



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, Washington 98115

July 7, 2005

Harry Barber, President
Tony Meyer, Program Coordinator
Lower Columbia Regional Fisheries Enhancement Group
12404 SE Evergreen Highway
Vancouver, Washington 98683

Re: Permit 1517

Dear Messrs Barber and Meyer:

Enclosed is the enhancement of survival Permit 1517, issued to the Lower Columbia Regional Fisheries Enhancement Group (LCFEG) under the authority of section 10(a)(1)(A) of the Endangered Species Act (ESA). At this date Permit 1517 covers take for Lower Columbia River (LCR) Chinook (*Oncorhynchus tshawytscha*) and LCR steelhead (*O. mykiss*). When LCR coho (*O. kisutch*) (which is currently proposed for listing under the ESA) becomes listed NMFS will send you an updated Permit 1517 which will include take for LCR coho in addition to LCR Chinook and LCR steelhead. The updated permit will then replace this permit.

The National Marine Fisheries Service (NMFS) requires that the LCFEG and any individuals acting under the authority of Permit 1517, review the permit prior to engaging in the enhancement activities and comply with the permit while engaging in such activities. Please sign and date the last page where marked and fax a copy of it (or mail a photocopy) to our office to the attention of Stephanie Ehinger. Our fax number is (360) 753-9517. *Please note that you are not authorized to conduct activities under Permit 1517 until our office receives a signed copy of the signature page.*

Your attention is directed to the annual reporting requirements and to the attached annual report form that must be submitted by December 31 each year. Permit 1517 is subject to annual authorization based on receipt of your annual report (including take) and your compliance with the terms and conditions of the permit. Permit 1517 expires on July 10, 2010.

We appreciate the LCFEG's efforts to enhance the habitat conditions for listed salmon in Southwest Washington. If you have any questions concerning the permit, please contact Stephanie Ehinger at (360) 534-9341 or via electronic mail at stephanie.ehinger@noaa.gov.

Sincerely,

Michael R. Course

D. Robert Lohn
Regional Administrator

Enclosure



SECTION 10(a)(1)(A) PERMIT FOR ENHANCEMENT OF SURVIVAL ACTIVITIES

Permit Number: 1517
Permit Type: Enhancement of Survival
Expiration Date: July 10, 2010
Annual Report Due: December 31 each year

Permit Holder:

Lower Columbia Regional Fisheries Enhancement Group
President: Harry Barber
Program Coordinator: Tony Meyer
12404 SE Evergreen Highway,
Vancouver, WA 98683

Contact:

Tony Meyer
Ph: 360-882-6671
cwfish@comcast.net

Board Members

Sam Giese - Engineer
Jon Rerecich - Biologist
Darrin Houpt
Tammy Mackey - Biologist
Ed McMillan - Engineer

Authorization:

The LCFEG is hereby authorized to undertake the enhancement projects and activities described in the LCFEG's permit application and in section A below, subject to the provisions of Section 10(a)(1)(A) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. Sections 1531-1543), NMFS regulations governing ESA-listed species permits (50 CFR Parts 222-226), and the conditions hereinafter set forth. The permit is valid for five years until July 10, 2010 subject to the annual reporting requirements described herein.

A. Authorized Activities

Projects authorized under this permit shall fall within the eight categories of activities described in A.1 below. Projects may take place in Southwest Washington in Water Resource Inventory Areas (WRIA) 24 to 28 excluding the estuarine areas of WRIA 24 and 25. The LCFEG shall apply the conservation measures listed in A.2 which are designed to minimize take of listed salmon.

A.1 Activities

1. Riparian Enhancement

These activities would include fencing, planting native vegetation, removing invasive vegetation and non-native plant species. The LCFEG typically does riparian restoration as needed to re-vegetate areas disturbed by equipment access to the stream to perform other work functions. They recently have been given access to a ten person corrections crew, two days a week and anticipate future stand alone projects that emphasize riparian restoration as the preferred treatment in otherwise functional stream reaches. (WRIA 24-28)

2. Fish Passage Restoration

This category would cover all projects related to restoring fish passage to historically accessible habitats as a result of man-made or human caused disturbance. Usually, the LCFEG restores fish passage on small tributary streams. Work would include the following treatments based on site conditions:

