

Endangered Species Act - Section 7 Consultation
and Essential Fish Habitat Consultation

BIOLOGICAL OPINION

FHWA/ODOT Butte Creek Bridge Replacement
Marion County, Oregon

Agency: U.S. Army Corps of Engineers

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

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I. BACKGROUND

On June 27, 2000, the National Marine Fisheries Service (NMFS) received a biological assessment (BA) and request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for a bridge replacement project over Butte Creek along Oregon Highway 211 (Woodburn to Estacada Highway) in Marion County, Oregon. NMFS reviewed the BA and requested additional information. The additional information was received from Oregon Department of Transportation (ODOT) on August 11, 2000, and a request for extending the in-water work period was received on September 25 and October 2, 2000. The FHWA is partially funding the action and is the lead Federal agency for the consultation. The ODOT has designed the project and will administer the construction contract. ODOT has also prepared the BA. This biological opinion (Opinion) is based on the information presented in the BA and during the consultation process.

FHWA/ODOT is proposing to replace the bridge beginning in 2001. Construction would last approximately one year. Butte Creek is a tributary to the Pudding River within the Willamette River basin. The new two-lane bridge will be built along the same alignment as the old bridge, with a detour bridge required to carry traffic during construction. The detour bridge will have a series of pilings driven into the creek's floodplain. Approximately 445 cubic yards of riprap will be used below the two-year flood elevation to stabilize the banks under the bridge.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The FHWA/ODOT determined that the proposed action was likely to adversely affect Upper Willamette River (UW) steelhead (*Oncorhynchus mykiss*) Evolutionarily Significant Unit (ESU) and UW chinook salmon (*O. tshawytscha*) ESU. The UW steelhead was listed as threatened under the ESA on March 25, 1999 (64 FR 14517) and the UW chinook salmon were listed as threatened on March 24, 1999 (64 FR 14308). Critical habitat was designated for both ESUs on February 16, 2000 (65 FR 7764) and protective regulations were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42423).

This Opinion is based on the information presented in the biological assessment (BA) and the result of the consultation process. The consultation process has involved a site visit, and correspondence and communications to obtain additional information and clarify the BA. As appropriate, modifications to the proposal to reduce impacts to the indicated species were discussed and enacted. This has included revisions to the original design, including a reduction in the amount of riprap proposed, more plantings, and leaving a large tree on the streambed.

The objective of this Opinion is to determine whether the action to replace the bridge at Butte Creek is likely to jeopardize the continued existence of the UW steelhead or UW chinook salmon, or destroy or adversely modify critical habitat.

II. PROPOSED ACTION

The ODOT is proposing to replace the Butte Creek bridge along Oregon Highway 211 (Woodburn to Estacada Highway) in Marion County, Oregon. Butte Creek Bridge is located approximately 1.9 miles upstream of the Pudding River. Construction will begin in 2001 and take approximately one year to complete.

Construction of the New Bridge

The new bridge will be built along the same alignment as the old bridge. The current bridge is 194 ft long and 26 ft wide. The new bridge will be 200 ft long and 48 ft wide, including 8-ft shoulders. The bridge design has a box girder configuration with three bents. The bridge will have two 100-ft spans with one central pier and two end abutments. Approximately 1200 sq yds of new right-of-way is needed to build the project, and approximately 445 cu yds of riprap will be used below the two-year floodplain. A riprap toe trench will be placed at bents 1 and 3. Placement of the central pier will not be in the active creek channel, but will be in the two-year floodplain. A temporary access road under the bridge may be needed to build central bent #2. The design of the central bent will be eight side by side 16-in diameter piles to form the central pier (web wall). The use of this type of construction will minimize the need for footing excavation within the two-year floodplain.

