

APPENDIX C: WILDLIFE SPECIES AND HABITAT SUMMARY

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Introduction

This appendix contains a list of species observed on the Nez Perce-Clearwater National Forest from the Idaho Species Diversity Database, with a brief description of their habitat. Habitat descriptions for birds came from species profiles at Birds of North America (Rodewald 2015) available at: <https://birdsna.org/Species-Account/bna/home>. For other species habitat descriptions originated from species profiles at International Union for Conservation of Nature's Red List of Threatened Species (IUCN 2019), the Montana Field Guide (Montana Natural Heritage Program and Montana Fish, Wildlife and Parks, 2019), the Idaho Statewide Wildlife Action Plan (IDFG 2015), or Nature Serve species profiles (NatureServe 2009). Species habitat profiles for the IUCN are available at: <https://www.iucnredlist.org/>. Nature serve species profiles are available at: <http://explorer.natureserve.org/>. Montana Field Guide is available at <http://fieldguide.mt.gov/default.aspx>. The Idaho Statewide Wildlife Action Plan is available at <http://fishandgame.idaho.gov/>.

Wildlife Species Observed on the Nez Perce-Clearwater

Table 1 lists wildlife species, scientific names, and a summary of their habitats.

Table 1. Wildlife species and habitat on the Nez Perce-Clearwater

Common Name	Scientific Name	Habitat Summary
American Pipit	<i>Anthus rubescens</i>	Arctic and alpine tundra throughout the range, grasslands, meadows, alpine.
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>	Open subalpine meadows
Gray-crowned Rosy Finch	<i>Leucosticte tephrocotis</i>	Not observed in the plan area but probably occurs. Habitats are generally alpine areas, usually near snow fields or glaciers, where they nest in talus, rockpiles, and cliffs. In summer they are found only at craggy breeding sites. They are possibly the highest-altitude breeding bird in North America. Found at lower elevations in autumn and winter, generally in open country, including mountain meadows, shrublands, roadsides, towns, cultivated areas, rocky hillsides, margins of dry ditches.
Wolverine	<i>Gulo gulo</i>	In habits a variety of habitats in the alpine, tundra, taiga, and boreal forest zones, including coniferous, mixed, and deciduous woodlands, bogs, and open mountain as well as tundra habitats. Snow is generally regarded as an important component of its seasonal habitat requirements. Wolverines are generally found in remote areas. Wolverine habitat selection is negatively affected by human activity, including roads, infrastructure, and back-country recreation.

Common Name	Scientific Name	Habitat Summary
Gray Jay	<i>Perisoreus canadensis</i>	Coniferous and mixed coniferous–deciduous forest; spruces (<i>Picea</i> spp.) are typically present. Boreal and sub-alpine coniferous forests, mixed coniferous-deciduous forest; spruces (<i>Picea</i> spp.) typically present. Uses jack pine, lodgepole pine, Engelmann spruce, black spruce, white spruce, white cedar, balsam fir, subalpine fir, silver fir, and quaking aspen. Is not found in the coniferous forests of the Sierra Nevada which contain pines and firs but no spruce.
California Gull	<i>Larus californicus</i>	Rare visitor within the plan area, common on adjacent lands. Open habitats near lakes, or rivers. Nesting occurs on islands.
Herring Gull	<i>Larus argentatus</i>	Multiple habitats, but nests near water in areas with sparse vegetation.
Sandhill Crane	<i>Grus canadensis</i>	Open grasslands, meadow, wet meadows, marshes, shallow wetlands. Nests near or in water on floating nests.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Typically breeds in forested areas adjacent to large bodies of water. Nests in trees, rarely on cliff faces and ground nests in treeless areas. Nests occur in mature and old-growth forest with some habitat edge, relatively close (usually <2 km) to water with suitable foraging opportunities. In suitable area, nest tree generally one of largest trees available with accessible limbs capable of holding nest. In most regions, seeks out aquatic habitats for foraging and prefers fish, but also takes waterfowl, mammals, and carrion.
Common Merganser	<i>Mergus merganser</i>	Oligotrophic lakes and rivers bordered by mature, tree cavities, and abundant fish. Uses large rivers extensively in plan area during the breeding season.
Bufflehead	<i>Bucephala albeola</i>	Ponds and small lakes and cavities for nesting during breeding season, lakes or major river systems during migration.
Wood Duck	<i>Aix sponsa</i>	Wide variety of habitats: creeks, rivers, overflow, bottomlands, swamps, marshes, beaver and farm ponds. Abundant plant and invertebrate food bases close to suitable nest sites are essential components of breeding habitat. Herbaceous emergent plants, flooded shrubs, and downed timber are important. Mature forests are needed for development of trees with suitable cavities for nesting. Trees producing suitable nest sites are > 11 inches (> 28 cm) diameter at breast height, but are commonly 23 inches.
Hooded Merganser	<i>Lophodytes cucullatus</i>	Forested wetland habitats, including emergent marshes, small lakes, ponds, beaver wetlands, forested creeks and rivers, and swamps.

Common Name	Scientific Name	Habitat Summary
Tree Swallow	<i>Tachycineta bicolor</i>	Tends to breed near bodies of water over which individuals can forage for flying insects. Habitat includes fields, marshes, shorelines, and wooded swamps with standing dead trees. Historical association with beavers that flooded big tracts of forest. Requires tree cavities for nesting and sometimes roosting.
Osprey	<i>Pandion haliaetus</i>	Habitat varies greatly, but common denominators are: (1) adequate supply of accessible fish near nests; shallow waters and open nest sites generally trees, large rocks [especially over water], or bluffs), nest platforms, snags, etc.
Spotted Sandpiper	<i>Actitis macularius</i>	Occupy almost all habitats near water, everything from the shorelines of wild rivers and lakes to urban and agricultural ponds and pools.
Canada Goose	<i>Branta canadensis</i>	A broad range of habitats near lakes, ponds, larger streams, marshes, muskegs, and wet hummocky areas.
Mallard	<i>Anas platyrhynchos</i>	Wide variety of wetlands, lakes, ponds, and other aquatic environments.
Rough Rams-horn	<i>Planorbella subcrenata</i>	The species occurs in nearly all perennial-water habitats that support significant rooted vegetation. Mud is a frequent substrate
Common Muskrat	<i>Ondatra zibethicus</i>	Found in brackish and fresh-water lakes, ponds, streams, rivers, and marshes.
American Mink	<i>Vison vison</i>	Species is found along streams and lakes as well as in swamps and marshes. It prefers densely vegetated areas. It dens under stones or the roots of trees, in expropriated beaver Castor or Muskrat Ondatra houses, or in self-excavated burrows. Forages on a variety of prey.
Western Tiger Salamander	<i>Ambystoma mavortium</i>	Tiger salamanders can be found in virtually any habitat, providing there is a terrestrial substrate suitable for burrowing and a body of water nearby suitable for breeding. This species occurs in a variety of habitats, including grass prairies, open prairies, aspen parkland, boreal, deciduous and coniferous forests and woodlands, alpine and sub-alpine areas, semi-deserts, and deserts, and because of this it is considered to be quite adaptable. It breeds in a wide range of environments, including permanent or semi-permanent ponds or lakes, from clear mountain ponds to temporary, manure-polluted pools in the lowlands, usually in sites where predatory fishes are absent.

Common Name	Scientific Name	Habitat Summary
Western Toad	<i>Anaxyrus boreas</i>	Wide variety of habitats, generally within proximity to water, and is found across Idaho from mountain meadows to low elevation deserts. Although primarily terrestrial, breeding occurs in quiet waters including beaver ponds, reservoirs, lakes, streams, marshes, and wet meadows.
Idaho Giant Salamander	<i>Dicamptodon aterrimus</i>	Larvae usually inhabit clear, cold streams, but are also found in mountain lakes and ponds. Adults are found in humid forests under rocks and logs etc., near mountain streams or rocky shores of mountain lakes (Stebbins 1985). Eggs usually are laid in headwaters of mountain streams. Breeding typically occurs in water-filled nest chambers under logs and rocks or in rock crevices.
Long-toed Salamander	<i>Ambystoma macrodactylum</i>	Found in a wide variety of habitats, from semiarid sagebrush deserts to sub-alpine meadows, including dry woodlands, humid forests, and rocky shores of mountain lakes. Adults are subterranean except during the breeding season. Found in well-drained areas with thick litter on the forest floor and close to relatively permanent water bodies. Salamanders were also found in seral stages ranging from three-year-old clear-cuts to 180-year-old forests and occurred in active logging areas. Breeds in temporary or permanent ponds, or in quiet water at the edge of lakes and streams. During the breeding season adults may be found under logs, rocks, and other debris near water. Eggs are attached to vegetation or loose on bottom.
Columbia Spotted Frog	<i>Rana luteiventris</i>	Usually occurs at the grassy/sedge margins of streams, lakes, ponds, springs, and marshes at water's edge in or near forest openings. Wetlands at or near tree line are also used. Usually found within 15 meters of shore. Breeds usually in shallow water in ponds or other quiet waters. Uses stream-side small mammal burrows as shelter. Winter sites are undercut stream banks and spring heads, deep lakes.
American Bullfrog	<i>Lithobates catesbeianus</i>	Generalist amphibian. Inhabits wetlands, ponds, oxbow lakes, bogs, lakes, usually living along the edge.

Common Name	Scientific Name	Habitat Summary
Sierran Treefrog	<i>Pseudacris sierra</i>	These frogs occupy a wide variety of habitats, including grassland, chaparral, woodland, forest, and farmland. They live on land except during the breeding season. They spend most of their time on the ground, but after the breeding season they may bask on the leaves of woody plants far from water, and sometimes they climb high into trees. Females deposit eggs in shallow water of marshes, lakes, ponds, ditches, reservoirs and slow-moving streams (Stebbins 2003).
Northern Leopard Frog	<i>Lithobates pipiens</i>	Springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; usually permanent water with rooted aquatic vegetation. In summer, commonly inhabits wet meadows and fields. Takes cover underwater, in damp niches, or in caves when inactive. Over winters usually underwater. Eggs are laid and larvae develop in shallow, still, permanent water.
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Associated with freshwater marshes, grasslands, and prairies.
American Avocet	<i>Recurvirostra americana</i>	Specialize in using ephemeral wetlands of the arid western United States with shallow open waters.
Great Blue Heron	<i>Ardea herodias</i>	Wetlands, water bodies and water courses, Nests in trees, bushes, on the ground and on artificial structures. Most observations near rivers within the plan area.
Greater Yellowlegs	<i>Tringa melanoleuca</i>	In migration - a variety of wetland habitats
Horned Grebe	<i>Podiceps auritus</i>	Small ponds and lake inlets containing a mixture of emergent vegetation and open water. A migrant in plan area. Wetland habitats important in migration.
Least Sandpiper	<i>Calidris minutilla</i>	Wet sedge, mossy and grassy bogs.
Lesser Yellowlegs	<i>Tringa flavipes</i>	Migrant only in the plan area. During migration, inhabits a wide range of wetland habitats from large permanent water bodies to small ephemeral pools; typical wetland features shallow, vegetation-filled pond with adjacent open mud flats.
Solitary Sandpiper	<i>Tringa solitaria</i>	Migration habitat - Generally around enclosed wet or muddy habitats, e.g., inland lakes and ponds.
Swamp Sparrow	<i>Melospiza georgiana</i>	A variety of wetland habitats
Wilson's Phalarope	<i>Phalaropus tricolor</i>	Breeds at shallow wetlands of interior western North America. Outside of breeding season uses saline/alkaline lakes.

Common Name	Scientific Name	Habitat Summary
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	Prairie wetlands, but also common in wetlands associated with quaking aspen parklands, mountain meadows, and arid regions. Nests in emergent vegetation of deep-water palustrine wetlands.
American Coot	<i>Fulica americana</i>	Wetland species with heavy emergent vegetation along the shoreline in combination with deeper water.
American Wigeon	<i>Anas americana</i>	Shallow, freshwater wetlands: sloughs, ponds, small lakes, marshes, and rivers.
Cinnamon Teal	<i>Anas cyanoptera</i>	Wetlands, ponds, lakes, with emergent vegetation.
Gadwall	<i>Anas strepera</i>	Breeding habitat - Seasonal and semi-permanent wetlands mixed prairie, parkland, shortgrass prairie, tallgrass prairie. Migration habitat - lakes, reservoirs, beaver ponds, farm ponds.
Green-winged Teal	<i>Anas crecca</i>	Forest wetlands, breeds in wetlands in boreal forest and deciduous parklands, and wetlands adjacent to grasslands or sedge meadows with brush thickets or woodlands.
Northern Pintail	<i>Anas acuta</i>	Open country with shallow, seasonal, or intermittent wetlands and low vegetation.
Redhead	<i>Aythya americana</i>	Habitat generalist. Uses wide variety of wetlands.
Ring-necked Duck	<i>Aythya collaris</i>	Only a migrant in plan area- Migration habitat includes shallow lakes and impoundments with dense stands of flooded emergents or submergents. Mostly documented on rivers in plan area.
Wilson's Snipe	<i>Gallinago delicata</i>	Edge bogs, fens, willow (<i>Salix</i> spp.) and alder (<i>Alnus</i> spp.) swamps, and marshy edges of ponds, rivers, and brooks.
Northern Shoveler	<i>Anas clypeata</i>	Found in a variety of wetland habitats, with nearby grasslands or rangelands for nesting
Virginia Rail	<i>Rallus limicola</i>	Breeds predominantly in freshwater wetlands, inhabits stands of robust emergent vegetation. Shallow water, emergent cover, and substrate with high invertebrate abundance are thought to be the most important features of Virginia Rail habitat
Blue-winged Teal	<i>Anas discors</i>	Shallow ponds with abundant invertebrates
Eurasian Wigeon	<i>Anas penelope</i>	Wetland or aquatic habitat
Ring-billed Gull	<i>Larus delawarensis</i>	Island habitat in lakes, farm fields, dumps, wetlands.

Common Name	Scientific Name	Habitat Summary
Rough-skinned Newt	<i>Taricha granulosa</i>	Rough-skinned newts inhabit various wooded and open valley habitats that include the required aquatic breeding habitat, such as lakes, reservoirs, ponds, and stream pools or backwaters. They generally spend most of their lives on land, but in some areas adults may be aquatic throughout the year or during the dry season.
Common Loon	<i>Gavia immer</i>	Migrant in plan area. Large lakes and rivers with clear water and an abundance of small fish.
Eared Grebe	<i>Pedicularis nigricollis</i>	Migration habitat- Saline lakes. Forages by diving in open water.
Red-breasted Merganser	<i>Mergus serrator</i>	Migration habitat is large lakes or rivers. Most observations in the plan area have been recorded on large rivers. Dives for food in open water.
Western Grebe	<i>Aechmophorus occidentalis</i>	Fresh water lakes and marshes with extensive areas of open water bordered by emergent vegetation. Breeding areas contain open water of at least several square kilometers, with largest colonies on most extensive lake systems.
Canvasback	<i>Aythya valisineria</i>	An uncommon visitor in the plan area, only during migration. Uses a wide variety of aquatic features during migration, ponds, lakes, slow rivers.
Lesser Scaup	<i>Aythya affinis</i>	Large seasonal and small semi-permanent wetlands and lakes with emergent vegetation.
Ruddy Duck	<i>Oxyura jamaicensis</i>	Prairie pothole region where it nests in wetlands and marshes. No nesting habitat in plan area. Only a visitor to large rivers in the plan area.
Tundra Swan	<i>Cygnus columbianus</i>	Migrant only in plan area - Migration habitat shallow ponds, lakes, and riverine marshes; also harvested agricultural fields and fields growing winter cereal grain. Sego pondweed important.
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Occurs on ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines.
Snow Goose	<i>Chen caerulescens</i>	Migrant only in the plan area. Classification based upon migratory habitats. Frequents protected freshwater and brackish marshes, slow-moving rivers, large and small lakes, impoundments, farm fields, and sand bars; avoids forested areas.
Artemesian Rams-horn	<i>Vorticifex effusa</i>	This species inhabits springs, large lakes, rivers and spring-fed streams. It is restricted to areas with perennial, well-oxygenated, cold water on stony substrate.

Common Name	Scientific Name	Habitat Summary
Great Basin Rams-horn	<i>Helisoma newberryi</i>	Habitat includes larger lakes and slow rivers, including larger spring sources and spring-fed creeks burrowing in soft mud just beneath the surface. Only one observation in the plan area. May be a misidentification, or may be extirpated.
Rotund Physa	<i>Physella columbiana</i>	It is generally found in shallow water rivers and lakes and is thought to be a cold water stenotherm (capable of surviving in only a narrow range of cold temperatures).
Twisted Physa	<i>Physella lordi</i>	This species is found in medium and large oligotrophic lakes
Veery	<i>Catharus fuscescens</i>	In west, inhabits riparian areas including canyons nesting in dense mixed broadleaf understory (e.g., <i>Salix</i> spp., <i>Alnus</i> spp., <i>Populus</i> spp.). Often found in disturbed forest.
Northern Waterthrush	<i>Parkesia noveboracensis</i>	Dense cover near ground level, combined with presence of surface water. Typical breeding habitats include cool, dark, wooded swamps, thickets of bogs, and riparian thickets along the shores of lakes, rivers and streams
Song Sparrow	<i>Melospiza melodia</i>	Forest, shrub, and riparian habitats, but limited to those adjacent to fresh water more often in arid environments. Shrubs on moist ground along streams, sloughs, marsh, or coastline, and occupy a wide range of habitats
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	Boggy, willow, sedge, and moss-dominated habitats, particularly where shrub cover is dense, mixed deciduous wood groves such as aspen and cottonwoods in montane or subalpine zone as well as a variety of other riparian habitat types. Generally avoids openings without shrub cover, and dense riparian areas.
Willow Flycatcher	<i>Empidonax traillii</i>	Breeds in a variety of usually shrubby, often with standing or running water and riparian habitats. In Palouse Prairie of southeast Washington where, in addition to mesic riparian sites, also nests in xeric uplands, including dry, brushy prairie remnants containing hawthorn (<i>Crataegus</i> spp.), chokecherry (<i>Prunus</i> spp.), or rose (<i>Rosa</i> spp.), and dry ninebark (<i>Physocarpus</i> sp.) thickets.
Wilson's Warbler	<i>Cardellina pusilla</i>	Restricted to mesic shrub thickets of riparian habitats, edges of beaver ponds, lakes, bogs, and overgrown clear-cuts of montane and boreal zone. Habitats consisting of willows, bog birch (<i>Betula glandulosa</i>), and shrubby cinquefoil (<i>Potentilla fruticosa</i>) with an understory of forbs, mosses, and sedges
Amber Glass Snail	<i>Nesovitrea electrina</i>	In the West, found along floodplains and at higher elevations in spring meadows, etc.
Idaho Vertigo	<i>Vertigo idahoensis</i>	Mid-elevation grass and sedge meadow with springs, seeps, bogs, and fens (Frest 1999).

Common Name	Scientific Name	Habitat Summary
Kingston Oregonian	<i>Cryptomastix sanburni</i>	Species occurs in lowland and flood plain edge pinus ponderosa forests slopes with a considerable admixture of deciduous shrubs and a rich forb understory (Frest 1999). Riparian wooded landscapes; ponderosa pine with a diversity of deciduous shrubs near springs and seeps. Found under woody debris, rocks, and in leaf litter (Hendricks 2012).
Marbled Disc	<i>Discus marmorensis</i>	Found at moderate elevations on limestone in intact moist well shaded Ponderosa pine forest, with diverse deciduous and forb understory. Usually found near stream edges and at the base of steeper slopes. Limited in distribution to a few major tributaries of the Lower Salmon near Lucile, ID.
Meadow Slug	<i>Deroceras laeve</i>	Found in a variety of situations near moisture (wet meadows, marshes, streamside riparian), sometimes in sites without a tree canopy. Canopy tree species include a mixture of conifer and broadleaf types, including Engelmann spruce, Douglas-fir, lodgepole pine, black cottonwood, aspen, paper birch, ponderosa pine, western larch, western redcedar, western hemlock, rocky mountain juniper, with a secondary canopy including alder, willow, dogwood, and hawthorn. Most often found under woody debris and leaf litter, sometimes under rocks.
Suboval Ambersnail	<i>Catinella vermeta</i>	Riparian areas, near rivers, streams, springs, and ephemeral wetland pockets, also drier sites away from water. Canopy species include aspen, Engelmann spruce, cottonwood, dogwood and willow. Found under woody debris and leaf litter in moist places, also under rock, in talus, and at the base of shrubs.
American Beaver	<i>Castor canadensis</i>	Rivers, springs, lakes, with adjacent woody foods such as willow, aspen, hardwoods.
Western Jumping Mouse	<i>Zapus princeps</i>	Commonly occurs in mesic, montane habitats. It occupies plant communities dominated by alder (<i>Alnus</i>) or aspen (<i>Populus tremuloides</i>), stands of willow (<i>Salix</i>), and meadows where forbs and grasses are abundant. Typically they are found in close proximity to water in areas of dense vegetation along streams.

