December 15, 2016

Kim Kratz, Assistant Regional Administrator
NOAA Fisheries Service
c/o Matthew Longenbaugh
510 Desmond Drive SE, Suite 103
Lacey, WA 98503

Eric Rickerson, State Supervisor
Washington Fish and Wildlife Office
U.S. Fish & Wildlife Service
510 Desmond Drive SE, Suite 102
Lacey, WA 98503

Subject: 2016 Forest Practices HCP Annual Report, Incidental Take Permits 1573 (NOAA) and TE 121202-0 (USFWS)

Dear Assistant Regional Administrator Kratz and State Supervisor Rickerson:

Enclosed, please find the 2016 Annual Report for the *Forest Practices Habitat Conservation Plan* (Forest Practices HCP). The annual report covers the period from July 2015 through June 2016. This report fulfills the State's obligation to "submit periodic reports to the federal Services describing actions taken by the State to implement the Forest Practices HCP" per Section 9.1 of the Implementing Agreement.

A few highlights from the report include:

Forest Practices Board (Board)

- The Board directed the Timber Fish and Wildlife Policy Committee to bring forward recommendations for inclusion of a permanent water typing rule and associated guidance, initiation of additional research, and training needs. The recommendations are due to the Board at their November 2016 meeting.

Compliance Monitoring Program (CMP)

- The recently completed 2014-2015 CMP report indicates results of greater than or equal to 90 percent compliance on all prescriptions.
- An ongoing trend analysis process was incorporated for the first time in the 2014-2015 report to discern patterns of changes in compliance rates measured over time.

Family Forest Fish Passage Program (FFFPP)

- FFFPP completed the removal of 20 fish passage barrier projects, opening up 44 miles of upstream fish habitat. Since the beginning of the program in 2003, 413 barriers to fish passage have been removed, opening up approximately 947 miles of fish habitat.

Road Maintenance and Abandonment Plans

- Since 2001, 25,589 miles of primarily industrial landowner forest roads have been improved to meet state forest practices standards.
- Roughly 83 percent of fish passage barriers (6,086) on large forest landowner forest lands have been eliminated, opening up approximately 3,507 miles of fish habitat.

There are many other accomplishments described in the 2016 Forest Practices HCP Annual Report. The report can be found on the Washington State Department of Natural Resources website at http://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-habitat-conservation-plan. If you have any questions, please feel free to contact Charlene Rodgers, FPHCP Administrator, at 360-902-1409 or charlene.rodgers@dnr.wa.gov.

The State looks forward to a strong, continuing partnership with NOAA National Marine Fisheries Service and the U.S. Fish and Wildlife Service to conserve federally listed aquatic species and their habitats on Washington's private and state-owned forest lands.

I certify that, to the best of my knowledge, after appropriate inquiries, the information submitted is true, accurate and complete.

Sincerely,

Peter Goldmark
Commissioner of Public Lands

c: The Honorable Jay Inslee, Washington State Governor
Washington State Forest Practices Board
James Unsworth, Director, Washington State Department of Fish and Wildlife
Maia Bellon, Director, Washington State Department of Ecology

Forest Practices Habitat Conservation Plan

July 1, 2015- June 30, 2016

Annual Report

Washington State Department of Natural Resources
Forest Practices Program, Forest Practices Division
Charlene Rodgers

Acknowledgements

On behalf of Washington State, this report was prepared by the Washington State Department of Natural Resources, Peter Goldmark, Commissioner of Public Lands.
2016

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Successful implementation of the Forest Practices Habitat Conservation Plan involves the efforts of all of our partners in resource protection.
Washington Department of Fish and Wildlife
Washington Department of Ecology
Governor's Salmon Recovery Office
Recreation and Conservation Office
Washington Forest Protection Association
Washington Farm Forestry Association
Conservation Caucus
Tribal Governments
Northwest Indian Fisheries Commission
Upper Columbia United Tribes
US Fish and Wildlife Service
NOAA Fisheries
US Environmental Protection Agency
Washington State Association of Counties

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Chapter Title

Executive Summary

In 2006, Washington State completed the Forest Practices Habitat Conservation Plan (Forest Practices HCP) (DNR 2005) with the goal of obtaining Incidental Take Permits from the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) (collectively, the Services). Implementation of the Forest Practices HCP protects public resources including aquatic and riparian-dependent species. The Forest Practices HCP covers more than 9 million acres of non-federal and non-tribal forestlands. This multi-stakeholder effort addressed the habitat needs of all covered aquatic species, including certain fish species that are federally designated as 'threatened' or 'endangered'. In 2006, the Services approved Washington's Forest Practices HCP and under the authority of the Endangered Species Act, the Services issued Incidental Take Permits to Washington State. The implementation of the Forest Practices HCP is a partnership between the Services and Washington State.

As a part of the Forest Practices HCP implementing agreement, the State submits to the Services an annual report describing implementation activities. This year's annual report covers the period from July 1, 2015, through June 30, 2016.

July 2015 – June 2016 Activities and Accomplishments

General

During the reporting period, the Board, Board staff and Timber, Fish, and Wildlife (TFW) partners considered focusing on development of a permanent water typing rule as described in the forest practices rules. The Board directed the TFW Policy Committee to bring recommendations for a permanent water typing rule, associated guidance, additional research, and training needs to the Board's November 2016 meeting. To accomplish this the Board accepted the Type F matrix that was prepared by TFW Policy Committee. There were four primary elements of the matrix: electrofishing and development of "best practices" recommendations for protocol survey; criteria for physical attributes of a Type F water; off-channel habitat; and potential improvements to the water typing model through a pilot study running the model using LiDAR. As of the end of this reporting period, neither water-typing recommendations, nor changes had been agreed to amongst the TFW Policy Committee voting members.

Forest Practices Board

In addition to the efforts toward a permanent water typing rule, the Board approved revisions to Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms* to include:

- The revisions included a description and delineation of groundwater recharge areas for glacial deep-seated landslides.
- The revisions included a way to assess the delivery potential from shallow rapid landforms.
- The revisions included information regarding how LiDAR can be used for identifying unstable features and assessing past landslide deposits for compound deep-seated landslides.

