Decision Record Memorandum
Soil, Vegetation and Permafrost Research

Introduction
Students and professionals have been conducting research projects in the Toolik Lake area for many years.

Summary
Michelle Mack with Northern Arizona University proposes to conduct soil, vegetation and permafrost research at four (4) sites near Toolik Lake Field Station for three (3) years.
In one randomly selected harvest plot per transect, we would use a SIPRE corer to collect permafrost soil from the frozen surface to 1 m depth. At an additional two sites near Toolik Field Station (TFS), I-Minus and greenhouse warming plots, we would experimentally apply a non-radioactive isotopically labeled ammonium chloride tracer to replicate warming, control, and natural thaw gradient plots. In the warming plots at TFS we would use existing plot replication, five 5 x 20 m plots, and at the thaw gradient (I-Minus) would locate six spatially dispersed replicate plots in three classes of time since thermokarst subsidence. Tracers would be recovered after 24 hours (2016) and one year (2017). From each experimentally labeled plot we would harvest aboveground biomass in 10 x 40 cm subplots and remove three soil profiles from the active layer and one permafrost core. Access to all sites would be by vehicle on the Dalton Highway and then by foot.

Decision
I have decided to authorize a one year permit to Michelle Mack with Northern Arizona University to conduct soil, vegetation and permafrost research at four (4) sites located near the Toolik Field Station. Access to all sites is by vehicle on the Dalton Highway and then by foot.

Management Considerations
The Categorical Exclusion and supporting documentation have been prepared consistent with the requirements of various applicable statutes and regulations, including but not limited to:

- Alaska National Interest Lands Conservation Act of 1980 (ANILCA)
- Federal Land Policy and Management Act of 1976 (FLPMA)
- National Environmental Policy Act of 1969 (NEPA)
- National Historic Preservation Act of 1966 (NHPA)

One BLM land use plan applies to the overall project area, the Utility Corridor Resource Management Plan**.**

Public Involvement
It was determined that due to the remoteness of the area there would be no impact to the general public. Additionally, this document was published to the electronic Central Yukon Field Office NEPA Register on April 28, 2016. No comments have been received as of May 12, 2016.

Appeal or Protest Opportunities
This decision may be appealed to the Interior Board of Land Appeals, Office of Hearings and Appeals in accordance with 43 CFR Part 4 and DOI Form 1842-1. The notice of appeal must be filed in the Bureau of Land Management Central Yukon Field Office, 222 University Avenue, Fairbanks, Alaska 99709 within 30 days from receipt of this decision. If you decide to file an

appeal you must carefully follow the procedure described on the enclosed form 1842-1. If you do not file your appeal at the locations specified on the form within 30 days; the Board may dismiss your appeal as untimely without considering its merits. Be sure to send a copy of your notice of appeal to each party named in this decision and to all of the addresses on the enclosed form 1842-1. You may also ask the Board to stay or suspend the effect of this decision while your appeal is pending. If you desire a stay, you must enclose your request for a stay with your notice of appeal. You have the burden of showing a stay is justified. The Board will grant a stay only if you provide sufficient justification based on the following standards:

1. The relative harm to the parties if the Board grants or denies the stay,
2. The likelihood of the success of your appeal on its merits,
3. The likelihood of immediate and irreparable harm if the Board does not grant the stay, and;
4. Whether the public interest favors granting a stay.

Approval from Authorized Official

Field Office Manager Recommendation

Having considered a full range of alternatives, associated impacts, and public and agency input, I recommend the adoption and implementation of the attached Approved Plan as the Utility Corridor Resource Management Plan.

/s/ Timothy J. La Marr Timothy J. La Marr Field, Manager, Central Yukon Field Office	Date May 23, 2016

Appendix A - Essential Fish Habitat Determination

NEPA document: DOI-BLM-AK-F030-2016-0025-CX

Case File No.: F-97089

Title: Soil, Vegetation and Permafrost Research

Prepared by: David G. Parker

Date: 05/12/16

The proposed action lies within the general range of Dolly Varden (*Salvelinus malma*); arctic char (*S. alpinus*); Lake Trout (*Salvelinus namaycush*); burbot (*Lota lota*); and whitefish (Coregonid spp.). Arctic grayling (*Thymallus arcticus)* and slimey sculpin (*Cottus cognatus*) are ubiquitous throughout the region (ADF&G 1978). Northern pike (*Esox lucius*), Alaska blackfish (*Dallia pectoralis*), longnose sucker (*Catostomus catostomus*) and ninespine stickleback (*Pungitius pungitius*) are also found in select streams and lakes in the area (BLM 2010 and Mecklenberg et al. 2002). Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and chum salmon (*O. keta*) are listed as present in adjacent watersheds. The National Marine Fisheries Service (NMFS) recognizes fresh waters cataloged (ADF&G 2014) as being used by salmon under AS 41.14.870 (Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes) as essential fish habitat (EFH).

