



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Arcata, California 95521-4573

JAN 23 2017

Refer to NMFS No: WCR-2016-4400

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Vincent Mammano
California Division Administrator, Federal Highway Administration
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Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens
Fishery Conservation and Management Act Essential Fish Habitat Response for the
Richardson Grove Operational Improvement Project (EA 01-46480)

Dear Mr. Croteau and Mr Mammano,

On October 4, 2016, NOAA's National Marine Fisheries Service (NMFS) received Caltrans' request for a written concurrence that the California Department of Transportation's (Caltrans) Richardson Grove Operational Improvement Project, funded by the Federal Highway Administration (FHWA), is not likely to adversely affect (NLAA) the Southern Oregon/Northern California Coast (SONCC) Evolutionary Significant Unit (ESU) of coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon ESU (*O. tshawytscha*), or Northern California (NC) Distinct Population Segment (DPS) steelhead (*O. mykiss*), or their critical habitats designated under the Endangered Species Act (ESA). Effective October 1, 2012, Caltrans was acting as the lead agency as per the Memorandum of Understanding (MOU) between the FHWA and Caltrans pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21). This law allows the Secretary of Transportation to assign, and Caltrans to assume, responsibility for the environmental review, consultation, or other actions required under any environmental law with respect to one or more highway projects in California funded by FHWA. The MOU is an extension of previous agreements between FHWA and Caltrans in 2007 and 2010 under a similar law. Therefore, Caltrans is considered the federal action agency for ESA consultations with NMFS for projects funded by the FHWA under MAP-21.

However, as a condition of the MOU, California must consent to the jurisdiction of Federal Courts for actions taken by Caltrans under this assumption of responsibilities. To accomplish this, the California State Legislature added Section 820.1 to the State Streets and Highways Code, waiving California's immunity under the Eleventh Amendment to the U.S. Constitution. Section 820.1 expired on January 1, 2017. The State Legislature is expected to reauthorize the



waiving of California's immunity. Until that occurs, FHWA retains ultimate responsibility for compliance with the ESA (50 CFR 402.08 and 402.13) for projects implemented by Caltrans with FHWA funding. Therefore this letter is addressed to both Caltrans and FHWA. This response was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR part 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action on coho and Chinook salmon EFH; species managed under the Pacific Coast Salmon Fishery Management Plan, 16 U.S.C. § 1855(b). This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System <https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts>. A complete record of this consultation is on file at NMFS West Coast Region, Arcata, California.

Proposed Action and Action Area

Proposed Action

Caltrans (2016c) is proposing a minor realignment (including minor widening) of US Route 101 at Richardson Grove State Park (Figures 1 and 2) to remove current Surface Transportation Assistance Act (STAA) restrictions on truck size¹ between post miles (PM) 1.1 and 2.2 (Figure 2). The proposed realignment would also improve safety, operation, and goods movement along this portion of US Route 101. For engineering purposes, the project has been broken into three segments (Figure 2): Segment 1, from PM 1.11 to PM 1.70; Segment 2, from PM 1.70 to PM 2.04; and Segment 3, from PM 2.04 to PM 2.20. The curves with STAA truck size restrictions are located in segments 1 and 3. Cuts and fills (Table 1) to accommodate realignments and widening, drainage improvements, repaving, and restriping would occur in segments 1 and 3. Only pavement overlay and restriping with one minor drainage improvement would occur in segment 2. The proposed project is expected to take one to two construction seasons to complete and is currently scheduled to begin construction in 2018, but may be extended, or delayed.

Specific activities of the proposed project include (see Table 2 for the activity list):

- Minor realignment improvements (including minor widening), to accommodate larger sized trucks;
- replace existing guardrail at each of the four corners of the bridge at the Richardson Grove Undercrossing (PM 1.61) with shorter transition barriers and crash cushions to meet current standards;

¹ Removal of the STAA truck size restrictions would typically allow for the use of longer truck cabs with sleeping space. Such trucks need more space for turning to avoid encroaching onto road shoulders or on-coming traffic.

- drainage improvement including lengthening four culverts, replacing two culverts, installing one overside drain, and replacing one down drain; and
- construction of a retaining wall composed of a soldier pile wall with a gabion wall on either end to accommodate roadway widening.

This proposed action involves:

- Grinding existing pavement, repaving, and restriping;
- culvert work with potential temporary diversions of roadside drainages and ephemeral watercourses;
- barrier rail modifications;
- retaining wall construction;
- slope excavations (cut and fill);
- equipment staging areas;
- vegetation (herbaceous, shrub, and tree) removal; and
- implementation of standard best management practices (BMPs).

01-HUM-101-PM 1.1/2.2
EA 01-46480
Richardson Grove
Operational Improvements

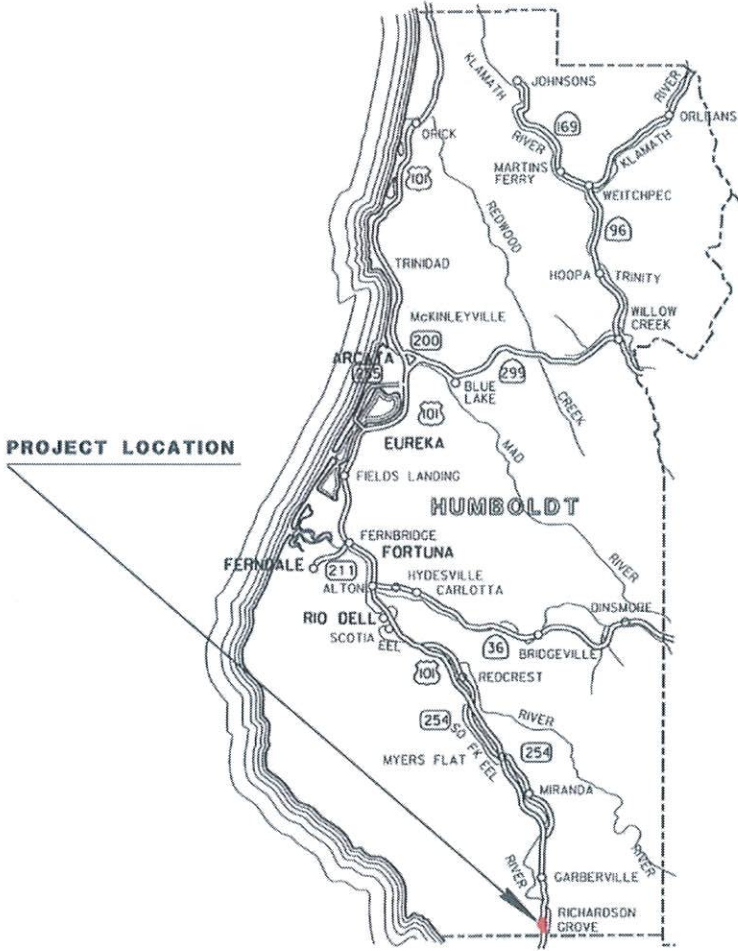


Figure 1. Project location map (Caltrans 2016c).

