

# **Review of Stibnite Gold Project Supplemental Draft Environmental Impact Statement (SDEIS) Wildlife Analysis**

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At Idaho Conservation League's (ICL hereafter) request, we reviewed the Stibnite Gold Project (SGP) SDEIS, focusing on the wildlife analysis and relevant sections that applied to the wildlife analysis. We also reviewed the comments made by ICL and others on the 2020 DEIS. We provide the following comments on the Stibnite Gold SDEIS for consideration and inclusion in the ICL et al. group comments on the 2022 SDEIS.

The SDEIS and wildlife specialist report describe the wildlife and wildlife habitat in the analysis area of the proposed SGP and analyze the potential effects to key species from the project. The species analyzed include four species listed under the Endangered Species Act (ESA): Canada lynx (*Lynx canadensis*) (Threatened), Northern Idaho ground squirrel (NIDGS) (*Urocitellus brunneus*) (Threatened), wolverine (*Gulo gulo*) (Proposed Threatened), and Monarch butterfly (*Danaus plexippus*) (Candidate). In addition, focal species, as defined in the Boise National Forest (BNF) Wildlife Conservation Strategy were selected from habitat families to represent environmental and ecological functions that may be affected by SGP activities. Included in the analysis are Forest Service Region 4 Sensitive species, BNF and Payette National Forest (PNF) Management Indicator Species (MIS), and Idaho Species of Greatest Conservation Need.

## **Terrestrial Wildlife Key Areas Of Concern:**

1. The Forest Service (FS) did not provide a useful summary of the changes between DEIS and SDEIS in relation to wildlife (or most every other resource) which impeded our review of the effects to wildlife.
2. The FS incorrectly refers to state and county agencies as cooperating agencies; the definition of which pertains only to federal agencies (see 40 CFR sec. 1501.6 Cooperating agencies). The FS does not include important federal agencies such as the NOAA - Fisheries and the US Fish and Wildlife Service in its list of cooperating agencies.
3. The FS provides little information on the important role of consultation with the US Fish and Wildlife Service (USFWS) and the NOAA - Fisheries, despite the anticipated effects to ESA-listed wildlife (and fish and plant) species.

4. Effects to Wildlife were not identified as a significant issue even though some project activities (such as new access routes) may have significant effects to listed wildlife species.
5. The SGP would have impacts on many wildlife species. While the primary difference between the effects of the two action alternatives (2021 MMP and Johnson Creek) on wildlife are the access roads, there are other impacts to key habitats and species at specific time periods. The SDEIS admits that effects will be “long-term and permanent” to many species. Impacts to wildlife are not adequately analyzed based on the metric of “acres disturbed.” In addition, impacts to mountain goats were not analyzed.
6. The analysis of effects to migratory bird species admits the project could include direct mortality of migratory birds, and does not meet the requirements of the Migratory Bird Treaty Act.
7. The SDEIS admits that some effects to wildlife will be Irreversible and Irrecoverable Commitments.
8. The NEPA requires that an EIS describes the environmental baseline of the areas to be analyzed (40 C.F.R. § 1502.15), noting that an accurate baseline is “essential” to an informed analysis (40 C.F.R. § 1502.22). The current condition of wildlife habitat was not updated with the effects of recent fires, hence the analysis is inaccurate. Further, an agency cannot rely on post-approval surveys, studies, or mitigation as a substitute for suitable baseline information.
9. The Wildlife Environmental Design Features (EDFs) are not consistent between the analyses in the wildlife specialist report and the SDEIS. The analysis is predicated on certain surveys to be conducted; but these surveys are not included in the EDFs.
10. The analysis of effects to Canada lynx is insufficient.
11. The analysis of effects to Wolverine is insufficient.
12. New motorized vehicle routes and facilities in winter will adversely affect many wildlife species, particularly the wolverine. Significantly, the Forest Service failed to adhere to the requirements of Subpart C of Travel Management Rule when proposing to designate new Over-Snow Vehicle (OSV) routes for the SGP.
13. Road construction and use are highly likely to affect wildlife species. The description of public road access is inconsistent in the SDEIS. In addition, the Forest Service appears to ignore the requirements of the Travel Management Rule when designating new motorized routes for the SGP. Hence, the analysis of effects to wildlife is also inconsistent and, therefore, flawed.
14. Utilities and right-of-ways contribute to the effects on wildlife. Large portions of the proposed transmission corridors associated with the SGP are located in lands with few roads. The SDEIS does not adequately analyze the effects of these facilities on wildlife habitat; including habitat fragmentation and migration corridors.

15. Avalanche hazard mitigation activities will negatively affect wildlife, but the SDEIS failed to adequately analyze these effects.
16. The effects to various wildlife species from climate change are addressed perfunctorily (see 3.4.4.11 Wildlife and Wildlife Habitat). The climate change analysis and the analysis of cumulative effects for wildlife fail to account for the cumulative impacts of habitat loss associated with the mine and with habitat loss from climate change to snow-dependent species such as the lynx and wolverine.

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**1. The FS did not provide a useful summary of the changes between DEIS and SDEIS in relation to wildlife (or most every other resource) which impeded our review of the effects to wildlife.**

The project was originally analyzed in a DEIS in 2020. In response to the FS request for public comments, ICL and others provided an extensive analysis of project effects. In October 2022, the FS released a SDEIS. The FS made little effort to provide a comparison of changes between the draft and supplement EIS. The FS did not acknowledge ICL's original concerns, and did not show how the concerns were addressed. This lack of information and transparency does not meet the intent of the NEPA.

**2. The FS incorrectly refers to state and county agencies as cooperating agencies; the definition of which pertains only to federal agencies (see 40 CFR sec. 1501.6 Cooperating agencies). The FS does not include important federal agencies such as the NOAA - Fisheries and the US Fish and Wildlife Service in its list of cooperating agencies.**

As stated in the SDEIS Executive Summary (ES-1):

“The Forest Service, specifically the Payette National Forest, is the lead agency in the preparation of this SDEIS (40 CFR 1501.5). The Boise National Forest is participating, as well as cooperating agencies including the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), Idaho Governor’s Office of Energy and Mineral Resources (OEMR), Idaho Department of Lands (IDL), Idaho Department of Environmental Quality (IDEQ), and Valley County, Idaho. (ES-1)”

In addition to listing state and local agencies as “cooperating agencies,” which is incorrect under 40 CFR sec. 1501.6, the SDEIS discusses how these agencies played a role in the development of alternatives (pp. 1-18, 2-1, 2-127). Unfortunately, despite the assertion that this project is designed to benefit threatened fish species, the FS does not include the federal agencies responsible for threatened and endangered fish and wildlife (NOAA - Fisheries and USFWS) as cooperating agencies.

### **3. The FS provides little information on the important role of consultation with the US Fish and Wildlife Service (USFWS) and the NOAA - Fisheries, despite the anticipated effects to ESA-listed wildlife (and fish and plant) species.**

The FS makes little mention of Endangered Species Act consultation with NOAA - Fisheries and the USFWS. Consultation is an essential element in the analysis of effects to species listed and proposed under the ESA. In the project area, the wolverine is proposed for listing, lynx and the northern Idaho ground squirrel (NIDGS) are listed as threatened. The monarch butterfly is a candidate species under the ESA. On page 3-263 the SDEIS describes the requirements of consultation:

Endangered Species Act Section 7 Consultation: The ESA (16 USC 35 1531 et seq. 1988) provides for the protection and conservation of threatened and endangered species and their Critical Habitats. Section 7 of the ESA (16 USC 1531 et seq.) requires all federal agencies to consult with the USFWS and/or the NMFS or NOAA Fisheries, collectively known as “the Services”, which share regulatory authority for implementing the ESA. ...The federal agency taking the action or the “action agency” (i.e., the Forest Service and the USACE in the case of the SGP) may prepare a BA (or designee, a non-federal representative to prepare the BA acceptable to the agency under federal regulation) to aid in determining a project’s effects on listed or proposed species or designated Critical Habitat. If the action agency determines that the action is likely to adversely affect ESA-listed or proposed species or designated Critical Habitat, then the action agency enters into “formal” consultation (or “conference” for species proposed for listing). The USFWS and/or NOAA Fisheries then prepare(s) a Biological Opinion and determines whether the action is likely to jeopardize the continued existence of the species or adversely modify designated Critical Habitat. If there is any anticipated “incidental take” (50 CFR 402.02 [defining “take”]) of a species, one or both of the Services must issue an Incidental Take Statement that includes terms and conditions and reasonable and prudent measures that must be followed to eliminate or minimize impacts to the species or its designated Critical Habitat.

Chapter 6.2.2 6.2.2 Endangered Species Act Section 7 Consultation, makes reference to a “collaboration memo in the Administrative Record.” This memo was requested and received, and showed that no documented consultation had occurred on the project since 2020.

#### **6.2.2.2 Informal Consultation History**

Informal consultation on the Project began in 2017 and is ongoing. The pertinent letters, emails, meetings, and conference calls are summarized in a collaboration memo in the Administrative Record. Formal consultation will commence once the final BA is deemed complete and accepted by USFWS and NOAA/NMFS.

