

**U.S. Department of the Interior
Bureau of Land Management**

**Environmental Assessment
Fifteen Mile Wildlife Water Modification Projects
April 2016**

PREPARING OFFICE

U.S. Department of the Interior
Bureau of Land Management
Worland Field Office



Introduction

Identifying Information:

Title, EA number, and type of project:

Fifteen Mile Wildlife Water Modification Projects

DOI-BLM-WY-R010-2016-0003-EA

Wildlife Guzzler Maintenance and Modification Projects

General Location of Proposed Action:

Whistleberry Guzzler (15 mile Water Catchment)- T48N., R.98W., SWSW Sec 15

Squaw Teats Guzzler - T48N., R.98W., SE Sec 15

Paradise Guzzler - T48N., R.97W., SE Sec 28

Name and Location of Preparing Office:

Worland Field Office

101 S. 23rd St.

Worland, WY 82401

Lease/Serial/Case file number:

Squaw Teats Guzzler - 907054

Paradise Guzzler - 907053

Whistleberry Guzzler (15 mile Water Catchment)- 906223

Applicant Name:

BLM, Worland Field Office

Background Information:

The Bureau of Land Management (BLM), in cooperation with the Wyoming Department of Game and Fish, and Mule Deer Foundation are proposing to provide maintenance and modifications to 3 existing guzzler projects, all in the Squaw Teats area of the Fifteen mile watershed, approximately 30 miles west of Worland Wy. (see map 1). At Paradise and Squaw Teats Guzzlers an additional 22' by 100' plastic catchment apron and 1800 gallon storage tank will be installed next to the existing metal apron and fiberglass wildlife tanks, and the additional 1800 gallon storage tanks will be overflowed, via 4" buried pipeline, to the existing wildlife drinker tanks. And for each of these sites an additional 350' of 3 strand fence will be constructed around each project site. For the Whistleberry Guzzler project, the existing 60' by 80' damaged metal apron and supporting framework will be removed and replaced with 2 - 22' by 200' plastic aprons set side by side on the ground. This project will also include removing the existing galvanized livestock tank and replacing it with a cement bottom rubber tire tank, as well as constructing an additional 330' of woven and barbed wire fence to protect the new plastic aprons from livestock trampling.

The guzzler aprons to be installed consist of 50 mm thick textured high density polyethylene (HDP) apron which catches precipitation and drains into a combination 1800 gallon storage tank and wildlife drinker. Drinker/tanks will be buried flush in the ground with just the lid and drinking corner exposed above the ground.

Purpose and Need for Action:

The Paradise and Squaw Teats Guzzlers were installed in 1996 for the purposes of providing consistent viable water sources for native wildlife, primarily mule deer, antelope, sage-grouse and other upland game birds, within otherwise dry habitats. And with average or above average precipitation these guzzlers have consistently provided wildlife water, particularly during the late summer and early fall periods. But around the year 2009 elk began migrating into and spending summer months in this area, and using these wildlife water sources. And these elk numbers have been steadily increasing as well as their water usage. This increased elk use, coupled with below average precipitation years, has resulted in the need to catch, store and provide more water at these guzzler sites to render them more consistently reliable for wildlife. The Whistleberry Guzzler has had a similar history, with the exception that this project was built for both livestock and wildlife, and the elk have actually damaged the existing metal apron. The removal of the metal apron and replacement with the larger surface area plastic catchment aprons will result in more water being captured stored and provided to both livestock and wildlife. In below average precipitation years this project site has provided little to no wildlife water because the captured water is first piped from the storage tank to the livestock tank, then when both the storage tank and livestock tanks are full, it will then overflow into the wildlife drinker tank. With the additional catchment and storage provided at Paradise and Squaw Teats Guzzlers, and the additional catchment at Whistleberry Guzzler, all three project sites will provide consistent wildlife water sources, even in below average precipitation years.

Decision to be Made:

The Bureau of Land Management will decide whether or not to approve the maintenance and modifications of these three wildlife guzzler projects.

Conformance:

This plan has been reviewed to determine if the proposed action conforms to the land use plan as required by 43 CFR 1610.5. The proposed action conforms to the Record of Decision and Approved Resource Management Plan for the Worland Field Office, dated September 21, 2015. The decisions in the Worland Resource Management Plan (WRMP) provide general management direction and allocation of uses and resources on the public lands in the area.

Wildlife Resources

4069 --In cooperation with WGFD and other stakeholders, work to develop water sources for wildlife and special status species in coordination with the WGFD and the BLM Water Development Handbook (H-1741-2).

4076 -- Allow water development projects in crucial elk winter range and in greater Greater Sage-Grouse nesting habitat with 10 inches or less annual precipitation only when adverse effects can be avoided, minimized and/or compensated based on site-specific analysis. Allow existing uses pending site-specific analysis on a priority basis.

4077 -- Apply wildlife seasonal protections for surface-disturbing and disruptive activities to non-routine maintenance and operation of projects when the actions are determined to be detrimental to wildlife through site-specific NEPA analysis.

