

BIOLOGICAL ASSESSMENT

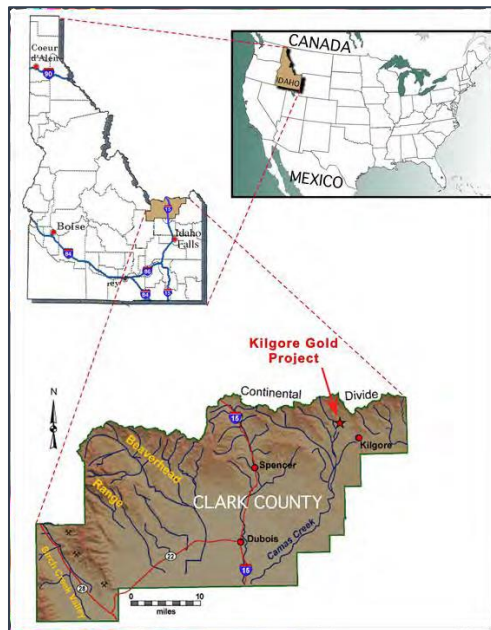
for

Canada Lynx
Grizzly Bear

Kilgore Gold Exploration

Dubois Ranger District
Caribou-Targhee National Forest

Clark County, Idaho



Prepared by:

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Date

SUMMARY

Species	Status	Determination
Canada lynx (<i>Lynx canadensis</i>)	Threatened	May affect, not likely to adversely affect (NLAA)
Grizzly bear (<i>Ursus arctos</i>)	Threatened	May affect, not likely to adversely affect (NLAA)
Whitebark pine (<i>Pinus albicaulis</i>)	Proposed Threatened	Not Likely to Jeopardize the Continued Existence (NLJCE)

INTRODUCTION

The purpose of this biological assessment (BA) is to analyze the effects of the proposed action on endangered, threatened, and proposed species. Section 7 of the Endangered Species Act directs federal agencies to ensure actions authorized, funded, or carried out are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of habitat of such species. This project was streamlined on March 14, 2018. The effects analysis for whitebark pine is presented in another document.

PROJECT

The project is occurring on the Dubois Ranger District of the Caribou-Targhee National Forest in Clark County near Kilgore, Idaho. The legal description is Township 13 North, Range 38 East, Sections 17 – 21 and 28 - 30 (figures 1 and 2 below). This project would last a minimum of three years and occur from July 15 through the end of November, unless weather and prior Forest Service authorization allows drilling to continue until December 15.

Otis Capitol USA Corporation would conduct exploration drilling on 130 drill sites on its claim in the Gold Ridge, Prospect Ridge, Dog Bone, and Mine Ridge areas. The purpose of the exploration drilling is to evaluate the gold potential. Project activities consist of Otis Capitol's plan of operations submitted to the Forest Service on July 22, 2020 and include existing road use, new road construction, and exploration drilling within the road prisms.

Otis Capitol estimates that there are up to 32.1 miles of roads that will be used for drilling activities. These roads include open motorized, decommissioned, existing mine claim roads, an ATV trail, and new roads. Approximately 10.4 miles of new roads would be constructed. Gates and berms would restrict public access.

Motorized equipment to be used for drilling activities include up to three drill rigs, fork lifts, ATVs, pick-up trucks, a water truck, a fuel truck, and water pumps. Additional motorized equipment to be used for reclamation activities include a hydraulic excavator, a bull dozer, and skidsteers. Equipment would be power-washed for noxious weeds prior to use on the claim and be inspected by Forest Service personnel prior to entering the project area. There would be two

to six pick-ups in operation per day and a water truck as necessary. There would be up to three drill rigs in operation at one time.

All 130 drill sites and associated activities are within the existing or proposed road prism. Sites may vary within 50 feet of proposed locations. Which sites are drilled depends on the results of each assay. Each drill site will have a maximum of three holes with an average depth of 1300 feet. Drill sites will have a sump to collect drilling wastewater. Liquids will be allowed to infiltrate the ground and then the sump will be reclaimed. Each drill hole will be plugged in accordance with state regulations after drilling. Five drill holes would be retained for ground water monitoring.

Drill sites would operate 24 hours per day. Lighting would be necessary at night. There may be up to three drills operating at one time. Generally, a drill operates at a site for one to two weeks before being moved to the next site.

Water may be drafted (collected) from three sources. These include an existing well on the claim, West Camas Creek at the road crossing, and Beaver Creek (not on Forest Service land). The primary water source would be the well. Otis Capitol would be required to obtain a temporary water appropriations permit on an annual basis from the state of Idaho for the West Camas and Beaver Creek water sources. These appropriations allow for five acre-feet per year at a rate of 18 gallons per minute from each water source. Water from all sources would be placed in storage tanks and piped to drill sites.

Each drill rig requires a crew of four persons. In addition, there would be five to ten additional personnel on site each day. Personnel would camp on the claim in RV trailers or drive to the site each day. Camps would be required to follow the food storage order for grizzly bears. Additional infrastructure on site include portable toilets, equipment trailers, rod storage trailers, power packs for the drill rigs, and the existing well pumphouse shed.

All fuels and lubricants greater than five gallons would be stored within a spill containment system. In addition, spill kits and fire prevention tools will be present on-site. Water quality monitoring will occur.

New roads would be reclaimed when Otis Capitol determines that no further exploration is warranted. New roads will be fully obliterated to match pre-existing topography. Roads with a previously-existing road prism would be evaluated by Forest Service personnel. Slash and woody debris application would occur on all reclaimed roads. Seeding may occur also. Otis Capitol would monitor the project area twice annually (early summer and early fall) to ensure that road restrictions for the public are working.

Exploration drilling activity has occurred in the Mine Ridge area of the claim during most years from 2008 to 2019. For example, no activity occurred in 2020, but in 2019, Otis Capitol drilled 11 holes at 10 sites. No activity occurred in 2018. In 2017, Otis Capitol drilled 27 sites on existing roads. In 2016, 36 sites were drilled, all in the road prism. In 2014, 16 sites were drilled with less than one mile of road construction.

Figure 1. Otis Capitol USA Corporation Mine Claim Block, Areas, and Water Sources.

