BIOLOGICAL EVALUATION

KIWANIS CAMP IMPROVEMENTS

DRAFT BIOLOGICAL EVALUATION OF THREATENED, ENDANGERED, PROPOSED, SENSITIVE, SURVEY AND MANAGE TERRESTRIAL SPECIES

Prepared by: Tom Williamson and Matt Gostin

Turnstone Environmental Consultants Inc

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DOCUMENTATION FOR ENVIRONMENTAL BASELINE AND EFFECTS OF PREFERRED ACTION(S) ON RELEVANT INDICATORS

Mt. Hood Kiwanis Camp

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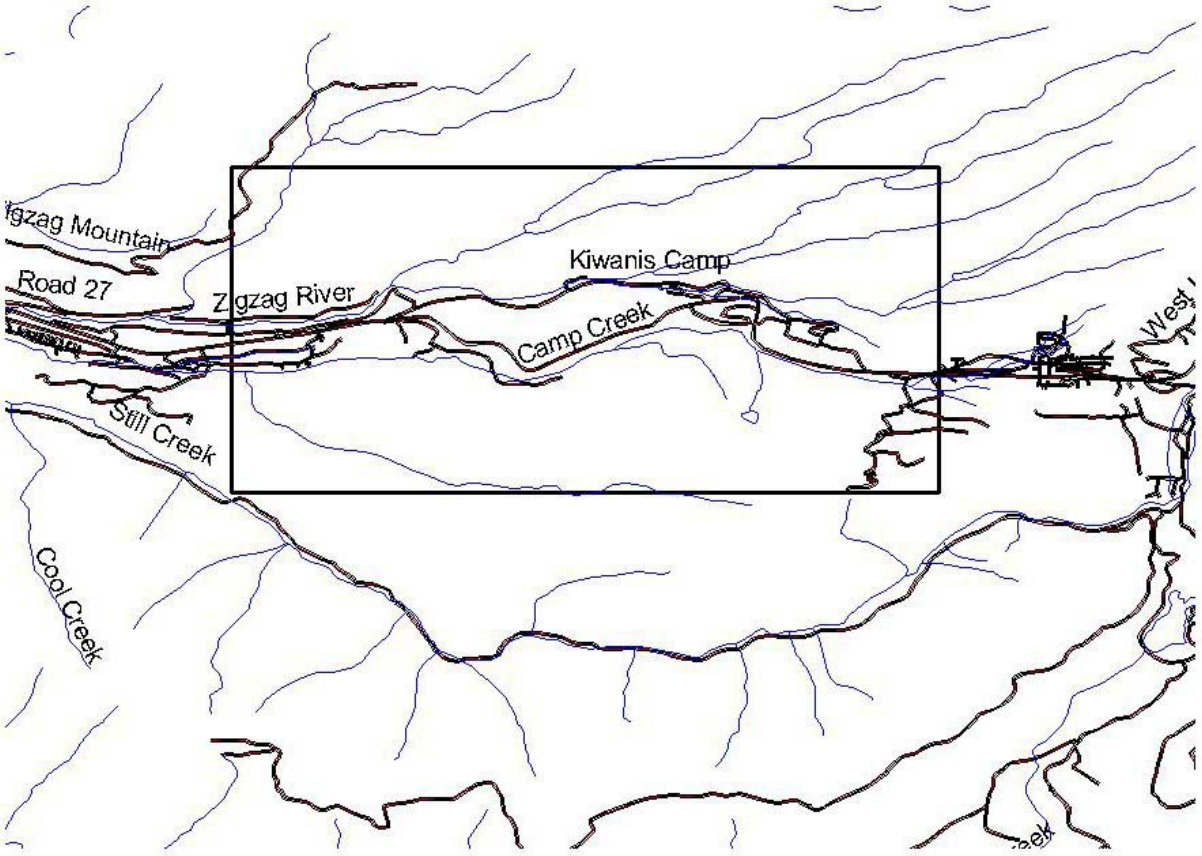
Introduction

This Biological Evaluation (BE) has been prepared in compliance with Section 7c of the Endangered Species Act (ESA) of 1973, as amended. Section 7 of the ESA assures that through consultation (or conferencing for proposed species) with the U.S. Fish and Wildlife Service (USFWS) state, local, and private actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of designated Critical Habitat.

The Mt. Hood Kiwanis Camp is located along the banks of the Little Zigzag River on Mt. Hood National Forest lands. The camp operates under a special use permit administered by the U.S. Forest Service providing outdoor experiences to children and adults with disabilities. Access to the camp is via two stream crossings, one that is used as the main entrance and another that provides access to a ropes-style course. In 2001, Kiwanis Camp began the NEPA process to amend their original 1979 master plan to update and construct new buildings, an indoor pool, a covered shelter in the camp's rope course area, a campfire assembly area/ampitheater, a sewage treatment facility, an interpretive kiosk, a new parking area, a new bridge entry, an increase in the size of the existing fish pond, a maintenance yard, and rehabilitation of streambanks and other disturbed areas with native vegetation.