Common Name	Scientific Name	Habitat Summary
North American Vole or Water Vole	<i>Microtus richardsoni</i>	A habitat specialist, with a patchy distribution within its range. It prefers subalpine and alpine meadows close to water, especially swift, clear, spring-fed or glacial streams with gravel bottoms, and marshes, or pond edges. It uses underground nests throughout the year. It burrows into stream banks and makes runways in wet meadows. Diet includes leaves and occasionally stems of forbs are the major foods. Also eats grasses, sedges and willows. May eat some seeds and insects. Feeds on subterranean parts of plants throughout the year.
Yuma Myotis	<i>Myotis yumanensis</i>	Generally considered to be an inhabitant of lower elevations and riparian situations, often in otherwise arid country, but often is associated with relatively large bodies of permanent water. Found in a variety of habitats, ranging from juniper and riparian woodlands to desert regions near open water. More closely associated with water than any other North American species of bat. However, on Vancouver Island, British Columbia, <i>M. yumanensis</i> occurs in the Coastal Western Hemlock zone (< 900 m, forests dominated by western hemlock (<i>Tsuga heterophylla</i>), western red-cedar (<i>Thuja plicata</i>), and amabilis fir (<i>Abies amabilis</i>) and the Mountain Hemlock zone (> 800 m, forests dominated by mountain hemlock (<i>Tsuga mertensiana</i>), yellow-cedar (<i>Chamaecyparis nootkatensis</i>), and amabilis fir. Their natural retreats probably include caves, hollow trees, loose pieces of bark, and cracks in dead trees. <i>Myotis yumanensis</i> has been observed roosting on limestone and sandstone cliff crevices in Verde River, Arizona and it also used abandoned swallow mud nests to roost.
American Water Shrew	<i>Sorex palustris</i>	This species is most abundant along small cold streams with thick overhanging riparian growth. Also around lakes, ponds, marshes, bogs, and other lentic habitats. Nest sites are near water in underground burrows, rafted logs, beaver lodges, and other areas providing shelter. Diet is mostly aquatic insects.
Northern Raccoon	<i>Procyon lotor</i>	Found almost anywhere water is available, along streams and shorelines. Dens under logs or rock, in tree holes, ground burrows, or in bank dens. Most abundant in hardwood swamps, mangroves, flood forests, and marshes. It is an opportunistic omnivore, eating fruits, nuts, insects, small mammals, birds' eggs and nestlings, reptile eggs, frogs, fishes, aquatic invertebrates, worms, and garbage.

Common Name	Scientific Name	Habitat Summary
Rocky Mountain Tailed Frog	<i>Ascaphus montanus</i>	Clear, cold swift-moving mountain streams with coarse substrate. It may occur primarily in older forest sites, but better information is needed; required microclimatic and microhabitat conditions are more common in older forests. May be found on land during wet weather near water in humid forests or in more open habitat. During dry weather stays on moist stream-banks. Lays eggs in long strings under stones in water. Habitat may be more suitable in older forests.
American Dipper	<i>Cinclus mexicanus</i>	Fast-moving, clear, unpolluted streams with cascades, riffles, and waterfalls.
Belted Kingfisher	<i>Megaceryle alcyon</i>	Most important requirements for breeding appear to be waters supporting aquatic animal populations and nearly vertical earth exposures for digging nesting burrows. Species favors streams, rivers, ponds, lakes, and estuaries or calm marine waters in which prey are clearly visible. Stream riffles, a major source of prey, may be important cues for assessing prey abundance and thus habitat quality. Prefers waters that are not obscured or overgrown by vegetation.
Barrow's Goldeneye	<i>Bucephala islandica</i>	Barrow's Goldeneye is a cavity-nesting duck that depends heavily on the availability of large cavities. Winters mostly in marine habitats (salt water), a few inland on open rivers. Uses open rivers in the plan area during winter only. Most observations were during migration or winter time. Prefers alkaline to freshwater lakes in parkland areas; to a lesser extent, subalpine and alpine lakes, beaver ponds, and small sloughs for breeding. In British Columbia, breeding habitat includes aspen parkland, open ponderosa-pine forests, rangeland, alpine meadows, and subalpine lakes in closed coniferous forest 300–1,850 m elevation.
Common Goldeneye	<i>Bucephala clangula</i>	Winter habitat only in the plan area. Winter habitat usually marine environments, but inland they use larger lake and rivers as far north as open water is available. Most observations in the plan area are in larger rivers.
Harlequin Duck	<i>Histrionicus histrionicus</i>	Clear, fast-flowing rivers and streams, with boulder substrates, low acidity, with abundant aquatic insects, such as midge larvae (Chironomidae), caddis flies, stone flies, and mayflies and/or salmonid roe.

Common Name	Scientific Name	Habitat Summary
Western Pearlshell Mussel	<i>Margaritifera falcata</i>	Inhabits perennial rivers, streams and creeks at depths of 1.5 to 5 feet, and they tend to congregate in areas with boulders and gravel substrate, with some sand, silt and clay. This species prefers clear, cold water with low velocities, low shear stress and stable substrates. It's frequently found in eddies or pools areas with stones or boulders that likely shelter mussel beds from scour during flood events. This species appears to be intolerant of sedimentation.
Western Ridged Mussel	<i>Gonidea angulata</i>	This species is found in both lotic and lentic habitats, occurring on the bottom of streams, rivers and lakes with substrates that vary from gravel to firm mud, and include at least some sand, silt or clay. Is associated with constant flow, shallow water and well oxygenated substrates
Ashy Pebblesnail	<i>Fluminicola fuscus</i>	This species is restricted to small-to-large rivers, in swift current on stable gravel to boulder substrate in cold, unpolluted, highly oxygenated water.
Nez Perce Pebblesnail	<i>Fluminicola gustafsoni</i>	The species has been found in shallow water on rocks and cobbles, but additional habitat requirements are unknown. The Nez Perce Pebblesnail is restricted to the Clearwater River and the lower Salmon River, as well as the reach of the Snake River in between these two rivers.
Rustic Pondsnaill	<i>Stagnicola hinkleyi</i>	Pondsnaills are cold water stenotherms, found in cold streams often with coarse substrates.
Shortface Lanx	<i>Fisherola nuttalli</i>	It is generally restricted to relatively large perennial streams ranging from 30- 100 m (98-300 ft.) wide. Within such streams it is found primarily at the edges of rapids or immediately downstream from rapids in areas that have suitable substrate. This species requires clean, cold, well-oxygenated water with gravel, cobble, and boulder substrate. Species prefers to attach themselves to hard surfaces in high velocities to avoid competition with other species.
Shortspire Pondsnaill	<i>Stagnicola idahoensis</i>	It occurs in cold water rivers in reaches with a moderately swift current and coarse, rocky substrates. Aquatic vegetation and algae are generally absent from occupied sites and the species is not found with mud, sand, or bedrock

Common Name	Scientific Name	Habitat Summary
Northern River Otter	<i>Lontra canadensis</i>	Found anywhere there is a permanent food supply (fish, crustation, amphibians) and easy access to water. In Idaho, river otters prefer valley over mountain habitats, and they select valley streams over valley lakes, reservoirs, and ponds. Woody vegetation and log jams are important habitat features. In plan area, most observations are in larger rivers.
California Floater	<i>Anodonta californiensis</i>	
Coeur d'Alene Salamander	<i>Plethodon idahoensis</i>	Primary habitats are seepages and streamside talus; also inhabits talus far from free water (deep talus mixed with moist soil on well-shaded north-facing slopes). In wet weather, it occurs also in leaf-litter and under bark and logs in coniferous forest. These are terrestrial breeders with direct development; eggs presumably are laid in underground rock crevices, although no nest sites have been found in the wild. The species loses water to the environment through evaporation and are therefore restricted to cool, damp environments. Seventy-six percent of known locations are classified as seeps, though this may be due to survey effort. They are generally located in coniferous forests, but are not restricted to a particular overstory species or aspect. Populations have been found in areas with ponderosa pine, Douglas-fir, western larch, western red cedar, and western hemlock overstory. There appears to be preference for canopy cover greater than 25%, but some observations have been recorded where canopy cover is less than 10%. Known populations occur in association with sharply fractured rock formations (used for underground refugia) from 488 meters to 1,524 meters in elevation. This fractured rock is often found in the Belt Rock formation but can also occur in talus and in other geologic types
Green River Pebblesnail	<i>Fluminicola coloradoensis</i>	Spring feed creeks with gravel, cobble or boulder substrate. Cold clean water with no macrophytes. Frest (1999) doubted the taxonomy of the observations in Idaho and suggested a species complex.
Pristine Pyrg	<i>Pristinicola hemphilli</i>	This snail is found in cold, undisturbed springs, seeps, and small creeks. It is completely aquatic.
Mourning Dove	<i>Zenaida macroura</i>	Nests in a wide array of ecological types, usually open woodlands and edges between forest and prairie, Foods are seeds of herbaceous plants found in early successional habitats.

Common Name	Scientific Name	Habitat Summary
Black-billed Magpie	<i>Pica hudsonia</i>	Thickets in riparian areas, often associated with open meadows, grasslands, or sagebrush for foraging
Common Grackle	<i>Quiscalus quiscula</i>	open areas with scattered trees
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Open environments with perches/trees for nests-fields with scattered shrubs and trees, meadows, woodland edges, aspen parklands, burned forest. Uses shrub fruits for broods
American Crow	<i>Corvus brachyrhynchos</i>	Open areas for ground foraging and presence of scattered trees, woodlots, windbreaks, and forest edges
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Open areas interspersed with patches of trees or structurally similar features. Feeds on a wide variety of prey. Nest typically located in mature forests of mixed conifer and deciduous trees adjacent to expansive openings
Wild Turkey	<i>Meleagris gallopavo</i>	Found in ponderosa pine (<i>Pinus ponderosa</i>), aspen (<i>Populus spp.</i>)/fir (<i>Abies spp.</i>), spruce (<i>Picea spp.</i>)/fir, and oak (<i>Quercus spp.</i>). Brood rearing habitat consists of grassy openings in mixed conifer forests, stands of aspen, and open meadows
Chipping Sparrow	<i>Spizella passerina</i>	Open woodlands, the borders of natural forest openings, and brushy, weedy fields. Nests in open coniferous forests, forages in brushy open areas
Steller's Jay	<i>Cyanocitta stelleri</i>	Western conifer or mixed conifer forest. Western hemlock, Douglas-fir, grand fir, western red cedar, spruce-fir forests, lodgepole pine, mixed ponderosa–Douglas-fir forests. Across their range, Steller's Jays are most abundant in fragmented, patchy forested landscapes, often along edges
White-throated Sparrow	<i>Zonotrichia albicollis</i>	Habitat generalist or edge species, occurs in coniferous, deciduous and mixed forests, especially stands having numerous openings with low, dense, shrubby ground cover. Successional coniferous and mixed forest with openings.
Dusky Grouse	<i>Dendragapus obscurus</i>	Summer - shrub step, grassland, aspen or non-forested alpine adjacent to conifer forest, or open conifer forest, also forest mosaic. Abundant arthropods for broods, lush vegetation for adult food. Winter -high elevation conifer forest, Douglas fir and lodgepole important winter diet.
Merlin	<i>Falco columbarius</i>	Falcon of open, open forest and grasslands and semi-open habitats, nest near forest openings, in fragmented woodlots. Ponderosa Pine (<i>Pinus ponderosa</i>) used significantly, Also uses high elevation scattered forests that mimic boreal conditions

Common Name	Scientific Name	Habitat Summary
Common Nighthawk	<i>Chordeiles minor</i>	Ground nester. Nests on beaches, logged or slash burned areas of forest, woodland clearings, prairies and plains, sagebrush and grassland habitat, open forests, rock outcrops. Forages above water or above tree canopy.
Western Kingbird	<i>Tyrannus verticalis</i>	Variety of habitats including riparian forests and woodlands, savannahs, shrublands, agricultural lands (pasture and cropland), deserts, and urban areas. Key features of its breeding habitat include open areas for feeding and trees and shrubs for nesting and perching.
Northern Shrike	<i>Lanius excubitor</i>	Winter habitat - coastal wetlands and estuaries, savannas, forest edges, Great Basin shrub deserts and edge with forests, Great Plains and edge with forests and deciduous woodlands, especially where trees and shrubs planted as shelterbelts, and mixed agricultural-suburban-woodland.
American Robin	<i>Turdus migratorius</i>	A wide variety of habitats with a combination of forested and open habitats.
Great Horned Owl	<i>Bubo virginianus</i>	Wide variety of habitats: deciduous, mixed, or conifer forests, but prefers open and secondary-growth temperate woodlands, usually with some open habitats.
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Primarily montane and northern coniferous forests, most often associated with forest openings, forest edges near natural openings (e.g., meadows, canyons, rivers) or human-made openings (e.g., harvest units), or open to semi-open forest stands. Presence in early successional forest appears dependent on availability of snags or residual live trees for foraging and singing perches. In dry Douglas-fir and grand fir (<i>A. grandis</i>) forest of west central Idaho, occurrence influenced by presence of tall trees and relatively open canopies.
Mountain Bluebird	<i>Sialia currucoides</i>	Prairie-forest ecotones with groves of trees, short grasses, and few shrubs; savannas; recently burned areas; clear cuts; edges of alpine tundra; sagebrush flats and valleys at elevations up to 3,800 m above sea level
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	Found in a variety of forest types, with densities highest in coniferous forests. In Idaho found in riparian, non-deciduous forests with dense mid-canopy layer and low shrubs. Generally hunts along forest edges and clearings

Common Name	Scientific Name	Habitat Summary
Northern Flicker	<i>Colaptes auratus</i>	Open woodlands, savannas, farmland with tree rows, and forest edges. In west woodland types include subalpine (subalpine fir, Engelmann spruce, limber pine, lodgepole pine, oak–juniper–pine woodland, and montane forests (yellow pine, ponderosa pine, Engelmann spruce, Douglas fir, white fir, quaking aspen), cottonwoods in riparian woodlands (WSM), and in burned woodlands. Berry producing plants in winter.
Great Gray Owl	<i>Strix nebulosa</i>	Mixed coniferous forest and meadow habitat mosaic
Western Bluebird	<i>Sialia mexicana</i>	Open coniferous and deciduous woodlands; wooded riparian areas; grasslands; farmlands; and burned, moderately logged, and edge areas with scattered trees, snags, or other suitable nest and perch sites. Open, parklike forests, edge habitats, burned areas and where moderate amounts of logging have occurred, provided a sufficient number of larger trees and snags remain to provide nest sites and perches. Associated with ponderosa pine, Douglas fir, pinyon juniper, pine-oak, and aspen woodlands.
Cooper's Hawk	<i>Accipiter cooperii</i>	A woodland raptor of deciduous, mixed, and evergreen forests, and forest mosaic. Forest edge habitat is generally included within the home range of breeders and may serve as primary hunting sites. Diet is mostly medium-sized birds; some small mammals. Nests are in mixed forest, and in more mature trees, with greater canopy cover (average 89.9%).
White-tailed deer	<i>Odocoileus virginianus</i>	White-tailed Deer inhabit a wide range of habitats from north temperate to subtropical and semi-arid environments in North America, and include rainforests and other equatorial associations, as deciduous forests and savannas of Central America and Northern South America. Its requirements are met in practically every ecological type including grasslands, prairies and plains, mountains, hardwoods, coniferous and tropical forests, deserts, and even in woodlots associated with farmland.
Moose	<i>Alces americanus</i>	Found in a range of woodland habitats, both coniferous and broad leaved. This species prefers a mosaic of second-growth boreal forest, openings, swamps, lakes and wetlands. Forages on broadleaf trees, preferring birch, ashes and willow in the spring and summer and the twigs of these species as well as of fir, alpine, and juniper in the autumn and winter. It also eats shrubs, such as blueberry and heather, dwarf shrubs, herbs, and aquatic plants.

Common Name	Scientific Name	Habitat Summary
Rocky Mountain Elk	<i>Cervus elaphus</i>	Mainly coniferous forests interspersed with natural or man-made openings (mountain meadows, grasslands, burns, and logged areas).
Hoary Bat	<i>Lasiurus cinereus</i>	Thought to prefer trees at the edge of clearings, but have also been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks. Roost 3 to 5 meters above ground during the day, usually in the foliage of trees. They also prefer trees that border clearings. They have been seen roosting in a woodpecker hole in British Columbia, in the nest of a gray squirrel, and under a driftwood plank. They forage about the tree tops, along streams and lake shores, and in urban areas where there are lots of trees.
Red-tailed Chipmunk	<i>Tamias ruficaudus</i>	Most abundant in forest openings or edges, where shrubby undergrowth is abundant. It is primarily terrestrial, but also climbs trees. Often around logs, brush piles, or boulders in Idaho. Diet includes seeds and fruit of various trees and shrubs, also leaves and flowers of various forbs; probably also fungi.
Ermine or Short-tailed Weasel	<i>Mustela erminea</i>	Often found in successional or forest-edge habitats, in scrub, alpine meadows, marshes, riparian woodlands, hedgerows, and riverbanks that have high densities of small mammals, especially <i>Microtus</i> and <i>Arvicola</i> voles. Coniferous and mixed woodlands are preferred
American Pygmy Shrew	<i>Sorex hoyi</i>	Found in a variety of habitats, and appears to prefer grassy openings of boreal forest. Moist habitats are preferred over dry areas.
Dusky or Montane Shrew	<i>Sorex monticolus</i>	Moist habitats. montane boreal and coastal coniferous forest and alpine areas; damp meadows surrounded by coniferous forest, in grass among spruce-fir, mid-elevation fir-larch, along streams and rivers in high prairie, mossy banks of small streams, alpine tundra, sphagnum bogs. High amounts of coarse woody debris important habitat component.
Bullock's Oriole	<i>Icterus bullockii</i>	Open woodlands, riparian areas, aspen, and gallery forming trees such as cottonwoods. Riparian and oak (<i>Quercus</i>) woodlands, especially where trees are large and well-spaced or in isolated clumps. Sycamores (<i>Platanus</i>), cottonwoods (<i>Populus</i>), willows (<i>Salix</i>), and deciduous oaks seem to be especially favored for nesting, but live oaks (<i>Q. agrifolia</i>), orchard trees, and occasionally conifers are used.

Common Name	Scientific Name	Habitat Summary
Warbling Vireo	<i>Vireo gilvus</i>	Occupies a variety of deciduous forest habitats, predominantly riparian. Mature mixed deciduous woodlands especially along streams, ponds, marshes, and lakes but sometimes in upland areas away from water. Associated with cottonwood/poplar. Habitat structure consists of large trees with a semi-open canopy. Presence of tall, primarily deciduous trees appears to be a requirement of breeding habitat
Red-eyed Vireo	<i>Vireo olivaceus</i>	Deciduous and mixed deciduous-coniferous forest with understories, riparian habitats, alder, aspen. More abundant in forest interiors than edges.
Least Flycatcher	<i>Empidonax minimus</i>	Semi-open, second-growth, mid-successional and mature deciduous and mixed deciduous woods.
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Breed mainly in large stands of deciduous, coniferous, and mixed pine-hardwood forests. Nests in relatively dense stands.
American Redstart	<i>Setophaga ruticilla</i>	Open wooded habitats and deciduous woodlands.
Ruffed Grouse	<i>Bonasa umbellus</i>	Closely associated with aspen. Most abundant in early-successional forests dominated by aspens and poplars. Present in riparian habitat and early-seral-stage deciduous forest in mountainous regions of Pacific Northwest. Although associated with aspen, heavy seasonal use of conifers in Idaho
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	Breeds in deciduous and mixed woodlands including aspen groves in open ponderosa pine (<i>Pinus ponderosa</i>) forests, aspen-fir parklands, logged forests where deciduous groves remain, aspen, birch, montane coniferous forests (Douglas-fir, larch, spruce, fir), and subalpine forest
Western Screech-Owl	<i>Megascops kennicottii</i>	Most associated with riparian habitats and deciduous trees over much of its range. Nests in tree cavities. Found associated with riparian areas in Idaho. Deciduous vegetation in riparian areas including Birch, Cottonwood, aspen, willow. Also found in mixed deciduous conifer forests of Western Red Cedar, and Western Hemlock. Also detected in subalpine fir, Engelmann spruce, and lodgepole.
Black-capped Chickadee	<i>Poecile atricapillus</i>	Deciduous and mixed deciduous/coniferous woodland, open woods and parks, willow thickets, and cottonwood groves.
Downy Woodpecker	<i>Picoides pubescens</i>	Open, deciduous, especially riparian, woodlands throughout its range; less abundant in coniferous forests except when associated with deciduous understory.

Common Name	Scientific Name	Habitat Summary
Black-backed Woodpecker	<i>Picoides arcticus</i>	It is an irruptive species that forages opportunistically on outbreaks of bark (e.g., Scolytidae) and especially wood-boring (e.g., Cerambycidae) beetles colonizing recently burned habitats. Uses boreal and montane coniferous forests throughout range, but tree-species composition varies geographically. Important species include: spruce (<i>Picea</i> spp.), tamarack (<i>Larix laricina</i>), red fir (<i>Abies magnifica</i>), mountain hemlock (<i>Tsuga mertensiana</i>), Douglas fir (<i>Pseudotsuga menziesii</i>), ponderosa pine (<i>Pinus ponderosa</i>), and lodgepole pine. Nests in live and dead trees of various species usually in a habitats with low to moderately decayed nest trees, in stands with high snag density.
American Three-Toed Woodpecker	<i>Picoides dorsalis</i>	Subalpine fir, Engelmann spruce, lodgepole pine, often after burn or exploits disease or insect outbreaks. Nests in trees with heart rot.
Townsend's Warbler	<i>Setophaga townsendi</i>	Tall coniferous and mixed coniferous-deciduous forests at various elevations. Douglas Fir, Grand Fir, Western Hemlock and Spruce. Most abundant in unlogged, old-growth forest, but also common in late successional stages, characterized by greater than 70 percent canopy coverage, tall conifers, high basal area, numerous conifer saplings, and dense deciduous undergrowth.
Hammond's Flycatcher	<i>Empidonax hammondii</i>	mature and old-growth coniferous (ponderosa pine, spruce-fir, lodgepole pine, and Douglas fir or mixed conifer-deciduous forests
Ruby-crowned Kinglet	<i>Regulus calendula</i>	In general Ruby-crowned Kinglets occur in highest abundance in old growth conifer or mixed forest habitats. It nests in variety of conifer and mixed forests, including spruce and spruce-birch forests, spruce-fir forests, lodgepole pine, Douglas-fir, and ponderosa forests. Highest densities in spruce fir.
Varied Thrush	<i>Ixoreus naevius</i>	Wet coastal forests and wet montane forests. Associated with western hemlock, and western red cedar, Douglas fir, western larch-Douglas fir forests, where this thrush reaches its highest abundance in large stands of unlogged forest mature and old-growth forests. Nests in understory vegetation of mature forest, often on small conifer.
Golden-crowned Kinglet	<i>Regulus satrapa</i>	Boreal and subalpine spruce or fir forests, hemlock, mixed coniferous-deciduous forests, deciduous forests, old-growth or mature conifer forests

Common Name	Scientific Name	Habitat Summary
Swainson's Thrush	<i>Catharus ustulatus</i>	Most strongly associated with spruce-fir forests, grand fir, mountain deciduous riparian or aspen forests, Douglas fir, hemlock, and cedar, hemlock, and mixed-conifer forests. Shrub understory important.
Blue-headed Vireo	<i>Vireo solitarius</i>	Evergreen forests with spruce (<i>Picea</i>), fir (<i>Abies</i>), hemlock (<i>Tsuga</i>), and pine (<i>Pinus</i>), or conifers, but also associated with deciduous growth or understory. Prefers relatively mature and extensive forests, with an understory of shrubs and small trees where its nests are suspended well below the canopy. Found almost anywhere with trees that are middle-aged to mature, with high percent canopy closure (usually >75%), and where there is some (but not dense) understory of shrubs and saplings, often near small openings or edges of wetlands and lakes
Brown Creeper	<i>Certhia americana</i>	Late successional stages of coniferous, mixed, and deciduous forests.
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	Densest coniferous forests, associated with Douglas Fir. A weak primary excavator requiring rotted snags with heartwood or cavities excavated by other species.
Vaux's Swift	<i>Chaetura vauxi</i>	Late stages of coniferous forests and deciduous forests mixed with coniferous. Abundance positively correlated with high density of live trees larger than 100 cm dbh and with snags. Primarily Douglas-fir, western hemlock, grand fir, and western redcedar. Hollow trees are its favored nesting and roosting sites. Forages in air over forest canopy, grasslands, and water
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Mature deciduous woodland, but also mixed deciduous and coniferous forest. Ponderosa Pine, and Douglas Fir, prefer to breed in natural holes in large, old trees, so their nests are often difficult to examine.
Barred Owl	<i>Strix varia</i>	Large, unfragmented blocks of forests, mature and old-growth forests, mixed deciduous-coniferous composition.
Red-breasted Nuthatch	<i>Sitta canadensis</i>	Mature and diverse stands of conifer, especially spruce, fir, pine, hemlock, larch (<i>Larix</i> spp.), and cedar (<i>Thuja</i> spp.) are present. Preference for forests that have a strong fir (<i>Abies</i> spp., <i>Pseudotsuga</i> spp.) and spruce (<i>Picea</i> spp.) component
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	Cool, shady locations along waterways. Cooler, more arid, and denser boreal forests of pine, fir, and spruce. Species Engelmann spruce, lodgepole, ponderosa, Jeffrey pine, white fir, quaking aspen, and black cottonwood, Douglas fir in certain localities.