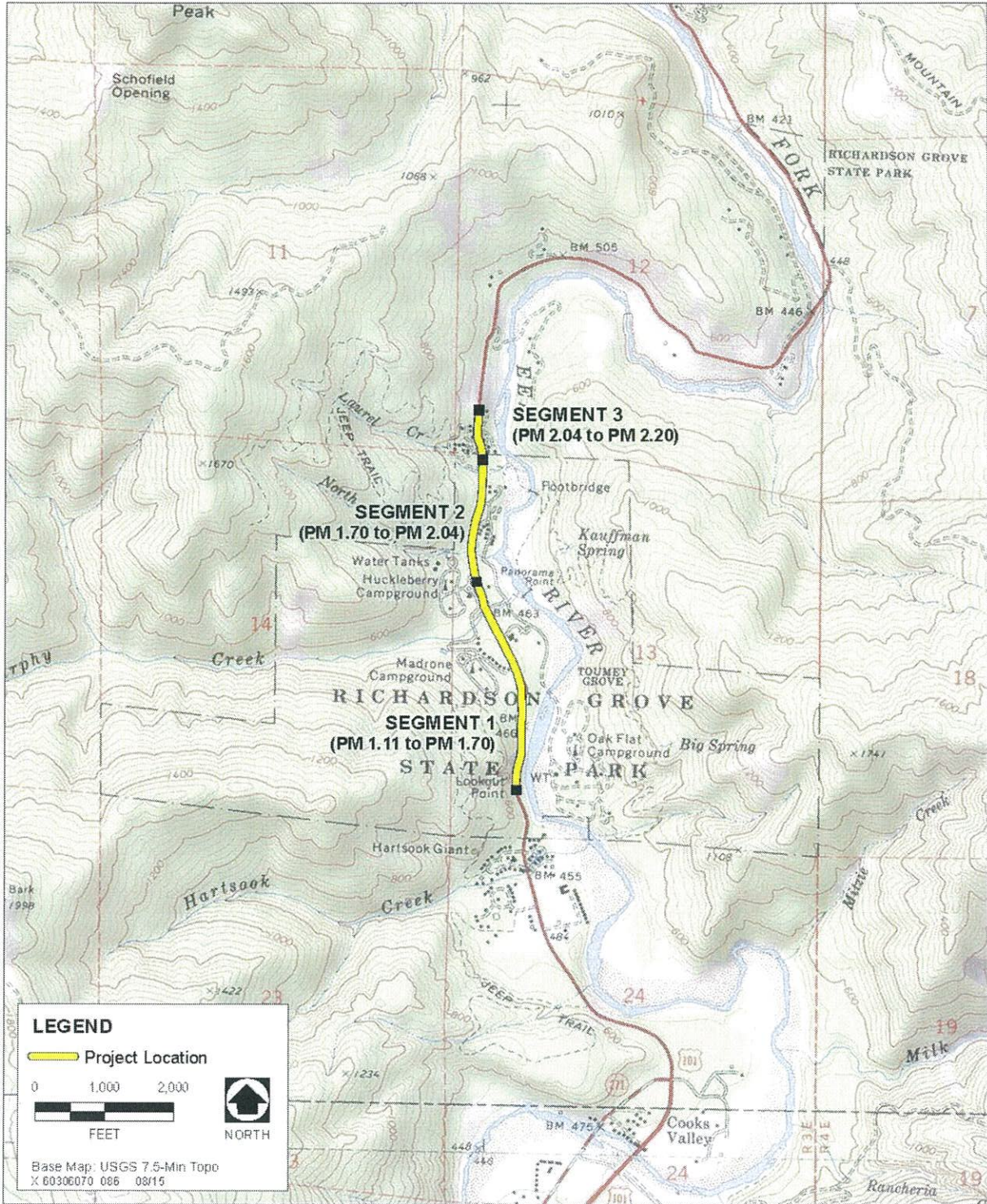


Figure 2. Richardson Grove Operational Improvement Project vicinity map showing location of segments 1 through 3 (Caltrans 2015).

Table 1. Volumes (cubic yards, yd³) of cut (excavation) and fill expected for proposed Project activities during Project construction as indicated by location and station for each segment involved (Caltrans 2016c).

Segment Name	Location by Stations ¹	Cut (yd ³)	Fill (yd ³)
<u>Segment 1 Total</u>	63+00 to 90+00	151	432
<i>Largest Cut/Fill Locations in Segment 1</i>			
Triangular Slope in Park	70+75 to 71+50	49	0
Unnamed fill	72+00 to 73+50	12	218
Crash Cushions	86+30 to 84+56	62	0
<u>Segment 3 Total</u>	105+00 to 113+50	482	145
<i>Largest Cut/Fill Locations in Segment 3</i>			
Singing Trees Cut	107+00 to 110+00	441	2
Gabion Walls	110+10 to 110+42, 112+26 to 112+61	22	84 ²
Soldier Pile Wall	110+42 to 112+26	5	76

¹Stations are used by engineers to designate exact locations within a project (Caltrans 2016c, Appendix A).

²Volume of the gabion baskets.

Table 2. Location, description, characteristics, and construction activity of the fourteen drainages/watercourses that cross US Route 101 within the Project action area (Caltrans 2016c).

Drainage/Watercourse	Post Mile (PM)	Fish-Bearing	Construction Activity	Connectivity to South Fork Eel River	Potential Water Diversion
Unnamed seasonal runoff (does not convey any roadway drainage)	1.14	No	None	Yes	N/A
Unnamed seasonal runoff	1.18	No	<u>Extend</u> existing culvert and replace headwall	Yes	No
Unnamed seasonal runoff (does not convey any roadway drainage)	1.28	No	<u>Extend</u> existing culvert and replace headwall	No	No
Unnamed seasonal runoff and groundwater (spring)	1.34	No	<u>Extend</u> existing culvert and install headwall	Yes	Yes
Unnamed seasonal runoff and groundwater (spring)	1.35	No	<u>Extend</u> existing culvert and install inlet.	Yes	Yes
Durphy Creek (does not convey any roadway drainage)	1.61	Yes	No work on culvert. Remove metal beam guard rail and install transition barriers and crash cushions at four corners of undercrossing	Yes	No
Unnamed seasonal runoff	1.63	No	None	Yes	N/A
North Creek	1.78	No	Install overside drain and <u>connect to existing culvert</u>	Yes	No
Unnamed seasonal runoff	1.87	No	None	Yes	N/A
Laurel Creek	1.98	No	None	Yes	N/A
Unnamed seasonal runoff	2.10	No	<u>Replace</u> existing culvert which would pass through new gabion wall and install slotted drain	Yes	No
Unnamed seasonal runoff	2.12	No	<u>Replace</u> existing, defunct down drain and reconnect to ditch that begins at PM 2.10	Yes	No
Unnamed seasonal runoff	2.17	No	None	Yes	N/A
Unnamed seasonal runoff	2.20	No	None	Yes	N/A

Project Action Area

The “action area” is defined in 50 CFR 402.02 as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” The project is located in Humboldt County on US Route 101 from one mile north of the Mendocino/Humboldt County line (PM 1.1) to approximately 8 miles south of Garberville (PM 2.2). The project action area bisects Richardson Grove State Park (Figure 2). Within the limits of the proposed project,

US Route 101 is a conventional two-lane highway with two, 12-foot lanes and 0 to 4-foot shoulders. The project bounds span 14 water courses throughout the action area; just over one mile in length (Figure 2). NMFS agrees with Caltrans' description of the action area as written in the BA (Caltrans 2016c) and further modified by supplemental information (Caltrans 2016d):

- US Route 101 through the Richardson Grove State Park in Humboldt County from PM 1.1 to PM 2.2 (Figure 2).
- The potential staging areas at PM 2.2 in Humboldt County and US Route 101 in Mendocino County, PM 106.5.
- Any portion of associated tributaries (Durphy Creek [PM 1.61], North Creek [PM 1.78], Laurel Creek [PM 1.98], and nine unnamed tributaries [PM 1.14, PM 1.18, PM 1.34, PM 1.35, PM 1.63, PM 1.87, PM 2.10, PM 2.12, and PM 2.20]) from the west side of US Route 101 to their confluences with the South Fork (SF) Eel River that could receive sediment input through stormwater runoff originating from the project area and associated areas of riparian vegetation (Table 2).
- Any portion of the SF Eel River that could receive sediment input through stormwater runoff originating from the project area. This may include the SF Eel River from its confluence with outflow from the most southerly culvert at PM 1.18 to a point downstream from the most northerly culvert confluence at PM 2.20 where sediment could remain suspended in the water column depending on river conditions (Figure 2).
- Two culverts (PM 1.28 and PM 2.17) that drain into vegetated uplands (Table 2).

