



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
OSB1998-0929

September 8, 1998

Dave Reilly  
Federal Highway Administration  
The Equitable Center, Suite 100  
530 Center St. NE  
Salem, Oregon 97301

Re: Biological Opinion for the Deep Creek Bridge Repair,  
Clackamas Hwy.

Dear Mr. Reilly:

The National Marine Fisheries Service (NMFS) has enclosed the Biological Opinion (BO) to repair and widen the Deep Creek Bridge on Hwy. 224. This project is described in your Biological Assessment (BA) submitted with your request for consultation.

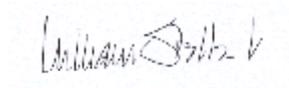
This opinion considers the Lower Columbia River steelhead (*Oncorhynchus mykiss*), and Lower Columbia River chinook salmon (*Oncorhynchus tshawytscha*) which occur in the proposed project area. The Lower Columbia River steelhead was listed as threatened under the ESA by the NMFS (March 19, 1998, 63 FR 13347). Critical habitat has not been proposed for the Lower Columbia River steelhead. The Lower Columbia River chinook salmon was proposed as threatened under the ESA by the NMFS (March 9, 1998, 63 FR 11482). Critical habitat has been proposed for the Lower Columbia River chinook salmon (March 9, 1998, 63 FR , 11482) and includes the current fresh water range within the Columbia River and tributaries including the Klaskanine, Clackamas, Sandy and Hood Rivers and Youngs Bay. This habitat includes the river bed, bank, and riparian zone.



This opinion constitutes formal consultation for the Lower Columbia River steelhead, and Lower Columbia River chinook salmon.

If you have any questions regarding this letter, please contact Jim Turner of my staff at (503) 231-6894.

Sincerely,

A handwritten signature in dark ink, appearing to read "William Stelle, Jr.", is centered on the page. The signature is written in a cursive style.

William Stelle, Jr.  
Regional Administrator

cc: Elton Chang - FHWA  
Randy Floyd - ODOT  
Alan Lively - ODOT  
Randy Reeve - ODFW

Endangered Species Act - Section 7  
Consultation

Biological & Conference Opinion

Deep Creek Bridge Repair, Clackamas Hwy.

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: September 8, 1998

Refer to: OSB1998-0929

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ATTACHMENT 1 Application of Endangered Species Act Standards to: Umpqua River Cutthroat Trout, Oregon Coast Coho Salmon, Southern Oregon/Northern California Coho Salmon, Oregon Coast Steelhead, Klamath Mountain Province Steelhead, Lower Columbia Steelhead, Chum Salmon, and Sea-Run Cutthroat Trout

ATTACHMENT 2 ODOT General Minimization/Avoidance Measures.

## I. Background

On December 17, 1998, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from Oregon Department of Transportation (ODOT) for Endangered Species Act (ESA) section 7 consultation for bridge repair within the Clackamas River basin. Additional information necessary for completing the consultation was provided on June 5, 1998. Oregon Department of Transportation (ODOT) is the lead agency and designated non Federal representative for transportation related actions in Oregon that are supported by funds from the Federal Highway Administration. This Biological Opinion is based on the information presented in the BA and the result of the consultation process.

ODOT has determined that the following species may occur within the project area (when the BA was first submitted the Lower Columbia River steelhead was proposed for listing. Since that time the steelhead were listed and the Lower Columbia River chinook salmon were proposed for listing and have been included in this opinion):

- C Lower Columbia River steelhead (*Oncorhynchus mykiss*); and
- C Lower Columbia River chinook salmon (*Oncorhynchus tshawytscha*).

ODOT is proposing to repair the Deep Creek Bridge on Clackamas Highway, Hwy. 224. This activity is necessary due to erosion and under cutting of bridge support piers which has resulted in the settling of the bridge increasing the potential for failure of the structure. These actions were determined to affect the indicated species. The effects determination is made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). ODOT determined that the proposed actions were likely to adversely affect the indicated species.

This BO reflects the results of the consultation process. This consultation process has involved 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 assessing alternative approaches for accessing the bridge footings and delivering rock riprap. It was determined that a temporary access road would be necessary due site constraints. The access road would need to be carefully constructed and removed because of the steep valley side slopes. Tree removal would be minimal and there would be no operation of equipment within the stream. ODOT suggested using a settling pond within the construction site to minimizing sediment discharge into Deep Creek. ODOT has proposed riparian habitat enhancement within the watershed at Eagle Creek as additional compensatory mitigation for this activity.

The objective of this biological opinion is to determine whether the action to repair and widen the Deep Creek Bridge on Hwy. 224 is likely to jeopardize the continued existence of the indicated species or destroy or adversely modify critical habitat.

## **II. Proposed Actions**

The proposal to repair the Deep Creek Bridge on Hwy. 224 will occur in Clackamas River basin. These actions include repairing the existing bridge structure by reinforcing and adding bridge supports. They are intended to minimize the likelihood of bridge failure and improve safety by realigning the bridge and the roadway.