Special Status Species

4107 -- Inside PHMAs

Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 to protect Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat (1,021,583 acres). Apply this timing limitation throughout the PHMAs. Activities in unsuitable habitats would be evaluated under the exception and modification criteria and could be allowed on a case-by-case basis.

4109 -- Density of Disturbances:

In PHMAs, the density of disturbance of energy or mining facilities would be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights (Appendix D, Greater Sage-Grouse Habitat Management Strategy (p. 271)). The one location and cumulative value of existing disturbances would not exceed 5 percent of habitat of the DDCT area. Inside PHMA, all suitable habitat disturbed (any program area) will not exceed 5 percent within the DDCT area using the DDCT process.

4112 -- In PHMAs, implement mitigation and minimization guidelines and required design features, including specific measures for Greater Sage-Grouse (refer to Appendix C, Required Design Features and Best Management Practices (p. 249)) as applicable and consistent with EO 2015-4 (Wyoming Office of the Governor 2015). Incorporate Greater Sage-Grouse specific measures into project proposals as required design features or mitigation for any authorized federal action, regardless of surface ownership.

Soils

1014 – Analyze all surface-disturbing activities for suitability and impacts.

1020 -- Reclamation plans, stipulations, and/or mitigation and monitoring measures are required prior to approval of all authorized surface-disturbing activities. Develop specific objectives and timeframes for reclamation plans in coordination with stakeholders.

Relationship to Statutes, Regulations, Plans or Other Environmental Analysis:

This environmental assessment was prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) and other statutes relevant to the proposal. Authority for the Proposed Action and alternatives is contained in the Federal Land Policy and Management Act of 1976, as amended (FLPMA), Instruction Memoranda WY-IM-2012-19, which provides guidance to BLM Field Offices regarding management consideration of Greater Sage-Grouse habitats for proposed activities until resource management planning updates are completed and is consistent with the Wyoming State Governor's Sage Grouse Executive Order 2011-5.

Scoping, Public Involvement and Issues:

Scoping

The proposed action was reviewed by an interdisciplinary team. Based on the size and routine nature of the proposed project, it was determined that external scoping was not necessary.

Issues Identified

Soils:

How would the proposed project affect soils in the vicinity of the guzzler?

Hydrology:

How would the proposed project affect the hydrologic characteristics of the area?

How would the capture, storage, and use of additional water impact the watershed and drainages downstream of the tanks?

Cultural:

How would the proposed surface disturbance affect cultural resources eligible or unevaluated for the NRHP?

Native vegetation:

How would the project affect the native vegetation in the allotment?

Wildlife:

What effect would the proposed guzzler maintenance and installation have on big game and sagebrush obligate birds?

Proposed Action and Alternatives

Description of the No Action Alternative:

No maintenance or modifications of the Paradise, Squaw Teats, or Whistleberry Guzzlers would be performed, and these wildlife water sources would continue to be unreliable and consistent wildlife watering sources, particularly in late summer and early fall.

Description of the Proposed Action:

The proposed project is to provide more consistent and reliable wildlife water sources by augmenting the water catchment, storage and availability at the existing Paradise, Squaw Teats, and Whistleberry Guzzler project sites in the upper Fifteen mile watershed , approximately 30 miles West of Worland Wyoming (see map 1).

At Paradise and Squaw Teats Guzzlers an additional 22' by 100' plastic catchment apron and 1800 gallon storage tank will be installed next to the existing metal apron and fiberglass wildlife tanks, and the additional 1800 gallon storage tanks will be overflowed, via 4" buried pipeline, to the existing wildlife drinker tanks. And for each of these sites an additional 350' of 3 strand fence will be constructed around each project site, (see diagrams 1 and 2). For the Whistleberry Guzzler project, the existing 60' by 80' damaged metal apron and supporting framework will be removed and replaced with 2 - 22' by 200' plastic aprons set side by side on the ground. This project will also include removing the existing galvanized livestock tank and replacing it with a cement bottom rubber tire tank, as well as constructing an additional 330' of woven and barbed wire fence to protect the new plastic aprons from livestock trampling, (see diagram 3).

The new guzzler aprons to be installed consist of 50 mm thick textured high density polyethylene (HDP) apron which catches precipitation and drains into a combination 1800 gallon storage tank and wildlife drinker. Drinker/tanks will be buried flush in the ground with just the lid and drinking corner exposed above the ground, (see Figure 1). All three existing guzzler projects are protected from livestock and/or wild horses by means of a 3 wire fence, (2 barbed with smooth bottom), approximately a 200' by 300' rectangle enclosure with no gates. Top strand on all fences will be marked with hazard fence markers following marking protocol to mitigate fence strikes from birds, primarily sage-grouse. And all corner wood posts will have anti raptor perch devices installed to discourage raptor perching and predation.

New guzzler apron installation would encompass a disturbance area of approximately 75' by 150' for the Paradise and Squaw Teats Guzzler projects, and approximately 75' by 250' for the Whistleberry Guzzler apron replacement. This surface disturbance would involve using a backhoe to prepare the apron sites and install the guzzler tanks at ground level. The project site would be marked, identifying the project as a wildlife watering source. Maintenance and installation is anticipated to occur during the summer or early fall of 2016, and should take approximately 3 to 5 days.