Road Maintenance and Abandonment Planning (RMAP) for Large Forest Landowners

- In calendar year 2015, 1,307 miles of forest road were improved and 356 fish passage barriers removed.
- Since 2001, 25,589 miles of forest road have been improved to meet state forest practices standards and 6,086 fish passage barriers – approximately 83 percent of those identified – have been eliminated, opening up 3,507 miles of fish habitat.

Compliance Monitoring

- The 2014-2015 Biennial Compliance Monitoring report was written and will likely be published spring of 2017.
- The Compliance Monitoring Program submitted the 2014-2015 biennial report, as well as current sampling and analytical methodology for Independent Study Peer Review with the goal of strengthening the overall statistical validity of the methodology and results and obtaining an independent review of the current methods and analytical procedures.
- The Compliance Monitoring Program incorporated an ongoing trend analysis project for the first time, to discern changes in compliance rates measured over time. Trends of annually increasing prescription compliance rates were observed and are reported in the 2014-2015 report, for the following prescriptions: Desired Future Condition Option 2 (1.5%), No Inner Zone Harvest (1.0%), and Road Construction and Abandonment (1.4%) (See chapter 9 for detail on numbers) (These percentages represent an average increase in compliance year over year.). There were no decreasing compliance trends for any rule prescriptions.
- The 2014-2015 report indicates results of greater than or equal to 90 percent compliance on all prescriptions analyzed.

Family Forest Fish Passage Program

The Family Forest Fish Passage Program completed the removal of 20 fish passage barrier projects opening 44 miles of upstream fish habitat. Since the beginning of the program in 2003, 413 barriers to fish passage have been removed, opening up approximately 947 miles of fish habitat, 5% more habitat access restored than last year.

Large Forest Landowners Road Maintenance and Abandonment Plans

- During the reporting period, WDFW biologists reviewed 1,307 Forest Practices Hydraulic Projects (FPHPs), which included 182 concurrence-required project reviews and 1,125 standard FPHPs.
- Since 2001, 25,589 miles of forest road have been improved to meet state forest practices standards and 6,086 fish passage barriers – about 83 percent of those identified – have been eliminated, opening up 3,507 miles of fish habitat.

Adaptive Management Program

The Forest Practices Adaptive Management Program continued to work on several research projects related to the effectiveness of riparian prescriptions on Type F and N waters, hardwood conversion, unstable slopes identification, road best management practices, forested wetland, and a remote sensing approach to extensive monitoring of riparian stands in western Washington.

Forest Practices Applications

The forest practices program processed 4,255 new Forest Practices Applications/Notifications (FPA/N) during Fiscal Year 2016. Also during this reporting period there were 15,109 active FPA/Ns (non-expired applications) that were subject to regulatory field compliance.

1. Introduction to Forest Practices Habitat Conservation Plan 2016 Annual Report

1.1 Introduction

In 2006, Washington State submitted the Forest Practices Habitat Conservation Plan (Forest Practices HCP) with the goal of obtaining Incidental Take Permits from the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) (collectively, the Services). Implementation of the Forest Practices HCP protects public resources including aquatic and riparian-dependent species. The Forest Practices HCP covers more than 9 million acres of non-federal and non-tribal forestlands. This multi-stakeholder effort addressed the habitat needs of all covered aquatic species, including certain fish species that are federally designated as 'threatened' or 'endangered'. In 2006, the Services accepted Washington's Forest Practices HCP and under the authority of the Endangered Species Act, the Services issued Incidental Take Permits to Washington State. The implementation of the Forest Practices HCP is a partnership between the Services and Washington State.

Three state agencies—the Washington State Department of Natural Resources (DNR), the Washington Department of Fish and Wildlife (WDFW), and the Washington Department of Ecology (Ecology)—work together to ensure implementation of the Forest Practices HCP. DNR provides the majority of staff positions that oversee implementation of this HCP due to the authority given the department in the Forest Practices Act (Chapter 76.09 Revised Code of Washington (RCW)) and Rules (Title 222 Washington Administrative Code (WAC)). However, both WDFW and Ecology have dedicated office and field staff time to support the various functions of the Forest Practices program and the implementation of the Forest Practices HCP. A portion of the work that WDFW and Ecology conduct is funded through Interagency Agreements 16-44 and 16-149 respectively. WDFW and Ecology support includes participation in the following:

- The Adaptive Management Program (AMP)
- The Compliance Monitoring Program (CMP)
- The Family Forest Fish Passage Program (FFFPP)
- The review of Road Maintenance and Abandonment Plans (RMAPs)
- Consultation on Forest Practices Hydraulic Project Approvals (FPHPs)
- The development of chapters in the Forest Practices Board Manual (Board Manual)
- The evaluation of water type change proposals
- The review of Forest Practices Applications
- Interdisciplinary Teams

Under the Forest Practices HCP, the state has a commitment to submit an annual report to the Services describing implementation activities for the year. This year's annual report covers the period from July 1, 2015, through June 30, 2016.

1.2 2016 Report Highlights

Highlights of the Forest Practices HCP implementation from July 1, 2015, through June 30, 2016, include:

Forest Practices Board

- During the reporting period, the Board, Board staff and TFW partners considered development of a permanent water typing rule. The Board directed the TFW Policy Committee to bring forward recommendations for a permanent water typing rule, associated guidance, additional research, and training needs. To accomplish this the Board accepted the Type F matrix that was prepared by the TFW Policy Committee. There were four primary elements of the matrix: electrofishing and development of "best practices" recommendations for protocol survey; criteria for physical attributes of a Type F water; off-channel habitat; and potential improvements to the water typing model through a pilot study running the model using LiDAR. Recommendations are due to the Board November 16, 2016.
- The Board approved revisions to Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms* regarding:
  - The description and delineation of groundwater recharge areas for glacial deep-seated landslides.
  - Assessing the delivery potential from shallow rapid landforms.
  - Compound deep-seated landslides and how LiDAR can be used for identifying unstable features and assessing past landslide deposits.

