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Mt Baker Ranger District
Mt Baker Snoqualmie National Forest
810 Highway 20
Sedro-Woolley, WA 98284

Re.: North Fork Nooksack Vegetation Management Project #58218

SENT VIA EMAIL

23 June 2020

Dear District Ranger Uloth:

On behalf of Conservation Northwest (CNW), please accept these scoping comments on the North Fork Nooksack Vegetation Management Project. Conservation Northwest supports efforts on the Mt. Baker Snoqualmie National Forest to restore ecological resiliency, watershed function and habitat conditions for wildlife populations at landscape scales. We also recognize the value of tribal and public access for cultural and recreational opportunities. Conservation Northwest has a 30-year history of successfully leveraging funding and public support to protect, connect, and restore habitat and wildlife in the Pacific Northwest. We represent over 4,000 members and 10,000 activists and online followers dedicated to conservation and recovery efforts in our state. Our success is owed in large part to our practical allegiance to science and policy, and commitment to collaboratively work with managers, scientists, user groups, industry and other stakeholders to develop and implement durable restoration plans and projects.

The Mount Baker Snoqualmie National Forest (MBSNF) contains immeasurable value, providing clean water and air for downstream communities, sequestering carbon and serving as important habitat for Cascadia's unique biodiversity. Generally-speaking we see planning of any restoration treatments in the North Fork Nooksack as a valuable opportunity to address and integrate as many of the forest and watershed restoration needs in the project area as possible to achieve ecological goals for the area. A long history of anthropogenic impacts means that much of this land requires thoughtful proactive restorative management, as successfully modeled in the recently approved Snoquera Landscape Analysis Restoration Project in the southern part of the MBSNF. As such, we were expecting a similar restoration approach

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and overall environmental stewardship for the important Nooksack watershed that includes proactive management of the more than 190,000-acre landscape that is especially valued as high-quality aquatic habitat for endangered Chinook salmon, steelhead and bull trout, and other aquatic species, important critical habitat for the threatened northern spotted owl and marbled murrelet, home to a myriad of old-growth associated plants and animals.

However, in stark contrast, the North Fork Nooksack Vegetation Project proposes, among other things, to clear cut huge tracts of Canyon Creek, a deep and steep tributary well known for floods and debris flows, a risky prospect at best, but particularly near salmon and trout habitat. As such, the proposed project represents a bewildering departure from the Forest Service's original effort, the Nooksack Integrated Conservation and Enhancement project (NICE) that was initiated in early 2018 with the same geographic footprint as the currently proposed project. The NICE sought to apply a holistic landscape restoration approach to comprehensively improve watershed and forest conditions for the long term, consistent with the Forest's March 4, 2016 restoration direction.

The North Fork Nooksack Vegetation Project effectively appears to replace the NICE and comes up short. The newly proposed project is exceedingly streamlined and narrowed in purpose, design and scope. A problem arises with this kind of piecemeal approach in that a prime opportunity to apply timber receipts from the project area to the landscape's numerous restoration needs through a Stewardship contract for example is effectively lost and the sequencing thrown off when only one aspect is developed and decided on at a time. With declining budgets and competing priorities, in our experience if the needed restoration actions envisioned by NICE are not authorized now, it is likely they will not happen at all.

We describe our specific concerns below related to: 1) the cancellation of an integrated restoration project in the same watershed, 2) regeneration harvest in the Matrix, 3) thinning and other activity in the LSRs and Riparian Reserves, 4) lack of focused attention to the Northwest Forest Plan's (NWFP) Aquatic Conservation Strategy (ACS) objectives and 5) additional wildlife needs. We also make recommendations related to these five areas of concerns that would ensure that the activities proposed adequately track the need stated for the project by the Forest Service in the scoping letter.