Reclamation:

All surface disturbance around aprons and tanks will be recontoured and reseeded. Recontouring will be done as part of the construction/installation contract once construction is complete. Seeding will be done by BLM personnel in the fall with the below seed mix, and seed will be broadcast and the area raked or chained to cover seed. Fall seeding will be completed after September 1, and prior to ground frost, and Wyoming big sagebrush will be broadcast separately, over snow. Seeding shall be repeated if a satisfactory stand is not obtained. Monitoring

for seeding success and invasives will be performed by BLM personnel at least twice annually when project sites are monitored for wildlife use.

Seed Mix for 10-14" Loamy Ecological Site:

2.0 lbs/acre PLS Indian rice grass (*Achnatherum hymenoides*)

5 lbs/acre PLS Western Wheatgrass (*Pascopyrum smithii*)

4 lbs/acre PLS Needle and Thread (*Stipa comata*)

18 lbs/acre PLS..... Bluebunch Wheatgrass (*Pseudoroegneria spicata* ssp. *spicata*)

0.50 lbs/acre PLS Wyoming big sage (*Artemisia tridentata wyomingensis*)**

0.4 lbs/acre PLS Scarlet globemallow (*Sphaeralcea coccinea*)

When the site is abandoned, all materials and hardware shall be removed from the site. The site shall be recontoured to conform to the surrounding terrain and best match pre-disturbance topography. It shall be ripped or scarified to a depth of 18-24 inches and reseeded.

Design Features of the Proposed Action:

The Required Design Features identified in Appendix C of the WRMP were reviewed for applicability and incorporated into the project design as appropriate; they include:

- When conducting NEPA analysis for water developments or other rangeland improvements address the direct and indirect effects to Greater Sage-Grouse populations and habitat.
- Include objectives for ensuring habitat restoration to meet Greater Sage-Grouse habitat needs in reclamation practices/sites. Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve Greater Sage-Grouse habitat needs.
- Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on important seasonal Greater Sage-Grouse habitats. Apply these measures during project level planning.
- Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.
- Design impoundments for wildlife and/or livestock use to reduce the potential to produce vectors for WNV where the virus may pose a threat to Greater Sage-Grouse.
- Avoiding facility placement on steep slopes, ridge tops, and hilltops.
- Screening facilities from view;
- Using subsurface or low-profile facilities to prevent protrusion above horizon line when viewed from any primary road;

Alternatives Considered but not Analyzed in Detail:

One alternative considered but not analyzed in detail was adding additional metal surface area to the existing metal catchment aprons, but this was found to be to labor intensive and costly compared to the proposed action alternative.

Affected Environment and Environmental Effects

This chapter characterizes the resources and uses that have the potential to be affected by the proposed action, followed by a comparative analysis of the direct, indirect and cumulative impacts of the alternatives. **Direct** effects are caused by the action and occur at the same time and place. **Indirect** effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. **Cumulative** impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions.

Introduction

General Setting and Geographic Scope of the project area

The proposed Pistol Draw wildlife guzzler is within the Pistol Draw Grazing Allotment (#00603), in the Washakie Planning area, approximately 13 miles south, southwest of Worland, Wyoming. Pistol Draw is an ephemeral tributary of the Nowater watershed. The project site receives 5 – 9 inches of precipitation annually.

Resources Not Analyzed

Resources and features not present or not effected by the proposed action or alternatives, and not discussed in this EA, include: Geology, Livestock Grazing, Threatened and Endangered and BLM Sensitive Plants, Paleontology, Recreation, Woodlands & Forestry, Wild Horses & Burros, Environmental Justice, Prime or Unique Farmlands, Flood Plains, Native American Religious Concerns, Riparian Areas, Visual Resources, Class I Airsheds, Wild and Scenic Rivers, Wetlands, Wilderness Values or Inventoried Lands with Wilderness Characteristics.

Resources Carried Forward for Analysis

Cultural Resources, Traditional Cultural Properties, Native American Religious Concerns

Issue(s) Identified

How would the proposed surface disturbance affect cultural resources eligible or unevaluated for the NRHP?

Affected Environment

The area of potential effect (APE) was defined to include the surface disturbance for the proposed maintenance activities, approximately 0.4 acres. A class III cultural resources inventory was conducted for the APE (BLM cultural project #010-2016-004) at the Paradise and Squaw Teats Guzzlers. A total of 5 acres were inventoried to determine effects to historic properties, cultural resources eligible or unevaluated for the National Register of Historic Places (NRHP), within the APE. The APE for the Whistleberry Guzzler was previously inventoried at the class III level (BLM cultural project #1699010N). No cultural resources were identified.

Direct and Indirect Effects

No Action

Under the No Action Alternative, the development of the proposed action would not occur. No resulting effect on cultural resources would be expected to occur beyond the current situation.

Proposed Action

A class III cultural resources inventory identified no cultural resources. Surface disturbance resulting from the proposed action, approximately 0.4 acres, will have no effect on known historic properties. Unknown cultural resources may be affected by surface disturbing activities. Consultation occurred with the State Historic Preservation Office (SHPO) under the Wyoming State Protocol Agreement between the BLM and the SHPO (State Protocol).