- 2.1. Culvert replacement, culvert removal, culvert retrofit, bridge removal/placement, fish ladders, and step-pool transitions. (Bates et al., 2003 and NMFS, 1995) A maximum of 30 projects are proposed for the next five years. Twenty are proposed to be done when little water is flowing in the channel. For these projects, the LCFEG projects a maximum of one hour of short-term sediment impact per project. A maximum of 10 projects will involve worksite isolation and fish rescue. These can include electroshocking. For these 10 projects, the LCFEG also expects sediment release in the form of a pulse when the channel is returned to its stream course.
- 2.2. In cases where small streams are blocked by beaver dams inside otherwise functioning culverts, circumstances require creative solutions such as constructing fish ladders or other forms of “beaver deceivers” that maintain stable ponded habitat and upstream migration (Slaney and Zaldokas, 1997). The impact for this type of work per project would be a maximum of 200 square meters for each of the 10 projects. No complete dewatering of a beaver pond or stream cross section is proposed. A cofferdam will be used as a minimization measure for worksite isolation possibly coupled with electroshocking if fish could be present.
- 2.3. In situations where fish passage has been lost in more than three out of five years due to un-natural logjams resulting from past timber harvest and fire suppression practices, the LCFEG would first confirm loss of fish passage, consult with the Washington Department of Fish and Wildlife (WDFW), and then identify a specific treatment that would maintain the value of the logjam while allowing fish passage. Methods to provide fish passage may include notching key members of a logjam and relocating some Large Woody Debris (LWD) to other locations in the watershed. Proposed locations for this action are Bluebird and Silver Creeks in WRIA 28. (Wade, 2001)
- 2.4. In situations where tributaries and adjacent floodplain habitat has become disconnected as a result of human disturbance, treatments using rock, wood, or other natural materials would be used to aggrade sediment or back up stream water to restore connectivity. Examples of locations where this specific problem for fish passage exists include Dougan, Meander, Reeder, and Prospector Creeks in the Washougal watershed

in WRIA 28. (Wade, 2001) All of these locations allow for work in the wet without significant sedimentation impact due to bedrock or coarse substrate.

3. Placement of In-Stream Habitat Forming Structures (Large Woody Debris and Boulders

This enhancement activity would be employed when site conditions dictate the treatments described below. Examples of conceptual designs can be viewed at Slaney and Zaldokas (1997), ISPG (2002), and Rosgen (1996). An estimated 300 structures will be constructed in all WRIsAs with a maximum of 75 involving work site isolation, if necessary. Work site isolations would be designed site specifically and could include coffer dams and sand bags. Isolation of work area would be used to facilitate wood and rock placement while minimizing turbidity. Total stream diversion would not be necessary. The scenario resulting in the largest impact would involve moving the thalweg during construction. As for all projects, the LCFEG will work closely with the WDFW to minimize impacts.

- 3.1. Gravel placement associated with structure placement: For work in gravel poor areas, a maximum of 50 cubic yards of clean, washed, 4-inch gravel can be imported and placed upstream of the structure. When placing LWD on the outside of meander bends (expected for a maximum of 30 structures), bar material can be removed from the inside of the meander bend and relocated immediately up and/or downstream of the new structure without use of a coffer dam. This would speed up the expected realignment of the thalweg and resulting scour and also protect the new structure. During the summer low flow work window, most of the gravel bar is dry. A maximum of five scoops are expected to be removed with water contact. Piling up the gravel near the structure would result in only the first five scoops having water contact. The sand and gravel removal and sand and gravel placement would result in a total maximum increase in turbidity of approximately one hour. Turbidity levels would be sublethal because of work with coarse material and short duration.
- 3.2. Logjams and beaver dams are rare to non-existent in the majority of stream reaches the LCFEG typically works in, and the ability of the watershed to retain organic material is subsequently diminished. The LCFEG understands storage of organic material is critically important to restore aquatic productivity in small to medium-sized streams. There are several ways, such as logjams and root-wad clusters, to capture and store organic material. One way to capture and store organic material is to construct “large woody debris collectors” specifically designed to capture and retain organic material. These engineered logjams will also store/sort sediment and increase usable pools and spawning habitats. If necessary to ensure stability, LWD may be anchored with rocks, stakes, cables, or be partially buried in the bank.
- 3.3. Complexity is needed to enhance rearing and spawning conditions for salmonids. The LCFEG proposes to add appropriately sized LWD and/or boulder clusters where needed, using tracked excavator, high line, helicopter or direct falling of trees into streams depending on site conditions. Trees will only be felled from the riparian zone into the stream if the riparian zone is intact, cover will not be decreased below 70 percent, elevated temperatures are not a problem in the stream, and hydrology, riparian and bank conditions are such that no avulsion will occur. To ensure stability