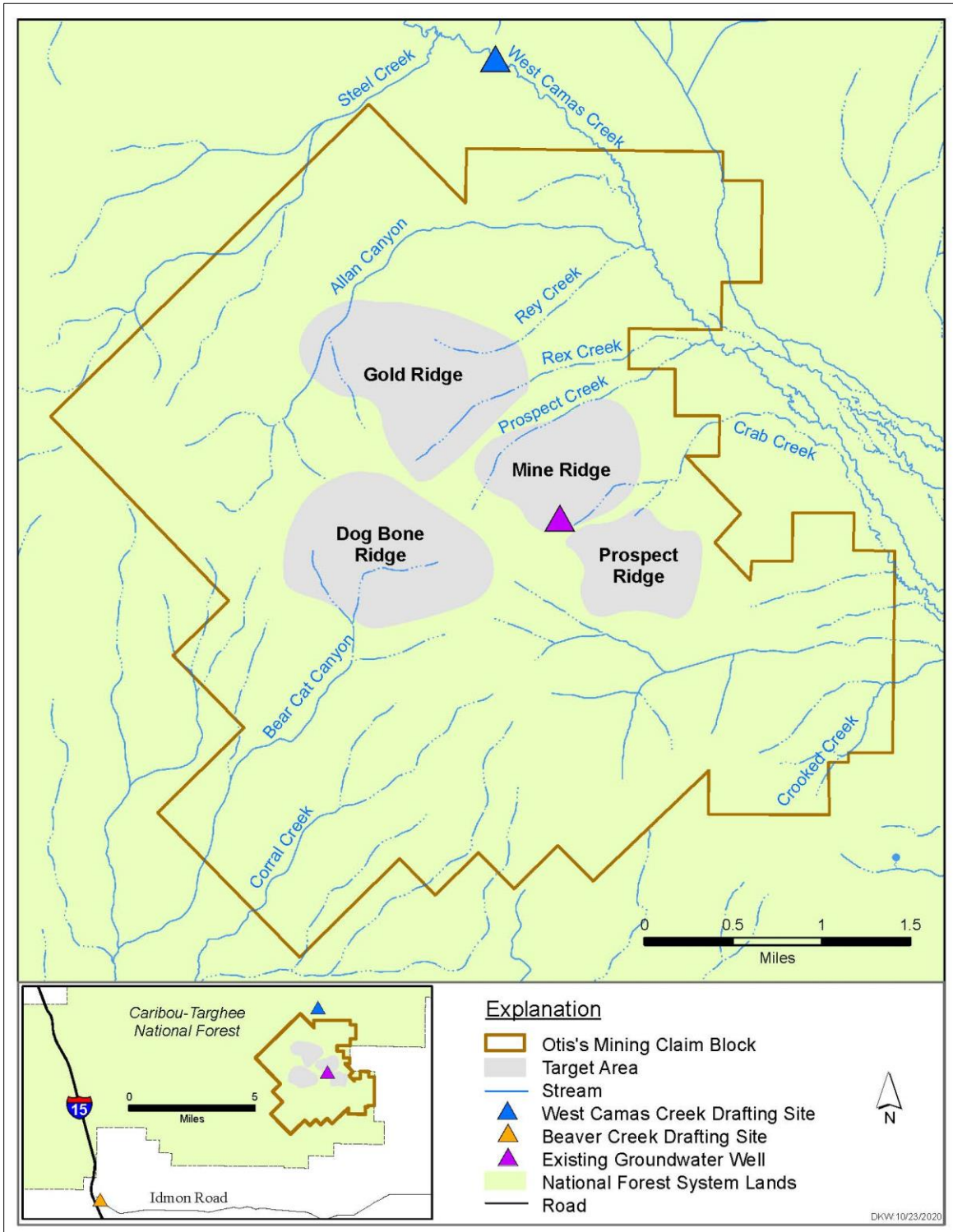
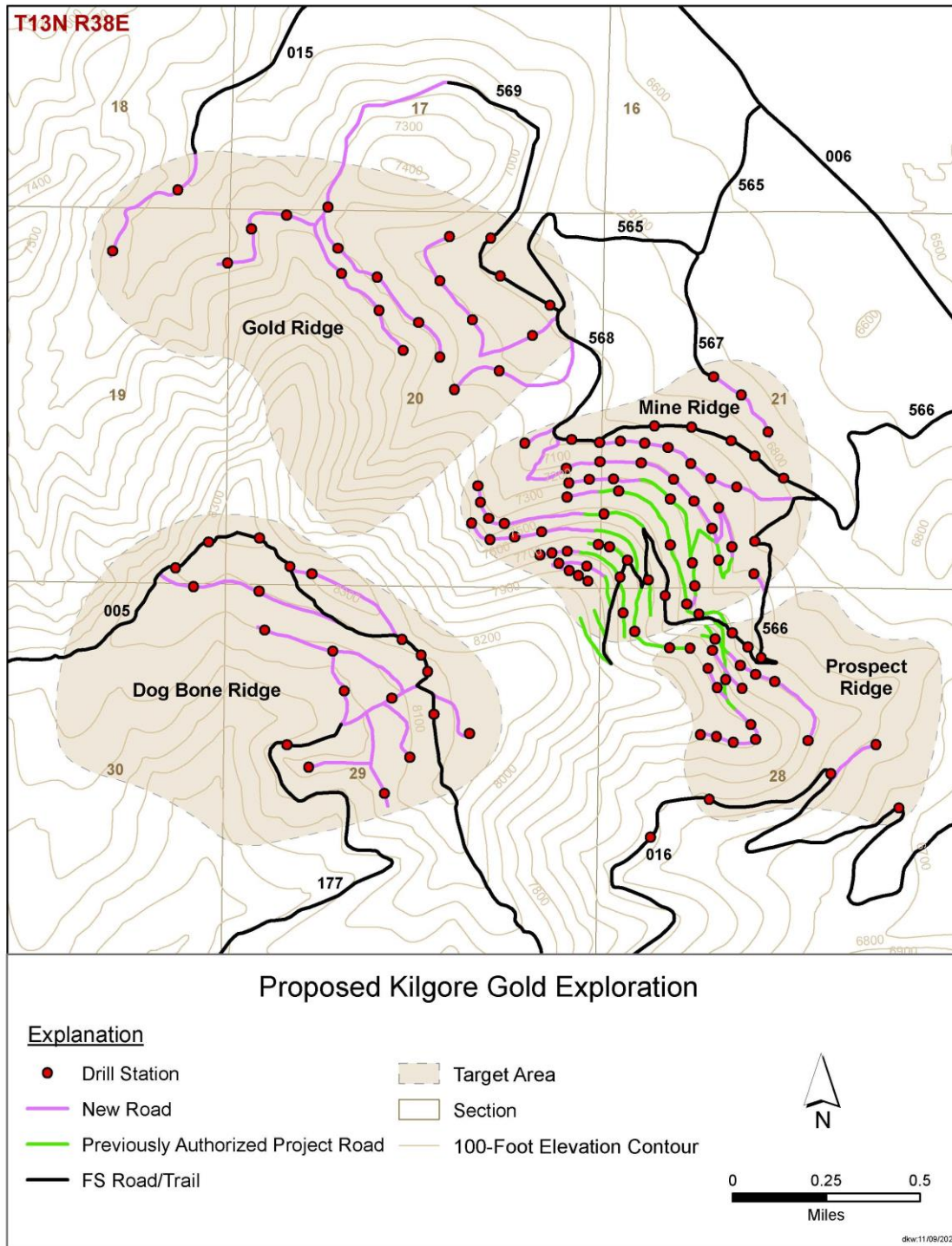


Figure 2. Otis Capitol USA Corporation Road Use, New Road Construction, and Drill Sites.



SPECIES CONSIDERED AND EVALUATED

A species list was requested from the IPAC website (<https://ecos.fws.gov/ipac/>) on November 3, 2020. Canada lynx and grizzly bear were on the list (consultation code: 01EIFW00-2021-E-00285). There is no critical habitat present in the project area.