Mitigation

For the protection of unknown cultural resources the standard cultural stipulations apply and are included in the conditions of approval.

Cumulative Effects

Construction of range improvement projects impact cultural resources through ground disturbance, unauthorized collection, and visual intrusion to the setting of historic properties. Potential impacts to historic properties are mitigated under the proposed action. Since there would be no direct or indirect effects on known historic properties, there can be no cumulative effects.

Vegetation

Native Vegetation

Issue(s) Identified

How would the project affect the native vegetation in the ecological site?

Affected Environment

The project area is in a Loamy ecological site in a 5 – 9 inch precipitation zone. The vegetation in the project area is a perennial grass/big sagebrush plant community (NRCS Ecological Site Description, 2008). The following native plant species have been identified and are readily observed in the area; Wyoming big sagebrush, Sandberg bluegrass, Bluebunch wheatgrass, Needle and thread grass, Western wheatgrass, Bottlebrush squirreltail, Wood aster, Bluegrama, and cactus.

Direct and Indirect Effects

No Action

There would be no loss or impact to native vegetation at the proposed site or on the landscape as a whole.

Proposed Action

The proposed project would affect less than .27 acres. The effect would be a removal of vegetative/change in ecological state for the life of the project for only the area of the project. The current vegetative state is stable and resilient therefore the project area which would be impacted would not affect the balance of the acres within the area. However, the potential to restore the site if the project is abandoned is low because of a total loss of vegetation within the disturbed/project area. As such, reclamation would be required to restore the site to a perennial grass/big sagebrush community state.

When compared to the No Action alternative the proposed action would cause a change in ecological state to a less desirable state or to a completely man made disturbed area that has no ecological state rating. The project area would remain as such until the project is abandoned and reclamation is complete and successful.

Cumulative Effects

No cumulative effects were identified.

Soils

Issue(s) Identified:

How would the proposed project affect soils in the vicinity of the guzzler?

Affected Environment

The soils in the project area, as mapped by the 1983 Washakie County soil survey, are identified as map unit #34 the Kashona, Shingle, Rock Outcrop complex. The soil characteristics of importance for the proposed project is the erosion potential as defined in the table below as slight and moderate slope erodibility of the soil. These soils support shallow clayey, and loamy range sites.

Hazard of Erosion and Suitability for Roads on Forestland

Washakie County Area, Wyoming

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The columns that identify the rating class and limiting features show no more than five limitations for any given soil. The soil may have additional limitations. This report shows only the major soils in each map unit]

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34: Kishona	30	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength Dusty	0.50 0.50 0.32
Shingle	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Dusty	1.00 0.50 0.35
Rock outcrop	15	Not rated		Not rated		Not rated	

Direct and Indirect Effects

No Action

Current soil and hydrologic conditions would remain the same in the vicinity of the guzzlers.

Proposed Action

This alternative would remove vegetation and disturb approximately .27 acres between the three locations. Apron and drinker tank site preparation and installation would result in impacts for duration of six months to one year to the soil and vegetative resource. Installation could cause a short-term increase in sediment loading potentially transmitted to the Pistol Draw drainage as a result of vegetation removal, but given the project location and existing vegetation, this is not anticipated. The projected disturbance was modeled with the WEPP 2010 model and no increased runoff or sediment delivery was anticipated to leave the site.

There would be some level of short term impact to the soil and vegetation from the creation of approximately 100 ft. of two-track road from the existing two-track to the project site, and also from the creation of a staging and parking area during construction. The staging and parking areas where machinery is present would receive compaction in the upper few inches of the soil profile.

This action would disturb and remove vegetation on .27 acres more than the No Action alternative. Under this action long term impacts from runoff or sedimentation is not expected to occur.

Cumulative Effects

There were no cumulative effects identified.

Water Resources (Water Quality and Ground Water, Floodplains, Wetlands and Riparian Zones)

Issue(s) Identified:

How would the capture, storage, and use of additional water impact the hydrologic characteristics of the watershed and drainages downstream of the tanks?

Affected Environment

The project area of Pistol Draw and is located within the Middle Fork area of Upper Fifteenmile Creek watershed. The Upper Fifteenmile Creek watershed is considered a level 5 watershed by the United States Geologic Survey and encompasses low and mid elevation areas located in the southern center of the Bighorn Basin. The main drainage nearest the project area in the watershed is Middle Fork of Fifteen Mile that flows in a eastern direction through the watershed. The flow regime of the Middle Fork of Fifteenmile Creek is typically ephemeral, with localized influences of water below canal areas and oil field water discharges throughout the watershed. The other smaller drainages such as Paradise Alley Draw are typically ephemeral in nature and generally have surface flow for a 3-4 week snowmelt period in early March and following storm events that are capable of producing surface water runoff in the watershed. There are 2 reservoirs that are within a two mile radius of the proposed guzzler locations additions. These reservoirs were historically constructed to provide a water source for grazing within the watershed. Field observations and aerial imagery from 2011 have indicated vegetation is present but open water from these sources is not available on average precipitation years. As stated above watershed conditions are improving, providing for increased infiltration and reduced volumes of surface water runoff.