and long-term function, it may be necessary to bury logs into stream banks, cable trees to bedrock/boulder anchors, increase mass of LWD by bolting and/or cabling logs together, or use long logs that will wedge against streamside trees. Boulders placed on bedrock may require pinning to ensure long-term stability (Slaney and Zaldokas, 1997; Wade, 2000).

- 3.4. The logjams will be built by a contracted crew using hand-operated, electric or battery powered, or pneumatic drills run by an air compressor. The portable compressor will be moved by the crew in a wheel barrow or push cart along nearby roads or in bedrock reaches. A secondary option using a track hoe may be utilized to haul the equipment to areas where needed. Gas powered equipment such as Hilti drills and chainsaw winches, will be used if electric or battery operated tools are not available. Stainless steel cable will be used to attach the logs to eyebolts drilled and anchored or epoxy glued into the bedrock stream bed using the Hilti method (See pp. 9-11 to 9-12 Slaney and Zaldokas, 1997). The epoxy glue is pre-mixed in standard glass vials that are placed in the bottom of the drilled hole. The eyebolt is inserted in the hole and a hammer is used to drive the eyebolt down onto the glass tube containing the epoxy, breaking and mixing the glue in one motion.

The LCFEG will minimize the downstream impacts from sedimentation by limiting excavation in the wetted channel width to no more than five minutes at each key piece location or a cumulative total of two hours for the entire logjam project.

- 3.5. To restore floodplain connections to side channels and tributary habitats, restore low flow channel formation, improve riffle-pool and width-depth ratios, increase sub-surface (hyporeic) flow, reduce water temperatures, increase macro-invertebrate habitat, and increase formation of active channel riparian plant growth in stable gravel bars, the following structures are proposed to be used: boulder clusters, individual boulders, log/pile cribs, cross-vanes, j-hooks, w-vanes, and engineered riffle construction (Slaney and Zaldokas, 1997; and Rosgen, 1996; and Rosgen 2001). Example design drawings for log/pile cribs can be found in Integrated Streambank Protection Guidelines (ISPG 2002). This application has huge potential for restoring channels incised to bedrock from past splash dams, log drives and gravel mining that resulted in loss of bedload in many local streams, especially the Washougal and Coweeman watersheds. Application will be restricted to bedrock, incised or sediment poor channels such as WRIA 28, the Washougal River.
- 3.6. The LCFEG proposes to drive piles to anchor logjams and LWD. Untreated wood or steel piles (12 inch or smaller diameter for steel) will be driven from a barge or from shore at the downstream sections of watersheds to create an anchor point for large wood structures. This is necessary due to the habitat conditions and the seasonal flow regime at these locations. A maximum of 200 steel or wood piles will be driven with a vibratory hammer where possible. An impact hammer may be utilized in areas of dense substrate. If an impact hammer is used for steel piles (for the entire project or at the end of the project to proof the pile) a bubble curtain will be used as a barrier to dissipate the high underwater shock waves. Also, a six inch or thicker wood block will be placed between the pile and the impact hammer to reduce the impact sound pressure as well.

4. Reconnecting, Enhancement, and Creation of Off-channel Rearing Habitat

This category of enhancement activity includes excavation or dredging of historic, existing, and potential off-channel or wetland rearing habitat to reconnect it to the mainstem. Some small scale maintenance will be required the following year after construction to ensure function and longevity in a dynamic stream channel. The rearing areas are typically protected from floods and serve as critically important winter and summer refuge areas. The LCFEG will not excavate in existing high quality habitats like off-channel areas that provide winter rearing and thermal refuges. Sediment impacts are expected to be minimal, occurring during the final scoops to make the connection. The LCFEG has experience in creating this type of habitat in the Washougal watershed, which has extremely limited off-channel habitat due to the high rate of channel incision throughout the watershed. All ponded habitat created by the LCFEG are filled with woody debris to facilitate organic decomposition and as cover for juvenile salmonids.