Adaptive Management Program

- The Forest Practices Adaptive Management Program completed 1 research project: Eastern Washington Riparian Assessment Project (Phase II).
- CMER continued ongoing work evaluating Type N riparian prescriptions in basalt and incompetent lithologies, as well as initiating work around unstable slopes, roads, Type F riparian prescriptions, forested wetlands, and eastside Type N riparian prescriptions.

Forest Practices Operations

- Forest Practices Operations staff processed 4,255 Forest Practices Applications and 931 water type modification forms.
- Operations developed guidance documents for forest practices staff including; guidance on processing water type modification forms during low staffing resulting from an extraordinarily demanding fire season, and an outline for unstable slopes Timber Fish and Wildlife training conducted in DNR regions.
- Forest Practices Operations hired two forest engineers to assist with forest practices hydraulic permits throughout the state.

Small Forest Landowner Office

- There were 20 new applications received under the Forest Riparian Easement Program (FREP) and six conservation easements were acquired. As of June 30, 2016, the backlog of unfunded, eligible FREP applications was 141. The backlog is growing compared to 127 unfunded applications one year ago.
- The Family Forest Fish Passage Program completed the removal of 20 fish passage barrier projects opening 44 miles of upstream fish habitat. Since the beginning of the program in 2003, 413 barriers to fish passage have been removed, opening up approximately 947 miles of fish habitat, 5% more habitat access restored by FFFPP than last year.

20-acre Exempt Riparian Forestland

- Forest Practices Applications utilizing the small forest landowner 20-acre exempt rule (non-conversion FPAs) along fish-bearing water comprised approximately 1.6 percent (63 out of 3831 FPAs) of all approved applications submitted during the 2015-2016 reporting period, no change from 2014-2015.
- Of the 846 Watershed Administrative Units (WAUs) in the state, 200 have possible reduction in the potential recruitment of large woody debris resulting from the cumulative total of non-conversion FPAs utilizing the 20-acre exempt rule. Of these, all but three currently have the potential of less than one percent cumulative reduction in function as measured by potential recruitable LWD. The three WAUs with more than one percent potential reduction all show less than three percent cumulative potential reduction in function in the WAU.
- There were no Forest Practices Applications associated with 20-acre exempt parcels in the bull trout areas of concern.

Alternate Plans

- There were 129 (38 large forest landowner and 91 small forest landowner) alternate plans approved during the reporting period. Three of the FPAs were small forest landowner long term applications.

Enforcement

- There were 15,109 active (non-expired) Forest Practices applications during the reporting period. During this time, DNR issued 56 Notices to Comply and 18 Stop Work Orders. Of these enforcement actions, 61 were for violations of the Forest Practices Rules. There were zero civil penalties and one Notice of Intent to Disapprove issued during this reporting period.

Compliance Monitoring

- The 2014-2015 Biennial Compliance Monitoring report was written and will likely be published spring of 2017.

- The Compliance Monitoring Program submitted the 2014-2015 biennial report, as well as current sampling and analytical methodology for Independent Study Peer Review with the goal of strengthening the overall statistical validity of the methodology and results.
- The 2014-2015 report indicates results of 90 percent or higher compliance rates for all prescriptions analyzed.
- The Compliance Monitoring Program incorporated an ongoing trend analysis for the first time, aimed at discerning patterns of changes in compliance rates measured over time. Trends of annually increasing prescription compliance rates were observed for the following prescriptions: Desired Future Condition Option 2 (1.5%), No Inner Zone Harvest (1.0%), and Road Construction and Abandonment (1.4%) (see chapter 9 for detail on numbers) (These percentages represent an average increase in compliance year over year). There was no decreasing compliance trends observed for any rule prescription.

Training, Information, Education.

- A new Forest Practices Training Manager was hired in January 2016 ending a year and a half vacancy.
- A comprehensive Forest Practices Enforcement and Compliance class was developed for delivery on and after October 2016. This course is designed to be a core required training class for all Forest Practices staff.
- An unstable slopes presentation was developed and delivered to DNR region staff and TFW cooperators covering: the DNR FPA review process as a whole for FPAs associated with potentially unstable landforms; the description of "in and around the area of" as it is used in FPA questions 11 and 12; and, the amended Board Manual section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms*.

Road Maintenance and Abandonment Planning (RMAP) for Large Forest Landowners

- In calendar year 2015, 1,307 miles of forest road were improved and 356 fish passage barriers removed.
- During the reporting period, WDFW biologists reviewed 1,307 Forest Practices Hydraulic Projects (FPHPs), which included 182 concurrence-required project reviews and 1,125 standard FPHPs (30-day review only). It is important to note that WDFW counted each pipe as a separate project; FPAs can have multiple FPHPs or projects.
- Since 2001, 25,589 miles of forest road have been improved to meet state forest practices standards and 6,086 fish passage barriers – approximately 83 percent of those identified – have been eliminated, opening up 3,507 miles of fish habitat.

Cultural Resources

- DNR commenced a contract to provide professional facilitation services to assist TFW Cultural Resources Roundtable discussions.
- During this reporting period there were 16 Forest Practices Applications requiring a landowner/Tribe meeting and all 16 fulfilled the meeting requirement.

Information Technology

- 4,255 FPAs were received or renewed and entered into the Forest Practices Application Review System (FPARS). Currently there are 1,208 reviewers receiving email notification of FPAs.
- The Forest Practices Enforcement Tracking System (FPETS) provides the forum to enter and report on data related to enforcement actions, civil penalties and appeals. During this reporting period, 781 Informal Conference Notes, 10 Notices of Conversion to Non-forestry Use, 56 Notices to Comply and 18 Stop Work Orders were entered into FPETS.
- Staff entered approximately 9,750 GIS stream segment (number of segments depend on how a stream was input into GIS) updates into the hydrography data set, representing approximately 1,070 stream miles, based on 931 Water Type Modification Forms. As of June 2016, the Water Type Modification Forms backlog was 172. This is lower than the FY2015 backlog of 365.