Cancellation of NICE

CNW engaged with and supported the NICE—the original holistic effort that was surprisingly cancelled in the most recent publication of the MBSNF's SOPA (Schedule of Projects) due to “time constraints” (pers comm. Andrew Montgomery, Forest Service, 16 June 2020). We see this as regrettable and we are of the view that the North Fork Vegetation Project should be replaced with NICE which would lead to more efficient, comprehensive and lasting restoration. The desired landscape goals of the NICE include: “maintain, improve, and restore natural resource function, promote forest stand structure development and complexity and manage for a resilient landscape from climate change events.” As such,

the NICE sought to integrate aquatic improvements for endangered and sensitive Chinook and other salmon and steelhead and bull trout, minimizing a dense degrading road network that is expensive to maintain, improving forest structure, pattern and function through ecological thinning and other less invasive vegetation treatments that promote late successional and old growth habitat for wildlife like the threatened northern spotted owl. This type of landscape-level restoration approach remains essential for the Nooksack watershed; its supported by sound science, successfully integrates aquatic and terrestrial needs to restore forest health for the long term and, with use of stewardship contracting, provides the chance to support difficult-to-finance restoration work from the very timber receipts the watershed produces from careful thinning of old plantations.

We request that all the material developed and assembled in the NICE be incorporated into this project as listed in the prior project link and the following references namely: North Fork Nooksack Watershed Analysis (1995), Canyon Creek Watershed Analysis (1995), Nooksack Late-Successional Reserve Assessment (1995), R6 Aquatic Restoration Strategy (2005), and North Fork Nooksack Access and Travel Management Final Decision (2017). Its landscape goals (stated above), desired services (“provide sustainable recreation and infrastructure” and “involve the community in identifying opportunities”) should also be incorporated, as well as the following values the NICE lists in its public presentation:

- Protection of the cultural heritage and treaty rights
- Protection of federally endangered species and their habitats
- Ensure stable and/or thriving populations of plant, fish, and wildlife across the landscape
- Improve and maintain water quality
- Resilient forests and forest health
- Having a forest that can support the uses and needs of people

If it is not possible to entirely return to the NICE approach, we request that an Alternative be included in the environmental analysis that implements NICE.

Lastly, the NICE also started down a path of collaborative, cooperative public involvement; we are of the belief that such a process, as also occurred on the development of the Snoquera project, is important for the Forest Service to foster in order to arrive at the best overall restoration plans for the Nooksack watershed.

Regeneration Harvest on Matrix

The current proposed project calls for regeneration harvest or clearcutting on more than 1,300 acres in the Matrix and 575 acres of Riparian Reserve in Canyon Creek watershed (Canyon Creek watershed analysis indicates much more Riparian Reserve due to high mass wasting potential). Proposing 1,800

acres of clearcuts on steep unstable slopes above Chinook salmon, steelhead and bull trout bearing streams is likely to further exacerbate stream flow (peak flow events), sedimentation, and debris flow/landslide risk and negatively impact these species and aquatic conditions. Canyon Creek has a long history of flooding and landslides, and is likely not properly functioning with respect to sediment and peak flows. Its lower reaches are listed as impaired under the Clean Water Act.

Not only would clearcut harvest likely increase soil erosion and landslides, and alter hydrology of the area, it also has the chance of eroding the globally important carbon sequestration function of this Forest (Buotte et al 2019) and exacerbating carbon emissions through the proposed logging, yarding, and hauling of timber from selected units. The proposal indicates that such clear cuts will open up early seral habitat, which is notably distinct and different in structure, function, and composition from ecologically important complex early seral, yet it provides no context of how much early seral or complex early seral already exists across the landscape (including neighboring State and private lands), how much is needed to align with natural conditions (i.e. the historical range of variation and even the future range of variation for this land cover under climate change projections), with what features and in what pattern. About 14% of Canyon Creek watershed is private industrial forest or intensively managed state lands, which appear to be continuously maintained in early seral condition. Thus, we are concerned that early seral habitat in Nooksack may not indeed be limited when viewed from a larger scale and when non-federal lands are factored.