CANADA LYNX

Life History

The lynx diet is predominantly snowshoe hare in both summer and winter. For example, 96 percent of the lynx diet in Montana is snowshoe hare (less than two percent red squirrel) and 81 percent of the lynx diet in Washington is snowshoe hare (14 percent red squirrel) (ILBT 2013). The minimum threshold density of snowshoe hares for lynx has been estimated at greater than 0.5 hares per hectare to greater than 1.5 hares per hectare (ILBT 2013).

Lynx habitat is characterized by dense, horizontal cover; moderate to high snowshoe hare densities, and persistent snow (ILBT 2013). Lynx habitat vegetation includes mature mesic spruce-fir, multi-layered mature lodgepole pine, and regenerating lodgepole pine (Ellsworth and Reynolds 2006; Maletzke et al. 2008, Shenk 2009, Squires et al. 2006), but the main lynx vegetation type in the western United States is spruce-fir forests (ILBT 2013). Preferred regenerating lodgepole pine stands are sapling stage (10 to 30 years in age), un-pruned, and comprised of 4500 to 33,000 stems per acre (Ellsworth and Reynolds 2006).

Lynx dispersal is relatively commonplace: Lynx from Canada may disperse southward when the snowshoe hare population cycle is at a low; these Canadian dispersers may be the most reliable source of replenishment for Canada lynx populations in the contiguous U.S. (USFWS 2014).

Also, sub-adult lynx disperse at ten months of age prior to the next mating period. Dispersal distances vary from five to 269 kilometers, with a median of 13 kilometers. Further, adults exhibit long-range exploratory movements (Squires et al. 2006). The duration of these movements is one week to several months (Ruediger et al. 2000). Documented movement distances have been as much as 1000 kilometers (Squires and Oakleaf 2005). For example, lynx from Colorado have traveled to eleven states; these are Arizona, Idaho, Iowa, Kansas, Montana, Nebraska, Nevada, New Mexico, South Dakota, Utah, and Wyoming (Shenk 2009). Habitats used by lynx during movements and dispersal are not well understood (USFWS 2005).

Lynx may prefer to move through continuous forest, using geographic features such as ridges, saddles, and riparian areas (USDA 2007), but lynx have been documented in sagebrush steppe outside of home ranges (Ruediger et al. 2000). Dispersing lynx may be affected by highways, especially those with high traffic volumes. Causes of mortality of dispersing lynx include illegal shooting, vehicle collisions, and starvation (ILBT 2013).

Affected Environment - Population Status

The Dubois Ranger District is in a secondary lynx area. Secondary lynx areas are defined by sporadic current and historic records of lynx, overall low relative abundance, and no documentation of reproduction. Secondary lynx areas are hypothesized to be important for dispersal of lynx or provide habitat until the animal(s) return to core or primary areas. The lynx recovery outline objective related to secondary lynx areas is to maintain habitat for occupancy by lynx (USFWS 2005). It is not believed that secondary areas will support lynx reproduction or home ranges (ILBT 2013).

There is no evidence that lynx are present on the Dubois Ranger District. During 1999-2003, the northeastern portion of the district in the Centennial Mountains was surveyed as part of the National Lynx Detection Survey. There were seven survey stations and there were no lynx detections. Lynx from the Colorado lynx project traveled to eleven states, including Idaho (Shenk 2009). These animals were radio-collared and none of them traveled through the Dubois District. From 1874 to present, there have been no reliable observations of Canada lynx on the Dubois District.

The Greater Yellowstone Ecosystem (GYE) has a long history of lynx presence, but that presence may or may not be consistent. There may be a small resident population of 10 individuals or less in the GYE, both currently and historically. From 2000 to 2009 (USFWS 2017), residency of both males and females or reproduction have been documented east of Yellowstone Lake in Yellowstone National Park and the Wyoming Range on the Bridger-Teton National Forest (Bell et al. 2016). But, there were no detections of lynx in the GYE from 2010 to 2017 (USFWS 2017).

Affected Environment - Habitat Status

Lynx habitat is determined using the definition in the Northern Rockies Lynx Management Direction (NRLMD). Primary and secondary vegetation that is above 4000 feet in elevation can contribute to lynx habitat. Primary lynx vegetation is defined as subalpine fir habitat types, even if the dominant cover is of Douglas-fir, spruce, or lodgepole pine. Secondary lynx vegetation includes other cool, moist habitat types of Douglas fir, when within 200 meters of primary vegetation. Dry forest habitat types of Douglas fir or climax lodgepole pine do not appear to be associated with lynx and so are not considered to contribute to primary or secondary vegetation (USDA 2007).

The GIS layer developed for lynx habitat for the 2015 draft EIS for the Targhee National Forest Lynx Analysis Units (USDA 2015) was used to determine primary and secondary vegetation in the project area. This layer was developed primarily from the Targhee National Forest Ecological Unit Inventory and model (USDA 1999). Since this model is a coarse assessment at a 1:24,000 scale, it is an initial estimate. It can be refined by site-specific, forest stand-level vegetation survey data (USDA 2015). However, the site-specific vegetation survey data was not available, so information from the GIS layer is an initial estimate and the best data available. There is modeled primary and secondary vegetation in the project area.

Primary and secondary vegetation contribute to lynx habitat when the amount, patch size, and inter-patch distance; are sufficient to identify a lynx analysis unit (LAU) (USDA 2007). Areas that do not contain lynx habitat are considered to have lynx linkage habitat and contribute to lynx linkage areas. A LAU is a hypothetical home range of a female lynx. Lynx habitat inter-patch distances should not be beyond daily female movement distances. The average daily movement of lynx in Montana was 6.9 kilometers per day (n = 28 to 33). There must be at least 10 square miles of lynx habitat to support a reproductive female lynx in a home range (ILBT 2013). Requirements for the amount, patch size, and inter-patch distance are met for modeled primary and secondary vegetation (lynx habitat).

A LAU should approximate the size of a lynx home range (Ruediger 2000). Lynx home ranges are larger in the western United States than in Canada or the northeastern United States. A female lynx home range (in west-central Wyoming) was 44 square miles (n = 1) (ILBT 2013). It is recommended that a LAU be delineated based on accepted ecological units, such as hydrologic unit codes (Ruediger 2000). Fifth and sixth code hydrologic unit codes were used (USDA 2015). Other factors relevant to delineation of LAUs includes a review of lynx occurrence records, an evaluation of land ownership pattern to achieve appropriate size and configuration of the LAU, and exclusion of ungulate winter ranges which may not retain adequate snow in winter for lynx (USDA 2007). Winter range was not excluded, land ownership allows for the appropriate size and configuration of a LAU, and there have been no reliable observations of Canada lynx on the Dubois District from 1874 to present.