§

2. Forest Practices Board

2.1 Introduction

The Forest Practices Board's (Board) activities during the July 2015 to June 2016 reporting period are explained in this section. They include:

- The Board approved changes to the Forest Practices Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms*.
- The Board confirmed its direction of moving forward on a permanent Type F water rule.
- The Board incorporated time in the May 2016 meeting to hear tribal elders and tribal members describe cultural resources and their importance to their culture.
- The Board did not engage in any rule-making during this reporting period.

2.2 Forest Practices Board Overview

The Board sets the public resource protection standards that are the basis for the Forest Practices program. The state's Forest Practices Act established the Board's authority in 1974 as an independent state agency responsible for the adoption of rules for forest practices on non-federal and non-tribal forestlands. The legislature directed the Board to protect public resources while maintaining a viable forest products industry. "Public resources" are defined as water, fish and wildlife, and capital improvements of the state or its political subdivisions.

Forest practices rules marked with an asterisk (*) pertain to water quality protection and are amended only by agreement between the Board and the Department of Ecology.

The Board consists of 13 members: the Commissioner of Public Lands or the Commissioner's designee; four additional state agency directors or their designees; and eight members appointed by the governor. The represented agencies are the state departments of Natural Resources, Commerce, Ecology, Agriculture, and Fish and Wildlife. The governor-appointed members include a member representing a timber products union, a forest landowner who actively manages his or her land, an independent logging contractor, an elected county commissioner or council member, and four general public members whose affiliations are not specified in the Forest Practices Act. The membership of the Board as of June 30, 2016, was:

- Stephen Bernath, Commissioner of Public Lands Designee, Chair
- Heather Ballash, Department of Commerce
- Tom Laurie, Department of Ecology
- Patrick Capper, Department of Agriculture
- Joe Stohr, Department of Fish and Wildlife
- Lisa Janicki, Skagit County Commissioner
- Bill Little, timber products union representative
- Bob Guenther, general public member and small forest landowner
- Carmen Smith, general public member and independent logging contractor
- Paula Swedeen, general public member

- Court Stanley, general public member
- David Herrera, general public member
- Brent Davies, general public member

In addition to adopting rules, the Board provides guidance through the Forest Practices Board Manual (Board Manual), an advisory technical supplement to the rules. The Board Manual guides field practitioners and DNR regulatory staff when implementing certain rule provisions. The forest practices rules and Board Manual largely represent the state's protection measures for public resources related to forest lands.

The Board is also a key structural component of the Adaptive Management Process (AMP) and empowers three of the five primary structural components engaged in the process, including:

- The Cooperative Monitoring, Evaluation and Research Committee (CMER)
- The Timber/Fish/Wildlife Policy Committee (TFW Policy Committee)
- The Adaptive Management Program Administrator (AMPA)

The Board itself and the Independent Scientific Peer Review Committee (ISPR) are the fourth and fifth structural components of the adaptive management process. The adaptive management program is intended to provide science-based recommendations and technical information to assist the Board in determining if and when it is necessary or advisable to adjust rules and guidance in order to achieve established goals and objectives. The Board also directs and approves funding allocation for the implementation of the Adaptive Management Program.

CMER is the research component of the AMP. CMER is comprised of scientists from forest landowners, environmentalists, state agencies, county governments, federal agencies, and/or tribal governments. The Board approves membership of voting CMER members. These members need to have a demonstrated background in research and represent the science, not the position of their caucus.

The TFW Policy Committee considers scientific findings from CMER and makes recommendations to the Board related to forest practices rule amendments and guidance changes. The committee consists of one caucus principal, or their designee, from environmental interests, industrial private timber landowners, nonindustrial private timber landowners, western Washington tribal governments, eastern Washington tribal governments, county governments, DNR, other natural resource state agencies (includes: state departments of Fish and Wildlife, and Ecology as one vote), and federal agencies.

The Adaptive Management Program administrator is a full-time DNR employee and is responsible for overseeing the program, supporting CMER and reporting to the TFW Policy Committee and the Board.

The Independent Scientific Peer Review Committee performs independent peer review of CMER work products to ensure they are scientifically sound and technically reliable.

2.3 Forest Practices Board Rule Making Activity (July 1, 2015 – June 30, 2016)

Though the Board did not conclude any formal rulemaking, at its August 2015 meeting, the Board directed TFW Policy Committee to move forward with a matrix (developed by TFW Policy) that provides a framework to complete an evaluation of all the components needed to establish a permanent water typing rule described in the forest practices rules. There were four primary elements of the matrix: minimizing electrofishing and updating of "best practices" recommendations for protocol surveys; criteria for physical attributes of a Type F water; off-channel habitat; and potential improvements to the water typing model through a pilot study running the model using LiDAR. The Board also directed TFW Policy Committee to bring to the Board, recommendations for developing a permanent water typing rule, at the upcoming November 2016 Board meeting. In addition, the Board conducted a field tour in October 2015 to gain a better understanding of the water typing process.

Cultural resources were also a topic of Board focus. In an effort to assist discussions at the Cultural Resources Roundtable (Roundtable), the Board directed DNR to retain a facilitator for the Roundtable. Additionally, the Board dedicated half of its May 2016 meeting to hear tribal elders and tribal members describe cultural resources and their importance to their culture; and landowners concerning the importance of protection of cultural resources. See Chapter 12 Cultural Resources for further information.

2.4 Forest Practices Board Manual

The Forest Practices Board Manual (Board Manual) is an advisory technical supplement to the forest practices rules. It provides technical background and guidance for DNR staff, forest landowners, and cooperating agencies and organizations when they implement certain rules. WAC 222-12-090 directs DNR to prepare revisions to the Board Manual in cooperation with the state Departments of Fish and Wildlife, Agriculture, Ecology and other agencies, affected tribes, and interested parties with appropriate expertise.

