting waterfowl. However, as a scenario, if we saw order of magnitude increases in motorized boating and floatplane landings in RMZ 1, we would expect nest disturbance to be of such a magnitude that we would observe a marked decrease in nesting pairs or in productivity of trumpeter swans and other waterfowl. Periodic assessments of wildlife resources would be performed in RMZs 1 and 4 to determine if motorized boating and airplane landings are detrimentally affecting wildlife in this area. Upon a finding that wildlife is being adversely affected, an ANILCA closure procedure would be considered to prohibit motorized boating and airplane landings in RMZs 1 and 4. Although this increased use is expected to be minor, monitoring of motorized boating and floatplane landings use will allow BLM to protect wildlife resources while refining use estimates.

Alternative 4:

Alternative 4 proposes the greatest restrictions on motorized boating and airplane landings by limiting certain types of uses altogether, and by establishing seasonal limitations and horsepower restrictions on these activities. Consequently, Alternative 4 would do the most to reduce potential disturbances to land bird and waterfowl nesting activity when compared to all other alternatives. Disturbance of nesting waterfowl from large wakes and loud noise will be avoided. Nest abandonment from these disturbances will likely be minimized.

4.3.14.3 Effects of recreation management decisions on human and bear interactions.

Alternative 1 (No Action Alternative):

Relationships between visitor use levels and human-bear encounters are unknown, but may exist. Human-bear interactions, when involving groups of three or more humans, generally result in fewer injuries and fatalities. This is because bears are more likely to flee when they encounter a large group of people. However, human-bear encounters are unpredictable and the results of these encounters can depend on several factors such as whether a sow and her cubs are involved, or whether a bear was defending a kill. In developed sites, bears are less likely to be seen unless attracted to trash and other human waste. Increased recreational use of the river without a concomitant increase in human waste and litter cleanup patrols in Alternative 1 may result in increased bear visitations in campsites.

Alternative 2 (Proposed Action):

Alternative 2 would implement proactive measures to decrease human-bear encounters by emphasizing education (Leave No Trace, bear safety) and awareness. This alternative proposes potential use limits and management actions for litter and human waste. Human-bear interactions, when involving groups of three or more humans, generally result in fewer injuries and fatalities. In developed sites, bears are less likely to be seen unless attracted to trash and other human waste. Group size limitations, more education, and management actions to control human waste may reduce bear visitations in campsites along the DWSR.

Alternative 3

Alternative 3 also emphasizes increased education, but this beneficial effect could be offset by the potential for increased recreational users on the river, larger group sizes, and the development of additional campsites, thus increasing the likelihood of adverse human-bear encounters.

Alternative 4

Under Alternative 4, education regarding minimum impact camping and bear safety would be similar to Alternative 2; however, through the potential limitation of total users on the river and smaller group sizes, the probability for negative human-bear encounters would be less than all other alternatives.

4.3.14.4 Effects to wildlife resources from identifying ORVs.

Alternative 1 (No Action Alternative):

ANILCA did not identify ORVs for the DWSR. It is a purpose of this planning effort to do so. The specific effects of not identifying ORVs to wildlife resources are difficult to quantify, but would be primarily the same as the effects described for Alternative 1 throughout Chapter 4.3.14.

Alternatives 2 (Proposed Action), 3 and 4:

Wildlife is an important part of the river's ecosystem. Adopting wildlife as an ORV for the *Scenic* river classification segment will provide focused management and protection of the river's immediate environments, and will positively impact wildlife resources because of the added protections provided by the WSRA.

4.4 Cumulative Impacts

The Council for Environmental Quality defines cumulative impacts as " the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (BLM NEPA Handbook H-1790-1). The goal of identifying potential cumulative effects is to provide for informed decisions that consider the total effects (direct, indirect, and cumulative) of alternative management actions. This section characterizes the incremental cumulative effects that potentially arise from external factors, in combination with the direct and indirect effects.

4.4.1 Climate Change

Past, present, and reasonably foreseeable future actions that incrementally contribute to the emission of greenhouse gases within the planning area are produced by the operation of gasoline powered engines. Motorized recreational activities, including the use of OHVs, snowmachines, motorized watercraft, vehicles, aircraft, and generators contribute minor levels of carbon dioxide (CO2) to the atmosphere. Mining operations adjacent to the river corridor would also contribute to the emission of greenhouse gases from power and fuel consumption related to mineral development activities.

Cumulatively, the magnitude of potential greenhouse gas emissions contributed by mineral exploration activities and from the proposed recreational activities in all alternatives would be minor when compared to total greenhouse gas contributions worldwide. It is nearly impossible to estimate the local contribution of greenhouse gas emissions from these activities as changing science regarding climate change and global warming is still being debated. Even though the anticipated emissions of greenhouse gases from the proposed activities are projected to be relatively minor on both a local and global scale, the BLM will need to be particularly sensitive to changes in vegetation, riparian areas, and areas underlain by permafrost, and how these changes affect wildlife habitat. The BLM will also need to be aware of and adjust to changing permafrost and soils conditions within the river corridor through site specific considerations primarily in trails management, but also for any ground disturbing activity that may be proposed within the river corridor.

4.4.2 Cultural Resources

Cumulative actions that most affect cultural resources are related to past and potential future access activities associated with mining development and OHV use, within and adjacent to the DWSR corridor. Past human-induced erosion has included damage to sites covered by thin and fragile layers of windblown sediments. Current or increased levels of OHV use, combined with potential mining development access, may lead to erosion and soil impacts that could impact both known and unknown archaeological sites. One archaeological site at Mile 22 Denali Highway North is currently being impacted by unauthorized OHV use. Two archaeological sites along the Top of the World Trail have been impacted in the past by heavy equipment for the purposes of mining access. Additional OHV use is likely to continue erosion along these trails. This would reduce the potential to yield information that is significant to our understanding of the region's prehistory, and may degrade any eligibility these sites have for the National Register of Historic Places. It is also possible that previously recorded and undiscovered archaeological sites in other portions of the river may be similarly adversely impacted through past and future OHV use, combined with natural erosion processes.

In Alternatives 2 and 4, the closure of unauthorized OHV trails that are currently impacting three known archaeological sites, combined with the past, present and future actions of mining development access and OHV use, would have the least potential of the alternatives to adversely impact these sites and other unknown archaeological sites. This would increase the potential of yielding information significant to our understanding of the region's prehistory and eligibility these sites have for the National Register of Historic Places.

In Alternative 3, the designation of additional OHV trails in areas having known archaeological sites, combined with the past, present and future actions of mining development access and OHV use, has more potential than Alternatives 2 and 4 to adversely impact these sites and other unknown archaeological sites. This would reduce the potential to yield information significant to our understanding

of the region's prehistory and degrade any eligibility these sites have for the National Register of Historic Places.

4.4.3 Fisheries

Past, present, and future actions that have affected aquatic resources and habitat quality throughout the DWSR corridor are primarily related to recreation and placer mining activities. The demand for fisheries resources will increase during the life of the plan, resulting in more pressure on fish populations and fish habitats in the DWSR corridor. Aquatic resource disturbance from mining activities will vary depending on mine design, construction of roads, power line corridors, selection of tailing disposal method, and other factors. Most of these disturbances would occur on State lands, but possibly within the adjacent Delta River watershed.

Future activities associated with mineral development may have adverse effects on drainage patterns, water quality, and riparian vegetation, although this would depend upon the location and area of activity. Disturbance and displacement due to mineral development could be long-term. The removal of streamside riparian-wetland vegetation during mining would result in a loss or degradation of aquatic habitat until proper functioning condition could be reestablished. In general, the time required for riparian-wetland areas to attain proper functioning condition would be dictated by natural processes and may require decades to centuries before it approximates the structure and function of the original aquatic habitat (NCSU 1998; BLM and Montana Dept. of Environ. Quality 1996; BLM 1988).

If road density increases commensurate with mineral development, adverse cumulative impacts may affect fish migration and bedload movement. Bridges, culverts, and low-flow crossings are integral features to road development associated with surface mining. These features can also interfere with stream bedload (substrate) movement, migrations to spawning, feeding, rearing, and overwintering sites if improperly designed. Current concerns related to surface mining and road placement include diverting or eliminating flow from small tributaries that connect lakes and rivers. Fish species that are present in the river that move between these habitat types are vulnerable to impact.

The cumulative impact of unauthorized OHV trails and unrestricted motorized boating activities under Alternatives 1 and 3 may change stream morphology, cause riparian loss or damage, and increase sedimentation into streams. Recreation and travel management actions under Alternatives 1 and 3, combined with past, present, and future actions, may have an overall adverse cumulative effect on fish and fish habitat within the DWSR corridor, although these effects would be localized and unlikely to extend to the regional level.

Under Alternatives 2 and 4, OHV use would be limited to designated trails, unauthorized trails would be closed and rehabilitated, and the use of motorized boats would either be discouraged (Alternative 2) or limited altogether (Alternative 4), contributing to a reduction in cumulative adverse effects to fish habitat through alterations in drainage patterns, degradation of water quality, and riparian loss and/or damage, especially in heavy use areas. Therefore, adoption of the management actions under these alternatives, combined with past, present, and future actions, may have an overall beneficial effect on fish and fish habitat within the DNWSR corridor.

4.4.4 Lands and Realty

Designated trails (Top of the World and Rainy Creek Trails) within the river corridor provide access to state lands and mining operations that are located adjacent to the river corridor. Authorized rights-of-way include the PLO 5150 Transportation and Utility Corridor, which is primarily identified with the Trans Alaska Oil Pipeline System (TAPS), but is also reserved as a utility and transportation corridor for future pipeline or electrical transmission needs. Future development proposals on adjacent State lands would likely result in additional requests for land use authorizations for facilities such as roads, utilities, and operation sites related to mineral development. This depends entirely on the results of exploratory drilling, which are ongoing at this time. Increased mineral development would likely result in new requests for additional mining access routes across the river corridor. Additional rights-of-way may also be requested for the possible development of a natural gas pipeline spur from Delta Junction to Glennallen.

Under all action alternatives, these requests would only be authorized after a thorough review and conformance with Title XI of ANILCA, which provides procedural requirements for new transportation and utility systems within Conservation System Units. This review would mitigate potential adverse effects from authorizing future transportation and utility systems proposals within the DWSR corridor. Therefore, there would be no cumulative effects.

4.4.5 Natural Quiet and Natural Sounds

Past, present, and reasonably foreseeable future actions that may affect natural quiet and natural sounds include recreation development projects, mineral development adjacent to the river corridor, transportation and utility development projects (Alaska Natural Gas Pipeline), and overflights associated with mineral development and military flight operations.

Cumulative adverse impacts to natural quiet and natural sounds would be greatest under Alternatives 1 and 3. RMZs 1 and 4 would not be managed to promote nonmotorized uses, adversely impacting natural quiet and natural sounds. Short term loss of the area's naturalness and solitude from impacts related to motorized activities would likely increase. Alternatives 2 and 4 would be managed to promote nonmotorized recreational opportunities in RMZs 1 and 4, contributing to the preservation of natural quiet and natural sounds, while also providing for a greater diversity of nonmotorized recreational experiences.

4.4.6 Recreation Resources

The DWSR corridor currently provides a diversity of recreation opportunities, conditions that are expected to continue over the life of the plan, regardless of the alternative selected. Historically, the major social conflict issue affecting recreational experiences within the DWSR corridor has been motorized versus nonmotorized uses. As the overall population in the State of Alaska continues to increase, recreation use is expected to increase, especially in road accessible areas like the DWSR corridor. Generally, recreation settings would shift to less primitive recreation classifications with increasing development and desire for motorized access. Future actions that may affect recreation resources include anticipated increases in recreational demand, mineral development, and transportation and utility corridor development projects. All of these reasonably foreseeable future actions have the potential to change recreation settings, recreation access, and availability of recreation resources.

Cumulative effects to recreation resources would be greatest under Alternative 1, which does not have any management actions to address recreational impacts. Loss of the area's naturalness from unmanaged recreational impacts, combined with the potential for increased access from the development of transportation and utility corridors, would adversely impact the natural and primitive character of the river corridor. Alternative 3 allows for higher levels of recreational use and impact levels than Alternative 2 and 4, and when combined with the potential for increased access from the development of transportation and utility corridors, adverse cumulative effects would be greater than Alternatives 2 and 4, but less than Alternative 1. Alternatives 2 and 4 provide a more restrictive approach to managing levels of recreational use and impact levels, and when considered with past, present and reasonably foreseeable actions, Alternatives 2 and 4 would result in reduced adverse cumulative impacts to recreation resources.

4.4.7 Scenic Resources

Past and present actions impacting scenic resources are primarily related to the unauthorized development and proliferation of motorized and nonmotorized trails within and adjacent to the river corridor. Unauthorized trails impact scenic resources because trail braiding results in large areas of erosion and vegetation disturbance that was not present before these trails were pioneered. It is conceivable that mining development will occur adjacent to the DWSR corridor in the future, potentially impacting scenic resources with the increased need for transportation and utility corridor development.

The past, present and future development of mining and utility transportation networks, combined with current and future impacts from OHV use, may lead to changes in existing scenic resources by altering basic visual elements of form, line, color, and texture at the landscape level. While Alternative 1 does provide mitigation measures to protect scenic resources through the development of Required Operating

Procedures for VRM management, it does not directly address the management of unauthorized OHV trails and resulting trail proliferation.

Cumulative impacts to scenic resources as a result of future potential transportation and utility corridor development and increased OHV use will be greatest in Alternatives 1 and 3. Because Alternative 3 provides for the highest number of OHV trails within the planning area, this alternative would have the greatest adverse cumulative impact to scenic resources compared to Alternatives 2 and 4. Alternatives 2 and 4 would not designate any additional OHV trails and would close unauthorized OHV trails that are currently impacting scenic resources. Implementing Alternatives 2 or 4 would result in less potential for trail proliferation, erosion and trail braiding, and when combined with past, present and reasonably foreseeable actions, would result in reduced adverse cumulative impacts to scenic resources.

4.4.8 Soil Resources

Past and present actions impacting soil resources are primarily related to the unauthorized development and proliferation of motorized trails within and adjacent to the river corridor. Unauthorized trails impact soil resources because trail braiding results in large areas of erosion and soil disturbances that were not present before these trails were pioneered. It is conceivable that additional mining development will occur adjacent to the river corridor on state lands and OHV use will slightly increase during the life of the plan. Additional impacts to soil resources may occur with the increased need for transportation networks related to future mining development and unauthorized trail proliferation, leading to changes in existing soil resources.

The cumulative impact of OHV trail management under Alternatives 1 and 3, combined with past, present, and future actions, may have an overall adverse cumulative effect on soil resources. Under Alternatives 2 and 4, OHV use would be limited to designated trails and unauthorized trails would be closed and rehabilitated. This would contribute to a reduction in cumulative adverse effects to soil resources. Therefore, adoption of the management actions under these alternatives, combined with past, present, and future actions, may have an overall cumulative beneficial effect on soil resources in the DWSR corridor.

4.4.9 Subsistence

The BLM is required by ANILCA Title VIII, Section 810 to consider any potential impacts to subsistence activities, resources, or impacts to access for subsistence activities from the proposed action and alternatives. Cumulative impacts are discussed in the Section 810 Evaluation Report. The complete Section 810 Evaluation for this plan can be found in Appendix 8.2.

4.4.10 Travel Management

State lands located adjacent to the river corridor are open to OHVs, subject to conditions for generally allowable uses[3]. Restrictions on the use of OHVs in BLM and State of Alaska managed portions of the TLAD have been implemented to protect archaeological resources. Although there are OHV restrictions on State and Federal lands in the TLAD, the less restrictive OHV use on State lands adjacent to the river corridor may result in additional OHV related impacts, including unauthorized trail proliferation, soil and vegetation damage, loss of primitive and natural character and introduction and establishment of invasive plants within the adjacent river corridor. Reasonably foreseeable future actions associated with

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[3] Using a highway vehicle with a curb weight of up to 10,000 pounds, including a four-wheel-drive vehicle and a pickup truck, or using a recreational-type vehicle off-road or all-terrain vehicle with a curb weight of up to 1,500 pounds, including a snowmobile (or other tracked vehicle), motorcycle or ATV, on or off an established road easement, if use off the road easement does not cause or contribute to water quality degradation, alteration of drainage systems, significant rutting, ground disturbance, or thermal erosion. (Curb weight means the weight of a vehicle with a full tank of fuel and all fluids topped off, but with no one sitting inside or on the vehicle and no cargo loaded. Most highway rated sport utility vehicles are within the weight limit as are most small ATVs, including a basic Argo.) Use of larger off-road vehicles over 1,500 pounds curb weight, and the off-road travel of construction and mining equipment require a permit from DNR. An authorization is required from the ADF&G-Habitat for any motorized travel in fish bearing streams.

transportation and utility corridor development for mining activities, combined with expected increases in OHV use, would compound and expedite these effects.

In Alternative 1, an increase in OHV users and improvements in OHV technology will lead to easier accessibility of remote areas that were previously inaccessible. As this occurs, users searching for a primitive recreation experience will have to venture further into the backcountry to fulfill their expectations. Additional impacts to natural resources including trail braiding, rutting, scarring, and the potential for the introduction of invasive and noxious weeds will increase as OHV use increases. Recent mining exploration and core drilling has been conducted adjacent to the DWSR corridor. Foreseeable future actions associated with overland transportation for mining activities, combined with expected increases in motorized surface transportation, would compound and expedite these effects. Recent increases in aerial operations associated with mining activities and exploration, combined with military or civilian flights, may adversely affect users seeking solitude and natural quiet in all RMZs.

Alternative 2 provides a balanced approach to travel management planning. In the past 5 years, extensive trail rehabilitation and maintenance has taken place on high use trails within the TLAD and lands bordering or accessing the DWSR corridor. These actions, combined with the closure of unauthorized trails, will help to ensure a responsible travel management system while restoring the scenic viewshed to a more natural setting. The designation of formal hiking trails will have a beneficial effect. Dispersed travel will be reduced by designating and maintaining foot trails, and the overall health and appearance of the impacted areas will be improved. Adverse impacts will be reduced by designating motorized and nonmotorized trails, managing RMZs 1 and 4 for nonmotorized recreation and through increased educational efforts related to travel management.

Under Alternative 3, unlimited motorized boating access, aircraft landings, and the designation of four additional OHV trails, combined with potential overland mining access and aerial operations in support of military, civilian, and mining activities will adversely affect natural quiet, solitude, and wilderness characteristics found within the DWSR corridor. Cumulative effects will be the same as Alternative 1.

The cumulative effects of Alternative 4 are the same as Alternative 2, except that Alternative 4 would allow for the implementation of more restrictions on motorized boating and aircraft landings, further reducing potential adverse cumulative effects.

4.4.11 Vegetation

Past and present actions impacting vegetation are primarily related to recreation, mining, and the unauthorized development and proliferation of motorized trails within and adjacent to the river corridor. Impacts to vegetation resources will likely occur with the increased need for transportation and utility corridor development related to future mining and pipeline related development, leading to changes to existing vegetation resources and increased potential for establishment of invasive species.

Cumulatively, the likelihood of invasive species establishment increases as the areas that are open to vehicular access increases. Additional access may provide a means for more invasive plants to enter and colonize within the river corridor, negatively impacting the landscape. The cumulative impacts of vegetation change in Alternatives 1 and 3 are greater than Alternatives 2 and 4 due to the designation of four additional OHV trails and the absence of OHV limitations. The more proactive and intensive OHV management actions in Alternatives 2 and 4, such as limiting OHV use to designated trails and closing and rehabilitating unauthorized trails, will help to mitigate undesirable vegetation changes and may have an overall beneficial effect on vegetation resources in the DWSR corridor.

4.4.12 Water Quality

Past, present, and future actions that may affect water quality throughout the planning area are primarily related to recreational and placer mining activities. The demand for mineral exploration may increase during the life of the plan, resulting in increased pressure on water resources in the planning area. Future development activities associated with mineral development would likely have adverse effects on drainage patterns and water quality, although this would depend upon the location and area of activity. Areas adjacent to the DWSR corridor that are disturbed due to mineral development could have long term impacts to water quality in the DWSR corridor. Depending on the level of disturbance, it could take

decades to centuries before the structure and function of the original aquatic habitat could be reestablished (NCSU 1998; BLM and Montana Dept. of Environ. Quality 1996; BLM 1988). If road density increases over time with mineral development or pipeline activities, resulting sedimentation would affect water quality. In addition to increased sedimentation, bridges, culverts, and low-flow crossings can act as source points for potential contaminants to enter the watershed.

The cumulative impact of OHV trail management and unrestricted motorized boating activities under Alternatives 1 and 3 may increase contaminants within the water column and increase sedimentation into streams. Alternatives 1 and 3 have the least restrictions on OHV access and motorized boating, and when combined with past, present, and future actions, may have an overall adverse cumulative effect on water quality, although these effects would be localized and unlikely to extend to the regional level.

Under Alternatives 2 and 4, OHV use would be limited to designated trails, unauthorized trails would be rehabilitated, and the use of motorized boats would be discouraged or limited through the targeted management of nonmotorized experiences. This may contribute to a reduction in possible adverse cumulative effects to water quality. Therefore, adoption of the management actions under these alternatives, combined with past, present, and future actions, may have an overall beneficial effect on water quality within the DWSR planning area when compared to all other action alternatives.

4.4.13 Wilderness Characteristics

Past restoration and rehabilitation projects to trails and campsites have helped to maintain wilderness characteristics by improving naturally appearing conditions. Adverse cumulative effects to wilderness characteristics would be greatest under Alternative 1. There would be no RMZs identified that would lead to maintenance of wilderness characteristics. The construction of long term or permanent mining facilities such as power lines, permanent roads, gravel pads, material sites, or other structures related to mineral development would result in adverse cumulative impacts to solitude, naturalness, or primitive/unconfined recreational opportunities. Loss of wilderness characteristics would likely occur within and adjacent to the planning area, with reduced opportunities for solitude and adverse impacts to naturalness.

The remaining alternatives all identify the creation of RMZs that would help to maintain wilderness characteristics in two areas (RMZs 1 and 4). The cumulative effects of increased recreational use and mining that are incompatible with wilderness characteristics would be mitigated with the creation of RMZs 1 and 4. User capacity systems developed for each action alternative vary the threshold by which user capacity would be restricted. Alternative 3 generally has the highest threshold (meaning a higher level of camp encounters could be reached before restrictions are implemented). In contrast, Alternative 4 has the lowest threshold; and the threshold for Alternative 2 falls between Alternatives 3 and 4. Therefore, Alternative 4 would be the alternative that best maintains wilderness characteristics, considering the cumulative impacts to those characteristics from increased mining and recreation.

4.4.14 Wildlife

Past and present actions affecting wildlife resources in the planning area generally involve subsistence and sport hunting, recreation, and mining. Moose and caribou hunting in the DWSR corridor is regulated by both state and federal regulations, and current access for hunting and recreation include the use of OHVs and motorboats on the river. Recent mining explorations in adjacent lands will likely result in increased mining activities if sufficient mineral resources are discovered and extraction is economically feasible, leading to potential road construction and power lines across the river corridor.

Under Alternative 1, continued OHV use on unauthorized trails may cause adverse impacts to wildlife by potentially fragmenting wildlife habitat. Disturbance via increased motorized boating and aircraft landings will likely have adverse impacts to nesting waterfowl and trumpeter swans in the Tangle Lakes area. Future roads and power lines associated with potential mining activities may contribute to further habitat fragmentation, although such actions are subject to ANILCA §810 review for compliance with subsistence stipulations. There is also a likely increase in human-bear interactions in this alternative. When combined with past, present, and future actions, this alternative would have an overall adverse cumulative effect on wildlife resources in the DWSR corridor when compared to Alternatives 2 and 4.

Under Alternative 2, OHV use would be limited to designated trails, four unauthorized OHV trails would be closed and rehabilitated, and nonmotorized recreational experiences would be targeted in RMZs 1 and 4. These measures would likely reduce potential adverse cumulative impacts of habitat fragmentation to moose and caribou. Nesting waterfowl may benefit from reduced disturbances in RMZs 1 and 4. Human-bear interactions may still increase with increased visitation, however, combined with past, present, and future actions, this alternative would have an overall beneficial cumulative effect on wildlife resources in the DWSR corridor.

Under Alternative 3, OHV use will still be limited to designated trails, but there would be no restrictions to motorized boating use and aircraft landings. Cumulative impacts of habitat fragmentation to moose and caribou from OHV use would likely increase with the designation of four additional OHV trails, and disturbances to nesting waterfowl from motorized boating use and aircraft landings may also increase. Human-bear interactions may increase due to increased visitation, but would be mitigated by increased educational awareness. When combined with past, present, and future actions, this alternative would have an overall adverse cumulative effect on wildlife resources in the DWSR corridor when compared to Alternatives 2 and 4.

Under Alternative 4, OHV use would be limited to designated trails, four unauthorized OHV trails would be closed and rehabilitated, and motorized boating and aircraft landings would be seasonally limited or prohibited altogether. These measures would likely reduce the cumulative impacts of habitat fragmentation to moose and caribou. Nesting waterfowl may benefit from reduced disturbances from motorized boating and aircraft landings. Human-bear interactions may still increase with increased visitation, however, combined with past, present, and future actions, this alternative would have the greatest beneficial cumulative effect on wildlife resources in the DWSR corridor.

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43 CFR 1610. BLM Planning Regulations.

42 U.S.C. 4321 et seq. National Environmental Policy Act.

43 U.S.C. 1701 et seq. The Federal Land Policy and Management Act of 1976.

7.0 ACRONYMS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ANILCA	Alaska National Interest Lands Conservation Act
BBM	Benefits Based Management
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CIA	Cumulative Impact Area
CFR	Code of Federal Regulations
DWSR	Delta Wild and Scenic River
EA	Environmental Assessment
EARMP	East Alaska Resource Management Plan
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act
GFO	Glennallen Field Office
GIS	Geographic Information System
GMU	Game Management Unit
GPS	Global Positioning System
GVW	Gross Vehicle Weight
IPCC	International Panel on Climate Change
IWSRCC	Interagency Wild and Scenic River Coordinating Council
LNT	Leave No Trace
LWCF	Lands and Water Conservation Fund
MOA	Military Operations Area
OSM	Office of Subsistence Management
NCH	Nelchina Caribou Herd
NEPA	National Environmental Policy Act
OHV	Off Highway Vehicle
ORV	Outstandingly Remarkable Value
PLO	Public Land Order
RFFA	Reasonably Foreseeable Future Action
RMIS	Recreation Management Information System
RMZ	Recreation Management Zone
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
T&E	Threatened and Endangered [species]
TAPS	Trans-Alaska Pipeline System
TLAD	Tangle Lakes Archaeological District
USC	U.S. Code
VRM	Visual Resource Management
WSR	Wild and Scenic River
WSRA	Wild and Scenic Rivers Act

8.0 APPENDICES

8.1 Benefits Based Recreation Management

8.1.1 Overview

Benefits Based Management (BBM) is an approach to recreation planning that focuses on identifying and managing for the primary activities, experiences, and benefits that are attained by various user groups within a given resource area. Traditionally, recreation managers have focused on developing and maintaining recreational activities and facilities by simply providing programs and services and implementing management controls. Managing for beneficial outcomes requires a shift in the focus of recreation management beyond facility developments, management controls, and providing programs and services. In the traditional approach, users gain certain benefits or outcomes from their recreational experiences, but are often disconnected from the planning process for the resource area, as ideas are usually generated without considering the beneficial outcomes of available recreation experiences.

The biggest difference between the traditional approach and the BBM approach is that management objectives can target specific experiences and beneficial outcomes for recreational activities, instead of just simply targeting project development and resource protection. Under the BBM approach, specific experience and benefit outcomes are determined by considering the preferences of both visitors and resident customers, the capacity of each recreation management unit to produce the desired recreation opportunities, the availability of similar opportunities within the immediate market area, and management constraints for the planning area.

8.1.2 Land Use Plan Decisions

The first step in the BBM process is to delineate Special Recreation Management Areas (SRMA) throughout the entire district-wide planning area in a Resource Management Plan (RMP) during the Land Use Planning (LUP) process. A SRMA designation intensifies management of areas where outdoor recreation is a high priority. It helps direct recreation program priorities toward areas with high resource values, elevated public concerns, or significant amounts of recreational activities. Areas with a SRMA designation can be expected to see investments in recreation facilities and visitor services, aimed at reducing resource damages and mitigating user conflicts.

Each SRMA has a distinct, primary recreation-tourism market, as well as a corresponding and distinguishing recreation management strategy. For each SRMA, it is determined whether that primary market-based strategy will be to manage for a *destination* recreation-tourism market, a *community* recreation-tourism market, or an *undeveloped* recreation-tourism market, which is then stated and described in the LUP. Recreation Management Zones (RMZ) are then identified within each SRMA; these zones provide opportunities for different recreational activities and experiences within the SRMA. For each RMZ, the primary activities, experiences, and benefits for that zone are determined through an interactive process with various focus groups and stakeholders who commonly use the area or have a vested interest in the area. After these values are identified, managers can plan their program development and implementation actions to enhance or maintain those sought after outcomes, and the character of recreation settings that foster these outcomes. Using the BBM process, specific setting prescriptions and management actions are created that seek to preserve the identified activities, experiences, and benefits within each RMZ. Each RMZ has four defining characteristics:

1. Each RMZ serves a different recreation niche within the primary recreation market;
2. Each RMZ produces a different set of recreation opportunities and facilitates the attainment of different experiences and benefit outcomes;
3. Each RMZ has a distinctive recreation setting character; and
4. Each RMZ requires a different set of recreation provider actions to meet the strategically-targeted primary recreation market demand.

To address these four defining characteristics listed above for each RMZ, the following LUP allocation decisions must be made at the RMP level for each RMZ that has been designated in the SRMA:

1. Identify the corresponding recreation niche to be served;
2. Write explicit recreation management objectives for the specific recreation opportunities to be produced and the outcomes to be attained (activities, experiences, and benefits);
3. Prescribe recreation setting character conditions required to produce recreation opportunities and facilitate the attainment of both recreation experiences and beneficial outcomes, as targeted above (the recreation opportunity spectrum is one of the existing tools for both describing existing setting character and prescribing desired setting character); and
4. Briefly describe an activity planning framework that addresses recreation management, marketing, monitoring, and administrative support actions (e.g., visitor services, permits and fees, recreation concessions, and appropriate use restrictions) necessary to achieve explicitly-stated recreation management objectives and setting prescriptions (see Implementation Decisions subsection below).

8.1.3 Implementation Decisions

After the primary market-based strategy and RMZs have been developed in the LUP, implementation plans are then completed for each SRMA. SRMA implementation plans are more specific, and describe in detail the management actions, marketing, monitoring, and administrative support actions for each RMZ within the designated SRMA. Specific management actions that are developed in the implementation plan will produce a recreation management scheme that can enhance the desired benefits and outcomes, while providing the infrastructure for sustainable tourism and recreation. For each RMZ, four types of recreation actions must be addressed in the SRMA implementation plan. These actions include:

1. Recreation administration (regulatory; permits and fees, use restrictions; data management; and customer liaison).
2. Recreation management of resources, visitors, and facilities (i.e., developed recreation sites, roads and trails, recreation concessions, etc.);
3. Recreation marketing (including outreach, information and education, promotion, interpretation, environmental education; and other visitor services);
4. Recreation monitoring (including social, environmental, and administrative indicators and standards);

8.1.4 Market Strategy and Recreation Management Zones in the EARMP

The following tables and map depict the market strategy and RMZs for the Delta River SRMA that were developed in the EARMP in 2006. ***The LUP Amendment will revise these decisions through this EA.***

EARMP Market Strategy for the Delta River SRMA

Primary Market Strategy	Primary Market
Destination	Alaska Residents
Tourism Market Product	
The Delta River SRMA includes the Delta National Wild and Scenic River which consists of the upper stretch of the Delta River, all of the Tangle Lakes, and the Tangle River. This SRMA is located and can be accessed approximately 21.5 miles west of the Richardson Highway on the Denali Highway. The Delta River watershed is located in the Alaska Range in south-central Alaska. The watershed drains an area of about 150,000 acres and contains a network of 160 miles of streams and 21 lakes. The Delta flows through the Alaska Range and joins the Tanana River, which flows into the Yukon River. The Delta River is recognized for its outstanding scenery, natural and cultural values, and exceptionally clean waters. One can expect a true Alaskan wilderness experience floating through class I-IV rapids with sightings of wildlife and exceptional fishing opportunities for grayling. Most visitors float the river by canoe or small inflatable raft. The Tangle Lakes are popular for motorized and non-motorized boating and a multitude of other recreational activities. The Tangle Lakes campground and wayside provide RV and tent sites, vault toilets and boat ramps.	

EARMP Delta River RMZ 1 – Tangle Lakes Developed

Niche		
Public and private developed facilities that provide education as well as amenities to users and allows for easy access to lakes and rivers.		
Management Objectives		
To provide quality services and educational information to the public who are visiting and utilizing the local recreational resources including pass through travelers using the Denali Highway. By the year 2015, 75% of users surveyed will reply to BLM that this management objective has been achieved.		
Targeted Outcomes		
Activity	**Experience**	**Benefit**
• camping • fishing • hiking • berry picking • boating • photography • dining • hunting • OHV use • Picnicking • wildlife viewing • learning • comfort stops • swimming	• enjoying the closeness of family • appreciating personal interactions with visitors • enjoying having a wide variety of environments within the single area • having others nearby who could help you if needed • enjoying having easy access to natural landscapes • enjoying group affiliation with groups and togetherness • enjoying participating in group outdoor events • developing skills and abilities • enjoying meeting new people with similar interests • escaping social pressures • teaching others about the outdoors	• stronger ties with family and friends • increased local economic stability • increased local tourism revenue • greater family bonding • improved skills for outdoor enjoyment with others • freedom from urban living • stress reduction • increased tolerance for multi uses of a resource • increased appreciation of an area's cultural history

EARMP Delta River RMZ 2 – Tangle Lakes Dispersed

Niche		
A semi-primitive experience providing access to the Delta River, Upper and Lower Tangle Lakes, and surrounding BLM managed lands.		
Management Objectives		
To protect and enhance the qualities of a semi primitive experience resulting in a user satisfaction of 80% of users as determined by a survey conducted in the year 2015.		
Targeted Outcomes		
Activity	**Experience**	**Benefit**
• camping • fishing • hiking • berry picking • boating • photography • hunting • wildlife viewing • cultural and geological viewing • swimming	• feeling good about solitude • enjoying the artistic expression of nature • getting some exercise • sense of exploration • sensory experiences of a landscape • interacting with people • enjoying an escape from crowds of people • savoring a natural experience • a feeling of accomplishment • risk taking • developing your skills and abilities	• improved skills for outdoor enjoyment • enhanced awareness and understanding of nature • deeper sense of personal humility • greater respect for cultural heritage • freedom from urban living • improved physical fitness and mental health • enhanced lifestyle • reduced looting and vandalism of historic and prehistoric sites • reduced negative human impacts such as litter, trampling of vegetation and unplanned trails

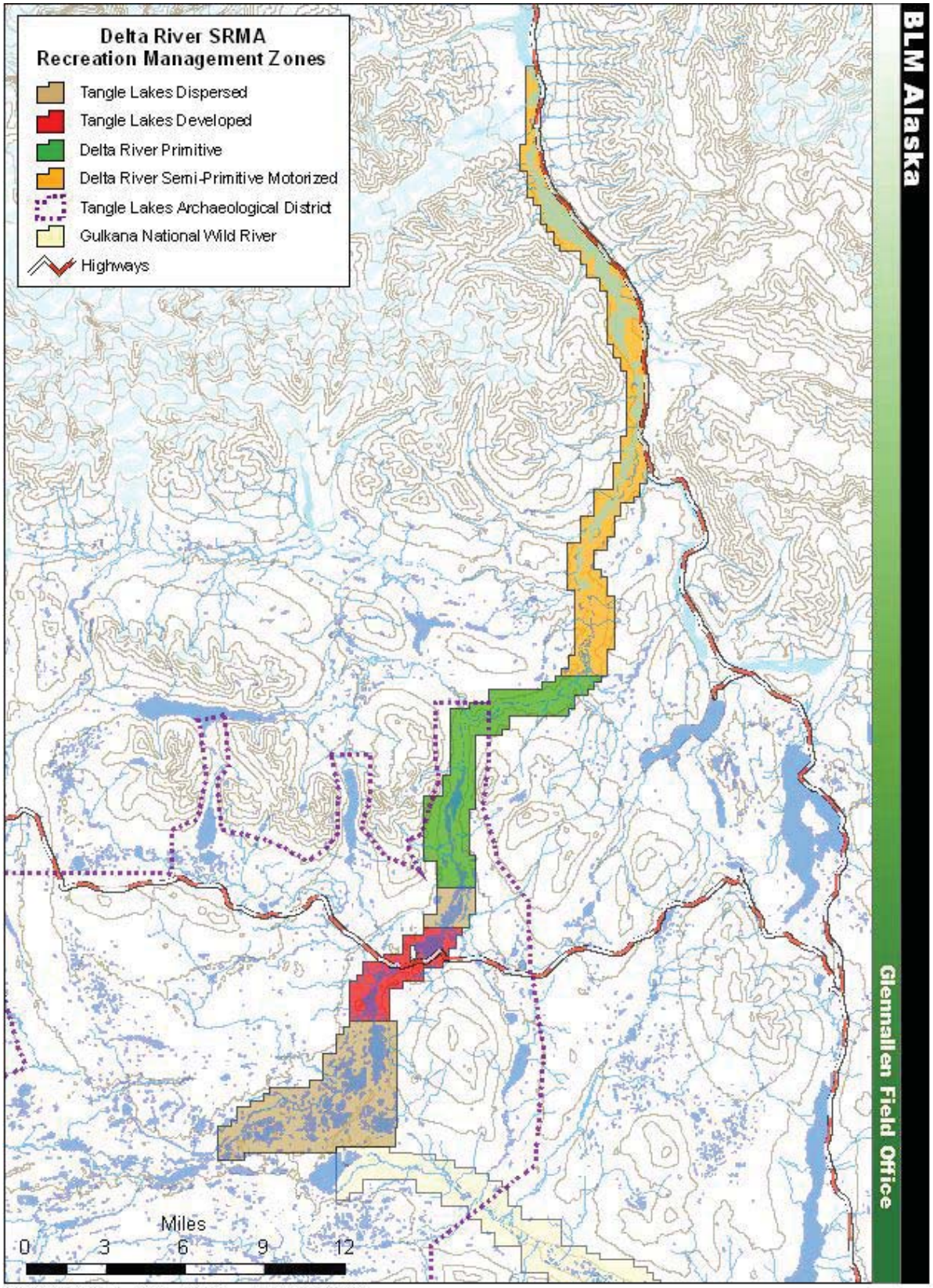
EARMP Delta River RMZ 3 – Delta River Primitive

Niche		
A primitive, non-motorized experience characterized by solitude along the Delta River and surrounding BLM managed lands.		
Management Objectives		
To protect and enhance the values, qualities and characteristics of a primitive landscape that provides for a quality experience for visitor resulting in a user satisfaction of 90% as determined by survey.		
Targeted Outcomes		
Activity	**Experience**	**Benefit**
• non-motorized boating • camping • fishing • hiking • berry picking • photography • hunting • wildlife viewing • cultural and geological viewing • swimming	• risk taking • solitude • testing your endurance • gaining a greater sense of self confidence • savoring the natural landscape • reflecting on one's own character and personal values • bringing back pleasant memories • enjoying the artistic expression of nature • being close to nature • strenuous physical exercise • knowing that things are not going to change too much • conservation of sustainable ecosystems	• improved mental and physical well being • enhanced sense of personal freedom • greater self reliance • improved skills for outdoor enjoyment • enlarged sense of personal accountability for acting responsibility on public lands • closer relationship with the natural world • getting away from society and family • reduced wildlife harassment and disturbance

EARMP Delta River RMZ 4 – Delta River Semiprimitive Motorized

Niche		
Providing for multiple use recreational activities in a semi-primitive setting associated with the Delta River and adjoining trails.		
Management Objectives		
To maintain the semi-primitive, multiple use experience while preventing further resource degradation that provides a quality experience for visitors resulting in user satisfaction rating of 80% determined by a survey conducted in 2015.		
Targeted Outcomes		
Activity	**Experience**	**Benefit**
• boating • camping • fishing • hiking • berry picking photography • hunting • wildlife viewing • geological viewing • off-highway vehicle use	• risk taking • learning outdoor skills • enjoying nature • talking about equipment and gear • getting needed physical exercise • escaping responsibility for awhile • getting needed • being able to tell others about the trip • bringing back pleasant memories • family togetherness • greater sense of independence	• local economic support • greater understanding of technology and mechanics • diminished mental anxiety • improved self confidence • greater community valuation of its ethnic diversity • improved opportunity to view wildlife close up • greater tolerance of multiple uses of landscape

EARMP Delta River SRMA - Recreation Management Zones



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8.2 ANILCA §810 Evaluations and Findings for All Alternatives

E.A. No.: DOI-BLM-AK-050-EA-2008-0001

Applicant: Bureau of Land Management, Glennallen Field Office

Evaluation by: Merben R. Cebrian

1. Evaluation and Finding of Alternative 1 (No Action Alternative)

1.A. Effect of Alternative 1 on subsistence uses and needs:

Fisheries: The Delta River is currently closed to all regulated subsistence fishing. Therefore, Alternative 1 has no significant effect on subsistence fishery uses and needs.