The action area is in Humboldt County in the Garberville USGS Quadrangle in T5S, R3E, S13 and 24. The project begins at 40.0141° North Latitude and 123.7914° West Longitude (PM 1.1) and ends at 40.0302° North Latitude and 123.7938° West Longitude (PM 2.2). The action area is in the Northern California Coast Ranges Ecological Province. The terrain surrounding the project location consists of steep and moderately steep hills/mountains. Elevation of US Route 101 in the action area is about 500 feet. The mean annual precipitation is about 40 to 110 inches with primarily rain at lower elevations and some snow at higher elevations. Many of the smaller streams are dry by the end of the summer. Mean annual temperature is about 40° to 53° F (Caltrans 2016c).

The proposed project is located adjacent to (west of) the SF Eel River (Figure 2) and surrounded by a conifer forest dominated by Coastal Redwood (*Sequoia sempervirens*) of the Richardson Grove State Park. Outside of the action area, the headwaters of the SF Eel River are at Cahto Peak near Laytonville in Mendocino County. From there, it flows to its confluence with the mainstem Eel River near Weott in Humboldt County. The SF Eel River Basin comprises an area of 689 square miles, and is the second largest subbasin of the Eel River, located in Northern California. The river flows mainly from south to north and is approximately 105 miles long. The action area is within the Western Subbasin of the SF Eel River. The Eel River joins the Pacific Ocean approximately 200 miles north of San Francisco, at latitude 40° 38' 32" N and longitude 124° 18' 43" W, and is the third largest river in California, with a drainage basin area of 3,684 square miles. The SF Eel River confluence with mainstem Eel River is located 40 miles upstream from where the Eel River meets the ocean. The SF Eel River has 683 miles of perennial blue line streams according to the USGS 7.5" maps, and the 100-mile long mainstem is split by Humboldt and Mendocino counties (CDFW 2014,

[http://coastalwatersheds.ca.gov/Watersheds/NorthCoast/EelRiver\(SouthFork\).aspx](http://coastalwatersheds.ca.gov/Watersheds/NorthCoast/EelRiver(SouthFork).aspx)). As noted above, fourteen watercourses, including Durphy Creek, are located in the project action area. Storm water runoff from the project location discharges to the SF Eel River through tributaries, ditches, and ephemeral channels over distances of 200 to 500 feet. The SF Eel River discharges to the Eel River north of the project action area, near Humboldt Redwoods State Park and the town of Weott.

The SF Eel River is strongly influenced by the coastal marine layer and defined by morning fog and overcast conditions, which supports coniferous and hardwood forest vegetation. These moderated air temperatures and shady conditions result in cooler summer water temperatures and lush riparian vegetation in Western Subbasin streams suitable for Chinook and coho salmon (CDFW 2014). However, in 1999, the SF Eel Basin was listed by the USEPA (1999) as an impaired water body for sediment; a consequence of past land use practices including timber harvest. Conversely, both SF Eel River coho salmon and steelhead were selected as “salmon strongholds”, which represent the healthiest wild Pacific salmon populations remaining, and recognize the high value of the habitats occupied by these populations (Wild Salmon Center 2012). The SF Eel River in the action area contains critical habitat for steelhead, coho salmon, and Chinook salmon. CDFW (2014) rated 38 of the 90 SF Eel River basin streams as “high potential” habitat refugia areas, largely due to tributaries in the Western Subbasin ([http://coastalwatersheds.ca.gov/Watersheds/NorthCoast/EelRiver\(SouthFork\)/Basin/Refugia.aspx](http://coastalwatersheds.ca.gov/Watersheds/NorthCoast/EelRiver(SouthFork)/Basin/Refugia.aspx)) where the action area is located.

Durphy Creek (a tributary of the SF Eel as described above) flows 2.2 miles (CDFW 2014) from its headwaters northwest of Richardson Grove at an elevation of 1,418 feet to its confluence with the SF Eel River at an elevation of 421 feet in Richardson Grove. Besides the SF Eel River, Durphy Creek is the only other fish bearing watercourse within the action area. Durphy Creek drains an area of about 2.15 square miles. Durphy Creek flows through an 8-foot high by 12-foot wide, by 38-foot long concrete box culvert under US Route 101 in Richardson Grove State Park. No highway drainage flows through this culvert, only the creek. The creek goes subsurface in the coarse sediment near the confluence with the SF Eel River during the dry season (Lang 2001).

Durphy Creek (PM 1.61) in the action area contains critical habitat for coho salmon and steelhead. Durphy Creek is not designated as critical habitat for Chinook salmon. However, historic surveys (1938, 1958, and 1987) observed Chinook salmon in Durphy Creek (CDFW 2014), though Caltrans (2016c) did not indicate that Chinook salmon currently occupy Durphy Creek. Caltrans did not consider that Chinook salmon currently occupy Durphy Creek and NMFS agrees, due to their absence in more recent spawning surveys, minimal suitable Chinook spawning habitat, the partial passage barrier downstream of the Durphy Creek culvert, and low, or subsurface flows during Chinook spawn timing. Regarding habitat refugia, Durphy Creek was rated as “Medium Potential” for reasons of degraded or fragmented instream and riparian habitat, with salmonids present but reduced densities and age class representation (CDFW 2014). Rearing juvenile steelhead in the action area may originate from spawning elsewhere in Durphy Creek, or may enter as non-natal immigrants from the SF Eel River (CDFW 2014). In any given year, coho salmon could spawn in Durphy Creek, though suitable habitat is upstream of the

action area, and rearing juveniles within the action area of Durphy Creek could originate from upstream spawning or as non-natal immigrants from elsewhere in the SF Eel River (CDFW 2014).

Designated critical habitat for each species (Table 3) is based on physical and biological features essential to the conservation of a listed species. In the action area, the physical and biological features of critical habitat essential for salmonids include:

- *Freshwater rearing sites* with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams, and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks; and
- *freshwater migration corridors* free of obstruction and excessive predation, with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Table 3. Designated critical habitat of listed species within the two, fish bearing watercourses within the Project action area.