Inwater work within the two-year flood elevation will be required to build this project. The Oregon Department of Fish and Wildlife (ODFW) in-water work timing for this stream reach is between July 15th and September 30th. To complete the project within one year, ODOT has requested an extension to this timing. ODOT proposes beginning construction of the detour bridge May 1st, and upon completion of the detour, allow work on the new bridge to continue below the two-year flood elevation of 34.71 m. This would include pile driving, construction of the detour bridge, concrete placement for the new bridge, and demolition of the existing bridge onto the dry floodplain. All work prior to July 15th will take place outside of the flow channel and in the dry. If the floodplain is inundated prior to the in-water work window, construction will not commence. In addition, ODOT proposes to remove the detour bridge in October.

Work within the active flowing stream will be done within the July 15th to September 30th window, including construction of the central bent of the new bridge, the construction and removal of the temporary piles associated with the detour bridge, and the construction of the toe trench and placement of riprap.

Construction of the Detour Bridge

A two-lane detour bridge will be required to carry traffic during construction. The detour bridge will be located directly north of the existing bridge. The detour will have a series of wooden piles that will be driven in the creek's floodplain. The detour bridge's central span will clear-span the active channel, and will not require work within the water to construct or remove.

Bridge Demolition

Both the existing bridge and the detour bridge will be removed. All efforts will be made to prevent debris from entering Butte Creek. Any material that falls into the water will be removed. The bridge itself will not be dropped into the creek.

Staging

Staging areas will be located above the two-year floodplain.

Temporary Water Rights

No temporary water rights have been proposed as part of this action.

Site Remediation

ODOT proposes to revegetate and seed disturbed areas. Any excavated organic topsoils are to be stockpiled above the two-year floodplain and used in the final landscaping. Approximately 148 shrubs will be planted in disturbed riparian areas and within the riprap.

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

Although there are currently limited data to assess population numbers or trends, NMFS believes that steelhead stocks comprising the UW steelhead ESU are depressed relative to past abundance. The status and relevant biological information concerning UW steelhead are well described in the proposed and final rules from the Federal Register (63 FR 11798, March 10, 1998; and 64 FR 14517, March 25, 1999, respectively), and Busby *et al.* (1995,1996).

UW steelhead are a late-run winter steelhead. Hatchery fish are widespread throughout the region. Both summer steelhead and early-run winter steelhead have been introduced to the basin and escape to spawn naturally in substantial numbers. Winter steelhead are in steep decline after exhibiting wildly fluctuating abundance. Recent average adult abundance has been estimated at 3,000 fish. Natural fish adult returns in 1995 were the lowest in 30 years. Declines have been recorded in almost all natural populations. Natural steelhead integrity is at risk from introduced summer steelhead.

Upstream spawning migration of winter steelhead primarily begins in March and April, and peak spawning occurs from April through June. Suitable spawning habitat is found in the Pudding sub-basin, including Butte Creek.

Critical habitat for UW steelhead includes all river reaches accessible to steelhead upstream of Willamette Falls to the Calapooia River. Freshwater critical habitat includes the stream, stream bottom, and riparian zone. Riparian areas include areas adjacent to a stream that provide the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody material (LWM) or organic matter. The proposed action would occur in designated critical habitat for UW steelhead.

Detailed information for the UW chinook salmon ESU is provided in the status review of West Coast

chinook salmon prepared by Myers et al. (1998). The UW chinook ESU is defined as “all naturally spawned populations of spring-run chinook salmon residing below impassable natural barriers” (64 FR 14308).

Adult UW chinook enter the Columbia River in late winter through early spring (i.e., February through April), and enter the lower Willamette River beginning in February. The run peaks in April, with passage through the Willamette River above Willamette Falls occurring primarily from late April through July (Myers et al. 1998; Willis et al. 1995). Mainstem areas of large Willamette River tributaries (e.g., McKenzie, Santiam, Clackamas Rivers) where UW chinook reproduce naturally in the Willamette Basin are very important for rearing habitat. The upper mainstem of the Willamette River itself may also be important for rearing (Willis et al. 1995). Murtagh et al. (1992) notes that juvenile UW chinook in the Clackamas River do not appear to use the tributaries as rearing areas. Studies by Everest et al. (1987) in Fish Creek, as an example, showed that most fry emigrate to the Clackamas River soon after emergence. Zakel and Reed (1984) observed the same type of behavior among UW chinook juveniles in the McKenzie River.