Wildlife: This alternative proposes to continue current management practices on the DWSR. Current practices are considered adequate to meet subsistence needs. Therefore, this alternative will have no significant effect on subsistence uses and needs.

Other resources: The No Action Alternative will not significantly affect other harvestable resources including, but not limited to, berries, willows, firewood, and spruce roots. Current practices are considered adequate to meet subsistence needs. Therefore, this alternative will have no significant effect on subsistence uses and needs.

1.B. Availability of other lands, if any, for the purposes sought to be achieved:

None. Lands available for the purposes of the applicant are limited to BLM lands that are within the DWSR. Therefore, no other lands are available for the intended purposes.

1.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:

The only alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

1.D. Finding:

Under Alternative 1, management of the DWSR corridor would continue under the 1983 DWSR Management Plan and the 2007 EARMP. Management actions will not result in a significant reduction in subsistence uses. Access to subsistence resources will not be hampered by this alternative. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to this alternative.

2. Evaluation and Finding of Alternative 2 (Proposed Action)

2.A. Effect of Alternative 2 on subsistence uses and needs:

Fisheries: The Delta River is currently closed to all regulated subsistence fishing. Therefore, the proposed action has no significant effect on subsistence fishery uses and needs.

Wildlife: The proposed action intends to limit OHV use to designated OHV trails in RMZ 5 and regulate campsite occupancy within the DWSR corridor.

ANILCA §811 stipulates that "rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands", subject to reasonable regulation. The 2007 EARMP §T-4(3)(a) stipulates that "OHVs would be restricted to designated trails (Top of the World Trail, Rainy Creek Trail) " within the DWSR corridor. Concurrent restrictions on OHV travel to designated trails exist within the Tangle Lakes Archaeological District (TLAD) under the 1980 Memorandum of Agreement between the BLM Alaska, the Alaska State Historic Preservation Officer, and the Advisory Council on Historic Preservation in compliance with the 1966 National Historic Preservation Act (NHPA). The Delta River is in Game Management Unit (GMU) 13B.

Under Alternative 2, an authorization is required for miners and subsistence users using OHVs greater than 2000 lbs. Gross Vehicle Weight (GVW) on the Top of the World Trail and on Rainy Creek Trail. Although this requirement imposes an additional burden to miners and subsistence users, this requirement allows the BLM to monitor impacts of OHVs on designated trails, while not denying access to either user group. Between 2005 and 2009, on average, 150 OHVs were estimated to have used the Rainy Creek Trail primarily associated with access to mining claims; an additional 823 OHVs, on average, were estimated to have used the Top of the World Trail (Recreation Management Information System, 2009). These estimates combine mining, recreational and subsistence users of the designated trails. Although there are no trail counters in place on these trails, the BLM estimates that most of this reported OHV use occurs on the eastern portion of the Top of the World Trail that is located outside the river corridor. The BLM also estimates that approximately 10% of the users on the Top of the World Trail travel into and/or across the designated river corridor. Furthermore, aside from large mining equipment, the BLM has not documented observations of OHVs larger than 2,000 lbs GVW within the river corridor. Subsistence users harvested 31 moose, on average, in GMU 13B from 1990 to 2009 (OSM 2009). Subsistence users also harvested 309 caribou, on average, in GMU 13B from 1994 to 2009 (OSM 2010). The proposed action allows miners and subsistence users to exceed OHV weight restrictions on designated trails and does not impose additional restrictions to access beyond those stipulated in the EARMP and the NHPA that are currently in place. Therefore, the proposed action will not have a significant effect on subsistence uses and needs.

The proposed action also intends to limit campsite occupancy on the DWSR. Camping will be limited to designated campsites when camping within 200 feet of the shoreline, but dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping. Subsistence users typically camp near a kill site for convenience in access to and processing of big game such as moose and caribou. The kill site may be outside of designated campsites. A registration system or permit system may be developed through a public process if designated campsite use levels exceed adaptive management standards, based on competition and encounters outlined in Chapter 2.4.2 of the Environmental Assessment. Subsistence users, whether hunting big game, small game, or upland birds, will be allowed to use dispersed camping. Therefore, the proposed action will not have a significant effect on subsistence uses and needs.

Trapping of furbearers will not be significantly affected by the proposed action since this activity is usually conducted via snowmachine that requires adequate snow cover.

Other resources:

The proposed action will not significantly affect other harvestable resources including, but not limited to, berries, willows, firewood, and spruce roots. Access to these resources is not significantly restricted. Proposed actions that mitigate litter and human waste disposal, fire rings, and campsite impacts will likely be beneficial to the habitat by allowing natural revegetation.

2.B. Availability of other lands, if any, for the purposes sought to be achieved:

None. Lands available for the purposes of the applicant are limited to BLM lands that are within the DWSR. Therefore, no other lands are available for the intended purposes.

2.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:

The only other alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

2.D. Finding:

Under Alternative 2 (Proposed Action), recreation management on the DWSR will not significantly restrict subsistence uses. Access to subsistence resources will not be hampered by the proposed action. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to the proposed action.

3. Evaluation and Finding of Alternative 3

3.A. Effect of Alternative 3 on subsistence uses and needs:

Fisheries: The Delta River is currently closed to all regulated subsistence fishing. Therefore, Alternative 3 has no significant effect on subsistence fishery uses and needs.

Wildlife: Under Alternative 3, additional OHV trails will be designated in the DWSR, OHVs will be allowed to travel off designated trails for game retrieval, and there will be no weight limits for OHV use. This alternative will also regulate campsite occupancy within the DWSR corridor.

Alternative 3 will designate additional OHV trails without weight restrictions on the DWSR and allows OHVs to travel off designated trails for game retrieval. This will improve access to subsistence resources. However, increasing the number of designated OHV trails may create ruts and mud holes that may affect trail usability especially since travel off designated trails for game retrieval is allowed for both subsistence users and non-subsistence users. There may also be more users that compete for subsistence resources. However, with the moose population in GMU 13 slowly increasing and federal hunt success remaining at approximately 10% for moose and approximately 28% for caribou, Alternative 3 has no significant effect on subsistence uses and needs.

Like Alternative 2, Alternative 3 also intends to limit campsite occupancy on the DWSR. Camping will be limited to designated campsites when camping within 200 feet of the shoreline, but dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping. Subsistence users typically camp near a kill site for convenience in access to and processing of big game such as moose and caribou. The kill site may be outside of designated campsites. Therefore, allowing dispersed camping for subsistence users will not significantly restrict access to subsistence resources. Also under Alternative 3, additional campsites will be developed in high use areas. Although this option provides more opportunities for the recreationist, it may also lead to increased interactions between recreationists and subsistence users. By-products of processing big game in the field include blood, entrails, internal organs, and other anatomical parts that may influence the experience of recreationists who happen to be camping nearby. However, recreationists are largely gone during hunting season, so encounters with subsistence users are likely to be minimal. Subsistence users, whether hunting big

game, small game, or upland birds, are allowed to use dispersed camping. Therefore, Alternative 3 will not significantly affect subsistence uses and needs.

Trapping of furbearers will not be significantly restricted by this alternative since this activity is usually conducted via snowmachine that requires adequate snow cover.

Other resources:

Alternative 3 will not significantly affect other harvestable resources including, but not limited to, berries, willows, firewood, and spruce roots. Access to these resources is not significantly restricted. Under this alternative, actions that mitigate litter and human waste disposal, fire rings, and campsite impacts will likely be beneficial to the habitat by allowing natural revegetation.

3.B. Availability of other lands, if any, for the purposes sought to be achieved:

None. Lands available for the purposes of the applicant are limited to BLM lands that are within the DWSR. Therefore, no other lands are available for the intended purposes.

3.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:

The only alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

3.D. Finding:

Under Alternative 3, recreation management on the DWSR will not significantly restrict subsistence uses. Access to subsistence resources will not be hampered by this alternative. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to Alternative 3.

4. Evaluation and Findings of Alternative 4

4.A. Effect of Alternative 4 on subsistence uses and needs:

Fisheries: The Delta River is currently closed to all regulated subsistence fishing. Therefore, Alternative 4 has no significant effect on subsistence fishery uses and needs.

Wildlife: The proposed action intends to regulate OHV use, motorized boating, and campsite occupancy within the DWSR corridor.

Under Alternative 4, an authorization is required for miners and subsistence users using OHVs greater than 2000 lbs GVW on the Top of the World Trail and on Rainy Creek Trail. Although this requirement imposes an additional burden to miners and subsistence users, this requirement allows the BLM to monitor impacts of OHVs on designated trails. Between 2005 and 2009, on average, 150 OHVs were estimated to have used the Rainy Creek Trail, while an additional 823 OHVs were estimated to have used the Top of the World Trail (Recreation Management Information System, 2009). These estimates combine recreational and subsistence users of the designated trails. Although there are no trail counters in place on these trails, the BLM estimates that most of this reported OHV use occurs on the eastern portion of the Top of the World Trail that is located outside the river corridor. The BLM also estimates that approximately 10% of the users on the Top of the World Trail travel into and/or across the designated river corridor. Furthermore, aside from large mining equipment, the BLM has not documented

observations of OHVs larger than 2,000 lbs GVW within the river corridor. Subsistence users harvested 31 moose, on average, in GMU 13B from 1990 to 2009 (OSM, 2009). Subsistence users also harvested 309 caribou, on average, in GMU 13B from 1994 to 2009 (OSM 2010). Alternative 4 allows miners and subsistence users to exceed OHV weight restrictions on designated trails and does not impose additional restrictions to access beyond those stipulated in the EARMP and the NHPA that are currently in place. Therefore, this alternative will not have a significant effect on subsistence uses and needs.

Under Alternative 4, motorized boats will have horsepower restrictions in all RMZs, and would be prohibited entirely in RMZ 3. All airboats and hovercraft will also be prohibited in all RMZs. The Tangle Lakes in RMZ 1 is a potential area for spring hunting of waterfowl and migratory birds in Game Management Unit (GMU) 13. In the Upper Copper River region, residents of Gulkana, Chitina, Tazlina, Copper Center, Gakona, Mentasta Lake, Chistochina, and Cantwell have customary and traditional use in GMU 13 for subsistence hunting of migratory birds based on criteria found in 50 CFR §92.5. 50 CFR §92 regulates the subsistence harvest of migratory bird species in Alaska. No permits are required to harvest migratory birds. In GMU 13, the 2009 season for migratory bird harvest is April 15 – May 26 and June 27 – August 31. Naves (2010, revised) shows that an estimated 1,120 migratory birds were harvested in 2004 and 247 were harvested in 2007 in the Upper Copper River region. Moose and caribou hunters may also choose to hunt with a motorized boat on the DWSR. Although Alternative 4 may limit the engine size of motorized boats and prohibits the use of airboats and hovercraft in the DWSR, these limitations do not constitute a significant restriction to access of subsistence resources and do not pose an added burden to subsistence users. Airboats and hovercrafts are not an established use within the river corridor. Airboats have rarely been observed and hovercrafts have never been observed on the river or lakes. Motorized boating has never been observed, nor is it practical in the Tangle River in RMZ 3; being naturally restricted by very shallow river conditions and river width. Therefore, Alternative 4 will not have a significant effect on subsistence uses and needs.

Alternative 4 also intends to limit campsite occupancy on the DWSR. Camping will be limited to designated campsites when camping within 200 feet of the shoreline, but dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping. Subsistence users typically camp near a kill site for convenience in access to and processing of big game such as moose and caribou. The kill site may be outside of designated campsites. A registration system or permit system may be developed through a public process if designated campsite use levels exceed adaptive management standards, based on competition and encounters outlined in Chapter 2.6.6 of the Environmental Assessment. Subsistence users, whether hunting big game, small game, or upland birds, will be allowed to use dispersed camping. Therefore, Alternative 4 will not have a significant effect on subsistence uses and needs.

Trapping of furbearers will not be significantly restricted by this alternative since this activity is usually conducted via snowmachine that requires adequate snow cover.

<u>Other resources:</u>

Alternative 4 will not significantly affect other harvestable resources including, but not limited to, berries, willows, firewood, and spruce roots. Access to these resources is not significantly restricted. Actions that mitigate litter and human waste disposal, fire rings, and campsite impacts will likely be beneficial to the habitat by allowing natural revegetation.

4.B. Availability of other lands, if any, for the purposes sought to be achieved:

None. Lands available for the purposes of the applicant are limited to BLM lands that are within the DWSR. Therefore, no other lands are available for the intended purposes.

4.C. Other alternatives, if any, which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes:

The only other alternative that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes is to not allow or permit any activities that conflict with subsistence uses. However, such an alternative is not viable because the BLM manages public lands for multiple uses.

4.D. Finding:

Under Alternative 4, recreation management on the DWSR will not significantly restrict subsistence uses. Access to subsistence resources will not be hampered by this alternative. There is no reasonably foreseeable significant decrease in the abundance of harvestable resources and in the distribution of harvestable resources due to Alternative 4.

_____/s/ Merben R. Cebrian_____ _____14 October 2010_____

Merben R. Cebrian Date
Wildlife Biologist
BLM, Glennallen Field Office

8.3 Comparison of Management Actions by Alternatives

	Alternative 1: No Action—Current Management	Alternative 2: Proposed Action	Alternative 3	Alternative 4
Litter Management (Recreation Management Zones 1, 2, 4, & 5)				
Indicator	No indicator	Percentage of sites at which litter occurs	Same as Alternative 2	Same as Alternative 2
Standard	No standard	Less than 20% of sites (13 sites) with litter present.	Same as Alternative 2	Same as Alternative 2
Phase I	Maintain existing litter cleanup patrols, increase educational efforts.	Maintain existing cleanup patrols, increase education and partnerships.	Same as Alternative 2	Add one additional cleanup patrol, increase education and partnerships.
Phase II		Add one additional cleanup patrol and continue education.	Same as Alternative 2	Dismantle fire rings; require fire pans and removal of ash from the river corridor.
Phase III		Dismantle fire rings; require fire pans and removal of ash from the river corridor.	Continue education, no firepan requirement.	
Human Waste Management (Recreation Management Zones 1, 2, 4, & 5)				
Indicator	No indicator	Percentage of sites that human waste (or toilet paper) is present	Same as Alternative 2	Same as Alternative 2
Standard	No standard	Less than 10% of sites (7 sites) with human waste/tp present	Same as Alternative 2	Same as Alternative 2
Phase I	Maintain existing human waste cleanup patrols, increase educational efforts.	Maintain existing cleanup patrols, increase education, LNT workshops, and partnerships. Require commercial guides to use portable toilets. Publicize state statutes regarding human waste disposal.	Same as Alternative 2, except commercial guides would not be required to use portable toilets.	Same as Alternative 2
Phase II		Add one additional cleanup patrol and continue education.	Same as Alternative 2, except for the addition of one outhouse on the Upper Tangles portage in RMZ 2.	All users will be required to use portable toilets and pack out human waste and toilet paper. Outhouse at river portage will be removed when a portable toilet cleanout facility is developed.
Phase III		All users will be required to use portable toilets and pack out human waste and toilet paper. Outhouse at river portage will be removed when a portable toilet cleanout facility is developed.	Users would be encouraged to pack out human wastes through continued education, but not required. Maintain outhouses at river portage and Upper Tangles portage.	
Fire Ring Management (Recreation Management Zones 1, 2, 4, & 5)				
Indicator	No indicator	Number of fire rings per site	Same as Alternative 2	Same as Alternative 2
Standard	No standard	Less than 20% of sites (13 sites) with more than one fire ring	Same as Alternative 2	Same as Alternative 2
Phase I	Maintain existing cleanup patrols, increase educational efforts.	Dismantle all but one fire ring per site, increase education, and encourage the use of firepans.	Same as Alternative 2	Same as Alternative 2
Phase II		Dismantle all fire rings; require the use of firepans and removal of ash from the river corridor.	Install metal fire rings at heavy use sites and sites with multiple fire rings. Firepans would not be required.	Same as Alternative 2
Private and Commercial User Capacity Management (Recreation Management Zones 1, 2, 4, & 5)				
Indicator	No indicator	Number of user days that groups are required to camp within sight or sound of other campers, pass up occupied campsites, or share campsites due to campsites being occupied	Same as Alternative 2	Same as Alternative 2
Standard	No standard	Less than 20% of total user days annually	Less than 40% of total user days annually	Less than 10% of total user days annually
Phase I	There are no private or commercial user capacity limitations under current management strategy.	Group size limitation of 10 people per campsite, designate campsites and develop campsite map, consider development of additional campsites in high use areas.	Develop additional campsites in high use areas. Designate campsites and develop campsite map.	Group size limitation of 8 people per campsite, designate campsites and develop campsite map.
Phase II		Voluntary registration system for overnight trips, first come/first served	Group size limitation of 12 people per campsite	Mandatory registration system for overnight trips, first come/first served
Phase III		Voluntary registration system progresses to mandatory registration system	Voluntary registration system for overnight trips, first come/first served	Mandatory permit system
Phase IV		Mandatory permit system	Voluntary registration system progresses to mandatory registration system. No formal permit system.	

	Alternative 1: No Action—Current Management	Alternative 2: Proposed Action	Alternative 3	Alternative 4
Campsite Impact Management (Recreation Management Zones 1, 2, 4, & 5)				
Indicator	No indicator	Percentage of bare ground disturbance and density of social trails and satellite sites at designated campsites. Sites have been inventoried and categorized as heavy, moderate, and light impact sites.	Same as Alternative 2	Same as Alternative 2
Standard	No standard	**Heavy impact sites:** No increase in bare ground on the riverbank and no increase in satellite sites or social trails from existing condition. **Moderate impact sites:** Less than 66% bare ground disturbance and no more than one satellite site or social trail. **Light impact sites:** Less than 33% bare ground disturbance and no new satellite sites or social trails.	Same as Alternative 2	Same as Alternative 2
Phase I	Maintain existing campsite documentation efforts and rehabilitate dormant sites.	Group size limitation of 10 people per campsite, designate sites and develop campsite map. Consider the development of additional campsites. **Heavy Impact sites:** Close developing satellite sites and social trails using native materials to discourage use. Use passive rehabilitation to funnel use along the riverbank. **Moderate Impact sites:** Use passive rehabilitation to halt expansion of core area, satellite sites, and social trails. **Light Impact sites:** Same as described for moderate impact sites. Temporarily close site if not designated using passive rehabilitation methods.	Maintain existing campsite documentation efforts, designate campsites and develop campsite map. Existing heavy and moderate impact sites would be hardened and expanded to accommodate larger groups and increased use. Light impact sites would be allowed to become moderate impact sites before hardening and expansion.	Same as Alternative 2, except for a group size limitation of 8 people per site. Additional campsites would not be developed.
Phase II		Groups in excess of 10 people will be prohibited in all designated campsites. **Heavy Impact sites**: Close satellite sites and social trails using physical barriers and signage. **Moderate Impact sites:** Where passive rehabilitation is not effective, temporarily close sites until bare ground has revegetated within site categorization standards. **Light Impact sites:** Passive rehabilitation, temporary closure of sites.	Group size limitation of 12 people per campsite. All campsites would be maintained and rehabilitation, rest, or closure would only be used if resource damage (i.e. erosion, sedimentation) is occurring. Campsites would then be rehabilitated use passive rehabilitation and signage to discourage use.	Same as Alternative 2, except groups in excess of 8 people will be prohibited in all designated campsites.
Special Recreation Permit (SRP) Management				
	Commercial uses are limited through Special Recreation Permit stipulations.	Limit commercial group sizes to 10 people per campsite. Require commercial guides to use designated campsites and portable toilets. Competitive events will be considered and may be authorized based on compatibility with specified ORVs for the management zone.	Same as Alternative 2, except commercial groups would be limited to 12 people per campsite and would not be required to use portable toilets.	Same as Alternative 2, except commercial groups would be limited to 8 people per campsite.
Group Size				
	No limitations on group size under current management.	In RMZs 1, 2, 4, and 5, group sizes will be limited to a maximum of 10 people per campsite. Groups in excess of 10 people per campsite must obtain written authorization with special stipulations from the BLM. In RMZ 3 (campground) group sizes will be limited to a maximum of 10 people and 2 vehicles per designated campsite (one of which may be a recreational vehicle). Groups in excess of 10 people may camp in the designated group camping areas.	In RMZ's 1, 2, 4, and 5 group sizes will be limited to 12 people per campsite under Phase II campsite and user capacity management actions. Groups in excess of 12 people per campsite must obtain written authorization that may include special stipulations from the BLM. In RMZ 3 (campground) group sizes will be limited to 12 people and 3 vehicles per designated campsite (one of which may be a recreational vehicle). Groups in excess of 12 people may camp in the designated group camping areas.	Same as Alternative 2, except group size would be limited to 8 people per campsite. Groups in excess of 8 people per campsite must obtain written authorization with special stipulations from the BLM.
Occupancy and Use				
	Camping is limited to 10 consecutive days within the river corridor within any 60 day period.	Camping will be limited to 14 consecutive days within the river corridor within any 60 day period. Designated campsites must be used when camping within 200 feet of the river or lake shoreline. Dispersed camping (more than 200 feet from the shoreline) will be allowed when using Leave No Trace low impact camping methods.	Same as Alternative 2	Same as Alternative 2
Chainsaw Use and Firewood Gathering				
	No limitations on chainsaw use and firewood gathering under current management.	Only dead and down wood may be used for campfires and the use of chainsaws for the cutting of firewood for campsites will be prohibited in RMZs 1, 2, and 4. Chainsaw use will be allowed in RMZ 3 for cutting of wood brought from home and in RMZ 5 for the cutting of standing dead at least 200 feet from the river's edge.	Chainsaw use for the cutting of firewood for campsites and the cutting of standing dead at least 200 feet from the river's edge will be allowed in all RMZs.	Only dead and down wood may be used for campfires. The use of chainsaws for the cutting of firewood for campsites will be prohibited in all RMZs.

	Alternative 1: No Action—Current Management	Alternative 2: Proposed Action	Alternative 3	Alternative 4
Recreational Shooting				
	Under current management, discharging a firearm or any other implement capable of taking human life, causing injury, or damaging property at any time within 150 yards of residence, building, developed or undeveloped recreation sites, or occupied area; or at any time across or on any public road, or across or on any trail or body of water whereby any person or property is exposed to injury or damage as a result of such discharge is prohibited.	Same as Alternative 1, except that target shooting and plinking will also be prohibited.	Same as Alternative 2	Same as Alternative 2
Fireworks				
	Under current management, fireworks are prohibited within the WSR corridor.	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Supply Caching				
	No limitations on supply caching under current management.	The caching of supplies will only be allowed through written authorization with special stipulations from the BLM.	Same as Alternative 2	Same as Alternative 2
Education and Interpretation				
	Information describing available recreational opportunities and Leave No Trace low impact camping techniques is provided at the boat launches, on the BLM website, and in BLM brochures. Information is provided throughout the developed facilities describing facility rules and regulations, interpretation of area resources, river trip options and Leave No Trace (LNT) educational materials. Volunteer hosts are available to provide education and information to visitors.	Additional educational and interpretive information will be provided to promote a cultural and natural resource awareness of the area, LNT low impact camping techniques, and to inform visitors of new rules and regulations for all management zones. River crews will make contact with river users to discuss LNT river ethics and provide informal presentations at boat launches. Interpretive displays will be installed on nonmotorized trails, focusing on TLAD cultural significance and subsistence lifestyles. Volunteer hosts will be available to provide education and information to visitors.	River crews will focus on cleanup and maintenance of campsites, portages, and facilities, rather than educational outreach efforts.	Same as Alternative 2, except interpretive displays will not be installed on nonmotorized trails.
Marketing				
	A defined marketing strategy has not been considered or developed under the current management scenario.	In RMZ's 1, 4, and 5, recreational opportunities will be marketed by providing information on the BLM website and in BLM brochures. In RMZs 2 and 3, recreational opportunities will be marketed to a wider audience using the BLM website, magazine articles, brochures, and outdoor shows.	Recreational opportunities will be marketed to a wider audience in all RMZs using the BLM website, magazine articles, brochures, and outdoor shows.	Same as Alternative 2
Monitoring				
	A defined monitoring strategy has not been developed under the current management scenario.	The administration of visitor satisfaction surveys will be used to assure that BBM outcomes/objectives are being met and setting prescriptions are being maintained. Adaptive management standards will be monitored using river patrols, river surveys, and visitor registration.	Same as Alternative 2	Same as Alternative 2
Facility Management				
Tangle Lakes Zone 1	No facility developments identified. Public use cabins would not be developed.	No facility developments identified. Public use cabins would not be developed.	Developed day use facilities with metal fire rings and picnic tables would be installed at heavy use campsites. Public use cabins will be considered for development.	Same as Alternative 2
Tangle Lakes Zone 2	No facility developments identified. Public use cabins would not be developed. Acquisition of area lodges would be considered for a visitor center if the opportunity presents itself.	No facility developments identified. Public use cabins would not be developed. No additional outhouses would be developed at the portage. Acquisition of area lodges will not be considered for a visitor center.	Outhouse and boater registration kiosk would be installed at first portage of the Upper Tangles. Developed day use facilities with metal fire rings and picnic tables would be installed at heavy use campsites. Public use cabins will be considered for development.	Same as Alternative 2
Tangle Lakes Developed Zone 3	Facility developments limited to campground renovation and wayside improvements. Public use cabins would not be developed.	Facility developments will be limited to campground renovation and wayside improvements. User fees will be implemented for the use of the campground only. Public use cabins would not be developed. Possible river educational contact station and portable toilet cleanout facility will be developed if needed in the future.	User fees would be implemented for the use of campground, boat launches, and overnight parking at the DWSR wayside. Public use cabins will be considered for development. An educational contact station or cleanout facility would not be considered for future development.	Same as Alternative 2, except facility developments would be limited to campground renovation only.
Delta River Zone 4	Facility developments limited to outhouse, river survey box, portage warning signs, and boater registration kiosk. Public use cabins would not be developed.	River survey box and boater registration kiosk will be removed. Outhouse will be removed if portable toilets are required in the future and portable toilet cleanout facility is developed. Portage warning signs will remain discrete, but noticeable. Public use cabins would not be developed.	Facility developments will include an outhouse, river survey box, portage warning signs, and boater registration kiosk. Public use cabins will be considered for development.	All existing facility developments would be removed. Outhouse will be removed if portable toilets are required in the future and portable toilet cleanout facility is developed. Public use cabins would not be developed.
Delta River Zone 5	Increased signage prescribed at the Mile 212.5 Richardson Highway takeout. Public use cabins would not be developed.	Facility developments at the Mile 212.5 Richardson Highway takeout would include takeout warning signs, river survey box, and boater registration kiosk. Public use cabins would not be developed.	Metal fire rings and picnic tables would be installed at heavy use campsites. Facility developments at the MP 212 takeout would include takeout warning signs, river survey box, and boater registration kiosk. Public use cabins will be considered for development.	No facility developments identified. Public use cabins would not be developed. Takeout warning sign would be removed at Mile 212.5 Richardson Highway takeout.

	Alternative 1: No Action—Current Management	Alternative 2: Proposed Action	Alternative 3	Alternative 4
Travel Management				
Tangle Lakes Zone 1	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Unauthorized trails will be closed and rehabilitated. Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	Same as Alternative 2	Same as Alternative 2
	Nonmotorized trails are dispersed and undeveloped. Portage trails are not marked or maintained.	Portage trails will not be marked or maintained unless trail proliferation or resource damage is occurring.	Portage trails will be marked and identified with signage and improved access will be provided through trail construction and maintenance activities using native materials.	Same as Alternative 2
	Recommended limitation of 15 horsepower motors.	Motorized boating will be discouraged, but not prohibited unless monitoring shows that adverse impacts are occurring to recreational, wildlife, riparian, and/or water quality resource values. Upon a finding that any of these resource values are being adversely affected as a result of motorized boating, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h).	No restrictions on motorized boating.	All recreational motorized boating will be prohibited. Motorized boating for subsistence use and access for traditional activities (described in ANILCA Sections 811 and 1110) will be limited to 15 horsepower motors, and airboats and hovercraft will be prohibited.
	No limits on airplane landings. No new airstrips will be constructed.	Airplane landings will be discouraged, but not prohibited unless monitoring shows that adverse impacts are occurring to recreational, wildlife, riparian, and/or water quality resource values. Upon a finding that any of these resource values are being adversely affected as a result of airplane landings, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h). New airstrips will not be authorized within the management zone.	No restrictions on airplane landings. New airstrips will not be authorized.	All airplane landings will be prohibited, except for emergency operations. New airstrips will not be authorized.
Tangle Lakes Zone 2	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Round Tangle Lake and Mile 22 Denali Highway North Trails are unauthorized OHV trails and will be closed to OHV use. Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	Round Tangle Lake and Mile 22 Denali Highway North Trails will be open to OHV use and designated as OHV trails. All other OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover).	Same as Alternative 2
	Nonmotorized trails are dispersed and undeveloped. Portage trail is not marked or maintained.	Lower Tangles Ridge Trail, Rock Creek Trail, Upper Tangles Ridge Trail, and the Round Tangle Lake Trail will be designated as nonmotorized trails. Portage trail will not be marked or maintained unless trail proliferation or resource damage is occurring.	Same as Alternative 2, except portage trails will be marked and identified with signage and improved access will be provided through trail construction and maintenance activities using native materials.	Only the Lower Tangles Ridge Trail will be designated as a nonmotorized trail. Portage trail will not be marked or maintained unless trail proliferation or resource damage is occurring.
	Recommended limitation of 15 horsepower motors.	No restrictions on motorized boating.	Same as Alternative 2	All motorized boating will be limited to 15 horsepower motors, and airboats, hovercraft and personal watercraft (jetskis) will be prohibited.
	No limits on airplane landings. No new airstrips will be constructed.	Airplane landings will not be restricted. New airstrips will not be authorized.	Same as Alternative 2	All airplane landings will be prohibited, except for emergency operations. New airstrips will not be authorized.
Tangle Lakes Developed Zone 3	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover. Use of OHVs in the Tangle River will be prohibited. Within the developed facilities, OHV use will only be allowed for ingress and egress to campsites in designated areas and on gravel travel routes designated for motorized travel.	Same as Alternative 2	Same as Alternative 2
	Recommended limitation of 15 horsepower motors.	No formal restrictions on motorized boating. Motorized boating is naturally restricted by shallow river conditions.	Same as Alternative 2	All motorized boating will be prohibited.
	No limits on airplane landings. No new airstrips will be constructed.	No formal restrictions on airplane landings. Airplane landings are not practical in the developed facilities due to the lack of suitable airstrips. New airstrips will not be authorized.	Same as Alternative 2	Same as Alternative 2

	Alternative 1: No Action—Current Management	Alternative 2: Proposed Action	Alternative 3	Alternative 4
Delta River Zone 4	No designated OHV trails. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	No designated OHV trails. Unauthorized OHV trails will be closed and rehabilitated. OHV use is prohibited, except during periods of adequate snow cover (at least 6" ground frost or 12" snow cover). Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	Same as Alternative 2	Same as Alternative 2
	Nonmotorized trails are dispersed and undeveloped. Portage trail is marked and maintained using signing and native construction materials.	Portage trail will be marked and maintained using signs and native construction materials. Additional nonmotorized trails may be designated in the future in the Garrett Creek drainage.	Same as Alternative 2	Portage trails will not be marked or maintained unless trail proliferation or resource damage is occurring. No additional trails would be considered for future designation.
	No motorized boating limitations.	Motorized boating will be discouraged, but not prohibited unless monitoring shows that adverse impacts are occurring to recreational, riparian, fisheries, and/or water quality resource values. Upon a finding that any of these resource values are being adversely affected as a result of motorized boating, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h).	No restrictions on motorized boating.	All recreational motorized boating will be prohibited. Motorized boating for subsistence use and access for traditional activities (described in ANILCA Sections 811 and 1110) will be limited to 65 horsepower motors, and airboats and hovercraft will be prohibited.
	Airplane landings are prohibited except for emergency operations. No new airstrips will be constructed.	Airplane landings will be discouraged, but not prohibited unless monitoring shows that adverse impacts are occurring to recreational, riparian, fisheries, and/or water quality resource values. Upon a finding that any of these resource values are being adversely affected as a result of airplane landings, an ANILCA closure process would be considered in compliance with the procedures outlined in 43 CFR 36.11(h). New airstrips will not be authorized within the management zone.	Airplane landings will not be restricted. New airstrips will not be authorized.	All airplane landings will be prohibited, except for emergency operations. New airstrips will not be authorized.
Delta River Zone 5	OHVs are limited to designated trails from May 16th to October 15th or until such time that adequate snow cover or ground frost is present (at least 6" ground frost or 12" snow cover). Designated trails include the Top of the World Trail and Rainy Creek Trail. Snowmachines and OHVs may be used to travel cross country during periods of adequate snow cover.	OHVs must remain on designated OHV trails (Top of the World and Rainy Creek Trails) and will not be allowed to operate off designated trails for game retrieval, except during periods of adequate snow cover (at least 6 inches of frost or 12 inches of snow cover). OHVs will be limited to 2000 lbs. Gross Vehicle Weight (GVW). OHV restrictions apply to all users, including subsistence users (defined in ANILCA Section 811). Exceptions to the 2000 lb. GVW limitation may be granted for access to active mining claims via the Rainy Creek Trail and to subsistence users who obtain authorization from the BLM, Glennallen Field Office. Two unauthorized OHV trails at the confluence of Eureka Creek will be closed and rehabilitated.	Two OHV trails at the confluence of Eureka Creek will be open to OHV use and designated as OHV trails. OHVs will be allowed to travel off designated trails for game retrieval, and there will be no weight limits for OHV use.	No change from Alternative 2, except OHVs would be required to park out of sight of the river.
	Nonmotorized trails are dispersed and undeveloped.	Nonmotorized trails will remain dispersed and undeveloped. Additional nonmotorized trails may be designated in the future in the Eureka Creek drainage.	Same as Alternative 2	Nonmotorized trails will remain dispersed and undeveloped. No additional trails would be considered for future designation.
	No motorized boating limitations.	No restrictions on motorized boating.	Same as Alternative 2	All motorized boating will be limited to 65 horsepower motors and airboats and hovercraft will be prohibited.
	Airplane landings are prohibited, except for emergency operations. No new airstrips will be constructed.	Airplane landings will not be restricted. New airstrips will not be authorized.	Same as Alternative 2	All airplane landings will be prohibited, except for emergency operations. New airstrips will not be authorized.

8.4 Draft EA Public Comment Analysis

A. Introduction

On March 23, 2010, the public comment period commenced for the Draft Environmental Assessment (EA) for the Delta River SRMA Plan and EARMP Amendment. Public comments were accepted until May 6, 2010 and could be submitted via email, U.S. Mail, in-person, or fax. A total of 68 comments were received during the public comment period. This appendix contains the actual text or transcription of all comments received during the comment period, with BLM responses to each comment. The BLM responses include how the comments were considered and addressed in the development of the alternatives and analysis of effects for the Final EA.

B. Content Analysis Process

A standardized content analysis process was conducted to analyze the public comments for the Draft EA. Each letter, email, or written testimony that was submitted in response to the comment period was considered a "comment," these comments were then parsed to extract individual themes or issues that could be grouped according to specific categories. Each comment was read by the planning team to ensure that all comments were identified and associated with the appropriate subject category, and then entered into a table to allow sorting based on the issue or subject. Comments are included verbatim as they were submitted by the public.

C. Responses to Individual Comments

Comment letters were assigned comment numbers when they were received; these numbers are used in the following table so reviewers can easily find their comment and how the BLM responded to each comment. Also shown are the page numbers where responses to specific comments can be found in the different categories throughout the table. Organizations and government entities are listed by the organization or agency, rather than by the signatory to the submission.