### **4. Effects to Wildlife were not identified as a significant issue even though some project activities (such as new access routes) may have significant effects to listed wildlife species (see section 4.13.2.2 2021 MMP; p. 4-393):**

#### **Threatened, Endangered, Proposed, and Candidate Species**

The analysis of direct effects includes the potential take of ESA listed species. Pursuant to the ESA, take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” (16 USC 35.1531 et seq.). Take of an individual or population could occur for various reasons such as traffic collisions, change in an individual or population’s habitat use due to noise, other disturbance, or contamination of food or water sources. Direct effects also would include loss of habitat or the encroachments into wildlife migration or travel areas, although no defined corridors have been identified. For all species, habitat loss could be temporary (0 to 3 years); short-term (3 to 15 years); long-term (>15 years); or permanent for land use changes (i.e., pit lakes, TSF, TSF Buttress, transmission line upgrades). The analysis of potential indirect effects on threatened, endangered, proposed, and candidate species includes fragmentation of habitat; increased competition for resources or habitat due to displacement of individuals from the affected area into the territory of other animals; or other effects, such as increased human presence in the species-specific analysis areas (e.g., hunters, trappers, and recreationists) that can cause mortality (i.e., illegal hunting or trapping) or reduced breeding and recruitment in the future population.

***Canada Lynx*** (p. 4-395)

Therefore, based on the impact analysis for the Canada lynx and its habitat, the 2021 MMP would result primarily in localized, long-term, and permanent, minor impacts to the Canada lynx. ....Disturbance impacts to Canada lynx along roadways due to noise and light would be long-term.

***Wolverine*** (p. 4-399)

....Therefore, based on the impact analysis for the wolverine and its habitat, the 2021 MMP would result in localized and long-term impacts to the wolverine, particularly the local population (part of larger Central Idaho sub-populations). .....

**5. The SGP would have impacts on many wildlife species. While the primary difference between the effects of the two action alternatives (2021 MMP and Johnson Creek) on wildlife are the access roads, there are other impacts to key habitats and species at specific time periods. The SDEIS admits that effects will be “long-term and permanent” to many species. Impacts to wildlife are not adequately analyzed based on the metric of “acres disturbed.” In addition, impacts to mountain goats were not analyzed.**

**i. The SDEIS compares acres of habitat disturbed under each alternative for a number of species (p. ES- 19). However, many other impacts also are described in the SDEIS but not fully analyzed. These effects are summarized in pages ES-19 through ES-20:**

**2021 MMP and Johnson Creek Route Alternative would remove an estimated 3,266 acres and 3,096 acres, respectively, of wildlife habitat, including habitat for Canada lynx (194 and 175 acres, respectively), wolverine (2,342 and 2,005 acres, respectively), northern Idaho ground squirrel (63 acres), Monarch butterfly, Region 4 sensitive species and management indicator species, Idaho species of greatest conservation concern, general wildlife species, big game species, and migratory bird species and bald and golden eagles.**

**Direct impacts to wildlife species may include direct mortality** (i.e., wildlife-vehicle collisions, removal of nest or roost trees, etc.) or loss of habitat due to land clearing activities and land use changes. Indirect impacts could include reduced use of foraging or breeding habitat or reduced prey resources in the analysis area.

.....**Light, noise, and fugitive dust** impacts associated with mine site activities are likely to disturb or displace wildlife species. ....

**As a result of new access roads**, .... direct effects on wildlife species would primarily be due to loss and fragmentation of habitat; direct mortality through vehicle-wildlife collisions; and disturbance from light, noise, fugitive dust, and increased human activity. Construction of 15 miles of new road for the Burntlog Route would likely fragment habitat for general wildlife species and may act as a barrier to movement for some species. The intensity of this impact could range from minor displacement to mortality.

Regarding utilities, direct impacts on wildlife species may include **loss or fragmentation of habitat** along utility corridors, substations, and communication towers due to land clearing activities and land use changes under the 2021 MMP and Johnson Creek Route Alternative. The addition of new utility access roads, as well as new transmission lines, and upgraded transmission lines, could impact individual wildlife species.....

The important differences among the alternatives lie in the acres of habitat loss, the amount and **location of the disturbance from noise and human activity**, new access roads, and the location of the facilities. The Johnson Creek Route Alternative would have 170 fewer acres than the 2021 MMP due to the elimination of the Burntlog Route which also would reduce the magnitude and extent of impacts on most wildlife, especially wolverine, big game, and migratory birds. However, under both alternatives, greater impacts would occur for several groups of wildlife (e.g., big game [moderate impacts] and wolverine [**major impacts**]) due the species' known occurrences and location and amount of habitat disturbance associated with the SGP.

**ii. The SDEIS admits that effects to many wildlife species will be “long-term and permanent”. Impacts to wildlife are not adequately analyzed based on the metric of “acres disturbed.”**

As examples, the following species all had a determination of localized, long-term, and/or permanent impacts: Canada lynx (p. 4-395), wolverine (p. 4-399), dusky grouse (p. 4-410), boreal owl (p. 4-412), fisher (p. 4-415), flammulated owl (p. 4-417), northern goshawk (p. 4-422), pileated woodpecker (p. 4-425), peregrine falcon (p. 4-431), bighorn sheep (p. 4-432), Townsend's big-eared bat (p. 4-434), and bald eagle (p. 4-435). See also these excerpts from the SDEIS:

*Fisher* (p. 4-415)

The 2021 MMP may directly and indirectly impact fisher individuals and habitat but would not likely contribute to a trend towards ESA listing or loss of viability of the species within the planning

area. Therefore, based on the impact analysis for the fisher and its habitat, the 2021 MMP would result primarily in localized, long-term and permanent, minor impacts to the fisher.

*Northern Goshawk* (p. 4-422)

.....The 2021 MMP may directly and indirectly impact northern goshawk individuals and habitat but would not likely contribute to a trend towards ESA listing or loss of viability of the species within the planning area. Based on the impact analysis for the northern goshawk and its habitat, the 2021 MMP would result primarily in localized, long-term and permanent, minor impacts to the northern goshawk.

In addition, the impact of roads is not adequately analyzed or displayed based on “acres disturbed.”

*Canada Lynx*

**Access Roads** (pp. 4-395, 4-396)

.....Construction and the year-round operation (and plowing in winter) of the Burntlog Route could be a potential source of mortality for transient Canada lynx.

.....Indirect impacts could occur in the form of increased competition for resources, including the competition created by plowing the Burntlog Route, which is currently not plowed for winter use. Currently, access in this area during the winter is limited to predators suited for over-snow travel (i.e., lynx and wolverine). Construction and operation of the Burntlog Route would open new corridors for predators and recreational activities. This could increase the predation on snowshoe hares by other predators (e.g., coyotes) or become a source of mortality for prey species (e.g., snowshoe hare, squirrels, etc.), which could affect food availability for transient Canada lynx. The increased human access and potential increase in hunting and trapping pressure for lynx and prey species in previously undisturbed areas also would be indirect effects.

*Northern Idaho Ground Squirrel (NIDGS)*

**Off-site Facilities** (p. 4-398)

Vehicle traffic associated with the proposed off-site facilities could impact individual NIDGS where the 2021 MMP components cross modeled habitat known to support populations. Surveys of modeled habitat would be required before construction activities occur. All staff and contractors would be trained to reduce wildlife collisions.

We note that these surveys were not listed as an Environmental Design Feature (see also #9,ii).

*Idaho Species of Greatest Conservation Concern*

**Access Roads** (p. 4-441)

Direct effects on general habitat for SGCN would primarily be due to loss and fragmentation of habitat, and disturbance from light, noise, fugitive dust, and increased human activity under the 2021 MMP. Construction of 15 miles of new road for the Burntlog Route would likely fragment habitat for SGCN and may act as a barrier to movement for some species. The new 15-mile-long section of Burntlog Route would be constructed and plowed year-round and have an AADT level of 50 during

operations, which could disturb the bird and bat SGCN. The intensity of this impact could range from minor displacement to mortality. The duration ranges from temporary road construction to short-term. It is not expected that the increased risk of injury or mortality would become permanent, because the new segment of the Burntlog Route would be reclaimed upon closure, and traffic levels on the existing roads would return to current levels. The geographic extent of these impacts would be limited to the vicinity of the access road. Restricting public access on the Burntlog Route would likely reduce impacts due to mortality.

We note that the group of species above is technically called “Species of Greatest Conservation **Need**” (SGCN) (emphasis added). The summary of effects to this group from the Burntlog Route is inconsistent with the “long-term and permanent” effects from roads described for other wildlife species.

### **iii. Impacts to mountain goats were not analyzed.**

The FS’s omission of mountain goats is a significant oversight, as the species has been observed in Idaho Department of Fish and Game’s (IDFG) “Upper South Fork” Population Management Unit (PMU) as recently as 2016 on Big Baldy Ridge, Murphy Peak, Red Peak, and Red Ridge in Game Management Unit (GMU) 27 - all adjacent to or within the SGP wildlife analysis area. Murphy Peak, in particular, lies on the easternmost side of the area of analysis. Mountain goats have also been observed in the area of Pinnacles on the border of GMUs 25 and 26, along the upper ends of Big Creek, Monumental Creek, and in West Fork Monumental Creek in GMU 26 (Idaho Department of Fish and Game 2019). Additionally, IDFG is currently evaluating the potential for successful translocations of mountain goats into historically occupied portions of this PMU to restore healthy populations.

Mountain goats are listed in Idaho’s State Wildlife Action Plan (SWAP; Idaho Department of Fish and Game 2017) as SGCN (Tier 3). SWAP is the “guiding document for managing and conserving species before they become too rare and costly to protect.” IDFG’s 2022 Draft SWAP indicates that mountain goats are a high-profile Alpine Tundra and Forest & Woodland species potentially impacted by outdoor recreation, forestry management, development, invasive species and climate-related stressors.

Required habitat for mountain goats is regarded as rare in Idaho (Idaho Department of Fish and Game 2019). Populations of Idaho’s mountain goats grow slowly due to low reproductive rates. IDFG’s management plan for mountain goats (2019) points to specific life history requirements when considering actions which would: allow the species to maintain stability or increase populations, increase distribution, consider augmentation efforts and/or achieve harvestable surplus such that limited, structured hunts could occur. These factors include avoidance of activities that can pose direct or indirect threats affecting the use of habitat such as “road construction, timber harvest, mining, power infrastructure, oil and gas extraction, climate change, wildfires, and fire suppression”. Those threats could also disrupt mountain goat behavior by triggering alarm responses, lowering foraging and resting rates, and reducing productivity. For example, Joslin (1986) determined kid production and survival were negatively correlated with seismic surveys in Montana.