Direct and Indirect Effects

No Action

The current watershed conditions would remain the same in the Middle Fork of Fifteenmile and Upper Fifteenmile Creek watershed. There would be no additional water guzzler source constructed.

Proposed Action

The proposed action would augment the capacity of the facilities to capture and store approximately 1800 gallons of rainwater at one time for each location. The surface area where the guzzlers additions would be installed would no longer receive infiltration and would capture the water and deliver it to the tank. Overflow from the tank would be discharged from the site following large storm events. The amount of gallons is statistically insignificant when compared to total watershed precipitation received.

There would be potential indirect effects to ground cover conditions in the area by creating an additional water source in the area. There would be increased wildlife use and distribution in the Pistol Draw area. The overall runoff from the area would remain unchanged as long as sufficient vegetative cover is present.

Cumulative Effects

There would be no anticipated cumulative impacts to water resources as a result of the proposed action. The locations are currently established and the action would only augment the existing water sources within the watershed.

Fish/Wildlife (Including Threatened, Endangered, Candidate and BLM Sensitive Species)

Issue(s) Identified:

What effect would the proposed guzzler maintenance and installation have on big game and sagebrush obligate birds?

Affected Environment

This proposed project area provides habitat for several big game species, as well as many other non-game and special status wildlife species. The habitats near all 3 project sites is a mix of predominantly rolling sagebrush grasslands upland benches and incised drainages separating these upland benches. Both Whistleberry and Squaw Teats guzzler locations are within crucial winter range for mule deer, but antelope as well as elk could be expected at all 3 project sites, elk particularly in the spring and early summer. All 3 project sites are within Priority Habitat Management Area (PHMA) for Greater sage-grouse habitat, and these sagebrush habitats surrounding the project sites also provide winter concentration areas, breeding, nesting, and early brood rearing habitats for sage-grouse. The Paradise guzzler location is within 2 miles of an occupied sage-grouse lek, and the East Ridge lek is approximately 1.8 miles west of this project site. These sagebrush habitats are also providing breeding, nesting and foraging habitat for other sagebrush obligate bird species like the sage thrasher, Brewer's sparrow and loggerhead shrike.

The Paradise and Squaw Teats guzzlers were installed in 1996 for wildlife use, and have been the subject of wildlife use monitoring via remote cameras by the BLM for many seasons. Because of this monitoring the most common wildlife species documented using these guzzlers would be the following species in declining order from most to least observed; mule deer, antelope,

raven, cottontail, jackrabbit, golden eagle, elk, coyote, sage-grouse, sage thrasher, various other sparrows, mourning dove, chukar, Hungarian partridge, badger, & bobcat.

Direct and Indirect Effects

No Action

Under the No Action alternative the existing guzzlers would not be modified. The effects of not augmenting these water sources wildlife species would likely continue to defer away from these project sites, particularly during the dry season from around mid-July through September to find reliable water sources. The closest reliable water sources would be a livestock pipeline system about 1 to 2 miles south, or Gooseberry creek which is about 4 to 5 miles south. Without augmenting the water availability at these project sites, wildlife use of the surrounding habitats, and livestock use near the Whistleberry guzzler, would continue to decline. These existing habitats within the proposed project area would continue to be under-utilized by native wildlife species, particularly during the dry season, when water is most valuable. As surrounding reservoirs continue to degrade, silt-in, and dry up, the area of suitable but unoccupied wildlife habitat would increase.

Proposed Action

The proposed action is to augment the amount of water captured, stored and available to wildlife and livestock at all 3 of these project sites. The site preparation and installation of the additional aprons (catchments) and drinkers/storage tanks will result in an additional .27 acres of surface disturbance, between all 3 project sites. Surface disturbance will include some moderate ground leveling where for apron and tank placement. While all 3 project sites are within PHMA sage-grouse habitat, all construction and installation will occur after June 30 and before Nov 15, outside of critical sage-grouse or sagebrush obligate breeding, nesting, wintering time periods. All new apron and drinker tank installations will not be placed in sagebrush habitat. But some sagebrush mortality will likely occur due to truck and backhoe traffic at each project site.

Because this proposed disturbance is within PHMA, the proposed .27 acres of habitat removal requires a DDCT (density disturbance calculation tool) to make sure the addition of the proposed disturbance along with existing disturbances does not exceed the 5% disturbance cap. The DDCT process was conducted per Appendix D of the Worland ARMP guidelines using the DDCT web application and reviewed by the Wyoming Game and Fish Department (WGFD). DDCT results for the project are as follows: Total Disturbance = .56%, Project Disturbance = 0.00%, Density = 0.01/640 acres.

Site preparation and installation will average 2 to 4 days at each project site, and this disturbance would consist of 5 to 10 individuals as well as multiple trucks and a backhoe. This motor vehicle/equipment and human activity disturbance will likely result in short term displacement of resident wildlife. Wildlife may be temporarily displaced by the noise from heavy equipment and increased human activity during the construction phase. These impacts would be short-term, lasting for the length of the operations and perhaps a short time after, not expected to exceed 10 days. In the long-term, wildlife would benefit from increased water availability, particularly during the dry season from mid-July through September.