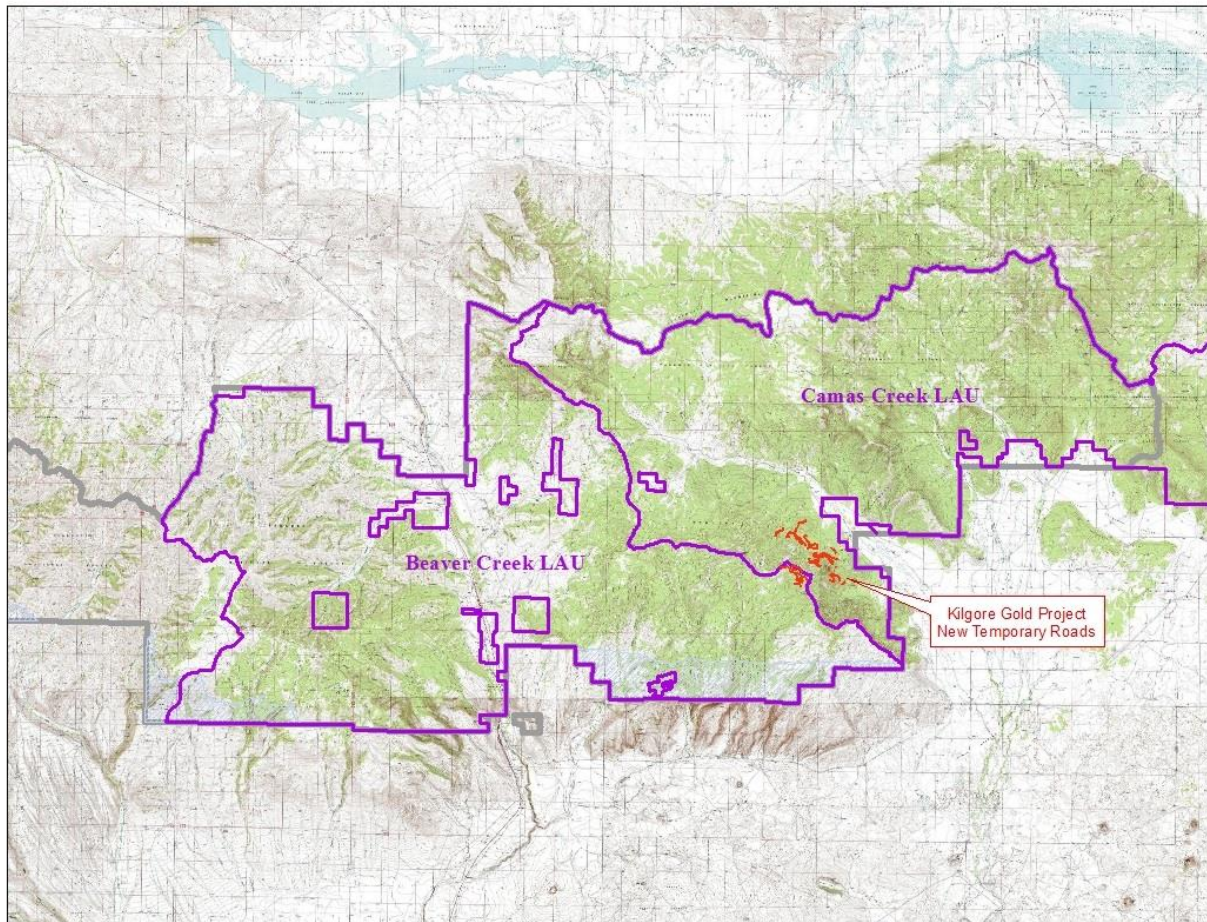
The project area overlaps with the Beaver Creek and Camas Creek fifth code hydrologic unit codes and LAUs (figure 3). The Camas Creek LAU is 73,611 acres with 41,191 acres of modeled primary and secondary vegetation (lynx habitat). The Beaver Creek LAU is 80,984 acres with 22,701 acres of modeled primary and secondary vegetation (lynx habitat). It should be noted that there is a lack of lynx occurrence in the LAUs.

Of the 10.4 miles of new temporary roads, 9.9 miles intersect with modeled lynx habitat and 0.5 mile intersect with no modeled lynx habitat (lynx linkage habitat). Specifically, there are 7.4 miles of new temporary roads that intersect with modeled lynx habitat in the Camas Creek LAU and 2.4 miles of new temporary roads that intersect with modeled lynx habitat in the Beaver Creek LAU. New roads may be 12 or 20 feet wide. Since the width is not known for the mileage that intersects with modeled lynx habitat, it is assumed that all 9.9 miles of road would have a width of 20 feet. Thus, up to 24 acres of lynx habitat would be removed by this project (18 acres in the Camas Creek LAU and 6 acres in the Beaver Creek LAU). Using the same assumption, approximately 1.2 acres of non-lynx habitat (lynx linkage habitat) would be removed by this project. It should be noted that new roads would eventually be reclaimed and re-vegetate.

Lynx presence is likely limited by the patchy distribution of high-quality habitat and the low or marginal hare densities in the Greater Yellowstone Ecosystem (Bell et al. 2016). For example, surveys of hare density in Yellowstone National Park demonstrated that snowshoe hares were rare and patchily distributed with 36 percent of stands having no hares and only four percent of stands having greater than 0.5 hares per hectare (Hodges et al. 2009). Hare densities greater than 0.5 to 1.5 hares per hectare are necessary to support lynx (ILBT 2013). Given the protected status of much of the ecosystem (Yellowstone and Grand Teton National Parks, several

wildernesses including the Jedediah Smith Wilderness Area on the Caribou-Targhee National Forest) and the current inability of this area to support lynx suggests that lynx presence is limited in the Greater Yellowstone Ecosystem (Bell et al. 2016).

Figure 3. Beaver Creek and Camas Creek LAUs and the Kilgore Gold Project Area



Direct and Indirect Effects

The direct and indirect effects action area is an area that includes all of the existing and proposed roads for access to and used for exploration drilling. The area also includes all of the forest between this system of roads. This area is approximately 4000 acres (six square miles). This may represent the habitat for lynx that is affected by vegetation removal or human disturbance.

It is possible, although unlikely, that a lynx on a dispersal or long-distance exploratory movement would be disturbed by project activities. Project activities include multiple sources of motorized vehicle noise and vehicle travel, both day and night, in an approximate six square-mile area, during July 15 to December 15, over a multi-year period. There is no evidence that a lynx has ever been present on the Dubois District. However, there was a lynx sighting or trapping by a Wildlife Services trapper in the Medicine Lodge Basin on BLM land south of the district

boundary in 1998. But, there is considerable alternate habitat for lynx movements on the district outside of the project area, including the Centennial Mountains corridor (about 60 square miles). Thus, disturbance to lynx from project activities is expected to be discountable.

This project would remove up to 24 acres of modeled lynx habitat and approximately 1.2 acres of vegetation that is not modeled primary or secondary vegetation, which can contribute to lynx linkage habitat. However, this acreage would revegetate after reclamation in the future. There is no evidence of current or historic lynx presence or movements on the district and considerable opportunity for alternate habitat (such as the Centennial Mountains corridor) for lynx movements or temporary occupation. Thus, removal of 24 acres of modeled lynx habitat is expected to be insignificant.

Cumulative Effects

The cumulative effects analysis area for lynx is the Beaver Creek and Camas Creek LAUs. This area is approximately 154,595 acres. Important factors for analysis are highway movement impediments and mortality, illegal shooting, incidental trapping, wildfire, and climate change.