Name of Commentor	Comment #	Response Page #
Alaska Center for the Environment	01	154, 160, 167, 183, 184, 185, 188, 190
Alaska Miners Association, Inc	02	154, 186, 187, 206
Alaska Quiet Rights Coalition	03	154, 160, 167, 170, 171, 174, 178, 179, 180, 188, 213
Alaska Wilderness League	04	155, 161, 188, 198-201, 213-214
Baird, Becky	05	172
Baring, Sharon	06	155, 161, 168, 188
Bentzen, Rebecca	07	155, 161, 168
Bondy, Claude and Jennifer	08	155, 161, 182
Brown, Linda and Miller, Jon	09	156, 162, 168, 187, 190
Copper Country Alliance	10	151, 156, 162-163, 168, 170, 171, 172, 174, 178, 180, 183, 184, 186, 187, 188, 190, 201, 212, 214
Davidson, Gail	11	151
Delisa, Susan	12	191
Devenport, Dael	13	156, 163, 168, 191
Eklund, Janelle	14	156, 163, 188, 203-204
Feltz, Daniel	15	156, 163, 174, 214
Galbraith, Joseph	16	151-152
Gaydos, John	17	156
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COMMENT #	COMMENT	BLM RESPONSE
	GENERAL TRAVEL MANAGEMENT	
10	There are many opportunities in the Copper Basin and adjoining regions to enjoy motorized recreation and motorized hunting and fishing (not all hunters and fishermen use motorized vehicles in their pursuits; not only are a number of them seeking a quieter, more natural experience, but their hunting success can be adversely affected if game is driven farther away from their access points by motorized vehicles; regarding the latter point, see p. 67). There are very few locations, however, where non-motorized recreationists and sportsmen can recreate free of the impacts and conflicts that can be created by motorized vehicle use. In this narrow, specially designated corridor the emphasis should be on non-motorized travel and the opportunity to enjoy a more natural, more primitive experience and environment. And of course, even more important than these social issues, responsibly managing ATV and other motorized use has the extremely significant benefit of reducing ecological and archaeological damage (see, e.g., pp. 51, 52, 65, 66, 76, 77, 78). We think it's telling that Outstandingly Remarkable Values ("ORVs") are being identified based on how the area was at the time of designation (p. 10). It's a virtual certainty that motorized vehicle use was much lower in 1980 than it is now, thirty years later. This very strongly suggests that motorized use should be managed at significantly lower levels than is being proposed in the DEA.	Please refer to comment #16 in this section regarding ANILCA access regulations. The effects of motorized uses are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
11	Motors, noise, and pollution are taking over the few places accessible to quiet, non-motorized travel. In order for the Delta River to remain Wild and Scenic, motorized traffic should not be allowed in any form beyond the first Tangle Lake.	Please refer to comment #16 in this section regarding ANILCA access regulations. The effects to noise caused by motorized travel for each alternative are discussed in the EA on pages 99-100.
16	The Tangle Lake area along with the entire Denali highway is one of the best bird watching areas in the state that is accessible by road. For this reason I must strongly protest the inclusion of any motorized recreation in this area as the two activities are mutually exclusive. I appreciate the fact that some people enjoy making a racket and whipping around on their toys, but it makes it impossible to enjoy the area for those of us that are looking for some peace and quiet. I think we can all agree that the noise made by these machines drives off any wildlife in the areas where they are operating. I have grown up in this state and it seems that those of us that don't want to try and enjoy nature in spite of the ATVs and snowmachines have to travel further and further afield. The motorized users already have parts of Hatcher Pass and are trying to get more here in the valley as well as other areas around the state. Tangle Lakes and the surrounding area is one of the last big areas that is easy to get to that you don't have to compete with motorized recreation. In addition I do not believe that the motorized activities will stop at the designated areas. I have witness many case of ATVers and snowmachiners jumping the borders of the motorized area and rampaging through the off limits area. In such a remote location I doubt that an enforcement office will be able to stop this from occurring in the areas covered by this proposal. Not only is this annoying, but it could damage the nesting grounds of the migratory bird life that uses the area in the summer months. I have no problem with motorized recreation in the winter being allowed in the area, but I strongly opposed it in the summer months over the delicate tundra. If motorized recreation ends up being allowed in the area please consider enforcement of rules as of primary concern.	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for subsistence uses and special access. ANILCA Section 811 states that the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Similarly, ANILCA Section 1110(a) provides that the Secretary shall permit the use of snowmachines, motorboats, airplanes and non-motorized surface transportation on CSUs in Alaska, subject to reasonable regulations. Unless these uses are found to be detrimental to the resource values of the area, the applicable methods of access shall not be restricted. Alternatives 2, 3 and 4 were developed with two Recreation Management Zones (RMZ 1 and 4) that would be managed for a nonmotorized setting prescription and nonmotorized recreational opportunities. ANILCA access provisions limit the closure of CSUs to certain modes of travel that have been historically used for subsistence purposes or traditional activities, unless these uses are found to be detrimental to the resource values of the area. The BLM would be required to first determine that motorized uses would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA Sections 811(b) and 111O(a). Such a finding requires the agency to follow

COMMENT #	COMMENT	BLM RESPONSE
		ANILCA closure procedures outlined in 43CFR36.11. After additional consideration, at this point in time, the current levels of motorized boating use and airplane landings in RMZs 1 and 4 do not warrant an ANILCA closure, although geography (low water, portages) does contribute to historically low levels of motorized boating use in these areas. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if motorized uses are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of use and impacts before implementing an ANILCA closure, if monitoring shows this is necessary in the future. OHV use within the river corridor in the Tangle Lakes and Denali Highway area is currently prohibited under BLM TLAD regulations. There are no designated OHV trails within this portion of the river corridor. This would only be changed under Alternative 3 with the designation of two additional OHV trails in this area. Otherwise, OHV use would be prohibited during the snow free months in RMZs 1, 2, 3, and 4, but allowed in RMZ 5 on two designated OHV trails (Rainy Creek and Top of the World Trails). The BLM is aware that unauthorized OHV trails have the potential to enter the river corridor as a result of unauthorized OHV use and has developed management actions to address this concern. Travel management actions for each RMZ in the EA include monitoring for unauthorized trails. The effects of motorized uses are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
18	I would like to request this area be kept as free of motorized vehicles and development as is possible. I've spent many a day enjoying it's peace and quiet, it's freedom from the trash and litter that accompanies vehicle access, the waste and destruction that follows on the heels of opening an area to development. Given the archaeological, paleontological, and natural beauty of the area I think it is well worth keeping as natural as possible. We have lost so much of the wonder that was once this country that I think it behooves us to preserve what is left before it, too, is given over to the ATV and bulldozer.	Please refer to comment #16 in this section regarding ANILCA access regulations. The effects of motorized uses are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
20	Please ensure all areas are open for multi-use purposes which included motorized access within the Delta Wild and Scenic River Management Plan. Motorized access is critical for Americans with disabilities to enjoy this area and for Alaskan to gather food resources.	All areas are open for multi-use purposes and all of the alternatives propose varying levels of motorized access. Alternative 3 has the most liberal motorized access proposals.
22	Subsistence activities, berry gathering and hunting should use traditional means to access the use areas, i.e. non motorized access.	Please refer to comment #16 in this section regarding ANILCA access regulations.
26	I would like to see this area protected as much as possible from motorized uses; there are plenty of places to go nearby and throughout Alaska for jetskis, airboats, and the like. Please preserve this area from excessive development and disturbance as possible.	Please refer to comment #16 in this section regarding ANILCA access regulations.

COMMENT #	COMMENT	BLM RESPONSE
38	I strongly feel that the number of people that have been visiting the river valley is fairly low in comparison to some of the numbers in this assessment. The majority of all of the motor boats that use the river due so for hunting purposes. This generally is from late August through September. During this time frame, the number of recreational floaters is extremely low. Those that are on the river during these times are doing the same thing as the motor boaters. They are hunting. BLM should not make regulations that favor one group over the other. The use of OHV is also extremely low. However, the top of the world trail did start getting more use roughly 5 years or so ago. This I feel is because Ft. Greeley closed a big section of land that the military personnel and Delta residence once recreated on. The majority of these OHV users were generally day riders and stayed out of the river corridor and their use is gradually falling back to the normal levels. As far a trail conditions go, the portion of the trail that parallels the Delta River is in excellent shape. Its use should have no impact on bank erosions. There are a couple of muddy braided spots on the top of the world trail. This is fairly common for any trails in Alaska. These muddy spots are a deterrent that helps keep the less experienced riders from coming into the valley.	The BLM utilizes several different methods to estimate visitor use levels on the Delta River. Sources include voluntary visitor registration kiosks, post use reports from commercial permittees, overflights of the river corridor on random days; traffic counters at developed facilities, visual observations, and river user surveys. We will continue to refine the methods used to estimate visitor use. We agree that the use of OHVs is relatively low, but we are also aware that current levels of OHV use have caused braiding and rutting on the Top of the World Trail as it descends into the river corridor. While these resource impacts may act as a deterrent to some OHV users, we cannot overlook the fact that these impacts may be adversely affecting soil quality, water quality, and vegetative resources, and that OHV management prescriptions are necessary to mitigate possible adverse impacts. The effects of OHV use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
39	The proposed motorized restrictions, (not consistent with the current navigability definition) in Zone 1, by possibly allowing some individuals to use motors, places the burden of proof of “traditional” on the individual. “Traditional” is not defined in ANILCA. The statement made by BLM personnel {at our meeting 4-14-2010} that “traditional” means prior to ANILCA has absolutely no basis in any written regulation or finding. “Traditional” needs a definition. Regulations need be a solid base on which individual users can rely. Allow motors for everyone, or for no one. Two classes of users cause a lot of grief; the guy from New York who paddles up and then has a jet boat pass him in an area he reads as non-motorized is not a happy camper. PAC believes in one class of user; make the regs consistent with ANILCA. Zone 1 motorized restrictions: PAC generally liked the concept, however the way this is written causes some heartburn. The word “may” used in the description of Zone 1 is unacceptable. Conceivably that would allow a “traditional” user access while a citation could be issued for his cousin from the city who is riding in the boat with him. We don’t want someone to have to call the Glennallen BLM office to be allowed motorized use in Zone 1. Who do they call on Sunday? PAC wants a solid regulation here.	Alternatives 2, 3 and 4 were developed with two Recreation Management Zones (RMZ 1 and 4) that would be managed for a nonmotorized setting prescription and nonmotorized recreational opportunities. ANILCA access provisions limit the closure of Conservation System Units to certain modes of travel that have been historically used for subsistence purposes or traditional activities, unless these uses are found to be detrimental to the resource values of the area. The BLM would be required to first determine that motorized boating and airplane landings would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA Sections 811(b) and 111O(a). Such a finding requires the agency to follow ANILCA closure procedures outlined in 43CFR36.11. After additional consideration, the BLM agrees that a traditional use determination would be needed to implement a seasonal closure, and at this point in time, the current level of motorized boating use and airplane landings do not warrant an ANILCA closure in RMZs 1 and 4. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if these uses are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of use and impacts before implementing an ANILCA closure, if monitoring shows this is necessary in the future.
45	I would like to express my concern about the proposal to allow powerboats and aircraft use on the Round Tangle Lake and Delta River. In particular the Wild and Scenic areas of the Delta River need to be preserved for non-motorized use only. I have floated sections of the Delta and fished in the Tangle Lakes. These are beautiful areas of Alaska that I would like to see protected from powerboats and aircraft.	Please refer to comment #16 in this section regarding ANILCA access regulations.

COMMENT #	COMMENT	BLM RESPONSE
47	In general, I favor restrictions on motors. There is no shortage of places in Alaska for outboards and ATVs; what the BLM offers in this locale is quality primitive recreation accessible by car without the restrictions of national parks. That is a rare commodity, and I'd like to see it protected. By all means do ban motors on the Upper Tangle River, specifically.	Please refer to comment #16 in this section regarding ANILCA access regulations.
62	Motorized vehicles should not be allowed in Zones 1 and 4.	Please refer to comment #16 in this section regarding ANILCA access regulations.
63	Hunting - my family chooses to go non-motorized hunting. We recognize this is not everyone's ethic, but it is ours. The Upper Tangles are one of the only places where you really can get away from the 4 wheelers and jet boats and Argos and all of those other "big boy toys". I'm not saying there is no place for motor supported hunting, I would just like to advocate for spaces where those of us who choose to go under human power have a place to do so. The lack of motor noise makes the Tangles particularly special.	OHV use in the Upper Tangles is already restricted within the river corridor under Tangle Lakes Archeological District (TLAD) Special Rules. There are no authorized OHV trails within the river corridor in the Upper Tangles area. Effects of motorized uses to natural quiet and natural sounds are discussed in the EA on pages 99-100.
65	Hi, I wanted to write in support of a very minimized motorized usage of the Tangle Lakes. I am a hiker, bicyclist, kayaker, and packrafter. The reason I love the Tangle Lakes area is that it has a relatively low human impact, therefore the wildlife is still abundant. The reason I live in Alaska is because it is NOT the lower 48, with motorized trails everywhere and jetskiis bombing around the lakes, and it's still possible to enjoy nature without the desctrutive impacts of human civilization. I feel very strongly that what makes the Delta "Wild & Scenic" is the low impact, so far, of motorized craft.	Please refer to comment #16 in this section regarding ANILCA access regulations.
OFF HIGHWAY VEHICLES (OHV)		
01	In alternative #3, BLM proposes to legalize motorized uses on trails that were previously closed. This encourages illegal poaching of trails and is a poor administrative choice that will only result in more illegal activity. We strongly discourage this kind of precedent being set on our public lands. Noise and damage to vegetation, soil, and water are common impacts from Off-Highway Vehicle (OHV) use; these are all impacts that would degrade the values of the corridor. With almost the entire Copper Basin open to recreational OHV use, it is reasonable to disallow such use throughout this narrow Wild and Scenic River corridor in snow-free months. Off-highway vehicle use for mining and subsistence purposes could be allowed on the Rainy Creek Trail. We are in favor of closing Top of the World/Yost Trail to motorized use, allowing access for mining and subsistence purposes only.	Decisions regarding OHV use that were developed in the EARMP are listed in the EA in Section 3.2.10.4.1 on page 77. Unless changed in this Land Use Plan Amendment, these decisions will continue to apply, including "...the future consideration of the development of motorized or nonmotorized trails..." as directed by the EARMP. The effects to noise, vegetation, soil, and water quality caused by OHV use for each alternative are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 107-108 (soil resources), pages 111-113 (vegetation), and pages 113-115 (water quality).
02	We understand that exceptions to the 2000 lb limitation on OHV weight "may be permitted on a case-by-case basis for access to active mining claims via the Rainy Creek Trail...." Additional access routes may be needed depending on mineral exploration results. Similar exceptions apply to uses of other approved routes. We recommend that language be used that will provide wider discretion for the BLM to approve other areas.	On page 60, the EA discusses the process for additional access routes within the DWSR corridor. The effects of authorizing additional access routes were discussed in the EA on pages 98-99.
03	Ideally, there would be no ATV use in this very special corridor. There are millions of acres of state and federal public domain land where their use is allowed with virtually no effective restrictions. We applaud BLM's proposal to close to motorized use, and attempt to rehabilitate, all of the motorized social trails in the corridor. And, although it's unfortunate that there are two designated subsistence and mining ATV trails there (Top of the World and Rainey Creek), we do not oppose their use, for these purposes only, by permit. Recreational motorized use on these trails should not be allowed.	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU). ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for subsistence uses and special access. ANILCA Section 811 states that the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Unless

COMMENT #	COMMENT	BLM RESPONSE
		the use of OHVs is found to be detrimental to the resource values of the area, OHV use for subsistence purposes shall not be restricted. At this point in time, the BLM believes that the current level of OHV use and associated impacts do not warrant an ANILCA closure to subsistence and/or recreational OHV use. The BLM does not believe that defining different types of OHV user groups, (i.e. recreational versus subsistence users) is compatible with providing a semiprimitive motorized recreational experience in areas that are targeted for motorized recreation. The effects to noise, soils, vegetation, and water quality caused by OHV use for each alternative are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 107-108 (soil resources), pages 111-113 (vegetation), and pages 113-115 (water quality).
04	In addition to this, we would suggest that the BLM review OHV uses for the Top of the World Trail and the Rainy Creek Trail. The cumulative impacts of climate change and recreation in the planning area may require stronger management guidelines, adaptive management and/or future closures/limitation on these trails to recreational OHV use if braiding, damages to vegetation and soils, erosion and scarring continue to be a problem or are exacerbated by decisions made in the EA.	The BLM will retain its authority to temporarily or permanently close trails if OHV use is causing unacceptable resource damages. The effects to recreation, vegetation, and soils caused by OHV use for each alternative are discussed in the EA on pages 107-108 (soil resources), pages 109-111 (travel management), and pages 111-113 (vegetation). We have also updated the effects analysis on pages 93-94 to consider the impacts on climate change for each alternative.
06	I am disheartened to learn that you are proposing an environmental assessment management plan for the Tangle Lakes and Delta Wild and Scenic River system that would support expanded motorized vehicle use in this area. As an annual user I have witnessed the damage to the tundra from ATV's on the south side of the highway during snow-free periods. I have appreciated the waterfowl and other wildlife and relative peace and quiet within this river system from my adventures on foot and by canoe. I do NOT support use of motorized off-road vehicles in this river system as I see such use as incompatible with the vision of a wild and scenic river and there are other opportunities for these vehicles elsewhere nearby.	Please refer to comment #03 in this section regarding OHV use and comment #1 regarding the development of additional motorized trails. The effects to noise and wildlife caused by OHV use for each alternative are discussed in the EA on pages 99-100 (natural quiet and natural sounds) and pages 117-119 (wildlife).
07	...almost the entire Glennallen BLM district is open to recreational OHV use, it is reasonable limit ORVs throughout this narrow Wild and Scenic River corridor in snow-free months.	Please refer to comment #03 in this section.
08	We enjoy the fact that this is one of the only campgrounds left that allows you to unload your atv's in the campground itself, for traveling to the various trails around. I will not visit campgrounds that don't allow you to take your wheelers off a trailer inside the park. We realize there are going to be people that mis-use this privilege, but don't feel everyone should suffer for the violations of a few. The numerous atv trails in the area are some of the best in the state, and we would not want to see any restriction going forward on using those trails.	All alternatives allow for the loading and unloading of OHVs in the campground. OHV use would be allowed for ingress and egress to the developed facilities on gravel travel routes designated for motorized travel. This would still provide for access to OHV trails in the area.
09	We also think that BLM should ban any off-road vehicles within the river corridor. Clearly these vehicles have a devastating impact on vegetation, and wildlife as we have personally seen in areas such as the Chena River Recreation Area. Moreover, like motorized water craft, the noise impacts must be considered to be in conflict with the semi-wilderness experience that is the draw of the Delta corridor for most users.	Please refer to comment #03 in this section. The effects to noise, vegetation and wildlife caused by OHV use for each alternative are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 111-113 (vegetation), and pages 117-119 (wildlife).

COMMENT #	COMMENT	BLM RESPONSE
10	Ideally, in order to protect the corridor's natural, primitive character to the greatest extent possible, ATVs should not be allowed anywhere in the corridor. Consequently, we commend BLM for its proposal to prohibit the use of social trails and to restore the damage they've already caused. And although, in the abstract, we would definitely prefer to see no designated trails, we can support the two designated trails because of the need to provide, by permit, motorized access for subsistence and mining—but there is no need for recreational ATV use of those trails and they should be closed to that activity. Additionally, both of those trails should be managed to minimize additional damage to the greatest extent possible. We were happy to see the rest of the area proposed to be closed to ATV use. We're unclear, however, about the proposal to allow ATV use for ingress and egress in the campground; once leaving the campground, is it legal to ride ATVs (unless licensed) on the highway? Incidentally, the proposed prohibition on non-ingress or egress use of ATVs in the campground definitely needs to apply to the campground host; in our experience, the host can be the worst offender, making frequent disturbing trips around the campground on an ATV.	Please refer to comment #03 in this section. The use of OHVs in the Denali Highway corridor is under the jurisdiction of the State of Alaska, Department of Transportation and Public Works.
13	I would also ask the BLM to ban ATVs within the river corridor because they are extremely destructive to the vegetation, soil, water and archeological sites. In addition, the noise disrupts wildlife and other users. My family and I enjoy spending time together in this area and I fear the continued degradation of the area will change it from a place to get away to into a place to get away from.	Please refer to comment #03 in this section. The effects to archaeological sites, noise, vegetation, soil, and water caused by OHV use for each alternative are discussed in the EA on pages 94-96 (cultural resources), pages 99-100 (natural quiet and natural sounds), pages 107-108 (soil resources), pages 111-113 (vegetation), and pages 113-115 (water quality).
14	OHV use should be prohibited in the wild and scenic river corridor during the snow-free months. They are loud, stinky, and have impacts on the land.	Please refer to comment #03 in this section. The effects to noise caused by OHV use for each alternative are discussed in the EA on pages 99-100.
15	A majority of all users felt that BLM should improve OHV trails to minimize places with unacceptable impacts using geoblock, planking, and water bars.	Please refer to page 38 of the EA for trail maintenance prescriptions. Trail maintenance activities may include the use of geoblock, planking, and waterbars, depending on the location and effectiveness of these methods.
17	I would like to see no change from the current plan. If anything, I would like to see expanded Off Highway Vehicle access and opportunity.	Alternative 1 would not change management from the current 1983 Delta River Management Plan. Alternative 3 provides for the creation of four additional OHV trails within the river corridor.
21	*Top of the World Trail.* I support any trail improvements/maintenance required to make this a sustainable and usable ATV trail to access the Delta corridor. I would like to see these maintenance activities aimed at reducing braided sections of trail thus reducing visual impacts to river users, reducing vegetation and soil impacts and reducing user conflicts. I do not believe that this trail has a detrimental impact to the non-motorized through floater. The use is centralized around the river crossing area. *South Landmark Gap Trail.* The South Landmark Gap Trail is a designated OHV trail within the TLAD. I have concerns about this trail "growing" and extending into Tangle Lakes Zone 1; a zone which is managed for a non motorized experience and will thus attract users with the highest sensitivity levels to motorized use. This brings into conflict users of the non-consumptive and consumptive genres which, as stated on page 57, tend to value different recreational experiences. I recognize that the main time that South Landmark Gap trail is used is during hunting season, which is not a heavy time for recreational use of Zone 1 but the visual impacts of an ATV in a primitive zone as well as the impacts to those hunters looking for a remote, primitive hunting experience would be greatly impacted by the introduction of another, motorized, access point into the deep Upper Tangle Lakes. As stated on page 101, "The demand for recreational use of public lands will likely increase." And "demand for OHV trails will likely increase. The use of OHVs for recreational purposes will increase." I am concerned that the recreational OHV user will	As a designated OHV trail, The Top of the World trail would be prioritized for OHV trail maintenance activities, as discussed in the EA on page 38. Regarding the South Landmark Gap Trail, page 19 of the EA specifies management actions that include monitoring for unauthorized trails. The effects of unauthorized trail use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).

COMMENT #	COMMENT	BLM RESPONSE
	become a more prominent user of the area. They are more likely to be using the area during the summer months. Their use could easily extend South Landmark Gap Trail and once a trail is there, subsistence users and hunters will use it. "Where does this trail go?" It is the natural progression. I believe that the possibility of this infringement should be clearly stated in the plan and a monitoring/action plan outlined to address and prevent any impacts to Tangle Lakes Zone 1 from this motorized ATV trail. Both recreational and subsistence activities need to be part of the monitoring plan. The introduction of motorized use in Zone 1 would reduce the diversity of experiences available in the area.	
22	ATV/ORV should be controlled and access restricted in the river corridor.	Currently, there are restrictions on OHV use that were developed in the EARMP. These decisions are listed in the EA in Section 3.2.10.4.1 on page 77. Additional restrictions have been proposed in Alternatives 2 and 4 of the EA.
25	...off road vehicles (ORV) should be required to stay on designated trails.	Alternatives 2 and 4 would require OHV users to stay on designated trails. Alternative 3 allows for travel off designated trails for game retrieval only.
30	Ban the use of jetskis, hovercraft, and airboats. These simply have no place in this setting and will also likely damage riparian habitats. There are plenty of other places where people can go and play. Same with ORV's, except for subsistence activities.	Please refer to comment #03 in this section. The effects of OHV use to riparian habitats are discussed in the EA on pages 96-98 (fisheries), pages 107-108 (soil resources), pages 111-113 (vegetation), and pages 113-115 (water quality).
31	I do not support...OHV travel. I hope you can get a good trail crew to help repair some of the resource damage caused by OHV's.	Please refer to comment #03 in this section. The effects of OHV use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife). Please refer to page 38 of the EA for trail maintenance prescriptions.
32	Recreational use of Off-Highway Vehicles (OHVs) should be prohibited throughout the corridor during snow-free months. With almost the entire Glennallen BLM district open to recreational OHV use, it is reasonable to disallow such use throughout this narrow Wild and Scenic River corridor in snow-free months.	Please refer to comment #03 in this section.
36	I urge you to...limit off road vehicles to subsistence use only within the corridor...	Please refer to comment #03 in this section.
40	...motorized craft and vehicles (e.g. ORV/ATV's) have no place within the Wild and Scenic River corridor and should be expressly prohibited. There is a serious problem in addressing the access to mining claims on the west of the corridor. I am greatly saddened by the pioneer road crossing the river and running on the west bank. While I realize that access is important, a road along the bank is not acceptable. Some method of allowing legitimate access while mitigating the intrusion and impacts associated with such access must be examined.	Please refer to comment #03 in this section. The decision to authorize the construction of the Rainy Creek Trail is discussed in the EA on page 74. On page 60, the process for authorizing travel routes that are necessary to access mining claims within or adjacent to the DWSR corridor is discussed. The effects of authorizing additional access routes are discussed in the EA on pages 98-99.
41	Your Alternative #3 proposals for OHV use in Zones #4 and #5 seem reasonable.	Thank you for your comment.
44	OHV use must be seriously considered. ATV's have the capability of penetrating the Delta River Corridor and perhaps already are. Serious planning should be made to select certain access trails and limit ATV use to just those trails. These trails should not descend right to the river's edge but terminate some distance away. This will preserve the scenic beauty of the river and allow foot access down into the actual river channel.	Alternatives 2 and 4 would require OHV users to stay on designated trails. Alternative 4 would require OHV users to park out of sight of the river. The effects of OHV use on scenic resources are discussed in the EA on pages 105-107.

COMMENT #	COMMENT	BLM RESPONSE
46	OHVs should not be allowed to drive off designed trails and the building of new OHVs trails should be prohibited in throughout the Delta Wild and Scenic River Corridor. The use of off-road vehicles is widely distributed in the RMZs and if there is not a limit we will begin to see the quality of wilderness and wildlife habitat drop significantly. The proposed alternative closes the unauthorized OHV trails to protect fish and wildlife. I support this very much.	Alternatives 2 and 4 do not allow travel off designated trails or the creation of new OHV trails. OHV use within the river corridor in the Tangle Lakes and Denali Highway area is currently prohibited under BLM TLAD regulations. There are no designated OHV trails within this portion of the river corridor. This would only be changed under Alternative 3 with the designation of two additional OHV trails in this area in the river corridor. Otherwise, OHV use would be prohibited during the snow free months in RMZs 1, 2, 3, and 4, but allowed in RMZ 5 on two designated OHV trails (Rainy Creek and Top of the World Trails). The effects to fisheries, wilderness characteristics and wildlife habitat caused by OHV use are discussed in the EA on pages 96-98 (fisheries), pages 115-116 (wilderness characteristics), and pages 117-119 (wildlife).
48	The use of four-wheelers (and off-road trucks) also needs to be regulated. These may be useful for subsistence hunting, but should be limited to specific trails where their damage can be minimized and ameliorated. This type of regulation and management is necessary in an area that gets so many different types of users. Only by preserving the underlying natural resources will there be similar opportunities for future generations to manage and enjoy this area the way we could in our lifetimes.	Currently, there are restrictions on OHV use that were developed in the EARMP. These decisions are listed in the EA in Section 3.2.10.4.1 on page 77. Additional restrictions have been proposed in Alternatives 2 and 4 of the EA, including the requirement to stay on designated trails. The effects of OHV use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
49	The use of OHVs should not be allowed anywhere in the area, including the campground and Zone 3. Their noise, and the inevitability of their being used on trails where they are inappropriate demands an outright prohibition on their use in the whole of the Wild and Scenic and Recreational areas, for the preservation of the wild and scenic character. The rest of the Denali Highway and the surrounding lands have no restrictions whatsoever on the use of OHVs, with widespread, obvious, and worsening habitat deterioration as a result. Allowing ever expanding OHV use will create ever increasing habitat degradation, damage to archaeological resources and over time damage fish and wildlife populations. Placing restrictions on their use sooner rather than later is the only way to begin to step out of a deepening trend of habitat degradation.	Please refer to comment #03 in this section. The effects to archaeological sites, fisheries, noise, and wildlife caused by OHV use for each alternative are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), and pages 117-119 (wildlife).
50	Off highway vehicles pretty much have access to the entire Copper River Basin. Restrictions are few. In the Delta Wild and Scenic River Area OHV use should be disallowed in the snow free months. OHV use for mining and subsistence hunting could be allowed on Rainy Creek Trail.	Please refer to comment #03 in this section. The effects of OHV use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).

COMMENT #	COMMENT	BLM RESPONSE
51	OHV's should be prohibited in the Wild and Scenic River corridor during the snow-free months. Presence of tracks, noise and fumes would greatly degrade the values that make the Delta River wild and scenic. The Tangle Lakes and Delta River are among my favorite parts of Alaska. I travel to the area several times during each summer to photograph, backpack, paddle, fish, hike, go birding, and explore. I have paddled the lengths of most of the lakes and the wild character of the land and water is what makes the region so appealing. I dread the impacts on the lakes and rivers that the current preferred alternative would create, and the overall change in the character of the place. I strongly encourage the BLM to continue to manage Tangle Lakes and the Delta Wild and Scenic River for low impact uses.	Please refer to comment #03 in this section. The effects to noise and scenic resources caused by OHV use are discussed in the EA on pages 99-100 (natural quiet and natural sounds) and pages 105-107 (scenic resources).
52	With regard to off road vehicle use, designate any and all trails as "open" for personal consumptive use. If restrictions are deemed absolutely necessary for preservation of a trail's usefulness, they should be based on ground pressure (pounds per square inch of contact) rather than on an arbitrary total size or weight figure. Small atv's with wheels cause much more damage to the land than larger ones with "soft" tracks.	It is difficult to generalize the impacts of "standard" 4-wheelers vs. tracked vehicles. Impacts to vegetation and soils from OHV use (including tracked rigs) varies widely based on soil and vegetation types. Concerns with tracked rigs often revolve around the width of trail they create, particularly through black spruce vegetation, and the subsequent development of road-like trails as a result. The effects of OHV use are discussed in the EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
57	Lastly, I would advocate that Recreational Off-Highway Vehicles (OHVs) should be excluded from all parts of the river corridor because of the impact from OHVs to vegetation, soils, water, and wildlife, and the noise impacts...	Please refer to comment #03 in this section. The effects to noise, vegetation, soil, water and wildlife caused by OHV use are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 107-108 (soil resources), pages 111-113 (vegetation), pages 113-115 (water quality), and pages 117-119 (wildlife).
60	OHVs create air pollution and permanent destruction of the habitat they cover. None of these polluting craft are consistent with maintaining the current relatively unspoiled region.	The effects to vegetation, soil, water and wildlife caused by OHV use are discussed in the EA on pages 111-113 (vegetation), pages 107-108 (soil resources), pages 113-115 (water quality), and pages 117-119 (wildlife).
67	Except for subsistence use, all OHV use should be banned from with the corridor. If OHV use is continued to be allowed it should be limited to only the Yost, Rainy Creek and Top of the World trails. Under these circumstances, impacts upon the environment, wildlife and non-motorized recreational users should be monitored and restrictions put in place to eliminate these impacts & conflicts.	Please refer to comment #03 in this section. The effects to recreational users and wildlife caused by OHV use are discussed in the EA on pages 109-111 (travel management) and pages 117-119 (wildlife).
68	I also disagree with the ORV use restrictions contained in BLM's proposed alternative. Again, the Bureau seems to be valuing one user group's comments above the others. As I noted in my comments during the scoping process, many of the proposals regarding "management" are simply over reaching over regulation. The volume of use in the river valley is not such that these regulations are necessary. Many of the desired goals can be accomplished through education rather than regulation. Not cutting live trees and properly disposing of waste are primary examples. Courteousness between motorized and non motorized users is also an example. The importance of not establishing new ORV trails is a further example.	The alternatives were developed to provide a wide range of management actions for OHV use within the river corridor.

COMMENT #	COMMENT	BLM RESPONSE
	MOTORIZED BOATING	
01	Jetskis, hovercraft, and airboats are not only detrimental to the river ecosystem but are also extremely noisy and should not be allowed in any zone of the Delta Wild & Scenic River system. All motor craft should be prohibited from Tangle River between the Wayside and the Campground. Powerboat use...should be limited to Round Tangle Lake. On Round Tangle Lake, boat motors should be limited to 15 horsepower.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
03	**Jet skis, airboats, and hovercraft.** These types of watercraft are EXTREMELY noisy and irritating, and they can, and of course too often do, because of their particular technical capabilities, seriously harm, both mechanically and because of pollution, lake- and river-side vegetation/habitat and the fish and wildlife that depend on that habitat. Their use should not be allowed anywhere in the corridor. Recreational powerboats should be allowed only on Round Tangle (campground users will recognize that there will be somewhat more noise here than in other areas), with a 15 horsepower limit (BLM's present recommended limit). This 15 hp limit should be maintained for subsistence use as well on the lakes, should exceptions be made there for big game subsistence hunting (although it is entirely possible to have a successful subsistence hunt, including transporting the game, on the lakes by non-motorized canoe). Zone 4, and the entire Wild section of the river (surely "wild" should mean something), should be non-motorized for all purposes. Powerboats could be allowed for subsistence purposes only in Zone 5, with motors no more powerful than is necessary for safety. Finally, the small Tangle River reach between the wayside and where it empties into Round Tangle should be closed to all powerboat use now—not after a problem develops. BLM recognizes that areas that now seem impracticable for motorized use could become routinely useable with "improvements" in technology. It is foolhardy to wait until that happens to try to close this beautiful little fly fishing spot to an inappropriate and unnecessary use.	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for subsistence uses and special access. ANILCA Section 811 states that the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Similarly, ANILCA Section 1110(a) provides that the Secretary shall permit the use of snowmachines, motorboats, airplanes and non-motorized surface transportation on CSUs in Alaska, subject to reasonable regulation. Unless motorized boating is found to be detrimental to the resource values of the area, motorized boating shall not be restricted. Alternatives 2, 3 and 4 were developed with two Recreation Management Zones (RMZ 1 and 4) that would be managed for a nonmotorized setting prescription and nonmotorized recreational opportunities, with targeted setting character conditions that are primitive (RMZ 4) and semiprimitive nonmotorized (RMZ 1). In RMZs 2 and 5, motorized uses are common and these areas have been targeted for a semiprimitive motorized experience. ANILCA access provisions limit the closure of CSUs to motorized boating activities that have been historically used for subsistence purposes or traditional activities, unless these uses are found to be detrimental to the resource values of the area. The BLM would be required to first determine that motorized boating would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA Sections 811(b) and 111O(a). Such a finding requires the agency to follow ANILCA closure procedures outlined in 43CFR36.11. After additional consideration, at this point in time, the current level of motorized boating use in RMZs 1 and 4 does not warrant an ANILCA closure, although geography (low water, portages) does contribute to historically low levels of motorized boating use in these areas. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if these uses are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of motorized boating use and impacts before implementing an

COMMENT #	COMMENT	BLM RESPONSE
		ANILCA closure, if monitoring shows this is necessary in the future. Alternative 4 will still be analyzed to display the effects of prohibiting the use of jetskis, hovercraft and airboats within RMZ's 1, 2, 4, and 5 and prohibiting all recreational motorized boating in RMZs 1 and 4, even though these limitations would still be subject to the ANILCA closure procedures and resource degradation requirements specified above. The BLM will modify Alternative 4 to include a prohibition on all motorized watercraft use in RMZ 3 (Tangle River between the wayside and campground) and to limit motorized boating to 15 horsepower motors within RMZ s 1 and 2, which would include Round Tangle Lake. The BLM believes that the 65 horsepower limitation for RMZ 5 is appropriate to ensure that users have enough power to safely negotiate the braided Delta River floodplain, and that recreational motorized boating is consistent with the targeted semiprimitive motorized recreational experience for RMZ 5. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
04	Under existing management, the BLM has recommended limitations for horsepower ranges of motorized boats. However, the Delta EA preferred management alternative fails to recommend or adopt limitations for power boating. We support a limitation of 15 Hp in the motorized portions of the river and hope that the BLM will not lose a strong existing management option.	Please see response to comment # 03 in this section.
06	...small-engined outboard motor boats would be acceptable, if they were restricted to the main Round Tangle Lake, or used for subsistence only.	Please see response to comment # 03 in this section.
07	I urge you to limit powerboat use...to Round Tangle Lake and to limit boat motors to less than 15 horse power. Additionally jetskis, hovercrafts and, especially, airboats should not be allowed in the Delta Wild & Scenic River system. This area should be managed as a wild and scenic area, not a play ground.	Please see response to comment # 03 in this section.
08	As far as boating, I'm all for allowing motorized boats in the area, but would be hesitant to advocate for high powered boats and jetski's. This is one of the few area's left where a person very old or very young can still get out and see area's where they don't have the physical ability to hike. We are saddened by seeing so many 'walking' or 'no motorized vehicle' area's, as you are singling out an entire segment of the population by doing so.	In regards to motorized boating, the alternatives were developed to provide a reasonable range of potential management actions. Alternative 4 is the most restrictive, prohibiting high powered boats (greater than 65 horsepower), hovercraft, airboats, and jetskis in RMZ's 1, 2, 4, and 5. Alternatives 1 and 3 do not propose any formal motorized boating restrictions. Alternative 2 will be modified to propose restrictions on motorized boating based on monitoring data for specific resource values in RMZs 1 and 4. The BLM will also modify Alternative 4 to include a prohibition on all motorized watercraft use in RMZ 3 (Tangle River between the wayside and campground) and to limit motorized boating to 15 horsepower motors within RMZs 1 and 2, which would include Round Tangle Lake.

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09	We have enjoyed paddling by canoe through the Tangle Lakes and Delta River Scenic River area for many years. Over the last 20 years or so, we have made the trip from Tangle Lakes to a take-out near Michael Creek too many times to count. Over time, we have come to view with dismay the degradation of the corridor that has occurred from the introduction of more and more motorized watercraft. As you move forward with the Environmental Assessment (EA) for the area, we urge you to ban jetskis, hovercraft and airboats in the river corridor! In our experience many of these craft are very inconsiderate of non-motorized users and the noise has so impacted our own experience that we have not visited the area for the past several years. Moreover, it certainly seems clear that there is also potential to damage water quality and to disrupt wildlife which is, of course, even more sensitive than humans to the noise. Since it is the paddler's hope to see wildlife and migrating birds, and since the area is known as a "scenic" river corridor, we think it is important that BLM limit powerboats...to Round Tangle Lake, and limit boat motors to some low horsepower. 15 horsepower would be a good upper limit since this size engine is appropriately slow and quiet.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
10	Banning motorized use seasonally (June and July) in Zones 1 and 4 would admittedly be a positive step, but it doesn't go nearly far enough. There are countless areas in the region where powerboats can be used; powerboat use in Zones 1-4, and the Wild section of Zone 5, should be limited to Round Tangle, with a 15 horsepower maximum. Round Tangle is adjacent to the developed campground, where a somewhat greater level of noise would be expected. Use levels should not be allowed to increase significantly, however; these levels could perhaps be monitored by the campground host. Requiring newer engine technologies (e.g., four-stroke, direct injection) is one of the actions BLM could take if engine pollutants show up in water sampling. BLM's current recommended horsepower limit is15 horsepower (p. 72; this appears to be for the lakes). This is a very good recommendation, and should be a mandatory maximum (the sole exception would be the Recreational section of Zone 5; see below); why BLM seems to be ignoring it now is puzzling. 15 hp is entirely adequate for both recreational and subsistence purposes; human-powered canoes, for example, have been, and still can be, used for hunting, including the transport of the game, on the lakes. 65 horsepower, the proposed maximum for Zones 2-5 in Alternative 4, as well as the 35 hp maximum proposed for Zone 1, is way more power than is needed in most of this area (see, e.g., http://smalloutboards.com/choose.htm). We should explain why we aren't supporting the use of powerboats (except in part of Zone 5; see below) for subsistence big game hunting elsewhere in the corridor. First of all, they're not necessary (see immediately above). Secondly, this subsistence opportunity (that is, by powerboat in the corridor) is far from the only one in the region; a vast area off of the Denali and Richardson highways is accessible for big game hunting, and is presumably one that far more people take advantage of. Thirdly, an exception for subsistence hunting would be difficult to enforce since every boater with a weapon would on the face of it appear likely to be a subsistence hunter. Fourthly, most of August, a beautiful time of year to be paddling on the lakes and other parts of the corridor, would be motorized. And, finally, making most of the corridor non-motorized would provide one of the few opportunities available for the not insignificant number of hunters who are seeking a more natural, quieter hunting experience. A Wild and Scenic River corridor would seem to be an ideal location for the provision of such an experience. The Recreational section of Zone 5 is the only other place in the corridor where we can support powerboat use, by permit, for either mining or subsistence big game hunting, but not for recreational use; a 65 hp maximum, or a lower limit that would still allow boats to be operated safely, should be required. This does create a significant safety issue, however, for paddlers; this problem needs to be thoughtfully evaluated and resolved in order to protect paddlers from wakes, capsizing, and collisions with powerboats. It is hard to understand why all motor craft would not be prohibited from the Tangle River between the Wayside and where it flows into Round Tangle. Sooner or later, some motor craft will be capable of operating in that short, beautiful river (BLM has recognized in a number of places in the DEA that	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).