In their SWAP, IDFG also notes that “conservation of existing quality mountain goat habitat should be one of the highest priorities for managers. Specifically, proactively managing access and travel will be critical to protecting mountain goat populations.”

Goat distribution in the Upper South Fork PMUs could be underrepresented in the data, compared to other parts of the state, since IDFG doesn't perform rigorous surveys on a regular basis. This is because populations aren't robust enough to support any sort of managed hunt, leading to a deprioritization of limited resources for goat monitoring in the project's area of impact. IDFG also acknowledges that data is showing that there's more seasonal migration of populations than originally modeled (J. Abrams. pers. comm. with Dennis Newman, Wildlife Manager, Salmon Region).

Some of the most negative human-induced effects on mountain goats originate from mechanized devices. The impacts of helicopters, in particular, are well documented (Idaho Department of Fish and Game 2019 and citations therein). The potential for disturbance to mountain goats, within and adjacent to the Upper South Fork PMU, would come from not just avalanche control activities, but from construction, operations and closure actions associated with SGP. In addition, a new source of human-caused disturbances would be introduced by increased road access - possibly during all four seasons of the mountain goat's life cycle. The Forest Service must account for these activities in the wildlife impacts analysis.

**6. The analysis of effects to migratory bird species admits the project could include direct mortality of migratory birds, and does not meet the requirements of the Migratory Bird Treaty Act.**

**The Migratory Bird Treaty Act is described on p. 3-328 of the SDEIS**

The Migratory Bird Treaty Act (MBTA) (16 USC 703–712) provides protection for all migratory bird species. The MBTA specifically prohibits any action to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory birds or any part, nest, or egg of any such bird.” (16 USC 703). The list of migratory bird species protected by this law is based on bird families and is periodically updated. The current list of migratory bird species can be found in 50 Code of Federal Regulations Part 10.13

The analysis of Migratory Bird Species and Bald and Golden Eagles (p. 4-448,) shows the project fails to meet the requirements of the MBTA:

Direct impacts on migratory bird species and bald and golden eagles could include direct mortality (i.e., collisions with vehicles, structures, removal of nest trees, etc.) or loss of habitat due to land clearing activities and land use changes. Indirect impacts on these species could include reduced use of foraging or nesting habitat; reduced prey resources (insects and pollinators) in the analysis areas;

or disturbance from noise, light, and emissions Effects on migratory birds under the 2021 MMP are similar in nature to the effects discussed for general wildlife. Therefore, this section focuses only on the differences for migratory bird species.

The 2021 MMP may directly and indirectly impact migratory bird species, individuals and habitat. Therefore, based on the impact analysis for migratory bird species and their habitat, the 2021 MMP would result primarily in localized, short-term, long-term, and permanent, minor impacts to migratory bird species. ....

Cutting of trees for 2021 MMP activities and removal of snags would avoid avian tree nests, where feasible; and a Forest Service wildlife biologist would be notified of any occupied sensitive species nests or dens encountered. Although design features would reduce impacts, there would still be a decrease in habitat.

## **7. The SDEIS further admits that some effects to wildlife will be Irreversible and Irretrievable Commitments.**

Irreversible and Irretrievable Commitments for wildlife include habitats that require long time periods to reestablish, recovery of species such as Canada lynx or wolverine that occur in low numbers, or direct mortality. The SDEIS describes these commitments on pp. 4-459 to 4-460:

### **4.13.4 Irreversible and Irretrievable Commitments of Public Resources**

#### **4.13.4.2 Action Alternatives**

Although most wildlife species are considered renewable, certain biological resources that would be affected by the 2021 MMP and Johnson Creek Route Alternative are renewable only over long-time spans, including mature vegetation, including snags, seedbanks, and topsoil. Loss of these resources would be considered irreversible. Reclamation of high-value habitats for wildlife species such as Canada lynx, wolverines and migratory bird species may require long periods of time (decades). Impacts to populations of threatened or endangered species, or species with low populations, such as Canada lynx or wolverine, would be considered irreversible, because recovery may take a long period of time or not occur at all. The direct mortality of wildlife also would be an irreversible impact.

Irretrievable commitments include biological resources that are renewable over a short time, such as vegetation, wetlands, and streams. Although the loss of the resource itself is reversible, the temporal loss of the use of the resource is irretrievable. The 2021 MMP and Johnson Creek Route Alternative activities would cause a temporal loss of habitat for a number of species; both from direct removal of vegetation, and indirectly through avoidance due to human presence. Some species sensitive to human presence, such as Canada lynx and wolverine, may not return to the area for years after the mine is closed.

Injury or mortality of individuals, such as burrow-dwelling species and slow-moving species that are unable to relocate when ground-disturbance activities begin, or through vehicle or transmission line collisions, would result in an irretrievable commitment of these resources. Although most animals

displaced from the affected areas are expected to survive relocation, some displaced animals may not survive due to the associated dangers of migration and competition for resources; their loss also would be irretrievable.

Any reduction in habitat functions also would be irretrievable. Once the habitat is reclaimed to its full function, the irretrievable loss would only be the temporal loss of habitat during the period before it was reclaimed. Some vegetation and soil habitats would be lost for future use by wildlife until reclamation could be successfully implemented. Wildlife displaced from the affected habitat may relocate throughout the region, changing the availability of game for hunters and predators. The change could increase or decrease hunting success, but any reduction in game availability would represent an irretrievable loss of opportunity.

Under the Johnson Creek Route Alternative, there would not be improvements or construction of new segments for Burntlog Route, which would be a significant reduction of irretrievable commitments compared to the 2021 MMP. Relocation of the maintenance facility could affect different habitats

**8. The NEPA requires that an EIS describes the environmental baseline of the areas to be analyzed (40 C.F.R. § 1502.15), noting that an accurate baseline is “essential” to an informed analysis (40 C.F.R. § 1502.22). The current condition of wildlife habitat was not updated with the effects of recent fires, hence the analysis is inaccurate. Further, an agency cannot rely on post-approval surveys, studies, or mitigation as a substitute for suitable baseline information.**

The ICL 2020 comment letter repeatedly noted areas where wildlife data should be updated. The 2022 SDEIS made little effort to address these concerns. For example, the habitat layer for lynx was not updated to reflect changes from recent fires. As identified in our wolverine comments (below) the Forest Service did not utilize adequate baseline data. The Environmental Design Features (EDFs) for the project include EDFs that commit to future survey work, hence important wildlife data would not be obtained or available to inform the current analysis in the SDEIS.

**9. The Wildlife Environmental Design Features (EDFs) are not consistent between the analyses in the wildlife specialist report and the SDEIS. The analysis is predicated on certain surveys to be conducted; but these surveys are not included in the EDFs.**

**i. Wildlife EDFs are not consistent between the analyses in the wildlife specialist report and the SDEIS.**

The Wildlife Specialist Report (WSR) lists design features to address regulatory and Forest Plan requirements, see WSR, **Table 2-2 Prominent Regulatory and Forest Plan Requirements for Wildlife and Wildlife Habitat**. Some of the EDFs are worded differently and so might cancel one another (see below, specifically bolded text). Following each EDF listed below, we identify if the EDF was included in the SDEIS.

Some measures would be designed during project implementation. As noted in our comment #8, this is a violation of the NEPA: **an agency cannot rely on post-approval surveys, studies, or mitigation as a substitute for suitable baseline information.**

Impacts to known nests, denning sites, winter roosting sites, and hibernacula (bats) of TEPC and Sensitive wildlife species will be avoided during the nesting or denning period whenever possible. **If impacts cannot be avoided, specific mitigation measures would be developed to minimize impacts, maintain key features of habitat, or to avoid disruption on a case-by-case basis through coordination with Forest Service wildlife biologists.** BNF and PNF: TEST12, WIST03  
**(not in SDEIS)**

The Forest Service wildlife biologist would be notified of any sightings of TEPC or Sensitive wildlife species, including occupied sensitive species nests or dens encountered during implementation. **If necessary to maintain key features of nesting/denning habitat or to avoid disruption of nesting/denning activities, prescribed activities would be modified in accordance with the Forest Service wildlife biologist.** Design Feature developed for compliance with BNF and PNF: WIST03, TEST12

**(same in SDEIS)**

**Mitigate management actions within known winter roosting sites or hibernacula (bats) of Sensitive species if those actions would measurably reduce the survival of wintering or roosting populations. Sites, periods, and mitigation measures will be determined during project planning.** FP Component BNF and PNF: WIST04

**(same in SDEIS)**

The proponent **will coordinate with Forest biologists to consider TEPC habitat needs when designing and implementing** facilities and management activities that may affect TEPC species and their habitats BNF and PNF: Developed in response to BTGU02, BTGU05, TEGU06, TEGU07, TEST09, TEST10, TEST13, BTST01,BTST02, WIST03

**(not in SDEIS)**

To prevent inadvertent entrapment of common and special-status wildlife during construction, all excavated, steep-walled holes or trenches more than two feet deep will be covered with tarp, plywood, or similar materials at the close of each working day to prevent animals from being trapped. Ramps may be constructed of earth fill or wooden planks within deep walled trenches to allow for animals to escape, if necessary. Before such holes or trenches are backfilled, they would be thoroughly inspected for trapped animals. If trapped wildlife are observed, escape ramps or structures will be installed immediately to allow escape. WIST06