Climate change has the potential to decrease snow depth and snow persistence. These two snow condition factors are important for lynx habitat (ILBT 2013). However, climate models analyzed by McKelvey and others suggest that the Greater Yellowstone Area would maintain snow cover, albeit with increased fragmentation (2011). Historically and currently, lynx populations in the GYE have been low (0 to 10 individuals). It is possible that irruptions of lynx from Canada into the GYE during lows in the snowshoe hare cycle in Canada may replenish and provide continuity of lynx in the GYE. However, climate change may have dampened snowshoe hare cycles in Canada. This could result in extirpation of lynx from the GYE (USFWS 2017).

A review of wildfires in the western U.S. from 1973 to 2012 demonstrated that wildfires have increased in frequency, area burned, and length of fire season. These changes are correlated with higher spring and summer temperatures and earlier spring snowmelt associated with climate change (Westerling 2016). Wildfires can create lynx habitat by producing early-seral lodgepole pine and spruce-fir stands with very high stem densities. Alternatively, wildfires can remove mature, multi-storied stands and destroy lynx habitat.

There is no legal trapping season for Canada lynx in the contiguous United States. However, lynx are very vulnerable to trapping and may become caught in traps set legally for other species. Since 2000, ten lynx in Montana have been documented caught in traps set for other species. At least four of these individuals died from the trapping incident. Even if released alive, a trapped lynx may have trap-related injuries such as dislocations, fractures, and foot-freezing (ILBT 2013). However, the likelihood of lynx presence in the analysis area is very low, reducing the likelihood of trapping-related injury or mortality.

Canada lynx are also vulnerable to illegal shooting. In the first 10 years of the Colorado lynx re-introduction project, 14 of 102 lynx mortalities (14 percent) were caused by illegal shooting (ILBT 2013). However, the likelihood of lynx presence in the analysis area is very low, as no

lynx have been documented in the analysis area from 1874 to present. Thus, trapping incidents and illegal shooting are unlikely.

Research suggests that roads and highways can create lynx movement impediments and cause direct mortality. Non-resident lynx may be more vulnerable to highway mortality than resident lynx (ILBT 2013). Interstate 15 is the only highway in the analysis area. However, the likelihood of lynx presence in the analysis area is very low, reducing the likelihood of mortality from highway crossings. Overall, the expected level of effects for the project would not contribute to overall cumulative effects in a way which is detrimental to Canada lynx recovery.

Regulatory Framework - Northern Rockies Lynx Management Direction

The contiguous United States population of the Canada lynx (*Lynx canadensis*) was listed as threatened under the Endangered Species Act effective April 24, 2000. The U.S. Fish and Wildlife Service concluded that the primary threat to lynx was a lack of guidance in federal management plans for the conservation of lynx. The 2007 Northern Rockies Lynx Management Direction (NRLMD) provides management direction for lynx conservation for 18 national forests in Idaho, Montana, Utah, and Wyoming; including the Caribou-Targhee National Forest (USDA 2007). The land management plan amendments for lynx have substantially reduced the influence of anthropogenic impacts to lynx (ILBT 2013). The table below demonstrates how this project meets the NRLMD.

OBJECTIVES, STANDARDS, & GUIDELINES	EXPLANATION & DISCUSSION
The following objectives, standards, and guidelines apply to all management projects in lynx habitat in lynx analysis units (LAUs) and in linkage areas, subject to valid existing rights. They do not apply to wildfire suppression, or to wildland fire use.	The project area may contain lynx habitat and lynx linkage habitat.
<u>Objective ALL O1</u> Maintain or restore lynx habitat connectivity in and between LAUs, and in linkage areas.	Habitat connectivity consists of an adequate amount of vegetation cover arranged in a way that allows lynx to move around. Narrow forested mountain ridges or shrub-steppe plateaus may serve as a link between more extensive areas of lynx habitat; wooded riparian areas may provide travel cover across open valley floors (USDA 2007). This project does not remove large areas of vegetation or remove vegetation along riparian corridors. Rather, this project removes vegetation for temporary road construction. The roads would be up to 20 feet in width. This level of vegetation removal would not prohibit lynx movements. This objective is met.
<u>Standard ALL S1</u> New or expanded permanent development and vegetation management projects must maintain habitat connectivity in an LAU or linkage area. A permanent development is any development that results in a loss of lynx habitat for at least 15 years. Ski trails, parking lots, new permanent roads, structures, campgrounds, and many special use developments would be considered permanent developments. Vegetation management	This project does not involve new permanent development or vegetation management.

changes the composition and structure of vegetation, using such means as prescribed fire or timber harvest.	
<u>Guideline ALL G1</u> Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways or forest highways across federal land. Methods could include fencing, underpasses, or overpasses.	This project does not involve highway construction or re-construction.
<u>Standard LAU S1</u> Changes in LAU boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.	This project does not involve a change in LAU boundaries.
The following objectives, standards, and guidelines apply to vegetation management projects in lynx habitat within lynx analysis units (LAUs). With the exception of Objective VEG O3 that specifically concerns wildland fire use, the objectives, standards, and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments such as mineral operations, ski runs, roads, and the like. None of the objectives, standards, or guidelines apply to linkage areas.	This project does not involve vegetation management, so this section does not apply. No further management direction is discussed.
The following objectives and guidelines apply to grazing projects in lynx habitat in lynx analysis units (LAUs). They do not apply to linkage areas.	This project does not involve grazing management, so this section does not apply. No further management direction is discussed.
The following objectives and guidelines apply to human use projects, such as special uses (other than grazing), recreation management, roads, highways, and mineral and energy development, in lynx habitat in lynx analysis units (LAUs), subject to valid existing rights. They do not apply to vegetation management projects or grazing projects directly. They do not apply to linkage areas.	This project does involve special uses in modeled lynx habitat, so this section does apply.
<u>Objective HU O1</u> Maintain (conserve) the lynx's natural competitive advantage over other predators in deep snow, by discouraging the expansion of snow-compacting activities in lynx habitat.	Snow-compaction is created by snowmobiles, skiers, and animals. Project activities would occur from July 15 to December 15 each year. Thus, project activities would not occur during winter. So, this project does not create or encourage snow-compacting activities in modeled lynx habitat. This objective is met.
<u>Objective HU O2</u> Manage recreational activities to maintain lynx habitat and connectivity.	Project activities will occur behind roads restricted to the public, so this project should have no influence on recreational activities. This objective is met.
<u>Objective HU O3</u> Concentrate activities in existing developed areas, rather than developing new areas in lynx habitat.	The drill sites in the Mine Ridge area are adjacent to an existing area of activity, but proposed actions in the Gold Ridge, Prospect Ridge, and Dog Bone Ridge areas are extensions of activity in areas not previously explored on the claim. However, this project does not involve any permanent developments in modeled lynx habitat because new roads would be reclaimed in the future. This objective is met.
<u>Objective HU O4</u> Provide for lynx habitat needs and connectivity when developing new or expanding existing developed	This project does not involve developed recreation sites. This objective does not apply.