5. Enhancement and Creation of Spawning Habitats and Sediment Conditions

5.1. This activity includes placing appropriately sized washed spawning gravels in small, sediment poor and often incised stream channels following the addition of wood or rock structures intended to hold the gravel in place. Where problems with high fine sediment input exist, the LCFEG will address the source of the fine sedimentation problem prior to placing spawning gravel.

5.2. Place up to 1,000 cubic yards per year of spawning gravel below the dams on Wildboy and Lacamas Creek in the Washougal watershed. The intent is to let high water events move the material downstream where it would be collected, sorted and stored based on the stream channel hydraulics. The gravel to be placed will be matched in size and form using a historic or close by reference and will be of sufficient sizes to meet species requirements (Slaney and Zaldokas, 1997; Wade, 2000; Wade 2001). Applies to WRAs 26, 27, and 28.

6. Bank Stabilization using bio-engineering techniques

In WRIA 24 to 28, the LCFEG proposes to build bank stabilization using bio-engineering (deformable) techniques that incorporate elements of LWD and anchor rock placement to address near bank shear stress. The intent is to reduce/eliminate stream bank erosion and to stabilize the stream banks while riparian treatments mature. Work will be conducted in areas where there is no evidence of recent spawning. A tracked excavator will be used for placement of rock and wood. Work would occur in areas where access is easy and minimal disturbance of riparian habitat would occur. In-water work would be limited to areas with low flow near the edges of the wetted channel on gravel bars and solid banks. No methods with hard rock (bank hardening) that prevent meandering will be used such as riprap and toe rock. These structures are intended to enhance and provide habitat as well as survival of listed species. The benefits should be felt throughout the seasonal variations in the river systems where they are constructed. Technical expertise for the design of these structures will come from the consultants listed earlier. The LCFEG staff and several volunteers have

also received training by the WDFW engineers on how to use the ISPG manual (Slaney and Zaldokas, 1997; ISPG 2002)

7. Nutrient Enhancement

The LCFEG currently implements an aggressive salmon carcass placement program (16,000 carcasses, Washougal watershed 2002/ 03) designed to enhance aquatic productivity. This project will evolve over time to possibly include in-organic forms of nutrient additions (fish analogues) when or where salmon carcasses are unavailable. Additions of in-organic nutrients would be administered by US Geological Service through a separate permitting process (Slaney and Zaldokas, 1997; Washougal/ Lewis River Nutrient Assessment project <http://www.newsdata.com/enernet/fishletter/fishltr160.html#5>).

8. Placement of Engineered Rock Structures (J-vanes, W-vanes, and Cross Vanes)

These structures would be placed to reduce near-bank shear stress and to create desired habitat features such as pools and riffles where adult and juvenile salmonids can spawn, rear, and evade predation. These engineered structures require precise design and placement in order to work effectively and remain durable (Rosgen, 2001). A field supervisor or contractor with experience installing instream Rosgen structures will be on site during every phase of the instream construction. Techniques and training include that provided by D. Rosgen (1996 and 2001) and Southerland (2004).

8.1. A maximum of 30 J-vane and 30 Cross vane structures will be placed in the next five years in stream reaches where large wood cannot be placed due to stream geomorphic conditions and/or recreational uses such as boating and kayaking. Generally, mainstem work will be performed in the wet with a maximum of six hours of in-water work per Cross vane or J-vane structure. This work has the potential to release sediment into the stream with a maximum 20 meters downstream effect.

8.2. Work for 50 structures is expected to result in low level sediment impacts, because work would be performed in gravel based areas like the lower Washougal, lower Grays River, lower Kalama, lower Cowlitz, lower Elochoman, and lower Lewis. At these locations, generally water temperatures and existing habitat is severely degraded. Site selection will be based on stream plan, profile, dimension data, and habitat conditions. Pre-project and during construction activities will employ standard techniques to avoid and/or reduce “take” to listed fish.

8.3. The LCFEG expects to install 10 projects in locations with finer substrate. Thus, work would be performed in the dry and the flow would be diverted into a side channel. Sand bags or culverts may be utilized to reactivate existing side channels or small streams and work will be performed in the dry if possible.