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	technological "advancements" are possible, "leading to increased access in areas that are currently limited by shallow water and natural barriers" (see, e.g., p.93); we would say such advancements are likely, if not inevitable), and waiting for that to happen (as BLM suggests) is unwise. Harlequin ducks, grayling, and fishermen should not have to contend with motor craft. Jet skis, airboats, and hovercraft are exceptionally noisy, obtrusive vehicles (not only because of their decibel level but, often, because of their highly irritating changes in pitch), and they can do significant damage to waterfowl and to fish in vegetative cover, and to their riparian and lacustrine habitat. They should be banned throughout the corridor; they are totally inconsistent with its natural, wild character. Even in Alternative 4, jet skis are proposed to be banned only in Zone 2 (banning recreational boating is not necessarily a ban on jet skis, since they can be used for subsistence purposes). Airboats and hovercraft would be banned in Zones 1, 2, 4 and 5 in Alternative 4; we would applaud such a ban, in conjunction with a ban on jet skis, if it were instead in the Alternative that BLM is likely to adopt. Why it isn't in the Preferred, when there are few if any good reasons for allowing these three craft to be used in this protected area, and many reasons why they should be banned (including, in the Preferred, the general availability of other motorized watercraft), is unclear. And if nesting waterfowl in Zones 1 and 4 would potentially benefit from the Alternative 2 June and July closures to motorized boating and airplane landings (p. 99), they would surely benefit from a total closure to jet skis, airboats and hovercraft; this of course would also be true in Zone 2 (and perhaps Zone 5). Loons are particularly sensitive to disturbance and could make a good indicator species for how well wildlife in the corridor is being protected. We encourage you to conduct loon surveys at least annually on all the lakes. Our organization has worked since 2000 to protect the Eastern Denali Highway area from mineral exploration and large-scale industrial mining. This effort has taken up a huge amount time on the part of our members and many other individuals and organizations that care about the region and its wildlife. We always include exploration and mining noise as one of the unacceptable impacts. If BLM allows high noise levels from recreational boating, you weaken our case, and thus you fail to help protect the Wild and Scenic River corridor from the other effects of mining.	
13	I would also ask BLM to ban jetskis, hovercraft and airboats in the river corridor because of the noise, air and water pollution that would impact wildlife, fish, and other users. I would prefer a ban on motorboats as well, but if this is not possible, then please limit boat motors to 15 HP and limit powerboats...to Round Tangle Lake.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
14	All motorized vehicles should be limited to 35hp instead of 65hp and jetskis, hovercraft and airboats shouldn't be allowed in any zone. They are very noisy and disturb the solitude of the Wild and Scenic River corridor. For future reference, it should say no motorized craft in Tangle Lakes between the wayside and the campground. There is a lot of waterfowl in this area that would be disturbed if that should happen.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
15	I have canoed across the Delta river below Black rapids on a day trip and it became an overnight trip because of flooding and my inexperience. On are trip back we almost did not make it. The only experienced user would have been in a power boat to rescue us. I don't think you should restrict power boats on lower Delta river as their positive out way the negative.	The only alternative that proposes limitations on motorized boating use on the lower river is Alternative 4, where it would be limited to 65 horsepower motors. Alternatives 1, 2 and 3 do not propose any motorized boating limitations in RMZ 5, which constitutes the lower river portion of the river corridor.
21	I support a ban of all airboats, hovercraft and personal watercraft on all stretches of the Delta System, although their use in Zone 5 I could find acceptable since it is traditionally a more motorized segment of the river. With page 73 stating that 59% of motorized users and 91% of non motorized users support restrictions on personal watercraft and hovercraft. Noise is also mentioned as a reason non-motorized users would like to see use of these craft limited. Page 84 discussed the effects of the alternatives on Natural Quiet and Natural Sounds. This point to alternative 4 as being the most beneficial to the natural	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).

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	quiet of the area and this is the only alternative that mentions limits on airboat, hovercraft and personal watercraft use. I find it interesting that the BLM has decided to talk about chainsaw use through its own category for each alternative and zone but fails to give the even more intrusive sounds of airboats, hovercraft, and personal watercraft the same weight. With the loud noise that an airboat emits, it would easily impact the quiet experience of a user in Zone 1 when being operated in Zone 2. The effects alternatives shown on page 94 speak to the loss of a diversity of recreational experience that may be felt by some users because of the limitation of airboat, hovercraft, and personal water craft use in Alternative 4. I would like to challenge the BLM to take a broader look at "diversity of recreational experiences." The restriction of airboats, hovercraft, and personal watercraft is only within the Delta NWSRR Corridor. People wishing to use these modes of transportation can still enjoy their use on other rivers and lakes in the area. The BLM itself allows their use on the Gulkana NWSR. Is the BLM required to provide a variety of recreational opportunities at every site it manages or to allow for that diversity to unfold across the landscape and even across land management agency boundaries? I feel the Delta NWSRR system is a unique opportunity. The use of these craft are currently a VERY small percentage of the use of the area as stated on page 72 that only 3% of motorized users were airboat users according the Delta River Survey. Through their restriction the BLM would be showing the users of the Delta that they are committed to maintaining the current recreational opportunities that dominate the area. These craft are not even established uses within the corridor and therefore their elimination has no bearing on subsistence. Page 116 "Airboats and hovercraft are not established use within the corridor. Airboats have rarely been observed and hovercrafts have never been observed on the river or lakes." I support the limitation of motorized boating in zones 1 and 4 for the months of June and July. I would like to propose that the limitation on motorized boating in Zone 1 be extended to include August. This would provide a more extensive diversity of recreational experiences in an area that traditionally has very little motorized boating. Again, the goal here is to maintain the CURRENT recreation experience and since users are already stating that they are seeking a more primitive experience in Zone 1, it should naturally have the strictest limitations on motorized travel. Page 26 – I would amend The Travel Management section of Alternative 2 to restrict the use of motorized boats on the Tangle River between the Delta Wayside and the Tangle Lakes Campground. It is true that "motorized boating is naturally restricted by shallow river conditions" but it is naïve to rely on that as the only limiting factor. With the increasing technological development of watercraft that can go more and more places, it would be prudent to specifically restrict the use of motorized craft on this stretch of river. The river is routinely used by fishermen and is in close proximity to the Delta Wayside and the Tangle Lakes Campground. Allowing motorized craft on the Tangle River would pose a threat to public safety and a conflict of users from the noise of motorized craft so near a campground facility.	
22	Limit jet boat activity (motor hps, no jet skis or hover craft). Natural sounds are very important for the outdoor floaters.	Please see response to comment # 03 in this section. The effects to natural quiet and natural sounds are discussed in the EA on pages 99-100.
23	It appears that Alternative 2 creates special controlled use areas within the Tangle Lakes drainage. These special controlled use areas have two specific types of users: general and subsistence. More privileges are granted to the subsistence users in their mode of travel, noise generation (i.e. motors) etc. over there general-use counterparts. This can create disharmony. Allowing motorized boat activity for all, but limiting horse power to 9.9 hp or less, could be a workable alternative. Should subsistence privileges be removed at a point in the future, some traditional travel modes would immediately end. Please ensure those travel modes continue in the future. Don't lose sight of the fact that motorized boat travel on the Tangle Lakes drainage adds a dimension of safety and reliability to water travel. Utilizing a boat motor, though generating some noise, can be good insurance on getting back safely and on time. The Tangles are for the most part above timberline and very exposed. The wind can come up without warning and remain unmercifully strong for extended periods (days). There are few places to hide from the wind and exposure, and hypothermia are a lake traveler's nemesis. Windy weather can be uncommon some years and ever	Please see response to comment # 03 in this section.

COMMENT #	COMMENT	BLM RESPONSE
	present on others. To insure consistent and safe lake travel, allow motorized boat usage. If motorized restrictions must be placed, limit horse power and restrict travel only in waterfowl massing areas.	
25	Any relaxation of current restrictions would be unacceptable. The "value" of the area would even be enhanced by tighter restrictions. Noise is certainly a "pollutant" in a wilderness area and should be strictly regulated. As such, high decibel craft such as jetskis, airboats, hovercraft, helicopters and aircraft must be highly restricted. In my opinion, they should be prohibited entirely. Outboard motors should be restricted to 20 hp and lower...	Please see response to comment # 03 in this section. The effects to natural quiet and natural sounds are discussed in the EA on pages 99-100.
27	Monitor the use of powerboats and if possible restrict their use to less than 15 horsepower to reduce noise and wake.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
29	The Delta River is naturally a challenging river to navigate and depending on water levels this task can be further enhanced. This, in conjunction with the limited number of boaters on the river does not warrant a ban implemented on the use of motorized boats past Garret Creek. Again I remind you how we all have stories in which we have rescued others from the floater mishaps on the river.	Alternatives 1 and 3 do not propose any motorized boating restrictions.
30	Ban the use of jetskis, hovercraft, and airboats. These simply have no place in this setting and will also likely damage riparian habitats. There are plenty of other places where people can go and play. Same with ORV's, except for subsistence activities. Limit powerboats and aircraft to Round Tangle Lake only, and place a limit of 15 horsepower for boat motors.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
31	I strongly suggest Jet Skis and airboats be banned.	Alternative 4 proposes limitations on horsepower, airboats, hovercraft and personal watercraft.
32	There are plenty of areas in Alaska where motorized water travel is allowed. Please allow motorize watercraft to powerboat use...to be limited to Round Tangle Lake. On Round Tangle Lake, boat motors should be limited to 15 horsepower. Jetskis, hovercraft, and airboats should not be allowed in any zone of the Delta Wild & Scenic River system.	Please see response to comment # 03 in this section.
34	Prohibit jetskis, hovercraft, and airboats throughout the system. Allow other motor craft to be used only in two places: Round Tangle Lake (at not more than 15 horsepower) and the recreational portion of the Delta River in Zone 5 (by permit for subsistence and mining use, not recreation).	Please see response to comment # 03 in this section.
35	First, in Zone 1, I support no restrictions on motorized boating...This area includes upper Tangle Lake or "Landlocked Tangle" and is accessible by a short portage. To restrict this lake to small motors in June and July restricts my ability to reach one of my favorite areas. Most motors are small because they need to be carried so it is sort of self restricting. In fact the only motor I have ever seen on this lake bigger than a 5 hp was a 14hp in 1985, June....the rest of the motors seen there are usually 2-5 hp and cause little noise and since you have to carry gas few people do. Second, in Zone 2, I support the No Action alternative. Third, in Zone 4, Lower Tangle Lake, I protest its closure to motors. With rare exception, the only motors used here are small 2-5 hp motors which must be lined back up Tangle River upon leaving or are used to push rafts across Lower Tangle to the beginning of the Delta River. Jet boats are infrequently seen and will usually never come back. The Lower Lake is self controlling by its very proximity.	Alternatives 1 and 3 do not propose any motorized boating restrictions.
36	I urge you to NOT allow jetskis, hovercraft or airboats within the corridor...and, if any power boats are to be allowed access, a size limit of 10-15 hp would be in order.	Please see response to comment # 03 in this section.

COMMENT #	COMMENT	BLM RESPONSE
40	I think that motorboat use (small motors, no wake zone) is allowable only in Round Tangle Lake, and during hunting season in Upper Tangle Lake. Other motorized craft and vehicles (e.g. jet skies, airboats, hovercraft) have no place within the Wild and Scenic River corridor and should be expressly prohibited.	Please see response to comment # 03 in this section.
41	Prohibiting river boat use of the river above Garrett Creek has no grounds. Canoeists and rafters should not be given priority over motor boats. They are by no means more pure.	Alternatives 1 and 3 do not propose any motorized boating restrictions.
46	I agree with most of what is in Alternative Two with some major exceptions. One major exception is that there needs to be motor boat...restriction in Recreational Management Zone (RMZ) Five. To insure that wilderness values are protected you must restrict motorized boats...(with an exception of authorized subsistence and traditional users) during the months of June and July in RMZs 1, 4 and especially Zone 5 (designed as "wild") which is NOT included in the boat...restrictions in your preferred alternative. These rules are essential to maintain the beautiful tranquility and solitude of this river. I implore you to set limits on horsepower motors in RMZs 1, 2, 4 and 5. Large horsepower motors causes waves that can swamp any unlucky canoe. This has happened to me many times. Having you and your supplies wet is not at all good for the outcome of the trip and could even be life threatening. Large horsepower watercraft is the main contributor to river bank erosion and it deteriorates fish and wildlife habitat. The noise from these motors is very disturbing for nesting waterfowl and can cause abandonment of nests. I'd like to see a 65 horsepower restriction in RMZ Five. There should also be a 35 horsepower limit in RMZs One, Two and Four. I also would like to see a complete ban on air boats and hovercraft. These kinds of watercraft should not be allowed on a Wild and Scenic River. They are greatly detrimental to all species of wildlife and to anyone who is trying to relax/sleep in their campsite. This is something that can completely ruin a wilderness experience and I urge you to address this issue.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
48	The BLM plan should ban jetskis, hovercrafts and airboats from the lakes and river, and should limit...the size of boat motors (< 15 horsepower).	Please see response to comment # 03 in this section.
49	I find specifically, the failure to restrict the use of personal watercraft (jetskis and wave runners), hovercraft, amphibious aircraft, or powerboats of any size from any part of the lakes and river, save the tiny portion in which they are impossible to use by virtue of the falls and the shallowness of some portions of the river, to be particularly negligent. I suggest the plan only allow powered craft with a power of no more than 15-20 h.p. on any of the lakes, that personal watercraft, hovercraft, and airboats be disallowed altogether and...be allowed only on the Round Tangle Lake. If powerboats are allowed in Zone 5 without power restrictions, they should not be allowed to transport OHVs into any other zone, or across the river into sensitive wilderness habitat.	Please see response to comment # 03 in this section.
50	Jetskis, hovercraft and airboats are all high impact machines and should be banned, plain and simple. Round Tangle Lake should be the host for powerboats... Powerboats should be limited to 15 mph. They should be prohibited from the Tangle River between the wayside and the campground.	Please see response to comment # 03 in this section.
51	The current preferred alternative would be an extremely bad change in the management of the area. The existing management of the Tangle Lakes with the limited use of 15hp motors on Round Tangle Lake and no motorized use in other areas is an excellent compromise, allowing fisherman and motor-boaters the opportunity to use and access the area without substantial disruption to the other users. Changes that would allow jet-skis, jet-boats, ski-boats, speed-boats, and even hovercraft anywhere on the lakes or rivers would cause an incredible disturbance to the area. Non-motorized users would quickly remove themselves from the noise, stench, and danger that the presence of such machines causes. Additionally the Tangle Lakes is an important nesting area for birds, and these impacts would unquestionably negatively impact their nesting success. I am a wildlife biologist who has worked in the area and understand how the delicate shoreline habitats could be destroyed by boat wakes and waves. Please do	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).

COMMENT #	COMMENT	BLM RESPONSE
	not make any changes to the management plan that would allow for increased use of motorized watercraft in the lakes or Delta River system. Continue the limitation of motorized watercraft to boats under 15hp on Round Tangle Lake and leave the rest of the lake and river system as non-motorized.	
57	...in areas where motorized boats are allowed, boat motors should be limited to 15 horsepower.	Please see response to comment # 03 in this section.
60	I strongly encourage limiting motorized access to what is currently allowed. Specifically, powerboats may have access only to Round Tangle Lake, and limited to 15 horsepower. Hovercraft and airboats produce noise pollution that reaches a mile or more from their location. Jetskis and waverunners create noise pollution, and air pollution that hangs around to affect those with asthma. None of these polluting craft are consistent with maintaining the current relatively unspoiled region. Please do not liberalize the permitted uses of Tangle Lakes and the Delta River.	Please see response to comment # 03 in this section. The effects of motorized boating use are discussed in Chapter 4 of the EA on pages 96-98 (fisheries), pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), pages 113-115 (water quality), and pages 117-119 (wildlife).
65	Please do not allow jetskis, hovercraft, and airboats in any zone of the Delta Wild& Scenic River system, and limit powerboat usage...to Round Tangle Lake.	Please see response to comment # 03 in this section.
67	Jetskis, hovercraft and airboats should be totally banned in the entire river corridor. This is one of the most accessible, non-motorized river corridors in Alaska's interior. Priority for non-motorized use of this entire corridor should be the number one consideration for recreation use on this river. Power boat use...should be limited only to Round Tangle Lake. Boat motors on this lake should be limited to a maximum of 15 horsepower.	Please see response to comment # 03 in this section.
AIRCRAFT		
01	...aircraft landings should be limited to Round Tangle Lake.	Please see response to comment # 03 in this section.
03	Aircraft landings and takeoffs are very noisy. They should be banned throughout the corridor unless it can be demonstrated that airplanes are used for transportation to the area (as opposed to within the area); if that's the case, Round Tangle only could be made available for landings, and only at approximately current levels of use. BLM has proposed almost nothing to manage aircraft flights over the corridor. Overflights, especially commercial ones for purposes like flightseeing or resource extraction, can create serious adverse impacts for both passive and active recreationists on the lands or waters below, and for some wildlife. BLM should do everything possible to prevent this situation from developing and adversely affecting the experience along the Wild and Scenic River. For overflights with no landings on federal lands, and therefore presumably no permit requirement, BLM should seek assistance from the FAA, and if that fails, should seek voluntary compliance with guidelines designating a zone of airspace above and adjacent to the river corridor within which flying should not occur except for reasons of safety when weather conditions are adverse. Where a permit is required for landing, a condition of that permit should be that flying is prohibited within the designated zone except for safety reasons.	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for special access. ANILCA Section 1110(a) provides that the Secretary shall permit the use of snowmachines, motorboats, airplanes and non-motorized surface transportation on CSUs in Alaska, subject to reasonable regulation. Unless these uses are found to be detrimental to the resource values of the area, the applicable methods of access shall not be restricted. Alternatives 2, 3 and 4 were developed with two Recreation Management Zones (RMZ 1 and 4) that would be managed for a nonmotorized setting prescription and nonmotorized recreational opportunities, with targeted setting character conditions that are primitive (RMZ 4) and semiprimitive nonmotorized (RMZ 1). In RMZs 2 and 5, motorized uses are common and these areas have been targeted for a semiprimitive motorized experience. ANILCA access provisions limit the closure of CSUs to the use of airplanes that have been historically used for traditional activities, unless these uses are found to be detrimental to the resource values of the area. The BLM would be required to first determine that airplane landings would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA

COMMENT #	COMMENT	BLM RESPONSE
		Section 111O(a). Such a finding requires the agency to follow ANILCA closure procedures outlined in 43CFR36.11. After additional consideration, at this point in time, the BLM believes that the current level of airplane landings in RMZs 1 and 4 do not warrant an ANILCA closure. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if airplane landings are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of airplane landings and impacts before implementing an ANILCA closure, if monitoring shows this is necessary in the future. Alternative 4 will still be analyzed to display the effects of prohibiting airplane landings throughout the entire river corridor, even though this limitation would still be subject to the ANILCA closure procedures and resource degradation requirements specified above. Alternatives 1 and 3 do not propose any airplane landing restrictions. The effects of airplane landings are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), and pages 117-119 (wildlife). Also, please see response to comment # 21 in this section.
06	Aircraft...would be acceptable, if they were restricted to the main Round Tangle Lake, or used for subsistence only.	Please see response to comment # 03 in this section.
07	I urge you to limit....aircraft landings to Round Tangle Lake...	Please see response to comment # 03 in this section.
09	...we think it is important that BLM limit...aircraft landings to Round Tangle Lake...	Please see response to comment # 03 in this section.
10	Aircraft landings and takeoffs are very noisy. They should be allowed on Round Tangle only, for the benefit of people who use planes for transportation to the area. Once in the area, other means of transportation can be employed. As we suggested for Round Tangle powerboat use, aircraft landing levels should also not be allowed to increase significantly. Additionally, as we note elsewhere, just because there is already some artificial noise in an area doesn't mean that additional noises are irrelevant; noise impacts are clearly incremental and cumulative, as are most impacts. The fact that there is some, relatively unobtrusive road noise in Zones 2 and 5 due to the relative proximity of the Denali and Richardson highways doesn't mean it's OK to allow airplane landings (p.93). Overflights of the corridor, especially by commercial aircraft, should be minimized. For activities not requiring a permit BLM should seek voluntary compliance with a no-fly zone above the corridor and a buffer area adjacent to it. For permitted activities, it should be a requirement of the permit that overflights in the no-fly zone are prohibited. An exception would be made for times when safety requires using the zone. BLM does not appear to have taken any action on this issue except with regard to mining (p. 74).	Please see response to comment s # 03 and #21 in this section. The effects of airplane landings are discussed in the EA pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), and pages 117-119 (wildlife). Also, please see response to comment # 21 in this section.
13	...please limit...aircraft to Round Tangle Lake.	Please see response to comment # 03 in this section.
21	On page 74 it states that the "BLM has worked with mining companies to limit . . ." Has this approach worked? Is there a requirement for a mining company to work with BLM to minimize their impacts to the river corridor if they are flying over it or is this a good faith effort? I am concerned about the aviation impacts that would come with a large scale mine located on state land. I would hope that the BLM would outline actions to minimize impacts from such concentrated air action across the Delta corridor, keeping in mind that the sound of aircraft, particularly helicopters, has a much larger and far reaching impact on non-	The BLM does not have the authority to regulate airspace within the river corridor, unless it is associated with a Special Recreation Permit (SRP) or a land use authorization for commercial filming. Stipulations associated with the issuance of SRPs or land use authorizations provide the BLM with considerable flexibility to minimize disturbances to river users on

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	motorized users than the sight of the aircraft. I applaud the aviation limitations outlined for June and July but am more concerned about aviation actions association with the mining aspects of the area.	the ground. These stipulations would depend upon a variety of factors including frequency of flights, flight ceiling levels, duration of flights, etc. The BLM does monitor low level overflights within the river corridor, and has contacted both the US Air Force and mining companies on adjacent state lands to request that any overflights avoid the river corridor, if possible. In 1997, the Federal Aviation Administration and US Air Force modified the boundaries of the Fox Military Operations Area (MOA) to exclude the DWSR corridor. The new boundaries of the FOX MOA were situated on the western boundary of the Delta River. The BLM will continue to work with the FAA, United States Air Force, and mining companies to discuss the potential effects to recreational users by low level overflights adjacent to the river corridor. The effects of airplane landings are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), and pages 117-119 (wildlife).
25	...high decibel craft such as...helicopters and aircraft must be highly restricted. In my opinion, they should be prohibited entirely.	Please see response to comment # 21 in this section. The effects of airplane landings are discussed in the EA on pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), and pages 117-119 (wildlife).
30	Limit...aircraft to Round Tangle Lake only...	Please see response to comment # 03 in this section.
32	Please allow...aircraft landings to be limited to Round Tangle Lake.	Please see response to comment # 03 in this section.
34	Prohibit aircraft landings, except on Round Tangle Lake.	Please see response to comment # 03 in this section.
35	First, in Zone 1, I support no restrictions on...airplane landings.	Alternatives 1 and 3 do not propose any restrictions to airplane landings in RMZ 1.
40	I see two issues; one is private planes landing on the Tangle Lakes. I believe that continued private (not commercial) float plane landings could be allowable in Round Tangle Lake and on Upper Tangle Lake during hunting season, but not on the other lakes in the Tangle Lake complex or on the river or in the river corridor. The second issue is aircraft over flights. Some aircraft may require a permit from BLM (e.g. mineral operations); others may not (flight seeing or hunting). Both should be limited by either permitted or voluntary ceiling limits or no fly areas. Few things are more intrusive than low flying aircraft while enjoying a float on a Wild River. While aircraft have a legitimate place, flying low over a Wild River is not acceptable.	Please see response to comment # 03 in this section. Stipulations associated with the issuance of special recreation permits or land use authorizations provide the BLM with considerable flexibility to minimize disturbances to river users on the ground, and these stipulations would depend upon a variety of factors including frequency of flights, flight ceiling levels, duration of flights, etc. The effects of airplane landings are discussed in the EA pages 99-100 (natural quiet and natural sounds), pages 109-111 (travel management), and pages 117-119 (wildlife). Also, please see response to comment # 21 in this section.
44	Flight-Seeing is the most non-impact method of enjoying our natural resource world. Flight-Seeing may be the only way some older or infirm people can enjoy the Delta River Corridor. This activity provides the viewer with a totally different perspective of the vast natural beauty of the resource. Granted, there is some noise factor that will be objectionable to some users on the ground (river). Let it be known however that the Delta River resource belongs to all and not just the physically fit. Flight-Seers also object to the obnoxious colors (non-natural fluorescent greens, reds and yellows for example) flaunted by the many campers within the river corridor. This should also be a consideration of the Delta River Plan.	The BLM has the authority to issue commercial recreation permits or land use authorizations for commercial flightseeing or filming. None of the alternatives propose limitations on flightseeing within the river corridor.
46	I agree with most of what is in Alternative Two with some major exceptions. One major exception is that	Please see response to comment # 03 in this section.

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	there needs to be...airplane restriction in Recreational Management Zone (RMZ) Five. To insure that wilderness values are protected you must restrict...plane landings (with an exception of authorized subsistence and traditional users) during the months of June and July in RMZs 1, 4 and especially Zone 5 (designed as "wild") which is NOT included in the...plane restrictions in your preferred alternative. There should be no new airstrips or other developments constructed in the area. Alternative Four is too restrictive. It is not necessary to ban all...airplanes. There needs to be a balance between allowing recreational activities and protecting wilderness and natural resources.	
48	The BLM...should limit aircraft landings...	Please see response to comment # 03 in this section.
50	Round Tangle Lake should be the host for...aircraft landings.	Please see response to comment # 03 in this section.
65	...limit...aircraft landings to Round Tangle Lake.	Please see response to comment # 03 in this section.
67	...aircraft landing should be limited only to Round Tangle Lake.	Please see response to comment # 03 in this section.
	SNOWMACHINES	
03	Snowmachines can be substantial polluters. Their use in the corridor should be strongly discouraged.	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for subsistence uses and special access. ANILCA Section 811 states that the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Similarly, ANILCA Section 1110(a) provides that the Secretary shall permit the use of snowmachines, motorboats, airplanes and non-motorized surface transportation on CSUs in Alaska, subject to reasonable regulation. Additional information regarding snowmachine use can be found in the EA on page 81 in Section 3.2.10.8 Winter Use. The BLM does not believe that the current level and frequency of snowmachine use is causing impacts that require snowmachine limitations at this time. Also, please see response to comment #21 in this section.
10	Many if not most snowmachines are heavy polluters. Water pollution in the corridor could perhaps be minimized by requiring snowmachines to avoid the corridor except to make right angle crossings, preferably on the highway. Additionally, snowmachines can create stress for wintering moose and caribou; monitoring should be undertaken to insure that this is not occurring.	Please see response to comments #03 and #21 in this section.
21	On page 74 under 3.2.10.7 Winter Use, it is stated that the EARMP had some language regarding snowmachine use and potential threat to critical moose wintering habitat. It is the only place within the Draft that I see this mentioned. Is this the avenue for implementing such limitations as outlined in the EARMP? Are there monitoring efforts going on to see if the snowmachine use is in fact impacting the large concentrations of wintering moose in the Delta system, specifically around high use times like Arctic Man? I understand that Arctic Man takes place on State land but the overflow from this high use time does spill	Limitations regarding snowmachine use that were developed in the EARMP would remain in effect unless changed in this Land Use Plan Amendment. Monitoring of trails within and adjacent to the Delta River corridor does occur periodically throughout the winter and during the Arctic Man event. Results of monitoring have shown that there is not a substantial amount of

COMMENT #	COMMENT	BLM RESPONSE
	into the Delta Corridor. If there is no monitoring taking place, then how will we know when the limitations need to be implemented? Does the effects section outlined on pages 98-99 4.2.14.1 take into account the impacts of snowmachine use on wintering moose as outlined in the EARMP? On page 78 it clearly states that one of the wildlife management concerns related to recreational activities is that recreationists "may further fragment moose and caribou habitat." This should extend to snowmachine use as well as OHVs since one of the most stressful times for moose and caribou are the winter and spring months. I would like to see some language in the Delta Draft EIS that addresses these issues. At the very least, some specific monitoring actions to be sure that an issue identified previously is followed through on and documented. It is seen as acceptable by the public to shoot wolves in the attempt to boost moose populations (I understand this is a State program and has no BLM connection) so they should also be in favor of reasonable restrictions to their specific recreational (not subsistence) activities to protect that same population. It should at least be outlined as an allowable and considered management tool to be used in the future if documented impacts to wintering moose occur from snowmachine use.	snowmachine use within the river corridor in areas with large concentrations of wintering moose. Moose generally winter lower down in the river valleys and snowmachines tend to use the pipeline corridor as an access route, rather than venturing into the deep snow found in the river valleys. The effects to wintering moose were not analyzed in this EA because they were already analyzed in the EARMP. Decisions made in the EARMP regarding snowmachine use in the DWSR corridor will remain in effect, and winter monitoring will continue as prescribed in the EARMP, with potential limitations to snowmachine use if monitoring shows that wintering moose are being negatively impacted.
PACK ANIMALS		
44	Domestic Herbivores (horses, llamas, etc) have been the source of invasion for non-indigenous plants (weeds). Their use should only be allowed if they have been fed "Certified Weed-Free Forage". This is the only forage that should be allowed into the river corridor also.	The BLM will add the recommendation that "certified weed-free forage and bedding" be used for pack animals and dog mushing in Alternative 2. This will be stated as a recommendation, rather than a regulation, due to the fact that enforcement would be difficult given the multiple access points into the river corridor where pack animals and dog mushing historically occurs.
NONMOTORIZED TRAILS		
03	AQRC advocates not only for the elimination or minimization of motorized recreational use and artificial noises on the public lands (with the many benefits thereby provided), but also for the specific provision of high quality muscle-powered recreation opportunities. Consequently, we generally support the designation of both trails and larger areas, screened if at all possible from the impacts of motorized use, for non-motorized use only. We therefore heartily support BLM's proposals for the designation/creation of non-motorized trails in the corridor—with one exception. After talking with local residents who use the area, we suggest not designating the Rock Creek Trail in order to maintain a sustainable berry resource for those residents.	Under Alternative 4, only the Lower Tangles Ridge Trail would be designated as a nonmotorized trail. Alternative 2 would designate four nonmotorized trails, including the Rock Creek Trail. The BLM believes that the designation of these four trails would not significantly affect the density of berry resources that are located adjacent to the Denali Highway throughout the entire watershed and highway corridor.
10	We are very pleased to see that BLM is proposing designating and/or creating several non-motorized hiking trails. We have consistently emphasized the need for more opportunities for high quality non-motorized recreation on the public lands, including the federal and state public domain (the majority of the lands BLM manages are public domain). Agencies often talk about the need to "maintain" a diversity of recreational experiences (see, e.g., p. 6). But frequently, especially—but not only—on the public domain, the need actually is to "create" high quality opportunities that don't presently exist. We would note that although trail designations are definitely important, designating larger areas, topographically screened from motorized use, is equally important. There are many opportunities for non-motorized users to recreate on lands also used by motorized users, but in most instances this ends up being anything but a high quality experience; non-motorized users have been largely displaced from the vast majority of the public domain, which is effectively managed for motorized use, often very intense use. Consequently, it feels odd to raise a concern about one of the agency's hiking trail proposals when we would ordinarily applaud such an effort. We do think, however, that it would be unwise to designate the Rock Creek Trail. This trail runs through a popular berry-picking area for local residents. The berries are adequate at this time even for the relatively high number of pickers, but the resource could quickly be depleted by hikers if the trail were to be designated. Since BLM has three other proposals for designated	Please see response to comment #3 in this section. Alternative 4 only proposed the designation of one nonmotorized trail to provide for a more primitive, low density experience with less trail development and scenic impacts.

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	hiking trails in a fairly small area (the campground trail, already largely developed, was a great idea), we think non-motorized hiking opportunities in the area would still be adequate without this one designation. One flaw in the campground trail is its high visibility. Perhaps it was constructed according to the usual BLM standards, but a standard for a wooded trail works poorly for a trail through low vegetation. For instance, a trail of that sort on the east side of the Upper Tangles (the one that would start at mile 21) would be a visual blight for people canoeing on the lake, walking on the esker to the west, or driving the highway. Signs on the trail should be few, low to the ground, and non-reflective. We would be pleased to discuss this further before you begin trail construction. Finally, just as an aside, although we understand BLM's rationale for proposing fewer hiking/non-motorized trails in Alternative 4 than in the Preferred Alternative (see p. 90), in our experience there are likely to be more such trails proposed in an agency's conservation alternative than in other alternatives, since non-motorized use is so much less intensive, obtrusive, and destructive than motorized use, and should be strongly encouraged.	
21	I support the development of hiking trails in Zone 3 as outlined on pages 69-70. This area is road accessible and offers the Denali Highway traveler the unique opportunity to get out of the car, hike a short trail with amazing views and cultural history with minimal effort. The geography of the area lends itself to hiking on the tops of the esker ridges along game trails. Visitors already get out and hike the areas in and around Zone 3. The creation of sustainable, engineered hiking trails will reduce the unsightly vertical trails up the sides of ridges and reduce soil and vegetation impacts while enhancing the scenic experience of the area.	The BLM agrees that the designation and maintenance of these nonmotorized trails will help to reduce trail erosion, rutting, and alteration of existing scenic qualities in the area while helping to protect soil and vegetation resources.
40	There is an abundance of trails in the Tangle Lakes area. In recent visits I've been pleased to note that new well-designed trails are being constructed; I completely support this. Many of the trails have developed over the years without planning or thought given to their sustainability or their effect on the vegetative cover or soils. These need to be improved so they are not a detriment to the local environment or closed and allowed to grow over (a long process). An inventory of trails, a trails plan, and monies for trail building and maintenance should be part of the river management plan.	The BLM agrees that the designation and maintenance of nonmotorized trails in the Tangle Lakes area will help to reduce trail erosion, rutting, and alteration of existing scenic qualities in the area while helping to protect soils and vegetative cover. Trail designation will help to ensure that these trails are maintained in a sustainable manner for future generations.
BENEFITS BASED RECREATION MANAGEMENT		
05	Since the new planning approach focuses on "identifying the primary activities, experiences, and benefits" I would like to share mine. The Delta Wild and Scenic River is my favorite place in interior Alaska for a long weekend getaway. I enjoy canoeing, rafting, wildlife viewing, hiking, and generally soaking up the scenery and solitude in the area. My experience is enhanced by the pristine, quiet nature of the area. I benefit greatly by just knowing the area is there and protected.	The primary activities, experiences and benefits that you describe are reflected in the Recreation Management Zones that have been identified in Alternatives 2, 3 and 4.
10	Primitive, semiprimitive non-motorized ROS classifications. We're a bit baffled. There's nothing primitive, non-motorized, or, put differently, "wild" (used generically) about motorized vehicles, as land managers in the far less primitive lower 48 seem to recognize. Why, except for June and July, are powerboats, and in the winter, snowmachines, proposed to be permitted in areas with these two classifications?	The Alaska National Interest Lands and Conservation Act (ANILCA) established the Delta River as a Conservation System Unit (CSU) and as a component of the Wild and Scenic Rivers System. ANILCA provides specific guidance for management issues that are unique to Alaska, including considerations for subsistence uses and special access. ANILCA Section 811 states that the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Similarly, ANILCA Section 1110(a) provides that the Secretary shall permit the use of snowmachines, motorboats, airplanes and non-motorized surface

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		transportation on CSUs in Alaska, subject to reasonable regulations. Unless these uses are found to be detrimental to the resource values of the area, the applicable methods of access shall not be restricted. The BLM intends to manage and target RMZs 1 and 4 for nonmotorized recreation, but unlike the Lower 48, ANILCA access considerations ultimately prevail. Unless monitoring shows that motorized uses are detrimental to the resource values of the area, upon which time an ANILCA closure procedure would be considered, these areas will continue to be managed for primitive and semi-primitive nonmotorized experiences. In the meantime, geography (low water, portages) and lack of suitable landing areas help to contribute to historically low levels of motorized boating and airplane landings in RMZs 1 and 4.
23	Having used Tangle Lakes for over 25 years, I think you should consider placing Upper Tangle Lake in Zone 2 rather than in Zone 1 if Management Alternative 2 is selected. This lake is nearly three miles long and runs north and south. The winds in this area can change quickly from calm to intense. These winds funnel down the lake from either the north or the south. Allowing motorized boats would allow people to disperse along this lake for hunting, berry picking, etc. Motorized boats allow younger or older people to reliably and safely utilize this unique area. I have canoed on this lake with my children when they were 10-14 years old, and though they paddled to the far end of the lake in relatively calm conditions, they could not have done so if the wind had picked up. I've experienced my children wanting to camp on the south end of Upper Tangle Lake, but had to refuse, because if the wind came up overnight, they would have not been strong enough to paddle to the north end. I've known other parties who have paddled to the south end of the lake, had the wind come up and have had terrible ordeals. Motorized boat traffic solves that problem. Limiting horsepower to 9.9 or less would be acceptable. This lake is not a major nesting area for waterfowl. This lake is landlocked and has a different type of habitat than other lakes within this system. Motorized boat traffic was common on this lake. Two boats have been left on the north end of this lake, near the portage, for many, many years, though they both appear to have been removed recently. I realize that subsistence users will be able to use motorized boats on this lake, however, hunters and fishermen from outside of Unit 13 commonly use this area, and they would be cut off from motorized use and the ability to reliably bring camps to the south end of this lake. Responsible motorized boating adds a safety and reliability factor to this lake and allows people to walk and portage to other lakes for wildlife viewing, etc., at a time when we need to encourage outdoor physical activity. Allowing people to pack items across the portage and continue motorized boating on Upper Tangle Lake is a physically positive idea. Without the above provision, Management Alternative 2 could result in people stacking up on the south end of the present Zone 2, causing heavy use in the portage area. The portage itself has changed little in the past 25 years, even though motorized traffic has not been restricted on the lakes.	Alternative 3 would allow for unrestricted motorized boating use in all Recreation Management Zones (RMZ). The boundaries between RMZs were developed to provide a diversity of recreational opportunities, including primitive and semiprimitive nonmotorized experiences, based on the prevailing uses and the potential of these areas to offer these prescribed setting characteristics. The mere fact that motors can be used in this area does not necessarily mean that the prescribed setting character should include motorized use.
27	Include berry picking in your list of recreational opportunities. It may be viewed as "subsistence" but it is chiefly recreational.	The BLM does not believe that berry picking is a primary recreational use in any of the Recreation Management Zones. We agree that it does occur in areas that are adjacent to the Denali Highway, but do not believe it is a primary recreational activity that drives the management intent of the recreation management zones (i.e. does not require intense recreational management).

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41	My area of greatest concern is zones 4 and 5. In general, your preferred Alternative #2 is too restrictive. You have arbitrarily drawn a line between these two management zones at Garrett Creek. Why at this point? River boat access above this point is, in most all years barring low water, very accessible. Never has there been a year when we've hunt when we could not get above Garrett Creek. Most years we have been able to boat to the lake below the rapids and above the braided portion of the river. One year, to rescue two stranded canoeists, we managed to get to within 1/4 mile of the mouth of Wildhorse Creek. Your dividing line at Garrett Creek to prohibit motorized boats above this point is arbitrary and unsupportable. Why can you propose to allow boats above Garrett Creek for subsistence users? Does this not contradict your assertion that it is not and should not be navigable above Garrett? Alternative #3 fairly addresses this issue by allowing motorized boats above Garrett Creek.	Thank you for your support of Alternative 3. In regards to Alternative 2, navigability is not dependant on whether or not a motorized watercraft can be operated on a particular river. The Federal test for navigability relies on whether or not a river was used for travel, trade, and commerce at the time of statehood. The BLM navigability determination determined that it was not used for travel, trade, and commerce at the time of statehood above Garrett Creek, therefore nonnavigable in this portion of the river corridor. This determination was completed independently from this planning process. The boundaries between RMZs were developed to provide a diversity of recreational opportunities, including primitive and semiprimitive nonmotorized experiences, based on the prevailing uses and the potential of these areas to offer these prescribed setting characteristics. The mere fact that motors can be used in this area does not necessarily mean that the prescribed setting character should target motorized use. Given this information, the boundary between RMZs 4 and 5 was developed to provide a primitive, nonmotorized opportunity in RMZ 4. Documented motorboat use above Garrett Creek in RMZ 4 is very low; consequently this allows the BLM to manage for a primitive nonmotorized experience in this area.
GENERAL RECREATION MANAGEMENT		
03	...generator use is very irritating, and should be banned in the campground from 5 pm to 9 am so that people can enjoy some peace and quiet after a busy, active day as well as get a decent, undisturbed sleep.	Supplemental rules for the Tangle Lakes Campground will specify regulations regarding the use of generators in the campground. Also, please see comment #29 in this section.
10	We applaud BLM for including natural quiet and natural sounds as resources that need to be addressed in all three of the document's key chapters: Proposed Action and Alternatives, Affected Environment, and Environmental Impacts (see, e.g., pp. 8, 11, 17). This is very encouraging. And, undeniably, BLM has taken a number of steps to help protect these essential resources. Unfortunately, more can, and should, be done, as we discuss below, primarily with regard to motorized recreation. We would add that the loss of natural quiet and natural sounds is more than just a social issue. Artificial noises can adversely affect not just humans but wildlife as well; the latter effects are increasingly being documented in the scientific literature.	Thank you for your comment.
15	This region is a cold climate region with a very short user time period. I don't believe it is the best interest of all users to limit the time period they can use the land.	Under all alternatives, camping will be limited to 14 consecutive days within any 60 day period. This provides opportunities for other users to enjoy recreational facilities and opportunities that are available to all.
29	Under the administrative sections it indicates that "special rules for the river corridor will be developed…" . Does this mean additional rules that are not included in this draft will be added, without public comment?	Under Code of Federal Regulations 8365.1-6, Supplemental Rules for the Tangle Lakes Campground will be developed after the campground renovation, and will specify regulations regarding allowable uses within the developed facilities. These rules for the developed facilities must be developed in accordance with CFR 8365-6, which requires posting of the rules, publishing in the Federal Register and local newspapers, and the opportunity for public comment.