The work consists of reconstructing bridge support bents and placing rip rap at the structure and along the bank. This involves using heavy equipment to construct an access road, divert the stream from the immediate work site, construct forms for concrete, and to place rock riprap.

Site specific actions:

### **Deep Creek Bridge Repair, Clackamas Basin**

Location - Clackamas Highway at Deep Creek.

The work will require constructing a temporary access road down the hill side slopes into the stream. The road will be approximately 45 meters long and zig zag down the slope. Care will be taken to protect the exposed surface by laying down gravel. Erosion protection screens and diversions will be in place. The stream will be diverted into a temporary culvert. The culvert will be placed on the stream bed and will conform to the natural stream gradient. The stream bed around the existing footing will be excavated and forms will be placed. Accumulated water within the excavation site will be pumped into a settling pond prior to its return to Deep Creek to reduce sediment discharge in to stream. Concrete will be poured into sealed forms. After curing, temporary pilings will be cut off at the footings and the forms will be removed. Rock riprap will be placed around the structure and along the bank to finish the work. Upon completion of the work the culvert will be removed and flow reestablished to the area.

### III. Biological Information and Critical Habitat

The listing status, biological information, and critical habitat elements or potential critical habitat for the indicated species are described in Table 1.

Species (Biological References)	Listing Status Reference	Critical Habitat Reference
Lower Columbia River steelhead (Busby et. al. 1995, Busby et. al. 1996)	The Lower Columbia River steelhead was listed as threatened under the ESA by the NMFS (March 19, 1998, 63 FR 13347).	Critical habitat has not been proposed for the Lower Columbia River steelhead.
Lower Columbia River chinook salmon (Healey 1991, Myers et. al. 1998)	The Lower Columbia River chinook salmon was proposed as threatened under the ESA by the NMFS (March 9, 1998, 63 FR 11482).	Critical habitat has been proposed for the Lower Columbia River chinook salmon (March 9, 1998, 63 FR , 11482) and includes the current fresh water range within the Columbia River and tributaries including the Klaskanine, Clackamas, Sandy and Hood Rivers and Youngs Bay. This habitat includes the river bed, bank, and riparian zone.

Table 1. References to Federal Register Notices containing additional information concerning listing status, biological information, and critical habitat designations for listed and proposed species considered in this biological opinion.

### 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). Attachment 1 describes how NMFS applies the ESA jeopardy standards to consultations on Federal actions. This application involves defining the biological requirements of the listed species; evaluating the relevance of the environmental baseline to the species' current status; determining the effects of the proposed or continuing action on listed species; determining whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages; determining whether the action will appreciably diminish the value of critical habitat, if designated, for both the survival and recovery of the species; and identifying reasonable and prudent alternatives to a proposed or continuing action that is likely to jeopardize the continued existence of the listed species.

#### A. *Biological Requirements*

For this consultation, NMFS finds that the biological requirements of the listed and proposed ESU's are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESU's. Individual environmental factors include

water quality, habitat access, physical habitat elements, and channel condition. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed and proposed ESU's (as referenced in Table 1).

## **B. Environmental Baseline**

The current range-wide status of the identified ESU's under the environmental baseline is referenced in Table 1. The identified actions will occur throughout some of the identified species range. The defined action areas for each proposed action is the area that is directly and indirectly affected. The direct affects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and other pollutant discharge, 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 include 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 by the watershed area commonly referred to as the 5th field HUC (Hydrologic Unit Code, a numeric hierarchical classification of water drainage basins developed by the US Geological Survey).

Deep Creek is in the Lower Clackamas watershed. This watershed includes Deep Creek and Clear Creek and various tributaries. The watershed is over 100,000 acres with Deep Creek draining approximately 40,000 acres. Baseline conditions of Deep Creek and the lower Clackamas River watershed indicate that some functional indicators relative to sediment input are at risk or not properly functioning (BA table 1.). There are other indications that high water temperature in portions of the watershed may pose a problem (DEQ 1996, DEQ 1998). Within Deep Creek temperature appears to be properly functioning (indicated in BA). Habitat degradation within the watershed remains of high concern (as referenced in table 1. ).

Based on the best available information on the current status of these ESU's range wide (as referenced in Table 1); the population status, trends, and genetics (Attachment 1); and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESU's within the action area are not currently being met. Improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of these species. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of anadromous salmonids

## V. Analysis of Effects

### A. Effects of Proposed Actions

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). This assessment method was designed for the purpose of providing adequate information for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected affect - restore, maintain, or degrade - on aquatic habitat factors in the project area.

For each individual action covered in this opinion, the effects on aquatic habitat factors and to species considered in this opinion can be limited by utilizing construction methods and approaches that are intended to minimize impacts. The effects of the proposed project have been evaluated based on the application of the *General Minimization and Avoidance Measures* (attachment 2.). Of particular importance are timing of actions to the preferred in-water work period (established by Oregon Department of Fish and Wildlife); implementing erosion control; limiting disturbance of riparian area, stream bank and bed; maintaining fish passage during construction; and minimizing direct discharge of sediments or pollutants into the stream.