The combined historic annual run size of spring chinook salmon in the Willamette and Sandy Basins (i.e., Upper Willamette ESU plus part of Lower Columbia ESU) is estimated to have been several hundred thousand adults (ODFW 1995). Total abundance of the UW chinook salmon has been relatively stable at approximately 20,000 to 30,000 fish; however, recent natural escapement is less than 5,000 fish and has been declining sharply (Myers et al. 1998). Furthermore, it is estimated that about two-thirds of the natural spawners are first-generation hatchery fish, suggesting that the natural population is falling far short of replacing itself.

Critical habitat is designated to include all river reaches accessible to listed chinook salmon in the Clackamas River and the Willamette River and its tributaries above Willamette Falls. Also included are adjacent riparian zones, as well as river reaches and estuarine areas in the Columbia River from a straight line connecting the west end of the Clatsop jetty (south jetty, Oregon side) and the west end of the Peacock jetty (north jetty, Washington side) upstream to and including the Willamette River in Oregon. Excluded are tribal lands and areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years).

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy, or adversely modify, critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by

determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning and rearing of UW steelhead and UW chinook salmon within the action area under the existing environmental baseline.

A. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list the ESUs for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for UW steelhead and UW chinook salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, and spawning and rearing. The current status of UW steelhead and UW chinook salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

B. Environmental Baseline

The current range-wide status of the identified ESUs may be found in Busby et al. (1995, 1996) and Myers et al. (1998). The identified action will occur within the range of UW steelhead and UW chinook salmon. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment discharge, fish handling, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities includes the immediate watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Butte Creek, extending upstream to the edge of disturbance and extending 100 feet downstream of the bridge. The action area includes the 2-year floodplain. Other areas of the watershed are not expected to be directly or indirectly impacted.

The action area is within the Willamette Valley physiographic province. This region is characterized by a temperate climate, which is moderated by the rain shadow effect of the Coast Mountains to the west. Winters are wet and mild, and summers are hot and dry with annual precipitation in the project vicinity being approximately 3 feet/year falling mainly as winter and spring rain.

The overstory vegetation in the action area is confined to the riparian zone and includes cottonwood, willow, Oregon ash, and red alder. Understory vegetation is composed of reed canary grass, Himalayan blackberry, mock-orange and snowberry. Fragmentation by agricultural fields and roads is common. Poor habitat quality dominated the lower Butte Creek basin. Butte Creek is listed as essential salmonid habitat by the Oregon Division of State Lands. This creek is not listed on Oregon Department of Environmental Quality's 303(d) list of water quality limited streams.

Chinook salmon, coho salmon and steelhead are found in Butte Creek. The ODFW has identified Butte Creek as suitable spawning and rearing habitat for chinook salmon and steelhead, although the substrate at the site is primarily silt which is not suitable for salmonid spawning. Adult chinook salmon migrate through the project area during November and December and spawn from November through April. Emergence is generally in March and April, with rearing occurring throughout the year, and smolt migration from March through May. For steelhead, adults migrate from October through May and spawn from December through May. They emerge from May through July, and rear at the site throughout the year. Juvenile steelhead outmigrate from March through May.

Based on the best available information on the current status of UW steelhead and UW chinook salmon range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESUs within the action area are not currently being met. Numbers of the listed salmon and steelhead are substantially below historic numbers. Long-term trends are decreasing. Droughts and change in ocean productivity during the 1990s have probably contributed to the reduced run sizes. In addition, river

basins throughout the ESUs display degraded habitat conditions resulting from agricultural and forestry practices, water diversions, urbanization, and mining. The following habitat indicators are either at risk or not properly functioning within the action area: Water temperatures, turbidity/sediment, chemical contamination/nutrients, physical barriers, substrate, large woody debris, pool frequency and quality, off-channel habitat, refugia, streambank condition, floodplain connectivity, peak/base flows, drainage network, road density and location, disturbance history, and riparian reserves. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of UW steelhead and UW chinook salmon.