Vicinity Maps

Kiwanis Camp Improvement Project
Vicinity Map (Inset Frame)
Mt. Hood Ranger District
Mt. Hood National Forest



Source: Turnstone Environmental Consultants Inc. GIS Lab

Pre-Field Review:

Two species of wildlife federally listed as threatened, endangered or proposed, have been listed as having the potential of occurring on or adjacent to the Zig Zag District of the Mt. Hood National Forest. There are sixteen R6 sensitive species and thirty three Northwest Forest Plan S&M species with potential to be found on the Zig Zag District and for which the project area potentially provides habitat (table 1).

The status of federally listed threatened, endangered, and proposed species; USFS Region 6 sensitive species; Northwest Forest Plan S&M species with potential to occur in the project area are as follows:

Table 1: Threatened, Endangered, Proposed, Sensitive, and Survey and Manage Species

Species	Habitat	Presence	Surveys
Threatened, Endangered or Proposed			
bald eagle *(Haliatus leucocephalus)*	N	-	-
northern spotted owl *(Strix occidentalis caurina)*	Y	Unk[1]	N
Canada lynx *(Lynx canadensis)*	N	-	-
R6 Sensitive Species			
wolverine *(Gulo gulo luteus)*	Y	Unk[1]	N
Baird's shrew *(Sorex bairdii bairdii)*	Y	Unk[1]	N
Pacific fringe-tailed bat *(Myotis thysanodes vespertinus)*	N	-	-
Pacific fisher *(Martes pennanti)*	Y	Unk[1]	N
peregrine falcon *(Falco peregrinus anatum)*	N	-	-
Larch Mountain salamander *(Plethodon larselii)*	Y	N	Y
harlequin duck *(Histrionicus histrionicus)*	N	-	-
bufflehead (*Bucephala albeola)*	N	-	-
horned grebe (*Podiceps auritus)*	N	-	-
Gray flycatcher *(Empidonax wrightii)*	N	-	-
Cope's giant salamander *(Dicomptodon copei)*	Y	N	Y
Cascade Torrent salamander *(Rhyacotriton cascadae)*	Y	N	Y
Oregon slender salamander (*Batrachoseps wrighti*)	Y	N	Y
Oregon spotted frog *(Rana pretiosa)*	N	-	-
northwestern pond turtle *(Clemmys marmorata marmorata)*	N	-	-
painted turtle (*Chrysemys picta)*	N	-	-

[1] Species that have the potential to reside or wander into the project vicinity for which no surveys were conducted

Table 1: Threatened, Endangered, Proposed, Sensitive, and Survey and Manage Species Cont.

Species	Habitat	Presence	Surveys
Survey and Manage Mollusks			
Dalles Sideband *(Monadenia fidelis minor)*	Y	N	Y
Puget oregonium *(Cryptomastix devia)*	Y	N	Y
Columbia oregonium *(Cryptomastix hendersoni)*	Y	N	Y
Evening fieldslug *(Deroceras hesperium)*	Y	N	Y
Crater Lake tightcoil *(Pristiloma arcticum crateris)*	Y	N	Y
Basalt Juga *Juga (Oreobasis) n. sp. 2*	Y	N	Y
Columbia duskysnail *(Lyogyrus n.sp. 1)*	Y	N	Y
Survey and Manage Mammals			
red tree vole *(Aborimus longicaudus)*	Y	N	Y
Survey and Manage Vascular Plants			
Botrychium minganense	Y	N	Y
Botrychium montanum	Y	N	Y
Carex livida	Y	N	Y
Cimicifuga elata	Y	N	Y
Coptis trifolia	Y	N	Y
Corydalis Aquae-gelidae	Y	N	Y
Cypripedium fasciculatum	Y	N	Y
Cypripedium montanum	Y	N	Y
Erigeron howellii	Y	N	Y
Howellia aquatilis	Y	N	Y
Lycopodium complanatum	Y	N	Y
Ophioglossum pusillum	Y	N	Y
Sisyrinchium sarmentosum	Y	N	Y
Wolfia columbiana	Y	N	Y

Table 1: Threatened, Endangered, Proposed, Sensitive, and Survey and Manage Species Cont.

Species	Habitat	Presence	Surveys
Survey and Manage Mosses			
Schistostega pennata	Y	N	Y
Tetraphis geniculata	Y	N	Y
Survey and Manage Lichens			
Bryoria tortuosa	Y	N	Y
Dendriscocaulon entracatulum	Y	N	Y
Hypogymnia duplicata	Y	N	Y
Loberia linita	Y	N	Y
Nephroma occultum	Y	N	Y
Platismatia lacunosa	Y	N	Y
Survey and Manage Fungi			
Bridgeoporous nobil	Y	N	Y
Rhizopogon brunneiniger	Y	Y	N[2]

[2] Historical records

Proposed Action

The proposed action would replace the current master plan authorized by the Mt. Hood National Forest in 1979 with a new master plan. A new 30-year Special Use permit would be issued to the Mt. Hood Kiwanis Camp for exclusive use and occupancy of the project area. The proposed action includes a variety of improvements proposed to improve facilities and services for campers, including complying with the Americans with Disabilities Act and other special requirements; enhance the natural environment; improve transportation circulation and access; provide additional recreational activities; and maintain the historic character of the Kiwanis Camp. The proposed action would include the construction of a number of new facilities and the modification of several existing facilities.