Common Name	Scientific Name	Habitat Summary
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Late successional stages of coniferous or deciduous forest, but also younger forests that have scattered, large, dead trees. Grand fir, red cedar, Larch Douglas fir, Western hemlock and Ponderosa Pines of Large diameter.
Pacific Wren (Formerly winter wren)	<i>Troglodytes pacificus</i>	Association with old-growth forests. It uses old-growth structures (snags, root masses, downed trees, and the bases of large standing trees) for nesting, foraging, and roosting. Breeding territories are primarily found in forests along rivers and streams. Frequently associated with—and nests and forages near—water, particularly streams and rivers, but also bogs, swamps, and lakes. Higher survival noted at lower elevations. Pacific Wrens is associated with greater shrub development. Larger edges and gaps generated naturally or from logging are generally avoided. Downed wood important foraging habitat. Nests in cavities, downed wood, root balls, stumps, and moss.
Boreal Owl	<i>Aegolius funereus</i>	Mature subalpine fir and Engelmann spruce, Douglas fir, aspen, cavity nester
Northern Goshawk	<i>Accipiter gentilis</i>	Nests in most forest types, ponderosa pine, lodgepole, Douglas Fir, Aspen. Nests in a relatively narrow range of structural conditions of mature to old-growth forests with large trees and with 40% or greater canopy closure. Forages in a variety of structural or size classes.
Hermit Thrush	<i>Catharus guttatus</i>	Various coniferous, deciduous, and mixed forest types, with an affinity for conifers in some areas. Landscape pattern important, positively associated with patch size and percent forest cover. Primarily a ground- or shrub-gleaning omnivore. Insects and broad variety of fruit important foods. Coniferous forest types include pine (Jentsch et al. 2008), Douglas-fir (Pseudotsuga), fir, spruce, (Rosenberg et al. 2003), pinyon-juniper (<i>Pinus edulis-Juniperus osteosperma</i>) (Sedgwick 1987), western hemlock (<i>T. heterophylla</i>), Sitka spruce (<i>P. sitchensis</i>), and mountain hemlock (<i>T. martensiana</i>)-yellow cedar (<i>Chamaecyparis nootkatensis</i>) forests.
Mountain Chickadee	<i>Poecile gambeli</i>	Coniferous forests of w. North America, in habitats with large conifers, fewer shrubs, and more dead trees. Uses forest dominated by pine, spruce-fir, and piñon-juniper. Nests exclusively in cavities, typically in trees, occasionally in ground or under roots. Uses preexisting cavities in trees averaging 10.41 inches dbh, often in deciduous trees.

Common Name	Scientific Name	Habitat Summary
Douglas's Squirrel	<i>Tamiasciurus douglasii</i>	Coniferous forests, in upper pine belt and in fir, spruce, hemlock forests. More abundant in mature and old forests than in young forests. Nests in vegetation in trees in summer, roosts in tree cavities in winter.
Canada Lynx	<i>Lynx canadensis</i>	Canada Lynx are found primarily in boreal forests, and their main prey species, the Snowshoe Hare (<i>Lepus americanus</i>), depends largely on patches of successional growth in older multi-layered stands or younger regenerating stands following disturbance. Hares make up 60-97% of the lynx diet. Canada lynx den in forests with large woody debris, such as downed logs and windfalls, to provide denning sites with security and thermal cover for kittens.
Southern Red-backed Vole	<i>Myodes gapperi</i>	Mesic areas in coniferous, deciduous, and mixed forests, with ground cover that includes stumps and logs. Mossy logs and tree roots in coniferous forests are optimal. Regarded as an ecological indicator of old-growth conditions in the Rocky Mountains. Also uses second-growth areas. They nest under logs, stumps and roots and will use the burrows of moles and other small mammals.
Fisher	<i>Pekania pennanti</i>	Fishers inhabit upland and lowland forests, including coniferous, mixed, and deciduous forests. They occur primarily in dense coniferous or mixed forests, including early successional forest with dense overhead cover. In plan area uses grand fir in warm dry PVT, and Warm Moist PVTs. Some habitat may extend into cool moist.
American Marten	<i>Martes americana</i>	Associated with late-seral coniferous forests characterized by closed canopies, large trees, and abundant standing and fallen woody material. It dens in hollow trees or logs, in rocky crevices, or in burrows. Diet is rodents, lagamorphs, birds, and fruit seasonally. Voles, squirrels and hares are the most important prey seasonally.

Common Name	Scientific Name	Habitat Summary
American Black Bear	<i>Ursus americanus</i>	Reported from a broad variety of forested habitats from deciduous forests in Eastern North America to Coniferous Forests in the West. Dense forests; riparian areas; open slopes or avalanche chutes during spring green-up. Uses snow slides, stream bottoms, wet meadows in early and mid-summer. May concentrate in berry and whitebark pine areas in fall. Hibernates in natural cavities such as in trees or rocks, under logs, brush piles. Studies in North Central Idaho show bears select for mature grand fir, Douglas Fir, with greater than 60% canopy cover, and select riparian areas. They also select fruiting shrubs/shrubfields for foraging.
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Northern flying squirrels generally occupy boreal or north temperate conifer, mixed conifer-hardwood, and northern hardwood forests, as found in the northern United States and Canada, at various elevations of mountain regions, and in some narrow valleys subject to cold air drainage. These habitats support old-growth forest, communities with old-growth elements, or younger woodlands usually contiguous with such forest. Optimal conditions have been reported as cool, moist, mature forest with abundant standing and down snags. Flying squirrels are habitat generalists and are not more abundant in old growth than in younger, second-growth stands. Occupies tree cavities, leaf nests, and underground burrows. Prefers cavities in mature trees as den sites. Diameter at breast height was 16.7-79.0 cm, age was 42-174 years. Diet consists largely of fungi and lichens plus plant and animal material (insects, nuts, buds, seeds, and fruit).
Snowshoe Hare	<i>Lepus americanus</i>	Associated with conifer and mixed deciduous forest of North America. It requires fairly dense understory vegetation, which it uses as cover. Diet consists mostly of grasses, forbs, sedges, and ferns. It is most abundant in mature multistoried forests, and early seral stand conditions.

Common Name	Scientific Name	Habitat Summary
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>	Open coniferous or mixed woods, wooded canyons. Found in a wide variety of forest types, including open oak groves, sycamores in canyons, pine-oak woodland, coniferous forest of far north and high mountains. Generally in partly open habitats rather than solid unbroken forest. Forest habitats of various types from deciduous bottomlands to high-elevation continuous forests. Natural cavities or those excavated by woodpeckers needed for nest sites, otherwise seems tolerant of mixed-age forest types. Forest habitats of various types-mixed spruce/fir, Douglas fir, cottonwood, aspen, ponderosa pine. These Forest types are all favorable for cavity formation/excavation. In w. Montana, breeding surveys indicate a preference for mixed spruce (<i>Picea engelmannii</i>) and fir (<i>Psuedotsuga menzessii</i> and <i>Abies lasiocarpa</i>) forests, but also includes cottonwood (<i>Populus trichocarpa</i>) bottomlands, aspen (<i>P. tremoloides</i>) stands, and mixed pine (<i>Pinus ponderosa</i>) forests to timberline. Otherwise a forest generalist.
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	Wide variety of habitats. Cottonwood (<i>Populus</i>)/willow (<i>Salix</i>) groves and other riparian and floodplain habitats; openings in mature pine (<i>Pinus</i>) forests; aspen (<i>Populus</i>) groves; deciduous growth especially in mountain valleys/canyons; pinyon-(<i>Pinus</i>) juniper (<i>Juniperus</i>) woodlands; oak (<i>Quercus</i>) savanna; gardens; urban and suburban developments with heavy understory; orchards. Regardless of overall habitat, a well-developed understory combined with large trees appears to be a key habitat component
Yellow-rumped Warbler	<i>Setophaga coronata</i>	One of the most ecologically generalized. Predominantly mature coniferous and mixed coniferous-deciduous habitats throughout range, but little habitat specificity within this broad habitat category. Forage in a broad range of microhabitats and employ a variety of foraging techniques, from fly-catching to foliage-gleaning for insects. Much less common in early successional stages of coniferous forest. Breeds in coniferous and mixed forests, preferring more open stands and edges in pine, fir, spruce, aspen; also spruce-tamarack bogs. Yellow-rumped Warblers seem to be able to maintain normal or near-normal breeding densities as long as some mature trees remain standing, presumably for nesting purposes

Common Name	Scientific Name	Habitat Summary
House Wren	<i>Troglodytes aedon</i>	An affinity for open, shrubby wood-lands. In the western foothills and mountains, found in deciduous or mixed deciduous-coniferous woodlands in riparian areas within canyons, in open ponderosa pine (<i>Pinus ponderosa</i>) and Douglas fir (<i>Pseudotsuga menziesii</i>) parklands, in piñon-juniper (<i>Pinus Juniperus</i>), oak, and walnut (<i>Juglans</i>) woodlands, in aspen (<i>Populus</i>) groves, and at edges or in clear-cut or thinned areas of denser montane coniferous forests. Generally absent from mature, unthinned coniferous forests across the continent. Generally not found in larger, contiguous forests except in areas opened up by logging, fire, insects or human development. Multiple studies have shown higher abundances in areas with more snags.
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Second-growth and mature coniferous mixed-conifer and spruce (<i>Picea</i> spp.)-fir (<i>Abies</i> spp.) forests, Douglas fir (<i>Pseudotsuga menziesii</i>), ponderosa pine, lodgepole pine (<i>Pinus contorta</i>), and quaking aspen, Berries of ash, snowberry, cherry, and hawthorn. Spruce budworm key in diet. In Sierra Nevada, most common in open canopy mixed-conifer, followed by open canopy red fir and closed canopy red fir; absent from closed canopy mixed-conifer. In Cascade mountains of Washington, Douglas-fir/western hemlock (<i>Tsuga heterophylla</i>) forest; more common in forests classified as mature (more large trees, more complex structure, more snags) and young (most stems <50 cm dbh [diameter at breast height]) than in old-growth. Douglas-fir/ponderosa pine in Idaho/Montana, more abundant in rotation-aged (80-120 yr old) forest than in old-growth (200+ yr), although difference not statistically significant (high variability in numbers due to flocking

Common Name	Scientific Name	Habitat Summary
Dark-eyed Junco	<i>Junco hyemalis</i>	<p>Broad variety of coniferous and deciduous forests. Mature aspen, in dry forests dominated by spruce (<i>Picea</i> sp.), Douglas fir (<i>Pseudotsuga menziesii</i>), pine, fir (<i>Abies</i> spp.); and in pure aspen, poplar, cottonwood (<i>Populus</i>), and mountain mahogany (<i>Cercocarpus</i>) stands and their edges. In west central Canada, where data were compared from many habitats that differed in moisture, flora, and successional stage, juncos absent only from marshes and bogs; most common in drier, nutrient-poor (often burned over) locations. In Alaskan forests ranging from old growth (both riparian and non-riparian) to various earlier stages, junco absent only from stage with closed dense canopy, low light, scant ground cover; most abundant in shrub/forb, sapling/shrub, lakeshore old growth, and muskeg. In British Columbia forests (age ≥ 200 yr), dominant western hemlock (<i>Tsuga heterophylla</i> sp.) and spruce were removed in varying degrees (0, 30, 60, 100%) from various tracts; 1–2 yr later, junco common on all tracts; in pairwise comparisons, in each case commoner on tract with greater removal. Oregonian group often breeds in open, tree-grown natural and landscaped “parkland,” plantings, and on campuses. In Arizona in unlogged Douglas fir, ponderosa pine (<i>Pinus ponderosa</i>) at approximately 2,700–2,800 m asl, density of <i>J. h. caniceps</i> approximately doubled 1 yr after 50% reduction of overstory.</p>

Common Name	Scientific Name	Habitat Summary
Hairy Woodpecker	<i>Picoides villosus</i>	Occupies both deciduous and coniferous forest habitats, various sizes and ages, frequents edges of open habitats. Aspen important. Forages on arthropods and a diversity of fruits and seeds. They are normally found in forests with a coniferous component in the Pacific Northwest. Hairy Woodpecker demonstrates marked increases in its abundance in areas that have been burned and subsequently become infested with bark- or wood-boring beetles. Jackman (1974) reports that Hairy Woodpeckers are found in “open” areas, more so than dense areas. Bate (1995) observed that they typically were not found in dense, regenerating stands in Douglas-fir/western hemlock forests created by clearcut harvest methods. In ponderosa pine forests of central Oregon, densities of Hairy Woodpeckers increased with increasing densities of hard snags, large trees (> 50 cm dbh), and increasing canopy height. Hairy Woodpeckers will forage in both mature and young seral stages during summer months (Thomas et al. 1979), and either in deciduous (Conner 1980) or coniferous forests. Hairy Woodpeckers nested in relatively open stands with low basal areas (mean = 17 m ² /ha), low stem densities (mean < 13/0.1 ha), and open canopies (39%).
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	Prefers second growth, open deciduous, or mixed-species forests, with high level of light penetration; preferably with shrubby undergrowth. In e. Washington, common in riparian habitat at lower elevations in ponderosa pine (<i>Pinus ponderosa</i>) and Douglas-fir (<i>Pseudotsuga menziesii</i>) zones, and sometimes higher into subalpine fir

Common Name	Scientific Name	Habitat Summary
Cassin's Finch	<i>Haemorhous cassinii</i>	Generally open coniferous forests of interior western mountains, in a variety of coniferous forest types over a broad elevational range. Often found in mature forests of lodgepole and ponderosa pine. Also found in Jeffrey pine (<i>P. jeffreyi</i>), Douglas-fir (<i>Pseudotsuga menziesii</i>), limber pine (<i>P. flexilis</i>), Engelmann spruce (<i>Picea engelmanni</i>), subalpine fir (<i>Abies lasiocarpa</i>), grand fir (<i>A. grandis</i>), red fir (<i>A. magnifica</i>), pinyon pine (<i>Pinus edulis</i>), bristlecone pine (<i>P. longaeva</i>), and quaking aspen (<i>Populus tremuloides</i>). Dry, relatively open ponderosa pine forest around 1,000 m elevation supports densest populations in Washington, both in unlogged areas with mostly mature trees and in selectively logged areas with mixtures of mature and very young trees. Feeds on buds, insects, seeds, and fruit.
Western Wood-Pewee	<i>Contopus sordidulus</i>	Habitat generalist, widespread in woodlands and forests, especially forest edge and riparian zones. Absent from dense forests. Important habitat components may include large tree diameters, open understory, edge characteristics, and dead trees or trees with dead limbs. Ponderosa pine, aspen, cottonwood, riparian habitats, Spruce-Fir, and Douglas Fir.
Western Tanager	<i>Piranga ludoviciana</i>	Open coniferous, or forests with openings, and mixed coniferous-deciduous woodlands of w. North America. Common in Douglas fir, ponderosa pine, lodgepole pine, mixed-conifer, spruce-fir, true fir, temperate rain, pine-fir, and mixed coniferous-deciduous forests of w. North America. Also oaks, Pinyon Juniper. Favors open woodlands, but occasionally extends into fairly dense forests, open coniferous forests or combination of coniferous forest and forest openings, such as clearings, including clear-cuts, and open wetlands, that offer natural breaks in canopy, numerous in edge or ecotone situations with mix of conifer and deciduous species.
Cassin's Vireo	<i>Vireo cassinii</i>	Open forests of coniferous, mixed-coniferous/deciduous, and deciduous forests in mountains and foothills at elevations from 120 to 2,400 m
Pine Grosbeak	<i>Pinicola enucleator</i>	Open coniferous forest of Engelmann spruce, subalpine fir, sometimes lodgepole.

Common Name	Scientific Name	Habitat Summary
Pine Siskin	<i>Spinus pinus</i>	In habitant of coniferous or mixed coniferous-deciduous forests. Primarily open coniferous forests. Eats Seeds of a variety of grasses and forbs, particularly those of composites (dandelions, chickweed, sunflowers, and ragweed). Also small seeds of various trees; alder, birch, and assortment of conifers (white cedar, tamarack, Canada hemlock (<i>Tsuga canadensis</i>), spruces, and various pines (including ponderosa) are especially favored.
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeding season - open forests, ranging in altitude from low-elevation riparian areas to higher-elevation burns, and pine forests during the breeding season. Habitats must have brushy understory that supports high insect abundance. Winter habitat- Mast or grains, and storage sites (usually snags or trees with cracks and decay). Tree species include Ponderosa pine, cottonwood, Douglas Fir, Aspen, Juniper/Pinyon, and others.
White-headed Woodpecker	<i>Picoides albolarvatus</i>	Throughout range, the species depends on mature pines (with large cones and abundant seed production), relatively open canopy (50–70%), and availability of snags and stumps for nest cavities. Requires montane coniferous forests dominated ponderosa pines, with tree species composition varying geographically. Other important species include sugar pine, lodgepole, white fir, incense cedar, western white pine and Douglas-fir.
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	Inhabiting open coniferous and mixed coniferous-deciduous forests of western North America. Breeds in middle to high elevation conifer and mixed conifer-deciduous forests. Availability of suitable nest sites is a critical component of breeding habitat (Conway and Martin 1993) whether these are suitable live trees or dead trees (snags). Common in montane western larch, Douglas fir, ponderosa pine, conifer-aspens and pine-fir (<i>Pinus-Abies</i>) forests. Uncommon in spruce-fir, lodgepole pine, mixed pine-fir-mountain hemlock. Sap trees range from 9-18 inches. Nests in cavities, newly excavated in most cases, in large (19-32 dbh) snags/trees with fungus decay. Williamson's Sapsucker will often select trees for nesting that are significantly older or larger than the average tree in the stand

Common Name	Scientific Name	Habitat Summary
Violet-green Swallow	<i>Tachycineta thalassina</i>	Open deciduous, coniferous, and mixed woodlands, including ponderosa pine, Monterey pine, and aspen (<i>Populus tremuloides</i>), Nests in cavities of various sites, prefers tree cavities, and cliffs, but also occasionally uses sand banks, cutbanks, or porous holes in volcanic rocks. Thought to benefit from post-fire habitat, under frequent low intensity fire system.
Flammulated Owl	<i>Psilosops flammeolus</i>	Open or low stem density forests of ponderosa, Douglas fir, limber pine and aspen, with large old trees and snags. Understory important to support insect prey.
Pygmy Nuthatch	<i>Sitta pygmaea</i>	Lives in long-needled pine forests, dependent on snags, and dead portions of live trees with cavities.
Townsend's Solitaire	<i>Myadestes townsendi</i>	Coniferous forest, In Rocky Mountains, occurs in all major coniferous forest communities, including mixed-conifer, spruce-fir, and cedar-hemlock, Prefers relatively open stands to dense forest. Nests on the ground beneath rocks, logs, or other objects. Winter habitats include juniper, and cedar. Fruits important component of winter habitats.
Western Heather Vole	<i>Phenacomys intermedius</i>	Open coniferous forest with heath, shrub understory; shrub areas on forest edge; mossy meadows in forests; alpine tundra with cover. Most common in subalpine spruce/fir forest with evergreen shrub ground cover, also in timberline krummholz (stunted windblown trees growing near the tree line on mountains), alpine tundra. Sometimes in montane yellowpine/Douglas-fir forests with bearberry/twinflower understory. Heather-like vegetation is a common element of its habitats. It nests on the ground under snow (winter) or in burrows (summer). In winter, these voles feed on bark and buds of shrubs and heaths. In summer, they feed primarily on green vegetation, berries, and seeds.