recreation sites or ski areas. Developed recreation sites include parking lots, buildings, roads, campgrounds, and toilets.	
<u>Objective HU O5</u> Manage human activities, such as special uses, mineral and oil and gas exploration and development, and placement of utility transmission corridors, to reduce impacts on lynx and lynx habitat.	This project is not expected to impact lynx and lynx habitat. There have been no reliable observations of lynx presence on the Dubois District from 1874 to present. This project will remove up to 24 acres of modeled lynx habitat, but given the lack of evidence of lynx presence, it is not believed that this will impact lynx. Further, the vegetation removal for new roads will revegetate after reclamation. This objective is met.
<u>Objective HU O6</u> Reduce adverse highway effects on lynx by working cooperatively with other agencies to provide for lynx movement and habitat connectivity, and to reduce the potential of lynx mortality.	There are no highways in the project area, so this objective does not apply.
<u>Guideline HU G1</u> When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris, so winter snowshoe hare habitat is maintained. Winter snowshoe hare habitat contains thousands of young trees per acre that protrude above winter snow levels and develops primarily in the stand initiation, understory re-initiation, and old forest multi-storied structural stages.	This project does not involve ski areas, so this guideline does not apply.
<u>Guideline HU G2</u> When developing or expanding ski areas, lynx foraging habitat should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes.	This project does not involve ski areas, so this guideline does not apply.
<u>Guideline HU G3</u> Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat.	This project does not involve recreation development and operations, so this guideline does not apply.
<u>Guideline HU G4</u> For mineral and energy development sites and facilities, remote monitoring should be encouraged to reduce snow compaction.	This project does not involve mineral development, but rather mineral exploration. Snow-compaction is created by snowmobiles, skiers, and animals. Project activities would occur from July 15 to December 15 each year. Thus, project activities would not occur during winter. So, this project does not create or encourage snow-compacting activities in lynx habitat. This guideline is met.
<u>Guideline HU G5</u> For mineral and energy development sites and facilities that are closed, a reclamation plan that restores (returns or re-establishes ecosystems or habitats to their original structure and species composition) lynx habitat should be developed.	This project does not involve mineral development, but rather mineral exploration. However, reclamation is included in project activities. This guideline is met.
<u>Guideline HU G6</u> Methods to avoid or reduce effects on lynx should be used in lynx habitat when upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable	This project does not involve upgrading unpaved roads to maintenance levels 4 or 5, so this guideline does not apply.

contribution to increases in human activity or development.	
<u>Guideline HU G7</u> New permanent roads should not be built on ridge-tops and saddles, or in areas identified as important for lynx habitat connectivity. New permanent roads and trails should be situated away from forested stringers.	This project does not involve new permanent roads, so this guideline does not apply.
<u>Guideline HU G8</u> Cutting brush along low-speed (less than 20 miles per hour), low-traffic-volume (less than 100 vehicles per day) roads should be done to the minimum level necessary to provide for public safety.	Brush removal would occur on approximately 2.1 miles of roads with low-speeds and low traffic volumes. This would be done for safety and convenience. These roads would not be open to the public.
<u>Guideline HU G9</u> On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.	This project does construct new roads, but these roads are not open to the public. The public will be restricted by the use of gates and rock berms. Further, Otis Capitol will twice annually monitor the restricted road systems (early fall and summer) to ensure effective public closure. Lastly, the new roads will be reclaimed. This guideline is met.
<u>Guideline HU G10</u> When developing or expanding ski areas and trails, consider locating access roads and lift termini to maintain and provide lynx security habitat, if it has been identified as a need. Lynx security habitat provides visual and acoustic insulation for lynx from human disturbance and allows lynx to move away from intrusion.	This project does not involve developing or expanding ski areas or trails, so this guideline does not apply.
<u>Guideline HU G11</u> Designated over-the-snow routes or designated play areas should not expand outside baseline areas of consistent snow compaction, unless designation serves to consolidate use and improve lynx habitat. This may be calculated on an LAU basis, or on a combination of immediately adjacent LAUs. This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings, or to access regulated by Guideline HU G12. Use the same analysis boundaries for all actions subject to this guideline. Areas of consistent snow compaction are those that receive enough snowmobile or ski use that individual tracks are not distinguishable. These areas are usually near snowmobile or ski routes, in openings, parks, and meadows, and near roads or parking areas.	This project does not involve designating over-the-snow routes or designated play areas, so this guideline does not apply.
<u>Guideline HU G12</u> Winter access for non-recreation special uses and mineral and energy exploration and development, should be limited to designated routes (open road or trail) or designated over-the snow routes (mapped routes).	This project does not involve winter access for mineral exploration, so this guideline does not apply. Project activities will not occur from December 21 to March 21, but rather July 15 to December 15. This guideline is met.
The following objective, standard, and guidelines apply to all projects within linkage areas, subject to valid existing rights.	The project area may contain lynx linkage habitat, so this section does apply.
<u>Objective LINK O1</u> In areas of intermingled land ownership, work with landowners to pursue conservation easements, habitat conservation plans, land exchanges, or other solutions to	This project does not provide the opportunity for conservation projects with intermingled land ownership, so this objective does not apply.

reduce the potential of adverse impacts on lynx and lynx habitat.	
<u>Standard LINK S1</u> When highway or forest highway construction or reconstruction is proposed in linkage areas, identify potential highway crossings. Forest highways are forest roads under the jurisdiction of and maintained by a public authority and open to public travel, designated by an agreement with the Forest Service, state transportation agency, and Federal Highway Administration.	This project does not involve highway or forest highway construction or reconstruction, so this standard does not apply.
<u>Guideline LINK G1</u> NFS lands should be retained in public ownership.	This project does not involve the transfer of Forest Service lands to private ownership, so this guideline does not apply.
<u>Guideline LINK G2</u> Livestock grazing in shrub-steppe habitats should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes. Mid-seral is the successional stage in a plant community that is the midpoint as it moves from bare ground to climax. For riparian areas, it means willows or other shrubs have become established. For shrub-steppe areas, it means shrubs associated with climax are present and increasing in density.	This project does not involve livestock grazing in shrub-steppe habitats, so this guideline does not apply.

Determination

The determination for Canada lynx for the proposed action is “may affect, not likely to adversely affect.” Project activities are expected to be insignificant and discountable. The following summarizes the rationale for this determination:

- Disturbance to lynx from project activities (road construction, drill operation, and vehicle use) within the 4000-acre action area is not expected to occur because there has not been any evidence of lynx on the Dubois District from 1874 to present. Further, there is ample alternate habitat and movement zones outside of the action area on the district, including the Centennial Mountains corridor (approximately 40,000 acres).
- This project would remove up to 24 acres of primary and secondary vegetation, which may contribute to lynx habitat, but the lack of evidence of lynx presence and the available alternate habitat outside of the action area, strongly suggest that the vegetation removal will have no impact on lynx. Further, the acreage would revegetate after reclamation.
- Cumulative effects do not contribute to direct and indirect effects in a manner which would prevent a determination of insignificant and discountable effects.

GRIZZLY BEAR

Life History

Grizzly bear dens are generally located on steep slopes, at high elevations, and are occupied by late September to early December. Grizzly bears in the Greater Yellowstone Ecosystem (GYE) emerge from dens in early February through early May. Males emerge before females, as females occupy dens for longer periods than males (Haroldson et al. 2002). There are no known grizzly bear dens on the Dubois District.