New Facilities

The proposed action would entail the following new site-specific improvements to the existing camp.

- **Seven new camper cabins and a director's cabin**. These cabins would replace all existing camper housing. Cabins would be approximately 1,300 square feet in size. They would meet ADA accessibility requirements and space and other needs of special needs populations at the camp. Two cabins would be sited in the location of the existing Hemlock dorm, which would be demolished. The remaining cabins would be located along the southeastern edge of the camp. Architectural design would be consistent with the character of historic structures at the camp. A new director's cabin would replace the existing "front" and "back" cabins which currently are dilapidated and do not meet the space or other needs of the camp. It would be similar in size and architectural design to the new camper cabins. The total new built area of the cabins would be approximately 7,800 square feet. This does

not include the two cabins which would replace the Hemlock dorm with an equivalent amount of square footage. In addition, three unpaved common areas, totaling approximately 1,000 square feet would be created. Native vegetation would be removed from this area as part of the construction. Native vegetation consists of relatively small (second-growth) trees and shrubs such as rhododendron, salal and other species common to this area. Table 2 (see page 14) summarizes the approximate number and size of trees to be removed in concert with construction of these and other improvements.

- **Health care center/office building**. This building would be approximately 1,300 square feet in size and would include the camp office and a nurse's station for campers and staff. It would be located just east of the existing pond and south of Fanning Hall. The exterior would be similar in design and appearance to the new camper cabins.
- **Covered shelter in the camp's ropes course area**. This relatively small, open-air structure would be located at the east end of the ropes course and would be approximately 300 - 500 square feet in size. It would protect campers from adverse weather conditions during use of the ropes course area.
- **Campfire assembly area/amphitheater**. This would be located in the open space between the cluster of buildings formed by Laurel Lodge, the proposed new pool building, new camper cabins and new staff housing. The entrance to the new pool building would be used as a stage and focal point for activities here.
- **Relocation and improvement of the Camp's swimming pool**. A new enclosed and sealed pool building would replace the existing outdoor pool in a similar location, north of Laurel Lodge. It would contain a swimming pool and restroom facilities and could be used year-round. It would be approximately 6,400 square feet in size, including an outdoor, covered porch/stage. The pool would be drained infrequently. Prior to draining, the chlorine in the water would be neutralized. The pool would be drained into the soil at a sufficient distance and in such a manner as to ensure that the water would not flow directly into the Little Zigzag River. Alternatively, if necessary and required by the camp's special use permit, the water could be drained to the camp's wastewater treatment system.
- **New maintenance building**. A new maintenance building would be constructed and located approximately 60 feet south of the Little Zigzag River, near the existing maintenance yard. The maintenance building would be used primarily to store equipment and supplies. No maintenance of motor vehicles would occur in or adjacent to this building. It would be approximately 2,400 square feet in size. The vegetative buffer between the building and Little Zigzag River would be expanded and enhanced for a distance of approximately 100 feet along the stream and an increased buffer width of approximately 20 – 30 feet. This building would be sited to minimize tree and other vegetation removal.
- **New sewage treatment facility.** The existing septic drainfield for the camp would be reconstructed; contaminated materials from the existing system would be disposed of at an approved landfill. New drainfields would be constructed in the upper equestrian center and on a bench about 30 feet from the equestrian area (reserve drainfield). The existing amphitheater area would serve as a second reserve drainfield but would not be expected to be used within the life of the special use permit. The new septic system would treat wastewater to state and county standards and keep fecal contaminants from entering Zigzag Creek.
- **Barlow Road Interpretive Kiosk**. An interpretive sign or kiosk would be located at the base of the existing trace of the Old Barlow Trail to provide information about the historic use and development of the trail.

- **New parking area in the old Barlow campground.** Parking in this area would replace parking areas for staff and visitors adjacent to Laurel Lodge and reduce the need for overflow parking on the Mt. Hood Loop Highway. Access from this area would be provided by a covered foot bridge just east of Cy Lodge. This parking area would serve as the main drop-off, pickup and meeting area for campers and other visitors during the summer. Approximately 35 parking spaces would be provided. "Eco-paving" surfaces would be utilized to reduce compaction and runoff impacts. Eco-paving refers to the use of paving stones with holes or spaces between or within them to allow percolation of runoff through the ground, reducing runoff and sediment impacts on nearby waterways. They typically are placed over a crushed rock base, similar to construction practices for other roads and parking areas. In addition, bio-swales and other water detention and filtering methods would be constructed along the edge of the parking area closest to the Little Zigzag River to further reduce the impacts of runoff and sediment transport.