We see that the North Fork Nooksack Watershed Analysis (1995) determined that the amount of early seral then was within HRV; therefore this suggests that an updated analysis is required to determine the actual current need. We appreciate that areas may have naturally progressed to mid seral and that early-seral creating agents like wind blow downs may have occurred since 1995 (indeed this, unlike fire, has not been suppressed). Further, during the scoping and public meeting of the prior NICE proposal, a side board spelled out in the MBSNF Forest Plan was referenced: early seral patch size is not to exceed 40 acres (likely to mimic natural events like wind blow downs etc). It's difficult to see how a clear-cut of >1,800 acres align with this guidance, or the typical complex early seral patch size created by blowdown or icestorms, which we would expect to be much smaller in size (a handful of acres). In a recent (verbal) communication with you we understand that there is an intention to maintain patch size at 40 acres; however, this constraint is so important that it must be explicitly stated. Then, in terms of early seral habitat, the complexity is important to consider and restore if meant to provide natural conditions and quality habitat for grazing ungulates and other wildlife. With respect to creating complex early seral, we recommend that the following be incorporated:

- Assess the amount and complexity of early seral presently on the broader landscape to create a vision of what is needed and where, factoring the frequency and temporal scale of characteristic disturbances.

- Design the treatments to ensure that complex early seral is created; therefore, include retention of legacy trees and snags, create small patch openings and include skips and gaps to mimic natural openings (e.g. of wind blowdowns which is the most frequent, typical disturbance agent in this type of forest), and how complex early seral will be maintained to prevent dominance by invasive species.
- No stands >80 years of age or areas not previously harvested should be removed to create complex early seral. We understand that the Matrix may have stands as old as 120 years, these should be retained as should younger stands that present with structural complexity already (and therefore not in need of restorative actions). In addition, late seral forest is highly fragmented by prior harvest and fire, especially in the lower Canyon Creek.
- With respect to forage improvement, delineate what species (e.g. elk and deer) the forage habitat will be designed to support and what the current population status and size each population is in the area. If improving forage for elk and deer, canopy cover needs to also be considered.

We note that the majority of the area proposed for clearcutting is Riparian Reserve, likely due to widespread unstable and potentially unstable slopes (Figure 1-5, Figure 2B-9, Canyon Creek watershed analysis), including the location of the proposed new road. Timber harvest is prohibited in Riparian Reserves, which are removed from the timber base, except to acquire desired vegetation conditions needed to attain Aquatic Conservation Strategy objectives including maintaining and restoring wildlife habitat, structural diversity, habitat connectivity, and riparian function. Stand regeneration is incompatible with Riparian Reserve management, and should be removed from consideration for Riparian Reserves.

Given its extensively degraded aquatic conditions in Canyon Creek, there is a great opportunity here to reduce road densities that drive sediment delivery and peak flows, improve large tree and old growth habitat in riparian and lower elevations, reduce old forest habitat fragmentation, improve wildlife habitat and increase ecological resilience to climate change (see Canyon Creek Watershed Analysis 1995). These objectives, which appear to align closely with NICE, should be the priority actions for Canyon Creek.

Please also note that Whatcom County and others have invested nearly \$6 million to address flood damage and debris flow deposition from landslides originating in Canyon Creek where clearcuts are being proposed. There may have been other investments by FERC after flood and landslide events. Any management activities with Canyon Creek must focus on maintaining and restoring conditions that support and build upon these investments, and prevent further degradation of watershed conditions and threats to infrastructure, property, and public safety.