A.2 Conservation Measures

The LCFEG shall ensure that the following measures are implemented for each project:

1. A spill prevention and control plan that will include the appropriate agency spill response notification information will be developed prior to beginning of work. At least one employee knowledgeable of the plan will be on-site at all times when work is being performed.
2. The riparian zone will be protected to the maximum extent possible.
3. Within seven calendar days of project completion, any disturbed bank and riparian areas will be protected using vegetation or other erosion control measures as appropriate.
4. All organic material that has to be cleared for access will remain on site.
5. If any adult listed fish are spawning in or near a project area, the fish will not be disturbed and no construction activities will take place. The project will be modified or delayed to avoid disturbing spawners.
6. Electrofishing is not done in the vicinity of redds or spawning adults.
7. Impact from in-water work will be minimized by working in the summer low flow periods as determined by the WDFW, except for the specific projects described below. Dates may be different for an individual project if stream conditions (run timing, flow, and temperature) warrant it.
The following enhancement activities can be implemented outside the normal work windows: (1) building logjams using hand labor/tools in small streams; (2) placing boulders, boulder clusters and logs using tracked excavators.
Work outside of the regular fish windows may be performed only:
 - 7.1. If no increased risk to salmonids compared to working within WDFW's regular fish window would be expected, and after coordination with WDFW and individual notification of NMFS.
 - 7.2. If the applicant can use tracked equipment on gravel bars or bedrock platforms that can be readily accessed from existing access points such as boat launches. There shall be no excavation involved. This work may include the placement of LWD or rock structures in less than one foot of water outside of the thalweg. The rock structures may be in the form of boulder clusters or ballast for LWD.
 - 7.3. The applicant shall not excavate except in dry channels to place logs or boulders. A typical structure for this application would be a large woody debris collector that collects debris only in floods.

- 7.4. Handheld tools only shall be used in tributaries. Heavy tracked equipment can only be used on dry areas in the lower mainstem rivers on cobble or bedrock with existing access or on bedrock platforms.
- 7.5. Construction and/or effectiveness monitoring shall be conducted on every project.
- 7.6. Historic and current site specific information for adult and juvenile fish usage in the work areas shall be researched in an effort to avoid contact with fish and habitat that is in use during a work window extension. Observations will be made for rainfall and river flow conditions prior to and following the normal in-stream work window. Information will be acquired through spawning/habitat surveys, information on local run timing, available Geographic Information System data, observations by LCFEG, project managers, local agency, and local fish conservation groups, as well as by the crew during the work period.
8. Whenever excavation is needed, e.g., for creating side channel habitat, the extent of earth movement will be kept to a minimum.
9. When heavy equipment enters or crosses a stream impacts are minimized by driving on logs or other pressure distributing devices in soft bottom streams, or crossing on coarse substrate or bedrock.
10. Removal of old culverts and bridges, and placement of fish passage structures, LWD, and instream habitat structures can be performed in the dry or wet depending on scope of work, site, and hydrologic conditions. In general, in-water work may be performed if average water depth is less than six inches and maximum velocity is less than one foot per second and substrate is coarse. If any one of those three conditions is not met, work generally will be performed in the dry after diverting the stream around the work site. Work may be performed in the wet at flows greater than one foot per second in sand or coarser bottom streams if in-water work does not exceed one hour of operation for the entire project. Under these conditions, the impact from the construction-related sedimentation is considered to be less than the impact that would result from diverting the stream.
11. The following measures will be taken to further minimize the risk of take to salmonids when working in the wet channel: First, set upstream block net, then make at least three downstream passes through the work area to move rearing juveniles downstream. No downstream net will be set as it is expected that juveniles that were not hazed out successfully will move temporarily downstream to avoid project generated turbidity.
12. The following measures will be taken to further minimize the risk of take to salmonids when working with a bypass to temporarily isolate the work area from stream flow:
 - 12.1. If fish could be present, they will be removed from work area prior to start of construction by (a) placing an upstream block net; (b) making at least three

downstream passes through the work area to herd juveniles downstream; and (c) setting a downstream block net.