Existing Facilities Modified

The proposed action would entail the following modifications to existing facilities at the Camp:

- **Conversion of existing maintenance building to staff housing and lounge**. The existing building would be renovated and reconfigured to provide space for staff to sleep and congregate. The building would accommodate approximately 15 to 20 staff and/or counselors overnight.
- **Outdoor interpretive area**. An outdoor educational area would be provided near the Little Zigzag River. Features would include benches, accessible riverbank, erosion protection, and riparian revegetation. The new interpretive area would replace the entire existing interpretive trail which meanders along the southern fringe of the river at varying distances up to 20' from the bank, consolidating access to the riparian area in a smaller area to reduce watershed impacts. The current trail runs from the western bridge access to the east bridge adjacent to the rope course. No educational or other activities currently occur or would occur in the future inside the stream.
- **Reconstructed bridge entry**. The existing bridge at the camp's main entry would be replaced in concert with removal of the existing culvert at the main entrance to the camp as part of a separate US Forest Service action. In-stream work and related impacts would be evaluated in a separate EA conducted by the USFS for the culvert replacement. The reconstructed bridge at this location would enhance the entrance experience of campers, create a platform from which to view the river, and provide safe pedestrian access for campers at this location. The bridge would be designed to minimize sedimentation impacts.
- **Fish pond**. The pond would be increased in size by about 75 %, with a small pedestrian bridge added near its east end. Reconstruction efforts would retain existing measures to prevent fish from traveling between the pond and the Little Zigzag River. A fish barrier grate and screening would continue to be located at the outflow see map for approximate location and size – about 1,500 - 2,000 square feet). Currently, water enters the fish pond from the Little Zigzag River and drains back to the River through an underground pipe.
- **Maintenance Yard**. This area would be reduced in size somewhat to allow for location of the new maintenance building adjacent to the yard. Areas on the edge of the existing yard would be revegetated to improve the quality of potential plant and animal habitat areas near the Little Zigzag River.
- **Covered foot bridge**. The existing pedestrian bridge between the Old Barlow campground (proposed future parking area) and the main portion of the camp (between Cy Lodge and Fanning Hall) would be

modified to include a covered structure. No in-stream work or tree removal is proposed as part of this improvement. Cedar or other materials would be utilized to minimize environmental impacts.

Other Actions

- **Rehabilitation of stream banks and other disturbed areas with native vegetation**. Banks within the camp would be replanted with native vegetation. Approximately 1,000 linear feet along the stream banks would be replanted, with a varying buffer distance of 10 - 30 feet, as conditions allow, totaling about 20,000 square feet in riparian areas. About 50,000 square feet of other existing disturbed areas also would be restored/replanted. These restoration efforts would be coordinated with Forest-wide efforts proposed to be undertaken by the US Forest Service.

The proposed action does not represent an expansion of the permit boundary, the current authorized capacity, or authorized uses. No amendment to the Mt. Hood National Forest Plan management direction, land allocations, or standards and guidelines are proposed.

Table 2. Proposed Action Individual Component Size and Distance from Little Zigzag River

Proposed Action	*QTY.*	*Unit Size*	*Total Size SQ/FT*	*Approx. Distance From River*	*# of Trees Removed*
Phase I Camper Cabins	6	1,300	7,800	90 - 260 feet	30-50 trees; 4 – 12" dia.; 15'-40' tall [1]
Phase II Camper Cabins	2	1,300	2,600	90 - 260 feet	None [2]
Hemlock Dormitory	1	-2,600	-2,600	320 feet	None
Pool Building	1	6,400	6,400	120 feet	None
Convert Maintenance Building *	1	4,300	4,300	260 feet	None
New Maintenance Building	1	2,400	2,400	60 feet	None
Directors Cabin	1	1,300	1,300	275 feet	2-3 trees/4" – 12" dia.
Fish Pond Enhancement *	1	2,500	2,500	190 feet	None
All Weather Shelter	1	300	300	20 feet	None
Covered Bridge	1	120	120	0 feet	None
New parking area	1	15,000	15,000	20 - 120 feet	5-10 trees/6"-18" dia./40'-60' tall
New commons areas	3	350	1,050	90 - 260 feet	12-18 trees; 4 – 12" dia.; 15'-40' tall
Restoration areas along streambanks	1	20,000	20,000	0 - 20 feet	NA
Restoration areas along streambanks	1	55,000	55,000	Variable	NA
Total Impervious surface			15,120		
Total modified semi-permeable or permeable surface			16,050		
Total restored/revegetated area			75,000		
* no additional impervious surface					

Notes

1. It is estimated that 6-10 trees would be removed for each camper cabin. Most trees are about 4'' to 8" in diameter, with a few as large as 12" in diameter. Most are 15 - 25 feet tall, with a few as tall as 40 feet.
2. Two of the camper cabins would replace the Hemlock Dormitory and would not involve any tree removal.

Minimization, Mitigation and Avoidance

Minimization and avoidance measures have been developed to remove, reduce, or compensate for adverse effects. The following measures will be included in the construction phase of the proposed project.

- Material removed during excavation will be stockpiled in areas where it cannot enter waterways.
- All cleared areas will be seeded and mulched prior to the fall rain period. Efforts will be made to implement seeding/mulching as soon as possible after exposure.
- A replanting plan will be prepared and implemented for all cleared areas and some historically disturbed sites. Native species will be used and planted at a density to allow successful competition with non-native invasives.
- All plantings will be monitored for correct installment and success
- New constuction will be sited in historicaly disturbed/developed area wherever possible to minimize habitat degredation.
- Riparian buffers will be expanded. Approximately 1,000 linear feet along the stream banks would be replanted, with a varying buffer distance of 10 - 30 feet, as conditions allow, totaling about 20,000 square feet in riparian areas. About 50,000 square feet of other existing disturbed areas also would be restored/replanted. These restoration efforts would be coordinated with Forest-wide efforts proposed to be undertaken by the US Forest Service.
- Bio-swales and other water detention and filtering methods would be constructed along the edge of the parking area closest to the Little Zigzag River to further reduce the impacts of runoff and sediment transport.
- Approximately 35 parking spaces would be provided. "Eco-paving" surfaces would be utilized to reduce compaction and runoff impacts.
- Some felled trees will be left on site to serve as Refugia for terrestrial mollusks, amphibians, and small mammals.