Thinning in LSRs

The proposed project describes thinning to restore older forest habitat within Late Successional Reserves (LSR) land allocations. Variable density thins of previously harvested areas -- that is old plantations of typically even-aged uniform monocultures -- can facilitate and expedite creation of older forest characteristics in the Riparian Reserve and LSR allocations but only if carefully done. This involves variable density thinning from below leaving hardwoods, natural regeneration from hemlocks and cedars for species diversity, and all bigger trees (>20 inch), snags, and down wood for structural diversity in stands less than 80 years old only for example, creating gaps and skips and thereafter decommissioning roads. This kind of detail (what tree species, what sizes etc., what units or stands) and more needs to be fully specified in the project proposal and incorporated in the overall design of the project if the intended need is to be met. Further, unit 15 is described as “LSR, Mountain Goat Habitat: In this allocation, there are to be no scheduled timber harvests. If timber management activities are conducted, practices shall be for the purpose of maintaining mountain goat habitat” yet unit 15 is listed for Commercial Thinning, how this activity will maintain goat habitat therefore needs to be thoroughly explained. Unit 5B is described as “LSR, 5B, Recommended Scenic River: The North Fork Nooksack River has been recommended as a scenic river under the Wild and Scenic Rivers Act. Under this allocation, evidence of timber harvest should not be noticeable from the river and lands appear natural when viewed from riverbanks”, how this will be achieved also needs to be thoroughly explained. Activities generating noise above ambient noise could impact approximately 1,736 acres of suitable spotted owl nesting habitat in the early breeding season, from March 1 through July 15; therefore, any thinning in LSRs should be scheduled outside of this window. Thereafter and until September 23 any activities should be delimited to between two hours after sunrise and two hours before sunset to avoid impacts to marbled murrelets.

Aquatics

The project proposals states that the “proposed actions should be designed to achieve Aquatic Conservation Strategy objectives” [of the NWFP] but no actions are evident to do so. Under the Forest Plan, management actions that “do not maintain the existing condition or lead to improved conditions in the long term would not “meet” the intent of the Aquatic Conservation Strategy and thus, not be implemented” (p. B-10, NWFP Record of Decision). The previous NICE project began to attend to ACS objectives by design and much of that thinking could be resurrected and incorporated into this project proposal. Puget Sound is a priority basin for restoration in the Pacific Northwest (Regional Aquatic Restoration Priority Analysis 2006), and the North Fork Nooksack River is a Tier 1 Key Watershed within that basin (NWFP 1994). Eight salmonid species occur in the Hedrick Creek – North Fork Watershed. The area between Canyon Creek and the Nooksack Fall at RM 65 is important for recovery of ESA listed Puget Sound Chinook salmon (WRIA 1 Salmonid Recovery Plan 2005) and is part of the Nooksack Core Area for ESA listed bull trout (USFWS 2015). Critical habitat has been designated and proposed for Puget Sound Chinook salmon, Puget Sound bull trout, and Puget Sound steelhead for the

entire 6th field watershed and several tributaries in this watershed. This watershed is also Essential Fish Habitat (EFH) for pink, coho, and Chinook salmon. The project area is characterized by unstable slopes, with high mass wasting and landslide risk, and high soil erosion potential (Figure 2B-9 and Figure 2B-10, Canyon Creek watershed analysis). Between 60-70% is within the rain-on-snow zone, where rain-on-snow events have caused extensive damage in the past. Given the high potential for increased damage to aquatic systems, the project will need to demonstrate how proposed actions, under these existing conditions, meet the 9 ACS objectives in the Mt Baker Snoqualmie Forest Plan as amended by the NWFP:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