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat factors in the project area.

The proposed action has the potential to impact to UW steelhead and UW chinook salmon, or critical habitat. Lethal and non-lethal impacts could occur during the in-water work including the killing or, more likely, displacement of fish during in-water work. A toe trench will be excavated in the stream and riprap will also be placed in the stream. These activities have the potential to directly harass, harm, wound or kill juvenile steelhead or chinook rearing at the site. By working during the low flow time of year, the impact is decreased because less work is occurring in the wetted channel. Isolating the work area and fish removal from the isolation area by an experienced fish biologist will also reduce the magnitude of the take. By limiting these activities to the in-water work window of July 15th to September 15th when fish will not be migrating through the project area, impacts will be limited to those fish rearing in the reach. While project activities will occur outside of the work window, none of these activities will occur in the flowing stream, so the risk of direct impacts is reduced.

Direct impacts to habitat will occur as well. Access to the bridge, and the construction and demolition of the detour bridge will result in the removal of riparian vegetation. Riprap placement under the bridge will replace low quality vegetation under the bridge. The loss of vegetation will affect riparian habitat features such as shading and organic matter inputs to the stream. Although new vegetation will be planted, it will take five to ten years before some function is realized.

Project activities will increase turbidity in the stream. This impact will be temporary and limited to the duration of the project. Juvenile steelhead are visual predators, and low water clarity decreases foraging success. If steelhead are present, the increased turbidity will decrease feeding activity and likely displace fish from the project area. Erosion control measures implemented as part of the proposed action are intended to minimize turbidity increases.

The riprap placed along the streambank of Butte Creek reduces the potential quality of riparian habitat available. Herbaceous growth at the site will be reduced, as will habitat complexity. The riprap bank will reduce foraging and holding opportunities compared to a properly functioning streambank. This impact will be reduced by staggering the toe of the boulders to create flow refuges and planting shrubs among the boulders to increase shade and organic inputs. The irregular toe and vegetation will add complexity to the reach, thus creating low velocity areas for steelhead and provide cover. The trees and shrubs will shade the stream during warm summer months and increase organic input to the stream.

The NMFS expects the effects of the proposed action are likely to maintain or restore each of the habitat elements over the long term, greater than five years, based on the current condition of the site. In the short term, a temporary increase in sediment production and turbidity, and disturbance of riparian habitat is expected. UW steelhead and UW chinook salmon may be killed, or more likely, temporarily displaced by the in-water work at Butte Creek.

B. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for UW steelhead and UW chinook salmon consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term, a slow recovery process will occur as the plants mature. The NMFS does not expect that these actions will diminish the value of the habitat for survival of UW steelhead or UW chinook salmon.

C. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat of Butte Creek, extending upstream to the edge of disturbance, and extending 100 ft downstream of the bridge. A wide variety of actions occur within the Upper Willamette watershed and the Pudding River sub-basin as defined within the Opinion. NMFS is not aware of any significant change in non-Federal activities that are reasonably certain to occur within the action area. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future FHWA/ODOT transportation projects are planned in the affected watersheds. Each of these projects will be reviewed through separate section 7 consultation processes, or through programmatic assessments, and are not considered cumulative effects.

VI. CONCLUSION

NMFS has determined based on the available information, that the proposed action is expected to maintain properly functioning stream habitat conditions within the action area. Consequently, the proposed action covered in this Opinion is not likely to jeopardize the continued existence of action area is defined as the streambed and riparian habitat of Butte Creek. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse effects to salmonid habitats due to in-water work. Direct mortality from this project is possible but will be limited in duration to the in-water work window of 2001.