**(not in SDEIS)**

To mitigate impacts to known nesting or denning sites of MIS or Sensitive species, land clearing activities in areas where complete vegetation removal is necessary greater than 0.5 acres would not occur, to the extent possible, until after the bird breeding season (April 1 through July 30th) for migratory and resident birds. **This design feature does not apply to the mine site, road construction or maintenance, hazard tree felling, or the power line upgrades and construction. Design Feature developed for compliance with BNF and PNF: WIST03. (same in SDEIS)**

The last EDF listed above, is one of the most problematic, as it removes timing restrictions for most of the major activities and impacts associated with the project. Timing restrictions are one of the most commonly used methods (through EDFs or project design) to mitigate impacts to species during key time periods, such as nesting and calving. This not only limits the ability to meet the other EDFs listed above, but was found inconsistent with text in the SDEIS. One example is provided here (emphasis added):

*Boreal Owl*

**Access Roads** (p. 4-414)

The 2021 MMP could disturb individual boreal owls in the wildlife analysis area through direct habitat loss (9 acres) due to tree clearing, road construction, and increased human activity along the access roads (**Table 4.13-8**). Direct take of adult birds due to these activities is possible, but unlikely, because most individuals are expected to avoid areas of activity. However, it is possible that nests, eggs, and young could be directly disturbed by vegetation removal, including cutting of trees if it occurs during the nesting season. **Timing restrictions described for the mine site would be used to reduce impacts.**

**ii. The analysis is predicated on certain surveys to be conducted; but these surveys are not included in the EDFs.**

As an example, the SDEIS states that, for the preferred alternative, site checks and formal surveys for the northern Idaho ground squirrel would be conducted, as needed, prior to ground-disturbing activities in suitable habitat (SDEIS at p. 3-343 and 4-398). It also states that surveys would be required before construction activities occur at off-site facilities (SDEIS at p. 4-398). However, there is no survey-related item listed in either Table 2.4-12 (regulatory and Forest Plan requirements) or in Table 2.4-13 (proponent proposed design features). In addition, no mitigation measures were identified for any wildlife species or wildlife habitat (SDEIS at p. 4-459). Given that the SDEIS said such surveys would be conducted, surveys must either be formally recognized as a design feature or identified as mitigation.

The northern Idaho ground squirrel (NIDGS hereafter), a federally listed species, is not known to occur currently in the project area. There are 2 historical, assumed extirpated, locations adjacent to the project area, referred to as “Van Wyck”, which likely was inundated by the creation of Cascade Reservoir, and “2 mile S Cascade” (Yensen 1991). NIDGS are dynamic on the landscape and have reappeared in or near places presumed to be extirpated (IDFG data). The NIDGS is a

burrow-dwelling mammal that hibernates approximately 8 months of the year. Ground-disturbing and excavating activities have the potential to destroy burrows, remove vegetation needed for food, and cause direct mortality from large machinery. Excavating activities in occupied sites during the animal's below-ground season could be more lethal. Squirrels that are hibernating would not have the option of moving away from activity, and if aroused from hibernation and forced to the surface, would have no food resources to survive.

The most extensive modeled habitat in the project area is along the east side of Cascade Reservoir, including the transmission line corridor that will be upgraded from Lake Fork to Cascade (Figure 3.13-3). As described in the SDEIS, contractors conducting surveys for NIDGS in 2018 and 2019 also identified suitable habitat around, east of, and north of, the proposed Cascade switching station and near the Scott Valley Substation (SDEIS at p. 3-343).

For reasons described above, surveys should occur prior to ground disturbing activities. The USFWS generally requires that all NIDGS surveys be conducted at the appropriate time of year, at the appropriate times of day, under suitable weather conditions, and by observers experienced in detecting NIDGS or their sign. Clearance-type surveys conducted for other projects generally have a life of 3 years. If the action has not occurred within that time frame, follow-up surveys are required. Surveys should specifically include the length of the transmission line ROW from Lake Fork to Cascade, which is proposed to be upgraded and support structures replaced.

#### **10. The analysis of effects to Canada lynx is insufficient.**

The Canada lynx is a mid-sized forest carnivore that occurs across mountainous areas of northern North America. The lynx is highly adapted to hunting its primary prey, the snowshoe hare in deep, powdery snow. Canada lynx were listed as threatened under the Endangered Species Act (ESA) for the contiguous U.S. in March of 2000. The USFWS designated critical habitat for Canada lynx in 2006, revising the designation in 2009, and finalizing critical habitat designations and what constitutes the range in which lynx are protected by the ESA in 2014. None of the designated critical habitat is located in the SGP analysis area.

The Forest Service modeled lynx habitat across 656,493 acres of the Boise and Payette National Forests, subdividing the area into seven Lynx Analysis Units (LAUs). No critical habitat has been designated on the forests, with project area lands described as secondary habitat. The SDEIS states that, "Although there is suitable habitat for the Canada lynx...there have been no verified sightings since 1978." The SDEIS further states that, "wildfires account for the majority of unsuitable habitat in these LAUs." We recommend the Forest Service provide a current (2022) map of fire activity in the SGP area that includes an overlay of suitable lynx habitat. This is necessary for the Forest Service to disclose the most likely areas for transient lynx movements to help avoid unintentional and indirect impacts to this threatened species.

As some habitats are made temporarily unsuitable for lynx, the importance of remaining habitat increases. While a broad swath of marginal habitat for lynx may see lynx utilizing any portion of it

as transitional habitat, if this habitat is reduced, lynx may restrict their travels to the remaining corridor of functional habitat, such as the ridgeline that would be impacted by construction and use of the Burntlog Route.

As forest succession proceeds, some areas will become suitable foraging habitat for snowshoe hare and subsequently suitable denning habitat for lynx. Because of the long duration of mining activities, the Forest Service needs to describe how habitat within the LAUs is expected to change over time.

Access roads threaten remaining suitable habitat for lynx in the SGP analysis area. The Mine site and associated infrastructure may displace transient Canada lynx as they move between occupied habitats. Based on the Forest Service's assessment that wildfire accounts for the majority of unsuitable habitat in the LAUs, any remaining intact habitat becomes even more important to lynx for movement across the landscape. Access roads stand out as the primary threat to Canada lynx and the remaining intact suitable habitat in the analysis area.

The Burntlog Route is a potential source of mortality for transient lynx, as well as fragmenting habitat and acting as a barrier to movement. Further, increased traffic on Warm Lake Road, Johnson Creek Road, and the Stibnite portion of the McCall-Stibnite Road would also discourage lynx from crossing or using these areas. The Forest Service needs to examine the cumulative impacts to Canada lynx by providing map overlays of habitat in the Stibnite and Burntlog LAUs with impact overlays to determine the full impacts mine development and infrastructure will have on fragmenting transient and migration corridors. Adverse effects to these areas would reduce the chances of Canada Lynx reestablishment or migration/movement.

Because Canada lynx depend on snowshoe hares as their primary prey, additional impacts to transient habitat will stem from winter snow plowing, particularly along the 38-mile Burntlog Route and from the proposed construction of a new 10.4-mile groomed OSV trail.

Winter recreation is known to impact the effectiveness and success rate of Canada lynx hunting strategies, based on their ability to travel in deep snows with large paws. The proposed new OSV trail to offset recreation impacts will introduce additional sources of snow compaction, reducing hunting success rates and potentially allowing for other apex predators to take advantage of the fragmented and compacted snow conditions.

It is due to the potential effects of winter recreation on lynx that the Lynx Conservation Strategy (LCAS) and Forest Plan direction (TEST34) state:

Allow no net increase in groomed or designated over-the-snow routes or play areas, outside of baseline areas of consistent snow compaction, by LAU or in combination with immediately adjacent LAUs unless the Biological Assessment demonstrates the grooming or designation serves to consolidate use and improve lynx habitat. This does not apply within permitted ski area boundaries, to winter logging, and access to private

inholdings. Permits, authorizations, or agreements could expand into baseline routes or areas of existing snow compaction, and grooming could expand to routes of existing snow compaction and routes that have been designated but not groomed in the past and still comply with this standard.

The Forest Service needs to examine the full impacts of winter recreation to Canada lynx, comparing the existing conditions to those anticipated and potential conditions and how winter recreation and access potentially affects any transitory and migrating lynx. The FS also needs to address consistency with FP direction, or provide rationale for not meeting that direction (see SDEIS App. A).

The SDEIS fails to provide any Environmental Design Features (EDFs) and/or mitigation measures that would reduce the impacts to suitable Canada lynx habitat, particularly the potential adverse effects associated with increased winter recreation and access and increased fragmentation associated with access roads and recreation opportunities. We suggest EDFs and mitigation measures for wolverine that would also benefit lynx (see #11 below). Due to the potential adverse impacts to the ESA-listed lynx, we expect that the Biological Assessment (unavailable to date), and the subsequent results of consultation with the USFWS, will result in additional mitigation measures or modifications to the project alternatives.

#### **11. The analysis of effects to Wolverine is insufficient.**

The Forest Service used the most current ruling on the wolverine's status under ESA (U.S. District Court May 2022) to appropriately analyze this species as "proposed threatened". As such, the FS has direction to prioritize conservation and recovery of endangered, threatened, and proposed species and their habitats (Forest Service Manual 2670.31).

Wolverines are not abundant. While it is generally accepted that wolverines have recolonized much of their historical range in the northwestern U.S., there is no definitive wolverine population estimate for the lower 48 states, or for Idaho specifically, as the SDEIS recognized. A frequently used value of ~300 wolverines for the lower 48 is based on a study that projected suitable habitat capacity for ~600 individuals, and an assumption by the authors that the population was approximately half of capacity at the time of their analysis (Inman et al. 2013). In contrast, a genetics-based study estimated an effective population size (the number of individuals contributing to the next generation) of 35 for the Rocky Mountains (Schwartz et al. 2009). A more accurate estimate likely is somewhere between these two values.