12.2. If overhanging banks, or loose gravel create ample hiding spaces for juvenile salmonids, electroshocking will be used after herding fish downstream to capture and release juvenile salmonids trapped in the work area. For electroshocking, the applicant will follow the NMFS electroshocking guidelines. (NMFS 2000)

12.3. A sandbag revetment or similar device will be installed at the bypass inlet to divert entire flow through the bypass. A second sandbag revetment or similar device will be installed upstream of the bypass outlet to prevent backwater from entering the work area. While the site is slowly being de-watered and after water has been diverted, juvenile fish that were not eliminated by the seining and successive electroshocking, will be captured with dip nets and transferred to free-flowing water downstream of the project site.

12.4. When bypass pumps are used for site de-watering, pump intakes will be screened according to NMFS screening criteria (NMFS 1996). Temporary bypasses will be sized large enough to accommodate the predicted peak flow rate during construction. Dissipation of flow at the outfall of the bypass system (e.g., splash protection, sediment traps) will be installed to diffuse the erosive energy of the flow.

13. If pile driving steel piles with an impact hammer is necessary a bubble curtain will be used as a barrier to dissipate the high underwater shock waves. Also, a six inch or thicker wood block will be placed between the steel pile and the impact hammer to reduce the impact sound pressure. The size of the steel piles will not exceed 12-inch in diameter. Untreated wood piles which do not necessitate a bubble curtain will be used preferably when possible.

14. Applies to placement of engineered rock structures: Where appropriate, material excavated from the streambed for footer rocks will be incorporated into adjacent project components. If excavated material is not appropriate for inclusion into another adjacent structure, it will be removed and disposed of outside of the geomorphic floodplain;

B. Authorized Take Levels

The LCFEG is authorized to take Lower Columbia River (LCR) steelhead, LCR coho¹, and LCR Chinook associated with the enhancement activities in Southwest Washington, Water Resource

¹ LCR coho was proposed for listing on June 28, 2005 (70 FR 37160). The final rule, and thus take prohibition, for coho pursuant section nine of the ESA, will be effective on August 29, 2005. Take for coho authorized by this permit will become effective on August 29, 2005.

Inventory Area 24 to 28, described in section A above. Take described below is subject to NMFS' annual authorization process during the period that this permit is valid.

Take is authorized for the entire five years the permit covers rather than on an annual basis. Depending on the types of projects constructed in any one year annual take may vary considerably.

Take is likely to occur as a result of displacement, sedimentation, capture, handling, and electrofishing. Depending on the activity lethal and non-lethal take is expected. The table below quantifies authorized take.

ESU/Species	Life Stage	Take Activity	Overall Take	Unintentional Mortality
LCR Steelhead	Juvenile	D/S/E/C/H/R	6150	2805
LCR Chinook	Juvenile	D/S/E/C/H/R	1190	533
LCR Coho	Juvenile	D/S/E/C/H/R	9840	4488

(D=Displacement, S=Sedimentation, E=Electroshocking, C=Capture, H=Handle, R=Release)

C. General Permit Terms and Conditions

Permit Holder means the LCFEG as well as any employees, agents, contractors or representatives of the LCFEG undertaking projects under this permit.

1. The permit holder must ensure that listed species are taken only at the levels, by the means, in the areas, for the purposes stated in the permit application, and according to the terms and conditions in this permit.
2. The permit holder must not intentionally kill or cause to be killed any listed species.
3. The permit holder must handle listed fish with extreme care and keep them in cold water to the maximum extent possible during sampling and processing procedures. When fish are transferred or held, a healthy environment must be provided; e.g., the holding units must contain adequate amounts of well-circulated water. When using gear that captures a mix of species, the permit holder must process listed fish first to minimize handling stress.
4. The permit holder must exercise care during any spawning ground surveys to avoid disturbing listed adult salmonids when they are spawning. The permit holder must avoid walking in salmon streams whenever possible, especially

where listed salmonids are likely to spawn. Visual observation must be used instead of intrusive sampling methods, especially when just determining presence of anadromous fish.