Watercourses Within Action Area	SONCC Coho Salmon	CC Chinook Salmon	NC Steelhead
South Fork Eel River	Yes	Yes	Yes
Durphy Creek	Yes	No	Yes

Adult and juvenile salmonids are likely to be seasonally present in the SF Eel River and Durphy Creek in the action area. No other watercourses in the action area are fish bearing. The patterns of salmonid activity in the action area are as follows (Caltrans 2016c):

- Adult coho are likely to be present in the SF Eel River, and may be present in Durphy Creek, from December to February;
- Adult steelhead are likely to be present in the SF Eel River, and may be present in Durphy Creek, from November to June;
- Adult Chinook are likely to be present in the SF Eel River from November to January;
- Portions of the SF Eel River that are within the action area provide spawning habitat for Chinook salmon (Caltrans 2016c);
- Portions of Durphy Creek are potential spawning habitat for coho salmon and steelhead, however, known locations of suitable spawning habitat are upstream of the action area;
- Juvenile coho and steelhead may rear in Durphy Creek (Caltrans 2016c) year round;

- Juvenile Chinook, coho and steelhead may be present in SF Eel River within the action area year round; however, they are expected only to persist in areas of cool water refuge (e.g., creek mouths or upwelling spring water) during summer (Caltrans 2016c). Apart from one identified small spring seep that is not currently providing measurably cool water to the river, there are no known thermal refugia in the action area (Caltrans 2016c). Therefore, listed salmonids are likely to be rare in the action area during summer months.

Interrelated or Interdependent Actions

As defined in 50 CFR 402.02, interrelated actions are part of a larger action and depend on the larger action for their justification. The project would slightly realign portions of an existing highway, modifying existing culverts, install a retaining wall, and replace existing guardrail. The project has logical termini (rational end points); as it addresses the curves that currently result in the STAA vehicle restriction on US Route 101 between the town of Benbow in Southern Humboldt and the town of Leggett in Northern Mendocino. No other project is needed to remove this restriction, nor is this project part of any other project (Caltrans 2016c). This project is not part of a larger action and does not depend on any larger action for its justification; therefore, this project is not interrelated with any other projects (Caltrans 2016c).

As defined in 50 CFR 402.02, interdependent actions have no independent utility apart from the action under consideration. The project has independent utility, as no further improvements on US Route 101 are required to lift the current STAA truck size restriction between Humboldt and Mendocino Counties. Although other highway improvement projects are planned on an ongoing basis, no actions that are part of and dependent on this proposed action have been identified. Whether or not this project proceeds would have no influence on any other known project. No interdependent activities have been identified as related to the proposed action (Caltrans 2016c).

Action Agency's Effects Determination

ESA Effects Determinations

Caltrans (2016c and 2016d) concluded that SONCC coho salmon, CC Chinook salmon, NC steelhead have the potential to occur in the action area and may be exposed to effects from project actions. Additionally, the physical and biological features of the critical habitat of listed salmonids that could be affected include impacts to water quality, cover/shelter, foraging potential, fish passage, and riparian vegetation.

Caltrans (2016c) stated that to minimize impacts to fish species, designated critical habitat, and EFH, no work would occur below the wetted channel of fish bearing waters; vegetation impacts would be minimized; the action is designed not to threaten the survival or stability of any large coast redwood trees, *Sequoia sempervirens* (Yanez 2015); and measures would be implemented during and after construction to minimize discharge of sediment and contaminants from project activities to Durphy Creek and the SF Eel River (Caltrans 2003a, 2003b, 2016c).

Due to the use of standard construction measures for water quality, conservation measures (including construction during the dry season, conservation of riparian habitat, and implementing a revegetation plan), and Best Management Practices (BMPs) as outlined in the BA (Caltrans

2016c), Caltrans determined the effects of the project on listed salmonids would be negligible, and therefore insignificant or discountable. Caltrans (2016c) made the following determinations for effects to listed species from the proposed action:

- *May affect, not likely to adversely affect* SONCC coho salmon (listed as threatened, 70FR37160, June 28, 2005; and updated, 79FR20802 April 14, 2014);
- *May affect, not likely to adversely affect* CC Chinook salmon (listed as threatened, 64FR50394, September 16, 1999; and updated 79FR20802 April 14, 2014);
- *May affect, not likely to adversely affect* NC steelhead (listed as threatened, 71FR834, January 5, 2006; and updated 79FR20802 April 14, 2014).

Due to the small amount of vegetation to be removed, the short duration of project construction, timing of construction during the dry season, and implementation of BMPs, Caltrans (2016c and 2016d) determined the effects of the project on designated critical habitat would be negligible, and therefore insignificant or discountable. Caltrans (2016c) made the following determinations for effects to designated critical habitat of the proposed action:

- *May affect, not likely to adversely affect* SONCC coho salmon critical habitat (designated critical habitat, 64FR24049, May 5, 1999);
- *May affect, not likely to adversely affect* CC Chinook salmon critical habitat (designated critical habitat, 70FR52488, September 2, 2005);
- *May affect, not likely to adversely affect* NC steelhead critical habitat (designated critical habitat, 70FR52488, September 2, 2005).

MSA, Pacific Coast Salmon EFH Effects Determination

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

Caltrans (2016c and 2016d) stated that project impacts to EFH are similar to effects to critical habitat described above for SONCC coho salmon and CC Chinook salmon. Caltrans (2016c and 2016d) concluded that the proposed action, *may adversely affect EFH* for species managed under the Pacific Coast Salmon Fishery Management Plans (PFMC 2014) within the Project action area waterways.

Consultation History

- On February 18, 2015, NMFS Fish Biologist Rebecca Bernard visited the proposed project site with Caltrans biologist, Gail Popham and design engineer, Eric Lund.

- In September 2015, Caltrans obtained a current official species list from NMFS for this action.
- From January 11, 2016, to February 2, 2016, Caltrans was in contact with NMFS for clarification of EFH effects conclusion.
- On March 16, 2016, Caltrans submitted a project BA with a request for consultation.
- On April 4, 2016, R. Bernard NMFS fish biologist met with the Caltrans senior environmental planner Steve Croteau and the project biologist, G. Popham for review of NMFS comments. As a result of those comments, Caltrans decided to rescind and revise the BA. The BA was rescinded formally via an email to NMFS on April 6, 2016.
- In May 2016, Caltrans contacted NMFS regarding the September 2015 species list and received NMFS' confirmation that it was still accurate (Jeff Jahn, personal communication, May 31, 2016).
- On June 14, 2016, Caltrans submitted an updated project BA with a request for consultation.
- On July 13, 2016, NMFS (J. Jahn by phone) requested and Caltrans (S. Croteau by phone) granted an additional week to review the BA.
- On July 20, 2016, NMFS submitted a letter to Caltrans that indicated there was not enough information in the BA to initiate consultation.
- On October 4, 2016, Caltrans submitted an updated project BA with a request for consultation.
- On October 6, 2016, NMFS (R. Bernard via email) requested a reference for a citation that was not included in the BA.
- On October 6, 2016, Caltrans responded and emailed the reference citation and the document.
- On November 7, 2016, NMFS (J. Jahn via email) provided a letter to Caltrans that indicated there was sufficient information in the BA to initiate the informal consultation.
- On December 8, 2016, NMFS (R. Bernard via email) requested Caltrans resubmit the Literature Cited section of the BA, submitted by Caltrans requesting informal consultation on October 4, 2016, and provide an updated Literature Cited section for use as errata.
- On December 13, 2016, NMFS (R. Bernard via email) requested Caltrans respond in writing to the list, sent by email, outlining additional information requests, and request for reconciliation of statements made in the BA submitted by Caltrans requesting informal consultation on October 4, 2016.
- On December 15, NMFS (R. Bernard) meet with Caltrans (Stephanie Fredrickson) to review and discuss NMFS' request from December 13, 2016.
- On December 21, 2016, Caltrans responded with a letter to NMFS' December 13, 2016 request and provided supplemental information to the October 4, 2016 Richardson Grove Operational Improvement BA.
- On December 22, 2016, after further clarification to the supplemental information provided, Caltrans provided an updated supplement to the October 4, 2016 BA.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Factors considered in the analysis include description of the spatial extent, duration, magnitude, and frequency of occurrence of direct and indirect effects and potential stressors on individual fish and critical habitat in the action area. The effects of the proposed action to individual fish describes the conditions that cause impacts to individual fish and quantifies the amount and extent of impacts expected, if any. The impacts of the proposed action to critical habitat describes the response of the habitat elements to the potential stressors and any impacts to the function of physical and biological features of the critical habitat in the action area.