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55	Under the proposed action alternative (pg. 19) the EA states: "Special rules for the river corridor will be developed in accordance with 43 CFR 8351.2-1 to address restrictions on travel management, group size, occupancy and use, chainsaw use and firewood gathering, recreational shooting, fireworks, supply caching, and disposal of human waste." This section of the general BLM regulations authorizes the authorized officer to issue written orders which close or restrict the use of lands and water surface administered by the BLM within the river corridor of the Delta Wild and Scenic River. However, the regulations in this section are not the proper authority for regulating travel management within the river corridor. As you are aware, within Alaskan conservation system units, including wild and scenic rivers, ANILCA Section 1110(a) permits, "(t)he use of snowmachines (during periods of adequate snow cover, or frozen river conditions in the case of wild and scenic rivers), motorboats, airplanes and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites. Such use shall be subject to reasonable regulations by the Secretary to protect the natural and other values of the conservation system units, national recreation areas, and national conservation areas, and shall not be prohibited unless, after notice and hearing in the vicinity of the affected unit or area, the Secretary finds that such use would be detrimental to the resource values of the unit or area." The regulations at 43 CFR Part 36.11 implement Section 1110(a) regarding the use of snowmachines, motorboats, nonmotorized surface transportation, aircraft, as well as off-road vehicle use. These regulations also provide closure procedures for restricting their use. Specifically, 36.11(h) outlines the closure procedures that must be followed: Closure procedures. (1) The appropriate Federal agency may close an area on a temporary or permanent basis to use of aircraft, snowmachines, motorboats or nonmotorized surface transportation only upon a finding by the agency that such use would be detrimental to the resource values of the area. (2) Temporary closures. (i) Temporary closures shall not be effective prior to notice and hearing in the vicinity of the area(s) directly affected by such closures and other locations as appropriate. (ii) A temporary closure shall not exceed 12 months. (3) Permanent closures shall be published by rulemaking in the FEDERAL REGISTER with a minimum public comment period of 60 days and shall not be effective until after a public hearing(s) is held in the affected vicinity and other locations as deemed appropriate by the appropriate Federal agency. (4) Temporary and permanent closures shall be: (i) Published at least once in a newspaper of general circulation in Alaska and in a local newspaper, if available; posted at community post offices within the vicinity affected; made available for broadcast on local radio stations in a manner reasonably calculated to inform residents in the affected vicinity; and designated on a map which shall be available for public inspection at the office of the appropriate Federal agency and other places convenient to the public; or (ii) Designated by posting the area with appropriate signs; or (iii) Both. Any restriction or closure of lands or waters within the Delta Wild and Scenic River corridor to the use of snowmachine, motorboat, aircraft or nonmotorized surface transportation must follow these procedures. Such closures cannot be legally implemented through adoption of a final plan or plan amendment. Neither the statute nor the regulations allow an agency the discretion to implement closures or restrictions to authorized uses prior to notice and hearing. Section 36.11(g) Off-road Vehicles, in accordance with Executive Order 11644, regulates use and permitting of off-road vehicles within conservation system units. One point that must be clarified in the final EA and plan amendment is that the "traditional activity" standard does not apply to access via motorboats, airplane and nonmotorized surface transportation. The regulations in Sections 36.11(d, e & f) do not restrict use of motorboats, airplanes and nonmotorized surface transportation only for traditional activities or travel to and from villages and homesites. The Department of the Interior addressed this in the supplementary information accompanying the Title XI regulations when they were published in the Federal Register in 1986: "Some commenters criticized the proposed regulations on motorboats and aircraft used within areas, in that those uses are not restricted to traditional activities and travel to and from homesites as in the statutory authorization. These commenters preferred the more restrictive language of the statute. Interior is of the view that it has the discretion to broaden the authorization beyond that required in the statute in light of other authorizations. Executive Order 11644 (EO 11644), on off-road vehicles (ORV) does not apply to motorboats or aircraft, so Interior is not limited by its requirements in authorizing these	BBM was used to develop recreation management zones (RMZ) that offer different primary recreational opportunities. The RMZs were developed to provide a range of recreational opportunities, including primitive and semiprimitive nonmotorized experiences, based on the prevailing uses and the potential of these areas to offer these prescribed setting characteristics. After additional consideration, the BLM agrees that a traditional use determination would be needed to implement a seasonal closure, and at this point in time, the current level of motorized boating use and airplane landings do not warrant an ANILCA closure. The BLM also agrees that the BLM would be required to first determine that motorized boating and airplane landings would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA Sections 111O(a) and 811(b), and that any restrictions under ANILCA Section 1110(a) would have to be in accordance with the process established in 43 CFR 36.11. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if these uses are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of use and impacts before implementing an ANILCA closure, if monitoring shows this is necessary in the future.

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	uses. After review of the impacts of these uses on the areas, including a review of the experience of the NPS and the FWS with their current regulations which are identical in addressing motorboat and aircraft uses, it was decided that deleting the limiting language of the statutory authorization would not significantly increase the use of areas by motorboats and airplanes. Such use would not be in the derogation of the values and purposes for which these areas were established, and would provide for greater enjoyment of these areas by visitors. Accordingly, to allow for access to the areas, the restrictions on motorboat and fixed wing aircraft use have not been increased in the final regulations." (51 FR 31626) The final EA and plan amendment should be revised to reflect that use of motorboats, aircraft and nonmotorized surface transportation are not restricted to "traditional activities" or for access to villages or homesites. Additionally, we must question whether or not the ANILCA 1110(a) standard of "detrimental to the resource values of the area" has been met for restricting motorboat or airplane use in any of the management zones. While the BBM focus groups addressed the issue of motorized access, there was considerable disparity in the views expressed regarding continued use or desired outcomes. The EA does not present any findings or determinations, as required by statute and regulations that resource values of the Delta WSR are being impacted to the point where even seasonal restrictions to access by motorboat or aircraft are justified. While we acknowledge that we are unfamiliar with the BBM concept, we must question whether or not its use is appropriate, particularly for providing justification for restricting allowed uses within ANILCA conservations system units. Public uses allowed by ANILCA within conservation system units in Alaska include a range of subsistence activities, motorized and non motorized access, sport hunting and fishing, as well as other recreational and traditional activities. These uses often overlap. As we understand it, the BBM was designed to manage recreational uses and not the range of allowed uses within conservation system units such as the Delta Wild and Scenic River. We would suggest that the BBM can complement, but not replace the standards or criteria for managing or restricting uses authorized under ANILCA.	
56	Gold panning is not mentioned as a recreational use in the document. The Delta River and its tributaries drain a vast mineral-rich area. Some visitors enjoy panning in accessible streams and other water courses. We request the document address allowed activities and equipment with regard to recreational gold mining. We further request that any guidelines be consistent with generally allowed uses on state land. For example, hand versus motorized equipment, size of suction dredge, what materials may be processed (bank versus gravel bars).	The BLM has not documented recreational gold panning as a primary recreational use within the DWSR corridor, nor did this issue arise during the scoping process. At this time, we do not believe that it warrants the development of allowable activities and equipment associated with this type of use.
HUMAN WASTE MANAGEMENT		
22	...human waste needs to be better managed. Maybe being more self contained and removed from the river area. "Leave no trace" philosophy.	Alternatives 2, 3 and 4 outline a comprehensive adaptive management strategy for human waste within the river corridor, with a high degree of emphasis on Leave No Trace river ethics.
27	Make sure an alternative is in place and working before removing outhouse at the portage. It has served to keep the area relatively free of human waste for the past 25 years.	Alternatives 2 and 4 propose the removal of the outhouse at the river portage only after a portable toilet cleanout facility has been developed and the use of portable toilet systems is mandatory, at which point the outhouse will be unnecessary.
41	My past experience when canoeing indicated that the outhouse at the portage takeout was heavily used. Not having something at this site could result in many feces pile sites along with potential pollution of the river.	Please see comment # 27 in this section.
62	Human waste management should not include required use of portable toilets by non-commercial users under any scenario.	Alternative 3 does not require the mandatory use of portable toilets by any users. Alternatives 2 and 4 do not require the

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		mandatory use of portable toilets unless other methods described in the previous phases are unsuccessful. This approach allows the public to drive the implementation of more restrictive management actions. It is the hope of the BLM that increased education regarding proper human waste disposal (ie. catholes and voluntary use of portable toilets) will prevent the more restrictive approach of requiring portable toilets.
CAMPSITE MANAGEMENT		
29	Why is there a need to designate specific camp sites along the river? If BLM is implementing other strict regulations then campers should be able to overnight where they feel is appropriate.	Please see response to comment #40 in this section.
40	In thirty-four years of floating the Delta River I have noted increased human impacts in the corridor. These are particularly evident in ATV/ORV trails and mining roads but I wish to address the prime campsites. I expect that the threshold of human use has been crossed and warrants designated campsites that are hardened in some fashion (e.g. tent sites, fire rings, outhouses). I would advise identifying and hardening these sites but not requiring their use at the current recreational use levels. In this fashion campers who want to camp in a more rustic situation can do so if they choose a site that is not so easily used or accessed as the designated hardened sites. First identify the campsites; those that are best in terms of access and capacity make designated improved campsites. Leave the second tier of campsites as they are to be used by campers who prefer a more rustic and natural setting. Continue to promote Leave No Trace best practices along the corridor.	The designation of campsites that are located adjacent to the river helps to protect fragile riparian, vegetative and scenic resources. Newly created campsites tend to attract other river users, and once established are difficult to rehabilitate. Campsite management actions in all alternatives were developed to protect the greatest amount of river resources possible, while still providing options for campsite management that include the development of additional campsites in sustainable locations based on a variety of factors including use levels, vegetative screening, soil stability, etc. Under all alternatives, dispersed camping at least 200 feet from the river corridor will be allowed. The effects of campsite management are discussed in the EA on pages 94-96 (cultural resources), pages 100-105 (recreation resources), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetative resources), and pages 113-115 (water quality).
LITTER MANAGEMENT		
21	Litter. Page 26 – Suggest re-wording. A volunteer campground host cannot be required to “enforce” anything. I understand that they need to be able to make sure people pick up their garbage but the word “enforce” should be reserved for a Ranger action.	Thank you for your comment. The word “enforcement” will be removed in the EA.
62	BLM’s management of this area should be limited to: Periodic cleanup of campsites.	The periodic cleanup of campsites is prescribed in all alternatives.
FIRERING MANAGEMENT		
21	I would like to support the dismantling of all firerings at sites that a river patrol attends to. If the majority of the garbage is found in the firerings, I see no reason to wait for phase standards and indicators to kick in to address the issue. The effects analysis shown on page 87 speaks volumes to the implication of stricter firering /firepan standards right from the beginning. Are there any other rivers in Alaska that require the use of a firepan and users to pack out their ash? I don’t mind coming upon a campsite with a firering. I do mind the garbage and the huge firewood logs that are half burnt lying around. If I had to do away with my firering to get rid of the garbage problem then so be it.	The dismantling of firerings has been proposed as a Phase II management action in Alternatives 2 and 4. The BLM believes that the less restrictive option of education should be used before more restrictive measures are implemented.
62	Fire ring management should not include required use of fire pans by non-commercial users under any scenario.	Alternative 3 does not require the mandatory use of firepans by any users. Alternatives 2 and 4 do not require the mandatory use of firepans unless other methods described in the previous

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		phases are unsuccessful. This approach allows the public to drive the implementation of more restrictive management actions. It is the hope of BLM that increased education regarding proper litter disposal and firering use will prevent the more restrictive approach of requiring firepans.
CHAINSAW USE		
03	We very much support the proposed general prohibition on...chainsaws in the corridor. We think it very inappropriate and unnecessary, however, to allow chainsaw use in the campground. Just because a certain level of noise is inevitable in the campground (or to a lesser degree, elsewhere in the corridor) doesn't mean that additional noise doesn't exacerbate the problem. It's quite simple—less noise is better than more noise. Chainsawing doesn't have to occur in the campground, and it shouldn't be allowed.	Alternative 4 will be changed to prohibit the use of chainsaws within the developed facilities in RMZ 3. In the remaining Alternatives, the use of chainsaws within the developed facilities in RMZ 3 would be limited by the establishment of quiet hours in supplemental rules that will be developed after the campground renovation. The effects to natural quiet and natural sounds are discussed in the EA on pages 99-100.
10	Regarding firewood gathering, we support the proposed rules. Regarding the use of chainsaws, we believe they should not be allowed anywhere in the corridor, including developed Zone 3; such use anywhere, including the campground, is unnecessary and would be extremely disturbing (just because the campground will admittedly be noisier than other areas in the corridor doesn't mean that noise shouldn't be minimized, and that unnecessary noise sources shouldn't be prohibited). Similarly, generators, which can be highly obtrusive, should not be allowed to be operated from 6pm to 8am; this would allow fellow campers to not only sleep in peace but also to enjoy some quiet relaxation time at their campsites.	Please see response to comment #03 in this section.
21	Chainsaws being allowed to be used in a campground (page 27) is a substantial and manageable user conflict. I understand that the use of a chainsaw to cut up firewood would be beneficial to the subsistence hunter who is camping at Tangles during their hunting season. But a loud chainsaw running in a campground where people are sleeping/relaxing, I would consider a nuisance and inconsiderate. Possibly re-word to say that chainsaw use within the campground will not be restricted but is discouraged for reasons of camping consideration. Or make chainsaw use restricted within the campground during June and July when the majority of the recreational use of the area takes place but allow it during subsistence hunting season. I support restrictions on chainsaw use for other Zones.	Please see response to comment #03 in this section.
29	...it is common knowledge that dead wood is best suitable for firewood and therefore, if dead wood is collected for fire building then chainsaws should be allowed for the ease of transporting wood. It is also common knowledge that, one should collect wood further from camp, rather than closer, to save the closer wood for those times when it is in great need. The ability to cut the wood allows for easier transport.	Alternative 3 would allow for chainsaw use throughout the entire river corridor for dead and down and standing dead trees at least 200 feet from the river's edge. Also, please see response to comment # 39 in this section.
37	Within the Wild and Scenic corridor, I would further recommend that chain saws could be used to cut only dead trees leaning over the water of the river. In my experience, chainsaws encourage wasteful cutting (beyond true needs) and landscape manipulation, such as at the "Boy Scout" campsite on river right in the clear water section downstream of the falls.	The BLM does not support the cutting of dead trees leaning over the water due to the visual impacts and loss of riparian habitat. Woody debris along the riverbank is a natural occurrence that helps to stabilize the shoreline, while providing habitat for a variety of aquatic and terrestrial species.
38	I am concerned that a ban on chain saw use in the valley will have a negative effect. Floaters are not going to go and harvest the dead fallen trees but rather the smaller living trees and branches that can be cut up easily with an axe or small hand saw. Then this rivers camp spots will end up looking like the Gulkana's where every tree at each camp site is stripped from the ground to an arms length for the easily accessible wood to burn. Having chain saws allows us to be able to cut up the larger dead falls. The groups that I know that use the river do not cut live trees for firewood. We all make a habit to gather wood	Alternative 3 would allow for chainsaw use throughout the entire river corridor for dead and down and standing dead trees at least 200 feet from the river's edge. In Alternative 2, written authorization may be given for subsistence house log gathering or personal firewood cutting, depending on the proposed location within the river corridor. Also, please see response to comment

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	that's already dead. I personally only take the dead trees that are deeper into the woods. I usually have access to OHV when I'm there and they help in the harvesting. I like to leave the easier accessible dead trees that are closer to the river in hopes that floaters will use these rather than cut live trees down. What are the loop hole for getting a "written authorization with special stipulations from BLM" in order to use a chainsaw with in the Delta River corridor? If I tree is already on the ground, does it really matter what type of tool cuts it up?	#39 in this section.
39	Chainsaw use in the DWSR corridor below the falls: We would like it allowed. Regs. could stipulate dead and down, standing dead, more than 100 feet from the river.	Alternative 3 would allow for chainsaw use in all RMZs for the cutting of dead and down wood and standing dead at least 200 feet from the river's edge. The BLM will modify Alternative 2 to allow for chainsaw use in RMZ 5 for dead and down wood and standing dead at least 200 feet from the river's edge. The BLM believes that 200 feet would protect scenic resources, while still allowing for the responsible cutting of dead trees for firewood.
41	I very much disagree with the banning of chainsaw use in this area. Alternative #3 would allow chainsaw use beyond 200 feet from the river and I agree with this limitation. The cutting of green trees should never be done. Besides, they do not burn. Why cut something that can't be used for firewood? The removal of dead wood in the forest reduces forest fire danger. Fewer forest fires will reduce carbon emissions into the atmosphere and lessen greenhouse warming. Likewise, the use of chainsaws on dead trees is necessary and not harmful to aesthetics if done 200 feet beyond the river edge.	Thank you for your support of Alternative 3. Also, please see response to comment # 39.
52	With regard to chainsaw use...liberalize (lessen) governmental intrusion on the rights of Alaskans choosing to exercise their right to harvest foodstocks for personal consumptive use.	Please see response to comment # 39.
62	Chain saws should not be allowed in Zones 1, 2, 4, and 5.	The use of chainsaws in RMZs 1, 2, 4, and 5 would be prohibited in Alternative 4.
68	...BLM proposes to prohibit chain saw use for firewood gathering for Zones 4 and 5. I agree that live trees should not be cut. However, the blanket prohibition on chainsaws is just plain dumb. If one is going to use the valley for hunting, considerable quantities of firewood will be required. If chainsaws are used to gather the wood from either downed or standing dead trees, what is the harm? Alternative 3 provides a much more realistic alternative regarding chain saw use.	Thank you for your support of Alternative 3.
RECREATIONAL SHOOTING		
03	We very much support the proposed general prohibition on...recreational shooting...	Recreational shooting is prohibited in Alternatives 2, 3 and 4.
23	I can agree with firearms use restricting plinking. I also realize this area is not the most appropriate for target shooting. However, in 25 years of utilizing this area, on two occasions, a party member or I have had to take a target shot, after having a rifle drop, to verify the gun's accuracy. This would appear to be a violation under the Alternative 2. Some provision needs to be included to keep this from being an illegal act.	Violations of prohibited acts depend upon the discretion used by authorized law enforcement personnel. It is the intent of the BLM to prohibit recreational shooting associated with plinking and excessive target practice. Clarification will be made in Alternative 2 in the EA that the use and discharge of a weapon will be allowed for the purposes of lawful hunting or trapping, defense of life and property, or for a signaling device in emergencies.

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35	No target shooting...is a good thing!	Please see comment # 03 in this section.
52	With regard to...necessary shooting for sight-in purposes and harvesting game, liberalize (lessen) governmental intrusion on the rights of Alaskans choosing to exercise their right to harvest foodstocks for personal consumptive use.	Please see comment # 23 in this section.
62	Recreational shooting...should not be allowed.	Please see comment # 03 in this section.
FIREWORKS		
03	We very much support the proposed general prohibition on fireworks...	Fireworks are prohibited in Alternatives 2, 3 and 4.
27	Prohibit fireworks.	Please see comment # 03 in this section.
35	No...fireworks is a good thing!	Please see comment # 03 in this section.
62	...fireworks should not be allowed.	Please see comment # 03 in this section.
SUPPLY CACHING		
52	With regard to...caching of supplies...liberalize (lessen) governmental intrusion on the rights of Alaskans choosing to exercise their right to harvest foodstocks for personal consumptive use.	In all alternatives, the caching of supplies is allowed with prior BLM written authorization.
SPECIAL RECREATION PERMITS		
10	Commercial berry-picking. This activity has been proposed in the area in the past. This should not be allowed either in the corridor or outside it. Berries have been and continue to be a very important subsistence resource, as well as a great source of pleasure for others. The EA should state that commercial activities not related to the purposes for which the area was designated, or to its ORVs, including but not restricted to commercial berry-picking, are prohibited. Competitive events are inconsistent with the corridor's generally natural, wild character, and the experience of solitude, and should be prohibited in most of the corridor. Perhaps some such events would be appropriate, on an ad hoc basis, on Round Tangle.	Please see comment # 23 in this section.
21	I support a maximum group size of eight for all SRPs in all zones as outlined in Alternative 4. The Delta River User Survey states that the mean largest tolerable group size is 8.1. It is also stated that "some of the data shows that on some segments of the river, current use levels are causing unacceptable change to the experience the user and impacting natural and primitive character of the river." The Draft also states, on page 63, that "typically commercial groups have a larger group size than private groups" and "there was support among non-motorized users for limiting commercial use, and there was more support than opposition among motorized users." Also on page 101 it states that "commercial recreation applications will likely increase." Guided trips are more intrusive. All of the above statements, particularly the Delta River User Survey 8.1 mean tolerance level, aim to putting a group size limit of 8 on commercial use. Considering there is only one permitted group, it will be easier to impose the limit now rather than when there is established use at a larger size. I value this limit on commercial use group size over limits on personal use group sizes.	Thank you for your support of Alternative 4.

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23	Any management alternative selected should carefully consider effects of and the regulation of industrial tourism. Commercial tours/guiding can put heavy repetitive use in an area and crowd out Alaskans or independent travelers to the area. Consider the change in the Klutina River use near Copper Center 1985-1995 vs 2000-2010.	Commercial uses are monitored within the river corridor and require the issuance of a Special Recreation Permit (SRP), with associated stipulations to protect river resources. At this point in time, there is only one permitted commercial SRP. Monitoring of commercial uses will continue in all alternatives, and associated management actions and permit stipulations will help to mitigate the effects of permitted commercial uses within the river corridor.
31	This entire corridor is a real treasure and I hope BLM really manages it for non-commercial recreation as the highest and best use.	Please see comment # 23 in this section.
41	I would prefer not to see commercial use of the river but, if it must happen, limiting group sizes to a maximum of 8 would be reasonable. Larger numbers have much greater impact than their incremental size increase.	Thank you for your support of Alternative 4.
62	BLM's management of this area should be limited to: Management of commercial enterprises including guiding. Commercial activities other than guiding should not be allowed. Guiding should not be allowed in Zones 1 and 4.	Please see comment # 23 in this section. At this point in time, BLM believes that the low levels of commercial use do not warrant a prohibition on guiding in RMZs 1 and 4 and that the proposed management actions in Alternatives 2, 3 and 4 provide the necessary stipulations for reducing impacts associated with commercial groups.
GROUP SIZES		
21	I support a maximum group size of eight in all zones as outlined in Alternative 4. Reasons I support this limitation mirror those stated below related to SRP group size but also relate to the impact of a large group on the recreational experiences. Esker ridges are great places to camp and afford spectacular views. But five to seven tents will stand out on an esker ridge as a "tent city" compared to smaller numbers. Can the average campsite in the Tangle Lakes and the Delta River support a group as large as ten people? I can think of many campsites that would expand if a group of ten people were camping at it. On page 56 it is states that the current average group size was 4 for the Delta River through trip and 3 for Upper Tangles. On page 57 it states that there are sections of the Upper Tangles and the Delta River where a user is already experiences higher use and development than is preferred. Page 58 "at current use levels, users' abilities to experience a primitive or semi-primitive river trip on certain segments are being impacted." If that is occurring with an average group size of 4 then setting the group limit at 10 would only allow more use/developed experience. I recognize that group size is not the only thing impacting the user's experience but here is an opportunity to use a pro-active management decision to keep group size, and thus its impact on user experience, within user tolerances. On page 59 a recreation management concern was the establishment/discussion of creating a carrying capacity for the Delta. If users' experiences are being negatively impacted then the BLM has their numbers to being the discussion of carrying capacity for the system. Since we are managing for a different recreational experience in the different zones, has the BLM considered changing the group size limits based on the zones? Yes, this approach would be more confusing to the public but it would allow a larger, more family oriented experience in the Zones 2, 3,and 5 while giving the more primitive zones and smaller group size thus preserving that experience. While this would not be my first choice, it would be better than a group size of 10 across the board. Again I would like to stress that when the users of the Delta River were asked their specific tolerances for group size their response was 8. So why is the BLM going higher than that? This is one opportunity for the BLM to recognize the spirit of Benefit's Based Management. Ask the user what they want. What is their experience out there? Are they are happy with their experience? Then the BLM can set the management prescriptions at the level to maintain or enhance the users' experiences. The users said eight at a	Thank you for your support of Alternative 4. In creating a reasonable range of alternatives, the BLM intended to assess the effects of implementing different group size limitations between the alternatives, based on a variety of factors including campsite impacts (soils and vegetation), scenic impacts, and social encounter rates. The group size limitations are the maximum number of people per group that would be allowed. This does not necessarily mean that this number is the same as the average group size. The BLM's intent is to manage the targeted recreational setting of each RMZ for the average group size, even though the allowable maximum group size will occasionally occur. Figure 2 on page 66 of the EA shows that the mean, or average tolerable group size was 8.1 people. The table also shows that large majorities (86%) will tolerate groups no larger than 12, and almost all users (98%) indicate a tolerance for less than 20 people. The BLM believes that a majority of the campsites on the lakes and river are able to accommodate up to twelve people, and that reductions in group size between alternatives will further protect campsite resources, lower social encounter rates, and reduce scenic impacts. A campsite map will allow larger groups to identify sites that are suitable for their group size. The renovation of the Tangle Lakes Campground will develop campsites that are capable of accommodating up to 12 people and 3 vehicles per site, which is the maximum proposed group size among all alternatives. The BLM believes that creating different group size limitations for each RMZ would not be in the

COMMENT #	COMMENT	BLM RESPONSE
	HIGHEST level of tolerance. Why go higher? It is also good to keep in mind that if any group wants to be larger than eight people they can contact the BLM to gain written authorization as stated in Alternative 2. Group size related to use in the Tangle Lakes Campground, page 27, should be dictated by the size of the campsites within the campground and campground supplemental rules. Ten people at a campsite seem like a large number considering that would require at least, if not more, than two vehicles. Also, at a campground, users have the option to simply occupy two sites. Again, why encourage such a large group when it is not currently the norm?	best interests of educating the public regarding new regulations, and that enforcement would be problematic. The effects of campsite management are discussed in the EA on pages 94-96 (cultural resources), pages 100-105 (recreation resources), pages 105-107 (scenic resources), pages 107-108 (soil resources), pages 111-113 (vegetative resources), and pages 113-115 (water quality).
22	Group size of 15 or less...needs to be better managed.	Alternatives 2, 3, and 4 propose group size limitations of 10, 12, and 8, respectively.
27	You accurately state that families and groups have historically use the area, yet on page 17 it states "Manage for an average group size of 3 to 5 people." I recommend a group size of at least 12 so that extended families or two or three families can camp together. Their kids would really appreciate this. Also it would allow a Boy Scout patrol to camp together with their leaders. Same for Girl Scouts and other youth groups.	Alternative 3 proposes a group size limitation of 12 people. The group size limitations are the maximum number of people per group. This does not necessarily mean that this number is the average group size. The BLM's intent is to manage the targeted recreational setting of each RMZ for the average group size, even though the allowable maximum group size will occasionally occur.
66	I don't much care about the size of the groups allowed at the campground because it's across the lake and we don't hear noise from the campers.	Thank you for your comment.
USER CAPACITY MANAGEMENT		
62	Capacity management should be limited to limiting the number of days that can be spend at any one campsite and limiting group sizes. This could vary by zone. Reservation systems implemented should be limited to those controlling the number of guided parties. A reservation system to limit the number non-commercial users should not be implemented under any scenario.	Alternatives 2, 3 and 4 propose limitations on group sizes and occupancy, as well as an adaptive management approach to address user capacity. This approach was designed to address increased user capacity by implementing the least restrictive measures first, followed by more restrictive measures, based on monitoring defined indicators and standards. The BLM believes that this approach of implementing a voluntary registration system before a mandatory registration or mandatory permit system is the most appropriate way to deal with potential user capacity issues that may develop in the future. Guided parties account for less than 5% of overall use within the river corridor, and BLM believes that arbitrarily limiting commercial use at such low use levels would not be an effective way to deal with user capacity. Since non-commercial use accounts for more than 95% of all river use, any limits to user capacity would likely be the result of increased non-commercial users, rather than commercial groups. Limiting commercial use in this situation would do little to address the overall user levels in the river corridor.
FACILITY MANAGEMENT		
08	Improvements to the area could always be done. We really like what was done on the North side of the highway on the wayside there. Upgrades to the area with facilities is always a good thing, in our opinion. It would be great to see a little more enforcement around the Tangle Lakes Area, mostly on big holiday weekends.	Increased law enforcement patrols on holiday weekends and during fall hunting season have been a priority of the BLM for many years.

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10	We support the DEA's proposal to minimize facility development.	Thank you for your comment.
22	We would like to see limited development in the more remote sections, i.e. no constructed gravel strips along the gravel bars.	None of the alternatives propose the construction or authorization of gravel landing strips.
24	There really is no need for any "Improvements" or enhancements. The Delta River gets surprisingly few travelers that navigate the entire river to it's takeout point at Mile 212 on the Richardson Highway. This is why it is so well liked by the few people that travel it during the summer months. Lets keep it that way! I would also like to comment on the wayside/boat launch at the East end of Upper Tangle Lakes. For many, many years this wayside was also a camping area. It was small, with maybe 7-9 campsites. A couple of years ago it was changed to a "Day Use Only" area and I believe that was poor decision. I can't tell you how many people have told me how disappointed they are to find that they can no longer camp in spot that they, their parents and grandparents had been using for many years. It would be a benefit to change this back to a Camp ground.	Alternative 4 proposes the fewest new facility developments in the river corridor. The Delta Wayside was closed to overnight camping in 2006 due to soil and vegetation impacts from developed camping and motor vehicle contaminants that were entering the Tangle River as a result of motorized vehicles parking next to the riverbank.
41	The idea of constructing public use cabins in the lower river contradicts your past burning down of cabins.	Alternatives 2 and 4 do not propose the construction of new public use cabins within the river corridor.
62	BLM's management of this area should be limited to: Development, management of, and maintenance of a new campground at the site of the existing Tangle Lakes Campground. Management of and maintenance of the existing wayside at the outlet of Upper Tangle Lake. Management of and maintenance of portage trails at the falls in Zone 4. An outhouse should not be provided at the portage. Development of, management of, and maintenance of campsites.	Alternative 4 best supports your comments in regards to facility development. Alternative 4 limits facility development to the campground renovation only; the wayside and portage trails would be maintained, the outhouse would be removed at the portage (based on a mandatory portable toilet requirement), and campsites would be managed and maintained for a low density recreational experience.
66	There's no question the Campground needs to be renovated, but I oppose opening any trails, walk-in camp sites or special use cabins outside the boundaries of the Campground. The tundra is too fragile, the wild life is too delightful and too many people already do not respect our private property signs. Fees should only be charged for use of the Campground. I am opposed to any fees being charged for use of the Wayside, boat launches or parking.	Alternative 4 limits facility development to the campground renovation only. Walk-in trails, cabins, and user fees for facilities other than the campground are not proposed in Alternative 4.
EDUCATION, INTERPRETATION AND MARKETING		
01	BLM should provide bear-resistant containers in all campgrounds where bears are known to be present and offer bear education (Bear Aware?) such as the BLM managers provide to users of the Campbell Tract facility in Anchorage.	All of the trash receptacles currently available at the Tangle Lakes Campground are bear-resistant trash receptacles. After the redesign of the Tangle Lakes Campground, bear resistant food containers will also be installed throughout the campground. Education regarding bear safety will be a component of the educational outreach proposed for all alternatives.
10	We appreciate BLM's intent to include in these materials an explanation of the need for use restrictions (see, e.g., p. 22). Unfortunately, reasonable restrictions are absolutely essential in order to protect the values for which the area was designated. Already, the corridor and surrounding lands are enjoyed by many Alaskans and visitors for a wide variety of purposes. One of its major attractions is that it is nevertheless relatively uncrowded compared to some other popular destinations. Further marketing is not needed, and if undertaken would only degrade rather than enhance the area. At least in the focus group we were a part of, virtually everybody felt that aggressive marketing was a very bad idea. The DEA says that for Zones 1, 4 and 5 marketing would be done through the website and brochures. This is appropriate, and entirely adequate, especially considering how much most people rely on website	Please see response to comment # 55 in this section.

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	information these days. For the two other zones, it is said that they would be "widely marketed and will include information on the BLM website, brochures, and interpretative displays." We think all three of these methods are appropriate, but believe that going beyond them is both contrary to what the public wants and likely to prove detrimental to the resources and values the Wild and Scenic River designation is meant to protect.	
29	From my experience over the past couple of decades this river has relatively low usage, however, BLM finds it necessary to advertise and promote the usage of the river which could potentially result in increased usage and problems that they are now trying to control. It really doesn't make since to market this river and create a situation that doesn't already exist.	Please see response to comment # 55 in this section.
35	...increased education is clearly appropriate.	The BLM agrees. Alternatives 2, 3 and 4 all propose increased educational efforts throughout the river corridor.
39	PAC believes that advertising done for any one of the Zones will affect all of the Zones to varying degrees. Usage of the Tangle/Delta River has not appreciably changed over the past 10-15 years. Wholesale advertising of any portion of the DWSR could conceivably change that to some unknown degree. We believe that the very qualities that are "Wild and Scenic" could be compromised. No to major advertising.	Please see response to comment # 55 in this section.
41	Respect by all users in the use of fire rings and waste disposal is an educational imperative you need to undertake.	The BLM agrees. Alternatives 2, 3 and 4 all propose increased educational efforts regarding fire rings and waste disposal.
55	While we fully support providing opportunities for public use of conservation system units such as the Delta Wild and Scenic River, the focus of the entire plan appears inconsistent with the concept of "marketing" the area. The plan seems to push for minimal usage of the area, while the purposes of marketing are to increase awareness and ultimately increase desire to visit the river area. As we point out above, the 2006 user survey indicates that public use has remained relatively unchanged since the early 1980's. Marketing the Delta will likely increase public use, resulting in additional restrictions and use limitations necessary to achieve the "desired outcomes" proposed for the various zones under the BBM concept or to avoid perceived conflicts between various user groups. The final EA and plan amendment must address this obvious contradiction.	While marketing may increase overall use to some extent, the BLM is obligated to provide the general public with information about available recreational opportunities on public lands. However, the BLM does believe that the level and type of marketing can be tailored to each RMZ to convey the overall setting character that is being targeted. In areas that are targeted for primitive and semiprimitive experiences where the concentrations of users is relatively low, the level of marketing and delivery methods would be commensurate with these targeted outcomes. In areas where the setting character prescription is for higher levels of use, marketing would be offered to a wider audience and through additional delivery methods.
62	BLM's management of this area should be limited to: Public education regarding no trace camping. Enforcement of rules.	Thank you for your comment. Public education regarding Leave No Trace camping and enforcement of rules are prescribed for Alternatives 2, 3, and 4.
WATER QUALITY		
01	Conduct baseline and ongoing sampling of water quality and aquatic invertebrates. BLM proposes to monitor water for petrochemicals (motorboats, aircraft and snowmachines) but it should also sample for nickel, copper, and other chemicals that might result from mineral exploration and development. Aquatic invertebrates such as mayflies and stoneflies are important to fish and are indicators of water quality.	Please see response to comment # 21 in this section.
10	Water quality within the corridor could well be affected by a mine, or even by exploration. It is important that baseline surveys of water chemistry and aquatic invertebrates be done now, and monitoring should continue. In addition to nickel, copper, and drilling mud chemicals, there is a whole suite of chemicals that	Please see response to comment # 21 in this section.

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	should be tested in order to establish baseline water quality. This testing would be a very important contribution that BLM could make to protecting the corridor and surrounding lands.	
21	There is a discussion on pages 76 and 77 regarding the testing of the water quality for the Delta River and potential impacts to water quality from recreational activities. I am concerned that there are no systematic water quality actions being taken by the BLM currently and none are outlined in this Draft plan. It is clearly stated the human waste, resulting in fecal coliform in the water, and hydrocarbons from motorized boat use are present in the system. It is also stated that the fisheries of the area are excellent, a direct correlation to the water and habitat quality water provides. The potential for large scale mining activity on surrounding State land is another important reason to get baseline water quality data now. Should that mining develop, and should it alter the water quality of the Delta system, they will require you to be able to show a change of the quality scientifically. We need the baseline data for the entire Delta system to prove that a change has taken place. Pages 22 and 34 under management states that "BLM will periodically monitor water quality . . . " This wording is vague and does not hold the BLM accountable to conduct the water testing. Plus it only addresses water testing in two of the zones. The scope of the outlined water testing is not sufficient. I recommend that the BLM develop a water quality monitoring plan for the Delta that will be systematic and comply with State water quality standards. What better time to get baseline data than when there doesn't seem to be an issue with the quality of the water? Baseline data is often what is missing and is a valuable tool for scientifically documenting any changes in the water column that could provide solid data to support the implementations of regulations to address water quality issues. The summer river patrols could easily be trained to collect and compile this water quality data throughout the Delta Corridor. The water is what makes the Delta a place of interest. Every aspect of the recreational use of the area is linked to the water. It is paramount to maintain a high quality resource.	Water quality management actions that were developed in the East Alaska Resource Management Plan (EARMP) will apply to the DWSR corridor and will not be changed. Page 4 of the Draft EA states: "New decisions that will be made as part of the Delta River SRMA Plan and EARMP Amendment will be analyzed in this EA. These decisions will apply to recreation management and only for BLM managed lands within the DWSR corridor and Delta River SRMA. Decisions made in the EARMP for other resources within the planning area will not be changed and will also be incorporated into the revised DWSR Management Plan". The water quality management actions that were developed in the EARMP to protect the watershed and riparian areas from a variety of potential contaminants, including petrochemicals and non-point source water pollution include: • Develop water quality data base in priority fish habitats and important recreation use areas to establish baseline for monitoring. In heavy use recreation rivers, include fecal coliform monitoring. First priority is Gulkana and Delta Wild and Scenic River corridors. • Continue assessment of riparian areas, using proper functioning condition assessment methodology. Priority areas include Wild and Scenic River corridors, ACECs, and riparian areas within anticipated or ongoing mining areas. • Continue to monitor water flows and develop web-accessed information for the Delta Wild and Scenic River. • Complete instream flow needs assessment documentation and obtain water rights for the Delta Wild and Scenic River. • Use Required Operating Procedures to prevent non point source water pollution when implementing projects. • Obtain appropriate permits pertaining to projects affecting water quality, wetlands, and/or streams prior to implementing BLM projects. • Require outside applicants to provide copies of pertinent permits prior to BLM authorizations.
27	I'm just curious, but how would you manage instream flow?	Please see response to comment # 21 in this section.
39	Water quality is a major concern; any drainage into the DWSR corridor that has, (or had), mining activity should periodically be monitored for potential contaminants.	Please see response to comment # 21 in this section.
	FISH AND WILDLIFE	
01	BLM staff should also record any observed reaction of wildlife to Pure Nickel's helicopter flights and other exploration activities.	Pure Nickel is currently conducting exploratory mining activities on State lands, not on federal lands. The BLM staff will strive to record observed reactions of wildlife to these activities whenever staff is present nearby. However, we recommend the public to

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		report observed reactions of wildlife to these exploratory activities to the State of Alaska, Department of Natural Resources.
10	We mentioned earlier that motorized vehicle and other artificial noises can be detrimental to wildlife. We'd only note now that in addition to local trappers, subsistence users, and other carnivores (p. 78), the corridor's small mammals and furbearers are of very strong interest to other human users of the area as well.	Thank you for your comment.
38	First off, the Wild segment of the DWSR runs from Garrett Creek to Phelan Creek. A few miles downstream from Garrett Creek is where Eureka Creek dumps into the Delta turning the water into a braided glacial river for the next 7 or so miles where it confluences with Phelan Creek. I have never seen a grayling caught on this section of the river. Secondly, I did some Google checks on Gryska, the source for which you have quoted. Everything that I could find on him in relation to this survey had to do with preparation work that he did for a James F. Parker. Parker wrote a Fishery Management Plan for Arctic Grayling in the Delta Clearwater River, 2001-2004; for the Alaska Department of Fish and Game, Fishery Management Report No. 03-02. The Delta Clearwater River is a 34 km river located 177 km southeast of Fairbanks and 23 km northeast of Delta Junction in the middle of the Tanana River drainage. These are two clearly different rivers with the same facts, "…greatest densities ever recorded for a population of arctic grayling > 270 mm length (Gryska, in preparation)". I am willing to take a guess that there is a mistake on BLM's part here. I found and read the report for the Delta Clearwater River but couldn't find any such reports on the Delta River. It is here that I have great concerns because of the BLM's suggestions that the use of OHVs crossing the river and the wake of power boats could disturb this great fishery of Arctic graylings based on the allege Gryska's finding for the Delta River.	The Alaska Department of Fish and Game and the BLM cooperated in a stock assessment of the Arctic grayling population inhabiting a 17-km portion of the DWSR. The study was conducted during July 2008 using a mark-recapture experiment to estimate abundance and length composition of the population. The density of Arctic grayling in the Delta River between 240 and 270 mm in fork length was the greatest ever observed among published density estimates for Alaskan riverine Arctic grayling (Gryska 2009). Andy Gryska with the Department of Fish and Game was the project lead. The report for this study has not yet been assigned a data series number and is cited as: 2009. Stock assessment Arctic grayling in the Delta River, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-XX, Anchorage.
CLIMATE CHANGE		
02	The conclusion of the International Panel on Climate Change (IPCC) that "warming of the climate system is unequivocal" due to anthropogenic contributions of greenhouse gasses is becoming more and more open to question. This statement is not relevant. Climate change is accepted by virtually all scientists. However, anthropogenic sources are not seen as a problem by many. Furthermore an increasing number scientists that once accepted anthropogenic as a major contribution no longer support that view. Man could have had very little to do with the beginning or ending of the numerous interglacial warming periods recognized in the Pleistocene. Several much better explanations exist. Land managers would be better advised to accept the fact that climate change is with us to stay (both warming and cooling and wet periods and dry periods) and to develop management approaches that will encourage adaptation to those changes. 4.2.1.1.1 Effects of recreation management decisions to contributing causes of climate change. AMA agrees that none of the management alternatives would impact climate change. We disagree, however, that greenhouse gas emissions are the primary cause of climate change and this statement should be removed.	The Department of the Interior, Secretarial Order 3226, requires that the BLM "consider and analyze potential climate change impacts when undertaking long-range planning exercises, setting priorities for scientific research and investigations, and/or when making major decisions affecting DOI resources". The BLM supports the view that the emission of greenhouse gases (GHG) is one of the contributing causes of climate change (but not the only cause), and that the impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions and other climate drivers. The tools necessary to quantify incremental climatic impacts of specific activities are presently unavailable, so the climate change analysis for the purposes of this planning document are limited to accounting and disclosing factors that contribute to climate change. Specific levels of significance cannot be established, and data is not available to put GHG emissions into a meaningful context for the planning area, but assumptions can be stated that account for and/or disclose the factors that contribute to climate change associated with each alternative (including greenhouse gas emissions). The effects to climate change are discussed in the EA on pages 93-94.