West Nile Virus has been detected in Wyoming and has been responsible for local sage-grouse population reductions in the Powder River Basin. One primary design feature, being proposed in this alternative with the proposed tank design, and being recommended by Knight et al. (2003) for

all water impoundments or artificial water tanks to mitigate mosquito reproduction and west Nile virus, is the employment of steep shoreline or tank wall construction. “Build steep shorelines to reduce shallow water and aquatic vegetation around the perimeter of impoundments. Construction of steep shorelines also will create more permanent ponds that are a deterrent to colonizing mosquito species ...”(Knight et al. 2003) The effect of the proposed guzzler maintenance and installations on West Nile virus and wildlife directly is expected to be slight due to the fact that the currently prevalence rates for West Nile Virus in Washakie, Park, and Bighorn Counties is very low, and the implementation of the above recommended design feature in the proposed drinker tank design.

Residual impacts to the surrounding area would be the increased wildlife occupancy and use of the area, particularly during the dry season. And this increased wildlife use could manifest in increased recreational big game and upland game bird hunting. Primary anticipated users will be antelope, mule deer, elk, sage-grouse, chukar and gray partridge. Numerous other passerines, predators and small mammals will also make use of this watering location.

Cumulative Effects

The DDCT analysis area was determined to be 70,560.65 acres. Past actions within the proposed analysis area include roads, oil and gas development, and existing pipeline infrastructure. There are no foreseeable future actions proposed within the analysis area. The total area of existing disturbance is 397.15 acres. This project would add 0.27 acres of new disturbance, increasing the total disturbance within the analysis area to 397.41 acres. This project will not cause past/present or future actions to exceed the 5% disturbance cap.

Tribes, Individuals, Organizations, or Agencies Consulted:

List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination
Bart Kroger, Biologist,	Wyoming Game and Fish Dept.
Mary Hopkins, SHPO	State Historic Preservation Office