The SDEIS also recognized that the wolverine naturally occurs at low densities on the landscape due to low reproductive rates and large home ranges that exclude other individuals of the same sex. What the SDEIS failed to connect is that the spatial separation and low fecundity determined by life history, combined with specialized habitat requirements (persistent snow cover, cool temperatures), magnify this species' vulnerability to threats such as climate change, habitat fragmentation, backcountry winter recreation, and other factors. Thus, the SDEIS did not fully capture the importance of the project area for wolverine or the difference between alternatives using acres of habitat as the metric. We detail these shortcomings as follows.



**i. Summary of wolverine occurrence is not complete and its importance is not adequately portrayed.**

The SDEIS carried forward, from the DEIS, a summary of wolverine occurrence in and near the wolverine analysis area (SDEIS Table 3.13-3). From these data, the SDEIS stated that the winter recreation study (Heinemeyer et al. 2017) identified 10 individuals and five confirmed den sites within the Payette and northern Boise study areas, which encompassed portions of the SDEIS wolverine analysis area (SDEIS at 3-345). These data are (1) incomplete and (2) fail to integrate the relationship to other sightings documented in SDEIS Table 3.13-3. An additional 4 wolverines (2 female, 2 male ) were identified during the life of the winter recreation study from the Payette and northern Boise study areas (Heinemeyer and Squires 2012, Heinemeyer and Squires 2014), for a total of 14 individuals from that study. In addition, the wolverines documented from Midas Gold's remote camera study, listed in Table 3.13-3 as Garcia and Associates 2013 and 2014, were identified as only male or female, when in fact genetics data and physical characteristics observable in remote camera photos of those individuals identified at least 2 different males and 1 female. One of the males was M4, known from the winter recreation study. Thus, at least 16 individual wolverines were identified in or adjacent to the SDEIS wolverine analysis area during 2010–2015. More importantly, 4 of these were documented within the Stibnite Gold Project area, including a resident reproductive female.

In addition, the Forest Service did not take the opportunity in the interval between DEIS and SDEIS to update occurrences beyond 2014, despite subsequent data available to them within a reasonable time frame. The table of wolverine occurrences remains unchanged from DEIS to Wildlife Specialist Report to SDEIS. Most relevant of subsequently available data were results from the Western States Wolverine Conservation Project's occupancy survey in the winter of 2016–17, in which 200 remote camera stations were deployed in wolverine habitat across four states (Lukacs et al. 2020). Two camera stations were within the SDEIS wolverine analysis area, and another 5 were within the Payette and northern Boise studies areas of the winter recreation study. Notable results from this survey were (1) the continued documentation of M4 and F5 in their presumed territories north and south of Landmark within and adjacent to the SDEIS wolverine analysis area, and (2) detection of a female offspring of M4 (Evans Mack 2018).

A complete and accurate synthesis of sightings is important to establish a baseline for analysis. Resident, breeding individuals maintain established territories and exhibit high fidelity to their territories (Aronsson and Persson 2018). Venturing outside a territory boundary incurs some level of risk due to neighboring territorial wolverines. The SDEIS recognized this:

“This is important because territoriality constraints define how wolverines can react to changes in habitat quality or displacement from occupied habitat.” (SDEIS p. 3-345).

Thus, the potential impacts of new roads and increased human-related activities should be put in the context of potential loss of quality habitat within individuals' home ranges. The Forest Service made no attempt to do so.

**ii. Importance of wolverine habitat is not adequately portrayed and the potential for habitat fragmentation and barriers to movement is not adequately addressed.**

Figure 3.13-4 displays modeled wolverine habitat based on persistent spring snow (Copeland et al. 2010). We appreciate that the Forest Service used the updated 2009–2015 version of this model (Heinemeyer et al. 2017) for their analysis.

At a fine scale, modeled wolverine habitat within the project area encompasses the higher-elevation terrain encircling river bottoms. From a broad-scale perspective, the project area supports high-quality wolverine habitat that is part of an interconnected landscape across south-central Idaho. South-central Idaho is near the southern extent of wolverine occurrence in the continental U.S. (Aubry et al. 2007, Idaho Department of Fish and Game 2014). Wolverines at the southern extent of their range, specifically the Rocky Mountains, exist as small and semi-isolated subpopulations within a larger metapopulation (Inman et al. 2013). Research has demonstrated the importance of habitat connectivity to demographic connectivity of wolverines, where connection among reproductive habitat blocks is needed to sustain wolverines within any single continuous block. In other words, wolverine persistence at this southern extent of its range in North America depends on regular dispersal of individuals among blocks of habitat (Aubry et al. 2007).

The SDEIS makes no assessment of the importance of the project area to wolverine persistence in Idaho, yet habitat in the project area provides a stepping stone between important breeding concentrations of wolverine to the north (Salmon River Mountains north and east of McCall) and to the south (Sawtooth Mountains). Two long-distance wolverine dispersal events have been documented between the Sawtooth and White Cloud Mountains, respectively, to the Salmon River Mountains (Copeland 1994, Heinemeyer and Squires 2014). While the exact routes these individual wolverines traveled is unknown, the map of modeled suitable habitat across central Idaho suggests that habitat within and surrounding the Stibnite Gold project area could have provided a corridor for dispersal. In addition, a male wolverine resident in the project analysis area is linked genetically (parent-offspring relationship) to the McCall area, demonstrating demographic connectivity (Pilgrim and Schwartz 2013).

Thus, although the SDEIS noted that the Stibnite Gold Project area supports resident wolverines that are part of a subpopulation occupying the McCall region, it did not emphasize the depth or significance of this connection and makes no assessment of the importance of habitat in the project area to wolverine persistence in Idaho.

The SDEIS did not adequately address the potential impact of habitat fragmentation and potential barriers to movement that proposed roads and other activities could pose to forest carnivores in general and the wolverine in particular. Within the project area, a network of wolverine movement in winter has been documented with cameras, non-target trapping events, and DNA that connects Warm Lake Summit (Landmark Summit) to Johnson Creek Road to Burnt Log Road to Horse Heaven and beyond (Evans Mack and Hagen 2022; Heinemeyer et al. 2012, 2014; Pilgrim and Schwartz 2013, 2014). The proposed increase in infrastructure, new travel corridors in both summer and winter, increased road widths, higher traffic volumes, and increased frequency and

duration of use could impede wolverine movement, resulting in a functional loss of habitat and potential reduction in genetic exchange.

The Forest Service should analyze the two action alternatives in terms of how much wolverine habitat remains connected and contiguous rather than simply a count of acres affected. Specifically, the preferred alternative changes the character of the Burnt Log Road (FR #447) and the adjacent unroaded area, by creating the Burntlog Route, a corridor of year-round traffic and access that bisects wolverine habitat adjacent to the FCRNRW. In contrast, the Johnson Creek Road Alternative, by concentrating activity west of the Burntlog drainage, keeps more habitat intact and does not impinge on the refugia represented by the FCRNR Wilderness.

The ICL et al. 2020 comment letter on the potential negative impact to wolverine from roads was a good synthesis of available literature. We incorporated their assessment in this and the following paragraphs. The proposed Burntlog Route is of particular concern for wolverines because it is adjacent to, and occasionally directly crosses, some of the highest-quality habitat in the analysis area based on the number of years with persistent snow cover (SDEIS Figure 3.13-4). The SDEIS attempts to downplay the impact the Burntlog Route would have on wolverines by citing its narrow ROW and moderate traffic levels (SDEIS p. 4-400) compared to research findings. For example, the Forest Service cites Luensmann (2008) to conclude that since wolverines have an aversion to crossing roads with ROWs over 328 feet, and the Burnt Log and Thunder Mountain roads of the Burntlog Route would be widened only to a 26-foot ROW, then the roads would not impede wolverine movement. The SDEIS implies that any road with a ROW <328 feet is a non-issue for wolverines. However, the reference states that wolverines avoid areas within 330 feet of the highway and actively prefer being at least 3,600 feet away from a road. It is improper for the SDEIS to cite this study and subsequently the narrow ROW of the Burntlog Route as justification for dismissing its potential impacts.

In the same section of the SDEIS (P. 4-400), the Forest Service makes a similar error when citing a study of traffic levels and wolverine movement in northern Alberta to imply that the traffic levels on the Burntlog Route would not cause significant impacts to the species. The SDEIS states:

Scrafford and Boyce (2014) found that wolverines in northern Alberta tended to avoid areas within 300 meters (i.e., approximately 1,000 feet) of roadways, but regularly crossed paved roads with more than 100 vpd. Traffic levels on the Burntlog Road would be highest during operations at about 65 vpd.

The 2014 Scrafford and Boyce reference cited here is actually a progress report for a research project at the University of Alberta, not a peer-reviewed study. The same researchers did actually publish their findings in a peer-reviewed journal - Behavioral Ecology - in 2018 (Scrafford et al. (2018)). In the discussion section of that study, the authors conclude the following:

Traffic volume was an important predictor of wolverine speed but not avoidance. Wolverines increased speed most when near roads with greater relative traffic volume. This result suggests that wolverines are

more likely to be flushed by vehicles from habitats along roads with higher-traffic volume. Unlike speed, *wolverine avoidance of roads was constant regardless of traffic volume.* (emphasis added)

The authors of that study go on to further address the issue of traffic volume later in the discussion section:

Although we found that wolverines were displaced by higher traffic roads, our models also indicated that *roads scarcely used by vehicles were deleterious to wolverine habitat suitability.* (emphasis added) This finding aligns with the prediction that wildlife species with low density and fecundity, such as wolverines, would be sensitive to roads even with low traffic volumes (Jacobson et al. 2016).