Upon den emergence in the spring, grizzly bears seek out low elevation meadows, riparian areas, south-facing avalanche chutes, and ungulate winter range. During summer, bears use higher elevation habitats. In the fall, habitat use is more variable and occurs in both low and high elevation areas (USFWS 1993). Overall, grizzly bears are opportunistic omnivores with dietary flexibility and can utilize many different habitat types (Gunther et al. 2014). However, grizzly bear habitat is also defined by human activities (YES 2016).

As opportunistic omnivores, the dietary breadth of grizzly bears includes 266 species, some of which are experimentally eaten and others which form the foundation of most GYE grizzly bear diets. The items most frequently found in grizzly bear scats are graminoids (59 percent), ants (16 percent), whitebark pine nuts (15 percent), and forbs; predominantly clover and dandelion (10 percent). However, berries, fish, and small mammals are also important (Gunther et al. 2014). Grizzly bears exhibit dietary plasticity and resilience such that they can adapt to new food resources, switch from food resources in decline, and take advantage of highly available food resources (YES 2016).

The mean age of first female reproduction is 5.8 years, the mean litter size is 2.0, and the reproductive rate is 0.318 female cubs per female per year (Schwartz et al. 2006). Mean annual survival for females is 0.9. The amount of secure habitat (habitat greater than 500 meters from a motorized route) within a grizzly bear's home range is likely the most important determinant of grizzly bear survival (Schwartz et al. 2010). The population trend for females with cubs is very sensitive to road density (Boulanger and Stenhouse 2014). Most known grizzly bear mortalities are human-caused (85 percent) (Schwartz et al. 2006).

Affected Environment - Population Status

Radio-collar information from the Interagency Grizzly Bear Study Team (IGBST) for 2000 - 2017 for the east side of the Dubois District (east of I-15) was obtained to outline specific grizzly bear presence. This was supplemented with more generic information for 2005 to 2019 from IGBST for all of the Caribou-Targhee National Forest. Specifically, six radio-collared males have been present on the east side of the Dubois District during six years (2001, 2009, 2010, 2014, 2016, and 2017). Five of these males frequent the district. The radio-location information does not contain the temporal resolution to determine if these grizzly bears are present only in certain seasons or in all seasons of the non-hibernal period (Landenburger et al. 2017).

From 2000 to 2017, no radio-collared female grizzly bears had moved naturally to the east side of the Dubois District. In 2011, a sub-adult female was transported to the area from the Shoshone National Forest, but she did not stay in the area (Landenburger et al. 2017). However, in 2018 or 2019, a female with young was present on the east side of the Dubois District and a solitary female was observed in the northwest corner of the east side of the district (Karabensh et al. 2020).

From 2000 to 2017, all of the radio-locations in the area, except one, were no further west than the East Camas Creek drainage. The lone radio-location of a male grizzly bear was near West Camas Creek immediately south of Steel Creek. However, in 2018 and 2019, a solitary female was observed in the northwest corner of the east side of the district and a male was also present west of West Camas Creek (Karabensh et al. 2020). There are no radio-locations of grizzly bears within or adjacent to the project area. While grizzly bears have expanded their distribution in the Greater Yellowstone Ecosystem (GYE), especially to the north and south, since 2004, there has been no westward expansion of grizzly bears. Thus, it is believed that interstate 15 and adjacent open sagebrush steppe is a dispersal barrier to grizzly bears (Bjornlie et al. 2013).

Overall in the GYE, the grizzly bear has expanded its range, distribution, and numbers: From 1983 to 2002, the annual population growth rate of grizzly bears in the GYE was four to seven percent. From 2002 to 2011, the annual population growth rate was 0.3 to 2.2 percent. While there were 230 to 312 grizzly bears in the GYE in 1975, there were at least 714 grizzly bears in 2014. In 2013, there were an estimated 58 unique females with cubs of the year. This is the highest number recorded. Further, the range and distribution of grizzly bears has tripled since 1975. Forty-one percent of the GYE grizzly bears are present within the GBRZ and 59 percent are present outside of the GBRZ, mostly on federal land. The stabilizing population trend, along with evidence of other density dependent regulation, suggests that the GYE grizzly bear population is approaching carrying capacity (YES 2016).

Affected Environment - Habitat Status

This project is 27 kilometers west of the grizzly bear recovery zone (GRBZ). Bear analysis units (BAUs) have been identified outside the GBRZ. The units correspond to areas where state agencies currently manage for grizzly bears in the GYE. The BAUs were designed in a manner consistent with bear management units (IGBST 2011). The project area is in the Centennial BAU (199.1 square miles).

The amount of secure habitat (habitat greater than 500 meters from a motorized route) within a grizzly bear's home range is likely the most important determinant of grizzly bear survival (Schwartz et al. 2010). The Centennial BAU is 50.9 percent secure. Among all of the BAUs on the Caribou-Targhee National Forest, there is a range of 36.7 to 70.0 percent security (IGBST 2015).

Lethal removal from livestock depredation was the most common cause of grizzly bear mortality in the GYE (Haroldson and Frey 2016). There are 11 active livestock allotments and two closed allotments in the Centennial BAU. Six of the active allotments are sheep allotments. Grizzly bear-livestock conflicts are more likely with sheep than cattle (Knight and Judd 1983). There

have been two grizzly bear-livestock conflicts in the Centennial BAU. One occurred in 2000 and one occurred in 2016; both of these were sheep depredations on the Dubois District. The 2016 male was lethally removed (Landenburger et al. 2017). The low level of livestock depredations in the Centennial BAU is not surprising since depredations are positively related to grizzly bear density (Wells 2017).

The second greatest source of grizzly bear mortality in the GYE was from hunter conflicts (Haroldson and Frey 2016). Usually, the bear is killed by a hunter in self-defense, but occasionally, the bear is killed because of mistaken identity. There was one hunter conflict in the Centennial BAU in 2012 on the Ashton-Island Park District. This bear was not killed.

The Centennial BAU has considerable denning habitat in the more rugged areas of the Centennial Mountains. There are two den locations of radio-collared bears in the Centennial Mountains of the BAU. One is on the Ashton-Island Park District and one is 30 meters north of the Dubois District boundary (Karabensh et al. 2020, Landenburger et al. 2017).

The Centennial BAU also has two large areas of whitebark pine forests; one is in the Table Mountain area and the other is in the head of Ching Creek. Both areas are on the Dubois District. One of the six radio-collared males has radio-locations that overlap with the whitebark pine forests in the Ching Creek drainage in the fall. This occurred in 2001. Overall, this information suggests that grizzly bears are not foraging for whitebark pine seeds on the Dubois District (Landenburger et al. 2017).

Direct and Indirect Effects

The direct and indirect effects action area is the area that includes a 500-meter buffer on all of the existing and proposed roads for access to and used for exploration drilling. A 500-meter buffer was selected because areas less than 500 meters from an open or restricted road are non-secure habitat for grizzly bears and the amount of secure habitat in a grizzly bear's home range may be the most important determinant of a grizzly bear's survival (Schwartz et al. 2010). Non-secure habitat may be lower-quality habitat for grizzly bears or areas that grizzly bears avoid. This area is calculated to be 6069 acres (9.5 square miles). In addition, this area includes the noise effects zone.