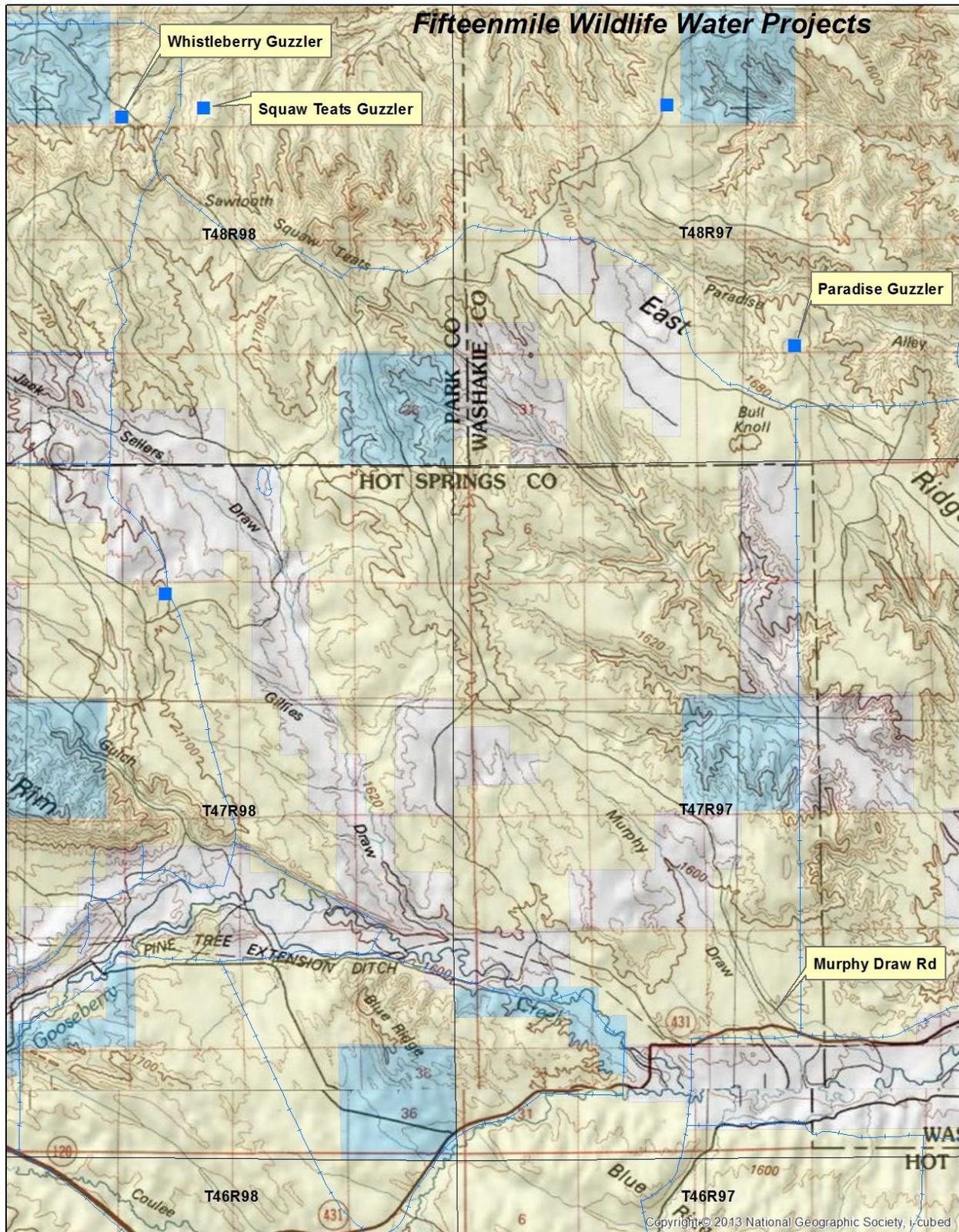
List of Preparers

Resource	Name	Title
Cultural Resources	Marit Bovee	Archaeologist
Fish/Wildlife (including T&E)	Tim Stephens	Wildlife Biologist
Recreation/VRM/Travel Management/Special Designations	Adam Babcock	Recreation/Visual Specialist
Rangeland/Vegetation	Cam Henrichson	Range Management Specialist
T&E Plants	Karen Hepp	Range Management Specialist (T&E/Sensitive Plants)
Engineering	Monica Geopferd	Civil Engineer
Soils	Jared Dalebout	Soils Scientist
Invasive Species	Leslie Coleman	NRS/Weeds
Water resources	Jared Dalebout	Hydrologist
Paleontology	Marit Bovee	Archaeologist
Geology & Minerals	Joe Scyphers	Geologist
Land Use/Access	Connie Craft	Realty Specialist
Fuels	Eve Warren	NRS
Forests	Jim Gates	Forester
Public Health and Safety	Holly Elliott	P&EC
Socioeconomics	Holly Elliott	P&EC
Air Quality	Holly Elliott	P&EC

References

Knight, R. L., W. E. Walton, G. F. Meara, W. K. Riesen and R. Wass. 2003. Strategies for effective mosquito control in constructed treatment wetlands. *Ecological Engineering*. 21: 211-232.