Critical Habitat

Effects to SONCC Coho Salmon, CC Chinook Salmon, and NC Steelhead Critical Habitat

The designation(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this LOC, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

PBFs for the critical habitat in the proposed project’s action area (specifically portions of Durphy Creek and the SF Eel River) include: Salmonid migratory corridors for adult and juvenile salmonids transient rearing; non-natal juvenile rearing; and spawning habitat in SF Eel River (Caltrans 2016c) for adult salmonids. Durphy Creek and the SF Eel River in the action area provide most of these PBFs. Portions of Durphy Creek are potential spawning habitat for coho salmon and steelhead; however, known locations of suitable spawning habitat are upstream of the action area (Caltrans 2016c).

Riparian Vegetation Impacts

Two of the main factors for the decline of salmonids throughout the SF Eel River Basin over the past century have been an overabundance of fine sediments entering streams and an increase in stream temperatures (CDFW 2014; NMFS 2014). Vegetation on the landscape directly influences both of these conditions and (May et al. 1997). Riparian vegetation shades streams and reduces solar radiation, both of which lower stream temperatures (Beschta et al. 1987). Hillslope vegetation intercepts and slows the velocity of rainwater and provides leaf-litter and duff layers to the surface of soils, which intercepts and disperses rainwater and increases

resistance to surface erosion. Leaf and duff layers also provide an intricate irregular, permeable interface that allows surface water to pond and be absorbed rather than flow downhill as runoff. Vegetation also increases transpiration, decreasing pore pressure between soil grains during heavy rains and thereby reducing slope failure. Root systems increase the tensile slope strength of unstable soils, reducing landslides, erosion and sedimentation (CDFW 2014).

Richardson Grove was designated as a California State Park in 1922. The riparian zones in the project's action area are heavily vegetated redwood forest. Minor areas of riparian vegetation consisting of herbaceous species, shrubs, and small understory trees will be permanently impacted by highway realignment improvements (including minor widening) to construct barrier rail modifications and associated approach realignment and widening at Durphy Creek to the Richardson Grove Undercrossing. The guardrail modification element at Durphy Creek is the only project activity that would disturb riparian vegetation on fish bearing waters. Herbaceous vegetation that would be disturbed at culvert locations PM 1.34 and PM 1.35 could also be considered riparian. However, the minor removal of vegetation would not produce any meaningfully measurable impact to salmonid critical habitat, and no redwood trees would be impacted (Caltrans 2016c).

The proposed project would remove approximately 15 linear feet (616 square feet, approximately 0.14% of the length of Durphy Creek's riparian zone) of riparian vegetation. This minor riparian vegetation removal is expected to have negligible effects to SONCC coho salmon and NC Steelhead critical habitat in Durphy Creek and essentially no impact to SONCC coho salmon, NC steelhead, and CC Chinook salmon critical habitat in the SF Eel River because nearly all of the shade over streams in the action area is provided by old growth redwoods and no redwoods will be removed due to this project. Additionally, due to the intact and well-functioning riparian canopy of large redwood trees along this reach of Durphy Creek, and the relatively small, temporary loss of understory riparian vegetation, allochthonous inputs, stream temperature, stream channel structure, and instream habitat would not be altered to a degree that could create any meaningfully measurable exposure to the designated critical habitat of steelhead or coho salmon (Durphy Creek and SF Eel River), or Chinook salmon (SF Eel River) in the action area, and impacts from the proposed project are thus insignificant.

Fish Passage Impacts

All types of barriers fragment the habitat available to different life stages of salmonids by reducing access to stream reaches that are used as migratory corridors, and spawning and rearing habitat (CDFW 2014). Durphy Creek is typically dry during the summer (Lang 2001; Caltrans 2016c) and therefore, construction disturbance is extremely unlikely to impact fish passage. In the event that Durphy Creek has surface flow, construction activity has the potential to impact fish passage through disturbance, but because the construction on the Richardson Grove Undercrossing is 25 feet away and upland of Durphy Creek, construction disturbance is extremely unlikely to have any impact to fish passage and therefore, discountable.

The potential use of stream diversions associated with culvert extensions, and headwall and inlet installation at the water courses at PMs 1.34 and 1.35 (not salmonid critical habitat), for extension of the existing culverts and replacing headwalls would not impact access through migratory corridors because these channels are not fish bearing streams. The existing pipe

conveys intermittent stormwater runoff and groundwater to designated critical habitat in the SF Eel River; the culvert outlet is perched high on a cut bank characterized by steep topography. Caltrans stated “therefore, steelhead, coho salmon, and Chinook salmon would not be exposed to stressors related to fish passage, and “no designated critical habitat would be impacted”. NMFS agrees, salmonid fish passage is extremely unlikely to be impacted by potential stream diversions because the habitat is not occupied, but further clarifies that the *designated critical habitat* of the SF Eel River would also not be subject to fish passage impacts from temporary stream diversions. Therefore, potential passage impacts to the designated habitats of listed salmonids due to barrier rail foundation work at Durphy Creek and culvert work PMs 1.34 and 1.35 are discountable.

Water Quality Impacts

Construction Lubricants and Liquids

Accidental spills from construction equipment pose a risk to water quality, particularly at the onset of the rainy season when runoff from the first rains could exacerbate the discharge of any spilled materials. However, implementation of standard measures (Caltrans 2016c) including the use of pollution prevention plans, are expected to prevent most, if not all, localized degradation of water quality from construction related spills during construction that could degrade water quality, as well as prevent potential spills outside of the wetted channel. Additionally, project activities adjacent to watercourses would be restricted to the dry season and restricted from work in the wetted channel. Therefore, the proposed best management practices are expected to avoid and adequately clean up any spill of hazardous materials from project actions and thus, the proposed project is extremely unlikely to degrade the designated critical habitats of coho salmon, Chinook salmon, or steelhead.

Sedimentation and Turbidity

Due to its proximity to the SF Eel River and work within its tributaries, the project has the potential for non-storm water and storm water discharges to receiving waters both during construction and post-construction. Sediment affects salmonids both directly and indirectly by modifying aquatic habitat (Booth 1991). Project excavation for roadway realignment and widening, culvert and drain work, installation of crash cushions and transition barriers, riparian vegetation removal, and possible temporary diversion of non-fish bearing roadside drainages have the potential to introduce sediment or cause turbidity into the receiving waters of Durphy Creek and the SF Eel River (Tables 1, 2, 4 and 5).