Board Manual revisions typically begin with a DNR-led working group that identifies key elements to be addressed, followed by the actual drafting of Board Manual language. For sections that provide guidance for rules protecting aquatic resources, a final draft is shared with the TFW Policy Committee for review, after which the Board considers the final approval.

Forest Practices Board Manual Activity (July 1, 2015 – June 30, 2016)

The Board approved several amendments to Board Manual Section 16, *Guidelines for Evaluating Potentially Unstable Slopes and Landforms* during this reporting period. No other Board Manual sections were amended.

- August 2015 – Amendments approved were the result of recommended changes to material originally completed in 2014 regarding the description and delineation of groundwater recharge areas for glacial deep-seated landslides. These recommendations were developed by a stakeholder group and included clarifying language, improving transitions and modifying the sequential flow of subject matter. This was the completion of phase 1 in a two phase process (initiated by the Board in May 2014).

The two phase process analyzed: phase 1) groundwater recharge on glacial deep-seated landslides, and phase 2) assessing the delivery potential from shallow rapid landslides.

- November 2015 – Amendments were approved that fulfilled the Board's direction to amend guidance specific to assessing the delivery potential from shallow rapid landforms. This completed phase 2 of the two-phase process explained above.

- May 2016 – Amendments were approved that incorporated information on compound deep-seated landslides and how LiDAR can be used for identifying unstable features and assessing past landslide deposits. This fulfilled the Board's November 10, 2015, direction to assemble a qualified expert group to review and make recommendations on items near resolution that contained material relevant for guidance.

Additional information regarding technical information incorporated in Board Manual Section 16 is found below in section 2.6 Unstable Slopes and Landforms.

2.5 Anticipated Forest Practices Board Direction

Anticipated Rule Making Activity

Water typing

The TFW Policy Committee is assigned to complete recommendations for a permanent water typing rule after the current reporting window.

Refocus

In 2015, the Board removed the following rule-making projects from its work plan in order to complete higher-priority projects.

Forest Road Maintenance

The possibility of adding rule language authorizing landowners to schedule road maintenance according to a site's relative potential for public resource damage. This would apply to all roads with completed road work under existing road maintenance and abandonment plans (RMAPs), as well as roads that were never covered under an RMAP.

Riparian Management Zones (RMZs)

- The Board wants to clarify outer zone leave tree clumping and dispersal options; and

- § The Board wants to clarify methods and processes of collecting stand data for determining stand requirements to meet desired future conditions.

State Environmental Policy Act Requirements for Landscape Management Plans
The Board wants to determine if a rule revision in WAC 222-16-080(6) is necessary to clarify whether State Environmental Policy Act (SEPA) analysis is required for state-approved landscape management plans for threatened and endangered species conservation.

Anticipated Board Manual Revision Activity
Board Manual Section 7 *Guidelines for Riparian Management Zones (RMZ)*
If the Board initiates RMZ rule amendments listed above, guidance may be warranted to provide information for clumping and dispersing outer zone leave trees, collecting and evaluating stand information, and marking RMZ boundaries and outer zone leave trees so they are easily identified and retained.

Board Manual Section 13 *Guidelines for Determining Fish Use for the Purposes of Typing Waters*
When the Board adopts a new permanent water typing system rule this section will be removed from the Board Manual. With the new rules the current protocol for determining fish use contained in this section will become obsolete. New guidance to determine fish habitat through an Adaptive Management Program developed fish habitat assessment methodology will be included in the newly developed Board Manual Section 23 *Guidelines for Field Protocol to Locate Mapped Divisions between Stream Types and Perennial Stream Identification.*

Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms.*
Amendments to this section of the Board Manual are complete and have been approved by the Board. The Board has also approved a strategy and funding for an Adaptive Management Program science review of unanswered unstable slopes questions brought forward in the amending of this section of the board manual. When the science review is complete the TFW Policy Committee may bring recommendations to the Board for revisions to the guidance in this section of the board manual. See section 2.6 below for more detail.

Board Manual Section 23 *Guidelines for Field Protocol to Locate Mapped Divisions between Stream Types and Perennial Stream Identification*
This section of the board manual, when developed, will consist of two parts. The first part, *Guidelines for Field Protocol to Locate Mapped Divisions between Stream Types*, will be developed concurrently with the permanent Water Typing System rules. It will feature new guidance to determine fish habitat through a *fish habitat assessment method*, and will incorporate the improved best management practices for incorporating an electrofishing protocol as a tool within the fish habitat assessment methodology. The second part *Guidelines for Perennial Stream Identification* has been postponed due to the Board's direction for the TFW Policy Committee to focus on recommendations for a permanent water typing rule. After the permanent water typing system rules and guidance are completed, TFW Policy Committee will resume

work to develop recommendations on a wet season method to locate the uppermost point of perennial flow in Type N Waters.

Adaptive Management Program Priorities
The Adaptive Management Program's work in several subject areas could result in recommendations to the Board during or after the 2016-2017 reporting period, including the following:

- § determining how to locate the Type F/Np Water regulatory break point (water typing);
- § establishing an unstable slopes research strategy, including glacial deep-seated landslides and groundwater recharge areas (see section 2.6 Unstable Slopes and Landforms for more information); and
- § adding a small forest landowner alternate plan template in Board Manual Section 21 *Guidelines for Alternate Plans* for harvest in riparian management zones.

2.6 Unstable Slopes and Landforms

Unstable slopes and landforms have been a particular focus for the Board and its TFW Policy and CMER committees, as well as for the State's forest practices program for the last three years. During this reporting period there have been: amendments to the forest practices Board Manual; the Board's acceptance of a proposal initiation for adaptive management review (under Upslope Processes Scientific Advisory Group (UPSAG) related to deep seated landslides; and forest practices program training for implementing the 2015 forest practices rule the Board adopted. The 2015 rule clarifies DNR's authority to ask landowners for additional geologic information in order to process and comply FPAs.