5. The permit holder using backpack electrofishing equipment for fish removal must comply with NOAA Fisheries' Backpack Electrofishing Guidelines (June 2000) available at <http://www.nwr.noaa.gov/1salmon/salmesa/4ddocs/final4d/electro2000.pdf>.
6. The permit holder must notify NMFS as soon as possible but no later than 2 days after any authorized level of take is exceeded or if such an event is likely. The permit holder must submit a written report detailing why the authorized take level was exceeded or is likely to be exceeded.
7. The person(s) actually doing the enhancement project must have a copy of this permit on hand while conducting the authorized enhancement activities.
8. The permit holder must allow any NMFS employee or representative to accompany field personnel while they conduct the authorized enhancement activities.
9. The permit holder must allow any NMFS employee or representative to inspect any records or facilities related to the authorized enhancement activities.
10. The permit holder may not transfer or assign this permit to any other person as defined in Section 3(12) of the ESA. This permit ceases to be in effect if transferred or assigned to any other person without NMFS' authorization.
11. NMFS may amend the provisions of this permit after giving the permit holder reasonable notice of the amendment.
12. The permit holder must obtain all other Federal, state, and local permits/authorizations needed for the enhancement activities.
13. On or before December 31 of every year, the permit holder must submit to NMFS an annual report in the prescribed form (see attached annual reporting form) describing the enhancement activities, the number of listed fish taken and the location, the type of take, the take dates, the sediment monitoring data, and the longitudinal profiles (in years applicable). Falsifying annual reports or permit records is a violation of this permit.
14. A permit holder who violates any term or condition of this permit will be subject to any and all penalties provided by the ESA. NMFS may revoke this permit if

the authorized activities are not conducted in compliance with the permit and the requirements of the ESA or if NMFS determines that its ESA section 10(d) findings are no longer valid.

D. Penalties and Permit Sanctions

1. Any person who violates any provision of this permit is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the ESA and 15 CFR part 904 [Civil Procedures].
2. All permits are subject to suspension, revocation, modification, and denial in accordance with the provisions of subpart D [Permit Sanctions and Denials] of 15 CFR part 904.

E. References

- Bates, K. et al. 2003. Design of Road Culverts for Fish Passage. Washington Dept. of Fish and Wildlife. Olympia, Washington.
- ISPG. Integrated Streambank Protection Guidelines. 2002. Washington State Aquatic Habitat Guidelines Program. Washington Department of Fish and Wildlife. Olympia, Washington. <http://wdfw.wa.gov/hab/ahg/ispgdoc.htm>
- National Marine Fisheries Service. 1995. Anadromous Salmonid Passage Facility Guidelines and Criteria (draft document). NMFS. Northwest Region. Portland, Oregon http://www.nwr.noaa.gov/1hydrop/hydroweb/docs/release_draft.pdf
- NMFS (National Marine Fisheries Service). 1996. JUVENILE FISH SCREEN CRITERIA FOR PUMP INTAKES. <http://www.nwr.noaa.gov/1hydrop/pumpcrit1.htm>
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- Rosgen, D.L. Applied River Morphology. Minneapolis: Printed Media Companies, 1996. <http://www.wildlandhydrology.com>
- Rosgen, D.L. 2001. The Cross-Vane, W-Weir and J-Hook Vane Structures. Their Description, Design and Application for Stream Restoration and River Restoration. Proceedings of ASCE 2001. Wetland and River Restoration Conference. Reno: ASCE, 2001. Document available for download at www.wildlandhydrology.com

- Southerland, B. 1999. Level II Applications in Fluvial Geomorphology, USDA-NRCS. Spokane Technical Center. Spokane, WA.
- Slaney, P.A. and D. Zaldokas. 1997. Fish Habitat Rehabilitation Procedures. Watershed Restoration Technical Circular No. 9. Watershed Restoration Program. Vancouver, BC. http://srmwww.gov.bc.ca/frco/bookshop/docs/wrtc_9.pdf
- Wade, Gary. 2000. Salmon and Steelhead Habitat Limiting Factors Analysis. Water Resource Inventory Reports WRIA 24, 26, 27. Washington Conservation Commission. Olympia, Washington.
- Wade, Gary. March 2001. Salmon and Steelhead Habitat Limiting Factors. Water Resource Inventory Report - WRIA 28. Washington State Conservation Commission.

f. / Michael R Couse

D. Robert Lohn
Regional Administrator
Northwest Region, NOAA Fisheries

7/7/05

Date:

/s/

Harry Barber
President, LCFEG

7/12/05

Date:

Tony Meyer
Program Coordinator, LCFEG

7/12/05

Date:

cc: David Martin, US COE, Regulatory Project Manager, Southwest WA Field Office,
2108 Grand Boulevard, Vancouver, WA, 98661-4624