The proposed action described in this Categorical Exclusion is a 2920 permit to conduct soil, vegetation, and permafrost research. Adherence to the stipulations listed in this CX will limit any negative impacts on adjacent anadromous water courses. Therefore, there is no anticipated deleterious effect on EFH.

Essential Fish Habitat Finding: *No adverse effect*. EFH consultation with NMFS is not required.

References:

Bureau of Land Management, 2010. Fish Streams Along the Trans-Alaska Pipeline System, A Compilation of Selected References with Current TAPS Stationing. BLM Open File Report 105. 43 p.

Mecklenburg, Catherine W., T. Anthony Mecklenberg, and Lyman K. Thorsteinson, 2002. Fishes of Alaska. American Fisheries Society. Bethesda, Maryland. 1037 p.

State of Alaska, Alaska Department of Fish and Game. 1978. Alaska's Fisheries Atlas. Volume 2. Edited by R. McLean and K. Delaney. Alaska Department of Fish and Game.

State of Alaska, Alaska Department of Fish and Game. 2014. An Atlas to the Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes, Resource Management Region V. Alaska Department of Fish and Game, Habitat and Restoration Division.

http://extra.sf.adfg.state.ak.us/FishResourceMonitor/?mode=awc

Appendix B - Wilderness Characteristics Assessment

NEPA Document No.: DOI-BLM-AK-F030-2016-0025-CX

Applicant: Michelle Mack with University of Arizona

Serial No.: F-97089

Location: Toolik Lake area, mile post 285 off Dalton Highway

Township/Range: Secs. 21 and 32, T. 9 S., R. 11 E., Sec. 20, T. 9 S., R. 12 E., and Sec. 28, T. 10 S., R. 11 E., Umiat Meridian, Alaska

Evaluation by: Robin Walthour

Date: April 28, 2016

Proposed Action: Michelle Mack with Northern Arizona University proposes to conduct soil, vegetation and permafrost research at four (4) sites near Toolik Lake Field Station for three (3) years.
In one randomly selected harvest plot per transect, we would use a SIPRE corer to collect permafrost soil from the frozen surface to 1 m depth. At an additional two sites near Toolik Field Station (TFS), I-Minus and greenhouse warming plots, we would experimentally apply a non-radioactive isotopically labeled ammonium chloride tracer to replicate warming, control, and natural thaw gradient plots. In the warming plots at TFS we would use existing plot replication, five 5 x 20 m plots, and at the thaw gradient (I-Minus) would locate six spatially dispersed replicate plots in three classes of time since thermokarst subsidence. Tracers would be recovered after 24 hours (2016) and one year (2017). From each experimentally labeled plot we would harvest aboveground biomass in 10 x 40 cm subplots and remove three soil profiles from the active layer and one permafrost core. Access to all sites would be by vehicle on the Dalton Highway and then by foot.

Evaluation: The evaluation of effects on wilderness characteristics on BLM lands within the Utility Corridor includes lands identified in the Nonwilderness Assessment, a special project approved by the BLM Director and conducted by the BLM along portions of the Trans-Alaska Pipeline System (TAPS) corridor in 1980. This assessment identified lands under BLM administration that were considered lacking in the wilderness characteristics as defined by the Wilderness Act of 1964. The assessment was conducted in a manner that met the requirements of Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA).

The Dalton Highway and Trans-Alaska Pipeline parallel each other for the entire length of the Utility Corridor. The pipeline is 48” in diameter and elevated above ground for much of its length so it is highly visible. The Dalton Highway supplies Alaska’s arctic oilfields and supports considerable industrial traffic year-round. These man-made features and associated human activities are highly visible and audible. Permitted activities such as gravel and gold mining occur throughout the area and have expanded in some locations. These developments are substantially noticeable and alter the natural character of lands in the Utility Corridor.