Amendments to Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms*.
In November 2015 the Board approved technical material and guidance for estimating the runout and delivery potential from shallow-rapid landslides. The technical experts involved in the review of this material and their recommendations focused on shallow-rapid landslides, as these are by far the most common landslide type, and predicative runout models have been developed by the scientific community. This completed the second phase of a two-phased process, which was initiated by the Board in May 2014. The first phase involved providing information on groundwater recharge areas for glacial deep-seated landslides and the second phase involved developing guidance for estimating the delivery potential from shallow rapid landforms. The amended Board Manual provides technical guidance for the following:

- § Technical guidance provides users with information on the types of landslides associated with the specific rule-identified landforms;
- § Technical guidance identifies factors contributing to debris flows initiation and factors influencing debris flow runout;

- Technical guidance provides users with several empirical and numerical methods/models proven effective for calculating runout distances for shallow rapid landslides; and
- Technical guidance identifies how natural processes and possible mitigation strategies are used for slowing debris flow runout distances.

In May 2016 the Board approved further revisions regarding deep-seated landslides and the use of LiDAR for screening purposes. The most recent amendments to the Board Manual include the following:

- Guidance helps to identify a subset of deep-seated landslides known as compound landslides. Compound is a term used to describe a large host landslide that contains secondary landslides.
- Guidance provides users with additional information on how LiDAR can be used for identifying various geomorphic features for determining relative age and activity potential.
- Guidance provides users with information on how LiDAR is used to identify historic landslide deposits within a given geographical area when conducting runout assessments.

Future Amendments to Board Manual Section 16
In November 2015, the Board accepted a proposal initiation for Adaptive Management review of scientific literature and materials regarding deep-seated landslides (see next section). This proposal will be processed under the Adaptive Management Program and will verify unresolved scientific questions and processes outlined in the proposal initiation. Technical material appropriate for improving or amending guidance resulting from the proposal initiation implementation will be incorporated into the Board Manual when the material is made available.

Adaptive Management Program
In February 2016, the Board asked the Adaptive Management Program Administrator to respond to the proposal initiation (mentioned above) submitted to the Board in November 2015 that addressed concerns related to deep seated landside information in Board Manual Section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms.* In response, the administrator submitted recommendations to the TFW Policy Committee in April 2016 on how to implement an Adaptive Management Program review of the issues outlined in the unstable slopes proposal initiation. To date, TFW Policy Committee has not responded with revisions or acceptance to the recommendations from the Adaptive Management Program Administrator.

Additionally, two specific efforts related to unstable slopes are on-going in CMER:

1) The Upslope Processes Scientific Advisory Group (UPSAG) is currently finishing a literature review on glacial deep-seated landslides to better understand what is known about them from the scientific literature. This literature review is the first step in developing a study approach for UPSAG to develop research strategies for glacial deep seated slides.

2) The Unstable Slopes Technical Writing and Implementation Group (TWIG) is addressing the question of whether or not the unstable slopes criteria are adequate for identifying unstable features that should receive review by qualified experts (geologists). If the criteria are not adequate, then forest practices rules will not produce the intended effect while protecting public resources. TWIG is focused on determining if modification to the unstable slopes criteria could result in more accurate and consistent identification of those landforms that are likely to have an adverse impact to public resources or threats to public safety. Currently, TWIG is looking at alternatives to develop a study that would provide information in better identifying rule-identified landforms that need review by a geologist.

Forest Practices Program Training

As reported in the 2015 annual report, in February 2015 the Board affirmed DNR's ability to establish the form and content of the FPA through the adoption of rule amendments regarding unstable slopes information on FPAs. As a normal course of business, the Forest Practices Division conducted training for Forest Practices staff in DNR regions regarding interpretation and implementation of the rule amendment in June 2015. In January 2016, the Forest Practices program decided it was best to provide the June 2015 training to the larger stakeholder community through regular DNR region TFW meetings, and this training was completed by June 30, 2016.

3. Adaptive Management Program

3.1 Introduction

This chapter provides a brief background on the Forest Practices Adaptive Management Program and accomplishments to date. In large part, those accomplishments occur through the Cooperative Monitoring, Evaluation and Research Committee projects. The CMER Work Plan presents an integrated strategy for conducting research and monitoring to provide scientific information to support the Adaptive Management Program. Section 3.6 lists websites that give detailed information on the work plan and projects.

Section 3.7 contains information on electro-fishing activities associated with Adaptive Management Program projects. The federal Services specifically requested this information through the conditions that govern the Incidental Take Permits.

3.2 Adaptive Management Program

In response to water quality and aquatic endangered species issues, the Washington State Forest Practices Board adopted emergency water typing rules in 1996 and salmonid emergency rules in 1998. In addition, in 1997 the governor formed a Joint Natural Resources Cabinet and charged it with creating a salmon recovery plan for Washington State by June of 1998. A "Salmon Recovery Strategy" developed by the state called for the protection of salmon habitat through forest, agriculture, and urban modules.

The Joint Natural Resources Cabinet turned to Timber, Fish, and Wildlife (TFW) to develop recommendations for the forestry module. The TFW stakeholder process resulted in a set of recommendations called the Forest and Fish Report (1999) that was presented to the Forest Practices Board and the Governor's Salmon Recovery Office. These recommendations responded to federal fish listings and water quality problems in Washington State on approximately 12.7 million acres of private and state-owned forestland.

The authors of the *Forests and Fish Report* agreed to use all reasonable efforts to support the expeditious implementation of the recommendations contained in it. The authors' commitments, however, were subject to the:

- Washington State Legislature's adoption of a statutory package providing for implementation of the report;
- Forest Practices Board's adoption of permanent rules implementing the recommendations of the report;
- Provision of adequate funding for the implementation of the recommendations contained in the *Forests and Fish Report*;
- Receipt of federal assurances relating to the Endangered Species Act and the Clean Water Act; and

- § Continued support from the authors for the completion of the tasks and implementation of the provisions specified in the report.