Field Reconnaissance: Threatened, Endangered, Proposed, and Sensitive Species

Northern spotted owl

Components of northern spotted owls preferred habitat are as follows: moderate to high canopy closure (60 to 80 percent); a multilayered, multispecies canopy dominated by large (> 30 inches d.b.h. [76 cm]) overstory trees; a high incidence of large trees with various deformities; numerous large snags; large accumulations of fallen trees and other woody debris on the ground; and ufficient open space below the canopy for owls to fly (Thomas, Jack Ward; Forsman, Eric D.; Lint, Joseph B.; [and others]. 1990 , U.S. Department of the interior, Fish and Wildlife Service, Region 1. 1991. Proposed determination of critical habitat for the northern spotted owl). Stands composed of greater than 11-inch diameter trees with greater than 40 percent crown closure provide dispersal habitat. Surveys conducted on the District since l979 have revealed a number of documented

sightings. The project area has not been called to protocol. There are activity centers approximately two miles (pers. comm. Forest Service wildlife biologist Alan Dyck) of the Kiwanis Camp. Nesting, roosting and foraging (NRF) habitat surrounds the project site but is subjected to seasonally fluctuating levels of disturbance from the existing road use as well as from visitors to the Kiwanis Camp.

R6 Sensitive Species with Potential to Occur in or Adjacent to the Project Area

Wolverine

Wolverine tracks have been observed near the Highway 35 corridor, which is generally west of the project area. No potential denning habitat is located adjacent to the project area. The nearest potential denning habitat as determined by GIS analysis is two miles away both to the North and South. The project area is mapped as potential summer and winter habitat for Wolverine (pers. comm. Forest Service wildlife biologist Alan Dyck). The general area could be considered potential foraging or travel habitat by wolverine. However, wolverines are secretive animals and try to avoid humans. Existing road uses and recreation preclude use of the area by wolverine except to travel across the road from one point to another.

Pacific fisher

Fisher habitat from a variety of localities within its geographical range is commonly described as widespread, continuous-canopy forests at relatively low elevations (Powell, 1981). Only three specimens of fishers from Oregon are on deposit in systematic collections, two from Lane County and one from Douglas County. Fishers are primarily carnivorous. Small and medium-sized forest mammals are the primary prey; porcupines, snowshoe hares, tree squirrels, mice and voles are among the most common preyed upon. Such habitat exists adjacent to the proposed project area; therefore fishers could utilize the surrounding area for foraging or other activity. However, all of the existing road uses (vehicles) and camp activity may reduce or prevent use of the area by fishers.

Baird's shrew

Baird's shrew is found in riparian areas with downed logs and woody debris. This type of habitat exists along the margins of the Little Zigzag River that flows throw the Kiwanis camp.

Larch Mountain salamander

The Larch Mountain Salamander has been found in a variety of habitats in the Columbia River Gorge and Washington. One location has been documented on the Mt. Hood National Forest outside the Columbia River Gorge. It can be found near the surface under rocks during wet weather. Individuals occur far from streams and seepages and seem to be less common in perpetually wet talus.

Cope's giant salamander

Cope's giant salamanders are normally restricted to streams and seepages in moist coniferous forest. They occasionally occur in clear, cold mountain lakes and ponds. They can be found under stones, slabs of bark, or other cover in streams. After and during heavy rainfall, individuals can be found at night, out of the streams, crawling among wet rocks and vegetation at streamside. The Kiwanis camp meets the habitat conditions for supporting Cope's giant salamanders. During a

stream survey (2002) Dicamptodon were observed in the Little Zigzag River but were not identified to species.

Cascade Torrent salamander

Larval Cascade torrent salamanders are found in small mountain streams, spring heads, and seepages. Metamorphosed individuals are found in humid coniferous forests seldom far from lotic (flowing) waters. Small cold streams with water seeping through moss-covered gravel are preferred habitats. Other typical habitats include the splash zones of rocky, tumbling brooks in shady canyons and the spray zones of waterfalls. The Kiwanis camp meets the habitat conditions for supporting Cascade torrent salamanders, but none were found during protocol surveys in 2002.

Oregon slender salamander

Oregon slender salamanders are most common in the mature Douglas fir forests on the western slopes of the Cascade Mountains. They also occur in the recent lava flows near the crest of the Cascades and in second growth forest. The often occur under bark and logs lying on the forest floor and in rotten logs. The Kiwanis camp meets the habitat conditions for supporting Oregon slender salamanders, but none were found during protocol surveys in 2002.