An operating drill rig produces approximately 100 decibels of sound at the rig. In an environment without wind or other noise, at 100 meters the sound intensity would be 70 decibels (equivalent to traffic noise and considered annoying to most persons) or less, at 500 meters would be 50 decibels (equivalent to human conversation) or less, and at 2000 meters would be 40 decibels (equivalent to bird calls). Thus, I conservatively estimate that with wind and other noise sources, a drill rig in operation would create, at most, a noise effects zone with a radius of 500 meters that could potentially be disturbing to grizzly bears. The noise effects zone is 2672 acres (4.2 square miles). With up to three drill rigs in operation at once, there would not be drill rig noise throughout the noise effects zone. Rather, the zone reflects the maximum area that could contain drill rig noise.

Project activities that have the potential to disturb grizzly bears include drill operation, road improvement, road construction, and vehicle trips on restricted and open motorized roads within the action area. Road construction, improvement, and vehicle trips on motorized roads would be intermittent and variable noises and activities; most of these noises would occur during the day. Drill operation noise would be more constant in location and duration. Up to three drill sites would be in operation simultaneously and would operate 24 hours per day for one or two weeks at each site.

A literature search and review was conducted for the effects of noise on bears and little to no information was located. Any research available was concerned with traffic noise, but these studies are confounded by the associated disturbance of roads, human activity, and vehicles. High road density can cause population trend declines for reproductive female grizzly bears (Boulanger and Stenhou 2014), but this is not because of noise. Overall, it is expected that constant noise from drill rig activity is a potential disturbance to grizzly bears and some habituation may be possible.

While noise-producing activities could disturb grizzly bears, this seems unlikely for the following reasons: There are no radio-collar locations of grizzly bears in or adjacent to the project area from 2000 to 2019. All but two radio-collared grizzly bears from 2000 to 2019 are east of West Camas Creek and consistent with a lack of westward expansion identified by Bjornlie and others (2013). Further, there has been only one natural radiolocation of a female grizzly bear with young on the east side of the Dubois District and she was east of West Camas Creek as well. Females may be considered the most vulnerable members of the grizzly bear population.

Not all grizzly bears are radio-collared, so not all the locations of all grizzly bears are known. In this case, it should be noted that mineral exploration has occurred on the claim in since 2008, with recent activity occurring in 2012, 2014, 2016, 2017, and 2019. While these activities were confined to the Mine Ridge Area, and newer activities would occur in three adjacent areas, project activities have occurred every other year or so from 2008. Thus, this disturbance is not new to the landscape and there has been an opportunity for habituation. Further, it should be noted that there are no important habitats for grizzly bears within the action area, such as denning areas, sites where the four major food resources could be acquired, or other important foraging areas.

Up to 25 acres of vegetation would be removed to construct restricted roads. This vegetation removal should not impact grizzly bears. Not only is the vegetation removal occurring in an area with no radiolocations of grizzly bears, this vegetation removal is not occurring in any special grizzly bear habitats, such as denning, areas with major food resources, or other important foraging areas. There is considerable alternate habitat for grizzly bears in the Centennial Mountains corridor (approximately 40,000 acres). Indeed, this is where all but two radio-collared bears were located from 2000 to 2019.

Areas less than 500 meters from a motorized road (non-secure habitat) would be increased by 606 acres in the action area because of the new roads. Non-secure habitat may be lower-quality habitat for grizzly bears or areas that grizzly bears avoid. However, there are no grizzly bear

radiolocations in or adjacent to the area of increased non-secure habitat. In addition, the new roads would be reclaimed in the future and secure habitat would return to pre-project levels.

Cumulative Effects

The cumulative effects analysis area is the Centennial BAU. A BAU approximates the size of the annual or lifetime range of a female grizzly bear (IGBST 2011). The Centennial BAU includes the east side of the Dubois District (east of I-15) and the western part of the Ashton-Island Park District outside of the Grizzly Bear Recovery Zone. The BAU is 127,424 acres and is 97 percent national forest land.

Less than one percent of the BAU, or 1129 acres, is state land. The primary use is grazing. Approximately two percent, or 2700 acres, of the BAU is private land. Uses include grazing, opal mining, timber harvest, and residences; in order of most to least common use. Grazing can produce conflicts for grizzly bears, opal mining may be a disturbance, timber harvests have positive, negative, and neutral effects for grizzly bears; and residences can provide conflicts from food rewards. However, there have not been any food reward conflicts (Landenburger et al. 2017).

The amount of secure habitat within a grizzly bear's home range is likely the most important determinant of grizzly bear survival (Schwartz et al. 2010). Some recreationists create illegal OHV routes for access to the forest. These actions decrease secure habitat for grizzly bears. However, education and enforcement to prevent illegal routes and use are provided by forest personnel.

The most common grizzly bear conflict in the Idaho portion of the GYE is a food reward (garbage, pet food, birdfeeders) from subdivisions adjacent to public land (Hendricks 2016). However, there are no subdivisions in the analysis area. Food rewards are possible at campgrounds or campsites in the analysis area, but these have not occurred (Landenburger et al. 2017). In addition, food storage education occurs in the analysis area.

Regulatory Framework

On the Caribou-Targhee National Forest, Occupancy and Use Order #04-15-117 (food storage order) applies to the Ashton-Island Park District and portions of the Dubois and Teton Basin Districts annually from March 1 to December 1. This project is on the Dubois District in the food storage order area. Since personnel may be camping on the claim, the camp will need to abide by the food storage order:

When personnel are asleep at the camp or away, all bear attractants (food, garbage, coolers, toiletries, dish soap, dishes, cutlery, and cookware) will need to be unavailable to bears. A recreational trailer with windows and doors closed, the bed of a pick-up with a closed topper, the cab of a truck with doors and windows closed, a fully-enclosed utility trailer, or certified bear-resistant containers are acceptable for storing attractants. Grills used for cooking should either be secured or burned off for one hour and have drip trays wiped. Propane stoves would need to be

burned off and kept clean. Garbage should be routinely removed from the camp. Compliance with the food storage order will be checked during site inspections.

The 1997 revised forest plan for the Targhee National Forest contains management direction for grizzly bears. This direction is based on the best available science on grizzly bears in the 1990s. However, there is no management direction outside of the GBRZ and this project is outside the recovery zone.

The national forests in the GYE follow the management direction in the 2016 Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem. The strategy provides the adequate regulatory mechanisms to maintain a recovered grizzly bear population. However, the management direction of the strategy applies only to areas within the GBRZ.

Determination

The determination for grizzly bears for the proposed action is “may affect, not likely to adversely affect.” Project activities are expected to be insignificant. The following summarizes the rationale for this determination:

- Disturbance to grizzly bears from project noise is not expected because there are no radiolocations of grizzly bears within the project area, no important habitats for grizzly bears within the project area, and previous project activities may have provided opportunity for habituation.
- Vegetation removal and an increase in non-secure habitat from new road construction is not expected to impact grizzly bears because there are no radiolocations of grizzly bears within the project area, no important habitats for grizzly bears within the area of new road construction, and reclamation of all new roads would occur in the future, returning all non-secure habitat into secure habitat.
- Cumulative effects do not contribute to direct and indirect effects in a manner which would prevent a determination of insignificant effects.

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