As a result of the proposed project, soil erosion is likely, and small amounts of sediment may enter watercourses in the action area. The input of sediment may negatively affect the quality and functionality of substrate, the amount of space, quality of water, and food abundance in designated critical habitat (May et al. 1997). However, utilizing a storm water pollution prevention plan (SWPPP) and water pollution control program (WPCP) (Caltrans 2003a) combined with construction site BMPs (Caltrans 2003b) and combined with project conservation measures that include: 1) the lack of need for in-channel activity; 2) the use of standard containment BMPs; 3) the distance (200 to 500 feet) of excavation from fish bearing waters (Durphy Creek and the SF Eel River); and 4) the project timing window for construction (June 1–October 15) that is expected to partially or completely overlap with the timing when Durphy Creek and the other US Route 101 watercourses are dry in the action area, increases in turbidity

that may occur during construction activities throughout the project action area are expected to be minimized to negligible amounts, or avoided.

Table 4. Expected area (square feet—ft²), of temporary and permanent disturbance for each project activity associated with project construction (Caltrans 2016c).

Location US Route 101 Post Mile (PM)	Area (ft ²) of Temporary Disturbance	Area (ft ²) of Permanent Disturbance/New Impervious Surface	Total Disturbed Area (ft ²)
Culvert PM 1.18	30	14 (headwall)	44
Culvert PM 1.28	25	14 (headwall)	39
Culvert PM 1.34	20	14 (headwall)	34
Culvert PM 1.35	18	16 (headwall)	34
Culvert PM 1.78	6	30 (overside drain and drainage apron)	36
Culvert PM 2.10	692	46 (headwall)	738
Retaining Wall: Gabion walls portion PM 2.10/2.14	541	588	1,129
Retaining Wall: Soldier pile wall portion PM 2.10/2.14	1,762	926	2,688
Areas of roadway widening (includes area of transition barriers PM 1.6/1.7)	16,045 (0.37 acre)	8,341 (0.19 acre)	24,386 (0.56 acre)
TOTAL	19,139 (0.44 acre)	9,989 (0.23 acre)	29,128 (0.67 acre)

Additionally, it is extremely unlikely that sediment and turbidity from potential water diversions at PM 1.34 and PM 1.35 (if water is present) would impact the water quality of the SF Eel River (Caltrans 2016c). Therefore, any negative impacts to the physical and biological features of SONCC coho salmon and NC steelhead designated critical habitat (rearing and migration) due to soil disturbance activity would be either extremely unlikely to occur because critical habitat is not present in the areas that would be disturbed, or insignificant because even if surface flows did, did example, transport sediments downstream, the BMPs Caltrans would use will prevent more than negligible amounts from reaching salmonid critical habitat.

Any suspended sediment in the channel from project disturbance of soils at the onset of the first precipitation event post-construction are expected to be temporary and localized and the long-term value of the affected critical habitat is not expected to be significantly diminished. In total, the amount of sediment likely to enter the stream is small and will likely lead to negligible increased levels of turbidity due to small concentration of sediment, dilution effects of the

stream, and the short duration of disturbance. Additionally, given the expected effectiveness of sediment control BMPs and the significant filtering and settling of runoff and sediment in forest floor duff, there is extremely low likelihood of delivery of waters containing sediment and elevated turbidity from reaching the channel of the SF Eel River or Durphy Creek as a result of either short-term discharges during construction, or discharges during post-construction related to disturbed soil. Therefore impacts to the designated habitat of coho salmon, Chinook salmon, or steelhead are expected to be insignificant or discountable.

Contaminants Associated with Stormwater Runoff

Impervious surfaces collect and accumulate pollutants deposited from the atmosphere, leaked from vehicles or derived from other sources. During storms, accumulated pollutants are quickly washed off and can be rapidly delivered to aquatic systems (Schueler 1994; USDT 2012). Metals and polycyclic hydrocarbons are present in highway stormwater runoff. Several traffic-related compounds have been found to be toxic to organisms (WDOE 2016). The additional impervious surface area of the proposed highway realignment and widening may result in a slight increase in runoff and associated chemicals (e.g., PAHs), where the “first wash” effect described by Johnson et al. (2007) is expected primarily at the close of highway paving activities after the onset of the first precipitation event and to a lesser degree after that event (Hall and Anderson 1988). Highway traffic is not expected to increase as a result of this project (Caltrans 2016a and 2016c). However, once the project is complete, the slight increase in runoff and associated chemicals from highway widening (an expected increase of 0.17 acres of additional asphalt) may combine with increases in chemicals from asphalt wear and additional chemical releases due to traffic increases unrelated to the proposed action (Caltrans 2003c, 2016a, 2016b, and 2016c).

These potential increases in runoff and toxic materials are unlikely to reach waterways designated as salmonid critical habitat in the action area in more than negligible amounts. Surface stormwater runoff from the new project area paved with asphalt, flows from the road surface to road shoulders and through vegetated drainage ditches, redwood forest floor duff, and soil that will act to filter stormwater runoff from the highway (McIntyre et al. 2015) prior to entering project waterways. Approximately 58% of the existing roadway drainage is sheet flow (Caltrans 2016b); the remaining flows through vegetated drainage ditches. Caltrans’ project design expects that a minimum of 33% of the volume of water from the new impervious surface area will be treated by infiltration through the forest floor duff (Caltrans 2016b). The incidence of chemical contamination from the new highway surface to waterways would be mainly short term (from the “first wash” as described above), and always very small due to soil and forest floor duff filtration. Therefore, NMFS expects any traffic and asphalt-derived contaminant impacts to the critical habitat of listed salmonids will be insignificant.

Impacts Due to New Impervious Surface

Impervious surfaces seal soil and eliminate rainwater infiltration and natural groundwater recharge (Booth 1991). Roads and other impervious surfaces can increase peak overland flows, thus fundamentally altering the hydrologic disturbance regime for those systems. Roads can also concentrate overland flows to specific locations where channel erosion and gullyng and accelerated sediment loading may be initiated (May et al. 1997). The proposed project will result in the additional asphalt surfacing of 0.23 acres of newly created impervious surface, and removal of approximately 0.06 acres of existing pavement results in a net gain of 0.17 acres of

additional impervious surface (Caltrans 2016b and 2016c). Additionally, Caltrans (2016c) will use Hot Mix Asphalt-Type A, a form of dense grade asphalt, with an overlay of Hot Mix Asphalt-Type Open Grade designed to be water permeable.

The existing impervious state highway surface in the action area is approximately 3.7 acres (Tables 4 and 5). The new impervious surface proposed by the project design is expected to maintain as much sheet flow of highway drainage as possible. NMFS believes there is the slight potential for increases of peak flow runoff due to the additional project related impervious surface area. While Caltrans indicated such an impact would be discountable to the critical habitat of coho salmon, Chinook salmon, or steelhead, NMFS believes the slight increases in peak stormwater runoff due to additional project related impervious surface is instead insignificant.

Table 5. Roadway drainage areas (pre-project, post-project, and change), of project action area culverts (Caltrans 2016c). Square feet (ft²).

Watercourse Culvert Location (US Route 101 PM)	Pre-Project Roadway Drainage Area (ft ²)	Post-Project Roadway Drainage Area (ft ²)	Change (ft ²)
1.14	0	0	0
1.18	10,692	10,600	-92
1.28	5,460	5,460	0
1.34	1,120	5,900	4,780
1.35	1,601	736	-865
1.61	0	0	0
1.63	10,800	11,500	700
1.78	9,470	9,470	0
1.87	12,200	12,200	0
1.97	2,080	2,080	0
2.10	800	210	-590
2.12	0	2,990	2,990
2.17	0	0	0
2.20 ¹	-	-	0
Total	54,223	61,146	6,923

¹The culvert at PM 2.20 conveys drainage from both inside and outside the project area. The drainage area associated with this culvert would not be changed as a result of this project.