Taking into consideration the most recent and peer-reviewed research on wolverines and traffic volume, it is improper for the Forest Service to conclude that the Burntlog Route will not have significant impacts to wolverine movement and habitat on the basis that the traffic volume is “only” expected to be 65 vpd. The best-available science indicates that all roads, regardless of their width or traffic levels, can and do significantly disrupt wolverine movement and behavior. We point out that the Forest Service did not adjust their narrative of road impacts to wolverine in the SDEIS, despite having these inconsistencies pointed out in the ICL et al. comment letter submitted in 2020 on the DEIS. The Forest Service must correct these errors, accurately disclose the impacts to wolverine posed by access roads and other infrastructure, and develop design features to avoid, minimize and mitigate impacts to wolverine.

### **iii. SDEIS does not adequately address the potential for increased non-target trapping.**

The SDEIS does not adequately address the potential for increased non-target trapping incidents that could result from the anticipated increase in year-round access. While there is no legal hunting or trapping season for wolverine in Idaho, the species’ propensity for scavenging, particularly in winter, increases risk of injury or mortality in traps set legally for other species. Trapping contributed to the widespread decline and range contraction of wolverine in the lower 48 states in the 1900s (Aubry et al. 2007, Idaho Department of Fish and Game 2014). IDFG collects information on non-target trapping incidents that are voluntarily reported to the Department, and Wildlife Services reports to the Forest Service incidents of non-target captures during their control actions on FS-managed land. These numbers were not disclosed in the SDEIS.

Not all non-target trap incidents result in direct mortality. Nevertheless, wolverines usually sustain injuries to some degree while attempting to escape from a foothold trap or during human intervention to free them. Injuries include missing toes, bone fractures, and worn teeth (IDFG data, Heinemeyer unpublished data).

The SDEIS acknowledged indirect effects from trapping for listed species in general (SDEIS p. 4-393) and for two forest carnivore species specifically: Canada lynx (SDEIS p.4-395 ) and fisher (SDEIS p. 4-416). In each case, the statement was similar to this for Canada lynx:

“The increased human access and potential increase in hunting and trapping pressure for lynx and prey species in previously undisturbed areas also would be indirect effects.”

Such statements are not an analysis and totally insufficient.

Notably, there was no mention in the SDEIS of direct or indirect impacts to wolverine from trapping, despite the fact that the wolverine is relatively more numerous than lynx or fisher in the project area and that there are documented cases of wolverine incidentally trapped in the project area.

While it may be difficult to demonstrate a population effect of non-target trapping on wolverine in Idaho, the loss of a breeding-aged female from a small, semi-isolated subpopulation could be an additional factor that suppresses population stability or growth (Mowat et al. 2020). The Forest Service should conduct a more thorough analysis of potential effects from non-target trapping.

#### **iv. SDEIS does not adequately address the likely increase in winter travel and associated impacts.**

The SDEIS gave a vague and inconsistent description of how the Burntlog Route would be managed for public access. Thus, it is unclear how the FS could have completed a thorough analysis of impacts to any wildlife species, including wolverine, with regard to public access. What can be concluded is that, under either proposed alternative, there would be a change (increase) in winter travel for a 20+ year time frame, although the exact footprint cannot be reliably teased out of the SDEIS.

As described below under #12, “**motorized vehicle routes in winter**”, the proposed new groomed permanent snow machine trail along Cabin Creek, although described as a replacement for the current groomed route along Warm Lake Rd, would in fact be additive, because it would operate contemporaneously with proposed year-round travel on Warm Lake Road and proposed year-round travel on the Burntlog Route (which currently is groomed for only a portion of its length and gets limited winter recreation use). For wolverine, the concern is the increased opportunity for over-snow recreational activity that the project directly and indirectly would provide. The proposed Cabin Creek OSV groomed route would give new, direct access to over-snow recreation in wolverine habitat. The Burntlog Route, if selected, would provide access to additional areas by virtue of a newly plowed road in winter. The SDEIS made no attempt to quantify the public’s use of plowed roads for backcountry access in winter, and was unclear as to how far along the entire Burntlog Route access would be allowed. In addition, the Forest Service Recreation Specialist Report acknowledged the potential for unauthorized motorized use of the FCRNR wilderness area from the Burntlog Route (Stibnite Gold Project, Recreation Resource Specialist Report at p. 67).

The SDEIS gives only a qualitative recognition that over-snow recreation can impact wolverine. Thus, the SDEIS does not adequately address the potential impact to wolverine from increased recreation resulting from increased access, particularly in winter. The potential effects of winter recreation on wolverine behavior and habitat use were the focus of a 6-year research project in central Idaho and the western Yellowstone region during 2010–2015 (Heinemeyer et al. 2017, 2019). Findings from that rigorous study were that wolverines avoided areas of both motorized and

non-motorized winter recreation, and off-road recreation elicited a stronger response than road-based recreation. Female wolverines exhibited strong avoidance of off-road motorized recreation and experienced higher indirect habitat loss than male wolverines. For example, on average 14% of habitat within female home ranges was reduced in quality due to winter recreation, with at least 1 individual experiencing a 70% degradation of habitat (Heinemeyer et al. 2019). Similarly, wolverines used areas of recreation less as intensity of recreation increased. The research conclusions suggest indirect habitat loss, particularly to females, could be of concern in areas with higher recreation levels. It is also important to note that, at the conclusion of that study, the researchers noted that the number of wolverines in the western Salmon River Mountains, which encompassed the SGP area, appeared to have declined from when the project was initiated, with an incremental loss of resident animals (Heinemeyer et al. 2017).

Results from Heinemeyer et al. (2019) were supported by a study in British Columbia that found that density of forestry roads was a strong negative predictor of wolverine distribution in winter, particularly of females (Kortello et al. 2019). They hypothesized that the negative relationship with roads was related to a high level of snow machine operation in their study area and reflected anthropogenic disturbance. Their model also found a positive relationship between wolverines and protected areas. The authors proposed a reduction in road density or mechanized use of roads in winter as a conservation tool for wolverine.

The Idaho Department of Fish and Game also recognized the importance of managing winter recreation to benefit wolverine in their draft management plan for Canada lynx, wolverine, and fisher (Idaho Department of Fish and Game 2023). The plan establishes a wolverine-specific priority action of “providing technical assistance for land managers and recreation planners related to intensity and distribution of winter recreation, and considerations for wolverine habitat or connectivity.”

The SDEIS states, in the context of roads and increased recreational activity in winter, that wolverines would “avoid the areas by moving away from the activities...” (SDEIS p. 4-401). This statement is overly simplistic and fails to consider wolverine social structure. As described above, resident wolverines, such as occur in the project area, maintain and defend territories. Both adult and subadult wolverines are killed by other wolverines in some instances (Aronsson and Persson 2018). As a consequence, venturing beyond one’s territory has associated risk. For a wolverine to “avoid” human-related activity, it would have to do so temporally or spatially, either of which could equate to a loss of access to resources within its territory and effectively reduce territory size.

In summary, the SDEIS assessment of impacts of winter recreation on wolverine was insufficient.

#### **v. Cumulative impacts were not considered**

ICL’s 2020 comments on cumulative impacts to wolverine pointed out that the SDEIS failed to consider the cumulative impacts of the SGP, increasing winter recreation, and climate change to wolverines. We concur with the assessment that the SGP is not happening in a vacuum; any adverse impacts that this project will have on wolverines and wolverine habitat will be amplified and exacerbated by the pressures the species is already facing with declining spring snow cover and

expanding winter recreational use. Access points to groomed trails and winter backcountry routes around McCall have continued to attract increased levels of visitation in the past decade, to the point that an additional winter snow park (parking lot) was developed along Warren Wagon Road to augment the Francis Wallace lot to accommodate visitors. The wolverine–winter recreation study documented a steady increase of use during 2010–2015 using infrared trail use counters (Heinemeyer et al. 2019). The groomed route along Warm Lake Road also has seen increased use in winter, in both the number of traditional over-snow vehicles and in hybrid users (snow machines carrying backcountry skiers; DEM personal observation). It is only logical to expect that recreationists will welcome the chance to move from the congested McCall area to new territory made available by the proposed Cabin Creek OSV groomed trail and the new and existing roads proposed to be open year-round. This use will almost certainly expand beyond the road/access corridors and infringe on wolverine habitat across the larger accessible landscape. Climate projections identify a change in the type and timing of precipitation in Idaho, creating a potential scenario where recreationists and snow-dependent wildlife become concentrated in a shrinking snowpack. These threats were not addressed in the SDEIS.

**vi. The SDEIS states the SGP would result in “localized and long-term impacts to the wolverine.” Many other impacts are recognized, despite the insufficiency of the analysis. It is difficult to see how the FS makes a “not likely to jeopardize determination” for wolverine. In addition, the numerous effects to wolverine do not meet FP direction (TEST04). Given the numerous detrimental effects, additional Environmental Design Features (EDFs) and/or mitigation measures are necessary.**

It is clear from the SDEIS, published scientific literature, and unpublished reports that the SGP area is important to wolverines, both in terms of the number of resident individuals and the amount of high-quality habitat. The SDEIS does not adequately address the impacts (direct, indirect, and cumulative) that the SGP would have on this vulnerable species, nor does it include sufficient mitigation measures to minimize these impacts. Rather, the SDEIS tends to downplay the potential impacts that the large-scale and long-term disturbance would have. While wolverines may not be entirely extirpated from the larger area due from the expanded road network, it is likely that their utilization of this landscape and access to other areas will be diminished and connectivity with surrounding subpopulations will be negatively affected. We base this conclusion on the fact that there are less than 300 wolverines in the western U.S.; wolverines have been well-documented in the SGP area, which overlaps with two Tier 1 Wolverine Priority Conservation Areas; wolverines in the project area are linked demographically with breeding concentrations to the north and south; wolverines are already facing significant pressures from climate change, declining snow cover, winter recreation, and existing road networks; and the best-available science shows that wolverines are sensitive to roads, regardless of their width or traffic levels, and both motorized and nonmotorized winter recreation.