Common Name	Scientific Name	Habitat Summary
Fringed Myotis	<i>Myotis thysanodes</i>	<p>The most common habitat in which to find this species appears to be oak, pinion, and juniper woodlands or ponderosa pine forest at middle elevations. Also uses deserts, grasslands, and other woodlands. The plan area has little oak, pinion and juniper and occurrences have been in ponderosa forest. The few Montana records indicate that habitats in Montana that are used by the Fringed Myotis are similar to other regions in the interior West (Foresman 2012). It has been captured in ponderosa pine and Douglas-fir forest while foraging over willow/cottonwood areas along creeks and over pools, and taken in caves. (Montana Field Guide Website). Roosts in caves, mines, rock crevices, buildings, tree snags and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings. Roosting in decadent trees and snags, particularly large ones, is common throughout its range in western U. S. and Canada. <i>Myotis thysanodes</i> roosts have been documented in a large variety of tree species and it is likely that structural characteristics (e.g. height, decay stage) rather than tree species play a greater role in selection of a snag or tree as a roost. Fringed bats are known to migrate, but little is known about the magnitude of movements. Roost trees tend to be large-diameter snags in early-to-medium stages of decay.</p>
North American Porcupine	<i>Erethizon dorsatum</i>	<p>Porcupines are found in a variety of habitats including dense forests, tundra, grasslands and desert shrub communities. Like their distribution, their diet is also generalized, but shows a marked difference between winter and summer seasons. Winter foods are primarily the bark, cambium and phloem of trees. In the spring their diet shifts and porcupines begin feeding on roots, stems, leaves, berries, seeds and grasses.</p>
Common Raven	<i>Corvus corax</i>	<p>Broad range of habitats: boreal, conifer, and deciduous forests; tundra; prairies and grasslands.</p>
Long-tailed Vole	<i>Microtus longicaudus</i>	<p>Generalist. Found in various habitats ranging from dense coniferous forests to rocky alpine tundra, sagebrush semi-desert, moist meadows, marshes, along rivers and streams and forest-edge habitat. It frequently occurs in disturbed areas, such as clear-cuts, surface mines, and those that have been fire-impacted. Diet includes green vegetation, seeds, berries, and fungi. In winter they may feed on inner bark of shrubs and trees.</p>

Common Name	Scientific Name	Habitat Summary
North American Deermouse	<i>Peromyscus maniculatus</i>	It is found in virtually every habitat within its range (tundra, taiga, temperate and boreal forests, swamps and bogs, prairies, deserts, and scrublands).
House Sparrow	<i>Passer domesticus</i>	Human modified environments, Absent from extensive woodlands, forests, grasslands, deserts.
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	A wide variety of open habitats.
Brown-headed Cowbird	<i>Molothrus ater</i>	Grassland vegetation-woodland edges, brushy thickets, prairies, fields, pastures, orchards, residential areas.
Chukar	<i>Alectoris chukar</i>	Steep rocky mountainous terrain harbors a mixture of brush, grasses, and forbs.
American Goldfinch	<i>Spinus tristis</i>	Weedy and grassy fields, early-successional growth.
Northern Harrier	<i>Circus cyaneus</i>	Grasslands, wetlands, shrub-stepp, prairies, cold desert, riparian woodlands.
Rough-legged Hawk	<i>Buteo lagopus</i>	Mostly in open, treeless areas including prairies, shrub-steppes, semi deserts, open fields, marshlands, bogs, and dunes
Ring-necked Pheasant	<i>Phasianus colchicus</i>	Open habitats, often associated with agriculture lands.
Vesper Sparrow	<i>Pooecetes gramineus</i>	Prefers dry grass fields, with some shrubs or similar structure, and is found in open habitats, including old fields, shrubsteppe, grasslands, and cultivated crop fields.
Ferruginous Hawk	<i>Buteo regalis</i>	Grasslands, shrub-steppes, and deserts.
Savannah Sparrow	<i>Passerculus sandwichensis</i>	Meadows, cultivated fields (especially alfalfa), lightly grazed pastures, roadsides, coastal grasslands, sedge bogs, edge of salt marshes, and tundra.
Say's Phoebe	<i>Sayornis saya</i>	Open country, prairie ranches, sagebrush plains, badlands, dry barren foothills, canyons, open forests, alpine cliffs, shrublands, rocky bluffs, grasses, shrubs, and occasional scattered trees
Western Meadowlark	<i>Sturnella neglecta</i>	Wide range of grassland habitats. Associated with intermediate height and density of grasses and forbs
Barn Owl	<i>Tyto alba</i>	Primarily open habitats: grasslands, deserts, marshes, and agricultural fields

Common Name	Scientific Name	Habitat Summary
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	Found mostly in suburban, urban, and agricultural areas where grain, roost, and nest sites available. Trees in urban and suburban habitats provides nesting and roosting sites for this species. Although less common in rural habitats, the Eurasian Collared-Dove will populate these areas when stored or waste grain is available.
Gray Partridge	<i>Perdix perdix</i>	Agricultural fields and grasslands; in summer, especially with broods, mainly fields with cereal grains and row crops but also roadsides and shelterbelts
Rock Pigeon	<i>Columba livia</i>	Nest in crevices, caves in rocky seaside cliffs or interior uplands, especially near open scrub vegetation or human agriculture. Also around human infrastructure.
American Kestrel	<i>Falco sparverius</i>	Open areas covered by short ground vegetation where it hunts mostly from perches
European Starling	<i>Sturnus vulgaris</i>	Starlings inhabit a wide variety of areas if a few crucial needs are met. They forage in open country on short, mown, or grazed fields, which are abundantly produced in urban areas and by many types of agriculture. These areas also provide accessory food resources, nesting cavities, and water.
American Badger	<i>Taxidea taxus</i>	Grasslands, meadows, open forest, brush, and desert. prefer grasslands and open areas with grasslands, which can include parklands, farms, and treeless areas with friable soil and a supply of rodent prey.[23][24] They may also be found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows.
Meadow Vole	<i>Microtus pennsylvanicus</i>	Occupies grassy habitats in a wide variety of settings across their range. Uses early seral habitats. Mostly eats grasses, but other vegetation is used sometimes. Needs loose organic soils for tunneling
Montane Vole	<i>Microtus montanus</i>	Found in alpine meadows in the southern portion of their range and mountain valleys in the north. They are found in wet meadows, cropland, especially fields and pastures of grass and legumes along fence rows; grassy areas by streams and lakes. Diet includes grasses and sedges; leaves, stems, and roots of a wide variety of forbs.

Common Name	Scientific Name	Habitat Summary
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Northern pocket gophers prefer deep soils along streams and in meadows and cultivated fields, but they are also found in rocky soils and clay. They occupy a wide variety of habitats ranging from sagebrush steppe, mountain meadows and tundra, to agricultural fields, grasslands, and suburban gardens and lawns. Occupies a greater variety of habitats than any other pocket gopher species. The unifying feature of these habitats is the absence of significant canopy cover, and abundant ground cover that supplies their nutritional needs. They primarily consume the roots, corms, rhizomes, and stems, of forbs and herbs. They prefer deep well drained soils, but are also found in compacted clays and shallow rocky soils.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Grasslands, and other open habitats and feeds on a variety of invertebrate and vertebrate prey
Mountain Cottontail	<i>Sylvilagus nuttallii</i>	Occurs in a variety of habitats throughout its range. In the north it primarily occupies sagebrush habitat, while in the south it occurs more frequently in forested areas. Feeds on sagebrush and juniper all year where this vegetation occurs, but grasses are preferred when available in spring and summer. Little or no habitat occurs in the plan area and the species may be accidental in the plan area or not occur.
Red Admiral	<i>Vanessa atalanta</i>	Breeding habitat is virtually any patch of nettles, false nettles etc. in North America or much of Europe. Adults are migratory and occur in almost any habitat. They prefer somewhat wooded or shaded backyard situations.
A Spur-throat Grasshopper	<i>Melanoplus digitifer</i>	Most grasshoppers are generalists, but some have narrow habitat requirements.
Payette's Short-wing Grasshopper	<i>Melanoplus payettei</i>	Most grasshoppers are generalists, but some have narrow habitat requirements.

Common Name	Scientific Name	Habitat Summary
Common Yellowthroat	<i>Geothlypis trichas</i>	A wide range of habitats (riparian, aspen, open conifer, oak), thick vegetation and/or well developed understories important in these habitats. Inhabitant of thick, tangled vegetation (particularly in wet areas). Occupies thick vegetation in wide range of habitats from wetlands to prairie to pine forest. Dense growth of low vegetation, which is more prevalent in wet areas, rather than the moisture itself, dry upland pine forests with undergrowth, thickets in open pine woods. Regenerating quaking aspen (<i>Populus tremuloides</i>) clear-cuts, abandoned quarries, airport runways, thickets of willow and young black cottonwood (<i>Populus deltoides</i>), and undergrowth of a mixed forest of conifer and quaking aspen in British Columbia. Understory appears to be important feature of many habitats.
Spruce Grouse	<i>Falcipecten canadensis</i>	Strongly associated with conifer forest, fire scars are the typical habitat of this bird, prefer relatively young stands over more mature conifer forest
Mountain Quail	<i>Oreortyx pictus</i>	Shrub-dominated communities. In Idaho, riparian shrub habitats, or forest with significant shrub component. Forages on Fruits, nuts of trees (e.g., oak and pine), seeds of shrubs (e.g., <i>Ceanothus</i> spp. , <i>Arctostaphylos</i> spp., <i>Toxicodendron radicans</i>), subterranean bulbs (e.g., <i>Lithophragma</i> spp. , <i>Brodiaea</i> spp.), seeds and leafage of weeds (e.g., <i>Stellaria media</i> , <i>Madia</i> spp.), and seeds and leafage of forbs and legumes (e
Lazuli Bunting	<i>Passerina amoena</i>	Brushy habitats, arid bushy hillsides, riparian, aspen, willow, alder, or cottonwood thickets, sagebrush, chaparral, scrub, recently burned, thickets.
Yellow Warbler	<i>Setophaga petechia</i>	Deciduous thickets, especially those dominated by willows, and in disturbed and early successional habitats. Shrub and thicket habitat. Vegetation includes willows, aspen, alder, dogwood
Brewer's Sparrow	<i>Spizella breweri</i>	Shrublands, usually sagebrush
Calliope Hummingbird	<i>Selasphorus calliope</i>	Shrub-sapling seral stage of forested habitats
Dusky Flycatcher	<i>Empidonax oberholseri</i>	Occupies scrub, brushy areas, thickets, and open areas with scattered trees. Open coniferous forest, mountain chaparral, aspen groves, streamside willow thickets and brushy open areas.

Common Name	Scientific Name	Habitat Summary
Fox Sparrow	<i>Passerella iliaca</i>	Brushy woodland edges, grown-up fields, cut-over woodland, and scrubby woods. streamside thickets and chaparral
House Finch	<i>Haemorhous mexicanus</i>	Variety of habitats: desert, grassland, desert shrubland, chaparral, oak savannah, juniper-oak woodland, riparian areas, open coniferous forest, and subalpine shrublands.
Orange-crowned Warbler	<i>Oreothlypis celata</i>	Breeds in a wider range of forest types than most birds. Prefers early seral habitats with shrubs and low vegetation, brushy and open deciduous woodlands, shrub thickets, mixed woods and coniferous forest edges.
Spotted Towhee	<i>Pipilo maculatus</i>	Dense, broadleaf shrubby growth (variously described as brush, thickets, or tangles) only a few meters tall, with or without emergent trees, that provide deep, sheltered, semi shaded litter and humus on ground, and screen of twigs and foliage close overhead.
Lesser Goldfinch	<i>Spinus psaltria</i>	Open country with scattered trees, inland riparian, woodland savannah, and chaparral habitats.
Yellow-breasted Chat	<i>Icteria virens</i>	Found in low, dense vegetation without a closed tree canopy, including shrubby habitat along stream, swamp, and pond margins; forest edges, regenerating burned-over forest, and logged areas; and fencerows and upland thickets of recently abandoned farmland. Population density positively correlated with blackberry in some studies. In the arid West, largely confined to riparian and shrubby habitats.
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	Second growth and riparian vegetation, composed of dense thickets, shrubs, willows, and saplings of various tree species, primarily in coniferous-forest of spruce and Douglas-fir, or mixed deciduous forests with birch, aspen and poplar.
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Inhabits shrubby understory and grass, and bare ground, trees sometimes present.
California Quail	<i>Callipepla californica</i>	A broad generalist, in chaparral, sagebrush scrub, and grassland oak, riparian and foothill woodland.
Common Redpoll	<i>Acanthis flammea</i>	Only winter habitat used in plan area. Open woodland and scrub, particularly of birch, alder, and willow; also among weeds, at field edges
Gray Catbird	<i>Dumetella carolinensis</i>	Shrubby vegetation, dense shrubs or vine tangles; abundant in shrub-sapling-stage successional and edge habitats, riparian corridors, riparian buffers,
Bewick's Wren	<i>Thryomanes bewickii</i>	Scrubby vegetation and open woodland, dense riparian areas of ash or oak. Opportunistic cavity nester, but also nests in other sites.

Common Name	Scientific Name	Habitat Summary
Mule deer	<i>Odocoileus hemionus</i>	Adapted to a variety of habitats including temperate forest, desert and semi-desert, open range, grassland, field and scrub habitats as well as Mountainous areas. Feeds on browse.
Yellow-pine Chipmunk	<i>Tamias amoenus</i>	Usually is found in brush-covered areas where snowberry (<i>Symphoricarpos</i>), chinquapin (<i>Castanopsis</i>), mountain mahogany (<i>Cercocarpus</i>), service berry (<i>Amelanehier</i>), antelope brush (<i>Purshia</i>), currant (<i>Ribes</i>), and buckbrush (<i>Ceanothus</i>) are found, providing abundant fruits seasonally. Such shrub areas are interspersed with a variety of grasses and herbs as well as open conifer stands, all producing favored food seeds. It is omnivorous, consuming a wide variety of food items, including seeds, fruits, bulbs or tubers, insects, bird eggs, berries, flowers, green foliage, roots, small animals, and buds of woody plants, and conifer seeds. Yellow-pine chipmunks require logs, snags, rock crevices, or stumps for nesting, in addition to shrubs and ground litter for cover.
Horned Lark	<i>Eremophila alpestris</i>	Open, generally barren country; avoids forests, short vegetation or bare ground
Killdeer	<i>Charadrius vociferus</i>	Mudflats, gravel bars, short-grass meadows, most often found near water
Kit Fox	<i>Vulpes macrotis</i>	Inhabits the deserts and arid lands of western North America. Arid and semi-arid regions encompassing desert scrub, chaparral, halophytic, and grassland communities. Areas with sparse ground cover are preferred
Turkey Vulture	<i>Cathartes aura</i>	Pastured rangeland, non-intensive agriculture, wild areas, parkland and grassland areas with intermixed forest, shrub, or open areas all with rock outcrops suitable for nesting. For nesting, prefers forested or partly forested areas with nest sites (rock outcrops, fallen trees, tree cavities, cliffs). Prefers hilly areas that provide thermals and updrafts. Avoids high forest canopy cover, flat areas, and high elevations.
Red Fox	<i>Vulpes vulpes</i>	Utilizes a wide range of habitats including forest, tundra, prairie, desert, mountains, farmlands, and urban areas.

Common Name	Scientific Name	Habitat Summary
Mountain Lion, Cougar, or Puma	<i>Puma concolor</i>	This species is found in a broad range of habitats, in all forest types, as well as lowland and montane desert. Several studies have shown that habitat with dense understory vegetation is preferred, however, Pumas can live in very open habitats with only a minimum of vegetative cover. In North America, deer make up 60-80% of the Puma's diet. In the plan area cougars are an important predator of elk.
Gray wolf	<i>Canis lupis</i>	Ranges in all northern habitats where there is suitable food (Mech 1970), densities being highest where prey biomass is highest (Fuller 1989). Food is extremely variable, but the majority comprises large ungulates (moose, caribou, deer, elk, wild boar, etc.). Wolves will also eat smaller prey items, livestock, carrion, and garbage.
Long-tailed Weasel	<i>Mustela frenata</i>	Found in a wide variety of habitats, usually near water. Associated with non-forested habitats within forested landscapes. Favored habitats include brushland and open woodlands, field edges, riparian grasslands, swamps, and marshes. Dens are in abandoned burrow made by other mammal, rock crevice, brushpile, stump hollow, or space among tree roots. These weasels are usually most abundant in late seral stages or ecotones where prey diversity is greatest. Waterways provide access to suitable habitat and are a natural avenue for dispersal, particularly in areas that otherwise are unsuitable. Feeds primarily on small mammals, occasionally birds, other small vertebrates, and insects. They are not found in deserts or thick, dense forests.
Coyote	<i>Canis latrans</i>	Coyotes utilize almost all available habitats including prairie, forest, desert, mountain and tropical ecosystems.
Bobcat	<i>Lynx rufus</i>	A wide variety of habitats, including boreal coniferous and mixed forests in the north, bottomland hardwood forest and coastal swamp in the southeast, and desert and scrubland in the southwest. High rabbit and small mammal populations are requisite. They seem to prefer shrub or open, or early seral habitats over forested habitats. Only large, intensively cultivated areas appear to be unsuitable habitat. Areas with dense understory vegetation and high prey density are most intensively selected by Bobcats. They sleep in hidden dens, often in hollow trees, thickets, or rocky crevices.

Common Name	Scientific Name	Habitat Summary
Rufous Hummingbird	<i>Selasphorus rufus</i>	Nests in dense mature and second growth coniferous forests, deciduous woods, riparian thickets, swamps and meadows. Red-tubular flowers such as red columbine (<i>Aquilegia formosa</i>), scarlet gilia (<i>Ipomopsis aggregata</i>), bearded tongues (<i>Penstemon</i> spp.) and paintbrushes, lilies (<i>Erythronium grandiflorum</i> , <i>Lilium columbianum</i>), purple larkspurs (<i>Delphinium barbeyi</i> and <i>D. geranioides</i>), heaths (<i>Vaccinium ovatum</i> , <i>Menziesia ferruginea</i>), currants (<i>Ribes sanguineum</i>), salmonberries (<i>Rubus spectabilis</i>), honeysuckles (<i>Lonicera</i> spp.), fireweed (<i>Epilobium angustifolium</i>), horsemint (<i>Monarda menthaefolia</i>), toad-flax (<i>Linaria vulgaris</i>), snapdragon (<i>Scrophularia montana</i>), and bee-flower (<i>Cleome serrulata</i>).
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	In arid portions of the range, riparian, canyon bottoms. Preferred habitat is a canyon or flood-plain riparian community, tracts of deciduous trees along stream bottoms, nesting habitats also include piñon-juniper woodlands and Gambel's oak (<i>Quercus gambelii</i>) shrublands. Nectar resources are likely important.
Bohemian Waxwing	<i>Bombycilla garrulus</i>	Winters in plan area where it feeds on fruit-bearing trees and shrubs.
Cedar Waxwing	<i>Bombycilla cedrorum</i>	The reliance of Cedar Waxwings on the fruits of shrubs and small trees, and their mutualistic role as seed dispersers, prescribes their habitat as open woodlands and shrubby fields that harbor these fruit-bearing plants. Insects are an important food in spring and early summer. Sugary fruits dominate the diet of this bird, especially in winter. This is a true frugivore, assimilating nutrients from fruit pulp and passing seeds intact back to the environment. Nests in open woodland and old field habitats with numerous shrubs and small trees, avoiding forest interior. Habitats include various woodlands—deciduous, coniferous, and mixed—especially open forests and riparian areas of deserts and grasslands, as well as farms, orchards, conifer plantations, and suburban gardens

Common Name	Scientific Name	Habitat Summary
Red Crossbill	<i>Loxia curvirostra</i>	Mature conifer forests of spruce (<i>Picea</i> spp.), Douglas-fir, eastern (<i>Tsuga canadensis</i>) and western hemlock, Ponderosa pine, Lodgepole pine. Breeds in mature conifer forests, but generally avoids dense forests; occurs wherever large cone crops have been produced by spruce (<i>Picea</i> spp.), Douglas fir, western hemlock, eastern hemlock (<i>Tsuga canadensis</i>), western larch (<i>Larix occidentalis</i>) and many species of pine. A critical factor influencing breeding is conifer seed availability, and its changes over time in relationship to the changing seasonal requirements for successful reproduction.
White-winged Crossbill	<i>Loxia leucoptera</i>	Conifer forests; wherever there are large crops of spruce or tamarack cones. Critical factor influencing crossbill breeding is conifer seed availability
Clark's Nutcracker	<i>Nucifraga columbiana</i>	Coniferous forest of species that produces mast or seeds, such as whitebark, limber, and ponderosa pines and Douglas fir.
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	The red squirrel inhabits coniferous forests, mixed conifer-hardwood and occasionally hardwood forests, and rural woodlots. Prefers coniferous and mixed forests, but also occurs in deciduous woodlands, hedgerows, and second-growth areas. Most common in montane (yellow pine and Douglas-fir) and subalpine (subalpine fir and Engelmann spruce) forests in western MT. Also occurs in drier, more open yellow pine forests of Eastern Montana It prefers to nest in tree cavities; and also constructs leaf nests and uses ground burrows. In central Colorado red squirrels were present in closed stands of mature conifers. In two study sites in central British Columbia red squirrels were twice and over five times as abundant in unthinned stands of 20-year-old lodgepole pine than in thinned stands. They were most abundant in mature stands. Diet consists of seeds, conifer cones, nuts, fruits. It occasionally feeds on invertebrates and small vertebrates. Commonly caches, and later consumes, large amounts of food. Species is more abundant in old forests compared to young and second growth forests. Annual fluctuations in density are large. Correlated with size of seed and cone crops. Red squirrels require mature coniferous trees as a source of cones and seed. Red squirrel population density varies with cone crops.