Appendix Maps and Diagrams



Map of 15 mile Guzzler Project locations



Example of Completed Wildlife Guzzler

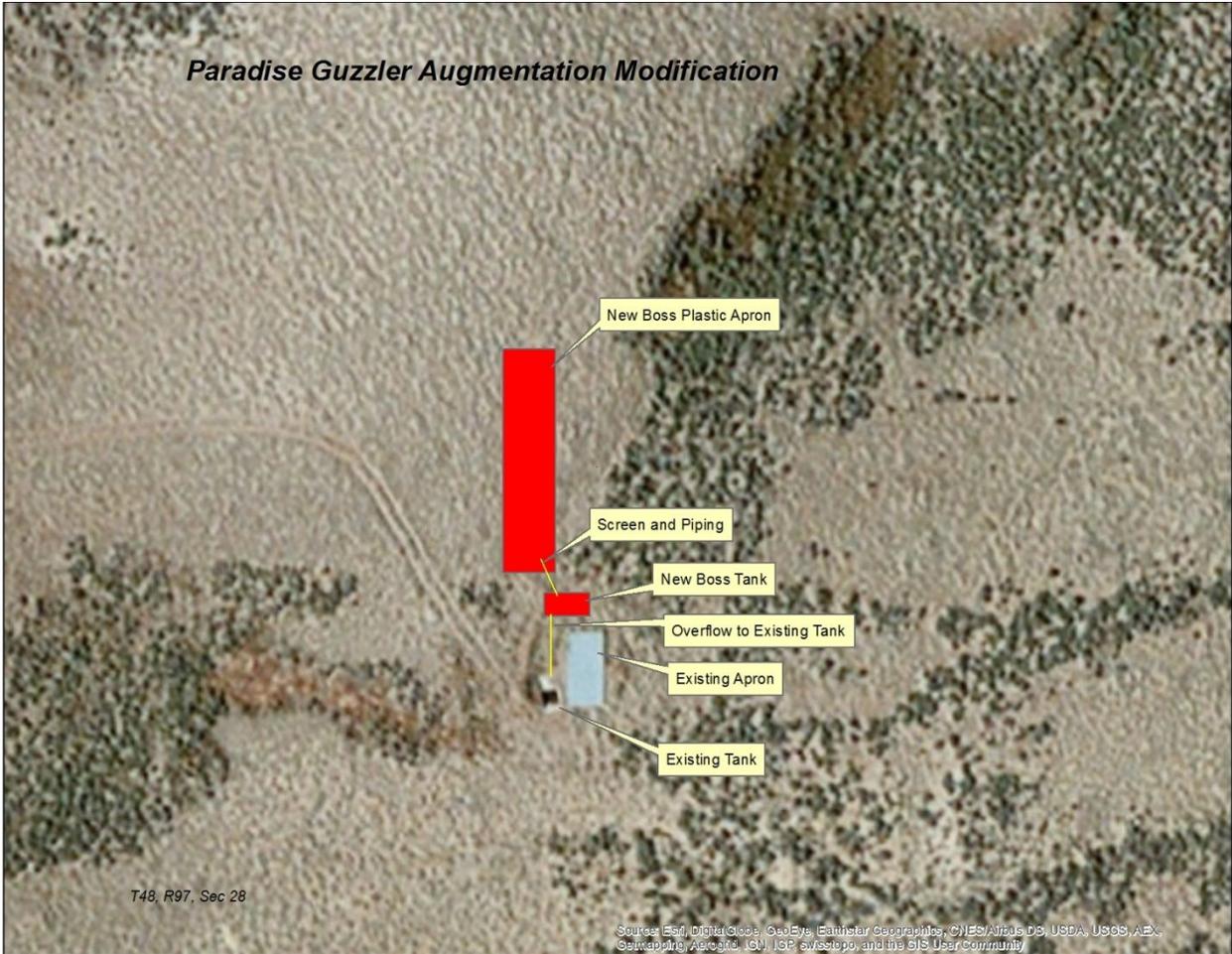


Diagram 1 – Paradise Guzzler Augmentation Modification

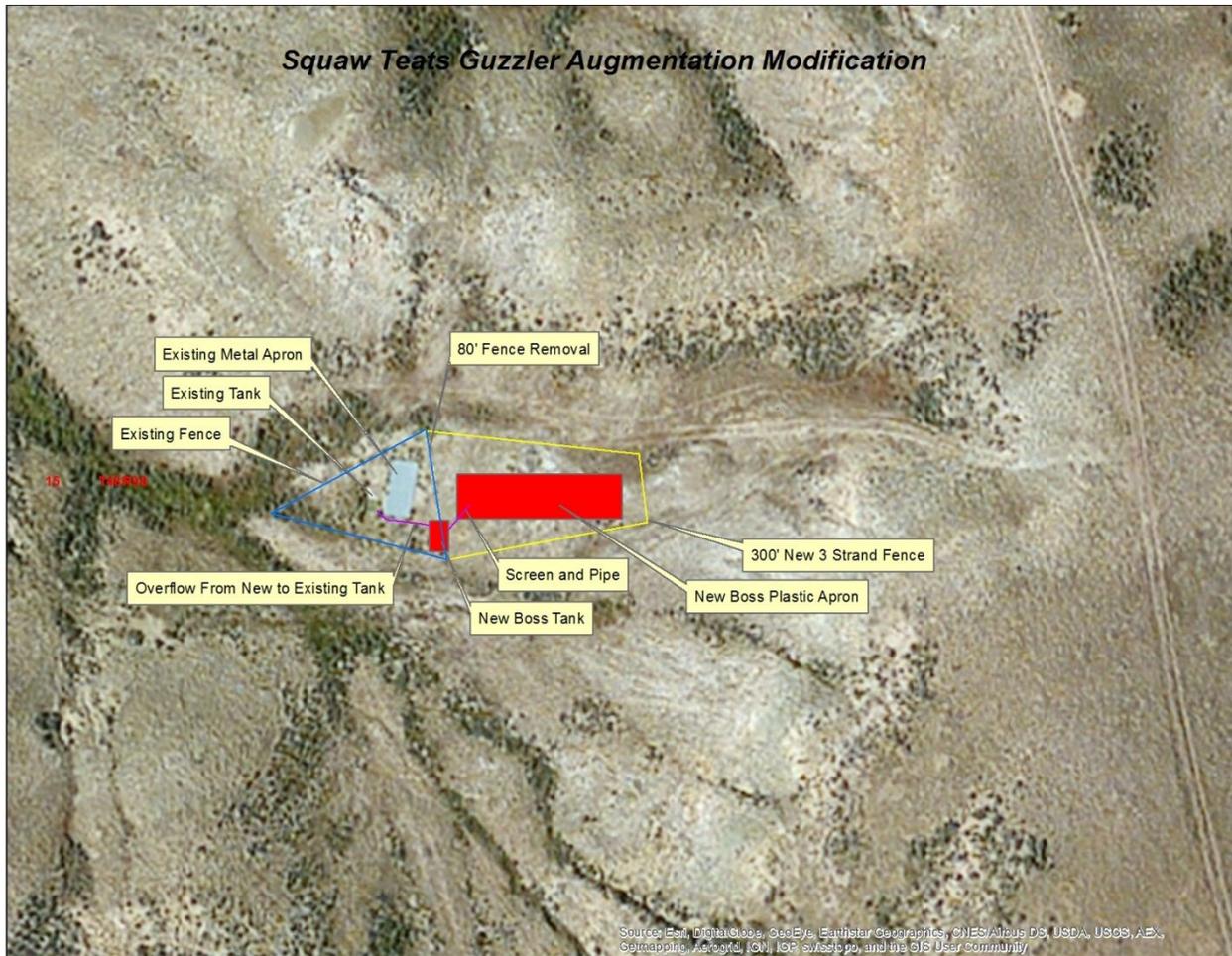


Diagram 2 – Squaw Teats Guzzler Augmentation Modification

Wistleberry Guzzler Apron and Livestock Tank Replacement



Diagram 3 – Wistleberry Guzzler and tank replacement