The Forest Service determined that the 2021 MMP would result in “localized and long-term impacts to the wolverine, particularly the local population (part of larger Central Idaho sub-populations).” (SDEIS p. 4-399).

“The Forest Service has preliminarily determined that the 2021 MMP may directly and indirectly impact wolverine individuals and habitat resulting in adverse impacts but would not jeopardize the continued existence of the species. Informal Section 7 ESA consultation is ongoing with the USFWS. The 2021 MMP would impact the most habitat overall, reduce habitat connectivity, and result in the highest level of displacement (particularly from breeding and winter range), based on direct and indirect impacts. Therefore, based on the impact analysis for the wolverine and its habitat, the 2021 MMP would result in localized and long-term impacts to the wolverine, particularly the local population (part of larger Central Idaho sub-populations...)”

In addition, “Direct impacts on wolverines are likely along the access roads due to habitat loss by access road construction, year-round vehicle traffic causing disturbance and potential avoidance behavior, over-snow recreation in the winter and new construction and plowing of the Burntlog Route through potential suitable habitat.” (SDEIS p. 4-400). “Vehicle-wildlife collisions and habitat fragmentation would likely be the largest impact on the wolverine related to the 2021 MMP.” (SDEIS p. 4-401).

Given these effects disclosed in the SDEIS, and the many impacts not sufficiently addressed, it is difficult to see how the FS makes a “not likely to jeopardize determination” for wolverine.

The FS also provides no rationale for how these effects meet Forest Plan direction:

Management actions that have adverse effects on Proposed or Candidate species or their habitats, shall not be allowed if the effects of those actions would contribute to listing of the species as Threatened or Endangered under the ESA (TEST04).

The FS needs to address consistency with FP direction, or provide justification for not meeting that direction (see SDEIS App. A).

Despite all of these acknowledged impacts, the only Environmental Design Feature (EDF) included in the SDEIS pertaining directly to wolverines is to monitor high elevation habitats “where practicable” (SDEIS p. 2-105):

As written, it is unclear what, if anything, would actually occur for monitoring, so we can not evaluate whether the data would be sufficient to assess impacts from project-related activities. A concerted monitoring effort will be needed for the Forest Service and Perpetua to determine the extent to which the SGP is adversely impacting wolverine.

We recommend the following additional EDFs or mitigation measures for wolverine:

1. If the Burntlog Route is approved and built, only mine traffic should be allowed for its entirety in winter. In summer, public use should occur only on the existing Burnt Log Road (FR #447).
2. No new OSV route in Cabin Creek. Any changes to OSV grooming and routes must be informed by an analysis consistent with the Travel Management Rule, Subpart C. This



analysis must fully consider the recent research on the effects of winter recreation and travel on wolverine.

3. Remove roadkill as encountered.
4. Fund development of a model of winter recreation, such as was completed in Colorado (Olson et al. 2017), based on terrain selection of motorized and non motorized winter recreationists. This will enable predictions of areas of potential conflict or disturbance to wildlife. For expediency and economy, coordinate and/or contract with Round River Conservation Studies and partners to use their extensive recreation dataset collected during the wolverine–winter recreation study (Heinemeyer et al. 2019).
5. Fund development of a fine-scale denning habitat model (e.g., talus layer) for wolverine for the two Tier 1 Wolverine Priority Conservation Areas that include the project area. Framework and methods were established during the wolverine–winter recreation study (Heinemeyer et al. 2019).
6. Conduct annual recreation monitoring of winter recreation for the first 5 years, beginning with the construction phase, then on adjusted schedule thereafter. A survey grid and methods were developed for the wolverine–winter recreation study that uses fixed wing aerial surveys and infra-red trail counters (Heinemeyer et al. 2017, Heinemeyer et al. 2019b). A baseline of recreation intensity and footprint was established for the SGP area from surveys in 2018 (Heinemeyer et al. 2019b), hence data analysis should be coordinated and/or contracted with Round River Conservation Studies.
7. Using an independent contractor, monitor wolverine activity with remote cameras in winter on an established schedule (every 2 or 3 years) using a method that incorporates collecting genetic material (hair snagging with gun brushes) to identify and track individuals. The Western States wolverine conservation projects’ camera survey provides a blueprint (Lukacs et al. 2020).

**12. New motorized vehicle routes and facilities in winter will adversely affect many wildlife species, particularly the wolverine. Significantly, the Forest Service failed to adhere to the requirements of Subpart C of Travel Management Rule when proposing to designate new Over-Snow Vehicle (OSV) routes for the SGP.**

This issue is discussed in depth in the ICL et al. group comment letter on the 2022 SDEIS at **P. New motorized vehicle routes, 1. Over Snow Vehicle and other public access issues.**

Here we address the most relevant aspects to wildlife. Subpart C of Travel Management Rule (TMR), also known as the OSV Rule, provides a framework for winter travel planning on National Forests. Forests, with adequate snowfall, are required to analyze, designate, and display on an “over-snow vehicle use map” a system of routes and areas where OSV use is permitted based on resource protection needs and other recreational uses. The SGP proposes changes and additions in winter travel, and OSV routes, that must be adequately addressed in the SDEIS to comply with the TMR and minimize effects to wildlife. Planning under the TMR, requires compliance with the “minimization criteria” outlined in Executive Orders 11644 and 11989 (issued in 1972, and 1977, respectively.) Two criteria are particularly important to wildlife: 1) minimize damage to soil,

watershed, vegetation, or other resources of the public lands, and 2) minimize harassment of wildlife or significant disruption of wildlife habitats.”

Neither of the two OSV routes proposed in the SDEIS are currently designated OSV routes. The 15 miles of new road proposed to link the existing Burnt Log Road with the SGP mine site would also be a new travelway, open year round. As noted in section P, in order to designate these routes, the Forest Service must follow the requirements of the TMR and comply with the minimization criteria. Of particular concern is the impact that each route will have on wildlife, specifically wolverine, which are known to occur in the area and are currently proposed for listing under the Endangered Species Act.

While the SDEIS (4.13) raises the possibility that new routes in winter will impact wildlife, these effects are not addressed in any detail. The proposed Cabin Creek OSV route would bring additional use and impacts into an area that, while open to OSV use, has no groomed trail. It is important that the Forest Service fully analyze potential impacts to wildlife from the new OSV route, since grooming would increase use into an area that currently does not see much, if any, recreational use in winter due to lack of access.

Perhaps more important, because the Payette and Boise National Forests have not conducted winter travel management planning in accordance with Subpart C of the Travel Management Rule, it cannot assume that its existing system of OSV routes and areas comply with this Rule.

The Payette National Forest has long recognized the need to complete winter travel planning. In fact, previous environmental analyses of winter travel were put on hold to allow studies on the effects of winter recreation on wolverines. This became a multi-year, multi-forest study (including the Boise and Sawtooth national forests, among others) that is certainly one of the most extensive and rigorous to date. The results of this study showed that male and female wolverines avoided motorized and non motorized recreation to some degree, with females showing a stronger response. Both male and female wolverines responded more to dispersed recreation, motorized and non motorized, than linear travel. Increasing avoidance of areas as the amount of off-road winter recreation increased resulted in indirect habitat loss or degradation of moderate- or high quality habitats.

Following this study, the IDFG continued to collect data on wolverines in the project area with remote cameras. A multi-state survey in the winter of 2016–17 encompassed the project area, and a follow-up, more intensive camera survey occurred during the winter of 2020–21. Wolverines were detected in the project area during both efforts (see above #11.i). More information on the potential effects to wolverine and lynx is provided above.

It is essential that the Forest Service makes use of this research and best available science, (conducted on and supported by the Payette and Boise national forests) to inform decisions regarding winter travel in the SGP area. Ideally, the Forest Service would meet the intent of the Travel Management Rule and conduct a comprehensive travel plan analysis across both national

forests, before making any project specific decisions on winter travel. But certainly, any project-specific decisions must be informed by the recent research and best available science.

**13. Road construction and use are highly likely to affect wildlife species. The description of public road access is inconsistent in the SDEIS. In addition, the Forest Service appears to ignore the requirements of the Travel Management Rule when designating new motorized routes for the SGP. Hence, the analysis of effects to wildlife is also inconsistent and, therefore, flawed.**

Under either action alternative, traffic will increase dramatically, with direct and indirect effects to wildlife.

Under the 2021 MMP and the Johnson Creek Route Alternative, operational AADT would be 50 vehicles (33 heavy vehicles and 17 light vehicles), resulting in approximately four mine-related vehicles per hour traveling outside the SGP. (ES-23)

The SDEIS inconsistently describes public access on the Burntlog Route throughout the document. In some sections it is asserted that “After construction is completed, public use would be allowed on Burntlog Route when other public access roads are blocked by mine operations,” while in other places it is assumed that the public may have unlimited access. Representatives for Stantec, the company that prepared the SDEIS, gave two conflicting answers when asked; one said the analysis was supposed to assume the “worst case scenario” of unlimited public access, while the other individual said they assumed the route would only be used by the public when access was closed elsewhere. See 2.4.4.3 Access Roads, Figure 2.4-5 (p. 2-18) and descriptions in Ch. 4 under Access and Transportation (p. 4-486, 4-487, 4-490); Recreation (p. 4-533, 4-534). The portion of the route to be closed to public use in winter was also unclear. See Ch. 4 Recreation which initially says the road from Warm Lake to Landmark would be closed to the public in winter, and then states the opposite (p. 4-435, 4-454, 4-459).