For each of the project actions described below, the NMFS expect that the effects of the project actions will tend to maintain or restore each of the habitat elements over the long-term, greater than one year. In the short term temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term, site conditions will be restored and with some localized changes to stream habitat and hydrology is expected. The potential effects from the sum total of proposed actions are expected to restore properly functioning stream conditions on site and restore properly functioning conditions or not further degrade the environmental baseline within the watershed.

Specific effects:

#### **Deep Creek Bridge Repair-- Clackamas Basin**

This site can be characterized as a by moderate gradient stream partially constrained within steep valley side slopes, the stream bed is predominately gravel, the riparian habitat consists of intermix of deciduous and conifer forest. The Deep Creek drainage is approximately 40,000 acres. Properly functioning conditions will be maintained or restored by removing the temporary road and replanting the

site, and enhancing riparian habitat within the watershed. Modification of the in-stream habitat elements by introducing hard structures and narrowing the channel at the bridge. This is not expected to result in any significant change in quantity or quality of pool/riffle complex nor in spawning bed potential within the work site.

### ***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 the indicated species includes the stream, bottom and water, and adjacent riparian zone within 300 ft of ordinary high water within the defined geographic extent (as referenced Table 1.). For each of the proposed actions, NMFS expects that the effects of these actions will tend to maintain or restore properly functioning conditions in the watershed under current baseline conditions. The proposed actions will effect critical habitat. In the short term temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term loss of stream habitat; and localized changes to stream hydrology is expected. NMFS does not expect that these actions will diminish the value of the habitat for survival of the indicated species.

### ***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." For the purposes of this analysis, the general action areas are the watersheds containing the project. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. In addition, non-Federal actions that require authorization under section 10 of the ESA will be evaluated in section 7 consultations. Therefore, these actions are not considered cumulative to the proposed action.

A wide variety of actions occur within the watersheds defined within the BO. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and state actions will continue at similar intensities as in recent years

## **VI. Conclusion**

NMFS has determined based on the available information, that the proposed actions covered in this opinion are not likely to jeopardize the continued existence of Lower Columbia River steelhead or Lower Columbia River chinook salmon. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 1), when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline (described in Attachment 1), 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 degradation of anadromous salmonid habitat due to sediment impacts, in-water construction noise, and habitat displacement. These effects will be balanced in the long-term through the proposed mitigation. Direct mortality from this project is not expected to occur.

## **VIII. Conservation Recommendations**

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 the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. In addition to those general minimization and avoidance measures as described in the biological report, the NMFS recommends all existing open bridge drains (scuppers) that directly enter Deep Creek be plugged and surface water runoff be redirected to the ends of the bridge and dispersed over the hill slopes. Or that the scuppers be fitted with filters that are adequately maintained to treat the water before being discharged into the stream.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed species or their habitat, NMFS requests notification of the implementation of any conservation recommendations.

## **IX. 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).

## X. 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.

Busby, P., S. Grabowski, R. Iwamoto, C. Mahnken, G. Matthews, M. Schiewe, T. Wainwright, R. Waples, J. Williams, C. Wingert, and R. Reisenbichler. 1995. Review of the status of steelhead (*Oncorhynchus mykiss*) from Washington, Idaho, Oregon, and California under the U.S. Endangered Species Act. 102 p. plus 3 appendices.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27, 261p.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. ([www.deq.state.or.us/wq/303dlist/303dpage.htm](http://www.deq.state.or.us/wq/303dlist/303dpage.htm)).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. ([www.deq.state.or.us/wq/303dlist/303dpage.htm](http://www.deq.state.or.us/wq/303dlist/303dpage.htm)).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

Healey, M.C. 1991. Life history of chinook salmon (*Oncorhynchus tshawytscha*). Pages 311-393 In: Groot, C. and L. Margolis (eds.). 1991. Pacific salmon life histories. Vancouver, British Columbia: University of British Columbia Press.

Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-35, 443 p.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. ([rainbow.dfw.state.or.us/ftp/](http://rainbow.dfw.state.or.us/ftp/)).

## **XI. 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 Biological Opinion has more than a negligible likelihood of resulting in incidental take of Lower Columbia River steelhead, Lower Columbia River chinook salmon because of detrimental effects from increased sediment levels and the potential for direct incidental take during in-water work. 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 the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological 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 Biological Opinion.

**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.

1. Effective erosion control and revegetation actions be taken on site to minimize fine sediment input in the stream over the long term.

**C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, ODOT 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.a. The site will be inspected one year after the completion of the action to assess the results of erosion control measures and revegetation of access road, and a report documenting the conditions will be prepared and provided to NMFS for review.
- 1.b. Based on the results of the assessment and a determination that erosion control and/or revegetation of the access road and riparian habitat are not effective as compared to undisturbed adjacent areas, additional actions will be taken as necessary and in agreement with NMFS to rectify the situation.