The *Forests and Fish Report* recommended an adaptive management program to address the effectiveness of the forest practices prescriptions in meeting resource objectives, the validity of the resource objectives for achieving the overall goals, and basic scientific uncertainties in the ecological interactions among managed forests, in-stream functions, and fish habitat. The 1999 Washington Legislature referenced the 1999 *Forests and Fish Report* in the Salmon Recovery Bill (Engrossed Substitute House Bill 2091), in which it directed the Forest Practices Board to adopt rules that were consistent with the recommendations of the report. Following that direction, the Forest Practices Board adopted rules which included the Adaptive Management Program, a formal science-based program.

The purpose of the Forest Practices Adaptive Management Program is to provide science-based recommendations and technical information to assist the Forest Practices Board in determining if and when it is necessary or advisable to adjust forest practices rules and guidance for protecting aquatic resources. The program was created to ensure that: programmatic changes will occur as needed to protect resources; there is predictability and stability in the process; and there are quality controls applied to scientific study designs, project execution, and the interpreted results. The adaptive management program is an integral component of the forest practices program, and since the Forest Practices HCP is a programmatic HCP based on the forest practices program, the AMP is also essential to successful implementation of the Forest Practices HCP.

From 2000 to 2011, more than $25 million in federal funding provided through the Pacific Coastal Salmon Recovery Fund was spent to help implement the 1999 Forests and Fish Report. This included funding for development of an Adaptive Management Program, a multi-landowner Forest Practices Habitat Conservation Plan (Forest Practices HCP), and information systems. Funds were primarily used to design and implement research and monitoring projects, workshops, and science conferences.

The Adaptive Management Program is governed by an official state rule-making body (the Forest Practices Board), and includes a policy committee and a science committee. The unique model of collaborative decision-making that was adopted was as significant as the program itself. In addition, an independent scientific peer review process (ISPR) was established to ensure the rigor and integrity of the adaptive management research and monitoring projects and reports.

Another significant outcome of the federal funding was the early emphasis on developing ‘rule tools’—projects designed to develop, refine or validate tools (e.g., models, methods and protocols) used to implement the Forest Practices Rules that support the 1999 *Forests and Fish Report*. These projects have helped define, test, or refine protocols, models, and guides that allow the identification and location of rule-specified management features, such as the Last Fish/Habitat Model (a method for evaluating streams for typing), landslide screening tools, or the achievement of specified forest stand conditions, such as the ‘desired future riparian condition’

basal area target. Target verification projects were designed to confirm riparian function performance targets developed during Forests and Fish Report negotiations that authors identified as having a weak scientific foundation, such as the desired future condition basal area targets for Type F (fish-bearing) streams.

A report titled *Monitoring Design for the Forestry Module* of the Governor's Salmon Recovery Plan, July 2002, was commissioned by the TFW Policy Committee to "develop a comprehensive framework for collection, analysis and interpretation of data related to effectiveness monitoring" for rules derived from the 1999 *Forests and Fish Report*. The report is a conceptual framework for a coordinated monitoring plan with examples of how specific types of monitoring could be conducted and how an effective monitoring program could be structured.

Development of the 1999 *Forests and Fish Report* and subsequent Washington State laws and Forest Practices Rules were based on the best scientific knowledge that was available at the time. Both the report and the rules were developed in a collaborative, transparent process, with many stakeholders involved. Another outcome of providing funding for establishment and support for the Forest Practices Adaptive Management Program is the continued participation by many stakeholders, including tribes and tribal organizations, state agencies, landowner groups, counties, and conservation organizations (through the "conservation caucus"). The stakeholder-consensus process continues to be used in the Adaptive Management Program to review and suggest revisions to Forest Practices Rules and guidance on state and private forest lands based on findings from research, monitoring and other information.

The Forest Practices Adaptive Management Program research and monitoring efforts have led to revisions in; the Washington State Forest Practices Rules, guidance in the Forest Practices Board Manual, and guidance for small forest landowners. For example, in past years, the rules containing the target threshold for the riparian Desired Future Condition basal area have been revised; and a small landowner fixed-width buffer template has been developed in cooperation with small landowner representatives and added to the Forest Practices Board Manual.

3.3 Cooperative Monitoring, Evaluation and Research Committee History

CMER is the scientific component of the Adaptive Management Program and oversees research and monitoring. The CMER Work Plan describes the various research and monitoring programs, associated projects and work schedule. Schedule L-1 from the *Forests and Fish Report* (U.S. Fish and Wildlife Service, 1999) was revised, Board-approved, and Schedule L-1 (2001) was incorporated into the HCP to serve as the structure of the adaptive management program, and to specifically guide the development of projects described in the 2015 CMER Work Plan.

It is likely that research and monitoring priorities within CMER and, therefore, within the Forest Practices HCP, will change over time as adaptive management proceeds, new information becomes available, and improvements are made to forest practices based on these scientific findings. At the project level, some reprioritization took place in 2010 to answer questions related to Clean Water Act (CWA) assurances (see Appendix 1, letter from Mark Hicks, for

explanation of CWA assurances); it occurred again in 2014 with the completion of the 2012 HCP Settlement Agreement[1] and a Master Schedule. These processes essentially prioritized projects when the TFW Policy Committee agreed on a schedule and a long-term budget.

While the first few years of the Adaptive Management Program focused on development of rule tools, the program has more recently focused much of its effort on effectiveness monitoring with a particular focus on water quality.
See Section 3.4 which discusses CMERs' activities.

3.4 CMER Work Plan and Activities

The 2015 CMER Work Plan describes more than 90 projects. Approximately 38 projects have been completed and multiple projects are ongoing (i.e., undergoing study design development, or being implemented or reviewed). The CMER Work Plan is updated biennially and presented to TFW Policy Committee at their regular April meeting. The next update will be presented to TFW Policy Committee in April 2017.