COMMENT #	COMMENT	BLM RESPONSE
09	Finally, we think BLM must take into account how the Delta River management plan will mitigate and adapt to changes occurring as a result of climate change. Changes from this source are very likely to occur in fish habitat, water quality, vegetation composition, and wildlife. These changes are complex and perhaps even unknowable at this point in time. Nonetheless, it is clear that a more conservative approach to the protection regime of the area will not be a mistake given that, even if we do not know what the changes will be, we know there will be change and change is likely to be drastic. We urge you to err on the side of caution as you develop a plan that will, it is to be hoped, protect into the indefinite future one of the Interior's most well-loved recreational areas.	Please see response to comment # 02 in this section.
40	Similarly we are facing impacts from global climate change at an alarming rate here in Alaska. The EA should consider the impacts of climate change, and how the management plan might mitigate these impacts. The glaciers in the area are receding rapidly, there is less snowfall and cover, surface and ground water levels must certainly be dropping. What effects will these have on fish, wildlife, vegetation, recreation and subsistence activities?	The effects to climate change are discussed in the EA on pages 93-94. Also, please see response to comment # 02 in this section.
57	Also absent is consideration of future impacts from a warming climate and how the Delta River management plan will mitigate and adapt to changes in soils, fish habitat, water quality, vegetation composition, wildlife, and recreation and subsistence activities as a result of climate change.	The effects to climate change are discussed in the EA on pages 93-94. Also, please see response to comment # 02 in this section.
61	I believe all reference to climate change should be removed from the Draft Environmental Assessment (EA) for the Delta River. Specifically paragraphs 3.2.1 and 4.2.1. The science that the global warming theory was based on has been seriously called into question. The EA should not become a sounding board for either polarized group of this issue. Referencing climate change in this format from the Bureau of Land Management, a government agency, will only provide false validation. Others will use it to discredit the EA in its entirety. No matter what personal stance someone has on the issue it cannot be argued the potential climate change on the local area of use from fossil fuel combustion is trivial. Therefore, why include it in the assessment.	Please see response to comment # 02 in this section.
ACCESS		
02	3.2.4.1.2 Transportation and Utility Corridors. AMA supports BLM efforts to avoid road construction within and along the wild and scenic river corridor so long as "overland transportation systems within or across the river corridor may be authorized if it is determined that there are no economically feasible and prudent alternative routes."	On page 60, the EA discusses the process for authorizing additional access routes within the DWSR corridor. This process was developed in the ANILCA legislation and would continue to serve as the primary tool to assess overland transportation systems within or across the river corridor. The effects of authorizing additional access routes are discussed in the EA on pages 98-99.
10	Should a mine be developed, a mining road would presumably be constructed. The question of where such a road should be routed is not a simple one. If the road is to intrude on the corridor at all, it should do so for the shortest possible distance, that is, it should cross the corridor at right angles. Of course, not intruding on the corridor would be the preferred solution from the standpoint of the Wild and Scenic River only. But there are also highly valuable lands, waters and natural resources (like the Nelchina herd) outside of the corridor. It might be that a quick crossing of the corridor, rather than a lengthy traverse parallel to it, would be in the overall best interest of the larger area and its many resources. We just don't know at this point. And of course a similar issue might arise with regard to other utilities, such as a transmission line. In general, BLM should do whatever it can to persuade the State of Alaska to minimize the impacts of mining on activities and resources within the corridor, and this intention should be included in the EA.	Please see response to comment #02 in this section.

COMMENT #	COMMENT	BLM RESPONSE
	PROPERTY AQUISITION	
01	We support BLM's efforts to purchase the inactive Tangle Lakes Lodge land next to the Wayside, so that land along the lake doesn't become a subdivision.	Please see response to comment # 04 in this section.
03	It would be a shame to see further development on the Tangle Lakes Lodge property. BLM has indicated its willingness to consider purchasing that property to prevent inappropriate additional development. It should act now, while the property is for sale, in order to prevent the substantial scenic and noise impacts that would result from additional development there.	Please see response to comment # 04 in this section.
04	We support the purchase of the private in-holdings and lodge within the Wild and Scenic River Corridor. While the RMP, existing, and prescribed management recommends the purchase of these lands no action to date has been taken to secure ownership as these lots have become available for purchase. The ownership of these areas will allow for consistent management in the Delta Corridor. Please take decisive action as these lands become available to acquire ownership and management responsibilities.	The EARMP specified that the DWSR corridor would be an emphasis area for the acquisition of private lands through purchase or exchange for the purposes of long-term Federal management and retention. On pages 22 and 26 of the Draft EA, Property Acquisition, the BLM proposes that: "The BLM will consider acquisition of private parcels for sale within the zone for inclusion into the DWSR corridor". This would not change in any of the alternatives. There are approximately 30 acres of private lands within the DWSR corridor. If these parcels become available for sale, the BLM may submit funding requests through the Land and Water Conservation Fund (LWCF) to acquire lands. The LWCF program provides funding for the acquisition and development of public outdoor recreation areas and facilities. The BLM has considered, and does not support, the acquisition and development of a visitor center at the Tangle Lakes Lodge because funding is not available to maintain and operate additional assets that would require staffing, maintenance, and site remediation costs that may be necessary to fully comply with Federal inspection, accessibility, and building code standards. The effects of property acquisition are discussed in the EA on page 99.
06	I DO support efforts to purchase the inactive Tangle Lakes Lodge land next to the Wayside.	Please see response to comment # 04 in this section.
10	One of the single most important actions BLM could take in the corridor is to acquire the Tangle Lakes Lodge property, and prevent land along the lake from becoming a subdivision. Further development there, or the development of the presently raw land, would seriously degrade the scenic qualities which the agency recognizes are a major part of the Tangles/Delta experience. Ideally, BLM should purchase the entire property, but should there be fiscal or management constraints preventing such a purchase at this time, the agency should obtain as much of the property as it can, and seek to obtain the reminder as soon as possible.	Please see response to comment # 04 in this section.
14	If BLM were to purchase the Tangle Lakes Lodge property it would help secure the values of the Wild and Scenic River Corridor and I support that.	Please see response to comment # 04 in this section.
21	I support the BLM purchasing land acquisitions or private inholdings within the Delta WSR corridor either through the LWFC requests or even using regular budget monies. I agree with the reclamation of any acquisitions to VRM Class 1 natural state sites as noted on page 83 and 84. This intention of restoring all acquisitions to VRM Class 1 should be noted in Chapter 2 on page 26 under Property Acquisitions. These inholdings are along the Denali Highway where there is great potential for the subdivision of the land as	Please see response to comment # 04 in this section.

COMMENT #	COMMENT	BLM RESPONSE
	well as the development of activities that would adversely impact the current character of the area such are intensive guide services and adventure lodges operated by large corporations like Princess. I specifically support the BLM purchasing the old Tangle Lakes Lodge. It would be a great use of our tax dollars to purchase the old Tangle Lakes Lodge property and then tear it down and restore that area to its natural state.	
24	As several other concerned people remarked last time, however, there is one big concern that has unfortunately come to a head: I have tried for the past 6 years to negotiate a sale of my property to the BLM in order to protect it from further development, with poor results. After an exhaustive period of approximately two years, which included public meetings, BLM staff time and an expensive appraisal by BLM, the decision was made to not purchase the only private property at the headwaters of this river. This decision disappointed many people, including BLM staff, conservation organizations and everyday users of this River corridor. I had agreed to sell this property at whatever price the BLM appraisal came in at, so I was not trying to hold anyone hostage on the price. No reason was ever given for the BLM's decision not to purchase. I was very surprised to be told at a meeting with BLM that they do not care if I subdivide and make parcels available to private citizens. Unfortunately, that looks like what may happen. I will forever be disappointed that BLM made this decision and will never be able to understand it, especially since this also negatively affects public safety. For 100 miles anyway you want to travel, there is no BLM, medical assistance or law enforcement present in this area, with the exception of a few days each summer when BLM Rangers or State Troopers make a trip out here. In the meantime, there are fatal accidents (I once held a two year old boy for over an hour, who was badly injured until EMT's arrived at a traffic accident that had killed his Father and Grandmother) fish & game violations and just general mayhem at times. The property at Tangle Lakes Lodge would have been the perfect place to provide this much needed presence at a bargain price. Are there any plans in the future for BLM to have a presence in this area?	Please see response to comment # 04 in this section.
25	I also strongly support the effort for BLM to acquire the Tangle Lakes Lodge to prevent development. That roadside lake is too special to open it up to unrestricted use. The short river that connects that lake and Round Tangle is also special and should be protected. With its fragile nature and easy accessibility, it would be easy to imagine some knucklehead trying to power his way from one end to the other with a motorized craft of some sort. It would be inconceivable to me how damage to the system would not result. Preventing this type of disaster is much easier than repairing it! Help protect one of the special places in Alaska that offers road access!!	Please see response to comment # 04 in this section.
27	I strongly recommend against acquisition of one of the area lodges. This year early “baby boomers” turn 65. Many of them will want to enjoy the values of the Tangle Lakes area without having to camp out. The importance of the lodges to provide this opportunity will increase in the future.	Please see response to comment # 04 in this section.
32	I support BLM's efforts to purchase the inactive Tangle Lakes Lodge land next to the Wayside, so that land along the lake doesn't become a subdivision.	Please see response to comment # 04 in this section.
34	I also strongly support your acquiring inholdings, including the Tangle Lakes Lodge property.	Please see response to comment # 04 in this section.
39	While we are not opposed categorically to all government land acquisition within the DWSR corridor, we believe that sufficient notice of intent should be given and we would request that a hearing be held. Land acquisition has the potential to affect the local residents far more than it would an occasional area user. We believe that PAC and other affected organizations should have the opportunity to make their voices heard prior to any proposed land acquisition within the corridor.	The BLM agrees. In the event that any future land acquisition proposals are being considered in the DWSR corridor, a public meeting will be held in the affected are to solicit public comments on the proposal. This language has been added to Alternative 2 of the EA on pages 24 and 29. Also, please see response to comment # 04 in this section.
41	It makes no sense for the BLM, which now controls 44,587 acres of land, to use tax payer funds to purchase any private land in this area.	Please see response to comment # 04 in this section.

COMMENT #	COMMENT	BLM RESPONSE
50	Your efforts to purchase the inactive Tangle Lakes Lodge property, next to the wayside, are encouraged. Seeing the land become a subdivision would be sad indeed.	Please see response to comment # 04 in this section.
66	Whichever alternative is chosen for Zone #3, I am absolutely, unequivocally, unalterably opposed to BLM purchasing any private property on that stretch of the Denali Highway. There is so little private property in the area that it should all remain in private hands, no matter the condition of that property. At least once a year for the last 20 years we have received inquiries about selling our little one acre plot. Good Grief, BLM! You already own 248 acres in zone #3 and a total of 44,587 acres for the whole management area. If you want to build something, do it on your own land.	Please see response to comment # 04 in this section.
MINERAL DEVELOPMENT		
01	Large-scale mining activities in the area will have significant impacts to the natural resources, and though the BLM needs to accommodate the mining industry, it should clearly define the parameters and set the standards high enough to protect the resources befitting a wild and scenic designation. Our preference would be that no large-scale mining would occur in proximity to this area.	The planning criteria on Page 5 of the Draft EA states: "the plan amendment will only address recreation management and will supersede only those sections of the existing EARMP that relate to management of the Delta River SRMA. The plan will conform to all other decisions made in the EARMP". Page 4 also states: "New decisions that will be made as part of the Delta River SRMA Plan and EARMP Amendment will be analyzed in this EA. These decisions will apply to recreation management and only for BLM managed lands within the DWSR corridor and Delta River SRMA. Recreational decisions made in this plan will be incorporated into a subsequent revision of the 1983 DWSR Management Plan. Decisions made in the EARMP for other resources within the planning area will not be changed and will also be incorporated into the revised DWSR Management Plan". Lands within the DWSR corridor are withdrawn from mineral entry, and the BLM has no authority to regulate mining operations on state lands that are adjacent to the river corridor. To the extent possible, the BLM will work with the mining companies to address issues that affect users of the river corridor, but otherwise, mineral development and exploration is outside the scope of this planning process.
09	We are also greatly concerned about the current and future impacts of on-going mineral exploration in the Tangle Lakes and Delta River. Nevada Star's exploration may well mean more noise from helicopters or off-road vehicles as well as the noise and view of drill rigs just outside the corridor. We urge BLM to do it's best to mitigate for the "conflicts of interest" that are inevitable between recreational users and development interests. It is important to keep in mind that Nevada Star wishes to make money but they seek to do so on Alaska's land. We think BLM has every right to require that those wishing to develop our natural resources not take more than they have paid for in the form of impact on other users.	Please see response to comment # 01 in this section.
10	The DEA mentions this possibility under Cumulative Impacts at pp.100-101, but doesn't appear to describe how it would respond to such a threat. Mining on a large-scale on nearby lands poses a very significant threat to recreationists, hunters, and wildlife in the corridor, and possibly to water quality as well. BLM should do whatever it can to prevent activities beyond the corridor from adversely affecting resources and users within it. It would not be responsible stewardship to take a hands-off stance just because the mining activities are on non-BLM managed lands outside the corridor.	Please see response to comment # 01 in this section.

COMMENT #	COMMENT	BLM RESPONSE
12	I have canoed and camped along Tangle Lakes and the Delta River for 35 years, and have some concerns about possible damage to this special area in the future. In your revision of the plan, please include safeguards against damage to soil and water, and disturbance to wildlife, by exploration and other activities by mining companies (such as those proposed by Pure Nickel), in addition to other activities such as motorized recreation. Even if mining activities take place outside the wild and scenic river corridor, they can still affect this vulnerable area. Please include monitoring that will detect any potentially damaging by-products of these activities, and a means to prevent any damage before it happens.	Please see response to comment # 01 in this section.
13	I am concerned about the mineral exploration that is occurring in the Tangle Lakes and Delta River areas. Nevada Star Resources applied for a 2010-2015 exploration permit, but the Environmental Assessment does not take into account the impacts from the continued exploration. Some of these impacts include noise from the helicopters flying over the area and from the drill rig. The visual impacts of these activities are also undesirable for recreational users of the area. While the sights and sounds of mining activity are unpleasant for people who would like to have a wilderness experience, they do not compare to the negative impacts to wildlife and subsistence users from contamination of the water by seepage from unlined overflow pits. I request that BLM reject the permit.	Please see response to comment # 01 in this section.
22	Mining access should be limited to have the least amount of damage and visual impact to the recreational user.	Please see response to comment # 01 in this section.
30	Fully address the current and potential future impacts of mining exploration.	Please see response to comment # 01 in this section.
31	I do not support additional mineral exploration...	Please see response to comment # 01 in this section.
36	I would ask you extend every caution in permitting any mining or mining exploration within this river corridor. The Delta River is one of the very few wild and scenic rivers that are easily accessible to the public, and as such it needs all the protection it can get from large corporate interests.	Please see response to comment # 01 in this section.
40	Mineral exploration has greatly increased recently and the activity associated with it has negative impacts on the recreational activities in the area. Helicopter traffic is intrusive, drill rigs unsightly, and if mining actually begins a host of problems arise with roads, ore trucks, increased pressure on the resources from increased population, possible contaminated water from inadequately designed or maintained facilities, dust, noise, potential spills of toxic materials. In view of this I want to see the Environmental Assessment include impacts associated with mineral exploration and mining.	Please see response to comment # 01 in this section.
57	Excluded from discussion in the EA are cumulative current and future impacts of ongoing mineral exploration in vicinity of the Tangle Lakes and Delta River. The sight and noise of helicopters flying low over the corridor, as well potential impacts of noise from drilling and possibility of water contamination affecting wildlife, fish, and the health and desirability of those resources for subsistence and recreational users if contaminated are worth consideration.	Please see response to comment # 01 in this section.
59	I request that any revision does NOT include mining in any of the lands with waters that flow into the Delta Wild and Scenic River, particularly above Eureka creek. Mining and its continuous, long lasting and insidious waste products are not conducive to fish and other natural animals or vegetation. Also it is not esthetically pleasing in a Wild and Scenic River.	Please see response to comment # 01 in this section.
63	Alaska cannot afford to learn (or not learn) another lesson about the impacts of mine waste seeping into fish rich waters. I hope that you will look at making clear rules for mine tailings and waste for future mines.	Please see response to comment # 01 in this section.

COMMENT #	COMMENT	BLM RESPONSE
67	The management plan should more fully consider the current and future impacts of the mineral exploration that is going on in the surrounding environments around the Delta River Wild/Scenic & Recreational Corridor. What impacts are likely considering the continued exploration and how can these impacts be mitigated, reduced or eliminated? Of particular importance are the possibility of contaminated water seepage from unlined overflow pits. But, also of importance are impacts associated with noise, overflights and impacts upon subsistence & recreational users, as well as impacts upon wildlife. What are these impacts and how can they be avoided?	Please see response to comment # 01 in this section.
SUBSISTENCE/ANILCA 810 EVALUATION		
56	Many elements of the Delta River Plan are not consistent with ANILCA. In the understandable effort to conform to BLM's national planning standards and practices, it appears the agency has overlooked or misunderstood several essential statutory mandates in ANILCA concerning certain public uses and how those uses may be closed or restricted. As a federal law, ANILCA cannot be trumped by national or regional administrative practices. If planning tools conflict with ANILCA, the provisions of ANILCA must prevail. The most notable example of this concern is Benefits Based Management. BBM was designed outside of Alaska exclusively for managing recreation; yet in Alaska, recreation is often difficult or impossible to distinguish from subsistence or other traditional activities expressly provided for in ANILCA. Similarly, ANILCA and its implementing regulations dictate a specific process for restricting subsistence uses and traditional activities. ANILCA sets a higher bar for public use restrictions in Alaska and calls for a more rigorous implementation process. In this light, many of the proposed public use limits would be legally questionable in Alaska. The discussions that follow explore these challenges in more detail. **Inadequate Standards for Restrictions** ANILCA Section 811 states the Secretary shall ensure all rural residents engaging in subsistence activities shall have reasonable access to resources on public lands and shall permit [allow] snowmobiles, motorboats, and other means of surface transportation traditionally employed, subject to reasonable regulation. Similarly, ANILCA Section 111O(a) provides that the Secretary shall permit [allow] the use of snowmachines, motorboats, airplanes and non-motorized surface transportation on CSUs in Alaska, subject to reasonable regulation. Section 111O(a) requires that applicable methods of access can only be restricted by reasonable regulation if the "Secretary finds that such use would be detrimental to the resource values of the unit or area." This intent is further clarified in implementing Department of the Interior regulations at 43 CFR Part 36. While Section 111O(a) does not apply to most lands in Alaska managed by BLM, it does apply to the Delta Wild and Scenic River corridor as a designated conservation system unit. The Plan proposes restrictions on allowed uses without a finding that these uses are detrimental to resources or other values. Restricting use to preserve desired outcomes and subjective experiences is contrary to ANILCA's intent to allow access to Alaska's remote areas until resource values are threatened. Following passage of ANILCA, BLM did not promulgate ANILCA Section 811 implementing regulations as did the U.S Fish and Wildlife Service (FWS) and National Park Service (NPS). At the time, BLM was not contemplating the need to restrict access for subsistence activities, so such regulations were not a priority. However, using the same basic standards for restricting subsistence access as specified in 50 CFR 36.12 and 36 CFR 13.460 would provide consistency among DOI agencies in implementing ANILCA and maintain a consistent approach for the public's benefit. Both the FWS and NPS regulations state that routes and areas may be restricted or closed to the use of snowmobiles, motorboats, dog teams, and other means of surface transportation traditionally employed when "such use is likely to cause an adverse impact on public health and safety, resource protection, protection of historic or scientific values, subsistence uses, conservation of endangered or threatened species, or the purposes for which the [area] was established." These long-established criteria have worked well for NPS and FWS. The overarching statutory guidance applies equally to all agencies, making it difficult to understand how BLM can justify a different approach. Emulating the NPS and FWS criteria would also serve BLM well,	**Inadequate Standards for Restrictions** **Inadequate ANILCA Closure Procedures** **Section 111O(a) "Traditional Activities "** **Section 811 "Qualified Rural Resident" and "Other Means of Surface Transportation"** After additional consideration, the BLM agrees that the BLM would be required to first determine that motorized boating and airplane landings would be detrimental to the resource values of the unit before restricting access that is subject to ANILCA Sections 111O(a) and 811(b), and that any restrictions under ANILCA Section 1110(a) would have to be in accordance with the process established in 43 CFR 36.11. At this point in time, the BLM believes that the current level of motorized boating use and airplane landings in RMZs 1 and 4 do not warrant an ANILCA closure. Therefore, Alternative 2 will be modified to include a monitoring strategy for specific resource values to determine if these uses are detrimentally affecting the specified values in RMZs 1 and 4. This will allow the BLM to monitor levels of use and impacts before implementing an ANILCA closure, if monitoring shows this is necessary in the future. **ANILCA Section 810 Analysis** Alternative 2, Wildlife. Permit requirements for motorized boating in Alternative 2 have been removed. Permit requirements for OHVs over 2,000 lbs. GVW is proposed for RMZ 5. Unlike some State Controlled Use Areas where OHVs are completely prohibited, this provision allows subsistence users and miners to still have access to natural resources. Hunters can acquire the free permits for OHVs over 2,000 lbs. at the time they get their subsistence permits. The BLM believes that these free permits will allow monitoring of impacts from OHVs over 2,000 lbs. in RMZ 5. Alternative 2 and 4, Wildlife. Dispersed camping is allowed for subsistence users. Subsistence users will not be limited to designated campsites. The mandatory camping permit system for designated campsites in Alternatives 2 and 4 would only be used if the voluntary registration systems are not successful. Developing a mandatory permit system would include an additional public process and opportunities for input.

COMMENT #	COMMENT	BLM RESPONSE
	including minimizing the potential for legal challenges. In summary, ANILCA imposes requirements regarding restriction of access under ANILCA Sections 111O(a) and 811(b). While it may be appropriate for BBM policy to inform the planning process, alone it does not serve as adequate justification to restrict public uses and access allowed for in statute. Restrictions without adequate justification pursuant to ANILCA constitute unreasonable regulation. **Inadequate ANILCA Closure Procedures** The plan indicates special rules will be developed in accordance with 43 CFR 8351.2-1 to address restrictions on travel management. As previously noted, access protected under Section 111O(a) can only be restricted by reasonable regulation if the Secretary determines such use would be detrimental to the resource values of the unit or area. Department of Interior (DOI) ANILCA regulations at 43 CFR 36.11 (h) include a process for implementing restrictions to these allowed uses that is not reflected in 43 CFR 8351.2-1, including specific notice and hearing requirements, an added rulemaking, and a minimum sixty-day comment period for permanent closures. Restrictions on airplane use also require added notice in specific publications. The Supplementary Information included in the Final Rule dated September 4, 1986 states: "Regulations providing for the closure of areas for reasons other than under the provisions of section 1110(a) include: For the NPS, 36 CFR 1.5; for the FWS, 50 CFR 25.21; and for the BLM, 43 CFR 8364." [Emphasis added] While 43 CFR 8351.2-1 may be appropriate to implement other management actions, the appropriate regulation for implementing Section 1110a) access restrictions is 43 CFR 36.11. The process followed by the FWS and NPS for restricting subsistence access is specified in Section 811 implementing regulations at 50 CFR 36.12 and 36 CFR 13.460, respectively. The Preamble in the June 17, 1981 Final Rule for 50 CFR Part 36 relative to Section 36.12, Access for Subsistence Purposes (page 31824), states: "All routes and areas are open to use of these vehicles for subsistence purposes except as specifically restricted or closed. The Refuge Manager will implement such closures or restrictions on the basis of criteria which are more limited than the criteria for closure to general recreation use. Basically, in order to impose a restriction, the Refuge Manager must determine that the use in question is causing or is likely to cause an adverse impact on public health and safety, resource protection, protection of historic or scientific values, subsistence uses, conservation of endangered or threatened species or the purposes and values for which the refuge area was established. The Refuge Manager will arrange notice and public participation concerning closure proposals in order to involve those affected to the fullest extent possible in the decision making." [Emphasis added] For consistency with the intent of ANILCA and for the public's benefit, we request that BLM implement an equivalent public process when restricting subsistence access to meet the intent of ANILCA and avoid potential legal challenges. **Section 111O(a) "Traditional Activities "** The draft plan does not demonstrate an adequate understanding of the breadth and consequences associated with the term "traditional activities." For example, under certain alternatives, the plan proposes to require a permit for those seeking access for traditional activities in zones 1 and 4 during June and July. Specifically: During June and July, motorized boating and airplane landings will be prohibited. During the closed season, subject to reasonable regulations and with BLM authorization, qualified rural residents may be permitted to use motorized boats or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811). Similarly, access via motorboats, airplanes and nonmotorized surface transportation may also be permitted for traditional activities (ANILCA 1110). Authorization may be obtained in person, by mail, and by phone from BLM Glennallen Field Office. [Emphasis added] We appreciate that BLM is attempting to create an allowance for such traditional activities; however, in practice the plan is creating a restriction. First, while ANILCA Section 1110(a) specifically authorizes the use of certain modes of access for "traditional activities," the implementing regulation at 43 CFR 36.11 broadens this authorization and does not require a "traditional activity" criterion for use of motorboats and airplanes. The Supplemental Information for the Final Rule states: "Some commenters criticized the proposed regulations on motorboat and aircraft use within areas, in that those uses are not restricted to traditional activities and travel to and from villages and homesites as in the statutory authorization. These commenters preferred the more restrictive language of the statute. Interior is of the view that it has the	Alternative 4, Wildlife. The ANILCA 810 Analysis has been updated to explain why horsepower limitations and the prohibition of airboats and hovercraft "do not pose an added burden to subsistence users" and "...will not have an effect on subsistence uses and needs." Adaptive management actions have also been included in the revised analysis under “other resources”. **Clarifying the State's Role regarding Fish and Wildlife Management** The BLM acknowledges the State’s responsibility in the conservation of fish and wildlife resources in the State of Alaska. References in the text to a federal subsistence hunting area does not preclude these responsibilities of the State, but rather, highlights the availability of such areas where federally-qualified rural residents may take subsistence resources using a federal subsistence permit. ANILCA 810 Evaluation, pages 139-144. Information on caribou harvests are now included. EA, Chapter 4.3.9.1, pages 109-110. The BLM agrees that federal subsistence priority is a priority opportunity to harvest subsistence resources in times when resources may be limited such that the harvest of said limited resources necessitates closure of other harvest opportunities by non-federally-qualified subsistence users.

COMMENT #	COMMENT	BLM RESPONSE
	discretion to broaden the authorization beyond that required in the statute in light of other authorizations.... Accordingly, to allow for access to the areas, the restrictions on motorboat and fixed wing aircraft use have not been increased in the final regulation." Therefore, pursuant to 43 CFR 36.11, the reference to "traditional activities" is not necessary in this context. In addition, requiring a permit, regardless of how easily obtainable, is still a restriction (a burden on the public) and - as recognized by both NPS and FWS - the standard for 1110(a) access applies. As previously noted, BLM is required to first determine that such use would be detrimental to the resource values of the unit or area before restricting such use in accordance with the process established in 43 CFR 36.11. Second, BLM's use of the term "traditional activities" in the context of a restriction implies that BLM has either informally defined the term internally, and retains the right to not issue a permit on that basis; or is putting the burden upon the individual user to somehow define what use is traditional for BLM. Either way, this approach is problematic. The term was intentionally not defined by DOI in ANILCA or in Section 1110(a) implementing regulations at 43 CFR 36.11 with the expectation that the managing federal agency may define the term as needed on an area basis. The Supplemental Information for the Final Rule states: Some commenters suggested that a definition of "traditional activity" should be included in these regulations... Because these regulations apply to a number of areas under the administrative jurisdiction of three agencies, it has been decided that it would be unwise, and perhaps impossible to develop a definition that would be appropriate for all areas under all circumstances. Exactly what "traditional activities" are must be decided on a case-by-case basis. Once the agencies have had the opportunity to review this question for each area under their administration, it may be possible to specifically define "traditional activity" for each area. Accordingly, these regulations do not contain a definition of "traditional activity." If BLM determines a need to define "traditional activities" as it applies to ANILCA Section 1110(a) access in the future, the definition needs to be established in regulation prior to implementing restrictions, as was done by the National Park Service for the definition as it applied to snowmachine use in the Old Park of Denali (36 CFR 13.950). The Forest Service is the only other federal agency that has defined "traditional activities" to date, and that definition was intentionally inclusive: "Traditional activities include, but are not limited to, recreation activities such as fishing, hunting, boating, sightseeing, and hiking." (FSM 2300, Chapter 2320). **Section 811 "Qualified Rural Resident" and "Other Means of Surface Transportation"** The management prescription referenced in the previous section also allows "qualified rural residents" to obtain a permit to use motorized boats and other means of surface transportation traditionally employed for subsistence purposes as an exception to the seasonal closure of motorboats and airplanes. We understand BLM is attempting to define those users who will be eligible for a subsistence access permit; however, ANILCA Section 81 1(b) applies broadly to "local residents." The term "qualified rural residents" only applies to consumptive use of fish and wildlife managed by the federal subsistence program. Other subsistence uses, such as berry picking, firewood and vegetation gathering, are not limited to "qualified rural residents." Therefore this so called allowance is without basis and unenforceable. Furthermore, in order for the public to fully understand what this provision applies to, "other means of surface transportation traditionally employed" would also need to be defined. Similar to the discussion above on the definition of "traditional activities" if left undefined, BLM is inappropriately putting the burden of proof on the public. **ANILCA Section 810 Analysis** It appears that conclusions about proposed actions generally under-disclose potential effects to subsistence uses and needs. ANILCA does not state that effects to subsistence uses may not be allowed. Instead it requires the federal agency to analyze and disclose potential effects; and where they are expected to be significant, requires notice, hearing, and reasonable steps to minimize adverse impacts. Despite substantial proposed changes to current subsistence practices, including permit requirements for OHV use, motorized boating, and campsite occupancy, this analysis concludes that none of the proposed management actions or alternatives will have any impact on subsistence uses and needs. These actions will have impacts that need to be acknowledged. Below are some specific examples of unreported impacts.	

COMMENT #	COMMENT	BLM RESPONSE
	• Alt. 2, Wildlife: The analysis appropriately recognizes a permit requirement for certain OHV use as an "additional burden" but does not similarly characterize a permit requirement for motorized boat use. In both instances, the analysis concludes the proposed action "will not have an effect on subsistence uses and needs," which ignores the fact that the permit requirement, by itself, will have an impact on users that are accustomed to obtaining subsistence resources freely, without first having to obtain "permission" from BLM. • Alt. 2 and 4, Wildlife: Camping will be restricted to designated campsites in both alternatives and dispersed camping will be allowed when using "Leave No Trace" camping methods. Alternative 4 also establishes a mandatory camping permit system for the designated sites, but exempts subsistence users who camp away from designated sites. In all instances, the evaluation concludes that "allowing dispersed camping for subsistence users will not have an effect on subsistence uses and needs." While we recognize allowing disbursed camping has a positive effect on subsistence use, the analysis ignores the potential negative effects of being limited to specific campsites, use of possibly unfamiliar camping methods, and having to compete with recreational users over designated sites. • Alt. 4, Wildlife: Motorized boat engine size is limited and airboats and hovercrafts are prohibited, yet the Analysis states these limitations "do not pose an added burden to subsistence users" and"...will not have an effect on subsistence uses and needs." At a minimum, these statements need to be supported as to why they do not create a burden or affect subsistence uses and needs. Furthermore, it appears the analysis only addresses the potential impacts of proposed management prescriptions (i.e. Implementation Framework Decisions). It should also evaluate the Adaptive Management Actions, which include additional phased-in restrictions. We urge re-evaluation and full disclosure of the potential impacts of proposed management decisions to subsistence users, including the impact on access to subsistence resources. **Clarifying the State's Role regarding Fish and Wildlife Management** The Alaska Department of Fish and Game (ADF&G) is responsible for the sustainability of fish and wildlife in the State of Alaska, regardless of land ownership, and is the primary management authority for fish and wildlife. Consistent with ANILCA Section 1314, ADF&G's responsibilities include determining healthy populations and allocating fish and wildlife - including for subsistence purposes unless specifically preempted by federal law. All BLM lands are open for harvest under state general hunting regulations unless the area is closed by the Federal Subsistence Board to the non-federally eligible. The State of Alaska currently provides for caribou take in Game Management Unit 13. Narrative on pages 66, 70, and 77 imply that state regulations do not apply in the Delta Wild and Scenic River (DWSR) corridor. "The DWSR corridor is a federal subsistence hunting area...." We request acknowledgement of the State of Alaska's underlying authorities regarding fish and wildlife consistent with the Master Memorandum of Understanding between BLM and ADF&G (attached under separate cover).	
EA PROCESS		
21	A comparison table summarizing the differences between the four alternatives would have been a valuable tool to the reviewer. I recognize that the detail of the narrative cannot be shown in table form, but the main points outlined would allow for a quick comparison of the alternatives on the standard topics. Then the reviewer could go back into the narrative to find the detail they require.	A comparison table summarizing the differences between the four alternatives has been provided as an appendix to the EA.
23	After reading through the draft environmental assessment, I request that any future assessments contain a glossary or index of all the acronyms used in the report (at least 20+ in this document). In a document with 121 pages, it's difficult to quickly review the material when one has to go back and hunt for the initial discussion of a particular term (example, ORV vs. OHV). A foot note highlight on each acronym used should direct you to this glossary page.	An index of acronyms has been provided as an appendix to the EA.