Since this route will have a major impact on ESA-listed species, it is essential that, if approved, the newly constructed portion of the route is permitted only as a temporary road used solely for mining purposes, with no public access and should not be part of the minimum road system as defined under the FS’s Travel Management Rule as regulated by 36 CFR 212, 251, 261, and 295 – Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule.

If the Burntlog Route is selected and approved, it is also essential that nothing changes the route status to interfere with the commitment in the SDEIS to decommission the constructed Burntlog Route after mining is completed in about 20 years (p. 2-89):

#### **2.4.7.9 Burntlog Route**

Once all final mine closure/reclamation work has been completed, Perpetua would reduce the 21-foot-wide travel way of 19.8 miles of Burntlog Road (FR 447), 1.3 miles of Meadow Creek

Lookout Road (FR 51290), and 2 miles along Thunder Mountain Road (FR 375) of the Burntlog Route to their approximate pre-mining width...The approximately 15 miles of Burntlog Route that was newly constructed for the SGP, connecting Burnt Log Road (FR 447) to Meadow Creek Lookout Road (FR 51290) and Thunder Mountain Road (FR 50375) would be fully decommissioned.

In the recent past, the Payette National Forest transferred jurisdiction of Forest Roads to Valley County citing direction in the Forest Roads and Trail Act (FRTA):

Forest Roads and Trail Act Easements: Section 2 of the FRTA authorizes the road and trail systems for National Forests, the granting of easements across NFS lands, the construction of maximum economy roads, and the imposing of requirements on road users for maintaining and reconstructing roads (16 USC 532 et seq.). FSM 7703.3 states that, "Wherever possible, transfer jurisdiction over any NFS road and associated Forest transportation facilities (FSM 7705) to the appropriate public road authority when the road meets any of the following criteria: a) More than half the traffic on the road is not related to administration and use of NFS lands; b) The road is necessary for mail, school, or other essential local governmental purposes; c) The road serves yearlong residents within or adjacent to NFS lands" (Forest Service 2016d).

Information provided in the SDEIS Access and Transportation section (p. 4-490) does not fully address the concerns expressed above - that the Burntlog Route be permitted only as a temporary road used solely for mining purpose with no public access (except "when other public road access is blocked by mine operations") and that the route be decommissioned after mining and reclamation is completed in about 20 years. The SDEIS states:

The newly constructed Burntlog Route connecting to Thunder Mountain Road would be a temporary road necessary for mining purposes and would meet 36 CFR 228A requirements for environmental protection to assume that mine operations are conducted to minimize adverse environmental impacts to the extent feasible for roads. Accordingly, the road would not be designated for public motor vehicle use under 36 CFR 212.50 on the Motor Vehicle Use Map. Therefore, for public motor vehicle use to be allowed on the road when other public access roads are blocked by mine operations, one of the other exceptions from the prohibitions on motor vehicle use on NFS land at 36 CFR 261.13 must be met. The approved plan of operations would meet the exception for written Forest Service authorization under 36 CFR 261.13(h) by including a provision in the mine plan for public use of the road when other public road access is blocked by mine operations. (p. 4-490)

**14. Utilities and right-of-ways contribute to the effects on wildlife. Large portions of the proposed transmission corridors associated with the SGP are located in lands with few roads. The SDEIS does not adequately analyze the effects of these facilities on wildlife habitat; including habitat fragmentation and migration corridors.**

While the proposed alternatives do not appear to designate ROWs as trails for public motorized use, unauthorized recreational motorized vehicle use may increase on the ROWs used for the project. We are concerned that this use could increase in summer and (with OSV) in winter, resulting in additional impacts to wildlife beyond those addressed in the analysis. The SDEIS

needs to incorporate a more thorough analysis of potential incidental impacts to wildlife, particularly increased habitat fragmentation and disturbance of migration corridors from both authorized and unauthorized use of ROWs.

**15. Avalanche hazard mitigation activities will negatively affect wildlife, but the SDEIS failed to adequately analyze these effects.**

As discussed in the ICL et al. Comment Letter on the 2022 SDEIS, section **N. Avalanche and Avalanche Mitigation**, the analysis fails to address effects to wildlife resulting from avalanche mitigation measures and control on the proposed access roads and the Cabin Creek OSV route. This is of major concern to wildlife because, as noted in section N, the SDEIS underestimates the frequency and extent of the control work. The SDEIS, and the associated report (DAC 2021), provide some information used to evaluate avalanche control noise impacts to humans, but not to wildlife. The SDEIS also fails to acknowledge impacts to wildlife from any associated helicopter activity. Alternatively, automatic exploders might be installed in some problematic areas (i.e., high cirques and ridges), but impacts from the noise of the explosives would still occur.

Much of the control work is expected to occur along the Burntlog Route, but control work would likely be necessary along the Cabin Creek OSV Route, if approved. As stated elsewhere in our letter, the Cabin Creek Route should not be considered a OSV recreation mitigation measure, as it only leads to the need for mitigation for wildlife, particularly wolverine. It will increase OSV use into an area with little use in the past, and also with a high avalanche hazard. This proposed route should be dropped to ensure human safety and wildlife habitat protection.

Many of our concerns about the insufficient analysis for wildlife are included in section **N**. As noted, wolverine and mountain goats are two important species that could be impacted.

Increased activities in wolverine habitat, particularly occupied habitat, such as occurs in the analysis area, provide more rationale for ESA listing of the wolverine (currently proposed) as Threatened. Almost the entire length of the Burntlog Route occurs in modeled wolverine habitat, and much of the priority denning habitat occurs near to the route. The Johnson Creek Road impacts 90 acres of priority denning habitat, but this habitat is more isolated and removed from known wolverine locations.

Helicopter flights and control work are also expected to occur in areas near to occupied mountain goat habitat. These activities have been documented to cause negative impacts to mountain goats, (see also our comments on mountain goats above.) The area also provides suitable habitat for the threatened lynx. Although lynx have not been documented in the analysis area, potential effects to the species must be addressed, including compliance with FP standards and guidelines for the species (see discussion in this section above).

Also, the SDEIS is unclear about whether under the 2021 MMP, the Stibnite Road would be maintained in winter, thereby adding to the effects identified for the Burntlog Route. If that is the case, then the total number of charges per year could increase 50% (an estimated 146 charges on

the entire Burntlog Route combined with 71 charges on Stibnite Road) based on data in DAC 2021 (which is likely an underestimate).

If either action alternative is selected, and before any control activities commence, Perpetua should work with the FS and IDFG to conduct mountain goat surveys in the area to be affected by control activities (including noise). Additional wolverine surveys are recommended elsewhere in section U of the ICL et al. 2022 SDEIS comment letter. The proposed OSV route on Cabin Creek should be dropped. Ultimately, the best option for wildlife protection and human safety would be to restrict mine access to snow-free months.

**16. The effects to various wildlife species from climate change are addressed perfunctorily (see 3.4.4.11 Wildlife and Wildlife Habitat). The climate change analysis and the analysis of cumulative effects for wildlife fail to account for the cumulative impacts of habitat loss associated with the mine with habitat loss from climate change to snow-dependent species such as the lynx and wolverine.**

“The region is currently facing unprecedented rates of change in climatic conditions that may outpace the natural adaptive capacities of several native species (Halofsky et al. 2018). Increased climate variability and frequency of extreme conditions will favor species adapted to frequent disturbance, potentially increasing the abundance of invasive species. Impacts to terrestrial species as a result of climate change are already being experienced through habitat loss and fragmentation, physiological sensitivities, alterations in the timing of species life cycles (e.g., seasonal changes impacting migration, hibernation, and reproductive success), and indirect effects (e.g., disruption of species interaction across communities). Most species are expected to exhibit sensitivity to changes in the climate, especially those restricted to high elevations or surface water habitats. Of the special status wildlife species occurring in the analysis area, the flammulated owl (*Otus flammeolus*), wolverine (*Gulo gulo*), and Columbian spotted frog (*Rana luteiventris*) are expected to be the most vulnerable terrestrial populations in the region (Halofsky et al. 2018). Other special status species expected to be impacted include the Canada lynx (*Lynx canadensis*) and Rocky Mountain bighorn sheep (*Ovis canadensis*) (Halofsky et al. 2018).”

#### **Climate Change Impacts to Analysis Area Resources (p. 4-64)**

##### **Wildlife and Wildlife Habitat**

Climate change impacts to wildlife and wildlife habitat in the SGP area would include habitat loss and fragmentation, physiological sensitivities, and alterations in the timing of seasonal life cycles. Habitat loss and fragmentation may occur in the region and analysis area due to the increased potential for wildfire that is anticipated from changing climatic conditions (Halofsky et al. 2018). Construction and operation of the SGP, access roads, utilities, and off-site facilities would additionally impact wildlife from habitat loss and fragmentation. Reclamation activities are intended to achieve post-mining land use for wildlife habitat as reasonably possible, which would help to reclaim habitat connectivity. However, some displacement and habitat fragmentation would be a long-term effect. (p. 4-70)

The climate change analysis in the SDEIS and climate specialist report fail to consider long-term impacts of climate change. Known effects of climate change include rising temperatures, decreased snowpack, and increased rain-associated precipitation. These factors could affect many species including wolverine, lynx, and whitebark pine. WBP is currently a candidate species for ESA consideration, and is considered critical to the survival of numerous wildlife species, including Clark's Nutcrackers, a variety of woodpecker species, and snowshoe hare, to name a few. Only one paragraph was dedicated to wildlife in the entire climate specialist report (see 6.2.9).

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