We are concerned that objectives 3,5, 6, 8 and 9 could be especially effected by the vegetation treatments proposed at the scale described; the project should demonstrate how these will be met. Likewise, the effects of project's actions should be analyzed using the NMFS matrix of pathways and indicators (MPI) (e.g. see Table 4.9 in https://www.wsdot.wa.gov/sites/default/files/2018/01/03/Env-FW-BA_ManualCH09.pdf) to fully understand and be transparent about the possible impacts to the watershed's hydrological system. The MPI's include analysis of: 1) Temperature; 2) Turbidity; 3) Chemical Contamination/Nutrients; 4) Physical Barriers; 5) Substrate/Sediment; 6) Large Wood; 7) Pool Frequency and Quality; 8) Off-Channel Habitat; 9) Refugia; 10) Width/Depth Ratio; 11) Streambank Condition; 12) Floodplain Connectivity; 13) Changes in Peak/Base Flows; 14) Increase in Drainage Network; 15) Road Density and Location; 16) Riparian Reserves; 17) Disturbance History; 18) Fish Population Characteristics. From the information we have, we see that Canyon Creek is considered water quality impaired and assigned category 5/ 303d by the Washington State Department of Ecology. Activities in this creek's basin should therefore demonstrably improve its conditions and function (as per the MPI) not degrade it more as aggressive regeneration harvest is likely to do (for the reasons described above), especially given its function as refugia to endangered fish who must contend with more naturally extreme conditions (e.g. due to glacial effects) elsewhere in the watershed.

Of additional concern is that the creation of any new road and especially without simultaneously decommissioning unstable, decaying roads in a catchment increases road density, soil damage, erosion and sediment load in streams harming water quality and altering hydrology of the system and further fragments habitat overall. The Jim Creek Slide, located in the vicinity of Canyon Creek Road, Forest Service Road (FSR) 31, is known for the risk it poses to the road and the road's infrastructure. This connection is being proposed to circumvent the unstable area, so that access in this area (needed for vegetation management as well as public access for recreation and treaty right activities) is maintained. If the connector road build should occur, it should be accompanied by a concerted effort to decommission the unstable, risky roads it circumvents in order to contribute to attainment of the ACS objectives and align with the Mt. Baker-Snoqualmie Forest Plan's directive to manage the transportation system at minimum standard necessary to provide for public safety.

The proposed project does not reference the Nooksack ATM; therefore, it is difficult to discern how the proposed roadwork aligns or conflicts with it. In any event, critics cite that a failure of the Nooksack ATM plan was its unwillingness to address the excessive road system here by only calling for the decommission of 37 miles of road (approximately six miles were open at the time of the decision in 2017) reducing the total 208 road miles to 202 miles in the watershed. Therefore, we are of the view that the current project should be expanded as it's a prime opportunity to revisit the need for road

decommissioning and closures in order to improve wildlife habitat where the ATM fell short. For example, as explained in the Nooksack ATM EA decision and under alternative B, 59 miles of roads were identified in 2014 as having high aquatic risk but only 8% were proposed for closure and none for decommission. To meet fish recovery goals and the NWFP's ACS objectives, we request this be reviewed and more ambitious decommissioning plans incorporated. Also as the Nooksack ATM highlights: "...in the Nooksack drainage, the predominant form of active mass wasting in the study watersheds is that of debris slides and debris torrents which are superimposed upon landforms created by glaciation and older inactive debris slides and rotational/translational failures. Road construction, clearcutting and other timber management activities have contributed to the acceleration of mass wasting events through deposition of erosion debris to bedload of the stream (Peak Consulting 1987; USFS 1995). In Canyon Creek, an analysis completed in the early 1990's identified debris flows and debris slides as the most common mass wasting type, and were commonly associated to roads and timber harvest areas (USFS 1995)."

The North Fork Nooksack Watershed Analysis (1995) states that "efforts should be made to increase security habitat wherever possible" and recommends that more road be decommissioned for security habitat wildlife than was planned for at the time in the Nooksack ATM planning process (and eventually went to decision on the Nooksack ATM). Therefore, findings in the Watershed Analysis also should be reviewed and considered, namely Table 5.2 that recommends road decommissioning and closures to reduce road density to 2.2mi/ square mile in elk and deer winter range in order to add >14,000 acres of security habitat (in contrast to the ATM which reduces road density to 2.8mi/square mile and provides <4000 acres of additional security habitat). Overall CNW is of the view that the current project is a chance to go further, do better and reflect the data and recommendations in the Watershed Analysis. That is to say, that creation of a new road as proposed should be avoided and the opportunity of decommissioning/closing more roads should seized given all wildlife, aquatic and forest health needs and in face of all the risks.