Noise and Visual Disturbance

Other project actions occur in the non-fishing bearing waters of ephemeral watercourses that are not designated critical habitat. Any negative impacts to the physical and biological features of SONCC coho salmon and NC steelhead designated critical habitat (rearing and migration) due to disturbance from construction activity and night work would be either extremely unlikely to occur because critical habitat is not present in the areas that would be disturbed, or insignificant

because even if surface flow did occur at the time of project construction, in Durphy Creek, the BMPs that Caltrans would use, such as shielding light sources from watercourses containing salmonids, will prevent more than negligible night lighting or noise from reaching salmonid critical habitat.

Simultaneous Construction Impacts

The Durphy Creek water crossing is the only location in the action area where multiple potential construction related impacts may be expected to occur simultaneously. However, with the combined use of project BMPs, and avoidance and minimization measures would likely prevent the construction impacts described above, such as loss of riparian vegetation, fish passage, sediment, turbidity, noise, light, and contaminants from producing combined impacts on the designated critical habitat of listed salmonids. Specifically, a WPCP and SWPPP would likely prevent construction-related impacts from sediment and turbidity from producing a potential combined construction impact on the critical habitat of listed salmonids in Durphy Creek and the SF Eel River.

ESA Listed Species

Effects to Individual Salmon and Steelhead

Fish Cover Impacts

Minor riparian vegetation removal is expected to have negligible effects to individual SONCC coho salmon and NC Steelhead in Durphy Creek because the temporary loss of understory riparian vegetation is 25 feet from, and upland of, the stream channel. Thus, structure and instream habitat that provide cover to salmonids would not be altered to a degree that could create any meaningful change in the fitness of individual listed coho salmon or steelhead in the Durphy Creek reach of the action area and would be insignificant.

Food Resources Impacts

The action area has an intact and well-functioning riparian canopy of large redwood trees. Along the action area reach of Durphy Creek, the relatively small, temporary loss of understory riparian vegetation would not meaningfully reduce allochthonous inputs of insect prey items to individual steelhead or coho salmon (Durphy Creek and SF Eel River), or Chinook salmon (SF Eel River) in the action area and thus effects on salmonid growth would be insignificant.

Impacts on Migration

Implementation of the proposed project at the Richardson Grove Undercrossing at Durphy Creek, as well as excavation activities to improve watercourse and roadway drainage that may convey sediments and turbidity to the receiving waters of Durphy Creek and the SF Eel River, could result in stressors related to fish passage. However, the timing of project construction occurs during the dry season when Durphy Creek is typically dry in the action area, and if dry, juvenile salmonids are not expected to be exposed to any project related fish passage impacts. If project construction occurs in a non-typical year and Durphy Creek has surface flow during construction season, juvenile salmonids may rear in the action area reach of Durphy Creek. Due to the BMPs Caltrans would use, NMFS expects only negligible impacts on juvenile movement during rearing. For example, sediment amounts entering flowing water are anticipated to be

miniscule as described above for salmonid critical habitat. Likewise, adult migrating salmonids would not be exposed to potential fish passage impacts during construction because overlap of migration and project construction timing are not expected. Similarly, outmigrating smolts would have already left Durphy Creek to migrate downstream to the ocean prior to the construction season.

Adult and rearing juvenile salmonids have the potential to experience the “first flush” impacts from highway contaminants during stormwater runoff events at the onset of the first rains of the season, which could lead to fish passage stressors, but as discussed below, asphalt related contaminants are expected to be insignificant. Additionally, the use of avoidance and minimization measures and project BMPs would minimize the possibility of dry sediment and turbid runoff leaving the construction zone. Also as discussed in the BA (Caltrans 2016c and 2016d), construction at the other project action area watercourses are located 200 to 500 feet from the SF Eel River and are non-fish bearing streams. Therefore fish passage impacts related to individual listed salmonids, from this project, are extremely unlikely and therefore discountable.

Water Quality Impacts

Water Temperature

Because of the principal influence of the old growth redwood forest on stream temperatures throughout the action area, the minor removal of understory upland vegetation (non-redwood) for project construction is not expected to have any measureable impact to water temperature that would negatively impact listed salmonids.

Construction Lubricants and Liquids

Project construction takes place at a time when adult salmonids are not expected in the project action area. Exposure of rearing juveniles is only possible in Durphy Creek if surface flows are present. Other water courses in the action area are not fish bearing. Because: 1) the other water courses in the action area are not fish bearing, and 2) project avoidance and minimization measures, including project BMPs and spill prevention plans, the likelihood of juvenile salmonids exposed to construction lubricants and liquids through the action area at any time is extremely unlikely. In the event that the Durphy Creek channel has surface flow during all, or a portion of project construction, the use of project BMPs and the spill prevention plan would prevent the exposure of juvenile salmonids to construction lubricants and liquids. Therefore, any potential impacts to individual SONCC coho or CC Chinook salmon, or NC steelhead from potential spill of hazardous materials are extremely unlikely.

Contaminants Associated with Stormwater Runoff

The new pavement and additional impervious surface area of the new roadway may result in an increase in runoff and associated chemicals from roadway traffic from US Route 101. Contaminants can be taken up by juvenile salmon and their prey (Johnson et al. 2007; McIntyre et al. 2015) and result in reduced growth and reduced resistance to disease (Arkoosh et al. 1998). The “first wash” effect described by Johnson et al. (2007) is expected after applying new pavement. However, the vegetated road shoulders and functioning forest floor duff adjacent to US Route 101 are expected to provide biofiltration of contaminants that run off project roadways. Once the project is complete, the slight increase in runoff and associated chemicals

from highway widening may combine with increases in chemicals from asphalt wear and additional chemical releases due to traffic increases unrelated to the proposed action (Caltrans 2003c, 2016a, 2016b, and 2016c). The incidence of chemical contamination from the new highway surface to waterways would be mainly short term (from the “first wash” as described above), and always very small due to soil and forest floor duff filtration. Therefore, NMFS agrees with Caltrans (2016c) that potential impacts to individual SONCC coho or CC Chinook salmon, or NC steelhead from traffic and asphalt related contaminants are insignificant.

Sedimentation and Turbidity

Sediment affects salmonids both directly and indirectly by modifying aquatic habitat. Coarse sediment, fine sediment, and suspended sediment may adversely affect adult and juvenile salmonids by altering channel structure and affecting production. Tappel and Bjornn (1983) demonstrated that increased fine sediment in spawning gravels caused decreased survival and emergence of salmonid eggs and alevin.

Processes of stream sedimentation are controlled by sediment supply and stream power, which is a combination of the stream’s discharge and the slope over which it runs (velocity). Excavation at the majority of watercourse at US Route 101 in the action area may deliver sediment and turbidity to Durphy Creek and the SF Eel River as post-construction sediment discharges. In sufficient quantity, sediment inputs may increase turbidity, resulting in a disruption to normal feeding behavior (Berg and Northcote 1985), reduced growth rates (Crouse et al. 1981), increased plasma cortisol levels (Servizi and Martens 1992), and causes gill erosion (Servizi and Martens 1987). Newcombe and Jensen (1996) indicated that both sediment concentration and exposure time impact fish responses to suspended sediment. However, with the use of BMPs and conservation measures, as well as the infiltration properties of a functioning forest floor over distances of 200 to 500 feet to the SF Eel River from excavation locations, the concentration and exposure duration of turbidity and suspended sediments as a result of this project would likely be temporary and negligible to individual listed salmon and steelhead, and therefore insignificant. Additionally, Chinook salmon fry will likely have completed outmigration prior to project construction and the impacts of the first seasonal precipitation events, the effects of turbidity and suspended sediment on Chinook salmon are extremely unlikely to occur and therefore discountable.