VII. REINITIATION OF CONSULTATION

Consultation must be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To re-initiate consultation, FHWA should contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

VIII. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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- Zakel, J. C. and D. W. Reed. 1984. Downstream migration of fish at Leaburg Dam, McKenzie River, Oregon, 1980 to 1983. Information Report 84-13. Oregon Department of Fish and Wildlife, Fish Research and Development Section, Corvallis, Oregon.

IX. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed

species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of UW steelhead and UW chinook salmon because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during the excavation of the toe trench and placement of riprap, construction of the central bent, driving and removal of temporary piles (lethal and non-lethal). There is also the potential for harm because of significant habitat modification. Effects of actions such as these are largely unquantifiable in the short-term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological report, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to the reach of Butte Creek immediately adjacent to project activities and extending 100 feet downstream.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from project activities within and adjacent to Butte Creek, measures shall be taken to limit the duration and extent of in-water work including excavation of the toe trench and riprap placement, and to schedule such work when the fewest number of fish are expected to be present.
2. To minimize the amount and extent of incidental take from construction activities near the creek, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the river, and to stabilize bare

soil over both the short-term and long-term.

3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to avoid impacts to riparian and instream habitat, or where impacts are unavoidable, to replace lost riparian and instream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures and plantings for site restoration shall be monitored and evaluated both during and following construction.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure #1 (in-water work), above, the FHWA shall ensure that:
 - a. All work within the wetted channel of Butte Creek will be done during the ODFW in-water work window of July 15th to September 30th. This includes driving and removal of piles, excavation of toe trench and placement of rock, and construction activities at the central bent.
 - b. Work within the two-year floodplain but outside the wetted channel may occur from May 1st to October 31st. If flow rises and inundates a work during this time but outside the in-water work window, then the associated activities must cease and all equipment removed from the wetted area. If a weather pattern is predicted that could raise the elevation of the creek to the work area, then activities must cease in the affected area.
 - c. Rock will be placed individually and not end dumped. Placement will be performed in the dry as much as possible, and from the top of the bank where possible.
 - d. When concrete is poured to construct the central bent, work must be conducted within a coffer dam (or similar structure) so that if the water level rises, the pH of the water is not affected through contact with “green” concrete.
2. To Implement Reasonable and Prudent Measure #2 (construction activities), above, the FHWA shall ensure that all erosion control and pollution control measures included in the June 2000, BA are included as terms and conditions of this consultation. Based on prior project evaluations, the NMFS requires FHWA to give particular attention to the following measures:
 - a. Vehicle maintenance, re-fueling of vehicles and storage of fuel shall be done at least

150 feet from the 2-year flood elevation or within an adequate fueling containment area.

- b. At the end of each work shift, vehicles shall be stored greater than 150 feet (horizontal distance) from the 2-year flood elevation, or in an area approved by the ODOT Engineer.
 - c. All erosion control devices will be inspected daily during project activities to ensure that they are working adequately. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.
 - d. If soil erosion and sediment resulting from construction activities are not effectively controlled, the ODOT Engineer will limit the amount of disturbed area to that which can be adequately controlled.
3. To Implement Reasonable and Prudent Measure #3 (critical habitat), above, the FHWA shall ensure that:
- a. If an access road is required, it must be constructed out of clean open rock on top of fabric so that all materials can be removed at the end of the project.
 - b. Bridge demolition must be done using appropriate containment systems, both over the water and two-year floodplain. The structure should be removed in as large pieces as possible. Pieces of the bridge will not be dropped into the water. Soils should not be disturbed during the demolition of the bridge, including the removal of the concrete from the floodplain. This will likely require some sort of barrier (e.g. plywood) over the soils.
 - c. Boundaries of the clearing limits will be flagged by the ODOT Project Inspector. Ground will not be disturbed beyond the flagged boundary.
 - d. Alteration of native vegetation will be minimized.
 - e. Riparian plantings will be completed as described in the June, 2000 biological assessment.
4. To Implement Reasonable and Prudent Measure #4 (monitoring), above, the FHWA shall ensure that:
- a. All significant riparian replant areas will be monitored for a minimum 3-year period to insure the following:
 - i. Finished grade slopes and elevations will perform the appropriate role for which