Habitat Connectivity for Wildlife and other needs

Maintaining, rather than fragmenting, habitat connectivity and travel corridors in the project area, especially given adjacent Wilderness, is of critical importance to health, growth and maintenance of its wildlife populations. Because the proposed project has a stated need for landscape restoration to "provide and protect habitat for native species and species of concern", all proposed vegetation treatment prescriptions should address how they will comprehensively protect or enhance of habitat for federally listed: Puget Sound Chinook, Puget Sound steelhead trout, bull trout, northern spotted owl, marbled murrelet and also grizzly bear and gray wolf, plus culturally important species/first foods such as elk and deer (winter range in the area) as well as mountain goat. It will also be important that this project demonstrate that critical habitat requirements of the northern spotted owl are met according to its recovery plan.

Tree removal in Riparian Reserves will need to clearly explain how the function of these natural wildlife corridors will be enhanced and not negatively altered. The Nooksack ATM (2016)'s Table 19, appended to this comment letter, lists 20 sensitive, threatened and endangered species that should all be thoroughly considered in this project as well; any suspected negative impacts to these species' status and movement along with sound mitigation activities should also be described. Table 19 includes "survey and manage" species. For vegetation treatments in the Matrix tree age classes need to be identified and if over than 80 -year old stands required surveys for survey and manage species, including fungi, amphibians, mollusks, lichens, bryophytes, and vascular plants must be completed and occupied sites protected, and disclosed in environmental analysis.

With respect to the remnant Nooksack elk herd, population growth, individual body condition and juvenile survivorship was low despite several habitat enhancement projects, including forage planting (Bender et al. 2006); therefore, if aiming to provide forage via creation of complex early seral habitat in this project through regen or other timber harvests, a focused monitoring plan should be initiated in parallel to track if such improvements result in better conservation outcomes for this struggling herd. Furthermore, if a prime goal of the harvest in the Matrix is indeed to provide forage habitat for these species, then a close look at the Watershed Analysis's road decommissioning/closure recommendations for security habitat (as described above) must go hand in hand. Increasing forage but not tackling the security habitat/roads issue is not likely to genuinely improve conservation outcomes for elk and deer (as well as predators that depend on this prey).

Inventoried Roadless Areas

The project area includes the Mt. Baker Roadless Area (Figure 1-6, Canyon Creek Watershed Analysis). Several proposed logging units appear to be located with the Roadless Area north of the 31 road. We request these logging units within the Mt. Baker Roadless Area be removed from the proposal.

We appreciate the ability to collaborate on this project with the Forest Service and diverse partners and to provide these comments in complement to that collaboration. Thank you for considering our comments.

Sincerely,
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Table 19. Terrestrial Wildlife Species Considered for the Project Area Analysis

Species or Habitat	Status ¹	Preferred Habitats	Occurrences in or Adjacent to Project Area ²
Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	Threatened/ MIS	Mature, old-growth forests (nesting, roosting, foraging); second-growth used for dispersal	Documented
Marbled Murrelet (<i>Brachyramphus marmoratus m.</i>)	Threatened	Mature, old-growth forests (nesting, roosting)	Documented
Grizzly Bear ² (<i>Ursus arctos horribilis</i>)	Threatened/ MIS	Core Security habitat with adequate forage and > 300 m from motorized roads and high-use trails	Suspected
Gray Wolf (<i>Canis lupus</i>)	Endangered/ MIS	Security habitat with reliable prey base and > 300 m from road and high-use trails	Suspected
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	Sensitive/ MIS	Cliff habitat for nesting near adequate prey base	Documented
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Sensitive/ MIS	Roost, nest habitat and forage areas near lakes, reservoirs, rivers with readily available food source (fish and carrion)	Documented
Harlequin Duck (<i>Histrionicus histrionicus</i>)	Sensitive	Swift, moving streams (rivers and creeks), adequate pool habitat for foraging and brooding.	Suspected, but not documented
Common Loon (<i>Gavia immer</i>)	Sensitive	Large lakes	Suspected, but not documented
Northern Goshawk (<i>Accipiter gentilis</i>)	Sensitive	Mature or old forest habitat for nesting	Documented
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Sensitive	Abandoned mine shafts and other human-made structures for roosting and hibernacula; Foraging in forest edges	Documented
Mountain Goat (<i>Oreamnos americanus</i>)	Sensitive/ MIS	Habitat of cliffs, isolated rock outcrops, forest cover in winter	Documented