Common Name	Scientific Name	Habitat Summary
Brown-banded Arion	<i>Arion circumscriptus</i>	Occupies moist to wet sites (stream-sides, marshy areas) within forested or shrubby locations, usually near areas of human activity, such as campgrounds, gardens and other disturbed sites.
Glossy Pillar	<i>Cochlicopa lubrica</i>	Moister sites, often in disturbed areas such as gardens, residential areas, roadsides and pastures; not common in natural areas or dense forest. Canopy tree species include black cottonwood, aspen, scattered Engelmann spruce, ponderosa pine, secondary canopy species include willow and alder. Found under woody debris and in leaf litter or duff
Gray Fieldslug	<i>Deroceras reticulatum</i>	Found in a variety of modified habitats near moisture (lawns, gardens, irrigated fields, and roadsides), sometimes in sites without a tree canopy. Canopy tree species include black cottonwood, ponderosa pine and aspen, with a secondary canopy including alder and willow. Most often found under woody debris, leaf litter and rocks as well as in lawns under planters and ornaments
Minute Gem	<i>Hawaiia minuscula</i>	Frequents a variety of sites, wooded to relatively exposed and arid. Found under limestone and sandstone rocks in sites sparsely vegetated with juniper and grass, in willow litter, also under Douglas fir and ponderosa pine canopy
Brown Hive	<i>Euconulus fulvus</i>	A wide range of habitats, from wet forest and riparian areas to dry grassy sites and isolated aspen pockets. Tree canopy species include western redcedar, western hemlock, grand fir, Douglas-fir, Engelmann spruce, subalpine fir, black cottonwood, western larch, lodgepole pine, whitebark pine and aspen; secondary canopy includes alder, willow, dogwood and paper birch. Found under woody debris and rocks in leaf litter and duff
Cross Vertigo	<i>Vertigo modesta</i>	Moist forested or wooded sites, near water, sometimes in campgrounds. Canopy species include western redcedar, western hemlock, grand fir, Engelmann spruce, subalpine fir, Douglas-fir, lodgepole pine, whitebark pine, western larch, ponderosa pine, black cottonwood, and aspen; secondary canopy includes alder, willow, and paper birch. Found on or under rocks and woody debris (sometimes immediately next to streams), in leaf litter or duff, on vegetation

Common Name	Scientific Name	Habitat Summary
Banded Tigersnail	<i>Anguispira kochi</i>	Mostly in mesic mixed conifer forest, typically near water such as stream-side riparian, and seeps. Canopy species include western redcedar, western hemlock, Engelmann spruce, Douglas-fir, grand fir, western larch, lodgepole pine, black cottonwood and paper birch, and a secondary canopy including alder, dogwood and mountain maple. Found most often under woody debris or rocks in leaf litter and duff
Coeur d'Alene Oregonian	<i>Cryptomastix mullani</i>	Forested to semi-open sites, often near moisture. Canopy species include western redcedar, western hemlock, grand fir, Engelmann spruce, subalpine fir, Douglas-fir, western larch, western white pine, lodgepole pine, ponderosa pine, black cottonwood, aspen, and paper birch; secondary canopy includes alder, dogwood, water birch, willow, and mountain maple. Often found under woody debris, rocks, bryophyte mats in talus, leaf litter, and duff
Conical Spot	<i>Punctum randolphi</i>	Found in mesic to moist mixed conifer forest. Canopy species include Engelmann spruce, grand fir, Douglas-fir, black cottonwood with a secondary canopy of alder, ferns, devil's club, thimbleberry; on the ground under moist dead leaves downed wood and other litter
Fir Pinwheel	<i>Radiodiscus abietum</i>	Found in a variety mixed conifer forests, but usually in moist mesic sites; canopy species include western redcedar, western hemlock, grand fir, western white pine, Douglas-fir, Engelmann spruce, subalpine fir, western larch, ponderosa pine, lodgepole pine, black cottonwood, water and paper birch, with a secondary canopy including aspen, Pacific yew, and alder. Found under woody debris, rocks, leaf litter, and bryophyte mats
Forest Disc	<i>Discus whitneyi</i>	This species has been found in shrubland desert canyons usually in deep loosely packed humus or nested habitats, from mesic (western redcedar, western hemlock, Engelmann spruce, Douglas fir, black cottonwood, secondary canopy including alder, Pacific yew, paper birch, mountain maple, dogwood, willow) to relatively dry (ponderosa pine and Rocky Mountain juniper, but usually in moister sites, such as imbedded pockets of aspen). Found under woody debris and rocks, in downed rotten wood, leaf litter and duff

Common Name	Scientific Name	Habitat Summary
Giant Gardenslug	<i>Limax maximus</i>	Inhabits gardens and city parks near water and human habitation, sometimes out of town in campgrounds and valley-bottoms (for example, along Avalanche Creek in Glacier National Park and on Wild Horse Island in Flathead Lake). Forest canopy includes western redcedar, western hemlock, grand fir, Douglas-fir, paper birch, black cottonwood, secondary canopy of alder, willow, dogwood, and snowberry. Most often found under woody debris and leaf litter, sometimes in downed rotten wood or wood piles
Humped Coin	<i>Polygyrella polygyrella</i>	Occupies mesic mixed conifer forest, often relatively close to water such as streams and seeps; canopy species include western redcedar, western hemlock, grand fir, Engelmann spruce, Douglas-fir, subalpine fir, black cottonwood, and western white pine; secondary canopy includes alder and mountain maple. Found under woody debris and rocks in damp soil and humus.
Idaho Forestsnail	<i>Allogona ptychophora</i>	Mesic mixed conifer forest, often near water such as stream-side riparian, and seeps, but sometimes well away from surface water. Canopy species include western redcedar, western hemlock, Engelmann spruce, Douglas-fir, grand fir, western larch, ponderosa pine, lodgepole pine, black cottonwood, aspen and paper birch; secondary canopy includes alder, willow, dogwood, and mountain maple. Found most often under woody debris or rocks in leaf litter and duff, sometimes on the surface and in the open
Lovely Vallonia	<i>Vallonia pulchella</i>	Inhabits disturbed areas, such as gardens, parks and roadsides, often near moisture. Canopy species include Douglas-fir, ponderosa pine, black cottonwood, lodgepole pine, Engelmann spruce; secondary canopy includes alder and willow. Found under woody debris and rocks, and in leaf litter and duff
Lyre Mantleslug	<i>Udosarx lyrata</i>	Mostly mesic mixed conifer forest and riparian woodlands, sometimes with talus, also at higher elevation in drier habitat where snow banks and seeps keep soil moister. Canopy species include Engelmann spruce, subalpine fir, whitebark pine, Douglas-fir, ponderosa pine, lodgepole pine, western larch, western hemlock, western redcedar, black cottonwood and paper birch, secondary canopy includes alder, willow, mountain maple, and dogwood. Usually found under rocks and woody debris, sometimes within rotten logs

Common Name	Scientific Name	Habitat Summary
Magnum Mantleslug	<i>Magnipelta mycophaga</i>	Mostly mesic mixed conifer forest and riparian woodlands, sometimes with talus, also at higher elevation in drier sites with sufficient ground cover to maintain elevated soil moisture. Canopy species include Engelmann spruce, subalpine fir, lodgepole pine, Douglas-fir, western hemlock, western redcedar, grand fir, western larch, ponderosa pine, black cottonwood, with secondary canopy species including alder, willow, dogwood, and mountain maple. Usually found under rocks and woody debris, sometimes in rotten logs.
Marbled Jumping–slug	<i>Hemphillia danielsi</i>	Mostly in mesic mixed conifer forest, typically near water such as stream-side riparian areas and seeps. Canopy species include Engelmann spruce, subalpine fir, western redcedar, western hemlock, grand fir, Douglas-fir, alder, aspen, and black cottonwood. Usually found under woody debris and leaf litter or in downed rotten logs, sometimes under rocks.
Mellow Column	<i>Columella columella</i>	Moist forested sites, aspen pockets, and moist open meadows. Canopy species include Douglas-fir, Engelmann spruce, subalpine fir, limber pine, and aspen. Found under woody debris, on logs, vegetation, bryophyte mats, and in leaf litter (Hendricks 2012).
Mitered Vertigo	<i>Vertigo concinnula</i>	Moist sites in aspen and riparian willow thickets. Found under woody debris and leaf litter.
Nimapuna Disc	<i>Anguispira nimapuna</i>	Specific habitat requirements are not known, but the species has been found in dry to mesic mixed conifer forest often under debris, especially rocks and talus.
Northwest Striate	<i>Striatura pugetensis</i>	Mixed mesic conifer forest in moist sites at lower elevations. Canopy species include western hemlock, grand fir, Engelmann spruce, black cottonwood and western larch; secondary canopy includes alder, dogwood, paper birch and mountain ash. Found under woody debris, mossy mats and ferns, in leaf litter or duff.
Pale Jumping–slug	<i>Hemphillia camelus</i>	Slugs in this genus inhabit moist, coniferous forests with abundant large, woody debris and extensive litter and duff layers. It occurs in forested areas and most often found under logs or rocks. Comes out during wet periods. During particularly dry conditions, retreats to decomposing logs and moist sections. This suggests that both species retreat toward moist refuges as required by drying conditions. It is a cold-associated gastropods.

Common Name	Scientific Name	Habitat Summary
Quick Gloss	<i>Zonitoides arboreus</i>	A variety of forested habitats where moisture retained or available. Canopy species include most conifers (including junipers), cottonwoods, aspen, birches, green ash and American elm; secondary canopy includes alder, willow, dogwood, mountain maple, current and hawthorn. Often found under woody debris and rocks, in downed rotten wood, leaf litter, and duff. Inhabits isolated aspen stands
Reticulate Taildropper	<i>Prophysaon andersoni</i>	Mostly in mesic mixed conifer forest, often relatively close to water. Canopy species include western redcedar, western hemlock, grand fir, Douglas-fir, black cottonwood, paper birch, aspen, Engelmann spruce, western larch, western white pine, and lodgepole pine, with secondary canopy sometimes including alder, Pacific yew and mountain ash. Usually found under woody debris and leaf litter or in downed rotten wood, sometimes under rocks
Robust Lancetooth	<i>Haplotrema vancouverense</i>	Mostly in mesic mixed conifer forest, typically near water such as stream-side riparian, seeps and wetlands, sometimes near areas of human activity such as campgrounds. Canopy species include western redcedar, western hemlock, grand fir, Douglas-fir, black cottonwood, paper birch, and a secondary canopy including aspen and alder. Found in leaf litter, under woody debris, rocks, and bryophyte mats
Selway Forestsnail	<i>Allogona lombardii</i>	This species is found in intact mixed coniferous forest, usually in low elevation, well-shaded, moist areas along medium to large streams. Sites usually have a diverse understory and a substantial duff layer.
Sheathed Slug	<i>Zacoleus idahoensis</i>	Primarily in mesic mixed conifer forest, often near water such as stream-side riparian areas and seeps, but also in more xeric sites. Canopy species include western redcedar, western hemlock, grand fir, Engelmann spruce, Douglas-fir, western larch, ponderosa pine, lodgepole pine, black cottonwood, paper birch, with a secondary canopy of alder, willow, and dogwood. Usually found under woody debris and leaf litter or in downed rotten wood, sometimes under rocks
Silky Vallonia	<i>Vallonia cyclophorella</i>	Drier mixed conifer forest and open grassy and rocky slopes. Canopy species include Douglas fir, Engelmann spruce, western larch, lodgepole pine, black cottonwood, aspen, and Rocky Mountain juniper. Found under woody debris, rocks, and in leaf litter

Common Name	Scientific Name	Habitat Summary
Small Spot	<i>Punctum minutissimum</i>	Forested sites near moisture. Canopy species include aspen and Douglas-fir. Found in moist sites under woody debris and in leaf litter or duff
Smoky Taildropper	<i>Prophysaon humile</i>	Mostly in mesic mixed conifer forest, often relatively close to water. Canopy species include western redcedar, western hemlock, grand fir, Douglas-fir, Engelmann spruce, subalpine fir, ponderosa pine, black cottonwood, paper birch, aspen, western larch, and lodgepole pine, with secondary canopy sometimes including alder, dogwood, willow, Pacific yew, and hawthorn. Usually found under woody debris and leaf litter or in downed rotten wood, sometimes under rocks
Spruce Snail	<i>Microphysula ingersolli</i>	Occupies both wooded and open sites, to above tree line. Canopy species include Douglas-fir, Engelmann spruce, subalpine fir, western larch, ponderosa pine, whitebark pine, lodgepole pine, black cottonwood, aspen, western redcedar and western hemlock; secondary canopy includes alder, willow, hawthorn, and dogwood. Found under woody debris and rocks (sometimes in rotten wood or talus slopes), in leaf litter or duff; most common in areas with moisture and limestone
Thinlip Tightcoil	<i>Pristiloma idahoense</i>	Often found in Idaho at lower elevations in moist forest zones under mature closed-canopy ponderosa pine, Douglas-fir, grand fir, and Pacific yew. Sometimes in mossy talus under coarse organic debris, and sometimes associated with limestone and basalt
Toothless Column	<i>Columella edentula</i>	A diversity of moist sites, including isolated aspen stands. Canopy species include western redcedar, western hemlock, grand fir, Engelmann spruce, Douglas-fir, lodgepole pine, black cottonwood, aspen, paper birch; secondary canopy includes alder, dogwood and mountain maple. Often found under woody debris, on logs and vegetation, and in leaf litter
Western Flat-whorl	<i>Planogyra clappi</i>	The species is generally associated with mesic forests at a wide range of elevations. Populations are also occasionally encountered in partly forested rock taluses or outcrops, marshes, meadows, or riparian areas. Individuals are usually found under leaf litter.
Crestless Column	<i>Pupilla hebes</i>	Found in somewhat open, dry and rocky habitats, generally at lower elevations but absent from very dry sites. Sometimes occurs in mountain meadows. Little substrate preference evident.

Common Name	Scientific Name	Habitat Summary
Western Spotted Skunk	<i>Spilogale gracilis</i>	Widespread in many habitats. In Idaho, western spotted skunks occur most commonly along streams, especially in the vicinity of basaltic outcroppings and rock piles. In Southeastern Washington, uses rocky places and riparian thickets of willow and cottonwood. Commonly uses canyons, cliffs, rimrocks, lava fields, and arid valleys whereas in coastal regions it is common in alder, salmonberry, riparian alder, riparian hardwood, and tanoak habitats. Known to use dens of other animals such as beavers, and woodrats, or under buildings. Dens in rock outcrops, road cuts, under shrubs, in crevices, and tree cavities.
Vagrant Shrew	<i>Sorex vagrans</i>	Found in a wide variety of habitats: forest, meadow, and riparian, salt marsh but usually mesic habitats. At elevations below 5000 ft, usually Douglas-fir, lodgepole pine, western larch, grand fir, western redcedar, Douglas fir, and lodgepole pine. Known to nest in decayed logs. The nests are approximately 4" in diameter and are made of dry grass. Primarily feeds on forest insects (eggs, larvae, pupae, and adults), slugs, earthworms, and other invertebrates. Occasionally may feed on salamanders and other small vertebrates.
Cinereus or Masked Shrew	<i>Sorex cinereus</i>	It occupies most terrestrial habitats excluding areas with very little or no vegetation. Thick leaf litter in damp forests may represent favored habitat, although it appears to be adaptable to major successional disturbances. Nest sites are typically in shallow burrows or above ground in logs and stumps. It is a generalist, opportunistic invertivore, and eats primarily insects and other invertebrates, carrion, small vertebrates, occasionally seeds.
Common Gartersnake	<i>Thamnophis sirtalis</i>	Inhabits a very wide range of aquatic, wetland, and upland habitats. When inactive, it occurs underground, in or under surface cover, or in other secluded sites.

Common Name	Scientific Name	Habitat Summary
Northern Alligator Lizard	<i>Elgaria coerulea</i>	Habitat includes open areas in coniferous forest, grassy grown-over areas at margins of woodlands, clearcuts, and areas along streams; along coast this lizard sometimes occurs far from trees or major cover; it is associated with rock outcrops and talus in some areas. There is little specific information on habitat associations in Montana. Several observations have been made on south-facing slopes in fine to coarse talus, sometimes in the open, but often with some canopy cover of Douglas-fir, ponderosa pine, a variety of shrubby species (serviceberry, ninebark, mock orange), and a litter layer of dried leaves and conifer needles.
Ring-necked Snake	<i>Diadophis punctatus</i>	The ring-necked snake is widespread throughout North America, but the distribution in the western part of the range is sparse and discontinuous. The species has been detected in 2 parts of Idaho. A cluster of populations occurring in west-central Idaho comprises records from the Clearwater and Potlatch river drainages and the lower Salmon River drainage near White Bird. In Idaho, localities are typically adjacent to perennial rivers or streams in grassland or forested habitats or sagebrush-dominated habitat and rocky canyons adjacent to ephemeral and perennial water sources. Ring-neck Snakes can be found in forested, brushy areas or open hillsides that have rocks or other debris for them to hide in and they may use microhabitats that are moist. Prefers moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, coniferous forests, mixed woodlands. Foods are small salamanders, lizards, and frogs, as well as earthworms and juvenile snakes of other species.
Terrestrial Gartersnake	<i>Thamnophis elegans</i>	This species occurs in a wide variety of habitats, from lowlands to high mountains: grassland, shrubland, woodland, and open areas in forests. It is chiefly terrestrial in most areas, but also aquatic in some locations. Often it inhabits wetlands and areas near streams, ponds, and lakes.
Western Fence Lizard	<i>Sceloporus occidentalis</i>	This lizard occupies various habitats, including grassland, sagebrush, woodland, open coniferous forest, rocky canyons, talus slopes, and fence rows. Eggs are buried in loose soil. They are usually found in association with rock outcroppings, talus slopes and cliff faces, they can however also be found in open forested areas on rocks, logs and trees.

Common Name	Scientific Name	Habitat Summary
Western Skink	<i>Plestiodon skiltonianus</i>	Habitats include grassland, chaparral, pinyon-juniper woodland, open pine or pine-oak woods, and rocky areas near streams. The species is partial to open wooded foothills and is usually associated with rocks, under which it takes shelter. It also digs burrows in soil. Eggs are laid in burrows or areas excavated by the female under rocks and stones.
Northern Rubber Boa	<i>Charina bottae</i>	Habitat includes woodlands, forest clearings, patchy chaparral, meadows, and grassy savannas, generally not far from water; also riparian zones in arid canyons and sagebrush in some areas. Generally this snake is found in or under rotting logs or stumps, under rocks or in crevices, or under the bark of dead fallen trees. Usually found under logs and rocks in either moist or dry forest habitats. In Montana, found in leaf-litter in deep shaded Douglas-fir/cedar forest.
Western Rattlesnake	<i>Crotalus oreganus</i>	This snake occupies a wide diversity of habitats, from shrubby coastal dunes to timberline, from shrubby basins and canyons to open mountain forests. It is primarily terrestrial but sometimes climbs into trees or shrubs. When inactive, it occupies mammal burrows, crevices, caves, or similar secluded sites. Diet includes mainly small mammals; also birds, lizards, and rarely amphibians.
North American Racer	<i>Coluber constrictor</i>	Habitats encompass a wide range of lowland and montane areas, including deserts, prairies, sandhills, shrublands, woodlands, forests, canyons, streamsides, and semi-agricultural areas. This snake is absent from the driest deserts and highest mountains (subalpine zones and higher). Eggs are laid in underground tunnels or burrows, rotting stumps, sawdust piles, or under rocks. Small mammals, lizards, orthopterans, anurans are all major components of diet

Common Name	Scientific Name	Habitat Summary
Gophersnake	<i>Pituophis catenifer</i>	This species occurs in a wide range of habitats, extending from lowlands to mountains: desert, prairie, shrubland, woodland, open coniferous forest, farmland, and marshes. This snake is terrestrial, fossorial, and arboreal. It remains underground in cold weather and during the hot midday period in summer; it may occupy mammal burrows. Eggs are deposited in burrows excavated by the female in loose soil, in spaces beneath large rocks or logs, or possibly in small mammal burrows. Feeds primarily on small mammals; also eats birds and their eggs, lizards, small snakes and snake eggs, and insects; lizards and insects are more common in the diet of juveniles than in that of adults.
Bank Swallow	<i>Riparia riparia</i>	Presently breeds primarily in lowland areas along ocean coasts, rivers, streams, lakes, reservoirs, and wetlands. Vertical banks, cliffs, and bluffs in alluvial, friable soils characterize nesting-colony sites throughout North America. Most rivers and streams with nesting habitats are low-gradient, meandering waterways with eroding streamside banks where it nests in cavities in the soil. Foraging habitats surrounding nesting colony include wetlands, open water, grasslands, riparian woodlands, agricultural areas, shrublands, and occasionally upland woodlands.
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	Vertical cliff face or artificial structure (bridges, buildings) with a horizontal overhang for nest attachment, near open fields.
Canyon Wren	<i>Catherpes mexicanus</i>	Rocky cliffs or outcrops
Peregrine Falcon	<i>Falco peregrinus</i>	Most commonly occupied habitats contain cliffs, for nesting, with open gulfs of air and generally open landscapes for foraging.
Rock Wren	<i>Salpinctes obsoletus</i>	Arid or semiarid areas with exposed rock, desert to alpine habitats. Rocks, cliffs, crevices, interstices, passageways, recesses, and nooks and crannies of diverse shapes and sizes
White-throated Swift	<i>Aeronautes saxatalis</i>	Nests in crevices in cliffs, canyon walls, pinnacles, and large rocks; and in variety of human-made structures, in mountainous and hilly terrain adjacent to both open country and heavily forested areas.

Common Name	Scientific Name	Habitat Summary
Boulder Pile Mountainsnail	<i>Oreohelix jugalis</i>	Found in dry, rather open, often grassy or brushy sites, on varied lithologies. This species occurs in varied habitats, but populations are usually associated with talus or boulder fields in mesic to somewhat xeric conditions. Vegetation at sites includes netleaf hackberry, willow, and various forbs and grasses.
Costate Mountainsnail	<i>Oreohelix idahoensis</i>	This species occurs in dry, open limestone or calcareous schist. The dominant vegetation includes sagebrush, netleaf hackberry, and prickly pear.
A Land Snail (Hells Canyon)	<i>Oreohelix idahoensis baileyi</i>	Dry, open limestone areas at cliff base and in rockpiles.
Deep Slide Mountainsnail	<i>Oreohelix intersum</i>	Habitat is basalt and schist talus and rock fields. Vegetation may include grass and forbs and shrubs
Rocky Mountainsnail	<i>Oreohelix strigosa</i>	Composition of the plant community appears to be of little importance, dominant plant species where it occurs ranging from sagebrush to a wide variety of deciduous shrubs and trees and a similarly wide variety of coniferous shrubs and trees. Substrate, however, is of great importance, the presence of exposed limestone being almost critical for occurrence. The presence of moisture, limestone, and leaf mold to be of critical importance, with colonies being found chiefly in or near limestone debris at the base of shady cliffs.
Salmon Coil	<i>Helicodiscus salmonaceus</i>	This species is found in xeric to mesic sites within moderately closed- to open-canopied mixed conifer forest, though sometimes it can be found in shrub-dominated habitats as well. It is often found under bryophyte mats over calcareous talus or under rocks with predominant canopy species including ponderosa pine, Douglas-fir, grand fir and western hackberry. It is thought to be limited by the occurrence of its rocky habitat
Salmon Oregonian	<i>Cryptomastix harfordiana</i>	This species is found in moderately xeric to somewhat mesic habitats, and is associated with talus or boulder fields often at the base of slopes or in riparian areas. Dominant plants include netleaf hackberry, grasses, willow, and dogwood.