COMMENT #	COMMENT	BLM RESPONSE
28	Suggestion for EA: Summary Charts for all Alternatives and Zones	Please see response to comment #21 in this section.
37	Your management plan seems complete in its general analysis, although a summary chart for all Alternatives and Zones would be helpful.	Please see response to comment #21 in this section.
53	In the introduction to the EA, the public is informed that "Decisions made in this [EA] planning process will be incorporated into a subsequent revision of the 1983 Delta Wild and Scenic (DWSR) Management Plan." In other words, two separate plans are in the works: a SRMA Plan and a proposed revision of the existing river management plan that will incorporate the proposed action/preferred alternative of the SRMA Plan. When the revised river management plan is to see the light of day is not disclosed, but given the 27 years that have passed since publication of the existing plan, the public may be in for another long wait before the Bureau proposes a revision of the outdated existing plan. Let us hope that this is not the case, and that a proposed revision will soon be available for public review. BLM's two-plans procedure is unnecessary, awkward, and confusing. BLM should simply issue a draft environmental impact statement for a revision of the 1983 plan. This would avoid the duplication and redundancy in producing two plans, reduce the Bureau's administrative and planning costs, relieve the public of the obligation to consider two related plans when one will suffice, and save time for all involved. Yet it is not too late for a streamlined and more efficient planning process. The draft EA analysis can be folded into a Draft EIS/Revised Delta WSR Management Plan that would also consider additional alternatives identified in scoping for the larger plan. We urge BLM to take this step. In the online and printed versions of the EA, it is difficult to readily compare the various features of each alternative and perhaps formulate a new alternative or a variation on an EA alternative that contains features from one or more of the EA alternatives. In the interest of a more user-friendly final EA, the final EA should include a side-by-side comparison of the four alternatives in the format found in most NEPA documents. Readers will expect the usual format in the forthcoming update of the river management plan.	The BLM believes that the LUP Amendment/SRMA Plan needed to be separate from the final river management plan revision to help maintain the focus on recreational decisions that were required to be analyzed in this SRMA planning effort. Goals, objectives, and management decisions for other resource values (in addition to recreation) were already made in the EARMP, and will be carried through to the final river management plan revision. This was done because these decisions have already been made and were outside the scope of this planning process. The revised river management plan will merely be a compilation of decisions made in this planning process and in the EARMP. A comparison table summarizing the differences between the four alternatives will be provided as an appendix to the EA.
55	It would be useful to have the total number of river miles by classification and within each zone. Specifically, it would be helpful to include those mileage numbers next to the acreage figures in Tables 1 and 2.	The BLM will update Tables 1, 2 and 3 with the total number of river miles by classification and within each zone.
56	**Lack of Compelling Issues** Compared to other land management plans in Alaska, the Delta plan contains a broad array of proposed public use restrictions, including seasonal motorboat and airplane restrictions; subsistence permits, restrictions on pack animals, biking, dog-mushing, chainsaws, discharge of weapons, and supply caching; camping group size limits, and temporal camping limits. Compared to other wild and scenic river corridors in Alaska, the number and degree of proposed public use restrictions for the Delta imply extensive public use, substantial user conflicts, and/or significant resource impacts. Yet, as the EA acknowledges, the Delta River corridor is characterized by "relatively low use areas" (page 58), "relatively stable use patterns" (page 59), "high quality of fish habitat" (page 51), and "traces of use are minimal"' (page 55). We agree there are few actual problems on the Delta River and, therefore, conclude that most of the proposed restrictions are either unnecessary or premature. We recognize Section 1.9 lists "issues," but these are included to gauge the effects of a proposed management decision on a resource. These "issues" do not appear to be typical resource concerns that would normally drive the development of proposed alternatives. For example, in Section 1.9.10 Travel Management, proposed management decisions appear to be creating issues rather than resolving them. Planning processes normally identify an issue; consider user experiences, benefits and conflicts; and then arrive at a proposed management decision. The public is generally more supportive of management decisions when there is a clear rationale for the proposed action. **Insufficient Justification** Related to the lack of issues is a corresponding lack of justification for the proposed management intent.	**Lack of Compelling Issues** The BLM believes that the proposed use restrictions that were developed are based on issues that are presently occurring within the watershed, or have a high potential to occur during the life of the plan. The Delta River is one of a few road accessible wild and scenic rivers in the state, and that comparing use levels on the Delta River to other rivers without the same level of road access is not a valid benchmark for future management of the Delta River. **Insufficient Justification** Justifications for the proposed restrictions are included in the EA in Chapter 3, Section 3.2.6.5 Recreation Management Concerns on pages 65-69. **Inappropriate Use of the Gulkana River Planning Outcomes Without an LAC Process** The results of the Gulkana River planning process were useful in determining the adaptability of the same types of management actions for the Delta River. Using the knowledge gained from the implementation of management actions developed in the Gulkana River planning process, in addition to the 2005 Delta River User Survey, the BLM attempted to create a similar methodology to

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	While the Draft EA and SRMA Plan have recreation as a focus, it is unclear how, within a Wild and Scenic River corridor, a planning process can be implemented without consideration for the resource values supporting the recreational experiences, activities and benefits. The plan does not make a clear connection between management prescriptions and the resource values upon which all use depends. It appears the public use restrictions are either BBM based (i.e., "Motorized boating and airplane landings will be seasonally restricted within the zone to help preserve the beneficial outcomes and setting character decisions") or something altogether undisclosed (e.g., no site specific resource concerns are provided to justify limits or prohibitions on camping group size, camping timeframe, chainsaws, vegetation cutting, recreational discharge of weapons, fireworks and supply caching). While the Affected Environment and Environmental Impacts chapters generally discuss potential impacts and benefits from proposed management actions on resources and user conflicts, no specifics are provided that demonstrate a need to limit public use, nor is it clear why such restrictions are imposed prior to using less restrictive management tools. Also, the over-reliance on recreation-based BBM is problematic for a plan that affects more than recreational use. See the ANILCA section below for additional concerns about justification in the context of ANILCA. **Inappropriate Use of the Gulkana River Planning Outcomes Without an LAC Process** Many of the management proposals as well as the standards and indicators included in the Delta Plan appear to be adopted, in large part, from the Gulkana River Management Plan. The Gulkana River Management Plan was developed through a comprehensive Limits of Acceptable Change (LAC) process specifically tailored to the Gulkana River and guided by intensive State and public involvement. The Delta River planning process did not include a similarly comprehensive LAC process. Without this rigorous process, the Delta Plan lacks a reasonable basis for the standards, and by extension, the management prescriptions to meet those standards. In addition, while public use limits (such as group size) may achieve BLM's desired outcomes, we first request consideration of less restrictive measures. Less restrictive means may accomplish the goals of the plan with less burden on the public. For example, better enforcement of existing rules regarding Leave-No-Trace and waste disposal may be just as effective as new rules and should be tried before imposing new limits on the public. Voluntary registration/orientation is another alternative, which could also supplement data gathering efforts. Information made available to the public during voluntary registration will assist those who want to avoid encountering other groups in the area. Educating visitors can have other major benefits. For example, knowledgeable and experienced larger groups can have far less impact than smaller groups unversed in outdoor etiquette or who may be unfamiliar with the area. We therefore urge BLM to revise the proposed implementation framework decisions to phase in proposed restrictions incrementally as adaptive management actions. **Multi-Layered Plan is Difficult to Synthesize and Understand** The plan contains too many independent layers; making it difficult for the public to understand how the proposed decision layers affect one another and how the Plan will ultimately affect future use. These layers include: • three wild and scenic river classifications • five proposed outstandingly remarkable values (ORVs) that correspond with the wild and scenic river classifications • five BBM recreation management zones (RMZs) • recreation opportunity spectrum (ROS) classifications that correspond with each of the five RMZs Next, the reader is tasked with tracking three action alternatives that include: • proposed management actions that vary in each of the five RMZs • proposed adaptive management actions that include up to four phases. At a minimum, this plan needs to include a comprehensive table that synthesizes and integrates all this information so that each alternative can be viewed and described as one consolidated layer in direct comparison to the other action alternatives. In addition, given the plan's limited, one paragraph narrative	address issues that are occurring within the Delta River corridor. The BLM agrees that some of the issues have not progressed to the level of the Gulkana River, but the BLM also believes that the methodology for the Gulkana River has worked well and that this approach would help in dealing with the same issues that are presently occurring, or have the potential to occur, on the Delta River. Virtually all of the adaptive management actions use less restrictive measures (including education) before implementing more restrictive measures, with education being the primary Phase 1 component before more restrictive measures are implemented. In the case of user capacity management, voluntary registration systems are prescribed before mandatory registration systems. Implementation framework decisions that do not use adaptive management were made to preserve the prescribed setting character conditions for each RMZ, in order to achieve the primary targeted outcomes (activities, experiences, and benefits). **Multi-Layered Plan is Difficult to Synthesize and Understand** The BLM believes that the LUP Amendment/SRMA Plan needed to be separate from the final river management plan revision to help maintain the focus on recreational decisions that were required to be analyzed in this SRMA planning effort. Goals, objectives, and management decisions for other resource values (in addition to recreation) were already made in the EARMP, and will be carried through to the final river management plan revision. This was done because these decisions have already been made and were outside the scope of this planning process. The revised river management plan will merely be a compilation of decisions made in this planning process and in the EARMP. A comparison table summarizing the differences between the four alternatives will be provided as an appendix to the EA. **Public Involvement and Difficulties Understanding the New Planning Process** BBM planning is based on the participation of stakeholders who are familiar with and have a vested interest in the planning area. BBM does not take the place of NEPA public involvement, but is used as a planning tool to help identify the RMZs and associated activities, experiences, and benefits. All of the BBM decisions were open to public scrutiny during the Draft EA public comment period. The BLM exceeded the requirements of NEPA for public involvement during this planning process. While marketing may increase overall use to some extent, the BLM is obligated to provide the general public with information about available recreational opportunities on public lands. However, the BLM does believe that the level and types of marketing can be tailored to each RMZ to convey the overall setting character prescription that is being targeted. In areas that are targeted for primitive and semi-primitive experiences where the concentrations of users is relatively low, the level of marketing

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	description of the no action alternative, the table also needs to include specifics on current management to provide a baseline for comparison purposes. **Public Involvement and Difficulties Understanding the New Planning Process** We have several concerns related to public involvement with this plan and the Benefits Based Management planning process in general. First, the initial outreach seems to have targeted select stakeholder groups to take advantage of BLM's national mandate to include BBM in the planning process. We question whether all potentially affected stakeholders were equally aware of the opportunity to participate, or if they were aware, did they understand the potential impact of not participating. We are concerned that BBM is a recreational planning tool affecting non-recreational uses as well and that the public was not adequately informed about how the BBM process would be used. These concerns are further exacerbated by the lack of public meetings on this draft plan that would not only help the public understand the various layers and proposed management prescriptions for the Delta specifically, but also help the public be fully informed on how this new planning process is implemented from beginning to end. In addition, the requirements for RMZs seem unnecessarily excessive. According to Appendix 7.1, the defining characteristics for an RMZ require that each zone take on a recreational identity of its own, each RMZ must have a different recreation setting character, serve a different recreation niche; and provide different opportunities, experiences and outcomes. Also, each RMZ requires a different set of recreation provider actions to align with "the strategically-targeted primary recreation market demand." By artificially forcing a different experience in each RMZ of an SRMA, the BBM process risks imposing excessive or unwarranted management prescriptions. Also, since the purpose of BBM is recreation management, concessions for subsistence and other uses protected by ANILCA must be made, which also trends toward unnecessarily burdening the public with more management prescriptions. Lastly, creating "marketing strategies" for each RMZ is unusual for land management planning; especially one that proposes public use limits, and thus appears counterintuitive. For example, in Tangle Lakes Zone 1, where motorboats and airplanes are seasonally prohibited (see Alternative 2 on page 18), the target audience for marketing is nonmotorized lake boaters. By increasing marketing for a specific zone, more people will visit that zone - potentially exacerbating user conflicts; while scaled back marketing efforts would more likely stabilize visitation and, hence, reduce user conflicts and impacts on the zone. (Also, motorboat restrictions in this zone appear unnecessary due to the natural barriers that already inhibit use of motorboats.) It seems pointless to encourage growth and simultaneously restrict use because of increasing impacts. Based on scoping comments from participants in the BBM working groups, this concept has already caught the attention of local residents concerned about marketing efforts to increase use.	and delivery methods would be commensurate with these targeted outcomes. In areas where the setting character prescription is for higher levels of use, marketing would be offered to a wider audience and through additional delivery methods.
NEPA ADEQUACY		
04	**1. The Scope of the Climate Change Analysis is Improper.** The draft EA inaccurately reviews climate change solely at the global scale for direct impacts from recreation decisions and activities. The review needs to be conducted, in reasonable detail, with an analysis of what the local contribution to climate change impacts are from the authorized activities. While the BLM's decisions on recreation may result in less than minor contributions of green house gases, and therefore have a limited impact to climate change, review at the global scale is not the only scale the BLM is required to review impacts. It is dangerous to set a precedent in the BLM's environmental assessments that climate change is only reviewed in this manner. It is likely that the specific recreation decisions made in this plan, under the preferred alternative, will also have a minor local direct contribution to climate change. However, Alaska and the northern latitudes are experiencing climate change at a much more rapid pace than the rest of the planet, justifying the requisite 'hard look'. We suggest that the analysis review the localized contribution to climate change and consider choosing language in the EA that states the contribution of recreation decisions for both local and global climate changes. In addition, we suggest you revise the following statements: Page 8 'Effects of recreation management decisions to contributing causes of climate change within the DWSR corridor' is an inaccurate interpretation of our scoping	**1. The Scope of the Climate Change Analysis is Improper.** It is beyond the scope of this planning process to relate the proposed management actions to specific quantities of greenhouse gas emissions. Language will be added to the EA on pages 93-94 stating both the local and global contributions of GHG emissions as a result of the proposed management actions, although these contributions cannot be quantitatively estimated with accuracy. **2. The Cumulative Impacts Analysis is Inadequate.** *A. The EA reviews impacts only through the lens of recreation management.* The cumulative impact analysis in Chapter 4.4.1 describes the anticipated impacts from the reasonably foreseeable planning assumptions discussed in Chapter 4. These planning

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	comments. The statement should be expanded to include cumulative impacts of recreation decisions and known/anticipated climate change impacts. Page 79 states that recreation activities 'would not themselves result in global warming and climate change'. Climate change in and of itself cannot be attributed to one emission or occurrence and is a cumulative impact resulting from amassed individually insignificant or small emissions that have collectively impacted our planet. **2. The Cumulative Impacts Analysis is Inadequate.** *A. The EA reviews impacts only through the lens of recreation management.* The EA inaccurately reviews the impacts to the river corridor solely through the lens of recreation management decisions. Cumulative impact analysis should be reviewed for the 'incremental effects of the alternatives when combined with past, present and future actions, regardless of what agency or person undertakes such actions.' EA at page 100. Impacts reviewed solely through the lens of impacts from recreation decisions to the area makes the EA inadequate for not meeting the requirements under 40 C.F.R. 1508.7 as it does not consider cumulative impacts to recreation and resources from actions both within and outside of the river corridor. While reasonably foreseeable actions are listed, there are no explicit or implied reviews for impacts from these actions. Please add additional discussion to the EA for impacts to the defined planning area - the Delta Wild and Scenic River corridor - for climate change, mineral development, recreation decisions, road corridors and other foreseeable impacts. B. *The EA fails to assess the cumulative impacts associated with climate change.* The BLM must include a cumulative impacts discussion in chapter '4.0 Environmental Impacts' in regards to the local scale of impacts from global climate change as well as how recreation decisions may increase or compound recognizable and predicted changes in the river corridor. This includes a discussion on impacts to the area soils, fish habitat, water quality, vegetation composition, wildlife, and recreation. The East Alaska Resource Management Plan (RMP) did not review the impacts of climate change within the planning area (with the exception of a cursory paragraph on climate change impacts to soils and vegetation). As a result the BLM has an obligation to include these reviews in the EA. An incomplete EIS does not allow for informed decision making. Animal Def. Council v. Hodel, 840 F.2d 1432,1439 (9th Cir. 1998). Under 40 C.F.R 1500.1(b), 'Procedures must insure that environmental information is available for public officials and citizens before decisions are made and before actions are taken. The information must be of high quality.' During discussions with the BLM's Glenallen Field Office, it was made clear that the East Alaska RMP amendment was limited in scope to recreation management and would not consider including an amendment that covered missing climate change reviews. If the BLM will not be including climate change impacts in the RMP to guide step down planning, the EA must review the cumulative impacts of climate change. Under NEPA § 1508.7 a "'cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (Federal or non-Federal) or person undertakes such other actions.' The BLM must include these reasonably foreseeable impacts in the EA to most effectively apply adaptive management strategies. Whether or not the BLM has the ability to influence/limit the occurrence and severity of climate change, the obligation to recognize and mitigate cumulative impacts in the river corridor remains. An EA must make a good faith effort to 'study and identify' relevant problems and alternatives and establish either the insignificance or planned mitigation for environmental harms. Protect Key West, Inc. v. Cheney, 795 F. Supp.1552 (S.D. FLA 1992) *C. The EA fails to assess the cumulative impacts associated with mineral materials extraction.* Mineral materials extraction was described as permitted in the recreation portion of the Delta River corridor under the East Alaska RMP (page 436). There is no mention of this allowed use or review for impacts in the EA. An overview should be included on page 101 under '4.3.1 Cumulative Impact Area (CIA) and Reasonably Foreseeable Future Actions (RFFA)' There is no explicit, site specific discussion or even a mention of the allowed minerals material extraction allowed in the recreational portion of the Delta corridor. In the East Alaska RMP, on page 437, a simple statement that 'gravel extraction has little impact on recreation experiences but can negatively impact visual resources' does not replace the need for a more	assumptions do include minerals material extraction. *B. The EA fails to assess the cumulative impacts associated with climate change.* A cumulative impacts discussion has been added to Chapter 4 of the EA on page 120 for climate change. *C. The EA fails to assess the cumulative impacts associated with mineral materials extraction.* The BLM disagrees. Where applicable to each resource, the impacts associated with mineral materials extraction have been discussed in the cumulative impacts section. *D. The EA's cumulative impacts analysis fails to assess impacts for soils, wildlife, wilderness characteristics and air quality.* A cumulative impacts discussion has been added to Chapter 4.4 of the EA for soils, wildlife, and wilderness characteristics. There were no direct or indirect impacts to air quality; therefore there is no cumulative impacts discussion (BLM NEPA Handbook H-1790-1 page 57). **3. The EA Fails to Adequately Assess Mineral Withdrawals.** **4. The EA Fails to Adequately Assess Ongoing Mineral Exploration.** **5. The EA Fails to Adequately Address Predator Control Activities on BLM Lands.** **6. The EA Fails to Adequately Assess the Direct and Indirect Impacts of the Right-of-Way.** Mineral withdrawals, mineral exploration, predator control, and rights-of-way management are not within the scope of this planning effort. The planning criteria on Page 5 of the Draft EA states: "the plan amendment will only address recreation management and will supersede only those sections of the existing EARMP that relate to management of the Delta River SRMA. The plan will conform to all other decisions made in the EARMP". Page 4 also states: "New decisions that will be made as part of the Delta River SRMA Plan and EARMP Amendment will be analyzed in this EA. These decisions will apply to recreation management and only for BLM managed lands within the DWSR corridor and Delta River SRMA. Recreational decisions made in this plan will be incorporated into a subsequent revision of the 1983 DWSR Management Plan. Decisions made in the EARMP for other resources within the planning area will not be changed and will also be incorporated into the revised DWSR Management Plan".

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	site specific review, nor does it honor NEPA for public participation when it is not mentioned in the EA. It is unreasonable to assume that the public has reviewed the RMP, in preparation for commenting on the EA. If the BLM wishes to tier to the RMP EIS for any analyses conducted in that EIS, it must explicitly state that it is doing so, so the reader can review that analysis. Omitting the discussion does not allow for 'informed decision making and informed public participation.' Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519 (9th Circuit) Please include a description of the mineral materials extraction that can be expected in the Delta River and review for impacts in the direct, indirect, and cumulative cases. *D. The EA's cumulative impacts analysis fails to assess impacts for soils, wildlife, wilderness characteristics and air quality.* The EA outlines reviews for cumulative impacts under section 4.3.2 Cumulative Impacts Analysis and lists: cultural resources, fisheries, recreation resources, scenic resources, travel management, vegetation, and water quality. It is an oversight to not include soils, wildlife, wilderness characteristics and air quality in the cumulative impacts analysis. Mineral activities on adjacent lands, climate change, and recreation management can disrupt and alter the existing nature of the area and the designations of the river corridor. Without a good faith effort at reviewing future impacts, the management direction outlined in the EA will not allow managers to sufficiently anticipate impacts, nor respond as necessary, with adaptive management. **3. The EA Fails to Adequately Assess Mineral Withdrawals.** The EA presents no discussion of mineral withdrawals, the new 16,000 acre withdrawals prescribed for the river in the RMP, or the prohibition of mineral development. There is no mention of the worth of withdrawals in the EA for protecting recreation and resource values. Please include a discussion of ANCSA and other administrative withdrawals in the EA. On page 26 of the Record of Decision for the East Alaska RMP the BLM recommended a new mineral withdrawal for the 16,000 acres of land along the scenic portion of the Delta River. There is no mention of this withdrawal proposal, alternative management for the remaining scenic acreage not covered by the 16,000 acre withdrawal, or the existing Alaska Native Claims Settlement Act (ANCSA) 17 (d)(1) withdrawals that are in place. There is no mention of the withdrawals in place throughout the corridor or the role they play in management of the Delta River corridor. **4. The EA Fails to Adequately Assess Ongoing Mineral Exploration.** The ongoing exploration permitted for the MAN project adjacent to the Delta River corridor and its impacts to recreation and user enjoyment need to be reviewed in the following sections as prescribed: Section 4.3.2 Cumulative Impacts Analysis should be updated to analyze the impacts of continued and expanded exploration; Section 4.3.2.4 Scenic Resources should be updated to discuss the sound impacts from drilling and helicopter flights and the Visual Resource Management impacts from drill platforms and drill operations in the viewshed of the Delta River; Section 4.3.2.2 Fisheries and Section 4.3.2.7 Water Quality should include a discussion of the impacts to fisheries and water quality within the Delta WSRC from potential seepage of water from unlined overflow pits associated with exploratory drilling; and Sections should be added in the Cumulative Impacts Analysis section (Section 4.3.2) to analyze the identified cumulative impacts to soils, wildlife, wilderness characteristics and air quality (see comment 2.D. above)and these added sections should discuss the impacts from exploration activities. On page 100-101, the EA discusses mineral exploration and mine development adjacent to the Delta WSRC. The description of this activity and its impact is focused almost entirely on the future development of a large-scale mining operation. However, in December 2009, Nevada Star Resource Corporation applied to the Alaska Department of Natural Resources for a five year exploration permit for 2010-2015, indicating its intent to continue to explore the area for mineral reserves. In the permit application, the company indicated that it will drill 52 drill holes in two claim blocks and from the maps submitted with the permit application, some drill holes will be within sight and sound of the Delta WSRC. See AMPA #F109742 p. 21. Drilling will occur 24 hours a day, 7 days a week, roughly from June 1st until September 15th. The application also indicates that equipment and employees will be moved between drill holes by helicopter. Given the pending application before the Alaska Department of Natural Resources, the continued and expanded exploration	

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	of the area is a reasonably foreseeable future action, the cumulative effects of which should be considered in the EA in detail. Please update the description of mineral development discussion on pages 100-101 to include information about the pending application and proposed drill holes and methods. **5. The EA Fails to Adequately Address Predator Control Activities on BLM Lands.** Any predator control activities on BLM lands should be reviewed in the EA or a subsequent assessment. The impact of predator control was not reviewed in the East Alaska RMP so must be done here or prohibited until there is a time that an assessment can be done. Environmental reviews are conducted for state managed predator control activities on US Fish and Wildlife Service Lands as well as National Park Service lands, both under the Department of Interior. It is reasonable to believe that a consistent application of reviews for predator control should also be required for BLM lands. Impacts (both beneficial and detrimental) of predator control on biodiversity, wildlife viewing for recreation, and system productivity should be reviewed before management activities are allowed to proceed. **6. The EA Fails to Adequately Assess the Direct and Indirect Impacts of the Right-of-Way.** The BLM has inaccurately listed the anticipated right-of-way through the river corridor and potential bridge and powerline construction as a cumulative impact to the Delta River. This should be reviewed for the direct and indirect impacts from potential road construction on the river instead of simply listing as a potential cumulative impact of mineral operations on adjacent lands with no real analysis. Further, the BLM merely listed the likelihood of development with no actual reviews for impacts in the Cumulative Impacts Analysis. The BLM has confused direct impacts with cumulative impacts: a road corridor or bridge in the WSR is not a cumulative impact and should be discussed as a potential direct impact during the life of the plan. While there certainly may be cumulative impacts associated with mineral development on adjacent lands and with any road proposal but the BLM must review reasonably foreseeable actions for their direct, indirect and cumulative impacts. If an 'impact is sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision' then it must be reviewed in the EA. Friends of Magurrewock v U.S. Army Corps of Engineers, 498 F.Supp.2d 365,374-75 (D. Me.2007)	
10	Ignoring for these purposes the adequacy otherwise of the DEA's cumulative impacts assessment, we believe BLM's definition is not correct. Cumulative impacts do not result just from individually "minor" (p. 100) impacts, though cumulative impacts can result from individually minor ones. They can also result, and consequently can be even more substantial, from individually moderate or major impacts.	The Council for Environmental Quality defines cumulative effects as " the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (BLM NEPA Handbook H-1790-1). This change will be reflected in the EA on page 120.
42	this should be an eis not an ea. this plan should fous on protection not on "recreation". earth is rapidly being developed into concrete sites.it is important to protect, not recreate. there are plenty of places for recreation. We dont need more. we need more protection. our kids deserve protection, but this agency has completely forgotten saving anything at all for them. this area should be saved as wilderness, complete wilderness. Blm approaches are horrific -they stem from bush/cheney - the haters of the environment. the guys who want to blow it all up. obama seems to not be aware yet of how horrific blm is. this agency needs to be reined in. its actions are completely focused on greed and money.	The Environmental Assessment is used as a means to determine if there will be any significant issues that require the preparation of an Environmental Impact Statement. We have not yet made this determination. That will be done once a Finding of No Significant Impact (FONSI) is prepared with the release of the EA.
56	The Plan is short on information about the future of mining in and adjacent to the planning area. Nevada Star Resource Corporation (U.S.)/Pure Nickel, Inc. holds 2,315 state mining claims encompassing 164,600 acres (257 sq. mi.) and 525 federal mining claims encompassing 10,500 acres (16+ sq. mi.). Mineral exploration has been conducted on these claims for the past five years. Access to federal mining claims is governed by the Utility Corridor Resource Management Plan and regulations in 43 CFR 3809. Mine operators are entitled access to their operations consistent with the mining laws. This plan cannot alter access to valid mining operations. Nevada Star/Pure Nickel is planning another exploration program on their claims in 2010. Nevada Star/Pure Nickel acquired many of the claims from American Copper and Nickel Company, Inc. and located many more themselves. The mining claims are situated between the	Revisions will be included in the EA in Section Chapter 4.2.3 regarding the future of mining operations that are adjacent to the river corridor. Furthermore, a large scale mining operation has not been currently proposed, and the mining companies that operate adjacent to the river corridor estimate that this will not occur during the life of this plan (see comment #43 in editorial changes section). Given this information, BLM does not believe that a comparison between motorized activities in RMZ 1 and potential mining disturbances is required.

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	Maclaren River on the west and the Richardson Highway on the east, and they straddle both sides of the DWSR corridor. The Nevada Star/Pure Nickel website currently indicates nickel-copper-platinum group metals of 15.4% Ni, 7.19% Cu, and 170 grams/ton PGM + Au and Ag over widespread areas on their mining claims. Most of the recent exploration has been located in the Amphitheater Mountains on either side of the DWSR corridor. Previous exploration was focused in the Fish Lake and Broxon Gulch areas. Under the Alaska Statehood Act, (PL 85-508), these mineral lands bordered by the Maclaren River (west), Richardson Highway (east) and Denali Highway (south) were selected by the state for their base metal mineral potential. If a mine were ever developed in the areas indicated above, it would likely be an underground mine with road access from the Denali Highway to the south. However, large mining operations could occur in numerous areas bordering the WSR. Drilling analysis from the west and east sides of Zone 4 offers evidence of rich mineral deposits trending toward a mineral resource band stretching through Zone 4 and the Delta River. Any future large mining operations and mining facilities would likely have some visual and soundscape impacts to the Delta River WSRA near the Tangle Lakes and Zones 2 and 3. A large mining operation will involve considerable tractor-trailer traffic through the corridor along the Denali Highway and excavating machines and blasting will be audible in areas managed to preserve natural sounds and solitude. In light of future large mining operations in the area, the impacts of summer motorized boating and airplane landings would be negligible in comparison. Therefore, the restrictions on motorized activities in Zone 1 would be ineffective in preserving the desired outcomes. In conclusion, we request more analysis about projected and potential mining activities in the region before making final decisions.	
PUBLIC INVOLVEMENT		
23	The BLM staff writing the DWSR draft environmental assessment has done a thorough job. They appear to have factored in many diverse user groups with careful consideration for the physical environment and the plants and animal contained therein. I'm sure they have had many meetings collaborating between the staff to come up with the five different zones, each with four different alternatives. Hopefully people will comment on their hard work. I've talked to a few Tangle Lakes users who would like to comment, but don't feel they have the time to assimilate the 121 pages and write a meaningful response. A six week comment period may seem a long time in the eyes of the BLM, but for the general public the time frame is short. It doesn't leave a lot of time to collaborate among different people. If the common quote, "time is money", is applied in this Environmental Assessment and comment period, BLM employees have gotten paid to write the plan, but those who have to write comments must in essence take their time (in other words money) to submit their comments. If you allowed more time for comments, additional comments may come forth. Extending the comment period through the fall would give people the chance to actually visit the site and look for boundaries between the different zones, assess trails they may never have used, and contemplate various aspects of each alternative in discussions with other users. A longer comment period would be appreciated, as the people who actually routinely utilize the area should provide their expertise and opinions to you, the policy makers. I'm supportive and have respect for the BLM staff and appreciate their efforts. Thank you for considering these comments. I sense there may be a significant majority of Tangle Lake users who would like to comment but haven't.	The BLM met or exceeded the requirements of NEPA for public involvement during this planning process. Please see comment #55 in this section for additional information.
39	Benefits Based Management is a good start but it neglects the key component to any process. Folks need to have good discussions after the initial EA is published. Preliminary scoping is necessary and good---it brings forth lots of ideas and allows all groups to set forth their individual concerns. However, no one group or individual can think of everything, so it is necessary to have all comments melded into a draft document------and then allow for meetings and comments. PAC likes a regulatory process that allows for public hearings on the draft. We are opposed to planning based regulations.	The BLM met or exceeded the requirements of NEPA for public involvement during this planning process. Please see comment #55 in this section for additional information.
55	We appreciate the previous efforts by the Bureau of Land Management to involve the public in the planning	The BLM met or exceeded the requirements of NEPA for public

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	process for the Delta River Special Recreation Management Area (SRMA). The scoping phase of plan development is an important component in the planning process, particularly for one as relatively new and esoteric as Benefits Based Management (BBM) Planning. We understand that a series of focus group meetings on the BBM were held in Spring 2007 during preparation of the East Alaska Resource Management Plan/ Environmental Impact Statement. However, while the BLM made an outreach effort through a mailing list and via its website, no public meetings, open houses or workshops were held during the 60 day scoping period in 2008. The scoping report notes that at least one organization submitted comments critical of the lack of opportunities for public participation during the scoping process. The report further notes that only 20 scoping comments were received. Given that 3 years have passed since the 2007 BBM focus group meetings and nearly 2 years since the scoping period, the Commission is disappointed that the BLM initially provided only a 30 day public comment period for review of this EA and draft management plan. Even more disappointing is the fact that no public meetings or open houses were held. Public meetings would have given the BLM the opportunity to explain the plan and its alternatives and to answer questions from the public. Preliminary scoping and planning meetings are useful and necessary to provide the public with information and for gathering input from user groups. However, experience has demonstrated that the public provides more meaningful input and feedback when responding to specific management or regulatory proposals. The general public is also more inclined to give testimony or make comments at a public meeting than to submit written comments. We understand that this plan attempts to accommodate, in some magnitude, all of the user groups identified during the focus group phase of the process. The intentions of the plan seem good. However, we have concerns regarding the overall complexity of the plan and how that may decrease the public's ability to understand and be involved and informed about management decisions. We are especially concerned with the lack of public input opportunities because this is a new planning methodology with outcomes measured and defined based on very subjective parameters. If BBM is to be the standard approach for future management decisions, the BLM must go beyond current minimum requirements for public involvement. At the same time equal consideration and representation must be given to each of the different user groups throughout the process. While it is impossible to represent every opinion of a good or bad experience, this would expand the range of considerations and increase perceived credibility in a subjective process. We do note that BLM did meet with a group in the Paxson area to discuss the EA and plan amendment and eventually agreed to extend the comment period for an additional two weeks. While we appreciate the short extension, a 45 day comment period with no public meetings is inadequate for this or any management plan. Before finalizing either the river plan or the RMP amendment, we strongly recommend that the EA be revised and expanded and an additional public comment period be provided. Additionally a series of public meetings should be held in the affected area, as well as in Anchorage and Fairbanks. Although we do not believe that there is sufficient justification for such actions, selection of any plan alternative that involves closures or restrictions to ANILCA 1110(a) access requires the BLM to publish proposed regulations, provide opportunity for public comment and hold public hearings as required by law and the regulations at 43 CFR Part 36 before closures or restrictions can be implemented. Even where not specifically required, we would encourage similar public meetings and opportunity for public comment for any public use limits or restrictions made under other BLM authorities.	involvement during this planning process. A Notice of Intent to initiate the planning process was published in the Federal Register on April 10, 2008. Scoping comments were accepted for 60 days, beginning July 15, 2008 and ending on September 15, 2008 (NEPA only requires a 30 day scoping period). A total of twenty comments were received during the scoping period. After analysis of these comments, a scoping report and comments table were prepared and were available on the Delta River planning website. The BLM also provided a 45 public comment period on the Draft EA (NEPA only requires a 30 day public comment period). Letters detailing both the scoping period and the availability of the Draft EA were sent to more than 1,300 parties on the Glennallen Field Office contact list, and were posted on the BLM website and publicized through local venues including the Copper River Record, Delta Wind, Anchorage Daily News, Fairbanks News Miner, and the statewide "What's Up" list serve. Public service announcements aired over KCHU, KDHS and KCAM.
NEW ALTERNATIVES PRESENTED		
14	I suggest alternative #4 with these comments: All motorized vehicles should be limited to 35hp instead of 65hp and jetskis, hovercraft and airboats shouldn't be allowed in any zone. They are very noisy and disturb the solitude of the Wild and Scenic River corridor. For future reference, it should say no motorized craft in Tangle Lakes between the wayside and the campground. There is a lot of waterfowl in this area that would be disturbed if that should happen.	Currently, Alternative 4 would prohibit the use of jetskis, hovercraft and airboats within RMZ's 1, 2, 4, and 5. Alternative 4 would also prohibit all recreational motorized boating in RMZs 1 and 4. The BLM will modify Alternative 4 to include a prohibition on all motorized watercraft use in RMZ 3 (Tangle River between the wayside and campground) and to limit motorized boating to 15 horsepower motors within RMZs 1 and 2, which would include

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		Round Tangle Lake. The BLM believes that the 65 horsepower limitation for RMZ 5 is appropriate to ensure that users have enough power to safely negotiate the braided Delta River floodplain, and that recreational motorized boating is consistent with the targeted semiprimitive motorized recreational experience for RMZ 5.
21	The BLM currently has a recommendation of a 15 horsepower limitation, page 72. There must be some basis for this recommendation for it to be in place yet the BLM evaluates only a 65 horsepower limitation in their conservation alternative, alternative 4. I personally feel that, with regards to horsepower, there is an insufficient range of alternatives presented. When 37% of motorized users support a 15 horsepower limitation below Round Tangle Lake (page 73) it seems unreasonable not to include that as an alternative that is evaluated. Personally, I think that a limitation of 65 horsepower is unacceptable. 57% of the motorized boats on the Tangle Lakes were less than 15 horsepower, page 72, in the Delta River User Survey. That fact, in and of itself, justifies the BLM at least considering the current 15 horsepower recommendation in Alternative 4. Impacts of larger horsepower motors include large wakes that erode the banks, cause sedimentation and vegetation damage (discussed on page 53 under fisheries concerns related to recreational activities). Not to mention the noise that high horsepower or jet boat puts into the air. By limiting horsepower, the BLM could address several resources issues with one regulation while improving the recreational experience for the majority of users of the area (those pursuing a non motorized experience and those motorized users who recognize the appropriateness of a smaller horsepower engine for the setting and established use of the area). There are very few places where the BLM would be able to put forth horsepower limitation due to the navigability of the waterways they manage. With the water column deemed as non-navigable (as shown on plan maps due to lack of navigability denotation) and therefore not owned by the State of Alaska, this is a rare opportunity for the BLM to provide a recreational experience, smaller motorized craft, that is not present in surrounding areas or waters. I recommend and support a change in the BLM's preferred alternative to include a horsepower limitation in Zone 2 for all the reasons stated above. My preferred horsepower limitation would be at 15. This horsepower limitation is, personally, one of the most important issues that this plan can address. Aside from large scale impacts from mining, I think that the more common place large horsepower motorized boats are on the Tangle Lakes the more the current recreation setting will change.	Please see response to comment #14 in this section.
28	As you have implied, the No Action alternative would be a poor choice. There are just too many people using the area. Alternative 2 is the most motorized, least restrictive, too "laissez-faire," and would not work either for the same reason. Alternative 3 is more restrictive, but would not work either because it allows too much motorized use and group sizes that are too large. Especially in Zones 1, 2, 4 and 5, it does not respect the desire for solitude and peace and quiet. Although flawed, Alternative 4 is my preferred alternative. It is the most restrictive of motorized use and group size and, with its other provisions, is more respectful of my personal desire for solitude and peace and quiet when I am in the area. Alternative 4 could be improved by: 1. Not allowing any motorized travel in Zones 1, 4 and 5 above Eureka Creek at any time of the year. 2. A group size of 6 would be better than 8. Remember, 6 people could equal 6 canoes. 3. The boundary for Zone 4 should be moved down to Eureka Creek, which is the end of the clear water. 4. No weapons should be discharged until after freeze-up anywhere in the corridor. 5. There should be a 1000 pound limit on ORV's wherever they might be permitted throughout the area, that is, use of only the smaller four-wheelers. 6. Chainsaw use should not be permitted anywhere in the corridor. 7. All unauthorized motorized trails should be shut down. 8. Use of ORV's on the Top of the World/Yost motorized trails should be by permit only.	Thank you for your comment. Please see response to comment #14 in this section.

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37	Alternative 4 could be improved by further reducing the size of groups and size of zones where motorized travel is permitted.	Thank you for your comment. Please see response to comment #14 in this section.
53	Pending the opportunity to consider alternatives in the forthcoming revised river management plan, we suggest some changes to EA Alternative 4 that would provide additional protection for the remarkably outstanding values of this National Interest lake-river system. Of the three action alternatives, Alternative 4 comes closest to achieving the level of security required for the Delta WSR. **1. Motorboat horsepower limits.** In Alternative 4, Tangle Lakes Zone 1 would allow up to 35 hp motors, 65 hp in Tangle Lakes Zone 2, and 65 hp in River Zones 4 and 5. A 35 hp limit on the lakes conflicts with BLM's "current recommended limit" of 15 hp on the lakes. We recommend that BLM revise Alternative 4 to include its preferred 15 hp limit on the lakes and speed limits designed to avoid shoreline erosion and conflicts with non-motorized users. For the clear water section of the river from the portage area to Eureka Creek, and from Eureka Creek to Mile 212, the 65 hp limit of Alternative 4 is excessive. BLM needs to determine what horsepower and boat size limits are consistent with avoiding damage to instream and shoreline habitat caused by wakes and turbulence from high-speed V-hull jet boats and other powerful motorboats. This is especially important for the clear water section that is essential habitat for the world-class Arctic grayling fishery. Although "BLM acknowledges the State of Alaska's authority to manage between the ordinary high water marks" in the navigable stretch of the wild segment, the State's land is within the boundaries of the Delta WSR. As an inholding, the State land and the use of the river itself is subject to reasonable BLM regulation designed to protect the unit's remarkably outstanding values. Horsepower and speed limits in the navigable stretch should be part of the alternative selected for the final EA. **2. Off-Highway Vehicle (OHVs) use for subsistence activities.** Sec. 811(a) of ANILCA allows for the "appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation." The EA allows OHVs for subsistence purposes, apparently on the assumption that OHVs were traditionally employed for these purposes prior to designation of the DWSR in 1980. However, before OHVs can be allowed or prohibited for subsistence purposes, BLM must first undertake a formal traditional use determination. Apparently, no such determination was made, as the EA is silent on this matter. In any event, the final EA should include a BLM traditional use determination. If OHVs are found to have not been traditionally employed for subsistence purposes prior to ANILCA, OHVs cannot now be permitted for such purposes. If on the other hand OHVs are found to have been traditionally employed, and thus are permitted, the "reasonable regulation" requirement suggests that the gross vehicle weight should be a maximum of 1500 pounds, not the EA's 2000 pounds. In other national conservation system units, and on state lands, 1500 pounds is the standard. **3. OHV use for "traditional activities."** Sec. 1110 (a) of ANILCA authorizes the use of snowmobiles, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities and for travel to and from villages and homesites (emphasis added). The section further states that "Nothing in this section shall be construed as prohibiting the use of other methods of transportation for such travel and activities on conservation system lands where such use is permitted by this Act or other law." "This Act" (ANILCA) does not authorize the use of motorized surface transportation methods, in this case OHVs, in conservation system units. And as the EA notes, BLM policy on wild segments of wild and scenic rivers, a policy based on the Wild and Scenic Rivers Act, is that "Motorized travel on land and water could be permitted, but it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area." We recommend that BLM revise Alternative 4 to prohibit the use of OHVs for traditional activities in the Delta WSR. This would involve closing the Top of the World/Yost Trail and the Rainy Creek Trail to traditional-use OHVs. As documented in the EA, OHV use of the TOTW/Yost Trail has resulted in extensive erosion on the hillsides adjacent to the Delta River where the trail crosses the river in the clear water section, home	**1. Motorboat horsepower limits.** Please see response to comment #14 in this section. **2. Off-Highway Vehicle (OHVs) use for subsistence activities.** The BLM believes a traditional use determination is not necessary since OHV use has been historically documented within the DWSR corridor prior to WSR designation and continues to occur for subsistence harvest of moose and caribou within RMZ 5. All other RMZs prohibit OHV use during the snow free months under Tangle Lakes Archeological District use restrictions. GVW restrictions of 2000 lbs. are consistent with other BLM plans in the Anchorage District, which include the Glennallen Field Office planning area. **3. OHV use for "traditional activities."** The BLM agrees that ANILCA Section 1110 does not preserve OHV use as a traditional access method, and this language has been removed from Alternatives 2 and 4 in the EA for RMZ 5. The BLM also believes that recreational OHV use on designated trails in RMZ 5 can be managed in a way that protects vegetative and soil resources. Requirements to stay on designated trails and a GVW limitation of 2000 pounds, in addition to continued trail maintenance, allows for sustainable OHV use on these designated trails. At this point in time, the BLM does not agree that the current impacts from OHV use warrant a closure to recreational or subsistence OHV use on the Top of the World Trail, although the BLM would reserve the right to close the trail to these uses in the future if impacts are causing undue degradation of the resources. Private and commercial user capacity management frameworks are included as adaptive management actions for Alternatives 2, 3 and 4. These actions specify a social encounter rate standard as a method of determining maximum carry capacities, with voluntary registration and/or permit systems prescribed, based on these social encounter rates.