Conflict Determination: Threatened, Endangered, Proposed, and Sensitive Species

Threatened, endangered and proposed species:

Bald Eagle

No Suitable habitat exists for bald eagles in the area. There are no mapped Bald Eagle areas in the area (pers. comm. Forest Service wildlife biologist Alan Dyck). The area would not be used for nesting. Foraging may occur in the Kiwanis camp as steelhead and cutthroat trout are known residents. The fish pond, stocked with large brood trout, affords additional foraging opportunities and may attract eagles. The proposed increase in pond size may make this area more attractive foraging habitat. If the area would be used for foraging, it is more likely that any occurrence would be irregular transient use. Eagles also could be affected by noise disturbance during construction activities only if they are foraging in the camp area. However, the project area is already immediately adjacent to an open and active road with a seasonally dependent degree of ambient background noise. After the construction phase of the proposed action, increased noise or other disturbance levels would return to previous levels as negligible increased activity is expected following construction of proposed improvements at the Kiwanis Camp. Since there are no mapped bald eagles in the area the proposed project would have "no effect" **(NE)** on bald eagles or their habitat.

Northern Spotted Owl

The proposed project is located in the riparian reserve land allocation and would impact potential nesting, roosting, foraging (NRF), or dispersal habitat; it also is within a critical habitat unit. The impacts from the proposed project would be increased noise during construction phases and limited tree removal (table 2). After completion of construction, noise disturbance levels are expected to return to pre existing conditions. The proposed project is an improvements project only and will not result in inceased use or human capacity at the Kiwanis Camp. The USFS has

completed a programmatic assessment of potential effects on spotted owl and their habitat resulting in a Biological Opinion drafted __(add date and reference). Based on this BO and the camp's proximity to owl nesting sites, it was determined that any construction activities at the camp conducted during owl breeding seasons. Therefore, the proposed project would have "may effect, likely to adversly affect" **LAA effect** on the northern spotted owl (or their habitat) directly or indirectly because it is within NRF habitat.

R6 Sensitive Species

Wolverine

There is no known denning habitat within two miles of the project area. The proposed project would negligibly alter habitat conditions for travel, foraging or denning from existing conditions both physically and through changes in noise or disturbance levels. In addition, wolverines are secretive animals that try to avoid humans. The current disturbance level of the Kiwanis camp likely results in avoidance of the area by wolverines. The proposed project would not substantially add to the existing level of disturbance. Therefore, should a wolverine happen through the general area, the proposed project would not significantly change conditions from the current situation. The project is **may impact individuals but is not likely to cause a trend to federal listing or loss of viability (MIIH)** wolverine or their habitat.

Pacific Fisher

There is potential habitat within the areas surrounding the project site. The proposed project would negligibly alter habitat conditions for travel, foraging or denning from existing conditions both physically and through changes in noise or disturbance levels. Therefore, should Pacific fisher be using the area or pass through the general area, the proposed project would not significantly change conditions from the current situation. The project is **may impact individuals but is not likely to cause a trend to federal listing or loss of viability** Pacific fisher or their habitat.

Baird's shrew

Baird's shrew is found in riparian areas with downed logs and woody debris. This type of habitat exists along the margins of the Little Zigzag River that flows throw the Kiwanis camp. Woody debris will not be removed as part of this project. Tree removal may alter habitat conditions and would adversely change conditions from the current situation but to a limited degree for a limited duration. Placement of some of these felled trees would be performed in consultation with district biologists to maximize the potential value of the woody debris. The replanting of historically disturbed areas will increase the suitability of shrew habitat over time. The project is likely to have "no impact" **(NI)** on Baird's shrew or their habitat.

Larch Mountain salamander

The Larch Mountain Salamander has been found in a variety of habitats in the Columbia River Gorge and Washington. One location has been documented on the Mt. Hood National Forest outside the Columbia River Gorge. It can be found near the surface under rocks during wet weather. Individuals occur far from streams and seepages and seem to be less common in perpetually wet talus. During general amphibian survey efforts, no specimens of Larch mountain salamanders were present, warranting a "no impact" **(NI)**.

Cope's giant salamander

Cope's giant salamanders are normally restricted to streams and seepages in moist coniferous forest. They occasionally occur in clear, cold mountain lakes and ponds. The Kiwanis camp contains these types of habitats. The proposed project has no in-stream components and would not disturb this habitat. Some slight sediment increases may result from earth disturbing activities. Mitigation, minimization, and avoidance measures have been designed to address sediment impacts. Increasing the size of the fish pond will result in increased cold pond habitat. During general amphibian survey efforts, no specimens of Cope's giant salamanders were present, warranting a "no impact" **(NI)**.

Cascade Torrent salamander

Larval Cascade torrent salamanders are found in small mountain streams, spring heads, and seepages. Metamorphosed individuals are found in humid coniferous forests seldom far from lotic (flowing) waters. Small cold streams with water seeping through moss-covered gravel are preferred habitats. Other typical habitats include the splash zones of rocky, tumbling brooks in shady canyons and the spray zones of waterfalls. The Kiwanis camp meets the habitat conditions for supporting Cascade torrent salamanders. The proposed project has no in-stream components and would not disturb this habitat. Some slight sediment increases may result from earth disturbing activities. Mitigation, minimization, and avoidance measures have been designed to address sediment impacts. During general amphibian survey efforts, no specimens of Cascade torrent salamanders were present, warranting a "no impact" **(NI)**.

Oregon slender salamander

Oregon slender salamanders are most common in the mature Douglas fir forests on the slopes of the Cascade Mountains. They also occur in the recent lava flows near the crest of the Cascades and in second growth forest. The often occur under bark and logs lying on the forest floor and in rotten logs. The Kiwanis camp meets the habitat conditions for supporting Oregon slender salamanders. Tree removal may alter habitat conditions and would adversely change conditions from the current situation but to a limited degree for a limited duration. Placement of some of these felled trees would be performed in consultation with district biologists to maximize the potential value of the woody debris.The replanting of historically disturbed areas will increase the suitability of Oregon slender salamander habitat over time. During general amphibian survey efforts, no specimens of Oregon slender salamanders were present, warranting a "no impact" **(NI)**.

Field Reconnaissance and Conflict Determination: Survey and Manage Species:

Mollusks

Dalles sideband

Habitat exists for the Dalles sideband in the area. Habitat is associated with talus habitat and moist rocky areas, especially around seeps and springs, in steppe or dry forest plant communities. However, it is not found in the springs or seeps, nor is it considered to be a talus obligate. Rocks

and large woody debris serve as refugia during the summer and late winter seasons. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI).**

Puget oregonium

Suitable habitat exists for the Puget oregonium in the area. Habitat is found in mature to late successional moist forest and riparian zones, under logs, in leaf litter, around seeps and springs, and often associated with hardwood debris and leaf litter and/or talus. It is often found under or near big-leaf maple and may be under sword-fern growing under these trees, or on the underside of big-leaf maple logs. Canopy cover is generally high. Habitat typically is found at low to mid-elevations. Young individuals may be found under mosses growing on the trunks of big-leaf maple. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI).**

Columbia oregonium

Suitable habitat exists for the Columbia oregonium in the area, generally within 100 meters of streams, seeps, and springs. It may be a riparian associate in steppe communities at low to mid-elevations and may be found among moist talus, leaf litter and shrubs, or underlogs and other debris. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI).**

Evening Fieldslug

Suitable habitat exists for the evening fieldslug in the area. It may be associated with a variety of low vegetation, litter, and debris. Rocks also may be used. Little is known about this species and its habitat. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI)**.

Crater Lake tightcoil

Suitable habitat exists for the Crater Lake Tightcoil in the area. It typically is found above 610 meters elevation in moist conifer forests and among mosses and other vegetation near wetlands, springs, seeps, and riparian areas. Specimens may be found on logs, among sedges, attached to decaying leaf surfaces, in litter, or inside other shells. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI)**.

Basalt Juga

Suitable habitat exists for the basalt Juga in the area though no habitat was noted in the sampling areas. This species occurs in small, shallow, undisturbed perennial springs and small springs that flow into the Columbia River. It prefers gravel substrates where *Rorippa* is usually present. Occupied springs are often surrounded by basalt talus. It appears to graze on periphyton and perilithon. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI)**.

Columbia duskysnail

Suitable habitat exists for the Columbia duskysnail in the area, though no habitat was noted in the sampling areas. This species occurs in cold, well oxygenated springs and spring outflows on soft substrates in shallow, slow-flowing areas where it appears to feed on decaying organic particles). It prefers areas without macrophytes (macroscopic emergent and submerged aquatic plants), but may also occur in areas with *Rorippa (*water cress*)* and *Cicuta* (water hemlock). It co-occurs with

Pristinicola hemphilli and *Juga* (*Oreobasis*) spp., which are typically found in small, cold, pristine springs.Suitable habitat exists for the Basalt Juga in the area though no habitat was noted in the sampling areas. This species occurs in small, shallow, undisturbed perennial springs and small springs that flow into the Columbia River. It prefers gravel substrates where *Rorippa* is usually present. Occupied springs are often surrounded by basalt talus. It appears to graze on periphyton and perilithon. This species was not among specimens collected during protocol survey efforts and warrants a "no impact" **(NI)**.

Mammals

Red tree vole

Suitable habitat exists for the red tree vole in the area. The literature on the red tree vole indicates that the species inhabits conifer forests containing Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), Sitka spruce (*Picea sitchensis*) western hemlock (*Tsuga heterophylla*) (Johnson and George 1991) and white fir (*Abies concolor*) (Manning and Maguire 1999). Based on the literature, old-growth habitat appears to provide optimum conditions for red tree vole populations. The tall, multi-layered canopies of old growth retain humidity and intercept fog, which functions as a climatic buffer and a source of free water. Large branches provide stable support for nests, protection from storms, and travel routes (Gillesberg and Carey 1991). Active nests have been found in remnant older trees in younger stands, which exist at the Kiwanis Camp, indicating the importance of legacy structural characteristics (Biswell pers. comm.). Red tree voles have been documented in conifer stands from sea level to 5,500 feet in elevation (Manning and Maguire 1999). They are suspected to occur in forested stands up to 6,000 feet when stands contain some Douglas-fir trees. During protocol survey efforts, no signs of red tree voles were present, warranting a "no impact" **(NI)**.

Vascular Plants

Botrychium minganense

Habitat typically includes meadows and moist coniferous forests. During protocol survey efforts, no specimens of Botrychium minganense were present, warranting a "no impact" **(NI)**.

Botrychium montanum

Habitat typically includes shady western red cedar forests & grassy areas. During protocol survey efforts, no specimens of Botrychium montanum were present, warranting a "no impact" **(NI)**.

Carex livida

Habitat typically includes swampy woods and peat bogs. During protocol survey efforts, no specimens of Carex livida were present, warranting a "no impact" **(NI)**.

Cimicifuga elata

Habitat typically includes mixed coniferous/deciduous forests. During protocol survey efforts, no specimens of Cimicifuga elata were present, warranting a "no impact" **(NI)**.

Coptis trifolia

Habitat typically includes dry woods. During protocol survey efforts, no specimens of Coptis trifolia were present, warranting a "no impact" **(NI)**.

Corydalis Aquae-gelidae

Habitat typically includes moist soil at edges of streams. During protocol survey efforts, no specimens of Corydalis Aquae-gelidae were present, warranting a "no impact" **(NI)**.

Cypripedium fasciculatum

Habitat typically includes montane dry to fairly moist open to shrub or forest covered valley or mountainsides. During protocol survey efforts, no specimens of Cypripedium fasciculatum were present, warranting a "no impact" **(NI)**.

Cypripedium montanum

Habitat typically includes moist to dry, rather rocky open coniferous forests. During protocol survey efforts, no specimens of Cypripedium montanum were present, warranting a "no impact" **(NI)**.

Erigeron howellii

Habitat typically includes moist rocky areas. During protocol survey efforts, no specimens of Erigeron howellii were present, warranting a "no impact" **(NI)**.

Howellia aquatilis

Habitat typically includes ponds and lakes. During protocol survey efforts, no specimens of Howellia aquatilis were present, warranting a "no impact" **(NI)**.

Lycopodium complanatum

Habitat typically includes moist coniferous woods. During protocol survey efforts, no specimens of Lycopodium complanatum were present, warranting a "no impact" **(NI)**.

Ophioglossum pusillum

Habitat typically includes moist meadows and woods. During protocol survey efforts, no specimens of Ophioglossum pusillum were present, warranting a "no impact" **(NI)**.

Sisyrinchium sarmentosum

Habitat typically includes moist meadows. During protocol survey efforts, no specimens of Sisyrinchium sarmentosum were present, warranting a "no impact" **(NI)**.

Wolfia columbiana

Habitat typically includes aquatic areas. During protocol survey efforts, no specimens of Wolfia columbiana were present, warranting a "no impact" **(NI)**.

Mosses

Schistostega pennata

Habitat typically includes crevices of root wads where humidity is high all year. During protocol survey efforts, no specimens of Schistostega pennata were present, warranting a "no impact" **(NI)**.

Tetraphis geniculata

Rotten logs During protocol survey efforts, no specimens of Tetraphis geniculata were present, warranting a "no impact" **(NI)**.

Lichens

Bryoria tortuosa

Habitat typically includes semi-open coniferous stands in low elevation transitional areas between wet coastal and inland. During protocol survey efforts, no specimens of Bryoria tortuosa were present, warranting a "no impact" **(NI)**.

Dendriscocaulon entracatulum

Habitat typically includes cyano-lichen rich areas at low to mid elevations. During protocol survey efforts, no specimens of Dendriscocaulon entracatulum were present, warranting a "no impact" **(NI)**.

Hypogymnia duplicata

Habitat typically includes moist coniferous forests, on Douglas-fir, pine twigs, mosses on rocks. During protocol survey efforts, no specimens of Hypogymnia duplicata were present, warranting a "no impact" **(NI)**.

Loberia linita

Habitat typically includes moist forests, on trees, shrubs, mossy rocks. During protocol survey efforts, no specimens Loberia linita were present, warranting a "no impact" **(NI)**.

Nephroma occultum

Habitat typically includes coniferous forests, on bark. During protocol survey efforts, no specimens of Nephroma occultum were present, warranting a "no impact" **(NI)**.

Platismatia lacunosa

Habitat typically includes moist riparian forests on upper branches of *Alnus*. During protocol survey efforts, no specimens of Platismatia lacunosa were present, warranting a "no impact" **(NI)**.

Fungi

Bridgeoporous nobil

Habitat typically includes true fir snags. During protocol survey efforts, no specimens of Bridgeoporous nobil were present, warranting a "no impact" **(NI)**.

Rhizopogon brunneiniger

Habitat typically includes low to high elevation dry old growth coniferous forest. There are widely scattered remnat old growth trees on the Kiwanis camp and historical records of Rhizopogon brunneiniger ocurring on this site. The project has been designed to minimize the number of trees to be felled. Tree removal is limited in scope (table 2) and no old growth trees are slated to be felled. Furthermore, most improvements at the camp are proposed to take place in previously disturbed areas. The proposed project **may impact individuals but would not be likely to cause a trend to federal listing or loss of viability** (**MIIH**) **effect.**

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