- they were designed.
- ii. Plantings are performing correctly and have an adequate success rate. An adequate success rate is 80% survival.
- b. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at another appropriate location will be done during the next available planting season.
 - c. By December 31 of each year, ODOT shall submit to NMFS a monitoring report that addresses the success of erosion control measures and of the plantings. At a minimum, the monitoring report must include photographs of the erosion control measures and plantings, with a short narrative that addresses riparian function. Monitoring reports will be submitted to:

Oregon Branch Chief
National Marine Fisheries Service
525 NE Oregon Street, #500
Portland, Oregon 97232-2737
 - d. If a dead, sick or injured steelhead is located, initial notification must be made to Nancy Munn, Ph.D., NMFS, telephone: (503) 231-6269. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured species or preservation of biological material from a dead animal, the finder has the responsibility to carry out instruction provided by Dr. Munn to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

IX. ESSENTIAL FISH HABITAT

Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for “Essential Fish Habitat” (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH. “EFH” means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” Magnuson-Stevens Act §3. The Pacific Fisheries Management Council (PFMC) has recommended an EFH designation for the Pacific salmon fishery that would include those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (*i.e.*, properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH, and it

does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

The consultation requirements of section 305(b) of the Magnuson-Stevens Act [16 U.S.C. 1855(b)] provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

Identification of Essential Fish Habitat

Designated salmon EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by PFMC (PFMC 1999). Chief Joseph Dam, Dworshak Dam, and the Hells Canyon Complex (Hells Canyon, Oxbow, and Brownlee Dams) are among the listed man-made barriers that represent the upstream extent of the Pacific salmon fishery EFH. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). In the estuarine and marine areas, proposed designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception (PFMC 1999).

Proposed Action

The proposed action is detailed above in Part II. The proposed action involves replacing the bridge at Butte Creek along Oregon Highway 211.

The proposed action area encompasses Butte Creek, Marion County, Oregon. Butte Creek is a tributary of the Pudding River, which flows into the Willamette River. These waters are part of the proposed designated EFH for chinook (*Onchorhynchus tshawytscha*) and for coho (*Onchorhynchus*

kisutch) salmon (PFMC 1999). A description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to these species' EFH from the above proposed FHWA activity is based on this information.

The objective of this EFH consultation is to determine whether the adoption of proposed conditions for replacement of the bridge funded by the FHWA in Butte Creek is likely to adversely affect EFH for the Pacific salmon fisheries.

Effects of the Proposed Action

As described above in Part V. Analysis of Effects, the replacement of the Butte Creek bridge is likely to adversely affect the distribution and abundance of juvenile salmonids. The proposed action will result in detrimental short- and long-term impacts although proposed plantings will improve site conditions over time as the plantings mature. In-water work may result in mortality or displacement of juvenile salmonids, increases in suspended sediments and turbidity; gravel compaction; loss of riparian vegetation; and increased bank erosion.

Conclusion

The NMFS believes that the proposed action may adversely affect proposed designated EFH for chinook or coho salmon.

EFH Conservation Recommendations

NMFS recommends that the Reasonable and Prudent Measures and the Terms and Conditions which implement them that are listed above in Part X. INCIDENTAL TAKE STATEMENT sections B and C above be adopted. Should these EFH conservation recommendations be adopted, potential adverse impacts to EFH would be minimized.

Statutory Requirements

The Magnuson-Stevens Act and Federal regulations (50 CFR Section 600.920) to implement the EFH provisions require Federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of receipt. Because the EFH designation for the Pacific salmon fishery has yet to be approved, this regulation does not apply until such time as the Secretary of Commerce approves it, at which time the 30 day period will commence. The final response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with the EFH Conservation Recommendations, an explanation of the reasons for not implementing them must be included.

Consultation Renewal

The FHWA must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920 [k]).