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	to the world-class Arctic grayling fishery. Damage to water quality, fishery habitat and the river's banks is also likely occurring. If OHVs are found to have been traditionally employed by local residents for subsistence purposes prior to ANILCA, the Rainy Creek Trail could remain open to subsistence OHVs, but the TOTW/Yost Trail should be closed pursuant to the reasonable regulation requirement. Rainy Creek Trail provides access to the same general area west of the river that the TOTW/Yost Trail enters. A fifth alternative for a permit system for travel on the river segments would be a valuable addition to the EA. It is clear from the EA's descriptions of existing use and overuse along these segments that a permit system is a reasonable and feasible alternative under the terms of NEPA. It is not clear what the BLM thinks is the optimum carrying capacity of this lake-river system. In preparation for the forthcoming revised river management plan, BLM should research what the optimum carrying capacities are for the wild and scenic segments of the river and offer alternatives consistent with these capacities. Alternative 4 should be amended to eliminate the provision calling for no signs alerting river users to the presence of the falls and the take-out at mile 212. Public safety takes precedence in this case, and in any event the presence of the signs does not significantly detract from the wild river setting. Similarly, the portage outhouse should remain in place pending the likely eventual requirement for portable toilets. In alternative 4, all recreational motorized boating will be prohibited in semiprimitive nonmotorized Tangle Lakes Zone 1, and in primitive Delta River Zone 4, except that in both zones qualified local residents can use motorized boats for subsistence purposes, and all other persons can do the same for traditional activities. In addition to all residents of Delta Junction, the final EA should include the number and residency of other local residents who qualify for subsistence use of motorized boats. A definition of "traditional activities" is also needed.	
57	Of the alternatives considered I would advocate for adoption of Alternative 4. The primitive and semi-primitive recreation opportunities along the DWSR are its greatest asset, and fairly unique for an area with such accessibility to the road system. Strictly limiting motorized access is essential for preserving these qualities. Ten individuals camping in a single campsite in a primitive or semi-primitive area is too many in one place, it is unlikely that a group that large could leave the area in a condition that would not be obviously impacted. This would detract from the experience of those that encountered such a large camp during occupation, or came upon the site for possibly several weeks afterward. For the same reasons, limiting the amount of trail improvements, markings, and signage is also desirable.	Thank you for your support of Alternative 4.
EDITORIAL CHANGES		
02	4.3.1 Cumulative Impact Area and RFFA. Ongoing exploration of the roughly 280 square mile area of largely state lands includes the MAN project. This work is being conducted by Pure Nickel Inc. (http://www.purenickel.com/s/Home.asp) rather than the Nevada Star Resource Corporation which merged with Pure Nickel in 2006.	Thank you for the clarification. This change will be reflected in the EA in Chapter 4.2.3
27	Page 17, last box—Add clean campsites, portages, lake and river shorelines to visitor services.	Visitor services referenced under the administrative setting character conditions refer to the general level of visitor interactions between the BLM and the public that will occur in each RMZ. Cleanup of portages, campsites, and shorelines is covered in detail under the adaptive management actions associated with each alternative.
43	Pure Nickel's comments on the Draft Environmental Assessment (Draft EA) are restricted to the first bulleted paragraph under Section 4.3.1 Cumulative Impact Area (CIA) and Reasonably Foreseeable Future Actions (RFFA). This section addresses mineral exploration in the area. Our comments are as follows: The description of "intense" exploration is somewhat misleading. One or two drills operating seasonally over a 3-month period in a 280-square mile area cannot really be accurately described as being intense. The exploration project is being carried on by Pure Nickel on the mineral claims formerly held by	Thank you for the clarification. Your suggested revisions will be included in the EA in Chapter 4.2.3.

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	Nevada Star Resources Corp. (U.S.). Pure Nickel acquired Nevada Star in 2006. The comparison with the Pogo Mine is probably reasonable. However, we wish to register the following points: Order-of-magnitude disturbance cited in the paragraph is an over-estimate of the actual disturbance. The most recent Pogo Reclamation Plan (Draft 2008) indicates that the mine area itself is permitted to disturb 425 acres, and by 2008 had disturbed only 386 acres. The road to the Pogo Mine includes another disturbance of 491acres for a 40-mile (approximately) single-lane road. It is difficult to imagine a requirement for a road of that length in the Pure Nickel project area. The power line for the Pogo Mine includes another 651 acres, but the overwhelming majority of the powerline disturbance does not disturb the vegetative mat. That is, the "disturbance" involves clearing the trees that might grow into the line. It does not involve clearing the smaller shrubs and bushes on the tundra. This equates to essentially no disturbance in the Denali Highway area where no large trees exist. Thus, a more accurate description of the Pogo-related disturbance would be that it includes disturbance of approximately 490 acres at the mine site, plus a one-lane road and a power line. A lengthy power line would not be a necessity if a mine were to be developed on Pure Nickel's claims. The Alaska pipeline crosses Pure Nickel's claims and, just north of the claim boundary, a diesel cracking plant could be constructed at the existing pumping station. The potential exists to produce power practically on site, should a mine ever be developed on the Pure Nickel property. As to any future mine development, it is useful to indicate that the minimum time between identifying a large ore body and development is over a decade. Thus, even if the drilling makes a significant find this year (2010), it will be a minimum of 10 - 15 years before development would occur – assuming a mine is economically and environmentally feasible. It is quite likely that the time frame would be even longer. Finally, it is probably useful to indicate that it is quite likely, given the large area being explored, that development of a mine could occur in a manner that does not cross the WSR corridor nor is even visible from the corridor, and any mine development would occur after a multi-year, public permitting process. Given the information above, we recommend that the following points be included in revisions to the paragraph: 1. Pure Nickel's exploration project is focused on finding nickel and platinum group elements. 2. The exploration is occurring in areas north of the Denali Highway. In some locations, the exploration is occurring near the DWSR corridor. 3. Geologic information indicates that the area has a high potential for a significant discovery of platinum group elements which are strategic metals required to control carbon emissions and combat global warming. 4. Pure Nickel is exploring for the metals within a 280-square mile area that includes both sides of the WSR. The area includes both State and Federal mineral claims. The State completed two comprehensive land-use plans for the area. Both plans kept the area open for mining, and future large-scale mining is possible. If exploration leads to the discovery of an economically viable deposit, the deposit will likely to be developed only through underground mining (not open-pit) techniques. If so, a mine could be developed in a similar manner as the Pogo Mine (about 38 miles northeast of Delta Junction). 6. Surface disturbance will vary depending on mine design, construction of roads, power line corridors, selection of tailing disposal method, and other factors. The Pogo Mine has a permitted disturbance of 425 acres plus a 40-mile road to the site. Road building, airstrips, and associated material sites account for the largest surface disturbance followed by mine, mill, tailings disposal site, and camp facilities. While most of these disturbances would occur on State lands adjacent to the DWSR corridor, it is possible that some road construction or power lines could place possible demands for access or right-of-way authorizations across the river corridor. 7. It is also possible, given the size of the exploration area, that any such development would occur without crossing or even being visible from the corridor. 8. Finally, the minimum time between identifying a viable ore body and development is over a decade. Thus, even if the drilling makes a significant find in 2010, it will be a minimum of 10 - 15 years before development would occur –assuming a mine is economically and environmentally feasible. It is quite likely	

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	that the time frame would be longer.	
55	**Definition of Semiprimitive Nonmotorized** In the Environmental Assessment, the semiprimitive nonmotorized resource opportunity spectrum to be managed for is defined as: Area is characterized by a high degree of naturalness. Concentration of users is low to moderate, but solitude is still possible. Area is free of motorized roads and trails, but some motorized boating use is present, limited by physical terrain features. Vegetation and soils are predominantly natural, but some impacts exist at campsites. Management presence is subtle and limited, absent of any facilities. This definition implies that areas classified for this type of experience are open to motorized boating except where the physical terrain features are limited, yet later parts of the document indicate otherwise. In alternative 2, Recreation Management Zone 1 is classified as semiprimitive nonmotorized. Under the Outcomes to be Avoided section, an activity to be avoided is "motorized boating during June and July". Also, in the Implementation Framework Decisions section, under Travel Management, the document states "[d]uring June and July motorized boating and airplane landings will be prohibited." The definition is not consistent with the rules for this alternative and zone and could be confusing to the user. Please clarify the definition. Justification for this seasonal closure should also be included in this section of the document. **Delta River Recreation User Survey and Visitor Usage Interpretations** Parts of the Environmental Assessment (EA) use the Delta River Recreation User Survey and visitor usage numbers as supporting evidence for identified issues and ultimately to justify the imposed limitations and restrictions (i.e. 3.2.6.5.7, 4.2.5.1, 4.2.6.2, 4.2.6.4). Although the methods and analysis used in the river survey appear to be of high quality, we find some of the management decisions derived from that information in the EA to be stretching beyond the limit of extrapolation. Basically, we do not agree that the need for proposed restrictions and separation of user groups can be justified with this data. In section 3.2.6.4 of the EA, Visitor Use Trends, a chart depicts historical visitor use data from different segments of the wild and scenic river corridor. The chart lists the number of reported annual visits by year and by river segment. The table shows relatively stable usage through the years with numbers essentially the same or less than those from 20 years earlier. While the summary explains that some of the earlier data collection methods were thought to overestimate actual numbers, the data from the past ten years shows the same trend where use is stable and in some cases decreased. Under section 3.2.6.5.1 Group Sizes (page 60) it reads: Regardless of the fluctuation in estimated visitor use figures since 1983, there is evidence of an increase in both state population and out-of-state visitation over the past two decades. Most importantly, some of the data shows that on some segments of the river, current use levels are causing unacceptable change to the experience of the user and impacting the natural and primitive character of the river (refer to Figure 2). Figure two shows that the mean reported largest group size was 7.8 while the mean largest tolerable group size was 8.1. Further, the median reported group size was 5 and the median largest tolerable group size was 7. This data suggests that group size has not exceeded the tolerable level and 50% of the time, the largest group observed was five people. Based on the polarity of the groups targeted in this survey (non-motorized user and motorized users), this is the type of result that would be expected when two generally opposing viewpoints are represented. Also, these statistics do not indicate unacceptable change in the natural and primitive character of the river and cannot be said to indicate change of experience unless there is a similar survey against which these data may be compared. The visitor use trends (section 3.2.6.4) would indicate that use levels have not changed since 1983, but essentially have remained the same. On page 62, results from the river user survey are also discussed. The survey asked for actual encounters (the number of contacts with other groups per day), preferred encounters, and tolerable encounters. The discussion states that "[f]or the lake segments, reported encounters were higher than preferred encounters. For the river segments reported encounters were nearly equal to preferred encounters, indicating that encounters on the river segments are approaching a point that is not desirable." If tolerable encounters were less than reported encounters, one could infer that this number is approaching a point that is not desirable, but not based on the preferred and reported	**Definition of Semiprimitive Nonmotorized** Under the BBM management framework, prescribed setting character is developed using the ROS classification system as a guide. It is the goal of the BLM to manage this area under a semiprimitive nonmotorized ROS classification. Even though there is the potential for motorized boating access within RMZ1, the BLM will still seek to manage the area for a semiprimitive nonmotorized recreational experience by focusing marketing and educational efforts towards nonmotorized recreational opportunities. The BLM believes it is important to note that a limited amount of motorized boating may occur within the management zone, but due to physical terrain features limiting this access, would not preclude the area from being managed for the attributes associated with a semiprimitive nonmotorized experience. **Delta River Recreation User Survey and Visitor Usage Interpretations** Regarding Section 3.2.6.4, the BLM recognizes that use trends appear to be stable and that visitor use numbers are difficult to estimate in open systems such as the DWSR corridor. Notwithstanding visitor use estimations, the BLM does believe that current use levels may be causing changes to recreational experiences and impacting the natural and primitive character of the river. An editorial error refers the reader to Table 2, rather than Table 5 on Page 63. Table 5 shows that a majority of respondents (both motorized and nonmotorized) would prefer a more primitive setting than the current available setting on some sections of the river. Data in this table supports the statement that "current use levels are causing changes to recreational experiences and impacting the natural and primitive character of the river". This editorial change will be made in the EA on page 63. Alternatives were developed with group size limitations that exceed both the median and mean reported and tolerable results from the 2005 survey. Alternative 2 proposes a group size limitation of ten, Alternative 3 is twelve, and Alternative 4 is eight. The proposed groups size limitations were not developed based solely on the 2005 river survey, but on a number of factors including campsite impact thresholds, social encounter considerations, and riparian/vegetative resource concerns. It is the goal of the BLM to manage encounter levels in a way that they do not approach, or eventually exceed, tolerable encounters. Table 5 on page 63 shows that preferred encounters have already been exceeded on the lake segments, and that preferred encounters equal the reported encounters on the river segments. The BLM believes that management is needed to prevent encounter levels from approaching or exceeding the

COMMENT #	COMMENT	BLM RESPONSE
	categories. One might presume that the preferred encounters would always be less than the reported encounters, no matter how satisfied people are. The conclusions listed in the River User Survey (page 33) do not suggest that encounters on the river are approaching a point that is not desirable. On page 57 of the Environmental Assessment (in reference to the River User Survey), it states that "[motorized and non-motorized users] rated being with friends and family very important, but the least important attribute among both groups was meeting other river users, which suggests that while friend and family groups are acceptable, minimizing interaction and competition between other user groups is desired." In the survey, users are asked to rate a list of reasons for taking a trip as not important, somewhat important, important, very important or extremely important (Delta Wild and Scenic River User Survey, page 88). Because users rated "meeting other river users" as "not important" this does not infer that interactions with others are undesirable, it could also mean that it was simply not a priority or the reason for the trip. Please also consider these types of excerpts from the River User Survey in the analysis: For all respondents taken together (Table 11), no segment is "over capacity," and only the Lower Tangle Lakes are in the "high normal" category. In general, both the Delta and Tangle Lakes are generally un-crowded resources, and crowding scores are well below those of nearby rivers such as the Gulkana and several Susitna Basin rivers. The Upper and Lower Delta River segments have particularly low crowding ratings, suggesting they offer relatively unique low density opportunities. [Page 27] Analysis of crowding ratings by years revealed no pattern of higher scores in more recent years. However, there were some patterns among crowding ratings for various segments by month (Figure 9). In general, lake segments are higher during the subsistence hunting seasons in August and September, although the Lower Tangles also sees relatively high ratings in July. River segments remain low through the entire recreation season, but Lower Delta ratings are slightly higher in hunting season. Results are consistent with anecdotal information about how hunters use the lakes and lower river by setting up long term camps and traveling via powerboats in search of game, which might lead to slightly higher crowding scores. [Page 30] Majorities of all groups indicated that the Delta / Tangles had stayed the same or improved, with slightly higher percentages for motorized and lake users. However, 44% of non-motorized and 45% of river users reported some decline (although most reported a slight decline). It is difficult to assess whether a perceived decline is related to actual changes in conditions or a general human response that "things aren't like they used to be." If memories of negative conditions fade sooner than memories of positive ones, it may be difficult for any recent trip to compare to previous ones. Nonetheless, impacts may have increased in recent years, and these data may reflect some of those changes. [Emphasis added] [Page 39] Figure 36 indicates that the highest use levels in the system occur at Tangle Lakes Campground and Tangle Lakes Wayside interpretive site. Lower boat launch use, in contrast, suggests fewer visitors to the corridor take boats on the water; of those that do, more use is associated with the Upper Tangles launch (where all upper lake trips start and finish) than the Lower Tangles launch (perhaps because "through trips" put-in here but take-out elsewhere). For all four facilities, there is no trend over time; data instead suggest year-to-year variation that is probably due to factors such as weather, fires in the area, flow levels, etc. [Emphasis added] [Page 82] The EA utilizes the River User survey to support the need for complex management, but parts of the survey could be interpreted to suggest that increased management and imposed restrictions are not necessary for the current level of usage. It appears that river users were divided on whether some form of management change is needed, which could be attributed to the selection of the survey group and their representative opposing worldviews. While other, more frequently used rivers may benefit from the type of management proposed in this EA, more compelling evidence is needed to suggest necessity here. The information provided does not suggest a strong desire from the public for complex management and usage restrictions on the Delta River.	tolerable level, since they have already surpassed or are at the preferred level, and that this constitutes responsible management of carrying capacity and social encounters. Regardless of why "meeting other river users" was rated by a majority of both motorized and nonmotorized users as the least important reason for taking trips on the DWSR, the management of group size and social encounters will help to limit the occurrence of "meeting other river users". Given that this was the least important reason for taking trips among both motorized and nonmotorized users, the BLM believes that this is a valid management goal that can be controlled through group size limitations and social encounter management. The BLM agrees that the Delta and Tangle Lakes are generally uncrowded resources and crowding scores are well below those of nearby rivers such as the Gulkana and several Susitna Basin rivers....and that...the Upper and Lower Delta River segments have particularly low crowding ratings, suggesting they offer relatively unique low density opportunities. This is why the BLM believes that it is necessary to implement management actions that will keep the DWSR an uncrowded resource with relatively unique low density opportunities. The BLM believes that without these types of management actions, the DWSR may have the potential to become crowded in the future, as discussed in our earlier comment regarding Table 5 on Page 63. Table 5 shows that a majority of respondents (both motorized and nonmotorized) would prefer a more primitive setting than the current, available setting on some sections of the river. Even though some parts of the survey could be interpreted to suggest that increased management and imposed restrictions are not necessary for the current level of usage, it is the position of the BLM to be proactive in the recreational management of the river corridor, rather than responding to issues once they have already occurred. The BLM believes that the proposed management actions will help to preserve the river in its immediate, natural environment, and will also provide tools to recognize changes over time within the river corridor.
56	Page 6, last paragraph: This paragraph cites moose harvest figures from 1990 to 2009. We presume this information is provided because subsistence users rely on OHVs to retrieve meat from the harvest of these large animals. If so, we recommend such an explanation. If OHVs are also commonly used to retrieve caribou meat, we recommend addressing caribou as well.	The BLM acknowledges the State's responsibility in the conservation of fish and wildlife resources in the State of Alaska. References in the text to a federal subsistence hunting area does not preclude these responsibilities of the State, but rather,

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	Page 92,4.2.9.1: Federal subsistence uses of fish and wildlife are not "protected" as implied by the first sentence of this section. Subsistence use of fish and wildlife are a "priority opportunity" amongst other consumptive uses and Congress, in Section 801(4), found it necessary to invoke constitutional authority to "... protect and provide the opportunity for continued subsistence uses...." (Emphasis added) Subsistence use of fish and wildlife can be closed "... in order to protect the continued viability of such populations, or to continue such use...." We request acknowledgement that the federal subsistence priority is a "priority opportunity" and any Congressional protection applies only to the opportunity to harvest, not actual harvest. Page 101, 4.3.2.2 Fisheries: The following description of potential disturbance to fisheries excerpted from the EA is more fitting for placer mining operations than a large hard rock mining operation. "Future activities associated with mineral development may have adverse effects on drainage patterns, water quality, and riparian vegetation, although this would depend upon the location and area of activity. Disturbance and displacement due to mineral development could be long term. The removal of streamside riparian-wetland vegetation during mining would result in a loss or degradation of aquatic ... " There may be an undocumented cumulative impact from hard rock mining in the future; however, most federal and state permits issued for mining operations include stipulations to protect or mitigate damage to the environment. The final decision needs to take this into consideration. Page 103, 4.3.2.7 Water Quality: The documents cited in the paragraph below, and in several other places in the EA, are not listed in the bibliography. "Future development activities associated with mineral development would likely have adverse effects on drainage patterns and water quality, although this would depend upon the location and area of activity. Areas adjacent to the DWSR corridor that are disturbed due to mineral development could have long term impacts to water quality in the DWSR corridor. Depending on the level of disturbance, it could take decades to centuries before the structure and function of the original aquatic habitat could be reestablished (NCSU 1998; BLM and Montana Dept. of Environ. Quality 1996; BLM 1988)." Examples of mines in Alaska where the water quality and aquatic habitat have been improved during and after mining operations include Red Dog and Fort Knox mines. This discussion is overly biased. The final decision should recognize that mining permits would include measures to avoid, minimize, or mitigate adverse affects due to mining activity.	highlights the availability of such areas where federally-qualified rural residents may take subsistence resources using a federal subsistence permit. Draft EA Page 6, last paragraph:. Information on caribou harvests are now included. Draft EA Page 92,4.2.9.1: The BLM agrees that federal subsistence priority is a priority opportunity to harvest subsistence resources in times when resources may be limited such that the harvest of said limited resources necessitates closure of other harvest opportunities by non-federally-qualified subsistence users. Draft Ea Page 101, 4.3.2.2 Fisheries: Thank you for the clarification. Placer mining will be specified under water quality impacts. This change will be reflected in the EA on pages 113-115. The documents used to explain the cumulative effects associated with mineral development for water quality have been added to the bibliography and include: North Carolina State University. 1998. Successful Mitigation. Internet website at http://h20sparc.wq.ncsu.edu/info/wetlands Raleigh, NC: North Carolina State University Cooperative Extension Service, Department of Biological and Agricultural Engineering. U.S. Department of the Interior, Lewiston, MT Bureau of Land Management and Montana Dept. of Environmental Quality. 1996. Final environmental impact statement, Zortman and Landusky Mines; Reclamation Plan Modifications and Mine Life Extensions. Document No. BLM/MT/PL-96/005+1990.
NAVIGABILITY		
21	On many of the maps there is a depiction of a section of river that is “navigable,” Zone 5 up to mile 212. I could not find a discussion of the navigability of the Delta system anywhere in the text outside of the one sentence on page 32. Has a navigability determination already been made on the Delta system or is this the document where that is taking place? Am I to infer that the BLM is maintaining water ownership for the majority of the Delta River and Tangle Lakes? I would be in support of this mainly because it would allow the BLM to have greater control over the enforcement of horsepower limitations on those sections of the Delta. What is the process for making a navigability determination? It would be helpful to have that included as an appendix to this plan since it has such far reaching management implications at the practical level.	Please refer to page 2 of the EA for a discussion regarding the navigability determination that was prepared by the BLM for the DWSR corridor. The navigability determination is available upon request from the Glennallen Field Office.

COMMENT #	COMMENT	BLM RESPONSE
38	The State of Alaska has long ago determined that the Delta River is a navigable waterway. We all know that the State of Alaska regulates these. How does BLM make the determination that the river is only navigable up to the Garrett Creek confluence? Where is the line on what the state says is navigable? Who has the final say? In your over flight and river checks you have seen motor boats above the Garret Creek. This is stated by you guys in this environmental assessment draft. Why are you taking away a good amount of river from the motor boating enthusiast? The river generally dictates how far upstream a power boat can go. We know that on a good high water year boats will only be able to make it to the lagoon as we sometimes call it, which is still downstream of the falls. By limiting the boats to a certain amount of river, you are essentially "stacking" the motor boats on top of each other. This not only provides a negative and possibly unsafe situation for the motor boaters but can all so be an eyesore for the non-motor users. I'm sure that they would not like to see all the motor heads stacked up through one section of the river when they can be spaced out. Being a multi use river, it makes more sense to me to have both user groups share as much of the river as possible.	Navigability is not dependant on whether or not a motorized watercraft can be operated on a particular river. The Federal test for navigability relies on whether or not a river was used for travel, trade, and commerce at the time of statehood. The BLM navigability determination determined that it was not above Garrett Creek, therefore nonnavigable in this portion of the river corridor. This determination was completed independently from this planning process. The boundaries between RMZs were developed to provide a range of recreational opportunities, including primitive and semiprimitive nonmotorized experiences, based on the prevailing uses and the potential of these areas to offer the prescribed setting characteristics. The mere fact that motors can be used in this area does not necessarily mean that the prescribed setting character should include motorized use. The boundary between RMZs 4 and 5 was developed to provide a primitive, nonmotorized opportunity in RMZ 4. Documented motorboat use within RMZ 4 is very low; consequently this allows the BLM to manage for a primitive nonmotorized experience in this area.
39	PAC disagrees with BLM's determination of navigability. The criteria in the Gulkana River court decision should be followed. (able to float 1000 lbs.) Also, commerce does not just involve the mining industry. Market hunters used the Tangle Lakes area in years past and sport guides have used the Tangle Lakes/Delta River for at least sixty years. The State of Alaska Department of Natural Resources should manage the waterway, consistent with the definition of Navigability that is presently being used.	The Federal test for navigability relies on whether or not a river was used for travel, trade, and commerce at the time of statehood. The BLM navigability determination determined that it was not above Garrett Creek, therefore nonnavigable in this portion of the river corridor. This determination was completed independently from this planning process. If the navigability of the DWSR is brought into question in the future through quiet action title proceedings, the BLM would amend this plan accordingly.
55	According to the EA, the BLM completed a navigability determination in February 2010. More information regarding this determination should be included in the final plan. Specifically, we would like to see details on why the State was not consulted more closely or involved in this determination. The final plan should also discuss the changes in management strategies that would occur should the State find it necessary to assert its ownership through a quiet title action. Section 3.2.2.1 indicates that archeological surveys from 07-08 "hint at the importance of the region for past subsistence and long distance travel". If new evidence is available to suggest the river was used for travel, trade and commerce, what was the basis for determining non-navigability? Would a new evaluation occur if new or additional information becomes available? Please include this information in the final Environmental Assessment.	Please see response to comment #39 in this section.
56	**Flawed Navigability Determination** The State determined that the Delta River is navigable in fact from its confluence with the Tanana through Lower Tangle Lake (Navigability Report- Delta River, June 1994). We do not agree with BLM's recent navigability determination that the Delta River, with the exception of the stretch between Garrett Creek to Phelan Creek, is non-navigable. The State will assert its ownership by an action to quiet title, if necessary. If subsequent decisions indicate this is a state-owned waterway, then BLM will not be able to implement some provisions of this plan, for example, the boat launch limits in phase IV as presented on page 38. **Management of Public Trust Resources** Without adequate justification, the State cannot support, nor would we implement, the proposed limits to public access to state resources (water) due to our responsibilities under the Public Trust Doctrine. Public	Please see response to comment #39 in this section.

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	use of natural resources, including the waters of the state, is protected in Article 8 of the Alaska State Constitution and in current statutes and regulations. Current public uses occurring on the Delta and Tangle Rivers and the Tangle Lakes are consistent with state statutes and regulations. Any impacts associated with such use on these waterbodies, at this time, are negligible and insignificant.	
OUTSTANDINGLY REMARKABLE VALUES		
10	Scenic resources are one of the major attractions of the Delta/Tangles area. Although scenic resources are sometimes described as subjective, it certainly seems that the vast majority of both Alaskans and visitors believe our state, including of course this area, is exceptionally beautiful and deserves strong protection. The DEA recognizes this important value in many places. "Scenic qualities were recognized as exemplary in 1983, and a quarter of a century later, still remain one of the most important resource values in the river corridor. Scenic quality is an essential component of most recreation activities" P.65 (see also, e.g., protecting the Class 1 viewshed, p. 6; scenic resources as an ORV, pp. 11-12). And one of the major impacts to scenic beauty is ATV trails, especially the large number of them that end up being extensively braided and wide (see, e.g., pp.65-66). As noted earlier, hiking trails should be constructed in ways that have low visual impact.	The BLM agrees. Thank you for your comment.
21	Page 12, ORV Fisheries, 5th management objective and Page 11, ORV Recreation, 4th management objective. Does the BLM have water rights for the Delta to achieve these objectives with regards to instream flow? With the mining potential in the area (discussed on pages 100-101 and in the cumulative impacts section on page 102) I would encourage the BLM to ensure they have the water rights needed. Page 12, ORV Scenic, 1st management objective. I support this objective and hope that the BLM uses this ORV to comment on and mitigate, to the extent within their jurisdiction, the potential impacts associated with a large scale nickel mine on State land that is a possibility in the area (described on pages 100-101). At the same time, I understand that the BLM has no management over lands outside the river corridor. Page 13, ORV Wildlife, 3rd management objective. I would hope that the BLM would use this ORV to comment on and mitigate, to the extent within their jurisdiction, the potential impacts associated with a large scale nickel mine on State land that is a possibility in the area (described on pages 100-101). I do not believe that the proposed scale and type of mining can occur on State lands without having adverse affects on the migration and wintering of the Nelchina Caribou.	The BLM is actively pursuing water rights for the DWSR. The application for water rights takes approximately ten years of water hydrology data collection, which is an ongoing process at this time. Once the data is collected, an application will be submitted to obtain water rights for the DWSR. Thank you for your support of the scenic and wildlife ORV management objectives. If large scale mining development does occur on adjacent state lands in the future, the BLM will likely be a major contributor in assessing the potential effects to all of the ORVs as a result of such an authorization.
27	To me ORV still means Off Road Vehicles. The phrase "Outstandingly Remarkable Values" seems redundant. It would be better to use "outstanding values" or "remarkable values" thus eliminating the confusion with the long used ORV acronym for Off Road Vehicles. Add Fisheries to Scenic Segment values.	The term "Outstandingly Remarkable Values" is used in Section 1b of the Wild and Scenic Rivers Act and at least one ORV is required for a river to be included in the WSR system. In abbreviating off road vehicles, the acronym "ORV" is no longer used by the Federal government, having been replaced by off highway vehicle, or "OHV". The density of arctic grayling in the scenic segment did not meet the criteria for inclusion as an outstandingly remarkable value in the scenic segment.
56	As acknowledged in the plan, outstandingly remarkable values (ORV) were not identified for any of the wild and scenic rivers designated by ANILCA and the current effort to identify ORVs for the Delta is conducted based on BLM guidance for evaluating a river's eligibility as a wild and scenic river. Since this process is usually done before designation, we reiterate our scoping comment that BLM should look primarily to legislative history for guidance on determining specific ORVs, which identified scenic, cultural and recreational values. We agree that these three values qualify as "outstandingly remarkable;" however, we question the necessity for the two additional ORV's: Fisheries and Wildlife. While the grayling fishery and the area's diverse wildlife are certainly important resources, they are not "rare, unique or exemplary" by	In cooperation with the State of Alaska, the BLM did look to the ANILCA legislative history in trying to determine the ORVs. There was no definitive legislation that specifically named the ORVs at the time of WSR designation. There were references to cultural, recreational, and scenic values, but specific ORVs were never named. Upon further inspection of the initial studies that were originally conducted to determine WSR eligibility and suitability for the Delta River ("Delta River: A Wild and Scenic River Analysis",

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	Alaska standards and we request they be removed.	Bureau of Outdoor Recreation, March 1976. "Draft Environmental Statement: Proposed Designation of the Delta River As an Element of the National Wild and Scenic Rivers System, Heritage Conservation and Recreation Service, 1978. "Delta River: A Wild and Scenic River Analysis", Heritage Conservation and Recreation Service, February 1978) the BLM found numerous references to "outstanding values" that included scenic, fish, wildlife, recreational, archeological, and geologic values. These discrepancies led the BLM to use the guidance provided by the Wild and Scenic River Coordinating Council as described on page 11 of the EA. The Fisheries ORV was evaluated, and partly due in fact, to the State of Alaska, Department of Fish and Game's own study, where results of a recent Delta River Arctic grayling study in this area showed one of the greatest densities ever recorded for a population of Arctic grayling ≥ 270 mm length in the world (Gryska, in preparation). We believe that this is a river-related value that is rare, unique and exemplary in a regional or national context, which are the criteria for an ORV. We believe that wildlife in the scenic segment meet the criteria for an ORV due to the annual migration of the Nelchina caribou herd directly through the river corridor and the density of trumpeter swans (a BLM sensitive species) that breed and nest in the lakes of the Upper Tangles. This display of breeding, nesting, and annual migration patterns owe themselves to the existence of the river corridor, also one of the criteria for an ORV.
GENERAL COMMENTS		
03	A comprehensive soundscape plan would probably require more resources than BLM has available for such a task in this area at this time. Even so, at least a scaled-back soundscape plan should be undertaken in order to obtain baseline data and to start planning for maintaining and restoring natural quiet and natural sounds in the area.	The development of a soundscape plan is not within the scope of this planning process, although this would not preclude the future consideration of a soundscape plan, dependent on staffing levels and funding.
04	The EA is missing a discussion on enforcement and implementation for the measures that are defined for the corridor. Recreation management decisions and mitigation measures in the plan can provide for the sustainable management of the river corridor. However, there is no explicit discussion about the enforcement of these measures and management for impacts from OHVs and mining. In addition to this, the monitoring and adaptive management described in the draft EA is only in reference to impacts from recreation decisions and does not cover climate change, mining, roads, and rights-of-way. Further, if the agency is using any mitigation or enforcement as described in the RMP it should site those measures in the EA for public review. There is no discussion of the cooperative management of the navigable portion of the Delta River between Garrett Creek and Phelan Creek. The BLM will be cooperatively managing the navigable portion of the Delta River with the State of Alaska. If there are inconsistencies in management designations or impacts from State management to the river corridor, the impacts should be reviewed in the EA for public awareness and to create an honest and clear picture of management challenges on the designated river corridor.	The BLM disagrees. Alternatives 2, 3 and 4 each contain administrative implementation decisions that discuss the implementation and enforcement actions to address restrictions on travel management (including OHVs), group size, occupancy, chainsaw use and firewood gathering, recreational shooting, fireworks, and disposal of human waste. Adaptive management decisions have also been structured to show implementation actions, monitoring, and enforcement for the management of litter, human waste, firerings, private and commercial user capacity, and campsite impacts. Chapter 4 discusses direct, indirect, and cumulative impacts as a result of OHV management proposals for each alternative. For example, the effects to archeological sites, fisheries, and wildlife caused by OHV use for each alternative were discussed in Chapter 4 of the Draft EA on pages 94-96 (cultural resources), pages 96-98 (fisheries), and pages 115-116 (wildlife).

COMMENT #	COMMENT	BLM RESPONSE
		Management actions were developed only for recreation decisions because decisions for the implementation and enforcement of climate change, mining, roads, and right of ways were already made in the EARMP and are outside the scope of this planning process. Page 4 of the Draft EA: "New decisions that will be made as part of the Delta River SRMA Plan and EARMP Amendment will be analyzed in this EA. These decisions will apply to recreation management and only for BLM managed lands within the DWSR corridor and Delta River SRMA. Recreational decisions made in this plan will be incorporated into a subsequent revision of the 1983 DWSR Management Plan. Decisions made in the EARMP for other resources within the planning area will not be changed and will also be incorporated into the revised DWSR Management Plan". Also, page 5 of the Draft EA, Section 1.6 Scope of the Analysis and Planning Criteria: "the plan amendment will only address recreation management and will supersede only those sections of the existing EARMP that relate to management of the Delta River SRMA. The plan will conform to all other decisions made in the EARMP". Cooperative management of the navigable portion of the river corridor with the State of Alaska would require the preparation of a Memorandum of Understanding (MOU) between the BLM and the State of Alaska, or the preparation of a Special Use Land Designation (SULD) by the State of Alaska. At this point in time, the State of Alaska disagrees with the navigability determination and has stated that they will not be developing a SULD for this portion of the river corridor.
10	We were pleased to see that Wilderness Characteristics is one of the issues identified in the EA. We would of course be even more pleased if BLM were to study portions of the lands they manage for inclusion in the national wilderness system. Probably the vast majority of the state's tourism operators use the "w" word in their marketing materials, and there's a reason for that. Alaska still has true wilderness (though motorized vehicle use degrades it), and many other places in the country no longer do.	The BLM agrees. Thank you for your comment.
15	At problem areas we need to better way to address key issue problems. For instance at Glacier lake trail at mile post 30 on the Denali HWY. The main trail goes through a bottomless swamp that is dangerous to hikers as well as OHV. These known problems cause all users to leave the trail and destroy the surrounding vegetation and disturb the archaeological sites. These trails need to be repaired or changed and not put in a file for somebody to review in 20 years for a change to possibly happen, meanwhile everybody points fingers at different user groups as to who's fault it is and nothing is done.	The Glacier Lake Trail is managed by the State of Alaska, Department of Natural Resources. This trail is not located within the planning area and is outside the scope of this planning process.
19	I have frequented the Tangle Lake-Delta River area for over thirty years. It is a crown jewel area in the Alaska Range, featuring great fishing, birding, wildlife viewing, boating, hiking, and wonderful wilderness. I support steps to protect and preserve it. I oppose roads, development, or proposed uses that detract from those qualities. I have not studied all proposed uses and don't mean to discount any thoughtful efforts undertaken to strike some balance among competing users. Having said as much, I do nonetheless wish to have my voice added to those speaking passionately in support of underscoring the wilderness and natural qualities of this area. It will not be the same experience if the mark of development stamps down upon it.	Thank you for your comment. The BLM believes that the range of alternatives presented include a variety of management options that seek to preserve the river and its immediate environment for future generations.

COMMENT #	COMMENT	BLM RESPONSE
31	In addition I hope you resist efforts to pave the Denali Highway past Tangle Lakes. This is one of the best drives in Alaska and should be enjoyed at a very slow speed not at 65 mph.	The Denali Highway is a State Highway maintained by the Alaska Department of Transportation and Public Facilities. The decision of whether or not to pave the Denali Highway is ultimately a State decision.
33	I've looked at the EA (and have few comments). Looks pretty good to me.	Thank you for your comment.
52	Please put the needs of Alaskans who use the referenced area for gathering of foodstocks for personal consumptive use at the top of any priority list for use of the lands. With regard to access of the lands, make further governmental restriction and prohibition for these users off limits. Make clear distinction between recreational use of the lands, to which prohibitions and restrictions may apply, and personal consumptive use, to which they must not. Make a valid state resident hunting or fishing license the only qualification for inclusion in the personal consumptive use category.	The BLM provides for the opportunity to harvest subsistence resources on federal lands. However, State hunting regulations also apply to hunting on federal lands. Therefore, both hunters hunting under State regulations and those federally-qualified subsistence hunters can harvest subsistence resources on federal lands. In times of scarcity of subsistence resources, federally-qualified subsistence users have priority opportunity to harvest subsistence resources on federal lands. In order to be a federally-qualified subsistence user, one has to be a rural Alaska resident and have a State of Alaska resident hunting license unless they are a minor.
54	I would like to have the BLM keep the same policy that has been and is being implemented today. Nothing needs to change for this area. We all seem to be getting along quite well with the rules that are in effect. This is all we need is more confusing rules on where and what we can do. I have always enjoyed this country because the BLM has been with governing the land. A lot of us who are local use this country throughout the year and not only for a few days out of the year, so why does it need to change for a few who think that it belongs to them. This is the last nice chunk of land we can use without all of the regulations stopping us from enjoying ourselves. We really don't need anymore rules.	The No Action Alternative (Alternative 1) would retain the same management strategy outlined in the 1983 Delta River Management Plan. The BLM believes that this management strategy does not effectively address the issues that have developed in the river corridor since 1983, and that it does not proactively plan for anticipated use levels and visitor trends in the future.
58	I am completely against development in and around the Upper Delta River corridor. It is one of the most accessible beautiful areas in Alaska and is heavily used by recreationalists, including some hunters. I am against the use of ORVs, drill rigs, choppers, and all the destruction associated with mining and development. Please prevent development in this area!	The range of alternatives was developed to provide for a variety of management options. Alternative 4 would prescribe the least amount of new facility development and the most restrictive management proposals for OHV use. Mining that occurs on adjacent state lands and the related use of drill rigs and choppers are outside the scope of this planning effort.
63	Please consider hunting & fishing -both sport and subsistence and recreation rafting when you pick your preferred alternative.	The range of alternatives presented includes a variety of setting character decisions that will help to facilitate fishing, hunting, and recreational rafting opportunities.
64	Please do not give permission or support for the damage of Alaska's wild wetlands. This includes military training and development. We only need to look at the oil spill taking place in the Gulf of Mexico to know how critically important it is to make these decisions with the precautionary principle guiding the result. Once the damage is done we humans do not have the capacity to recover these critical waters/lands.	Any military training or development that would be proposed within the DWSR corridor would require the proper land use authorization and/or special recreation permit, with stipulations that would ensure the protection of river resources.