Common Name	Scientific Name	Habitat Summary
Seven Devils Mountainsnail	<i>Oreohelix hammeri</i>	Habitat at the only known site is limestone outcrops and talus with grasses, forbs, and shrubs. This species occurs on a steeply descending ridge crested with an outcrop of limestone blocks and plates of rock standing on edge. The habitat is vegetated with grasses, assorted forbs (including balsamroot and paintbrush), and mountain mahogany. The east-facing slope immediately below the ridge is heavily timbered with Douglas-fir, while the west-facing slope is predominantly vegetated with grasses and perennial forbs.
Striate Mountainsnail	<i>Oreohelix strigosa goniogyra</i>	Found mostly on forested outcrops of ponderosa pine and lithologies ranging from shist to limestone. Commonly sites have a partly-complete closed canopy and diverse forb and deciduous understory.
Mission Creek Oregonian	<i>Cryptomastix magnidentata</i>	Populations are found on limestone and basalt talus in pine forest that is moist, rocky, and well-shaded.
Lyrate Mountainsnail	<i>Oreohelix haydeni</i>	This species is found in xeric habitats with exposed limestone outcrops. The subspecies hesperia occurs in open ponderosa pine forests while perplexa occurs in areas dominated by sagebrush, serviceberry, and grasses.
Western Glass-snail	<i>Vitrina pellucida</i>	Found in a variety of warm and cold xeric habitats, often at rather open sites, ranging from near coastal to subalpine elevations. Talus and rocky ground, but seldom in forests.
Whorled Mountainsnail	<i>Oreohelix vortex</i>	This species occurs in association with basalt boulder fields and talus in xeric habitat. Grasses and occasionally shrubs or forbs are the most common plant associates.
American Pika	<i>Ochotona princeps</i>	Talus or piles of broken rock, often at high elevations with nearby grassland or forblands
Bushy-tailed Woodrat	<i>Neotoma cinerea</i>	Found from alpine to Sonoran life zones. Inhabits mountains, cliffs, talus slopes, caves, and rock outcrops, both in forests and open deserts
Hoary Marmot	<i>Marmota caligata</i>	Found in treeless alpine meadows where there are rocky outcrops and talus. Grass and forbs make up diet.
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Lives in a variety of habitats including coniferous forests, mixed forests, desert, sagebrush steppe, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Distribution of roost, maternity and hibernaculum are more important for presence than habitat type. <i>Corynorhinus townsendii</i> individuals choose roosting sites most commonly in caves, cliffs, and rock ledges but have been found in abandoned mines and other man-made structures.

Common Name	Scientific Name	Habitat Summary
Little Brown Myotis	<i>Myotis lucifugus</i>	Found in a variety of habitats across a large elevation gradient. This species inhabits forested lands near water. Little brown bats live over a wide latitudinal and elevational range. Foraging habitat requirements are generalized; foraging occurs over water, along the margins of lakes and streams, or in woodlands near water. Winter hibernation sites (caves, tunnels, abandoned mines, and similar sites) generally have a relatively stable temperatures. These bats use a wide range of habitats and often use human-made structures for resting and maternity sites; they also use caves and hollow trees. Availability of suitable maternity sites may limit the species' abundance and distribution.
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Silver-haired bats prefer temperate, north temperate zone conifer and mixed conifer/hardwood forests. The typical day roost for the bat is behind loose tree bark. Silver-haired bats appear to be particularly fond of willow, maple and ash trees (most likely due to the deeply fissured bark). Hollow snags and bird nests also provide daytime roosting areas for silver-haired bats. Less common daytime roosts include buildings, such as open sheds and garages. During the winter months, silver-haired bats that hibernate find shelter in northern areas inside trees, buildings, rock crevices, and similar protected structures. Silver-haired bats are insectivorous. Their diet mainly consists of flies, beetles, and moths. However, these bats feed opportunistically on any concentration of insects they come across.
Big Brown Bat	<i>Eptesicus fuscus</i>	Inhabits cities, towns, and rural areas, but is least commonly found in heavily forested regions. In pre-settlement times it is presumed the big brown bat roosted in tree hollows, natural caves, or openings in rock ledges.

Common Name	Scientific Name	Habitat Summary
Long-eared Myotis	<i>Myotis evotis</i>	These bats occupy a diverse array of habitats, including lowland, montane, and subalpine woodlands, forests, shrublands, and meadows, wooded stream courses, and areas over water bodies. Daytime roosts are in buildings, railroad trestles, snags and hollow trees, spaces behind loose bark of trees or stumps, mines, caves, rock crevices (including those on the ground), erosional cavities and channels in the ground, and similar sites. In southern British Columbia, long-eared myotis roost in tree cavities in dense forests. In the large uninterrupted forests of the Pacific Northwest, <i>Myotis evotis</i> uses large snags for day roosts. These bats usually prefer snags that reach high into or above the forest canopy.
Long-legged Myotis	<i>Myotis volans</i>	These bats occur primarily in mountainous areas wooded with coniferous trees, but also may be found in riparian and desert habitats. Hibernacula are in caves and mines, but winter habits are poorly known. Warm-season daytime roosts are in tree hollows or under loose bark, in crevices among rocks or in cliffs, or in buildings, but apparently not in caves or mines (these may be used at night). In Washington-Oregon, large snags were important roosts, but bats sometimes roosted in rock crevices. Winter habits are poorly known, but individuals hibernate at least in portions of the northern part of the range.
California Myotis	<i>Myotis californicus</i>	Wide tolerance of habitat including semi-arid desert regions of the Southwest, arid grasslands, forested regions of the Pacific Northwest, humid coastal forests and montane forests. Found in caves, mines, rocky hillsides, under tree bark, on shrubs, on the ground, and in buildings. During the winter months roost either solitarily or in small groups in caves, mines, and buildings.

Common Name	Scientific Name	Habitat Summary
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Occurs in deserts, chaparral, riparian zones, and western coniferous forest. Common in arid desert, badland, and semiarid habitats, although higher elevation, more mesic habitats are used. Uses rock outcrops on open grasslands to canyons in the foothills to lower mountains with yellow pine woodlands. Day roosts are variable, but include cracks and crevices in cliffs, beneath tree bark, in mines and caves, and occasionally in tunnels and dwellings of humans. Night roosts are under a variety of natural and human-induced structures. In Montana, Found in mesic and arid conifer forest, associated with rock outcrops, talus, clay banks; also riparian woodland. Summer day roosts include rock outcrops, clay banks, loose bark, buildings, bridges, caves, and mines. Hibernacula include caves and mines, and crevices.
Great Basin Pocket Mouse	<i>Perognathus parvus</i>	Found in arid, sandy short-grass steppes; brushland covered with sagebrush, bitterbrush, and rabbit brush; pinyon-juniper woodland. It usually is found in habitats with light-textured, deep soils; also among rocks.
Columbian Ground Squirrel	<i>Urocitellus columbianus</i>	Found in open habitat: high grass plateaus, sagebrush plains, valley grasslands, openings (meadows, clearcuts) in coniferous forests, alpine meadows, and stream banks. Typically burrows in friable or sandy soils in open ground or bank under boulder or log.
Golden-mantled Ground Squirrel	<i>Callospermophilus lateralis</i>	mountain slopes and foothills, alpine tundra, chaparral, open areas in pine, spruce, and fir forests, rocky outcroppings and slides, margins of mountain meadows, and rocky sagebrush country; campgrounds. Often in areas with abundant stumps, rocks, or fallen logs. When inactive or tending young, it occupies burrows under rocks, stumps, logs, trees, bushes, or cabins, in rock crevices, or in banks or along washes.
Bighorn Sheep	<i>Ovis canadensis</i>	Rocky steep breaklands
Mountain Goat	<i>Oreamnos americanus</i>	Most mountain goats occur in high altitude habitats, up to the limit of vegetation. Although they sometimes descend to sea level in coastal areas, they are primarily an alpine and sub-alpine species. Their diet includes grasses, herbs, sedges, ferns, moss, lichen, twigs, and leaves from the low-growing shrubs and conifers of their high-altitude habitat. Across their range perhaps the most common feature is steep, rocky terrain.
Barn Swallow	<i>Hirundo rustica</i>	Open areas (fields, meadows) for foraging, nest site that includes a vertical or horizontal substrate

Common Name	Scientific Name	Habitat Summary
Golden Eagle	<i>Aquila chrysaetos</i>	Open habitats that provide hunting habitat and often near cliffs that supply nesting sites. Tundra, shrublands, grasslands, woodland-brushlands, and coniferous forests. Avoids heavily forested areas.
Prairie Falcon	<i>Falco mexicanus</i>	Arid plains and steppes of interior North America, wherever cliffs or bluffs are present for nesting sites. Absent as a breeder from forested north Rocky mountains of north Idaho panhandle. A rare visitor to the plan area, but more common outside plan area.
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	Open areas, including open woodlands. Nest sites include rocky gorges, shale banks, stony road cuts, railroad embankments, gravel pits, eroded margins of streams, and other exposed banks of clay, sand, or gravel.
Lava Rock Mountainsnail	<i>Oreohelix waltoni</i>	Xerophile, found in dry open areas in sage scrub vegetation on basalt or mixed schist/alluvium. This species has been observed near the plan area but not in the plan area.
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	It is found in meadows, valleys, and foothills, often where forest and meadow form a mosaic; occupies open areas relatively free of trees and shrubs. Uses talus or rock outcrops that are vegetated in conjunction with burrowing habitats. Presence of rocks sufficiently large to provide shelter are found to be used throughout their range. Avoids forested areas.

Threats Evaluation for At-Risk Wildlife

The purpose of evaluating threats to at-risk species was to identify the most important threats in the plan area to these species and inform which factors may affect the probability of long-term persistence of these species in the plan area. The threats assessment results were used in part to develop plan components to address threats. Threats were assessed for each at risk species with a rule-based system for recognizing the magnitude of threats on the Nez Perce Clearwater National Forest. The methodology for evaluating threats are those used by Nature Serve (Master 2012). The scale of the evaluation was considered the administrative boundary of the forest. The method uses a combination of scope and severity to assign a relative magnitude of threats. The scope represents the spatial overlap of the threat with the distribution of the species or its habitats in the plan area. The severity of the threat was determined by expert opinion and was assessed as the degree to which a given threat would either reduce populations or reduce distribution of the species using the definitions shown in Table 1.

The categories of threats were identified and described in Salafsky et al. (2008) titled "A Standard Lexicon for Biodiversity Conservation: Unified Classifications of Threats and Actions". Each classification is a hierarchical listing of terms and associated definitions. The classifications are comprehensive and exclusive at the upper levels of the hierarchy, expandable at the lower levels, and simple, consistent, and scalable at all levels. In this assessment the planning team adopted the level 1 and 2 threat categories and expanded the level 3 threats as appropriate to evaluate common activities and actions that could be performed under the plan. Threats were evaluated for those both within forest service control, as well as for threats outside of forest Service control. In some cases, threats were identified for each species by a team of wildlife biologists and other specialists from the Nez Perce Tribe, the Idaho Fish and Game and the Forest Service. In the interest of time, some species were evaluated by the wildlife biologist on the Forest Plan Revision Team. In all cases, the evaluation relied on spatial data when available to assign the scope of threats.

In the tables below, level one threats are highlighted, level two threats are in bold, and level 3 threats are in normal text and denoted by a decimal under level 2 threats. Level one threats were generally not ranked individually. Instead the rankings for threats under level one categories were ranked at lower levels. In some cases, level 2 threats were expanded to more detailed categories indicated by decimal points. For example, 1.3 indicates a level two threat and 1.3.1 indicates a level 3 threat that falls under 1.3. If a level two threat didn't have any level three categories, the evaluation was conducted on level two threats. If the level two threats had level three threats under them, then the level three threats were ranked and the level two threats were not. If an activity did not occur in the plan area or didn't affect a given species, the threat was assigned no impact. Threats identified using this method that were medium or higher were evaluated further in most cases in the wildlife technical report. Plan components and alternatives can change either the scope of threat or reduce the severity of threats.

Table 2. The rule-based criteria for assigning scope and severity for threats to at risk wildlife species in the plan area.

<p>Scope (numeric or spatial) of threat</p>	<p>Combined w/ Severity in rule-based NatureServe "Threat Impact"</p>	<p>Percent of <u>Forest wide</u> 1) population, or 2) distribution (= <i>occupied habitat at species-specific definition</i>), affected by this threat, either now or within the life of the plan</p>	<ul style="list-style-type: none"> * Pervasive = affects 71-100% * Large = affects 31-70% * Restricted = affects 11-30% * Small = affects 1-10% * Unknown 	<p>Cases of uncertainty defaulted to the higher value</p>
<p>Severity of threat</p>	<p>Combined w/ Scope in rule-based NatureServe "Threat Impact"</p>	<p><u>within the scope</u>, degree to which a threat is likely to 1) destroy or eliminate populations, or 2) reduce distribution, either now or within the life of the plan</p>	<ul style="list-style-type: none"> * Extreme = 71-100% * Serious = 31-70% * Moderate = 11-30% * Slight = 1-10% * Unknown 	<p>Cases of uncertainty defaulted to the higher value</p>

Bighorn Sheep

Species:	Bighorn Sheep
Sci Name:	Ovis canadensis
Author:	Kevin Labrum
Date:	11/19/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current conditions, time span is life of the plan. One domestic sheep allotment currently on the forest is vacated but not closed. Loss of populations or distribution based on expert opinion. Disease persistent in population despite separation from domestic livestock. Disease and predation may interact to reduce survival and recruitment of bighorn populations. Distribution of bighorn sheep in plan area includes populations in the salmon river canyon, Hell's Canyon, the Selway bitterroot wilderness. Livestock grazing itself was evaluated separate from disease transmission and included cattle allotments. Domestic sheep grazing was not present currently.
Data Source(s):	Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers. Bighorn sheep published literature, particularly Salmon River Bighorn Sheep Project Final Report 2007-2015, Idaho Species Diversity Database, local knowledge of plan area, expert opinion.

Table 3. The threats assessment for bighorn sheep

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Slight	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Slight	Low
1.3	Tourism and Recreational Areas	Restricted	Slight	Low
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Slight	Low
2	Agriculture and Aquaculture	-	-	
2.1	Annual and Perennial Non-timber Crops	-	-	no impact
2.2	Wood and Pulp Plantations	-	-	no impact
2.3	Livestock Farming and Ranching	-	-	
2.3.1	Livestock Grazing as permitted	Restricted	Slight	Low
2.3.2	Past livestock grazing	Pervasive	unknown	Medium

2.3.3	Disease transmission (From Livestock)	Pervasive	Serious	High
2.3.4	Water developments for livestock	Small	Slight	Low
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Small	Slight	Low
2.3.6	Animal damage control as a result of livestock depredation.	Small	Slight	Low
2.4	Marine and Freshwater Aquaculture	-	-	no impact
3	Energy Production and Mining			
3.1	Oil and gas drilling	-	-	no impact
3.2	Mining and Quarrying	Small	Slight	Low
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	-	-	no impact
3.2.4	Suction dredging	-	-	no impact
3.3	Renewable Energy	-	-	no impact
3.3.1	Geothermal Development	-	-	no impact
3.3.2	Solar Power Facilities	-	-	no impact
3.3.3	Wind Power Facilities	-	-	no impact
3.3.4	Hydro Power Facilities	-	-	no impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads	-	-	
4.1.1	Roads – Transportation Network (permanent roads)	Restricted	Slight	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Slight	Low
4.1.3	motorized trails (footprint of trail)	Restricted	Slight	Low
4.1.4	Railroads			no impact
4.1.5	Cross country travel (unauthorized routes)	Restricted	Slight	Low
4.2	Utility and Service Lines	-	-	
4.2.1	Utility Lines / Towers - Power and Communication	-	-	no impact
4.2.2	Pipelines - Energy Development	-	-	no impact

4.3	Shipping Lanes	-	-	no impact
4.4	Flight Paths	-	-	no impact
5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	
5.1.1	Harvest – Unregulated / Illegal	-	-	
5.1.2	Harvest – Regulated / Legal	Pervasive	slight	Low
5.1.3	Collection	Small	Slight	Low
5.1.4	Predator Control	Large	Slight	Low
5.1.5	Trapping	-	-	no impact
5.1.6	Falconry, collection of raptors or chicks	-	-	no impact
5.2	Gathering Terrestrial Plants or fungi	Restricted	Slight	Low
5.3	Logging and wood harvest	Restricted	Slight	Low
5.3.1	past timber management (pre 1980)	Restricted	Slight	Low
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged management.)	Restricted	Slight	Low
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Restricted	Slight	Low
5.3.4	Fire Salvage	Small	Slight	Low
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Slight	Low
5.3.6	Seed collection	-	-	no impact
5.3.7	Woodcutting for firewood / posts	Small	Extreme	Low
5.4	Fishing and Harvesting Aquatic Resource	-	-	no impact
6	Human Intrusions and Disturbance			
6.1	Recreational Activities	-	-	
6.1.1	OHV Motorized Recreation	Restricted	Slight	Low
6.1.2	Camping (Dispersed)	Restricted	Slight	Low
6.1.3	Cave / Mine Exploration	-	-	no impact
6.1.4	Hiking / Foot Travel	Large	Slight	Low
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Large	Slight	Low
6.1.7	River Rafting	Restricted	Slight	Low
6.1.8	Rock Climbing	Small	Slight	Low

6.1.9	Skiing/snow boarding	-	-	no impact
6.1.10	Winter Motorized Recreation	Restricted	Slight	Low
6.2	War, Civil Unrest and Military Exercises	-	-	no impact
6.3	Work and Other Activities (eg. law enforcement, species research, vandalism, forest service activities, log transportation)	Pervasive	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	-	-	
7.1.1	Fire Suppression (historical changes due to long term suppression)	Restricted	moderate	Low
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Small	Slight	Low
7.1.3	Uncharacteristic wildfire	Restricted	Slight	Low
7.1.4	Fuel Treatments - Vegetation manipulation to reduce the chance or severity of wildfire	Restricted	Slight	Low
7.2	Dams and Water Management / Use	-	-	no impact
7.2.1	Presence of Dams/Diversions	-	-	no impact
7.2.2	Channelization / Bank Alteration (direct, intentional)	-	-	no impact
7.2.3	Spring Development / Capping	Restricted	Slight	Low
7.2.4	Agricultural / Municipal / Industrial Water Usage	-	-	no impact
7.2.5	Water Allocation Policies	-	-	no impact
7.2.6	Dredging	-	-	no impact
7.3	Other ecosystem modifications	-	-	
7.3.1	Seeding Non-native Plants	Restricted	Unknown	Low
7.3.2	Rip rap/other streambank alteration	-	-	no impact
7.3.3	Mine Shaft / Adit Closures	-	-	no impact
8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	-	-	no impact
8.1.2	Invasive Plant Species – Non-native	Large	Unknown	Medium

8.1.3	Invasive insects	-	-	no impact
8.1.4	Pathogens – Alien Organisms	Pervasive	Serious	High
8.2	Problematic Native Species	-	-	
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Slight	Low
8.2.3	Herbivory – Wildlife	Large	Slight	Low
8.2.4	Insects- endemic organisms.	-	-	no impact
8.2.5	Pathogens – Endemic Organisms	Pervasive	Unknown	Medium
8.2.6	Predation - native species	Pervasive	moderate	Medium
8.2.7	Nest parasitism	-	-	no impact
8.2.9	Natural rarity	Small	Slight	Low
8.3	Introduced genetic material	Unknown	Unknown	Unknown
9	Pollution			
9.1	Household Sewage and Urban Wastewater	-	-	no impact
9.2	Industrial and military effluents	-	-	no impact
9.2.1	Heavy Metal Deposition	-	-	no impact
9.2.2	Acid Mine Drainage	-	-	no impact
9.3	Agricultural and Forestry Effluents	-	-	
9.3.1	Agricultural Pollution	-	-	no impact
9.3.2	Soil Erosion/Loss	-	-	no impact
9.4	Garbage and solid waste	-	-	no impact
9.5	Air-borne pollutants	Pervasive	slight	Low
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low
9.5.2	Soil Movement/Deposition	Small	Slight	Low
9.6	Excess energy	Small	Slight	Low
9.6.1	Noise Pollution	Small	Slight	Low
9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	no impact
10	Geological Events	-	-	
10.1	Volcanoes	-	-	no impact

10.2	Earthquakes / Tsunamis	-	-	no impact
10.3	Avalanches / Landslides	Restricted	Slight	Low
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Pervasive	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Pervasive	Slight	Low

Fisher (*Pekania pennant*)

Species:	Fisher
Sci Name:	<i>Pekania pennanti</i>
Author:	Kerey Barnow-Meyer, Mary Williams, Joel Sauder, Glen Gill, Cara Staab, Kevin Labrum
Date:	Originally evaluated in 2017, Revised 11/18/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, multi-agency and multiple disciplines, time span is life of the plan.
Data Source(s):	Facts Activities, Fire Intensity GIS, Forest Roads GIS, Management Areas, Wilderness spatial layers, Sauder probable fisher habitat spatial model, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 4. The threats assessment for the fisher

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Slight	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Slight	Low
1.3	Tourism and Recreational Areas	-	-	
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Moderate	Low
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	Small	Moderate	no impact
2.2	Wood and Pulp Plantations	-	-	no impact
2.3	Livestock Farming and Ranching	Small	Moderate	Low
2.3.1	Livestock grazing as permitted	Restricted	Slight	Low
2.3.2	Past livestock grazing	Large	Unknown	Medium
2.3.3	Disease transmission (From Livestock)	-	-	no impact
2.3.4	Water developments for livestock	Small	Slight	Low

2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Restricted	Slight	Low
2.3.6	Animal damage control as a result of livestock depredation.	Small	Slight	Low
2.4	Marine and Freshwater Aquaculture	-	-	no impact
3	Energy Production and Mining			
3.1	Oil and gas drilling	-	-	no impact
3.2	Mining and Quarrying	-	-	
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	Small	Slight	Low
3.2.4	Suction dredging	Small	Slight	Low
3.3	Renewable Energy	-	-	
3.3.1	Geothermal Development	-	-	no impact
3.3.2	Solar Power Facilities	-	-	no impact
3.3.3	Wind Power Facilities	-	-	no impact
3.3.4	Hydro Power Facilities	Small	Slight	Low
4	Transportation and Service Corridors			
4.1	Roads and Railroads	-	-	
4.1.1	Roads – Transportation Network (permanent roads)	Large	Slight	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Slight	Low
4.1.3	motorized trails (footprint of trail)	Small	Slight	Low
4.1.4	Railroads	-	-	no impact
4.1.5	Cross country travel (unauthorized routes)	Small	Slight	Low
4.2	Utility and Service Lines	-	-	
4.2.1	Utility Lines / Towers – Power and Communication	Small	Slight	Low
4.2.2	Pipelines – Energy Development	-	-	no impact
4.3	Shipping Lanes	-	-	no impact
4.4	Flight Paths	Large	Slight	Low

5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	
5.1.1	Harvest – Unregulated / Illegal	Large	Moderate	Medium
5.1.2	Harvest – Regulated / Legal	Large	Slight	Low
5.1.3	Collection	Small	Slight	Low
5.1.4	Incedental or intentional poisoning	Unknown	Unknown	Unknown
5.1.6	Falconry, collection of raptors or Chicks	-	-	no impact
5.2	Gathering Terrestrial Plants (or fungi)	Large	Slight	Low
5.3	Logging and wood harvest	-	-	
5.3.1	past timber management (pre 1980)	Unknown	Unknown	Unknown
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged management.)	Restricted	Serious	Medium
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Restricted	Moderate	Low
5.3.4	Fire Salvage	Small	Slight	Low
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Slight	Low
5.3.6	Seed collection	Small	Slight	Low
5.3.7	Woodcutting for firewood / posts	Small	Slight	Low
5.4	Fishing and Harvesting Aquatic Resource	-	-	no impact
6	Human Intrusions and Disturbance			
6.1	Recreational Activities	-	-	
6.1.1	OHV Motorized Recreation	Small	Slight	Low
6.1.2	Camping (Dispersed)	Small	Slight	Low
6.1.3	Cave / Mine Exploration	-	-	no impact
6.1.4	Hiking / Foot Travel	Small	Slight	Low
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	-	-	no impact
6.1.8	Rock Climbing	-	-	no impact
6.1.9	Skiing/snow boarding	Small	Slight	Low
6.1.10	Winter Motorized Recreation	Large	Slight	Low

6.2	War, Civil Unrest and Military Exercises	-	-	no impact
6.3	Work and Other Activities eg. Law enforcement, drug smugglers, illegal immigrants, species research, vandalism	Small	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	-	-	
7.1.1	Fire Suppression (historical changes due to long term suppression)	Large	Moderate	Medium
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	-	-	no impact
7.1.3	Uncharacteristic wildfire	Large	Moderate	Medium
7.1.4	Fuel Treatments – Vegetation manipulation to reduce the chance or severity of wildfire	Restricted	Slight	Low
7.2	Dams and Water Management / Use	-	-	no impact
7.2.1	Presence of Dams/Diversions	Small	Slight	Low
7.2.2	Channelization / Bank Alteration (direct, intentional)	Small	Slight	Low
7.2.3	Spring Development / Capping	Small	Slight	Low
7.2.4	Agricultural / Municipal / Industrial Water Usage	-	-	no impact
7.2.6	Dredging for water management, or infrastructure	-	-	no impact
7.3	Other ecosystem modifications	-	-	
7.3.1	Seeding Non-native Plants	-	-	no impact
7.3.2	Rip rap/other streambank alteration	Small	Slight	Low
7.3.3	Mine Shaft / Adit Closures	-	-	no impact
8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Small	Slight	Low
8.1.2	Invasive Plant Species – Non-native	Small	Slight	Low
8.1.3	Invasive insects	-	-	no impact
8.1.4	Pathogens – Alien Organisms	Pervasive	Unknown	Medium
8.2	Problematic Native Species	Small	Slight	Low
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Slight	Low

8.2.3	Herbivory – Wildlife	Small	Slight	Low
8.2.4	Insects- endemic organisms.	Large	Slight	Low
8.2.5	Pathogens – Endemic Organisms	Small	Slight	Low
8.2.6	Predation – native species	Large	Slight	Low
8.2.7	Nest parasitism	-	-	no impact
8.2.9	Natural rarity	-	-	yes
8.3	Introduced genetic material	Pervasive	Unknown	Medium
9	Pollution			
9.1	Household Sewage and Urban Wastewater	-	-	no impact
9.2	Industrial and military effluents	-	-	no impact
9.2.1	Heavy Metal Deposition	Small	Slight	Low
9.2.2	Acid Mine Drainage	-	-	no impact
9.3	Agricultural and Forestry Effluents	-	-	no impact
9.3.1	Agricultural Pollution	-	-	no impact
9.3.2	Soil Erosion/Loss	-	-	no impact
9.4	Garbage and solid waste	Small	Slight	Low
9.5	Air-borne pollutants	-	-	no impact
9.5.1	Atmospheric Deposition	-	-	no impact
9.5.2	Soil Movement/Deposition	-	-	no impact
9.6	Excess energy	-	-	no impact
9.6.1	Noise Pollution	-	-	no impact
9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	No impact
10	Geological Events			
10.1	Volcanoes	-	-	no impact
10.2	Earthquakes / Tsunamis	-	-	no impact

10.3	Avalanches / Landslides	Restricted	Slight	Low
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Pervasive	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Small	Slight	Low

Harlequin Duck

Species:	Harlequin Duck
Sci Name:	Histrionicus histrionicus
Author:	Kevin Labrum
Date:	Originally evaluated in 2016, Revised 11/18/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, multi-agency and multiple disciplines, time span is life of the plan. Habitat and distribution was assumed to be the distribution of observations from the Idaho Species Diversity Database.
Data Source(s):	Habitat and distribution was assumed to be the distribution of observations from the Idaho Species Diversity Database. Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers. The forest spatial data used included Facts Activities, Fire Intensity, Forest Roads and motorized trails, Management Areas, Wilderness, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 5. The threats assessment of the harlequin duck

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	-	-	no impact
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Slight	Low
1.3	Tourism and Recreational Areas	-	-	
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Restricted	Unknown	Low
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	-	-	no impact
2.2	Wood and Pulp Plantations	-	-	no impact
2.3	Livestock Farming and Ranching	-	-	
2.3.1	Livestock Grazing as permitted	Small	Slight	Low
2.3.2	Past livestock grazing	Unknown	Unknown	Unknown
2.3.3	Disease transmission (From Livestock)	-	-	no impact

2.3.4	Water developments for livestock	-	-	no impact
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	-	-	no impact
2.3.6	Animal damage control as a result of livestock depredation.	-	-	no impact
2.4	Marine and Freshwater Aquaculture	Restricted	Unknown	Low
3	Energy Production and Mining			
3.1	Oil and gas drilling	-	-	no impact
3.2	Mining and Quarrying	-	-	low
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	-	-	no impact
3.2.4	Suction dredging	Restricted	Unknown	Low
3.3	Renewable Energy	-	-	
3.3.1	Geothermal Development	-	-	no impact
3.3.2	Solar Power Facilities	-	-	no impact
3.3.3	Wind Power Facilities	-	-	no impact
3.3.4	Hydro Power Facilities	-	-	no impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads	-	-	
4.1.1	Roads – Transportation Network (permanent roads)	Pervasive	Unknown	Medium
4.1.2	Temp roads (road construction, decommissioning)	Restricted	Unknown	Low
4.1.3	motorized trails	Large	Unknown	Medium
4.1.4	Railroads	-	-	no impact
4.1.5	Cross country travel (unauthorized routes)	Small	Unknown	Low
4.2	Utility and Service Lines	-	-	
4.2.1	Utility Lines / Towers - Power and Communication	Restricted	Slight	Low
4.2.2	Pipelines - Energy Development	-	-	no impact
4.3	Shipping Lanes	-	-	no impact
4.4	Flight Paths	-	-	no impact
5	Biological Resource Use			

5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)			
5.1.1	Harvest – Unregulated / Illegal	Small	Slight	Low
5.1.2	Harvest – Regulated / Legal	Small	Slight	Low
5.1.3	Collection	Small	Slight	Low
5.1.4	Predator Control	-	-	no impact
5.1.5	Trapping	-	-	no impact
5.1.6	Falconry, collection of raptors or Chicks	-	-	no impact
5.2	Gathering Terrestrial Plants or fungi	Small	Slight	Low
5.3	Logging and wood harvest	-	-	
5.3.1	past timber management (pre 1980)	Large	Unknown	Medium
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged management.)	Small	Unknown	Low
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Small	Unknown	Low
5.3.4	Fire Salvage	Small	Unknown	Low
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Restricted	Slight	Low
5.3.6	Seed collection	-	-	no impact
5.3.7	Woodcutting for firewood / posts	Small	Slight	Low
5.4	Fishing and Harvesting Aquatic Resource	Pervasive	Unknown	Medium
6	Human Intrusions and Disturbance			
6.1	Recreational Activities	-	-	
6.1.1	OHV Motorized Recreation	Small	Slight	Low
6.1.2	Camping (Dispersed)	Small	Moderate	Low
6.1.3	Cave / Mine Exploration	-	-	no impact
6.1.4	Hiking / Foot Travel	Restricted	Unknown	Low
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	Pervasive	Unknown	Medium
6.1.8	Rock Climbing	Small	Slight	Low
6.1.9	Skiing/snow boarding	-	-	no impact
6.1.10	Winter Motorized Recreation	-	-	no impact
6.2	War, Civil Unrest and Military Exercises	-	-	no impact

6.3	Work and Other Activities eg. law enforcement, drug smugglers, illegal immigrants, species research, vandalism	Small	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	-	-	
7.1.1	Fire Suppression (historical changes due to long term suppression)	Pervasive	Unknown	Medium
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Small	Unknown	Low
7.1.3	Uncharacteristic wildfire	Pervasive	Unknown	Medium
7.1.4	Fuel Treatments - Vegetation manipulation to reduce the chance or severity of wildfire	Small	Slight	Low
7.2	Dams and Water Management / Use	-	-	
7.2.1	Presence of Dams/Diversions	-	-	no impact
7.2.2	Channelization / Bank Alteration (direct, intentional)	Large	Unknown	Medium
7.2.3	Spring Development / Capping	-	-	no impact
7.2.4	Agricultural / Municipal / Industrial Water Usage	Small	Slight	no impact
7.2.5	Water Allocation Policies	-	-	no impact
7.2.6	Dredging	Small	Unknown	Low
7.3	Other ecosystem modifications	-	-	
7.3.1	Seeding Non-native Plants	Small	Slight	Low
7.3.2	Rip rap/other streambank alteration	Large	Unknown	Medium
7.3.3	Mine Shaft / Adit Closures	-	-	no impact
8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Pervasive	Unknown	Medium
8.1.2	Invasive Plant Species – Non-native	Restricted	Unknown	Low
8.1.3	Invasive insects	Unknown	Unknown	Unknown
8.1.4	Pathogens – Alien Organisms	Unknown	Unknown	Unknown
8.2	Problematic Native Species	-	-	
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Unknown	Low
8.2.3	Herbivory – Wildlife	Large	Slight	Low
8.2.4	Insects- endemic organisms.	Small	Slight	Low
8.2.5	Pathogens – Endemic Organisms	Pervasive	Slight	Low
8.2.6	Predation - native species	Pervasive	Slight	Low

8.2.7	Nest parasitism	-	-	no impact
8.2.9	Natural rarity	Pervasive	Unknown	Medium
8.3	Introduced genetic material	-	-	no impact
9	Pollution			
9.1	Household Sewage and Urban Wastewater	-	-	no impact
9.2	Industrial and military effluents	-	-	no impact
9.2.1	Heavy Metal Deposition	Restricted	Unknown	Low
9.2.2	Acid Mine Drainage	Restricted	Unknown	Low
9.3	Agricultural and Forestry Effluents	-	-	
9.3.1	Agricultural Pollution	Small	Slight	Low
9.3.2	Soil Erosion/Loss	Small	Slight	Low
9.4	Garbage and solid waste	Restricted	Slight	Low
9.5	Air-borne pollutants	Pervasive	Slight	Low
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low
9.5.2	Soil Movement/Deposition	Large	Unknown	Medium
9.6	Excess energy	-	-	
9.6.1	Noise Pollution	Large	Slight	Low
9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	no impact
10	Geological Events			
10.1	Volcanoes	-	-	no impact
10.2	Earthquakes / Tsunamis	-	-	no impact
10.3	Avalanches / Landslides	Large	Unknown	Medium
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Pervasive	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Large	Unknown	Medium

Mountain Quail

Species:	Mountain Quail
Sci Name:	Oreortyx pictus
Author:	K. Barnowe-Meyer, M. Williams, M. Chin, R. Hennekey, J. Chenoweth, J. Sauder, J. Bonn, M. Pruss, G. Gill, H. Lyman, K. Labrum
Date:	Originally evaluated in 1/17/2017, Revised 11/18/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, multi-agency and multiple disciplines, time span is life of the plan. Habitat and distribution was assumed to be the distribution of observations from the Idaho Species Diversity Database.
Data Source(s):	Habitat and distribution was assumed to be the distribution of observations from the Idaho Species Diversity Database. Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers. The forest spatial data used included Facts Activities, Fire Intensity, Forest Roads and motorized trails, Management Areas, Wilderness, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 6. The threat assessment for the mountain quail

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Serious	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Extreme	Low
1.3	Tourism and Recreational Areas	Small	Moderate	Low
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Moderate	Low
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	-	-	No impact
2.2	Wood and Pulp Plantations	-	-	No impact
2.3	Livestock Farming and Ranching	-	-	
2.3.1	Livestock Grazing as permitted	Pervasive	Unknown	Medium
2.3.2	Past livestock grazing	Pervasive	Unknown	Medium
2.3.3	Disease transmission (From Livestock)	Small	Slight	Low

2.3.4	Water developments for livestock	Restricted	Slight	Low
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Small	Slight	Low
2.3.6	Animal damage control as a result of livestock depredation.	Small	Slight	No impact
2.4	Marine and Freshwater Aquaculture	Small	Slight	Low
3	Energy Production and Mining			
3.1	Oil and gas drilling	Small	Slight	Low
3.2	Mining and Quarrying	-	-	No impact
3.2.1	Hardrock Minerals	-	-	
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	Small	Extreme	No impact
3.2.4	Suction dredging	-	-	No impact
3.3	Renewable Energy	-	-	No impact
3.3.1	Geothermal Development	Small	Slight	Low
3.3.2	Solar Power Facilities	Small	Extreme	No impact
3.3.3	Wind Power Facilities	-	-	No impact
3.3.4	Hydro Power Facilities	-	-	No impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads			
4.1.1	Roads – Transportation Network (permanent roads)	Small	Extreme	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Serious	Low
4.1.3	motorized trails (footprint of trail)	Small	Extreme	Low
4.1.4	Railroads	Small	Slight	Low
4.1.5	Cross country travel (unauthorized routes)			No impact
4.2	Utility and Service Lines	Unknown	Unknown	Unknown
4.2.1	Utility Lines / Towers - Power and Communication	Small	Slight	Low
4.2.2	Pipelines - Energy Development	Small	Slight	Low
4.3	Shipping Lanes	-	-	No impact
4.4	Flight Paths	-	-	No impact
5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	
5.1.1	Harvest – Unregulated / Illegal	-	-	
5.1.2	Harvest – Regulated / Legal	Small	Slight	No impact
5.1.3	Collection	-	-	No impact
5.1.4	Predator Control	-	-	No impact
5.1.5	Trapping	-	-	No impact
5.1.6	Falconry, collection of raptors or Chicks	-	-	No impact
5.2	Gathering Terrestrial Plants or fungi	-	-	No impact

5.3	Logging and wood harvest	Small	Slight	Low
5.3.1	past timber management (pre 1980)	-	-	
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged management.)	Restricted	Unknown	Low
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Small	Unknown	Low
5.3.4	Fire Salvage	Large	Unknown	Medium
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Unknown	Low
5.3.6	Seed collection	Small	Unknown	Low
5.3.7	Woodcutting for firewood / posts	Small	Slight	Low
5.4	Fishing and Harvesting Aquatic Resource	Small	Slight	Low
6	Human Intrusions and Disturbance	-	-	No impact
6.1	Recreational Activities	-	-	
6.1.1	OHV Motorized Recreation	Small	Slight	Low
6.1.2	Camping (Dispersed)	Small	Unknown	Low
6.1.3	Cave / Mine Exploration	Small	Slight	Low
6.1.4	Hiking / Foot Travel	-	-	No impact
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	Small	Slight	Low
6.1.8	Rock Climbing	-	-	No impact
6.1.9	Skiing/snow boarding	Small	Slight	Low
6.1.10	Winter Motorized Recreation	-	-	No impact
6.2	War, Civil Unrest and Military Exercises	Small	Slight	Low
6.3	Work and Other Activities eg. law enforcement, drug smugglers, illegal immigrants, species research, vandalism	-	-	No impact
7	Natural System Modifications	Restricted	Slight	Low
7.1	Fire and Fire Suppression	-	-	
7.1.1	Fire Suppression (historical changes due to long term suppression)	Pervasive	Extreme	Very High
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Restricted	Slight	Low
7.1.3	Uncharacteristic wildfire	Restricted	Slight	Low
7.1.4	Fuel Treatments - Vegetation manipulation to reduce the chance or severity of wildfire	Large	Moderate	Medium
7.2	Dams and Water Management / Use	Restricted	Moderate	Low
7.2.1	Presence of Dams/Diversions	-	-	
7.2.2	Channelization / Bank Alteration (direct, intentional)	Small	Slight	Low
7.2.3	Spring Development / Capping	Small	Slight	Low

7.2.4	Agricultural / Municipal / Industrial Water Usage	Restricted	Slight	Low
7.2.5	Water Allocation Policies	Small	Slight	Low
7.2.6	Dredging	Small	Slight	Low
7.3	Other ecosystem modifications	-	-	No impact
7.3.1	Seeding Non-native Plants	Restricted	Unknown	Low
7.3.2	Rip rap/other streambank alteration	Small	Unknown	Low
7.3.3	Mine Shaft / Adit Closures	Small	Slight	Low
8	Invasive and Other Problematic Species and Genes	Small	Slight	Low
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Pervasive	Unknown	Medium
8.1.2	Invasive Plant Species – Non-native	Pervasive	Unknown	Medium
8.1.3	Invasive insects	Pervasive	Slight	Low
8.1.4	Pathogens – Alien Organisms	Small	Slight	Low
8.2	Problematic Native Species	Unknown	Unknown	Unknown
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Unknown	Low
8.2.3	Herbivory – Wildlife	Small	Slight	Low
8.2.4	Insects- endemic organisms.	Pervasive	Slight	Low
8.2.5	Pathogens – Endemic Organisms	-	-	No impact
8.2.6	Predation - native species	Unknown	Unknown	Unknown
8.2.7	Nest parasitism	Pervasive	Slight	Low
8.2.9	Natural rarity	-	-	No impact
8.3	Introduced genetic material	Pervasive	Moderate	Medium
9	Pollution	Large	Unknown	Medium
9.1	Household Sewage and Urban Wastewater	-	-	No impact
9.2	Industrial and military effluents	-	-	No impact
9.2.1	Heavy Metal Deposition	-	-	No impact
9.2.2	Acid Mine Drainage	Unknown	Unknown	Unknown
9.3	Agricultural and Forestry Effluents	Small	Slight	Low
9.3.1	Agricultural Pollution	-	-	No Impact
9.3.2	Soil Erosion/Loss	Small	Slight	Low
9.4	Garbage and solid waste	-	-	
9.5	Air-borne pollutants	Small	Slight	Low
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low
9.5.2	Soil Movement/Deposition	Pervasive	Slight	Low
9.6	Excess energy	Small	Slight	Low
9.6.1	Noise Pollution	-	-	
9.6.2	Thermal Alteration of Water (e.g., by power plant)	Large	Slight	Low

10	Geological Events			
10.1	Volcanoes	-	-	No impact
10.2	Earthquakes / Tsunamis	-	-	No impact
10.3	Avalanches / Landslides	-	-	No impact
11	Climate Change and Severe Weather	Restricted	Slight	Low
11.1	Habitat Shifting and Alteration (due to climate change)	-	-	
11.2	Droughts	Pervasive	Serious	High
11.3	Temperature Extremes	Pervasive	Moderate	Medium
11.4	Storms and Flooding	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Pervasive	Slight	Low

White-headed Woodpecker

Species:	White-headed woodpecker
Sci Name:	Picoides albolarvatus
Author:	Kevin Labrum
Date:	Originally evaluated 7/6/2017, Revised 11/18/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, multi-agency and multiple disciplines, time span is life of the plan. Distribution was a combination of observation data and a habitat modeled with Vmap data that included dominance types with ponderosa pine, and large and very large trees.
Data Source(s):	Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers. The forest spatial data used included Facts Activities, Fire Intensity, Forest Roads and motorized trails, Management Areas, Wilderness, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 7. The threat assessment for the white-headed woodpecker

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Extreme	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Extreme	Low
1.3	Tourism and Recreational Areas	Small	Moderate	Low
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Moderate	no impact
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	-	-	no impact
2.2	Wood and Pulp Plantations	-	-	no impact
2.3	Livestock Farming and Ranching	Large	Slight	Low
2.3.1	Livestock Grazing as permitted	Large	Slight	Low
2.3.2	Past livestock grazing	Large	Moderate	Medium
2.3.3	Disease transmission (From Livestock)	-	-	no impact
2.3.4	Water developments for livestock	Small	Slight	Low
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Small	Slight	Low

2.3.6	Animal damage control as a result of livestock depredation.	Small	Slight	Low
2.4	Marine and Freshwater Aquaculture	Small	Slight	Low
3	Energy Production and Mining			
3.1	Oil and gas drilling	-	-	no impact
3.2	Mining and Quarrying	Small	Slight	Low
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	-	-	no impact
3.2.4	Suction dredging	-	-	no impact
3.3	Renewable Energy	-	-	no impact
3.3.1	Geothermal Development	-	-	no impact
3.3.2	Solar Power Facilities	-	-	no impact
3.3.3	Wind Power Facilities	-	-	no impact
3.3.4	Hydro Power Facilities	-	-	no impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads	Small	Slight	Low
4.1.1	Roads – Transportation Network (permanent roads)	Small	Slight	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Slight	Low
4.1.3	motorized trails (footprint of trail)	Small	Slight	Low
4.1.4	Railroads	-	-	no impact
4.1.5	Cross country travel (unauthorized routes)	Small	Slight	Low
4.2	Utility and Service Lines	Small	Slight	Low
4.2.1	Utility Lines / Towers – Power and Communication	Small	Slight	Low
4.2.2	Pipelines – Energy Development	-	-	no impact
4.3	Shipping Lanes	-	-	no impact
4.4	Flight Paths	-	-	no impact
5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	no impact
5.1.1	Harvest – Unregulated / Illegal	-	-	no impact
5.1.2	Harvest – Regulated / Legal	-	-	no impact
5.1.3	Collection	-	-	no impact
5.1.4	Predator Control	-	-	no impact
5.1.5	Trapping	-	-	no impact
5.1.6	Falconry, collection of raptors or Chicks	-	-	no impact
5.2	Gathering Terrestrial Plants or fungi	-	-	no impact
5.3	Logging and wood harvest			Medium
5.3.1	past timber management (pre 1980)	Large	Extreme	High

5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged management.)	Restricted	Serious	Medium
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Small	Moderate	Low
5.3.4	Fire Salvage	Small	Serious	Low
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Slight	Low
5.3.6	Seed collection	Small	Moderate	Low
5.3.7	Woodcutting for firewood / posts	Restricted	Moderate	Low
5.4	Fishing and Harvesting Aquatic Resource	-	-	no impact
6	Human Intrusions and Disturbance	-	-	
6.1	Recreational Activities	-	-	Low
6.1.1	OHV Motorized Recreation	Restricted	Slight	Low
6.1.2	Camping (Dispersed)	Small	Slight	Low
6.1.3	Cave / Mine Exploration	-	-	no impact
6.1.4	Hiking / Foot Travel	Small	Slight	Low
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	Small	Slight	Low
6.1.8	Rock Climbing	-	-	no impact
6.1.9	Skiing/snow boarding	Small	Slight	Low
6.1.10	Winter Motorized Recreation	Restricted	Slight	Low
6.2	War, Civil Unrest and Military Exercises	-	-	no impact
6.3	Work and Other Activities eg. Law enforcement, drug smugglers, illegal immigrants, species research, vandalism	Small	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	Pervasive	Serious	High
7.1.1	Fire Suppression (historical changes due to long term suppression)	Pervasive	Serious	High
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Small	Slight	Low
7.1.3	Uncharacteristic wildfire	Large	Serious	High
7.1.4	Fuel Treatments – Vegetation manipulation to reduce the chance or severity of wildfire	Large	Slight	Low
7.2	Dams and Water Management / Use	-	-	no impact
7.2.1	Presence of Dams/Diversions	Small	Slight	Low
7.2.2	Channelization / Bank Alteration (direct, intentional)	-	-	no impact
7.2.3	Spring Development / Capping	Small	Slight	Low
7.2.4	Agricultural / Municipal / Industrial Water Usage	-	-	no impact

7.2.5	Water Allocation Policies	-	-	no impact
7.2.6	Dredging	-	-	no impact
7.3	Other ecosystem modifications	-	-	Low
7.3.1	Seeding Non-native Plants	Small	Unknown	Low
7.3.2	Rip rap/other streambank alteration	-	-	no impact
7.3.3	Mine Shaft / Adit Closures	-	-	no impact
8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Small	Slight	Low
8.1.2	Invasive Plant Species – Non-native	Pervasive	Slight	Low
8.1.3	Invasive insects	Unknown	Unknown	Unknown
8.1.4	Pathogens – Alien Organisms	Small	Slight	Low
8.2	Problematic Native Species	Small	Slight	Low
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Large	Slight	Low
8.2.3	Herbivory – Wildlife	Small	Slight	Low
8.2.4	Insects- endemic organisms.	Large	Slight	Low
8.2.5	Pathogens – Endemic Organisms	Small	Slight	Low
8.2.6	Predation – native species	Small	Slight	Low
8.2.7	Nest parasitism	Small	Slight	Low
8.2.9	Natural rarity	Pervasive	Moderate	Medium
8.3	Introduced genetic material	-	-	no impact
9	Pollution			
9.1	Household Sewage and Urban Wastewater	-	-	no impact
9.2	Industrial and military effluents	Small	Slight	Low
9.2.1	Heavy Metal Deposition	Small	Slight	Low
9.2.2	Acid Mine Drainage	Small	Slight	Low
9.3	Agricultural and Forestry Effluents	-	-	no impact
9.3.1	Agricultural Pollution	-	-	no impact
9.3.2	Soil Erosion/Loss	Small	Slight	Low
9.4	Garbage and solid waste	Small	Slight	Low
9.5	Air-borne pollutants	Pervasive	Slight	Low
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low
9.5.2	Soil Movement/Deposition	Small	Slight	Low
9.6	Excess energy	Small	Slight	Low
9.6.1	Noise Pollution	Small	Slight	Low
9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	no impact

10	Geological Events			
10.1	Volcanoes	-	-	no impact
10.2	Earthquakes / Tsunamis	-	-	no impact
10.3	Avalanches / Landslides	Small	Slight	Low
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Pervasive	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Pervasive	Slight	Low

Canada Lynx

Species:	Canada Lynx
Sci Name:	Lynx canadensis
Author:	Kevin Labrum
Date:	Originally evaluated in 2017, Revised 11/18/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, time span is life of the plan. Nez Perce Clearwater Lynx habitat layer was used as the basis for the distribution of lynx habitat in plan area.
Data Source(s):	Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers, Facts Activities, Fire Intensity, Forest Roads and motorized trails, Management Areas, Wilderness, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 8. The threat assessment for the Canada lynx

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Slight	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Slight	Low
1.3	Tourism and Recreational Areas	-	-	No impact
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Moderate	Low
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	-	-	No impact
2.2	Wood and Pulp Plantations	-	-	No impact
2.3	Livestock Farming and Ranching	Small	Slight	Low
2.3.1	Livestock Grazing as permitted	Small	Slight	Low
2.3.2	Past livestock grazing	Unknown	Unknown	Unknown
2.3.3	Disease transmission (From Livestock)	-	-	No impact
2.3.4	Water developments for livestock	-	-	No impact
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Small	Moderate	Low

2.3.6	Animal damage control as a result of livestock depredation.	Restricted	Moderate	Low
2.4	Marine and Freshwater Aquaculture	-	-	No impact
3	Energy Production and Mining			
3.1	Oil and gas drilling	Small	Slight	Low
3.2	Mining and Quarrying	-	-	
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	-	-	No impact
3.2.4	Suction dredging	-	-	No impact
3.3	Renewable Energy	-	-	
3.3.1	Geothermal Development	-	-	No impact
3.3.2	Solar Power Facilities	-	-	No impact
3.3.3	Wind Power Facilities	-	-	No impact
3.3.4	Hydro Power Facilities	-	-	No impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads	-	-	
4.1.1	Roads – Transportation Network (permanent roads)	Small	Slight	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Slight	Low
4.1.3	motorized trails (footprint of trail)	Restricted	Slight	Low
4.1.4	Railroads	-	-	No impact
4.1.5	Cross country travel (unauthorized routes)	Small	Slight	Low
4.2	Utility and Service Lines	-	-	
4.2.1	Utility Lines / Towers - Power and Communication	Small	Slight	Low
4.2.2	Pipelines - Energy Development	-	-	No impact
4.3	Shipping Lanes	Small	Slight	Low
4.4	Flight Paths	-	-	No impact
5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	
5.1.1	Harvest – Unregulated / Illegal	Small	Slight	Low
5.1.2	Harvest – Regulated / Legal	Large	Slight	Low
5.1.3	Collection	-	-	No impact
5.1.4	Incedental or intentional poisoning	-	-	No impact
5.1.6	Falconry, collection of raptors or Chicks	-	-	No impact

5.2	Gathering Terrestrial Plants (or fungi)	Small	Slight	Low
5.3	Logging and wood harvest	-	-	
5.3.1	past timber management (pre 1980)	Unknown	Unknown	Unknown
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged managment.)	Small	Serious	Low
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Restricted	Moderate	Low
5.3.4	Fire Salvage	-	-	No impact
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Moderate	Low
5.3.6	Seed collection	Restricted	Slight	Low
5.3.7	Woodcutting for firewood / posts	Small	Slight	Low
5.4	Fishing and Harvesting Aquatic Resource	-	-	No impact
6	Human Intrusions and Disturbance			
6.1	Recreational Activities	Large	Slight	Low
6.1.1	OHV Motorized Recreation	Restricted	Slight	Low
6.1.2	Camping (Dispersed)	Small	Slight	Low
6.1.3	Cave / Mine Exploration	-	-	No impact
6.1.4	Hiking / Foot Travel	Large	Slight	Low
6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	-	-	No impact
6.1.8	Rock Climbing	-	-	No impact
6.1.9	Skiing/snow boarding	Restricted	Slight	Low
6.1.10	Winter Motorized Recreation	Large	Slight	Low
6.2	War, Civil Unrest and Military Exercises	-	-	No impact
6.3	Work and Other Activities eg. law enforcement, drug smugglers, illegal immigrants, species research, vandalism	Small	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	Restricted	Serious	Medium
7.1.1	Fire Suppression (historical changes due to long term suppression)	Pervasive	Serious	High
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Small	Slight	Low
7.1.3	Uncharacteristic wildfire	Restricted	Serious	Medium
7.1.4	Fuel Treatments - Vegetation manipulation to reduce the chance or severity of wildfire	Small	Moderate	Low
7.2	Dams and Water Management / Use	Small	Slight	Low

7.2.1	Presence of Dams/Diversions	Small	Slight	Low
7.2.2	Channelization / Bank Alteration (direct, intentional)	-	-	No impact
7.2.3	Spring Development / Capping	Small	Slight	Low
7.2.4	Agricultural / Municipal / Industrial Water Usage	Small	Slight	Low
7.2.6	Dredging for water management, or infrastructure	-	-	No impact
7.3	Other ecosystem modifications	-	-	
7.3.1	Seeding Non-native Plants	Small	Slight	Low
7.3.2	Rip rap/other streambank alteration	-	-	No impact
7.3.3	Mine Shaft / Adit Closures	-	-	No impact
8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Small	Slight	Low
8.1.2	Invasive Plant Species – Non-native	Small	Slight	Low
8.1.3	Invasive insects	-	-	No impact
8.1.4	Pathogens – Alien Organisms	Unknown	Unknown	Unknown
8.2	Problematic Native Species			
8.2.1	Problematic/invasive Animal Species – Native	Pervasive	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Slight	Low
8.2.3	Herbivory – Wildlife	-	-	No impact
8.2.4	Insects- endemic organisms.	Large	Unknown	Medium
8.2.5	Pathogens – Endemic Organisms	Small	Slight	Low
8.2.6	Predation - native species	Pervasive	Slight	Low
8.2.7	Nest parasitism	-	-	No impact
8.2.9	Natural rarity	-	-	yes
8.3	Introduced genetic material	-	-	No impact
9	Pollution			
9.1	Household Sewage and Urban Wastewater	Small	Slight	Low
9.2	Industrial and military effluents	-	-	No impact
9.2.1	Heavy Metal Deposition	Small	Slight	Low
9.2.2	Acid Mine Drainage	Small	Slight	Low
9.3	Agricultural and Forestry Effluents	-	-	
9.3.1	Agricultural Pollution	-	-	No impact
9.3.2	Soil Erosion/Loss	-	-	No impact
9.4	Garbage and solid waste	-	-	No impact
9.5	Air-borne pollutants	Pervasive	Slight	Low
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low

9.5.2	Soil Movement/Deposition	Small	Slight	Low
9.6	Excess energy	-	-	
9.6.1	Noise Pollution	Small	Slight	Low
9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	No impact
10	Geological Events			
10.1	Volcanoes	-	-	No impact
10.2	Earthquakes / Tsunamis	-	-	No impact
10.3	Avalanches / Landslides	Restricted	Slight	Low
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Large	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Pervasive	Slight	Low

Wolverine

Species:	Wolverine
Sci Name:	Gulo gulo
Author:	Kevin Labrum
Date:	Originally evaluated in 2017, Revised 11/19/2019
Scale	Forest Administrative Boundary
Assumptions	Existing current or future conditions under the plan, based on expert opinion, available data used when available, time span is life of the plan. A composite of the Inman and Copeland models (IDFG 2014) was used as the basis for the distribution of wolverine habitat in plan area.
Data Source(s):	Forest Service Spatial data including management areas, roads and motorized trails, FACTS, Vmap, Infra, Weeds inventory, allotments, recreation, special uses, mvum, forest infrastructure, fire perimeters, burn severity data, mine and geology layers, Facts Activities, Fire Intensity, Forest Roads and motorized trails, Management Areas, Wilderness, Vamp spatial vegetation layer, special uses spatial layer, and other spatial data.

Table 9. The threat assessment for the wolverine

Threat ID	Threat Description	Scope	Severity	Impact
1	Residential and Commercial Development			
1.1	Housing and Urban Areas	Small	Slight	Low
1.2	Rec residences, fire towers, Ranger Stations, etc.	Small	Slight	Low
1.3	Tourism and Recreational Areas	-	-	
1.3.1	(Campgrounds, ski resorts, developed rec, boat ramps, trailheads)	Small	Moderate	Low
2	Agriculture and Aquaculture			
2.1	Annual and Perennial Non-timber Crops	-	-	No impact
2.2	Wood and Pulp Plantations	-	-	No impact
2.3	Livestock Farming and Ranching	-	-	
2.3.1	Livestock Grazing as permitted	Small	Slight	Low
2.3.2	Past livestock grazing	Unknown	Unknown	Unknown

2.3.3	Disease transmission (From Livestock)	-	-	no impact
2.3.4	Water developments for livestock	-	-	no impact
2.3.5	Range Developments (Fencing, corrals, enclosures, infrastructure)	Small	Slight	Low
2.3.6	Animal damage control as a result of livestock depredation.	Restricted	Unknown	Low
2.4	Marine and Freshwater Aquaculture	-	-	No impact
3	Energy Production and Mining			
3.1	Oil and gas drilling	-	-	No impact
3.2	Mining and Quarrying			
3.2.1	Hardrock Minerals	Small	Slight	Low
3.2.2	Sand and Gravel	Small	Slight	Low
3.2.3	Strip mining	-	-	no impact
3.2.4	Suction dredging	-	-	No impact
3.3	Renewable Energy	-	-	
3.3.1	Geothermal Development	-	-	No impact
3.3.2	Solar Power Facilities	-	-	No impact
3.3.3	Wind Power Facilities	-	-	No impact
3.3.4	Hydro Power Facilities	-	-	No impact
4	Transportation and Service Corridors			
4.1	Roads and Railroads	-	-	
4.1.1	Roads – Transportation Network (permanent roads)	Restricted	Slight	Low
4.1.2	Temp roads (road construction, decommissioning)	Small	Slight	Low
4.1.3	motorized trails (footprint of trail)	Restricted	Slight	Low
4.1.4	Railroads	-	-	No impact
4.1.5	Cross country travel (unauthorized routes)	Small	Slight	Low
4.2	Utility and Service Lines			
4.2.1	Utility Lines / Towers - Power and Communication	Small	Slight	Low
4.2.2	Pipelines - Energy Development	-	-	No impact
4.3	Shipping Lanes	-	-	No impact

4.4	Flight Paths	-	-	No impact
5	Biological Resource Use			
5.1	Hunting and Collecting Terrestrial Animals (harvest (illegal and legal), collection, falconry)	-	-	
5.1.1	Harvest – Unregulated / Illegal	Small	Slight	Low
5.1.2	Harvest – Regulated / Legal	Large	Slight	Low
5.1.3	Collection			no impact
5.1.4	Incidental or intentional poisoning	Unknown	Unknown	Unknown
5.1.6	Falconry, collection of raptors or Chicks	-	-	No impact
5.2	Gathering Terrestrial Plants (or fungi)	Small	Slight	Low
5.3	Logging and wood harvest	-	-	
5.3.1	past timber management (pre 1980)	Unknown	Unknown	Unknown
5.3.2	Regeneration harvest (clear cut, patch clearcut, clearcut with leave trees, Stand Clearcut, seed tree, shelterwood, two aged managment.)	Restricted	Slight	Low
5.3.3	Intermediate (thinning, improvement, liberation, sanitation)	Restricted	Slight	Low
5.3.4	Fire Salvage	-	-	No impact
5.3.5	Uneven Aged Management – (Single Tree selection, group selection)	Small	Slight	Low
5.3.6	Seed collection	Small	Slight	Low
5.3.7	Woodcutting for firewood / posts	Restricted	Slight	Low
5.4	Fishing and Harvesting Aquatic Resource	-	-	No impact
6	Human Intrusions and Disturbance			
6.1	Recreational Activities	Large	Slight	Low
6.1.1	OHV Motorized Recreation	Large	Slight	Low
6.1.2	Camping (Dispersed)	Small	Slight	Low
6.1.3	Cave / Mine Exploration	-	-	no impact
6.1.4	Hiking / Foot Travel	Large	Slight	Low

6.1.5	Mountain Biking	Small	Slight	Low
6.1.6	Pack / Saddle Stock	Small	Slight	Low
6.1.7	River Rafting	-	-	No impact
6.1.8	Rock Climbing	-	-	no impact
6.1.9	Skiing/snow boarding	Restricted	Moderate	Low
6.1.10	Winter Motorized Recreation	Large	Moderate	Medium
6.2	War, Civil Unrest and Military Exercises	-	-	no impact
6.3	Work and Other Activities eg. law enforcement, drug smugglers, illegal immigrants, species research, vandalism	Small	Slight	Low
7	Natural System Modifications			
7.1	Fire and Fire Suppression	-	-	
7.1.1	Fire Suppression (historical changes due to long term suppression)	Pervasive	Slight	Low
7.1.2	Fire fighting activities (fire lines, retardant drops, etc)	Small	Slight	Low
7.1.3	Uncharacteristic wildfire	Restricted	Slight	Low
7.1.4	Fuel Treatments - Vegetation manipulation to reduce the chance or severity of wildfire	Small	Slight	Low
7.2	Dams and Water Management / Use	-	-	
7.2.1	Presence of Dams/Diversions	-	-	No impact
7.2.2	Channelization / Bank Alteration (direct, intentional)	-	-	No impact
7.2.3	Spring Development / Capping	Small	Slight	Low
7.2.4	Agricultural / Municipal / Industrial Water Usage	-	-	No impact
7.2.6	Dredging for water management, or infrastructure	-	-	No impact
7.3	Other ecosystem modifications	-	-	
7.3.1	Seeding Non-native Plants	Small	Slight	Low
7.3.2	Rip rap/other streambank alteration	-	-	no impact
7.3.3	Mine Shaft / Adit Closures	-	-	no impact

8	Invasive and Other Problematic Species and Genes			
8.1	Invasive Non-native / Alien Species	-	-	
8.1.1	Invasive Animal Species – Non-native	Small	Slight	Low
8.1.2	Invasive Plant Species – Non-native	Small	Slight	Low
8.1.3	Invasive insects	-	-	No impact
8.1.4	Pathogens – Alien Organisms	Unknown	Unknown	Unknown
8.2	Problematic Native Species			
8.2.1	Problematic/invasive Animal Species – Native	Small	Slight	Low
8.2.2	Problematic/invasive Plant Species – Native	Small	Slight	Low
8.2.3	Herbivory – Wildlife	-	-	No impact
8.2.4	Insects- endemic organisms.	Restricted	Slight	Low
8.2.5	Pathogens – Endemic Organisms	Small	Slight	Low
8.2.6	Predation - native species	Pervasive	Slight	Low
8.2.7	Nest parasitism	-	-	No impact
8.2.9	Natural rarity	-	-	yes
8.3	Introduced genetic material	-	-	No impact
9	Pollution			
9.1	Household Sewage and Urban Wastewater	Small	Slight	Low
9.2	Industrial and military effluents	-	-	No impact
9.2.1	Heavy Metal Deposition	Small	Slight	Low
9.2.2	Acid Mine Drainage	Small	Slight	Low
9.3	Agricultural and Forestry Effluents	-	-	
9.3.1	Agricultural Pollution	-	-	no impact
9.3.2	Soil Erosion/Loss	-	-	no impact
9.4	Garbage and solid waste	-	-	No impact
9.5	Air-borne pollutants	-	-	
9.5.1	Atmospheric Deposition	Pervasive	Slight	Low
9.5.2	Soil Movement/Deposition	Small	Slight	Low
9.6	Excess energy	-	-	
9.6.1	Noise Pollution	Small	Slight	Low

9.6.2	Thermal Alteration of Water (e.g., by power plant)	-	-	No impact
10	Geological Events			
10.1	Volcanoes	-	-	No impact
10.2	Earthquakes / Tsunamis	-	-	No impact
10.3	Avalanches / Landslides	Large	Slight	Low
11	Climate Change and Severe Weather			
11.1	Habitat Shifting and Alteration (due to climate change)	Pervasive	Unknown	Medium
11.2	Droughts	Pervasive	Unknown	Medium
11.3	Temperature Extremes	Pervasive	Unknown	Medium
11.4	Storms and Flooding	Pervasive	Slight	Low

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