The action being considered is located within the Atigun Segment of the Nonwilderness Assessment, which covered approximately 528,000 acres total in 1980. Portions of this segment meet the 5,000 acre minimum size. However it was determined that these segments did not meet the standards for naturalness due to roads, camps, airfields, pipelines, material sites and associated facilities. These disturbances bisect the entire length of the segment. The location for the proposed action may include areas within the Utility Corridor that are outside the nonwilderness. The BLM has determined that, if a project or activity does not negatively affect wilderness characteristics, the permitting process may proceed as usual, regardless of whether an inventory of wilderness characteristics has been completed (Chris Barns, 2012). The assessment covered approximately 528,000 acres in 1980. Portions of this segment meet the 5,000 acre minimum size. However it was determined that these segments did not meet the standards for naturalness due to roads, camps, airfields, pipelines, material sites and associated facilities. These disturbances bisect the entire length of the segment. The location for the proposed action may include areas within the Utility Corridor that are outside the nonwilderness. The BLM has determined that, if a project or activity does not negatively affect wilderness characteristics, the permitting process may proceed as usual, regardless of whether an inventory of wilderness characteristics has been completed (Chris Barns, 2012).

Finding: The proposed action will occur on lands identified as lacking wilderness characteristics and therefore will not affect wilderness characteristics.

Type of Assessment/Sources:

- U.S. Department of Interior, BLM, 1980. Nonwilderness Assessment: The Alaska Natural Gas Transportation System, Final Decision. Anchorage, Alaska
- Chris Barns, BLM Representative, Arthur Carhart National Wilderness Training Center, 9 September 2012. “Wilderness Characteristics Guidance for the BLM”. Training Module IIID
- LWCs and Proposed Projects
- USGS topographic maps, GIS data, Google Earth images

Appendix C - Compliance with ANILCA Section 810

NEPA Document No.: DOI-BLM-AK-030-2016-0025-CX

Applicant: Michelle Mack with University of Arizona

Case File No.: F-97089

Proposed Action: Michelle Mack with Northern Arizona University proposes to conduct soil, vegetation and permafrost research at four (4) sites near Toolik Lake Field Station for three (3) years.

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Location: Toolik Lake area within Secs. 21 and 32, T. 9 S., R. 11 E., Sec. 20, T. 9 S., R. 12 E., and Sec. 28, T. 10 S., R. 11 E., Umiat Meridian, Alaska

Evaluation by: David G. Parker and Jennifer McMillan

Date: 5/12/2016

Type of Assessment/Sources: Review of application materials, subsistence database, local knowledge, interviews with staff knowledgeable about the area and the proposed action.

Effect of the proposal on subsistence uses and needs

Fisheries:

The proposed action would not alter the distribution, migration, or location of harvestable fisheries resources. Approved mitigation measures would prevent degradation of adjacent water sources and fisheries habitat. The proposed action will not create any legal or physical barriers that would limit access by subsistence users of the fisheries resources.

Wildlife:

Wildlife species used for subsistence in the area include moose, Dall's sheep, bears, caribou, furbearers and small game. The proposed action will not alter the distribution, migration and/or location of harvestable wildlife resources along the Dalton Highway. The proposed action would not create any legal or physical barriers that would limit subsistence harvest and access.

Other resources:

The proposed activity will not significantly impact other resources such as water, wood, or berries. Subsistence activities that target these resources occur in a much broader area than where the proposed action is to take place.

Expected reduction, if any, in the availability of resources due to alteration in resource distribution, migration, or location:

None. Fish and wildlife resources may temporarily avoid the area while the permittee and associates are present. However, no expected reduction in the availability of resources due to alteration in resource distribution, migration, or location will occur.

Expected limitation, if any, in the access of subsistence users resulting from the proposal:

None. Access to subsistence resources will not be hampered by the proposed action.

Availability of other lands, if any, for the purpose sought to be achieved:

None

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

There is no substantial evidence that would indicate a significant impact on subsistence will result from the proposed action. No other alternatives were evaluated.

Finding:

The proposed action will not significantly restrict subsistence uses. No reasonably foreseeable and significant decrease in the abundance of harvestable resources or in the distribution of harvestable resources, and no reasonably foreseeable limitations on harvester access have been forecasted to emerge as a function of the proposed action.

References: