

4.7 BIOLOGICAL RESOURCES

4.7.1 ENVIRONMENTAL SETTING

This section describes the existing biological resources known to occur in the project area. A Biological Assessment, Wetland Delineation, Survey & Manage Species Survey and Floristic Survey have been completed. The following reports are available for review as described in Section 2.7 of this EIR:

- *A Biological Assessment for Federal and State Listed, and Proposed Species Potentially Affected by the Hyampom Road Improvement Project (PM 6.5-8.8)* by May & Associates, Inc. November 2002.
- *Delineation of Waters of the United States for the Nine-mile Bridge Replacement and Hyampom Road Improvement Project, Trinity County, California*, by May & Associates, October 2002.
- *Mitigation Recommendations for U.S. Forest Service Survey and Manage Species Potentially Affected by the Proposed Hyampom Road Improvement Project (PM 6.5-8.3), Trinity County*, by May & Associates, November 2002.

A Conceptual Mitigation Plan for the Trinity Bristlesnail; Hyampom Road Improvement Project; Trinity County by May & Associates, November 2002 is included as Appendix D of this document.

BIOLOGICAL RESOURCES STUDY METHODOLOGY

Studies Required

Botanical and wildlife surveys, including special-status species surveys, were completed as part of this environmental analysis. Additional surveys were conducted to comply with the Survey & Manage Standards and Guidelines of the Northwest Forest Plan (USDA 2001). A jurisdictional waters of the U.S. delineation was completed as part of the ACOE permitting process.

Literature Search

The CDFG's California Natural Diversity Database (CNDDDB; CDFG, 2001) was consulted for information concerning sensitive botanical and wildlife resources within the vicinity of the project. The results of this database search are summarized in Table 4.7-3.

In addition, the California Native Plant Society (CNPS) inventory (CNPS, 2001) was consulted to identify special-status plants potentially occurring within the project vicinity. These results are also summarized in Table 4.7-3.

Letters requesting information on special-status species potentially present within the vicinity of the proposed project were sent to the U.S. Fish and Wildlife Service (USFWS). The USFWS responses are presented in Appendix C. The list includes species listed or proposed for listing as threatened or

endangered that are potentially present within the Hayfork, Hyampom, and Halfway Ridge 7 ½- minute U.S. Geological Service (USGS) quadrangles.

The USFS, Weaverville Ranger Station, was consulted concerning the presence of special-status plant species, including Forest Service Sensitive species in the vicinity of the proposed project (S. Erwin, USFS, pers. comm., 1/14/02).

Fisheries investigations conducted for this project impact assessment consisted of a review of the project description, and a site reconnaissance survey of the project area on April 26, 2001. Telephone interviews were conducted with the USDA Forest Service's (FS) Trinity River Management Unit's fisheries biologist, Loren Everest, Mike Kelly of the National Marine Fisheries Service (NMFS) in Arcata, and with the California Department of Fish and Game (CDFG) fisheries biologist for the area, Bernard Aguilar.

The National Wetland Inventory maps covering the project area were reviewed before conducting fieldwork to identify potential wetland and drainage areas.

Additional literature consulted in the preparation of this report is listed in **Chapter 9.0**, Bibliography.

Field Surveys

Biological field surveys of the project area were conducted by May & Associates, Inc. on April 25, 26, and 27, 2001, and May 5, 2002. May & Associates surveyed the project area for the presence of jurisdictional "waters of the U.S." and special-status plant and wildlife species and their habitat. Plant communities present within the project area were identified and mapped on recent blue-line prints of 1 inch = 100 feet black-and-white aerial photographs. A jurisdictional wetlands/ "waters of the U.S." delineation was completed according to the criteria described in ACOE, 1987.

The first year of a two-year USFWS protocol-level survey for Northern Spotted Owls was conducted in 2002 by Remote Possibilities. The second year of protocol-level surveys will be completed in spring 2003. To date, no northern spotted owls have been observed within or immediately adjacent to the study area. (L. Hubbard, pers. Comm. 9/12/02).

North State Resources, Inc. completed surveys for Northwest Forest Plan Survey & Manage species on Nov 2, 16, Dec 7, 2000, and on April 5 and June 1, 2001, according to the appropriate Northwest Forest Plan Survey & Manage protocols (North State Resources 2001).

Trinity County Resource Conservation District biologists completed floristic surveys of the project area in August 3, 7, and 8, 2000 (TCRCD 2000).

An agency field review of the project area was completed on February 6, 2002, with representatives of the U.S. Forest Service and the California Department of Fish and Game. Meeting notes are included in Appendix C.

Plant and animal species observed during these surveys are listed in Appendix E.

Limitations That May Influence Results

Populations of plant and animal species of concern are known to fluctuate naturally from year to year depending upon a variety of biotic and abiotic factors, including drought, flooding, seed production, consumption by herbivores and omnivores, and prey base. As reported by the CNPS, a comparison of 1986 survey data with previous surveys indicated that population numbers of special-status plant species in appropriate habitat may fluctuate over time (Skinner and Pavlik, 1994). Consequently, the observations (or lack thereof) of species of concern within the project area reflect only a temporal "snapshot" of these species' distributions. Given these limitations, this assessment includes a rigorous analysis of each species based on habitat suitability and recorded occurrences within the vicinity of the project area.

VEGETATION AND WILDLIFE HABITAT

Table 4.7-1, below and **Figure 4** in Appendix A identify the vegetative communities that are present within the project area, including dominant species and acreages. The entire study area covers approximately 199,207.4 m² (49.2 acres). Areas not accounted for in **Table 4.7-1** include wetlands and other "waters of the U.S." and developed areas (i.e., paved roadway). A list of plant and animal species observed during the field survey is presented in Appendix E.

**TABLE 4.7-1
 VEGETATIVE COMMUNITIES IN THE PROJECT AREA**

Community Type	Dominant Plant Species	Approximate m² (acres)
Douglas Fir Forest	<i>Pseudotsuga menziesii</i> , <i>Calocedrus decurrens</i> , <i>Quercus garryana</i> , <i>Quercus wislizenii</i> var. <i>frutescens</i> , <i>Rosa gymnocarpa</i> , <i>Ribes</i> sp., <i>Carex rossii</i> , <i>Viola lobata</i> ssp. <i>Lobata</i>	109,240.1 (27.0)
Oregon Oak Woodland	<i>Quercus garryana</i> , <i>Pseudotsuga menziesii</i> , <i>Pinus sabiniana</i> , <i>Cynosurus echinatus</i> , <i>Elymus glaucus</i> , <i>Melica</i> spp., <i>Fritillaria recurva</i> , <i>Cynoglossum grande</i> , <i>Senecio</i> sp.	23,605.3 (5.8)
Foothill Pine – Chaparral Woodland	<i>Pinus sabiniana</i> , <i>Quercus garryana</i> , <i>Quercus chrysolepis</i> , <i>Cercocarpus betuloides</i> var. <i>betuloides</i> , <i>Arctostaphylos manzanita</i> , <i>Ceanothus cuneatus</i> , <i>Quercus wislizenii</i> var. <i>frutescens</i> , <i>Carex rossii</i> , <i>Galium</i> sp., <i>Monardella villosa</i>	37,047.7 (9.2)
White Alder Riparian Forest	<i>Alnus rhombifolia</i> , <i>Salix</i> sp., <i>Quercus chrysolepis</i> , <i>Pseudotsuga menziesii</i> , <i>Rubus</i> sp., <i>Cornus</i> sp., <i>Symphoricarpos</i> sp., <i>Artemisia douglasiana</i> , <i>Equisetum telemateia</i> ssp. <i>braunii</i>	2,915.2 (0.7)
Total Vegetated Areas in Project Area		172,808.3 (42.7)

Douglas Fir Forest is the predominant community type within the project area, and it is present on both sides of Hayfork Creek. Depending on past land use (i.e., homestead, logging, etc) and the length of time since the last timber harvest the canopy cover in this community varies from approximately 60% to greater than 90% cover. The dominant tree is Douglas fir (*Pseudotsuga menziesii*) with ponderosa pine (*Pinus ponderosa*) and incense cedar (*Calocedrus decurrens*) also present in limited numbers. Oregon white oak (*Quercus garryana*) is present in limited numbers, especially where this community intergrades with Oregon Oak Woodland. Within the project area, the dense canopy cover of Douglas fir largely precludes a significant shrub component; however, when present, the scattered shrubs in the understory consist of interior live-oak (*Quercus wislizenii* var. *frutescens*), wood rose (*Rosa gymnocarpa*), and gooseberry (*Ribes* sp.). The herb layer in this community is very sparse (i.e., less than 5% cover) and at the time of the survey was comprised chiefly of Ross’ sedge (*Carex rossii*) and pine violet (*Viola lobata* ssp. *lobata*). Dead and downed trees are sparse, however numerous small snags (i.e., with diameter breast height, DBH, <25 cm or 10 inches) are present.

Wildlife or their sign observed within the Douglas Fir Forest community included black-tailed deer (*Odocoileus hemionus columbianus*), black bear (*Ursus americanus*), raccoon (*Procyon lotor*), Stellar’s jay (*Cyanocitta stelleri*), and common raven (*Corvus corax*). Western skink (*Eumeces skiltonianus*) and northwestern ringneck snake (*Diadophis punctatus occidentalis*) were also observed in Douglas Fir Forest.

Oregon Oak Woodland is a moderately dense canopied woodland dominated by Oregon oak with a largely herbaceous understory of scattered shrubs. Found on south facing slopes within the Hayfork Creek Canyon this community type is slightly drier than the adjacent Douglas Fir Forest. Other tree species infrequently encountered in this community include saplings of Douglas fir or foothill pine (*Pinus sabiniana*). Dominant understory species in this community include dogtail grass (*Cynosurus echinatus*), blue wildrye (*Elymus glaucus*), and melic grasses (*Melica* spp.). Showy wildflowers such as scarlet fritillary (*Fritillaria recurva*), big hound's tongue (*Cynoglossum grande*), and butterweed (*Senecio* sp.) are also abundant in the understory in this community.

The only wildlife sign observed in Oregon Oak Woodland was that of black-tailed deer.

Foothill Pine – Chaparral Woodland is an open canopy woodland (i.e., with less than 30% tree cover) with a sparse tree layer dominated by foothill pine and infrequent Oregon oak and canyon live oak (*Quercus chrysolepis*). The shrub layer in this community is well developed and is dominated by mountain mahogany (*Cercocarpus betuloides* var. *betuloides*) with green leaf manzanita (*Arctostaphylos manzanita*), buckbrush (*Ceanothus cuneatus*), and shrubby interior live oak, as codominants in some areas. The herb layer in this community is sparse owing to the rocky nature of the substrate and is composed primarily of Ross' sedge, bedstraw (*Galium* sp.), and coyote mint (*Monardella villosa*).

Wildlife observed within the Foothill Pine – Chaparral Woodland was limited to black-tailed deer, common raven, and western fence lizard (*Sceloporus occidentalis*).

White Alder Riparian Forest at the project site consists of a thin band of willows and white alders (*Alnus rhombifolia*) near the creek edge intergrading with canyon live oak on the steep canyon slopes below Hyampom Road and with Douglas fir on the slopes opposite Hayfork Creek from Hyampom Road. Because of the high energy and scouring nature of Hayfork Creek during flood events, the midstory and understory are very sparse. When present, midstory plants include blackberry (*Rubus* sp.), dogwood (*Cornus* sp.), and snowberry (*Symphoricarpos* sp.). The sparse herbaceous understory consists of mugwort (*Artemisia douglasiana*) and horsetail (*Equisetum telemateia* ssp. *braunii*).

Wildlife, or their sign, observed in the White Alder Riparian Forest included common merganser (*Mergus merganser*), raccoon, western toad (*Bufo boreas*), and pacific chorus frog (*Pseudacris regilla*).

The following plants rated as noxious weeds by the California Department of Food and Agriculture were observed within the project area: yellow star thistle (*Centaurea solstitialis*), thistle (*Cirsium vulgare*, *Cirsium* sp.), waterweed (*Eleoidea* sp.), Klamathweed (*Hypericum perforatum*), groundsel (*Senecio* sp.), and medusahead (*Teaeniatherum caput-medusae*).

The project area lies within the critical deer winter range of the Hayfork Deer Herd, identified by the CDFG.

Because the majority of the project area is densely forested it was not practical during the field survey to inventory all trees individually. In lieu of mapping individual trees, each tree-dominated plant community within the project area was sampled using 10-m (3-ft) radius circular plots. Within each plot the species and the diameter at breast height (DBH) of trees greater than 15 cm (six inches) DBH were identified. A minimum of two plots was sampled within each community type. The results of the sampling are presented in **Table 4.7-2** and **Appendix E**. For the most part, the tree sampling plots were completed in undisturbed sites. The areas that are expected to be impacted as a result of the proposed project are primarily relatively unvegetated and contain many fewer trees than the results of the sampling indicate.

**TABLE 4.7-2
 ESTIMATED NUMBERS OF TREES PER ACRE OF COMMUNITY TYPE WITHIN THE PROJECT AREA**

Tree Species ¹	Douglas-Fir Forest Trees per acre	Foothill Pine-Chaparral Woodland Trees per acre	Oregon Oak Woodland Trees per acre
ArMe	6.4	0.0	0.0
PiPo	9.6	0.0	0.0
PiSa	0.0	121.8	0.0
PsMe	150.9	0.0	57.7
QuCh	3.2	19.2	0.0
QuGa	9.6	0.0	391.0
QuWi	6.4	0.0	0.0
Snag	19.3	6.4	25.6
Total	205.4	147.4	474.3
ArMe: <i>Arbutus menziesii</i> (Pacific madrone) PiPo: <i>Pinus ponderosa</i> (ponderosa pine) PiSa: <i>Pinus sabiniana</i> (foothill pine) PsMe: <i>Pseudotsuga menziesii</i> (Douglas fir) QuCh: <i>Quercus chrysolepis</i> (canyon live oak) QuGa: <i>Quercus garryana</i> (Oregon oak) QuWi: <i>Quercus wislizenii</i> (interior live oak) Snag: standing dead tree			

SPECIAL-STATUS SPECIES

Table 4.7-3 lists the special-status species potentially occurring within the project area. No federally or state listed plant species are potentially present within the project area. The following federally or state listed animal species are potentially present or known to be present within the project area: Trinity bristle snail (*Monadenia setosa*—present within the project area; state listed Threatened), Coho salmon Southern Oregon/Northern California Coasts Evolutionary Significant Unit (ESU); (*Oncorhynchus kisutch*—potentially present within the project area; federally listed Threatened; state listed as Threatened pending

completion of a Recovery Plan), bald eagle (*Haliaeetus leucocephalus*; federally listed Threatened, proposed Delisted; and state listed Endangered), and Northern spotted owl (*Strix occidentalis caurina*; federally listed Threatened).

The following non-listed special-status plant species are potentially present or known to be present within the project area: *Aleuria rhenana*, sugarstick (*Allotropa virgata*), veiny arnica (*Arnica venosa*), *Bondarzewia montana (mesenerica)*, fox sedge (*Carex vulpinoidea*), clustered (Brownie) lady's-slipper (*Cypripedium fasciculatum*—present within the project area), mountain lady's-slipper (*Cypripedium montanum*), Dudley's rush (*Juncus dudleyi*), Heckner's lewisia (*Lewisia cotyledon var. heckneri*), Nile's madia (*Madia doris-nilesiae*), *Otidea leporina*, *Otidea smithii*, *Otidea onotica*, *Polyozellus multiplex*, Tracy's sanicle (*Sanicula tracyi*), Mexican gel-cup (*Sarcosoma mexicana*), goblin's gold (*Schistostega pennata*), Canyon Creek stonecrop (*Sedum paradisum*=*Sedum obtusatum* ssp. *paradisum*), Coast checkerbloom (*Sidalcea oregana* ssp. *exima*), *Tetraphis geniculata*, and *Ulota meglospora*.

The following non-listed special-status animal species are potentially present within the project area: hooded lancetooth (*Ancotrmea voyanum*), California floater (*Anodonta californiensis*), Klamath (Trinity) shoulderband (*Helminthoglypta talmadgei*—present within the project area), Topaz juga (*Juga occata*), Church's (Klamath) sideband (*Monadenia churchi*—present within the project area), papillose tail-dropper slug (*Prophysaon dubium*), Pressley hesperian (*Vespericola pressleyi*—present within the project area), summer steelhead Klamath Mountains Province ESU (*Oncorhynchus mykiss irideus*—present within the project area), spring-run chinook salmon Upper Klamath-Trinity Rivers ESU (*Oncorhynchus tshawytscha*—present within the project area), fall-run chinook salmon Upper Klamath-Trinity Rivers ESU (*Oncorhynchus tshawytscha*—present within the project area), tailed frog (*Ascaphus truei*), northwestern pond turtle (*Clemmys marmorata marmorata*—present within the project area), Foothill yellow-legged frog (*Rana boylei*—present within the project area), Southern torrent (seep) salamander (*Rhyacotriton variegatus = olympicus*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), Vaux's swift (*Chaetura vauxi*), hermit warbler (*Dendroica occidentalis*), osprey (*Pandion haliaetus*), pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), American marten (*Martes americana*), Pacific fisher (*Martes pennanti pacifica*), long-eared myotis bat (*Myotis evotis*), fringed myotis bat (*Myotis thysanodes*), long-legged myotis bat (*Myotis volans*), Yuma myotis bat (*Myotis yumanensis*), and Pacific Townsend's (=western) big-eared bat (*Plecotus townsendii townsendii*).

TABLE 4.7-3
 SPECIAL-STATUS SPECIES POTENTIALLY PRESENT WITHIN THE PROJECT AREA

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
PLANTS		
<i>Aleuria rhenana</i>	--/SM/-- /--	Potentially present within the project area. Occurs in late-seral conifer forest, primarily in duff of moist, relatively undisturbed, older conifer forest. Known from approximately 270 m west of the project area (S. Erwin, pers. comm., 2002). Not observed during the field survey.
Sugarstick (<i>Allotropia virgata</i>)	--/SM/-- /--	Potentially present within the project area. Occurs in yellow pine and Douglas Fir Forest between 75 and 3,000 m. Blooms June-August. Not observed during the field survey.
McDonald's rock cress (<i>Arabis macdonaldiana</i>)	E/--/E/1B	Unlikely within the project area. Occurs in montane coniferous forest on serpentine (and deep reddish) substrates, on steep slopes and dry ridges at approximately 1,200 m. Blooms May-June. Project area is outside the known elevation range of the species.
Veiny arnica (<i>Arnica venosa</i>)	--/FSE/--/List 4	Potentially present within the project area. Occurs in montane coniferous forest on serpentine (and deep reddish) substrates, on steep slopes and dry ridges between 600 and 1,600 m. Blooms May-June. Not observed during the field survey.
<i>Bondarzewia montana</i> (<i>mesenerica</i>)	--/SM/--/--	Potentially present within the project area. Occurs in late-successional conifer forests, often associated with stumps or snags. August-December. Not observed during the field survey.
Mingan moonwort (<i>Botrychium minganense</i>)	--/FSS, SM/--/List 2	Unlikely within the project area. Occurs in yellow pine forest and shady coniferous woods in wet to moist areas near streams above 1,200 m. Project area is outside the known elevation range of the species.
Western goblin (<i>Botrychium montanum</i>)	--/FSS, SM/--/List 2	Unlikely within the project area. Occurs in yellow pine forest and shady coniferous woods in wet to moist areas near streams between 2,000 and 3,100 m. Project area is outside the known elevation range of the species.
Green bug moss (<i>Buxbaumia viridis</i>)	--/PB/--/--	Unlikely within the project area. Occurs on rotten stumps and logs and on mineral or organic soil in cool, shaded, humid locations between 1,165 and 1,525 m. Floodplains and stream terraces are favored locations. Project area is outside the known elevation range of the species.
Wilkins' harebell (<i>Campanula wilkinsiana</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs on streambanks and springs in red fir and subalpine forests between 1,600 and 2,700 m. Blooms July-September. Project area is outside the known elevation range of the species.
Bottlebrush sedge	--/--/--/List 2	Unlikely within the project area. Occurs in

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
(<i>Carex hystericina</i>)		freshwater marshes and along streambanks at less than 500 m. Blooms in June. Project area is outside the known elevation range of the species.
Flaccid sedge (<i>Carex leptalea</i>)	--/--/--/List 2	Unlikely within the project area. Occurs in occurs in wet meadows and marshes at less than 700 m. Blooms May-July. Suitable habitat is not present within the project area.
Fox sedge (<i>Carex vulpinoidea</i>)	--/--/--/List 2	Potentially present within the project area. Occurs in occurs in marshes and riparian woodlands at less than 1,200 m. Blooms in June. Not observed during the field survey.
Shasta chaenactis (<i>Chaenactis suffrutescens</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs on Rocky open slopes, cobbly river terraces on ultramafic soils (i.e., soils rich in magnesium and iron) or glacial till with ultramafics included between 800 and 2,100 m. Blooms May-June. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.
Clustered (Brownie) lady's-slipper (<i>Cypripedium fasciculatum</i>)	SC/FSS, SM/-- /List 4	Present within the project area. Occurs in yellow pine forest, redwood forest, and Douglas Fir Forest in serpentine substrate within riparian, streambank and seep habitats between 100 and 1,800 m. Equally likely to occur in wetlands or non-wetlands. Blooms April-July. A population of eight clustered lady's-slipper was observed within the project area, along James Creek approximately 8 m (26.2 ft) upstream (i.e., northeast) from the culvert opening to James Creek (North State, 2001; May & Associates, pers.comm., 2002). Observed during the field survey.
Mountain lady's-slipper (<i>Cypripedium montanum</i>)	SC/FSS, SM/-- /List 4	Potentially present within the project area. Occurs in yellow pine forest, Yellow Pine Forest, Mixed Evergreen Forest between 200 and 2,200 m. Equally likely to occur in wetlands or non-wetlands. Blooms May-August. Not observed during the field survey.
Snow Mountain willowherb (<i>Epilobium nivium</i>)	--/--/--/List 1B	Unlikely within the project area. Occurs in chaparral and montane coniferous forest (rocky), on dry talus and shale slopes generally on ultramafic soil between 1,500 and 2,000m. Blooms July-October. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.
Oregon fireweed (<i>Epilobium oregonum</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in boggy areas in montane coniferous forest between 150 and 3,600 m. Blooms July-August. Project site is too dry and rocky for this species. Suitable habitat is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Brandegee's woolly-star (<i>Eriastrum brandegeae</i>)	SC/FSS/--/List 1B	Unlikely within the project area. Occurs in closed cone pine forests or chaparral in volcanic substrate between 300 and 1,300 m. Blooms May-August. Suitable habitat (i.e., closed cone pine forest or chaparral) is not present within the project area.
Serpentine goldenbush (<i>Ericameria ophitidis</i> = <i>Haplopappus ophitidis</i>)	--/FSE/--/List 4	Unlikely within the project area. Occurs on serpentine semi-barrens or openings in Jeffrey pine-incense cedar woodland between 800 and 1,700 m. Blooms July-August. Project area is outside the known elevation range of the species.
Dubakella Mountain buckwheat (<i>Eriogonum libertini</i>)	--/FSE/--/List 4	Unlikely within the project area. Occurs in openings in Jeffrey pine-incense cedar woodland or chaparral always on ultramafic soils between 760 and 1,700 m. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.
Scott Mountain fawn lily (<i>Erythronium citrinum</i> var. <i>roderickii</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in dry woodlands and shrubby slopes in mixed conifer forest on ultramafic or granitic soils between 880 and 1,200 m. Blooms in May. Project area is outside the known elevation range of the species.
Umpqua green gentian (<i>Frasera umpquaensis</i> = <i>Swertia</i> <i>fastigiata</i>)	--/FSS/--/--	Unlikely within the project area. Occurs in cool, moist Douglas fir/white fir forest margins or openings between 1,500 and 1,830 m. Project area is outside the known elevation range of the species.
Scott Mountain bedstraw (<i>Galium serpenticum</i> ssp. <i>scotticum</i>)	--/--/--/List 1B	Unlikely within the project area. Occurs on steep slopes in open pine forest on serpentine soils between 1,000 and 2,000 m. Blooms June-July. Project area is outside the known elevation range of the species.
Baker's globe mallow (<i>Iliamna bakeri</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in chaparral, pine, or mixed conifer/oak forest, juniper woodland on rocky soil between 1,100 and 2,000 m. Blooms July-August. Project area is outside the known elevation range of the species.
Pickering's ivesia (<i>Ivesia pickeringii</i>)	SC/FSS/--/List 1B	Unlikely within the project area. Occurs on steep slopes in open pine forest on ultramafic soils between 800 and 2,000 m. Blooms June-July. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.
Dudley's rush (<i>Juncus dudleyi</i>)	--/--/--/List 2	Potentially present within the project area. Occurs in wet areas in montane coniferous forest below 2,000m. Blooms July-August. One old (i.e., 1879) record exists within the project area. Not observed during the field survey.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Regel's rush (<i>Juncus regelii</i>)	--/-- /--/List 2	Unlikely within the project area. Occurs in mesic meadows between 800 and 1,900 m. Blooms in August. Suitable habitat is not present within the project area.
Heckner's lewisia (<i>Lewisia cotyledon</i> var. <i>heckneri</i>)	SC/-- /--/List 1B	Potentially present within the project area. Occurs on rocky cliffs and slopes in montane coniferous forest between 300 and 2,100 m. Blooms May-July. Not observed during field survey.
Tedoc Mountain linanthus (<i>Linanthus nuttallii</i> ssp. <i>howellii</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in Jeffrey pine/incense cedar forests usually on ultramafic soil between 1,200 and 1,500 m. Blooms May-August. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.
Woolly meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>)	--/-- /--/List 2	Unlikely within the project area. Occurs in moist meadows and vernal pools below 400 m. Blooms March-July. Project area is outside the known elevation range of the species.
Nile's madia (<i>Madia</i> [<i>Harmonia</i>] <i>doris-nilesiae</i>)	--/FSS /--/List 1B	Potentially present within the project area. Occurs on rocky ultramafic ridge tops and slopes in lower montane coniferous forests on rocky ridge tops and slopes with Jeffrey pine, gray pine, and shrubs between 640 and 1,700m. Blooms June-July. Observed in previous (i.e., within the last five years) surveys completed by the USFS within the vicinity of Station 117 (S. Erwin, USFS, pers. comm., 2002). Not observed during the field survey.
Stebbin's madia (<i>Madia stebbinsii</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in chaparral and lower montane coniferous forest on rocky ultramafic semi-barrens with Jeffrey pine, gray pine, and shrubs between 640 and 1,800 m. Blooms May-June. Suitable habitat (i.e., ultramafic soils) is not present within the project area.
Peanut sandwort (<i>Minuartia rosei</i>)	--/FSS/--/List 4	Unlikely within the project area. Occurs in gravelly serpentine barrens and openings in Jeffrey pine/mixed conifer forest between 760 and 1,800 m. Blooms July-August. Suitable habitat (i.e., serpentine barrens) is not present within the project area, and the project area is outside the known elevation range of the species.
Scott Mountain sandwort (<i>Minuartia stolonifera</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs on ultramafic rocky slopes in montane mixed conifer forest between 1,200 and 1,600 m. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Howell's montia (<i>Montia howellii</i>)	--/FSS/--/List 2	Unlikely within the project area. Occurs in vernal, wet sites, often on compacted soil below 400 m. Blooms March-May. The wet sites within the project area are too rocky for this species. Suitable habitat (i.e., non-rocky wet sites) is not present within the project area, and the project area is outside the known elevation range of the species.
<i>Otidea leporina</i>	--/PB/--/--	Potentially present within the project area. Occurs in conifer humus. August to December. Known from approximately 230 m northwest of the project area (S. Erwin, pers. comm., 2002). Not observed during the field survey.
<i>Otidea smithii</i>	--/PB/--/--	Potentially present within the project area. Occurs in conifer humus. August to December. Not observed during the field survey.
<i>Otidea onotica</i>	--/PB/--/--	Potentially present within the project area. Occurs in conifer humus. August to December. Not observed during the field survey.
Thread-leaved beardtongue (<i>Penstemon filiformis</i>)	SC/FSS/--/List 1B	Unlikely within the project area. Occurs in open, rocky places on ultramafic soils among shrubs or yellow pine between 600 and 1,800 m. Blooms June-July. Suitable habitat (i.e., ultramafic soils) is not present within the project area.
Scott Mountain phacelia (<i>Phacelia dalesiana</i>)	SC/-- /--/List 1B	Unlikely within the project area. Occurs in meadows, streambanks, and montane coniferous forest on serpentine soils between 1,500 and 2,000 m. Blooms May-June. Project area is outside the known elevation range of the species.
Scott Valley phacelia (<i>Phacelia greenei</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs on gravelly serpentine slopes and forest openings between 1,500 and 2,100 m. Blooms in June. Project area is outside the known elevation range of the species.
Siskiyou phacelia (<i>Phacelia leonis</i>)	--/-- /--/List 1B	Unlikely within the project area. Occurs in sandy flats and slopes in montane coniferous forest between 1,200 and 1,900 m. Blooms June-July. Project area is outside the known elevation range of the species.
<i>Polyozellus multiplex</i>	--/PB/--/--	Potentially present within the project area. Occurs in association with roots of <i>Abies</i> sp. June-November. Not observed during the field survey.
<i>Ptilidium californicum</i>	--/SM, PB /--/--	Unlikely within the project area. This species is usually epiphytic, occurring on coniferous tree trunks, decaying logs, stumps and rarely on humus over rock. In California it is known from one population on white fir (<i>Abies concolor</i>) in the Lassen National Forest. Suitable habitat (i.e., white fir forest) is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Howell's alkali grass (<i>Puccinellia howellii</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in permanently wet mineralized salt springs at approximately 450 m. Known from only one site in western Shasta Co. Blooms June-July. Suitable habitat (i.e., alkaline mineral springs) is not present within the project area, and the project area is outside the known elevation range of the species.
Showy raillardella (<i>Raillardella pringlei</i>)	SC/FSS/--/List 1B	Unlikely within the project area. Occurs in wet meadows and streambanks between 1,200 and 2,200 m. Blooms July-Sept. Project area is outside the known elevation range of the species.
Rough raillardella (<i>Raillardopsis scabrida</i>)	--/FSS/--/--	Unlikely within the project area. Occurs on rocky open subalpine slopes between 1,670 and 2,300 m. Blooms July-August. Project area is outside the known elevation range of the species.
Tracy's sanicle (<i>Sanicula tracyi</i>)	SC/--/--/List 1B	Potentially present within the project area. Occurs in openings in montane coniferous forest and woodland between 100 and 1,000m. Blooms April-July. Not observed during the field survey.
Mexican gel-cup (<i>Sarcosoma mexicana</i>)	--/PB/--/--	Potentially present within the project area. Occurs on decaying wood or duff under conifers after snowmelt in mountainous habitats. December-March. Not observed during the field survey.
Goblin's gold (<i>Schistostega pennata</i>)	--/PB/--/--	Potentially present within the project area. Occurs in humid areas on mineral soil in shaded pockets of overturned tree roots often with standing water most of the year. It is also found in moist crevices, in caves, and under buildings. Not observed during the field survey.
Canyon Creek stonecrop (<i>Sedum paradisum</i> = <i>Sedum obtusatum</i> ssp. <i>paradisum</i>)	--/FSS/--/1B	Present within the project area. Occurs on serpentine semi-barrens or openings in Jeffrey pine-incense cedar woodland between 300 and 2,000 m. Blooms July-August. Found along the north side of Hayfork Creek between Stations 116 and 117 (TCRCD, 2000). Observed during the field survey.
Coast checkerbloom (<i>Sidalcea oregana</i> ssp. <i>exima</i>)	--/--/--/List 1B	Potentially present within the project area. Occurs in Yellow Pine Forest, North Coastal Coniferous Forest, Meadows and seeps almost always in wetlands between 500 to 2,500 m. Blooms June-July. Not observed during the field survey.
Red Mountain catchfly (<i>Silene campanulata</i> ssp. <i>campanulata</i>)	--/FSS/E/List 4	Unlikely within the project area. Occurs in ultramafic semi-barrens or openings in Jeffrey pine-incense cedar woodland between 900 and 1,400 m. Blooms May-June. Suitable habitat (i.e., ultramafic soils) is not present within the project area, and the project area is outside the known elevation range of the species.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
English Peak greenbriar (<i>Smilax jamesii</i>)	--/FSS/--/List 1B	Unlikely within the project area. Occurs in shaded riparian habitat along lakesides, streambanks, and alder thickets in montane coniferous forest above 900 m. Blooms May-July. Project area is outside the known elevation range of the species.
<i>Tetraphis geniculata</i>	--/SM/--/--	Potentially present within the project area. Occurs in large woody debris of advanced decay in old-growth coniferous forests. In 1998 it was known from only 19 locations in the Pacific Northwest (CalFlora, 2002), Not observed during the field survey.
<i>Ulota meglospora</i>	--/PB/--/--	Potentially present within the project area. Occurs on twigs and branches in the canopy of old-growth forests. Not observed during the field survey.
ANIMALS		
Invertebrates		
Hooded lancetooth (<i>Ancotrimea voyanum</i>)	--/SM/--/--	Present within the project area. A terrestrial mollusk found near streams or intermittently permanently damp stream channels with late successional habitat elements, such as woody debris and leaf mold. Observed during the field survey.
California floater (<i>Anodonta californiensis</i>)	SC/FSS/--/--	Potentially present within the project area. An aquatic mollusk found in freshwater bodies of water in very low-flow conditions, typically in silty substrates. Not observed during the field survey.
Potem pebblesnail (<i>Fluminicola</i> n. sp. 14)	--/SM/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus. Occurs in the upper Sacramento River and the Pit River basins, California. Project area is outside of the historic range of this species.
Flat-top pebblesnail (<i>Fluminicola</i> n. sp. 15)	--/SM/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus Endemic to the Upper Sacramento River system, California. Project area is outside of the historic range of this species.
Shasta Spring pebblesnail (<i>Fluminicola</i> n. sp. 16)	--/SM/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus Endemic to the Upper Sacramento River system, California. Project area is outside of the historic range of this species.
Disjunct pebblesnail (<i>Fluminicola</i> n. sp. 17)	--/SM/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus Endemic to the Upper Sacramento River system, California. Project area is outside of the historic range of this species.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Umbilicate pebblesnail (<i>Fluminicola</i> n. sp. 18)	--/SM/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus. Occurs in the upper Sacramento River and the Pit River basins, California. Project area is outside of the historic range of this species.
Nugget pebblesnail (<i>Fluminicola seminalis</i>)	--/SM/--/--	Unlikely within the project area. Found in cool, clear, flowing water and gravel-cobble substrate, typically in large creeks and rivers. In addition, it can occur on soft, mud substrates in large spring pools. Known only from the Upper Sacramento, Pit, and McCloud River systems. Project area is outside of the historic range of this species.
Oregon shoulderband (<i>Helminthoglypta hertleini</i>)	--/SM/--/--	Unlikely within the project area. Prefers rocky talus areas but can be found anywhere that permanent ground cover and moisture exists. Known from Trinity County. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Klamath (Trinity) shoulderband (<i>Helminthoglypta talmadgei</i>)	--/SM/--/--	Present within the project area. Habitat for this terrestrial mollusk includes limestone rockland with partial shading by conifers and hardwoods. Observed during the field survey.
Topaz juga (<i>Juga occata</i>)	--/FSS/--/--	Potentially present within the project area. Habitat for this terrestrial mollusk includes cold water in large springs and swift large river sections with cobble, boulder, and gravel substrates. Not observed during the field survey.
Cinnamon juga (<i>Juga (Oreobasis)</i> n. sp. 3)	--/FSS/--/--	Unlikely within the project area. Inhabits cold, perennial springs with substrate material ranging in size from mud, sand, and silt to gravel, cobble, boulders, and talus. Endemic to the Upper Sacramento River system, California. Known from two sites in Shasta County, California; one near the present boundary of Shasta National Forest, and the other in a spring-influenced area in the Pit River. Other sites are possible in limited areas on Redding District BLM administered lands and in Lassen and Shasta National Forests in the vicinity of Fall River Mills. Project area is outside of the historic range of this species.
Canary duskysnail (<i>Lyogyrus</i> n. sp. 3)	--/SM/--/--	Unlikely within the project area. Known to occur in one very large, cold spring complex tributary to the Pit River, and in a spring-fed portion of the main stem of the Pit River. Individuals are only found in shaded areas on the undersides of cobbles and boulders. Project area is outside of the historic range of this species.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Siskiyou sideband (<i>Monadenia chaceana</i>)	--/SM/--/--	Unlikely within the project area. Inhabits rocky shrub steppe to pine oak woodland. Known from Trinity County. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Church's (Klamath) sideband (<i>Monadenia churchi</i>)	--/SM/--/--	Present within the project area. This terrestrial mollusk inhabits limestone and rock outcrops in conifer forests. Observed during the field survey.
Trinity bristle snail (<i>Monadenia setosa</i>)	SC/--/T/--	Present within the project area. This terrestrial mollusk is known only from a few streams in the Trinity River drainage. Found in moist well-drained talus slopes in mixed deciduous-coniferous forests, and on forested riparian benches. Found in seven locations within the project area. Observed during the field survey.
Shasta sideband (<i>Monadenia troglodytes troglodytes</i>)	--/SM/--/--	Unlikely within the project area. Inhabits pine-oak woodlands commonly near or in the mouths of caves. Known from the McCloud Arm of Shasta Lake. Project area is outside of the historic range of this species.
Wintu sideband (<i>Monadenia troglodytes wintu</i>)	--/SM/--/--	Unlikely within the project area. Inhabits pine-oak woodlands commonly near or in the mouths of caves. Known from the McCloud Arm of Shasta Lake. Project area is outside of the historic range of this species.
Papillose tail-dropper slug (<i>Prophysaon dubium</i>)	--/SM/--/--	Potentially present within the project area. This terrestrial mollusk inhabits conifer forests with a hardwood component. Found in hardwood logs and leaf litter among shrubs. Known from Trinity County. Not observed during the field survey.
Montane peadam (<i>Pisidium ultramontanum</i>)	SC/FSS, SM/--/--	Unlikely within the project area. Inhabits spring-influenced lakes, rivers, and streams in sand/gravel substrates. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Ground beetle (<i>Scaphinotus behrensi</i>)	SC/--/--/--	Unlikely within the project area. Found in extreme southwestern Oregon and northwestern California along the coast. Not known from Trinity County. Project area is outside of the historic range of this species.
Shasta chaparral (<i>Trilobopsis roperi</i>)	--/SM/--/--	Unlikely within the project area. Found in shaded limestone rockslides with shrub or oak cover. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Tehama chaparral (<i>Trilobopsis tehamana</i>)	--/SM/--/--	Unlikely within the project area. Found in limestone rockland. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Pressley hesperian (<i>Vespericola pressleyi</i>)	--/SM/--/--	Present within the project area. This terrestrial mollusk inhabits perennially damp conifer/hardwood forests and riparian areas. The observation at the project area represents a new locality and range extension for this species, since it was previously only known from the vicinity of Big Bar. Observed during the field survey.
Shasta hesperian (<i>Vespericola shasta</i>)	--/SM/--/--	Unlikely within the project area. Found in moist bottomlands, i.e., riparian wetlands, springs, etc. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Knobby rams-horn (<i>Vorticifex</i> n. sp. 1)	--/SM/--/--	Unlikely within the project area. Inhabits large cold springs with coarse substrate. Found on red algae-encrusted cobbles and boulders. Limited to the Pit River in northern California. Project area is outside of the historic range of this species.
Fish		
Green sturgeon (<i>Acipenser medirostris</i>)	SC/--/CSC/--	Unlikely within the project area. Occurs in the San Francisco Bay, San Pablo Bay, the lower San Joaquin River and Delta, the Klamath River, and the northern portion of the Trinity River in California. Not known from the South Fork of the Trinity River. Project area is outside the historic range of the species.
Hardhead (<i>Mylopharodon conocephalus</i>)	--/FSS/CSC/--	Unlikely within the project area. Occurs in low to mid-elevation streams in California up to 1,300 m. Known primarily from the Central Valley. Not known from the vicinity of the project. Project area is outside the historic range of the species.
Coho salmon, Southern Oregon/Northern California Coasts ESU (<i>Oncorhynchus kisutch</i>)	T/--/C/--	Potentially present within the project area. Occurs in anadromous streams in northern California. Found in cool to cold water streams with shaded aquatic riverine habitats. Needs fine sands and gravels for breeding. This species is listed under the federal Endangered Species Act within the Southern Oregon/Northern California Coasts Evolutionarily Significant Unit (ESU). Hayfork Creek is designated Critical Habitat and also Essential Fish Habitat for this species. The project area lies within potential and historic habitat but is not currently known to occur within Hayfork Creek. The Hyampom Gorge, located downstream, presents a barrier to fish migration to the project area. Suitable habitat is present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Summer steelhead, Klamath Mountains Province ESU (<i>Oncorhynchus mykiss irideus</i>)	--/FSS/CSC/--	Potentially present within the project area. Occurs in anadromous streams in northern California. Needs cool, swift, shallow water with loose clean gravels for spawning. This species is not listed under the federal or state Endangered Species Acts within the Klamath Mountains Province Evolutionarily Significant Unit (ESU). Hayfork Creek is designated Essential Fish Habitat for this species. The Hyampom Gorge, located downstream, presents a barrier to fish migration to the project area. Suitable habitat is present within the project area.
Steelhead, Northern California ESU (<i>Oncorhynchus mykiss</i>)	T/FSS/--/--	Unlikely within the project area. Occurs in anadromous streams in northern California. Needs cool, swift, shallow water with loose clean gravels for spawning. The project area does not lie within the boundaries of this ESU. Project area is outside of the historic range of this ESU.
Spring-run chinook salmon, Upper Klamath-Trinity Rivers ESU (<i>Oncorhynchus tshawytscha</i>)	--/FSS/--/--	Potentially present within the project area. Occurs in anadromous streams in northern California. Needs cool, swift, shallow water with loose clean gravels for spawning. This species is not listed under the federal or state Endangered Species Acts within the Upper Klamath-Trinity Rivers Evolutionarily Significant Unit (ESU). Hayfork Creek is designated Essential Fish Habitat for this species. The Hyampom Gorge, located downstream, presents a barrier to fish migration to the project area. Suitable habitat is present within the project area.
Fall-run chinook salmon, Upper Klamath-Trinity Rivers ESU (<i>Oncorhynchus tshawytscha</i>)	--/--/--/--	Potentially present within the project area. Occurs in anadromous streams in northern California. Needs cool, swift, shallow water with loose clean gravels for spawning. This species is not listed under the federal or state Endangered Species Acts within the Upper Klamath-Trinity Rivers ESU. Hayfork Creek is designated Essential Fish Habitat for this species. The Hyampom Gorge, located downstream, presents a barrier to fish migration to the project area. Suitable habitat is present within the project area.
California coastal chinook salmon (<i>Oncorhynchus tshawytscha</i>)	T/--/E/--	Unlikely within the project area. Occurs in anadromous streams in northern California. Needs cool, swift, shallow water with loose clean gravels for spawning. The project area does not lie within the boundaries of this ESU. Project area is outside of the historic range of this ESU.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Amphibians and Reptiles		
Tailed frog (<i>Ascaphus truei</i>)	SC/--/CSC/--	Potentially present within the project area. Occurs in cool, perennial, swiftly flowing streams in redwood, Douglas fir, and yellow pine forests in northern California. Not observed during the field survey.
Northwestern pond turtle (<i>Clemmys marmorata marmorata</i>)	SC/FSS/CSC/--	Present within the project area. Occurs in slow-moving streams in a wide variety of habitat types below 1,800 m in elevation. Requires basking sites. Suitable habitat not observed during the field survey, however, such habitat (i.e., slow moving water) is assumed present at other times of the year. Observed during the field survey.
Shasta salamander (<i>Hydromantes shastae</i>)	SC/FSS, SMT/--	Unlikely within the project area. Occurs in limestone rock outcroppings in both forested and non-forested vegetation types in Shasta County, California. Possibly unique to a small area near Lake Shasta. Found under rocks, in fissures or caves, and on vertical cliffs. Project area is outside the known range of the species.
Del Norte salamander (<i>Plethodon elongatus</i>)	SC/SM/CSC/--	Unlikely within the project area. Inhabits cool, shaded, stabilized forested talus and rock slopes in mixed conifer-hardwood forests in extreme southwestern Oregon and northwestern California, south to Humboldt County, California. Based on the North State Resources, Inc. habitat evaluation, SM survey effort, and review of existing information regarding habitat requirements, suitable habitat is not present within the project area.
Northern red-legged frog (<i>Rana aurora aurora</i>)	SC/FSS/CSC/--	Unlikely within the project area. Usually found near ponds or other permanent water bodies with extensive vegetation. Known from Del Norte, Humboldt, and western Siskiyou Counties, usually below 1,200 m. Hayfork creek lacks the extensive emergent and submergent vegetation required for this species. Not known from the Shasta-Trinity forest. Project area is outside the known range of the species and suitable habitat is not present.
Foothill yellow-legged frog (<i>Rana boylei</i>)	SC/FSS/CSC/--	Present within the project area. Habitat for this species includes partially shaded shallow streams and riffles with a rocky substrate (at least cobble-sized) up to 1,830 m in a variety of habitats. Three individuals were observed at the confluence of James Creek and Hayfork Creek. Observed during the field survey.
Southern torrent (seep) salamander (<i>Rhyacotriton variegatus</i> = <i>olympicus</i>)	SC/FSS/CSC/--	Potentially present within the project area. Found in coastal forests of northwestern California. Found primarily in cold well-shaded permanent streams and spring seepages in redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer forests. Not observed during the field survey.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Birds		
Cooper's hawk (<i>Accipiter cooperii</i>)	--/--/CSC/--	Potentially present within the project area. Habitat includes riparian forests and woodlands, cismontane woodlands, and lower coniferous forests from 0 to above 2,700 m elevation. Seldom found in areas without dense tree stands or patchy woodland forest. Nesting and foraging usually occur near open water or riparian areas. Breeds March-August (Zeiner <i>et al.</i> 1990; CDFG, 2001). Suitable foraging and nesting habitat (i.e., alder riparian habitat) does exist onsite. Not observed during the field survey.
Sharp-shinned hawk (<i>Accipiter striatus</i>)	--/--/CSC/--	Potentially present within the project area. Habitat includes riparian forests and woodlands, cismontane woodlands, and lower coniferous forests. Breeds April-August (Zeiner <i>et al.</i> , 1990). Suitable foraging and nesting habitat (i.e., alder riparian habitat) does exist onsite. Not observed during the field survey.
Northern goshawk (<i>Accipiter gentilis</i>)	SC/FSS/CSC/--	Unlikely within the project area. Habitat for this species includes older coniferous, mixed, and deciduous forest habitats. Nests in red fir, Jeffrey pine, and lodgepole pine forests. Require large trees for nesting and a closed canopy (i.e., approximately 70%) with open spaces under the canopy for maneuvering. Species is extremely sensitive to human disturbance, therefore is not expected to be present within the vicinity of Hyampom Road (T. Quinn, USFS, pers. comm., 2001; D. Garrison, USFS, pers. comm., 2001; C. Carrothers, USFS, pers. comm., 2001 and 2002). Suitable habitat is not present within the project area.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	SC/--/--	Unlikely within the project area. Occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. Suitable habitat is not present within the project area.
Bell's sage sparrow (<i>Amphispiza belli belli</i>)	SC/--/CSC/--	Unlikely within the project area. Habitat for this species includes dense stands of chaparral and scrub habitats for nesting and more open chaparral during winter. Suitable habitat is not present within the project area.
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	T/--/E/--	Unlikely within the project area. Habitat for this species includes mature coastal coniferous forests for nesting near coastal water for foraging. Nests in conifer stands greater than 150 years old and may be found up to 35 miles inland. Winters on subtidal and pelagic waters often well offshore. Old conifer stands (greater than 150 years) are not present in the project area. Site is at outside limit of inland nesting range. Suitable habitat is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Vaux's swift (<i>Chaetura vauxi</i>)	SC/--/CSC/--	Potentially present within the project area. Nests in hollow, burned-out large conifers; most other activities are conducted in the air. The breeding season extends from mid April-mid May to mid August-early September (Verner and Boss, 1980; Beedy and Granholm, 1985; Sterling, 2000). Suitable nesting habitat does exist onsite. Not observed during the field survey.
Black tern (<i>Chilidonias niger</i>)	SC/--/CSC /--	Unlikely within the project area. Restricted to freshwater (e.g., fresh emergent wetlands) habitats while breeding. Suitable habitat is not present within the project area.
Olive-sided flycatcher (<i>Contopus cooperi</i>)	SC/--/--/--	Unlikely within the project area. Prefers montane and subalpine coniferous forest between 1,200 and 2,700 m. Project area is outside the known elevation range of the species.
Black swift (<i>Cypseloides niger</i>)	SC/--/CSC /--	Unlikely within the project area. Breeds very locally in four regions of California: the central and southern Sierra; the coastal cliffs and mountains of San Mateo, Santa Cruz, and Monterey counties; the San Gabriel, San Bernardino, and San Jacinto mountains of southern California; and a limited area in the Cascade Range. Nests have been found only on cliffs behind or adjacent to waterfalls or steep coastal cliffs. Forages widely over many habitats. Outside the known range of the species and suitable breeding habitat is not present within the project area.
Hermit warbler (<i>Dendroica occidentalis</i>)	SC/--/--/--	Potentially present within the project area. Breeds in mature Douglas-fir, ponderosa pine, montane hardwood-conifer, mixed conifer, redwood, red fir, and Jeffrey pine habitats. The breeding season extends from late April-early July (Zeiner <i>et al.</i> , 1990). In migration and winter, also occurs in valley foothill hardwood habitat and in stands of planted pines. Not observed during the field survey.
Little willow flycatcher (<i>Empidonax trailii brewsteri</i>)	--/FSS/T/--	Unlikely within the project area. Habitat includes riparian areas and large, wet meadows with abundant willows for breeding. Usually found in riparian habitats during migration. Willow flycatchers are known from dense riparian habitats along Hayfork Creek. Marginal, disjunct habitat (i.e., few willows in isolated open/fragmented stands) is present within the project area, therefore, this species is not expected to be present in the project area (T. Quinn, USFS, pers. comm., 2001; J. Miller, CDFG, pers. comm., 2002). Suitable habitat is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Prairie falcon (<i>Falco mexicanus</i>)	--/--/CSC/--	Unlikely within the project area. Habitat for this species includes cliffs or escarpments for nesting and adjacent dry, open terrain or uplands, marshes, and seasonal marshes for foraging. Suitable habitat is not present within the project area.
American peregrine falcon (<i>Falco peregrinus anatum</i>)	D/FSS/E/--	Unlikely within the project area. Nesting habitat for this species includes vertical cliffs with large potholes or ledges inaccessible to land predators, preferably close to large avian prey populations. Suitable habitat is not present within the project area.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	T, PD/--/E/--	Potentially present within the project area. Occurs near large bodies of water or free-flowing rivers with abundant fish and snags or other perches nearby. Nests in large old-growth, especially Ponderosa pine, usually with less than 40% canopy. Suitable foraging habitat exists along Hayfork Creek within the project area. Not observed during the field survey.
Long-billed curlew (<i>Numenius americanus</i>)	SC/--/CSC /--	Unlikely within the project area. Known to breed in wet meadow habitat in northeastern California in Siskiyou, Modoc, and Lassen Counties. Preferred winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. Suitable habitat is not present within the project area.
Osprey (<i>Pandion haliaetus</i>)	SC/--/CSC/--	Potentially present within the project area. Nests in snags, cliffs, or other high, protected sites near the ocean, large lakes, or rivers with abundant fish populations. Suitable foraging habitat exists along Hayfork Creek within the project area. Not observed during the field survey.
Great gray owl (<i>Strix nebulosa</i>)	--/FSS, SM/E/--	Unlikely within the project area. Habitat for this species dense mixed coniferous forest in association with large wet meadows and other vegetated openings between 1,400 and 2,300 m. Nests primarily in large, broken-topped snags 20 or more ft tall. Large wet meadows are not present within the project area. Suitable habitat is not present within the project area.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Northern spotted owl (<i>Strix occidentalis caurina</i>)	T/--/CSC/--	Potentially present within the project area. Occurs in dense, old-growth, multi-layered mixed conifer, ponderosa pine, red fir, redwood, and Douglas-fir habitats between 0 and 2,300 m. Requires >70% canopy closure for nesting and >40% canopy closure for foraging and topped conifers or oaks with crevices for nesting. The nesting season (i.e., from the beginning of courtship until fledglings can safely flee a disturbance) is Feb 1- July 10 (C. Carrothers, USFS, pers. comm.). Suitable nesting, roosting, and foraging habitat is present within the project area. This species is reported in the CNDDDB at three km from the site, and nest sites are known from within 2.25 km from the project site. Two-year protocol-level surveys are being conducted for the species, and no owls were located during the first year of surveys. The project area is located in Critical Habitat for the species. Not observed during the field survey.
California thrasher (<i>Toxostoma redivivum</i>)	SC/--/--/--	Unlikely within the project area. Occupies moderate to dense chaparral habitats and, less commonly, extensive thickets in young or open valley foothill riparian habitat. Suitable habitat is not present within the project area.
Mammals		
Pallid bat (<i>Antrozous pallidus</i>)	--/FSS, PB/CSC/--	Potentially present within the project area. Locally common in California in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests, most commonly in open dry habitats with rocky areas, or crevices in buildings or bridges for roosting. Feeds almost entirely from the ground. Not observed during the field survey.
Spotted bat (<i>Euderma maculatum</i>)	SC/--/CSC/--	Potentially present within the project area. Occurs in a variety of habitats in California, including arid deserts, grasslands, and mixed conifer forests. Roosts primarily in rock crevices; females may favor ponderosa pine forests during reproduction. Not observed during the field survey.
California wolverine (<i>Gulo gulo luteus</i>)	SC/FSS/T/--	Unlikely within the project area. Occurs in mixed conifer, red fir, and lodgepole pine habitats in the northern Sierra Nevada, mostly at elevations between 1,300 and 2,225 m. Avoids areas of human disturbance. The proposed project is located at a much lower elevation than normal for the species. One wolverine sighting was reported approximately six miles to the north in 1974 (CDFG, 2001). Project area is outside the elevation range of the species.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Western red bat (<i>Lasiurus blossevillii</i>)	--/FSS/CSC/--	Unlikely within the project area. Locally common in California primarily in riparian and wooded habitats, including willows, cottonwoods, and sycamores at elevations up to 900 m. Some roosting in caves, but mostly roosts individually within trees or shrubs, often adjacent to streams or open fields. Not known from the vicinity of the project area. Project area is outside the historic range of the species.
American marten (<i>Martes americana</i>)	SC/FSS/CSC/--	Potentially present within the project area. Preferred habitat for this species includes dense coniferous forests with canopy cover greater than 40%, small openings for foraging, many large snags and downed logs, within close proximity to dense riparian corridors. Prefers old growth but also uses stands with age variation; needs snags and cavity trees for cover. Not observed during the field survey.
Pacific fisher (<i>Martes pennanti pacifica</i>)	SC/FSS/CSC/--	Potentially present within the project area. Preferred habitat for this species includes mature mixed conifer, fir, and pine forests, with canopy cover of 60-100%, and many large snags and downed logs, within close proximity to dense riparian corridors. Known from the vicinity of Hayfork, Hyampom and Big Bar; and from Hayfork Creek approximately two miles west of project area. Not observed during the field survey.
Long-eared myotis bat (<i>Myotis evotis</i>)	SC/PB/CSC/--	Potentially present within the project area. Occurs primarily in coniferous habitats from 0-2,700 m. Forages over dry grassland habitats as well as streams, wetlands, and lakes. Roost in caves, cliff faces, mines, tunnels, buildings, and bridges. Roosts singly or in small groups. Not observed during the field survey.
Fringed myotis bat (<i>Myotis thysanodes</i>)	SC/PB/CSC/--	Potentially present within the project area. Occurs throughout California, except in the Central Valley, in a wide variety of habitats from 0-9,350 ft. Roosting habitat for this colonial species includes caves, buildings, mines, and crevices. Not observed during the field survey.
Long-legged myotis bat (<i>Myotis volans</i>)	SC/--/CSC/--	Potentially present within the project area. Occurs most commonly in woodlands and forests above 1,200 m, but occurs from sea level to 3,400 m. Roosting habitat for this colonial species includes caves, rock crevices, buildings, snags, mines, and spaces under tree bark. Foraging habitat includes open water and open woodland areas. Not observed during the field survey.

SPECIES	STATUS * (USFWS /USFS/CA/CNPS)	COMMENTS
Yuma myotis bat (<i>Myotis yumanensis</i>)	SC/--/CSC/--	Potentially present within the project area. Occurs throughout California in a wide variety of habitats, including dry grassland habitats as well as streams, wetlands, and lakes from 0-3,500 m. Roosting habitat for this colonial species includes caves, buildings, mines, crevices, undersides of bridges, and abandoned swallow nests. Foraging habitat includes open water. Not observed during the field survey.
Pacific Townsend's (=western) big-eared bat (<i>Plecotus townsendii townsendii</i>)	SC/FSS/CSC/--	Potentially present within the project area. Roosts in caves, tunnels, mines, and dark attics of abandoned buildings; very sensitive to disturbances and may abandon a roost after onsite visit. Not observed during the field survey.
<p>Status*</p> <p>USFWS = U.S. Fish and Wildlife Service special-status species; USFS = U.S. Forest Service special-status species; CA = California Department of Fish and Game special-status species; CNPS = California Native Plant Society special-status species</p> <p><u>Federal</u></p> <p>E = Endangered T = Threatened PE = Proposed Endangered PT = Proposed Threatened FC = Federal Candidate (former Category 1 Candidate) SC = Species of Concern (former Category 2 Candidate) D = Delisted PD = Proposed for Delisting FSS = Forest Service Region 5 Forester's Sensitive Species List FSE = Shasta-Trinity National Forest Endemic Species WL = Forest Service Watchlist Plants SM = Survey & Manage Species PB = Protection Buffer Species PG = Protect from Grazing Species</p> <p>NOTE: Per a notice in the February 28, 1996 Federal Register, the USFWS has reviewed and altered the classification status of all candidate species. Former Category 1 candidates are now referred to as candidate species. The Category 2 candidate designation is discontinued. Former Category 2 candidates are now referred to as Species of Concern. Former Category 3 candidate species are not candidates for federal listing, and this designation is discontinued.</p> <p><u>State</u></p> <p>E = Endangered T = Threatened CE = Candidate Endangered CSC = California Special Concern species P = Protected FP = Fully Protected</p> <p><u>CNPS</u></p> <p>List 1B = Plants rare, threatened, or endangered in California and elsewhere List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere List 3 = Plants about which we need more information--a review list List 4 = Plants of limited distribution--a watch list</p>		

“WATERS OF THE U.S.”

Within the proposed project area, potential wetlands and “waters of the U.S.” were evaluated according to the methods outlined in the 1987 ACOE Manual (ACOE, 1987). This methodology employs the three-parameter approach to wetland delineation; that is, hydrophytic vegetation, hydric soils, and wetland hydrology must all be present for an area to be classified as a jurisdictional wetland. The limit of the “waters of the U.S.” for the proposed project was determined through field mapping of the ordinary high-water mark (OHWM) based on indicators such as vegetation limits and water marks. The wetland delineation report has been submitted to the ACOE and the areas of “waters of the U.S.” have been verified by the ACOE. The verification letter is included in Appendix C. The ACOE has jurisdiction over all “waters of the U.S.,” which include wetlands, and “other waters,” such as rivers, intermittent streams, mudflats, and sandflats.

Within the study area, approximately 37,655.0 m² (9.30 acres) and 2,403.7 linear m (7,884 linear feet) of jurisdictional “waters of the U.S.” was identified within the OHWM of Hayfork Creek and approximately 81.0 m² (0.02 acre) and 54.9 linear m (180 linear feet) of jurisdictional “waters of the U.S.” was identified within the OHWM of James Creek (see **Figure 5**). Waters of the U.S. within the project area include portions of Hayfork Creek, a perennial drainage with fringing riparian habitat, and James Creek, also a perennial (or nearly perennial) drainage that flows into Hayfork Creek on the eastern end of the project area. James Creek supports a very limited amount of riparian vegetation within its channel. Hayfork Creek is characterized by a defined low-flow channel and scattered high-flow channels where the floodplain is wide enough to support them. The stream substrate is composed of a mixture of boulders and cobble with sands and gravels in lower-velocity sites. Stream flow in Hayfork Creek follows a pattern of the highest flows occurring during winter storm events, and the lowest flows being in late August and September. A relatively small amount of snow pack in the surrounding mountains sustains moderate flows during the late spring. The instream habitat of Hayfork Creek within the project area shows no signs of excessive sedimentation. Cobble embeddedness is usually less than 10 percent, with the highest degree of cobble embeddedness observed being 15-20 percent. The project reach of Hayfork Creek has a pool to riffle ratio estimated at 60:40. Channel substrate composition typically consists of 65 percent small and medium boulder, 15 percent bedrock, 10 percent cobble, five percent gravel, and five percent sand.

Riparian habitat (i.e., White Alder Riparian Forest) on both Hayfork and James Creeks is limited to the drainage channel within the OHWM; therefore wetland habitats at each of the sites are included within the “waters of the U. S.” (i.e., perennial drainage). Because these wetland habitat types are within a perennially flowing “waters of the U. S.” it can be assumed that wetland hydrology is present, and consequently, hydric soils. No off-channel wetlands were observed within the project area. White Alder Riparian Forest is discussed in more detail above.

For regulatory purposes, Hyampom and James Creeks are classified as non-wetland “waters of the U.S.” The creeks are subject to the jurisdiction of the ACOE under Section 404 of the Clean Water Act, the CDFG under Sections 1600-1607 of the California Fish and Game Code, and the State Water Resources Control Board (SWRCB) under Section 401 of the Clean Water Act and the Porter-Cologne Act.

4.7.2 PLANNING DOCUMENT GOALS, OBJECTIVES, AND POLICIES

TRINITY COUNTY GENERAL PLAN OPEN SPACE AND CONSERVATION ELEMENT

The Trinity County General Plan Open Space and Conservation Elements contains the following objectives and recommendations related to biological resources:

- Objective: To preserve and maintain open space as a means of providing natural habitat for all species of wildlife is the prime objective.
 - Recommendation: To maintain all species of fish and wildlife for their intrinsic and ecological values as well as for their direct benefit to mankind.
 - Recommendation: To provide for diversified recreational use of fish and wildlife.
 - Recommendation: Provide for an economic contribution of fish and wildlife in the best interest of the people of Trinity County.
 - Recommendation: Any plans to alter the present environment should be considered on the basis of protecting fish and wildlife and their habitats.
 - Recommendation: Provide for scientific and educational use of fish and wildlife.
 - Recommendation: Present land uses which result in siltation and pollution of lakes and streams should be carefully monitored, and if necessary corrected to assure a clean and productive habitat.
 - Recommendation: Outstanding wildlife habitats that have an unusually high value for fish and wildlife should be carefully considered before any development altering this environment is permitted.
 - Recommendation: Encourage development and enhancement of wildlife habitat through careful use of methods, such as controlled burning, planting, water development, judicious livestock grazing, mechanical land manipulation and creation of ponds in water courses
 - Recommendation: Recognize and encourage the various appropriate and non-appropriate uses of wildlife. This includes such activities as bird watching, scientific studies, educational purposes, and hunting and fishing.
 - Recommendation: Retain and develop access to public areas very carefully through riding and hiking trails.
- Objective: To conserve and maintain streams, lakes and forest open space as a means of providing natural habitat and for all species of wildlife existing in the County.

Section I, *Fish, Wildlife and Natural Habitat* of the Open Space Element also contains the following recommendation regarding riparian and aquatic habitat:

- Riparian habitat, viable cold-water stream habitat, supporting fish life, and wetland habitat have actually increased in the past and are in good supply. Any alterations of this supply except for enhancement for fish and wildlife should be avoided.

TRINITY COUNTY REGIONAL TRANSPORTATION PLAN

The Trinity County Regional Transportation Plan contains the following goals, objectives, and policies related to biological impacts of the proposed project:

- Goal 7.1: To coordinate this plan with adopted environmental goals and policies addressed in the Trinity County General Plan and other documents. These goals and policies include, but are not limited to air, water, timber, and land management plans.
- Objective 7.1.1: Support those social, economic, recreational, safety, and service needs of the people in Trinity County which will preserve the quality of life outlined in the County General Plan.
 - Policy 7.1.1E: Limit vegetation removal along state highways and county roads to that necessary for safety purposes (including implementation of fire safety plans), excepting noxious exotic weeds (such as Scotch and French Broom and Pampas Grass) the removal of which should be aggressively pursued.
 - Policy 7.1.1F: Prohibit the use of herbicides along state highways and county roads.
 - Policy 7.1.1G: The appropriate state and county agencies shall revegetate highly eroded areas, to the extent feasible along highways and roads.
 - Policy 7.1.1H: The appropriate state and county agencies shall take active measures to stabilize unstable areas to the extent feasible along highways and roads.
- Objective 7.1.3: Minimize environmental impacts, project delays, and added costs or procedures for transportation projects through early, continued resource agency consultation and through public involvement.
 - Policy 7.1.3A: At a minimum, meet the legal public notification requirements of state and federal law, as applicable. Whenever feasible, utilize additional measures such as public workshops or newsletters to increase opportunities for public involvement.
 - Policy 7.1.3B: Encourage appropriate transportation and resource agencies to become actively involved in the development and review of projects to as to incorporate environmental considerations into projects from the beginning.

SHASTA-TRINITY NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

The proposed action area is included in Management Area 17, Hayfork Creek, and Management Area 19, Indian Valley/Rattlesnake of the Shasta-Trinity National Forests Land and Management Plan (LMP;

USDA, 1995). The *Shasta-Trinity National Forest Land and Resource Management Plan (LMP)* policies regarding biological resources that relate to the proposed project are as follows (USDI, 1995):

Applicable Forest Goals related to biological resources include the following:

- Integrate multiple resource management on a landscape level to provide and maintain diversity and quality of habitats that support viable populations of plants, fish, and wildlife.
- Manage the Forest's transportation system to facilitate resource management objectives, protect wildlife, meet water quality objectives, and provide recreational access.
- Emphasize sport fisheries as a major recreation activity by expanding recreational fisheries opportunities.
- Emphasize the restoration of summer steelhead and spring-run chinook salmon habitat in the South Fork Trinity River Basin.
- Provide for the protection, maintenance, and improvement of wild trout and salmon habitat.
- Manage rangeland vegetation to provide for healthy ecosystems and to make forage available on a sustainable basis for use by livestock and wildlife.
- Maintain or improve riparian habitat.
- Monitor and protect habitat for federally listed threatened and endangered (T&E) and candidate species. Assist in recovery efforts for T&E species. Cooperate with the State to meet objectives for state-listed species.
- Manage habitat for sensitive plants and animals in a manner that will prevent any species from becoming a candidate for T&E status.
- Maintain or improve water quality and quantity to meet fish habitat requirements and domestic use needs.
- Meet the Forests' share of habitat objectives in state deer herd plans.
- Meet habitat or population objectives established for management indicators.
- Cooperate with federal, state, and local agencies to maintain or improve wildlife habitat.
- Maintain natural wildlife species diversity by continuing to provide special habitat elements within forest ecosystems.
- Take advantage of management opportunities to increase populations of game species including mule deer, black-tailed deer, elk, and turkey in balance with the ecosystem.

Applicable Forest Standards and Guidelines include the following:

- For Survey & Manage species: manage known sites, survey prior to ground-disturbing activities, conduct extensive surveys for the species to find high-priority sites for species management, manage recreation areas to minimize disturbance to Survey & Manage species, and protect sites from grazing.
- With respect to biological diversity: manage natural openings at the project level; manage cliffs, caves, taluses, and rock outcroppings on a site-by-site basis to protect microenvironments;

provide the necessary number of replacement snags to meet density requirements; maintain unburned dead/down material in the quantity prescribed for each land allocation; provide for and maintain at least five percent of each timber type/seral stage delineated in the LMP; manage hardwood types for sustainability; allow conversion to conifers only to meet desired future ecosystem conditions; and provide connection travel corridors for wildlife.

- With respect to botany: map, record and protect habitat for sensitive and endemic plant species until conservation strategies are developed; analyze the potential effects of all ground-disturbing projects on sensitive and endemic plants and their habitats and mitigate project effects to avoid declines in species viability; monitor the effects of management activities on sensitive and endemic plants and alter management strategies as necessary; provide reports of sensitive plant populations to the CNDDDB annually; coordinate sensitive plant inventory and protection efforts with the CDFG, USFWS, The Nature Conservancy, CNPS, and other concerned agencies, organizations, and adjacent landowners; develop at least one conservation strategy per year; review the Forest's sensitive species list periodically and recommend appropriate changes to the Regional Forester; and protect type localities of sensitive and endemic plants for their scientific value.
- With respect to fisheries: develop an instream flow assessment program to assess needs and protect fish habitat in selected streams; coordinate instream flow needs with local agencies to benefit fish habitat; improve the anadromous fishery within the South Fork Trinity River and its tributaries; and coordinate rehabilitation and enhancement projects with cooperating agencies involved in the Model Steelhead Stream Demonstration Project Plan and the Trinity River Basin Fish and Wildlife Management Program.
- With respect to riparian areas: apply the Riparian Reserve Standards and Guidelines throughout the Forest; maintain riparian area values, particularly when locating and constructing new roads and trails; and identify and treat riparian areas that are in a degraded condition.
- With respect to wildlife:
 - For black-tail and mule deer: design and construct new roads to minimize potential conflicts; where possible, provide for line-of-sight barriers, consisting of vegetation or topography along open roads in important deer areas; and use seasonal or permanent road closures to reduce disturbance during critical periods such as fawning.
 - For TE&S: maintain and/or enhance habitat for TE&S species consistent with individual species recovery plans; survey and evaluate habitat for TE&S species as the project level in coordination with the USFWS, place in Prescription VII or IX and/or require limited operating periods or other restrictions as appropriate; manage and protect potential bald eagle and peregrine falcon sites for future occupancy; and require limited operating periods adjacent to active goshawk nesting sites until the young have fledged.

Supplemental LMP management direction for plants and wildlife within Management Area 17 includes the following:

- Protect rock outcrops from excavation until they have been surveyed for pale yellow stonecrop and Howell's lewisia.
- Search suitable habitat for Nile's madia.
- Maintain or improve selected habitat for steelhead and salmon with emphasis on spawning, rearing, and streamside cover areas, as well as barrier removal.
- In cooperation with DFG, develop and implement a species management plan for spring-run Chinook and summer steelhead for the South Fork Trinity River.
- Assess brushfields for multi-resource management opportunities, especially to enhance wildlife forage values.

Supplemental LMP management direction for plants and wildlife within Management Area 19 includes the following:

- Survey suitable habitat for additional populations of Nile's madia.
- Protect rock outcrops from excavation until they have been surveyed for pale yellow stonecrop.
- Protect the type localities of Nile's madia and pale yellow stonecrop for their scientific value.
- Maintain or improve selected habitat for steelhead and salmon with emphasis on spawning, rearing, and streamside cover areas, along with sediment control.
- Identify watershed and fisheries improvement opportunities within the Rattlesnake Creek watershed.

4.7.3 SIGNIFICANCE CRITERIA

Appendix G of the CEQA *Guidelines*, the CEQA Environmental Checklist, poses the following questions to be considered in determining whether the project would cause significant impacts to special status species or other biological resources, waters of the U.S. or other wildlife habitat:

Would the project:

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, Coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game (DFG) or US Fish and Wildlife Service (USFWS)?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

In addition to the criteria listed above, CEQA Guidelines Section 15065 contains the following relevant mandatory significance threshold, which should also be considered in determining whether the project would cause significant impacts to special status species:

Would the project:

- Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, [or] reduce the number or restrict the range of a rare or endangered plant or animal?

4.7.4. IMPACTS AND MITIGATION MEASURES

PERMANANT IMPACTS AND MITIGATION MEASURES

Biology Impact – 1: The proposed project would result in permanent impacts to various vegetative communities, including the loss of several hundred trees.

The amount of disturbance to the various vegetation types that is expected to result from the proposed project is presented in **Table 4.7-4**. Areas of temporary disturbance are those areas that will be revegetated or allowed to revegetate naturally after construction is complete. Areas of permanent disturbance are those areas that will be covered by the new structures or paved as part of the proposed roadway realignment or widening.

**TABLE 4.7-4
IMPACTS TO VEGETATIVE COMMUNITIES WITHIN THE PROJECT AREA**

Community Type	Dominant Plant Species	Approximate m ² (acres) of Temporary Disturbance	Approximate m ² (acres) of Permanent Disturbance
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Community Type	Dominant Plant Species	Approximate m ² (acres) of Temporary Disturbance	Approximate m ² (acres) of Permanent Disturbance
Douglas Fir Forest	<i>Pseudotsuga menziesii</i> , <i>Calocedrus decurrens</i> , <i>Quercus garryana</i> , <i>Quercus wislizenii</i> var. <i>frutescens</i> , <i>Rosa gymnocarpa</i> , <i>Ribes</i> sp., <i>Carex rossii</i> , <i>Viola lobata</i> ssp. <i>lobata</i>	5,805.0 (1.4)	15,673.5 (3.9)
Oregon Oak Woodland	<i>Quercus garryana</i> , <i>Pseudotsuga menziesii</i> , <i>Pinus sabiniana</i> , <i>Cynosurus echinatus</i> , <i>Elymus glaucus</i> , <i>Melica</i> spp., <i>Fritillaria recurva</i> , <i>Cynoglossum grande</i> , <i>Senecio</i> sp.	7,778.7 (1.9)	3,599.1 (0.9)
Foothill Pine – Chaparral Woodland	<i>Pinus sabiniana</i> , <i>Quercus garryana</i> , <i>Quercus chrysolepis</i> , <i>Cercocarpus betuloides</i> var. <i>betuloides</i> , <i>Arctostaphylos manzanita</i> , <i>Ceanothus cuneatus</i> , <i>Quercus wislizenii</i> var. <i>frutescens</i> , <i>Carex rossii</i> , <i>Galium</i> sp., <i>Monardella villosa</i>	116.1 (0.03)	2,931.5 (0.7)
White Alder Riparian Forest	<i>Alnus rhombifolia</i> , <i>Salix</i> sp., <i>Quercus chrysolepis</i> , <i>Pseudotsuga menziesii</i> , <i>Rubus</i> sp., <i>Cornus</i> sp., <i>Symphoricarpos</i> sp., <i>Artemisia douglasiana</i> , <i>Equisetum telemateia</i> ssp. <i>braunii</i>	0	87.1 (0.02)
TOTAL		9,520.2 (2.4)	26,470.8 (6.5)

As stated above in Section 4.7-1, the tree sampling plots were completed for the most part in relatively undisturbed sites. The areas that are expected to be impacted as a result of the proposed project are primarily unvegetated and contain many fewer trees than the results of the sampling indicate. Therefore, although several hundred trees with diameter breast height (dbh) of 15 cm (six inches) or greater could be removed as a result of the proposed project, many fewer trees are expected to actually be removed. Work to be performed on the downside slope from Hyampom Road (i.e., to the south of the road) will be completed primarily in disturbed areas containing few trees. Most of the tree loss during construction will occur to the north of Hyampom Road (i.e. on the upslope side). However, work will not take place in the densest tree-covered segments of this area.

To maintain clear safety zones and sight distance, and to minimize the need to remove hazard trees that threaten to fall on the roadway in the future, upland tree species will not be replanted on cut or fill slopes or within 100 feet of the new centerline. Only shrubs, grasses, and forbs will be planted in this area. Trees that reestablish naturally within this area will be subject to removal as necessary to maintain sight distance, mitigate hazards, and maintain fuel breaks. Existing trees growing outside of the cut and fill limits and safe recovery zone but still within 100 feet of the centerline will not be removed as part of project construction.

Even though the Douglas fir Forest, Oregon Oak Woodland, and Foothill Pine Chaparral-Woodland within the project area are not considered unique, they, along with the White Alder Riparian Forest, do provide habitat for wildlife species within the area. Therefore, the removal of native tree species as part of the proposed project is considered a potentially significant impact and will require mitigation.

Significance: Potentially Significant, but mitigated.

Biology Mitigation – 1: To minimize removal and disturbance of Douglas fir forest, Oregon oak

woodland, and riparian habitats, the following avoidance and minimization measures will be implemented:

- **Prior to the initiation of construction activities TCDOT shall clearly demarcate (with uniquely colored construction stakes or high visibility orange mesh fencing) the limits of construction within natural habitat areas.**
- **Prior to the onset of site grading, construction personnel shall be informed about the importance of avoiding ground-disturbing activities outside the designated construction work area. The TCDOT Resident Engineer and Environmental Compliance Specialist, with support from qualified biologists, will ensure that construction equipment and associated activities avoid any disturbance of sensitive resources outside the project areas.**
- **All material stockpiling and staging areas will be located within project right-of-ways in non-sensitive areas, or at designated disturbed/developed areas outside of design construction zones;**
- **Vehicle and equipment refueling and lubrication will only be permitted in designated disturbed/developed areas where accidental spills can be immediately contained;**
- **Project plans shall clearly indicate the locations of environmentally sensitive areas such as the Hayfork Creek riparian corridor, boundaries of waters of the United States, limited operation buffers (if present), and other areas where access or disturbance is prohibited on a temporary or permanent basis; and**
- **Minimize tree and shrub removal to the extent necessary for construction and to provide adequate line-of-sight and hazard reduction. When feasible, trees or shrubs that interfere with construction or project operation will be pruned or topped, but not removed.**

Biology Mitigation – 2 Riparian vegetation that will be permanently removed (rather than trimmed or topped) will be replaced at a 3:1 ratio. Replacement may occur in areas where the road is realigned away from Hayfork Creek, to enhance the riparian corridor. The exact planting locations shall be determined by the County in coordination with the USFS, and a Riparian Mitigation Plan shall be prepared, including the following elements:

- **Prior to construction, a qualified biologist or restoration ecologist shall count and identify riparian tree and shrub species that may be removed to accommodate construction.**
- **To mitigate for the loss of riparian habitat, TCDOT will conduct mitigation through planting at a ratio of 3:1 (per mature woody riparian plant) for habitat permanently lost due to project construction activities. Replacement of permanently lost riparian habitat would occur within the project area in disturbed areas or other areas currently devoid of riparian vegetation but judged by a qualified restoration ecologist or botanist as having potential to support and sustain riparian vegetation adjacent to Hayfork**

- Creek. However, new tree and shrub vegetation will not be planted within 30 feet of Nine-mile Bridge, to ensure maintenance access to the bridge, and unobstructed flows under the bridge.
- Following the completion of construction activities, plantings shall be installed to replace all riparian trees and shrubs that would be removed as a result of the project. All non-native species that are removed will be replaced with native species. Replacement trees and shrubs should be planted in the appropriate season (i.e., spring or preferably fall) following the completion of construction. Propagules (i.e., shrub cuttings, tree seedlings) shall be obtained either onsite or from a local nursery and planted along Hayfork Creek within the immediate project area.
 - The County shall monitor the plantings annually for up to three years to ensure that trees and shrubs have become established. Supplemental planting would be conducted, as necessary, to ensure that the performance standard of three surviving trees per one mature riparian tree removed is met. Once riparian mitigation has been successfully completed, the County shall submit a memorandum to CDFG, USFS and the U.S. Army Corps of Engineers.

In addition, areas disturbed during construction will be stabilized and revegetated in accordance with Geology Mitigation 1, introduced in Chapter 4.2 and restated below:

Geology Mitigation –1 Areas disturbed during construction will be stabilized and revegetated in accordance with a revegetation plan prepared by TCDOT in consultation with the Forest Service as part of the design phase of the project and incorporated into the project plans and specifications. The following seed mix is proposed for use during revegetation, pending approval by the Forest Service: California brome (*Bromus carinatus*), Blue wildrye (*Elymus glaucus*), Idaho fescue (*Festuca idahoensis*), Lotus (*Lotus crassifolius/L. purshianus*), and Arroyo lupine (*Lupinus succulentus*). The seed will be obtained from a supplier that has certified weed-free stock genetically related to natives found in Trinity County. Seed, fiber, commercial fertilizer and water will be applied by hydroseeding, in accordance with methods identified as Type D erosion control measures in Section 20-2 through 20-3 of the Caltrans Standard Specifications. Seed will be applied in the fall or spring, when soils are moist or expected to be moist soon after distribution. Certified weed-free straw or rice straw will be used for mulching the reseeded areas. The straw will be applied with the hydroseed mix, or spread at least two inches thick and in a way to insure good contact with the soil. No herbicides or pesticides shall be applied.

Significance After Mitigation: Less Than Significant

Biology Impact – 2: The project could result in the introduction or spread of noxious weed species, which could displace native species, changing the diversity of species or number of species of plants.

Soil-disturbing activities during construction and maintenance of the project could promote the introduction of plant species not currently found in the project study area, including exotic pest plant species. Exotic pest plants include noxious weeds designated as federal noxious weeds by the U.S. Department of Agriculture and listed by the CDFA, as well as other exotic pest plants designated by the CEPPC (California Exotic Pest Plant Council 2000), and the County Agricultural Commissioner.

The following plants rated as noxious weeds by the California Department of Food and Agriculture were observed within the project area: yellow star thistle (*Centaurea solstitialis*), thistle (*Cirsium vulgare*, *Cirsium* sp.), waterweed (*Eleodea* sp.), Klamathweed (*Hypericum perforatum*), groundsel (*Senecio* sp.), and medusahead (*Teaeniatherum caput-medusae*).

Roads, highways, and related construction projects are some of the principal dispersal vectors for exotic pest plants. The introduction and spread of exotic pest plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. This impact is considered potentially significant, and mitigation is proposed below.

Significance: Potentially Significant, but mitigated.

Biology Mitigation-3: To avoid the introduction or spread of noxious weeds into previously uninfested areas or the spread of existing noxious weeds, the County will implement the following measures:

- The Construction Supervisor and/or the Resident Engineer will be educated on weed identification and the importance of controlling and preventing the spread of noxious weeds;
- Construction equipment will be washed prior to entering and exiting the project area in order to remove seed materials and lessen the potential for the spread of invasive weeds;
- Only native, noninvasive species or nonpersistent hybrids and certified weed-free materials will be used for revegetation and erosion control;
- Disposal of soil or plant materials from areas containing invasive species will not be allowed in uninfested native vegetation areas.

Post-mitigation Significance: Less than significant

TEMPORARY IMPACTS AND MITIGATION MEASURES

Biology Impact – 3: Construction activities would result in temporary disturbance to general (non-special-status) wildlife and fish species.

Construction will result in short-term disturbance to and displacement of wildlife and the mortality of small, less mobile animals, such as rodents and reptiles. Impacts to fish could result from increases in sedimentation into Hayfork and James Creeks. As mentioned above, revegetation will occur following construction of the proposed project.

Disturbance to Critical Deer Winter Range of the Hayfork Deer Herd will result from the project. However, this disturbance will be relatively minimal, consisting of the loss of approximately 26,470.8 m² (6.5 acres) of upland and riparian habitat. Because the habitat to be disturbed is already along the existing Hyampom Road, it is of lesser quality than the surrounding undisturbed habitat of the National Forest. Superior undisturbed habitat and migration corridors will remain available during construction. Replacement of the culvert at James Creek with a bridge will open up a new riparian and aquatic migration corridor between James Creek and Hayfork Creek. Because of this and the revegetation measures included as part of the proposed project, general wildlife impacts are considered less than significant, and no mitigation will be required.

Significance: Less Than Significant

Mitigation Measure: None Required

Biology Impact – 4: Project construction could result in impacts to special-status plant species.

No listed plant species are likely to be present within the project area.

A population of eight clustered (Brownie) lady's-slippers was observed within the project area, along James Creek approximately 8 m (26 ft) upstream (i.e., northeast) from the culvert inlet (North State Resources, 2001; L. Linstrand, pers. comm., 2001; and May & Associates, pers. comm., 2002). It is expected that this population would be disturbed as a result of the relocation of Hyampom Road slightly upstream along James Creek, and the replacement of the existing James Creek culvert with a bridge.

A population of Canyon Creek stonecrop was observed on a rock outcrop along the north side of Hayfork Creek between Stations 116 and 117 (TCRCD, 2000). This population does not lie within an area proposed for disturbance during construction; however, accidental disturbance to the population could occur.

In addition, Nile's madia was observed in previous (i.e., within the last five years) surveys completed by the USFS within the vicinity of Station 117 (S. Erwin, USFS, pers. comm., 2002). While recent surveys have failed to locate this species within the project area, it is possible that Nile's madia could be present and potentially disturbed during construction of the project.

While habitat that could support *Aleuria rhenana*, sugarstick, veiny arnica, *Bondarzewia montana (mesenerica)*, fox sedge, mountain lady's-slipper, Dudley's rush, Heckner's lewisia, *Otidea leporina*, *Otidea smithii*, *Otidea onotica*, *Polyozellus multiplex*, Tracy's sanicle, Mexican gel-cup, goblin's gold, Coast checkerbloom, *Tetraphis geniculata*, and *Ulotia meglospora* is present within the project area, no individuals of these species were observed during the multiple field surveys, therefore impacts to these species are not expected to occur.

Significance: Potentially Significant, but mitigated.

Biology Mitigation 4: The following measures would be implemented in order to mitigate impacts to clustered (Brownie) lady's slipper:

- A qualified botanist shall conduct a focused survey for clustered lady's slipper in the project area in spring (April-May) of the year of design to determine the precise location of the occurrence and to determine whether or not the occurrence will be directly affected by the project;
- If clustered lady's slipper is found to occur in or near areas to be disturbed, the bridge design shall be modified to fully avoid the population if practical and feasible, and the population shall be clearly demarcated with construction barrier fencing;
- If complete avoidance is not feasible, the entire population will be transplanted to another suitable location on James Creek.

In the event that transplantation is necessary, a qualified botanist would do the following:

- Identify a suitable transplantation site (i.e., densely shaded [$>60\%$ canopy cover], perennially damp, dense duff layer) on James Creek upstream of the impact site in consultation with the Forest Service botanist;
- Perform transplantation when plants are dormant or after fruit maturation and while sufficient soil moisture and air temperature will prevent desiccation (i.e., October-November);
- Transplant all potentially affected individuals with a sufficient quantity of soil to protect the roots of the affected plants (transplant soil and plants as a unit if possible); and
- Monitor transplant site for a period of three years following transplantation to assess success of transplantation efforts. Monitoring will include an annual assessment of site conditions, health, survivorship of transplanted individuals, and reproductive potential (i.e., fruit-set). Annual monitoring will be summarized in a brief letter report and submitted to the Forest Service following completion of monitoring efforts.

Biology Mitigation 5: Potential impacts to the Canyon Creek stonecrop shall be reduced by fencing the known population with construction barrier fencing and avoiding these areas during construction.

Biology Mitigation 6: The following measures would be implemented in order to mitigate impacts to Nile's madia:

- Complete construction within the vicinity of the population of Madia located at Station 117 after seed set (i.e., complete work mid-July through October). This construction window is flexible: the County would consult with the USFS if construction needs to occur outside the given dates.

- **Stockpile soil within the vicinity of Station 117 in order to preserve the madia seedbank and reapply after construction is complete. This is feasible if reapplication occurs prior to the onset of fall rains, i.e., if stockpiling and reapplication can occur within the same construction season.**

Significance After Mitigation: Less Than Significant

Biology Impact – 5: Project construction could result in impacts to the Trinity bristlesnail, a state-listed invertebrate.

The Trinity bristlesnail, a state listed Threatened terrestrial mollusk, was located in seven locations within the project area. Construction of the project would result in direct loss or disturbance of 83 m² (0.022 acres) of optimal habitat within the James Creek riparian corridor and the permanent direct loss of 0.34 ha (0.83 acres) of sub-optimal habitat for the bristlesnail, consisting of roadside Douglas fir forest and Oregon oak woodland. Because project related impacts are occurring on the edge of contiguous habitat blocks, no habitat fragmentation would occur. However, direct mortality of individual snails is likely to occur during construction. The loss of habitat or Trinity bristlesnail individuals is considered potentially significant. The CEQA Guidelines, Mandatory Findings of Significance, states that to “Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, [or] reduce the number or restrict the range of a rare or endangered plant or animal” is considered a significant impact under CEQA. California Department of Fish and Game requires the impact on the State-listed Trinity Bristlesnail to be “fully mitigated” in order to complete Section 2081 consultation and obtain an Incidental Take Permit for the species from CDFG.

A conceptual mitigation plan is included in this document as Appendix D. The Conceptual Mitigation Plan has been approved by CDFG (B. Williams, March 2002). Details will be worked out during the formal 2081 consultation and Incidental Take Permit process prior to the start of project construction.

Significance: Potentially Significant, but mitigated.

Biology Mitigation 7: Impacts on the Trinity bristlesnail will be fully mitigated through a comprehensive mitigation plan that involves avoidance and minimization of impacts to Trinity bristlesnail habitat as well as individual snails. The mitigation plan shall also include measures to restore degraded habitat for the snail with appropriate restoration measures and a commensurate monitoring plan to document project success. The Mitigation Plan for the Trinity Bristlesnail is included as Appendix D of the Draft EIR.

- **The County shall initiate consultation with the California Department of Fish and Game (CDFG) to obtain an Incidental Take Permit (ITP) under the California Endangered Species Act for project related effects on the Trinity bristlesnail. Upon completion of consultation and issuance of the ITP the County shall comply with all conditions and measures stipulated to minimize and fully mitigate for impacts to the**

species and its habitat. At a minimum, mitigation agreed to within the ITP shall include the following mitigation measures:

- Clearly depict James Creek and its associated riparian vegetation and Hayfork Creek and its associated riparian vegetation as Environmentally Sensitive Areas (ESAs) on all project drawings and plans;
- Prior to the initiation of construction activities clearly demarcate (with uniquely colored construction stakes) the limits of construction within natural habitat areas (i.e., Douglas fir forest, Oregon oak woodland, and riparian habitats); staked boundaries may be inspected by a representative of DFG prior to the onset of earthwork;
- Implement the avoidance and minimization provisions required by Biology Mitigation – 1 in this Draft EIR.
- The County shall retain an experienced biologist to conduct a focused survey in all optimal habitat areas, and optimal microhabitat areas within sub-optimal habitat areas (i.e. in the James Creek Riparian corridor and in mesic moderately shaded Douglas fir forest and Oregon oak woodland on southeast and west facing slopes) within the area to be disturbed for Trinity bristlesnail individuals. The survey shall be conducted in the month of May prior to construction to maximize the potential for species detection. If individuals of Trinity bristlesnail are found within areas proposed for disturbance within the project area they shall be captured and moved to suitable sites outside the project area that contain optimal habitat within the local watershed. Capture and relocation of the Trinity bristlesnail shall only proceed after applicable permits and permissions are obtained from CDFG.
- Restore disturbed habitat within James Creek in accordance with the Mitigation Plan.
- The County shall perform annual and long-term monitoring for 15 years, in accordance with the Mitigation Plan.
- The County shall restore a minimum of 0.13-acre of optimal Trinity bristlesnail habitat. Planted trees shall have a combined survival rate of 80% by the fall of the fifth year of monitoring. By the end of year 15 the restoration area shall exhibit a dense continuous canopy cover and significant development of a leaf-mold layer (a continuous layer at least 5 cm thick).
- The County shall perform remedial actions if necessary to achieve performance standards.
- If remedial plantings are necessary, they will be monitored for an additional 10 years, or until performance standards are met.

Significance after mitigation: Less than Significant

Biology Impact – 6: Project construction could result in impacts to the non-listed invertebrate species that are listed as Survey and Manage Species in the Northwest Forest Plan.

Project construction activities have the potential to directly or indirectly affect Survey and Manage Species or their habitat, and can result in temporary short-term effects, long-term effects or permanent loss of the resources. Direct effects include physical disturbance of an individual or its associated habitat. Indirect effects include modification of surrounding

habitat (i.e. tree removal) that could alter microhabitat climatic condition (i.e. reduction in shading causing increased temperature), alteration of hydrologic function, or invasion by non-native species.

Four Survey and Manage mollusks, the hooded lancetooth, Trinity shoulderband, Church's (Klamath) sideband, and Pressley Hesperian are known to be present within the project area. Potential habitat for the California floater, topaz juga, and Papillose tail-dropper slug is also present within the project area.

Because project related activities are planned to occur more than 30 m (100 ft) from the known occurrences of Trinity shoulderband, and because the project will not directly or indirectly disturb habitat in the immediate vicinity of the known Church's (Klamath) sideband occurrence, the project is not expected to adversely impact these species. Direct or indirect impacts could occur to the other invertebrate species likely to be in the area, however. Impacts to individuals or their habitat are considered potentially significant, due to their status as Survey and Manage species. *Mitigation Recommendations for U.S. Forest Service Survey and Manage Species Potentially Affected by the Proposed Hyampom Road Improvement Project (PM 6.5-8.3)* by May & Associates, Inc. November 2002, has been submitted to the Shasta-Trinity National Forest for their review and comment. The document is available for public review as described in Section 2.7 of this Draft EIR.

Significance: Potentially Significant, but mitigated.

Biology Mitigation 8: Potential impacts to terrestrial mollusks, including Survey & Manage species, shall be reduced through the implementation of the *Mitigation Recommendations for U.S. Forest Service Survey and Manage Species Potentially Affected by the Proposed Hyampom Road Improvement Project (PM 6.5-8.3)* by May & Associates, Inc. November 2002, in consultation with the Shasta-Trinity National Forest. Mitigation shall include the following:

- **Implement the avoidance and minimization provisions required by Biology Mitigation – 1 in this Draft EIR.**
- **Limit ground disturbing and soil compacting activities to the minimum necessary within the project area. Talus, debris, and vegetation shall be maintained to the extent feasible to provide for cool moist areas during fall and spring and to provide refuge sites for summer aestivation and winter hibernation.**
- **Existing trees, canopy closure, surface vegetation, woody debris, and uncompacted forest litter shall be protected to the extent feasible**

The implementation of these measures is expected to reduce impacts to hooded lancetooth, Pressley Hesperian, topaz juga, and Papillose tail-dropper slug to a less than significant level.

Potential impacts to California floater, an aquatic mollusk, will be reduced by limiting construction disturbance in Hayfork Creek and along its banks to the extent feasible. Impacts to floater habitat shall be reduced through the implementation of the water pollution

prevention measures and erosion and hazardous materials controls included as part of the proposed project (see Section 3.6 *Proposed Project* and Mitigation Measures in Section 4.2 *Geology, Soils and Seismicity*, Section 4.3 *Hydrology, Water Quality* and Section 4.4 *Hazardous Waste and Materials*). Any additional water quality protection measures included as permit stipulations shall be implemented by the County and shall also prevent potential impacts to California floater habitat. The implementation of all of these measures is expected to reduce impacts to California floater to a less than significant level.

Significance After Mitigation: Less Than Significant

Biology Impact 7: In-stream construction could result in direct impacts to special-status fish species.

The Coho salmon, Southern Oregon/Northern California Coasts ESU, a federally listed Threatened species, is known to be present within the project area. The Coho salmon is also tentatively listed as threatened by the CDFG, pending completion of a Recovery Plan. In addition, summer steelhead, Klamath Mountains Province ESU; spring-run Chinook salmon, Upper Klamath-Trinity Rivers ESU; and fall-run Chinook salmon Upper Klamath-Trinity Rivers ESU are potentially present within the project area.

Hayfork creek is federally designated critical habitat for the Coho salmon and is within its historic range; however, the species has not been observed in Hayfork Creek in, or upstream of, the study area in quite some time and may have been extirpated from this portion of the creek (Aguilar pers. comm.). Current survey data for Coho salmon in the project reach are lacking; however, assuming there is not a downstream barrier the reach within the project area does support suitable habitat for the species (M. Kelly, NMFS, pers. com.).

Disturbance to the creekbed and habitat degradation resulting from sedimentation and water quality degradation could adversely impact habitat for these species. In addition, permanent disturbance to the creek could impact Critical Habitat for the coho salmon; and Essential Fish Habitat for the Coho salmon, the spring-run Chinook salmon, and the fall-run Chinook salmon.

Construction of the proposed project may directly affect anadromous fish and their habitat during construction, particularly if construction on the bridge or the creek-side of the road begins prior to June 1. Bank disturbance by heavy equipment during construction could result in the direct loss of one or more life stages of salmonids plus their habitat should sufficient quantities of disturbed sediment and rock enter the creek channel. Aquatic organisms are generally not directly affected by suspended solids and turbidity unless they reach extremely high levels (i.e., levels of suspended solids reaching 25 mg/L (Boyd 1990).

As previously mentioned, Coho salmon have not been recently observed in Hayfork Creek, and the species is thought to have been extirpated from Hayfork Creek. Hayfork Creek, within the project area, provides minimal suitable substrates for spawning (i.e., the channel has less than 5% gravel by area). Should juvenile salmonids occur in Hayfork Creek within the project area during the construction season, direct impacts to rearing juveniles are not anticipated since dispersal migration from tributary streams along the Trinity River typically occurs between February and early June, before in-stream water temperatures reach lethal levels. As a result, construction activities associated with the proposed project can be timed

to avoid potential impacts to rearing juvenile salmonids. Although the proposed construction method (i.e., coffer dams of sandbags, aquabags or similar to divert flows in the vicinity of the bridge piers – see Chapter 3, *Project Description* for additional detail) for the extended bridge supports would potentially involve placing temporary structures in the wetted channel, no active redds or juvenile coho salmon are currently known to occur within the project action area and no impacts are expected provided the timing of the in-channel construction work avoids the high flow periods when juveniles may be present.

Direct and indirect impacts to listed fish species are considered potentially significant impacts and will be mitigated by timing of in stream activities, as follows:

Significance: Potentially Significant, but mitigated.

Biology Mitigation- 9: The County shall perform in-stream construction activities, within the Ordinary High Water Mark of Hayfork Creek or James Creek, only between June 15 and October 15. Construction may continue after October 15 if there is no threat of rain, with permission from CDFG and/or NOAA Fisheries. In-stream construction shall be completed within one construction season, or all temporary equipment, materials and fills shall be removed from the Ordinary High Water Channel by October 15.

Biology Mitigation – 10: The County shall construct rock slope protection and retaining wall systems so as to minimize or avoid in-stream construction activities. Any unavoidable instream construction activities shall be isolated from the stream flow through the use of temporary cofferdams.

No adverse effects to rearing salmonids will occur if in-stream construction activities are isolated from the live stream and completed within the restricted in-stream construction window.

Significance After Mitigation: Less Than Significant

Biology Impact 8: Indirect impacts to special-status fish species could result from pollution or sedimentation of Hayfork Creek.

A construction-related spill of petroleum products or fluid concrete entering the creek could adversely affect anadromous salmonids through temporary water quality degradation. Staging areas are another potential source of temporary water quality degradation from construction vehicles and equipment wash water that could enter the creek. Wastewater from concrete mixing and washout and other construction activities can also be a source of water quality degradation. Lead-based paint and other materials may enter the stream from the proposed sanding and painting of Nine-Mile Bridge. Sub lethal quantities of sediment may be released from the site during and after construction until areas of disturbed soil are stabilized.

Measures to prevent water pollution from sedimentation, petroleum products, concrete and drilling fluids are described in the Project Description, Sections 3.6.9 through 3.6.19. Bridge resurfacing and painting will be performed in such a manner as to prevent material, including lead-based paint from falling into the active channel, as described in Section 3.6.13 *Bridge*

Sanding and Painting. The Caltrans Standard Specifications, including Section 7-1.01G *Water Pollution*, as summarized in Section 3.6.17, shall be part of the Contract Documents. In addition, the following Mitigation Measures to prevent pollution of Hayfork and James Creek are included in other sections of this document and repeated here:

Significance: Potentially Significant, but mitigated.

Geology Mitigation –1 Areas disturbed during construction will be stabilized and revegetated in accordance with a revegetation plan prepared by TCDOT in consultation with the Forest Service as part of the design phase of the project and incorporated into the project plans and specifications. The following seed mix is proposed for use during revegetation, pending approval by the Forest Service: California brome (*Bromus carinatus*), Blue wildrye (*Elymus glaucus*), Idaho fescue (*Festuca idahoensis*), Lotus (*Lotus crassifolius/L. purshianus*), and Arroyo lupine (*Lupinus succulentus*). The seed will be obtained from a supplier which has certified weed-free stock genetically related to natives found in Trinity County. Seed, fiber, commercial fertilizer and water will be applied by hydroseeding, in accordance with methods identified as Type D erosion control measures in Section 20-2 through 20-3 of the Caltrans Standard Specifications. Seed will be applied in the fall or spring, when soils are moist or expected to be moist soon after distribution. Certified weed-free straw or rice straw will be used for mulching the reseeded areas. The straw will be applied with the hydroseed mix, or spread at least two inches thick and in a way to insure good contact with the soil. No herbicides or pesticides shall be applied.

Geology Mitigation-2 The following measures will be implemented:

- **Soil exposure will be minimized during construction through the use of standard Best Management Practices, including but not limited to geofabrics, silt fences, straw bales and wattles, and temporary sediment basins. Exposed dust-producing surfaces will be sprinkled daily until wet while avoiding producing runoff.**
- **The TCDOT contractor will conduct daily inspections and maintenance of erosion and sediment control measures. Failures will be repaired each work day if they occur.**
- **All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the project engineer.**

Hydrology Mitigation-1 The following measures will be implemented:

- **No contact of wet concrete with the live stream will be allowed. Groundwater that comes in contact with wet concrete, such as within bridge footing excavations will not be allowed to enter the creek but will be pumped to a truck or upland for disposal or treatment, or it may be discharged to a sediment-stilling basin on site and percolated back into the soil.**
- **If drilling muds are used to drill holes within the ordinary high-water zone, all drilling muds and fluid within all drilled holes will be pumped through a closed system, contained on-site in tanks, removed from the project area, and disposed of off-site at an appropriate facility.**
- **The TCDOT contractor will remove all spoils materials from the drilled pier holes and dispose of the material in a manner that will not result in discharge of runoff of sediment into Waters of the United States.**
- **Heavy equipment will not be operated in the active flow channel of any creek.**
- **Complete diversion or damming of surface flows will not be allowed. A cofferdam may be installed along the edge of the low flow channel of Hayfork Creek, but shall not result in complete dewatering or impedance of flows within the creek.**
- **Maintenance and refueling areas for equipment will be located a minimum of 100 ft away from the active stream channel. If equipment must be washed, washing will occur where the water cannot flow into the creek channel.**
- **Spill containment booms will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.**

Hydrology Mitigation-2 All staging areas will be established at least 50 feet from the top of the stream bank or 50 feet from the outer edge of the riparian habitat, whichever is farther. This buffer will be clearly identified on the design drawings and delineated in the field with orange construction barrier fencing. Sedimentation fencing or other erosion and sediment control measures will be installed between the staging area and the riparian area to prevent sediment and pollutant discharges to creeks and riparian areas. There will be no removal of riparian vegetation for staging purposes.

Hazards Mitigation-2 The Contractor shall exercise every reasonable precaution to protect streams from pollution with fuels, oils and other harmful materials. The Contractor will be required to have adequate spill containment equipment on hand at all times. All waste petroleum products and empty petroleum

product containers will be disposed of properly at a recycling or disposal site legally authorized to accept that type of waste. The Trinity County Environmental Health Department and NCRWQCB must be notified immediately in the event of a release of significant quantities of hazardous materials. In the event of a release into Hayfork Creek, CDFG must also be notified.

Construction of the proposed project will also result in the direct loss of 81 m² (0.02-ac) of riparian vegetation consisting of white alder riparian forest. This riparian area may provide shaded riverine aquatic habitat (SRA) in Hayfork Creek, a habitat component deemed important to the maintenance of healthy fish habitat. Specifically, construction of rock slope protection and/or retaining walls below Hyampom Road on the bank of Hayfork Creek will result in the direct loss of 81 m² (0.02-ac) of white alder riparian forest. Mitigation for loss of riparian habitat is described in **Biology Mitigation-2**, above.

In addition to the mitigation measures included in this DEIR, and other protections provided by the provisions in the project description, Section 7 consultation will be completed with the NOAA Fisheries concerning the Coho salmon, Southern Oregon/Northern California Coasts ESU. In addition, Section 2081 consultation will be conducted with the CDFG. A Draft Biological Assessment (BA) has been prepared to support these consultations. (May & Associates, 2002c) The BA is available for public review as described in Section 2.7 of this DEIR. The Section 7 consultation will address impacts to Critical Habitat of the Coho Salmon, and impacts to Essential Fish Habitat of the Coho salmon, the spring-run Chinook salmon, and the fall-run Chinook salmon, as well as direct and indirect impacts to the Coho Salmon.

Significance After Mitigation: Less Than Significant

Biology Impact 9: Project construction could result in impacts to special-status amphibian and reptile species.

No listed amphibian or reptile species are likely to be present within the project area, but two State and Federal Species of Concern, foothill yellow-legged frogs and Northwestern pond turtles, are known to be present within the project area. In addition, potential habitat for the tailed frog and Southern torrent (seep) salamander is present. Disturbance to the riverbed and construction activities within Hayfork Creek could impact habitat for and individuals of these species.

Potential impacts to the foothill yellow-legged frog can be avoided by prohibiting construction activities within the creek during the breeding season when frogs are most likely to be present (i.e., March 15—June 1). **Biology Mitigation 8**, discussed above, already limits in-stream construction activity to the period of June 15 to October 15, thus prohibiting in-stream construction during the frog breeding season.

Limiting construction disturbance in and along Hayfork Creek and implementing erosion and hazardous materials controls and water quality protection measures included as part of the proposed project and previously mentioned mitigation measures, will limit impacts to foothill yellow-legged frog eggs, tadpoles, and adults, in addition to minimizing impacts to northwestern pond turtle, tailed frog and Southern torrent (seep) salamander. Any additional water quality protection measures included as permit stipulations shall also be implemented by the County.

Therefore, mitigation measures and measures already included in the project description have reduced these impacts to less than significant levels. No further mitigation is required.

Significance: Less Than Significant Impact

Mitigation Measure: None Required

Biology Impact – 10: Project construction could result in impacts to special-status bird species.

Listed species with the potential to occur within the project area include the bald eagle (federally listed Threatened, proposed Delisted; and state listed Endangered), and Northern spotted owl (federally listed Threatened).

There are no known bald eagle nest trees within the project area nor are nest trees known within one mile of the project area. While nesting habitat is not known in the area, potential foraging habitat for the bald eagle is present along Hayfork Creek. The areas within and adjacent to the project likely do not receive regular use, however, it is possible that prominent trees within one mile may be used as perches, (i.e., as areas of occasional or irregular eagle use). Bridge widening and rock slope protection placement could temporarily deter foraging activity along the creek. This impact will be temporary and is considered less than significant in the context of the entire Hayfork Creek and South Fork Trinity River corridor and abundant alternative perching trees. Therefore, significant adverse impacts to bald eagle are not expected to result from the proposed project and no special mitigation will be required.

Suitable nesting, roosting, and foraging habitat for the Northern spotted owl is present within the project area, and this species is known from within two miles of the project area (CDFG, 2001). Northern spotted owls have not been observed in the study area and the study area is not part of a Late-Successional-Reserve (LSR) as identified in the Northern Spotted Owl Recovery Plan (Garrison pers. comm.). The CDFG NDDDB identifies 10 records of northern spotted owls within 8 km (5 mi) of the study area (NDDDB 2002). These ten records consist of six observations of a single owl, two observations of paired owls, one nest tree, and one young (NDDDB 2002). The nearest observation according to the NDDDB is a nest observed in 1990 approximately 2.4 km (1.5 mi) west of the western end of the project area within the Jud Creek canyon (NDDDB 2002).

The project area is within lands mapped as critical habitat for the species and classified as critical habitat according to the critical habitat final rule (supports nesting and roosting primary constituent elements) (Garrison pers. comm.).

Surveys conducted in 2002 that comprised the first year of a two-year USFWS protocol-level survey did not yield any responses from northern spotted owls (Hubbard, pers. comm.). The second year of protocol-level surveys will be completed in spring 2003. To date, no northern spotted owls have been observed within or immediately adjacent to the study area. Additionally, the nearest recorded northern spotted owl is further than one mile from the study area and the nearest Protected Activity Center (PAC) is 2 km (1 ¼ mile) from the study area (NDDDB 2002; Garrison pers. comm.).

Construction of the proposed Hyampom Road improvements project has the potential to affect the northern spotted owl should the species occur in the area and also has the potential to affect critical habitat for the species. Effects to the northern spotted owl are considered adverse if they result in any of the following:

- Direct mortality of the northern spotted owl;
- Reproductive failure of nesting northern spotted owl;
- Temporary impacts to northern spotted owl habitat that may result in increased mortality or reduced reproductive success;
- Substantial reduction in the quality or value of habitat for which the northern spotted owl depends for survival or reproduction.

The proposed project will result in the direct permanent loss or disturbance of 15,673 m² (3.9 acres) of Douglas fir forest adjacent to the existing Hyampom Road, which may provide suitable roosting habitat but is unlikely to provide nesting habitat given its immediate proximity to Hyampom Road. The proposed project will also result in the temporary disturbance of 5,805 m² (1.4 acres) of Douglas fir forest adjacent to Hyampom Road. All northern spotted owl habitat disturbance or loss will occur within 33 m (100-feet) of the edge of the existing traveled way of Hyampom Road.

Excessive noise from construction can disturb owl nesting, breeding and rearing, potentially causing abandonment of a nest and resulting “take” of the juveniles. With the exception of pile driving and rock drilling operations most construction equipment (i.e., bulldozers, graders, cement mixers etc.) generate between 80 and 88 dBA at 15.2 m (50 ft) (Federal Transit Administration 1995), which is expected to be tolerable at a distance of over 1/4 mile from the nest, particularly in the environment of an existing road.

Non-listed special-status bird species with the potential to occur within the project area include Cooper's hawk, Sharp-shinned hawk, Vaux's swift, hermit warbler, and osprey. Surveys for nesting raptors were conducted in June 2002, during northern spotted owl surveys. No nesting raptors were detected (Hubbard, pers. comm.) Additional nesting raptor surveys will be conducted during the 2003 nesting season.

Construction of the proposed project could result in disturbance to foraging and nesting habitat for Cooper's hawk, Sharp-shinned hawk, Vaux's swift, and hermit warbler. Impacts to nesting habitat are considered potentially significant and mitigation will be required.

There are no known osprey nests within the vicinity of the proposed project. While nesting habitat is not known from the area, potential foraging habitat for the osprey is present along Hayfork Creek. Bridge widening and rock slope protection placement could temporarily deter

foraging activity along the creek. This impact will be temporary and considered less than significant in the context of the entire Hayfork Creek and South Fork Trinity River corridor. Therefore, significant adverse impacts to osprey are not expected to result from the proposed project and no special mitigation will be required.

Significance: **Potentially Significant, but mitigated.**

Biology Mitigation –11: TCDOT shall complete the second year of the USFWS two-year protocol-level surveys for northern spotted owl. In the event that no northern spotted owls are detected during the second year of surveys no further measures will be employed to avoid or minimize impacts to the species.

If a nest tree of a nesting pair (i.e., activity center) is detected within 400 m (¼ mi) of proposed earthwork the USFS will be notified of the location of the nest. The activity center will be protected as follows:

No construction activities that exceed 90 A-weighted decibels (dBA) measured 15.2 m (50 ft) from the source will occur within 305 m (1,000 ft) of the nest tree during the period between February 1 and July 10 unless a qualified biologist experienced with the assessment of nesting northern spotted owls determines that nesting has failed prior to July 10 or if the biologist determines that the young are capable of tolerating noise disturbance of the magnitude generated by the construction of the project.

Biology Mitigation – 12: Pre-construction surveys to verify that Cooper's hawk, sharp-shinned hawk, Vaux's swift, and hermit warbler are not nesting within the vicinity of the proposed project shall be completed in the spring prior to the commencement of construction activities. If more than one year of construction is required to complete the project, then these preconstruction surveys shall be completed in the spring prior to each construction season. The biologist conducting the surveys shall locate and map active nests within the project area or within ½ km (1/3 mile) of its boundaries. If nests of any of these species are found, a limited operating period shall apply to construction activities within 500 feet of the nest. If Cooper's or sharp-shinned hawk nests are found, no construction activities shall occur within 500 feet of the nest site until the end of August or until the nestlings have fledged. If Vaux's swift nests are found, no construction activities shall occur within 500 feet of the nest site until early September or until the nestlings have fledged. If hermit warbler nests are found, no construction activities shall occur within 500 feet of the nest site until early July or until the nestlings have fledged. The locations of nest sites shall be provided to the CDFG, USFWS, and USFS, and additional agency-required measures shall be implemented.

The implementation of these measures in addition to tree replanting and revegetation measures included as part of the proposed project will reduce impacts to special-status birds to a less than significant level.

Significance After Mitigation: Less Than Significant

Biology Impact – 11: Project construction could result in impacts to special-status mammal species.

No listed mammal species are likely to be present within the project area. Non-listed special-status mammal species with the potential to occur within the project area include pallid bat, spotted bat, American marten, Pacific fisher, long-eared myotis bat, fringed myotis bat, long-legged myotis bat, Yuma myotis bat, and Pacific Townsend's (Western) big-eared bat.

American marten and Pacific fisher habitat exists within the project area, and fisher are known from the vicinity of Hayfork, Hyampom and Big Bar; and from Hayfork Creek approximately two miles west of project area. However denning for these species is unlikely to occur within the area due to human disturbance. Habitat for these species within the project area is expected to be limited to foraging and movement along the creek. Construction of the proposed project will represent a relatively small and temporary disturbance to this habitat and potential movement corridor. Construction work is not expected to be taking place during times when marten or fisher could be present, since these species are primarily crepuscular (i.e., active during early morning and evening hours) and nocturnal. Significant impacts to American marten and Pacific fisher are not expected to result from the proposed project and no special mitigation is required.

No evidence of bats or guano was observed on the existing bridge during the field surveys. However, bats could begin roosting in the structure prior to construction of the proposed project. The Nine Mile Bridge will not be demolished; therefore no loss of potential bat habitat will result from the construction of the proposed project. Construction activities will take place during daylight hours when bat species that are likely to be in the area are inactive. Roosting bats in general are unlikely to be disturbed by adjacent construction activities (Dixie Pierson, pers. comm., 2001). If construction noise and vibrations do result in bats leaving their roost in the bridge, this effect will be temporary and less than significant, since bats typically utilize two to three roosting areas. (Brian Keeley, BCI, pers. comm., 2001). Significant impacts to bat species are not expected to result from the proposed project and no special mitigation is required.

Significance: Less Than Significant

Mitigation Measure: None Required

Biology Impact – 12: Project construction could result in discharge of fill to “waters of the U.S.”

The proposed project will include placing a small amount of fill in “waters of the U.S.” This fill includes extended bridge piers at Nine-Mile Bridge, and Rock Slope Protection in

Hayfork Creek near Station 122. Permanent placement of fill in James Creek for the construction of the new bridge, or in Hayfork Creek for road fill and retaining walls is not expected to occur. Temporary impacts will include disturbance during construction, such as removal of the culvert in James Creek and temporary cofferdams or other temporary dewatering or temporary fills for construction access. No off-channel wetlands are present within the project area.

The temporary disturbance of 977.6 m² (0.2 acre) and the permanent disturbance of 800.9 m² (0.2 acre) of “waters of the U.S.” will occur during project construction. This will be considered a significant impact.

Significance: Potentially Significant, but mitigated.

Biology Mitigation – 13: A Clean Water Act Section 404 Permit (probably under Nationwide Permits #s 13 and #14) shall be obtained from the ACOE, a 401 Water Quality Certification or Waiver shall be obtained from the RWQCB, and a 1601 Streambed Alteration Agreement shall be obtained from the CDFG. These permits shall be obtained prior to construction. The stipulations of these permits shall be included in the Plans, Specifications and contract documents prepared for this project and enforced in the field by the TCDOT Resident Engineer.

Significance After Mitigation: Less Than Significant

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Biology Impact – 13: The proposed project could add to the cumulative effects of development within the project vicinity, including increased potential for impacts to biological resources.

Other projects that could contribute to biological impacts along the Hayfork Creek corridor and surrounding forested areas include several transportation projects with effects similar to this project. The CFLHD projects along Hyampom Road will involve removal of Douglas Fir Forest and Oregon Oak Woodland along the existing road corridor. Hyampom Road through these segments is slightly further from Hayfork Creek, but terrain is generally steeper, and there will be large cuts on nearly vertical terrain, and large fills across tributary drainages.

The TCDOT project on the first 3.7 miles of Hyampom Road from Hayfork to the Forest Boundary is on flatter terrain further from Hayfork Creek, and will involve no removal of riparian vegetation along Hayfork Creek. Most of this section of Hyampom Road goes through private ranch lands vegetated with pasture grasses. There may be some removal of a small number of Douglas fir at the west end of the project.

The two bridge replacement projects in Hayfork will involve the use of Best Management Practices and Mitigation Measures to preserve and restore any riparian habitat removed, and to control concrete, petroleum products, paint and sediment from entering Hayfork Creek that will be very similar to those employed on this project. NOAA Fisheries has already approved these proposed measures for the County's replacement of the bridge on Bridge Street.

The CFLHD will also employ the Best Available Technology and Best Management Practices on their segments of Hyampom Road. These practices will be developed in consultation with Shasta-Trinity National Forest, NOAA Fisheries and the U.S. Fish and Wildlife Service. Northern Spotted Owl surveys are currently underway for the CFLHD project. No owl responses have been detected to date (S. Popiel, pers comm.). If owls are detected, limited operating periods and/or similar measures will be employed to minimize disturbance of breeding and rearing. Anadromous salmonids are not expected to be present in the upper reaches of the steep tributary drainages directly impacted by the CFLHD project. Strict erosion and sedimentation controls will minimize indirect impact to critical salmon habitat in Hayfork Creek.

Most impacts to biological resources resulting from these projects will be temporary, occurring only during construction. These short-term effects will not occur concurrently, and will occur at different locations. Therefore, noise disturbances would not be cumulative, as one particular area would only be disturbed during construction of one of these projects. Disturbed soils will be revegetated immediately after each project, so sediment sources from one project will be abated before the next project along Hayfork Creek begins.

As with this project, the long-term effect of the CFLHD project will be beneficial to aquatic species, as chronic erosion sources such as slope failures and culvert failures will be repaired and restored with upgraded, larger culverts and retaining walls to stabilize slopes. In many areas, the roadway will be realigned away from Hayfork Creek or the edge of the bluff, further reducing the possibility of road related sediment or other pollutants from entering the creek. The bridge replacement projects will also be beneficial, because the new bridges will be designed to pass the 50-year flood with passage for debris and the 100-year flood without overtopping. This will eliminate the potential for bridge failure and associated road fill failure and/or entrainment of roadway pollutants into flood waters.

Therefore, while the proposed project could add to the short term, temporary cumulative effects of road and bridge improvements within the project area, the degree of these effects would be mitigated by the revegetation, erosion control, pollution prevention and other mitigation measures that would be implemented as part of the proposed project and as part of the other projects. The intensity and duration of the effects of each project would be relatively small, since the projects would involve construction along already disturbed roadway corridors. The long-term permanent effects of the combined projects would be beneficial overall, particularly to aquatic habitats and species. It is unlikely that the combined projects would result in the loss of viability of terrestrial or aquatic species because 1) overall habitat quality within the general vicinity of the project would be maintained, mostly as undeveloped Forest Service lands and 2) modifications to habitats would not occur to the extent that would be expected to limit populations.

Significant cumulative impacts to biological resources are not expected to result from the proposed project in combination with other proposed projects.

Significance: Less Than Significant Impact

Mitigation Measure: None Required