If project construction occurs in a non-typical year and Durphy Creek has surface flow during construction season, juvenile salmonids may rear in the action reach of Durphy Creek. If juveniles are present, the amount of sediment and turbidity they encounter from the proposed project is likely to be very small due to all the BMPs Caltrans would use. These small amounts might result in temporary behavioral changes that would be insignificant.

Impacts Due to Impervious Surface

Impervious surfaces seal soil and eliminate rainwater infiltration and summer low flows can become lower as a result of reduced natural groundwater recharge natural groundwater recharge (Booth 1991), and increases peak run-off that cause bed and bank erosion, concentrating overland flows to streams more to specific locations where channel erosion and gullying and accelerated sediment loading may be initiated (Schuler 1994; May et al. 1997). Roads and other impervious surfaces can increase peak overland flows, thus fundamentally altering the

hydrologic disturbance regime for those systems and affecting individual salmonids via the mechanisms described above (accelerated sediment loading, for example).

As stated above in the impacts to critical habitat, we concluded that the addition of new impervious surface area would have no significant impacts to stormwater runoff drainage patterns. Therefore, any additional quantities of runoff would not be expected to rise to the level that would alter the physical structure of fish bearing waters in the action area, in any way that would create an impact to listed salmonids, and thus, insignificant.

Noise and Visual Disturbance of Rearing Salmonids

Implementation of project activities (construction at Durphy Creek) would take place at a time (summer dry season) when Durphy Creek is typically dry within the action area (Lang 2001; Caltrans 2016c). If the project occurs when Durphy Creek is dry, no SONCC coho salmon and NC steelhead juveniles would be present and exposure to construction noise and visual disturbance from construction, nor light from construction activity night work and such is extremely unlikely and therefore discountable.

If surface flow in Durphy Creek is present during all, or a portion of the construction season, juvenile fish may be rearing in the action area. Currently, any listed juvenile salmonids rearing in Durphy Creek in the action area are exposed to visual and noise disturbance by hikers on the trail below the roadway US Route 101 and traffic noise from the highway. NMFS expects these disturbances would affect fish as much or more than the workers and equipment operating on the road during construction at the Richardson Grove Undercrossing at Durphy Creek. Furthermore, if the trail is closed during construction activities, workers and equipment operating on the roadway would likely create no more noise or visual disturbance than hikers on the trail would under current conditions. NMFS expects any juvenile salmonids rearing in this portion of the action area would quickly become habituated to the low levels of visual and noise disturbance created by all these activities, including any small amounts of additional noise resulting from the proposed project. Night work requiring the use of artificial lighting may occur at Durphy Creek (Caltrans 2016c), but (as noted above) the use of light shields would direct artificial lighting toward the roadway and away from Durphy Creek to minimize potential impacts to fish if water is present in the channel during construction. Therefore, impacts from the proposed project would be insignificant.

Other project actions occur in the non-fishing bearing waters of ephemeral watercourses. Additionally, activities at non-fish bearing project action area watercourses take place from 200 to 500 feet from the SF Eel River buffered by the Richardson Grove State Park forest and are extremely unlikely to disturb any individual salmonids. However, as addressed in the critical habitat section above, noise and visual disturbance from project activities would likely be negligibly increased from baseline levels (Caltrans 2016c and 2016d) as the construction would be 25 feet from the creek on an upland bank and is therefore insignificant.

Simultaneous Construction Impacts

The combined use of project BMPs, and avoidance and minimization measures, as well as work occurring when habitat is seasonally unoccupied would likely prevent the construction impacts described above, such as loss of riparian vegetation, fish passage, sediment, turbidity, noise,

light, and contaminants from producing combined impacts on listed salmonids. The combined, or aggregate impacts above would not likely rise to the level where any listed salmonid, at any life stage would be significantly impacted.

Conclusion

Based on this analysis, NMFS concurs with FHWA / Caltrans that the proposed action may affect, but is not likely to adversely affect, federally listed SONCC coho salmon, CC Chinook salmon, or NC steelhead or their individual designated critical habitat.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by FHWA / Caltrans or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. FHWA / Caltrans also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1). NMFS suggests the FHWA / Caltrans consider the following conservation opportunities from the *Highest Priority Recovery Actions* listed in the SONCC coho salmon recovery plan (NMFS 2014) and the *Threats of Greatest Concern* from the Multispecies Recovery Plan (NMFS 2016); these suggestions relate to the action agency's larger section 7(a)(1) responsibilities:

1. Restore natural channel form and function by addressing confinement and channelization [at the Durphy Creek culvert beneath the Richardson Grove Undercrossing] (NMFS 2014).
2. Reduce sediment barrier formed by alluvial deposits at the confluence [of Durphy Creek and other watercourses within the Project action area] and the SF Eel River (NMFS 2014).
3. Inventory migration and flow barriers [at Durphy, Laurel, and North Creeks] and develop plan to restore passage (SFER-CCCh-5.1.1.1) (NMFS 2016).
4. Improve and restore passage [to Durphy, Laurel, and North Creeks], guided by plan (SFER-CCCh-5.1.1.2) (NMFS 2016).
5. Improve habitat complexity by developing plan to add large wood, boulders, or other instream structures near the confluence [of Durphy Creek and the SF Eel River—particularly to the creek channel area associated with the culvert that conveys Durphy Creek beneath the Richardson Grove Undercrossing] (SFER-CCCh-6.1.1.1) (NMFS 2016).
6. Add habitat complexity (structure) [to Durphy Creek] guided by plan (SFER-CCCh-6.1.1.2) (NMFS 2016).

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

SF Eel River and Durphy Creek near the Project action area support EFH for species managed under the Pacific Coast Salmon Fishery Management Plan.

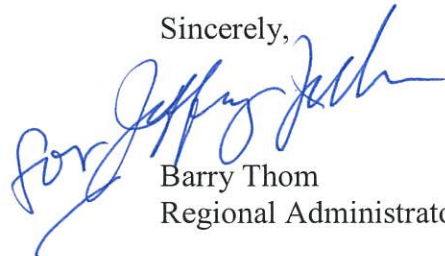
Caltrans determined that the project *may* adversely affect EFH for species managed under the Pacific Coast Salmon Fishery Management Plans. Potential project impacts to EFH include sediment and turbidity, chemical contaminants, loss of riparian vegetation, and noise. NMFS concurs with FHWA / Caltrans, the proposed project roadway realignment, culvert work, down drain work, installation of crash cushions and transition barriers, and possible temporary diversion of non-fish bearing roadside drainages *may* adversely affect EFH.

Because project impacts to EFH, as a result of implementing this project, would be avoided or minimized by control measures and standard BMPs, NMFS has no EFH conservation measures to provide at this time.

FHWA / Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920(l)). This concludes the MSA portion of this consultation.

Please direct questions regarding this letter to Rebecca Bernard in Arcata, California at 707-825-1622, or via email, Rebecca.Bernard@noaa.gov.

Sincerely,



Barry Thom
Regional Administrator

cc: Stephanie Fredrickson, Caltrans, Eureka, California
Julie East, Caltrans, Eureka, California
ARN File #151422WCR2016AR00159
Copy to Chron File

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