Species or Habitat	Status ¹	Preferred Habitats	Occurrences in or Adjacent to Project Area ²
California wolverine (<i>Gulo gulo luscus</i>)	Sensitive	Large expanse of minimally disturbed habitats, persistent snow fields, & reliable prey base.	Documented
Giant Palouse Earthworm (<i>Driloleirus americanus</i>)	Sensitive	Native habitat consists of the bunch grass prairies of the Palouse region. The fertile soil consists of deposits of volcanic ash and rich layers of organic matter.	Not documented
Broadwhorl Tightcoil (<i>Pristiloma johnsoni</i>)	Sensitive	includes abundant ground cover, conifer or hardwood overstory, and moderate to deep litter	Suspected, but not documented
Shiny Tightcoil (<i>Pristiloma wascoense</i>)	Sensitive	Ponderosa pine and Douglas fir forests at moderate to high elevations	Suspected, but not documented
Western Bumblebee (<i>Bombus occidentalis</i>)	Sensitive	A generalist forager and has been reported to visit a wide variety of flowering plants	Suspected, but not documented
Johnson's Hairstreak (<i>Callophrys johnsoni</i>)	Sensitive	Old-growth coniferous forests; associated with conifer mistletoe (genus <i>Arceuthobium</i>)	Suspected, but not documented
Melissa Arctic (<i>Oeneis Melissa</i>)	Sensitive	Dry tundra, talus slopes, fellfields, rocky summits and saddles, ridges, and frost-heaved clear-cuts; generally occurs above the timberline, which, in Washington, is at about 7,000 to 8,000 ft.	Suspected, but not documented
Valley Silverspot (<i>Speyeria zerene bremerii</i>)	Sensitive	Inhabits windy peaks with nearby forest openings. It is also found in native prairies and grasslands, often tending towards more mesic sites.	Suspected, but not documented
Larch Mountain Salamander (<i>Plethodon larselli</i>)	Sensitive/ Survey and Manage	Associated with hardwood logs, leaf litter, and beneath cool and moist rocks and talus. Not suspected north of Highway 2.	Not Documented

Species or Habitat	Status ¹	Preferred Habitats	Occurrences in or Adjacent to Project Area ²
		features and rock/cliff features.	
Mountain Goat Winter Range (MA-15)	MR	Forested stands, steep rocky cliffs, projecting pinnacles, ledges, talus generally tree-line and below.	Documented
Deer and Elk (MA-14)	Local Species of Concern	Clearcuts interspersed with closed canopy forests, meadows, grasslands,	Documented

¹Threatened – a native species likely to become endangered in the foreseeable future
MIS – Management Indicator Species – any species identified as representative for a group of species with special habitat requirements.
Sensitive – plant and animal species identified by the Regional Forester for which population viability is a concern
Survey and Manage – species that fall under the Standards and Guidelines of the NWFP
Species of Concern – species that are of concern to MBS biologists. An informal designation.
MR – Management Requirements – minimum specific management requirements to be met in accomplishing goals and objectives of the NFS (36 CFR 129.27)
²Documented – species is known/documentated to occur in or adjacent (within 1 mile) of the Project Area.
Suspected, but not documented – species is known (documented) to occur within the MBRD, but has not been documented within or adjacent to the Project Area.
Not Documented – species is considered locally extirpated, or not documented on the MBRD