The projects in the work plan originally were prioritized based on the level of scientific uncertainty and resource risk as related to the priorities of Schedule L-1 in the *Forests and Fish Report* (U.S. Fish and Wildlife Service et.al., 1999) and incorporated into the Forest Practices HCP (Washington DNR, 2005). CMER projects are intended to address the needs of higher priority subjects first, to ensure that the most important questions about resource protection are answered before questions with lower scientific uncertainty or lower resource risk. Projects were re-prioritized in 2010 to focus on CWA assurances; re-prioritized in the Master Schedule proposed in the 2012 HCP settlement agreement; and again in bringing the settlement before the TFW Policy Committee for adoption in the 2014 CMER Work Plan. The work plan is a dynamic document that is revised biennially in response to: research findings; changes in the Forest Practices Board and the TFW Policy Committee objectives; and available funding.

During this reporting period, the TFW Policy Committee approved the Master Project Schedule (MPS) for projects identified in the Adaptive Management Program. The goals of this MPS are to have a planning document that will help the Adaptive Management Program forecast when projects can be implemented, sequence projects for efficiencies, keep the budget within projected revenue and complete the critical projects that are already on the MPS by 2030. In addition, development of the MPS provides the Adaptive Management Program with a tool to evaluate its progress, which meets requirements of the 2012 HCP Settlement Agreement.

One project was completed, approved by CMER, and considered for action by the TFW Policy Committee. The project was the Eastern Washington Riparian Assessment Project (Phase II). The purpose of this study was to explore the dataset used in EWRAP Phase I (report completed in June 2008) to determine whether or not there was merit in additional analysis with this dataset

[1] In response to a potential challenge to issuance of the ITPs, the State negotiated a settlement agreement with the Forests and Fish Conservation caucus and the Washington Forest Protection Association concerning implementation of the Forest Practices HCP.

in describing the conditions of riparian communities across eastern Washington. After a great deal of guidance from Scientific Advisory Group Eastside, CMER scientists analyzed data and determined that this exploratory exercise highlights the need to do additional research on forest-type distributions. The analysis identified the variation in riparian stand composition and characteristics across the eastside, and in disturbance regimes (e.g., past forest management, fire, pests) affecting riparian stand conditions. Lastly, this report supports the idea that there is extensive overlap in the distribution of forest types across ponderosa pine and mixed conifer timber habitat types and recommends a study be initiated within the Adaptive Management Program to examine and validate the accuracy of using those definitions. Since this report was an exploratory analysis, there were no specific actions requested by the TFW Policy Committee.

Several draft reports were approved by CMER to go through Independent Scientific Peer Review in FY 2016, and those reports will be included in the 2017 Forest Practices HCP report.

In addition to the projects listed above, field work milestones were completed for the following CMER projects in FY2016:

- The Type N Experimental Buffer Treatment Project in Soft Rock Lithologies completed two years of pre-harvest data collection. Harvesting of the study sites was completed in 2015 and post-harvest data collection was initiated.
- The Type N Experimental Buffer Treatment Project on Hard Rock Lithologies eight-year resample was initiated in 2016 and will be completed in the autumn of 2017. This data will be presented in an appendix to the original report which will likely be completed in 2017.

The Forest Practices Board directed CMER to implement a “piloted” Lean process for a limited number of new projects with the intent of increasing efficiency in the development of the scoping and study design phases. As part of the Lean process, small teams (referred to as TWIGs) of qualified scientists and technical personnel in the area of expertise specified are assembled *in lieu* of a larger group of technical personnel referred to as a scientific advisory group (SAG). The premise is that this smaller team of experts will be more effective and efficient than a SAG in developing scoping documents and study designs. Four projects are currently in various stages of the Lean process. They completed the following work in FY 2016:

- Eastside Type N Riparian Buffer Effectiveness Project: CMER is currently evaluating the study design, and a dispute has been raised regarding the prescriptions.
- Unstable Slopes Criteria Project: The initial writing team is in the process of completing a best available science alternatives analysis.
- Roads Prescription-Scale Effectiveness Monitoring Project: The project team is currently working on a study design.
- Westside Type F Riparian Prescription Effectiveness Project: The project team is currently working on a study design.

- Forested Wetland Effectiveness Project: The project team is working on drafting a study design.

3.5 TFW Policy Committee Activity (July 1, 2015 – June 30, 2016)

General Policy Activity

The TFW Policy Committee held a budget meeting in April 2016 and reviewed the FY 2016-17 CMER Work Plan and budget identified in the Master Project Schedule. Following that discussion, TFW Policy Committee reviewed and approved the proposed FY 2017-19 biennial budget. In May 2016, the Forest Practices Board approved the proposed FY 2017-19 biennial budget. With the exception of new projects that will be developed through the piloted Lean process, most of the FY 2016 research and monitoring projects had been in the work plan and were ongoing projects. Although completion of some project elements was delayed in FY 2016 due to disagreements within the CMER Committee, it is reasonable to anticipate that CMER will complete three projects by the end of FY 2017, including the Hard Rock, Buffer Shade Effectiveness Study, and Hardwood Conversion projects.

In the beginning of FY 2013, the TFW Policy Committee initiated discussions on two priority items: development of a Type N (non-fish) water strategy and development of a strategy for transitioning from the interim water typing rule (that is, how to determine the regulatory division point between fish-bearing and non-fish-bearing waters) to a permanent rule to ensure protection of fish habitat. The TFW Policy Committee approved a type N water strategy in FY 2013. The purpose of the strategy was to examine the effectiveness of the Type N forest practices rules in protecting water quality including:

- Ranking and funding Type N water studies as highest priorities for research;
- Resolving issues associated with identifying the uppermost point of perennial flow; and
- Completing a comprehensive literature review examining the effects of buffering headwater streams.

During this reporting period, the TFW Policy Committee, under Board direction, prioritized working to resolve the Type F water typing issues, with primary emphasis on evaluating off-channel habitat protection, reviewing the water typing model, evaluating physical characteristic default criteria for determining the Type F/N regulatory division point, and gaining a better understanding on ways to potentially reduce protocol survey electrofishing in establishing the regulatory division point between Type F and Type N waters. This second priority to resolve issues of Type F water typing is particularly important to the Services. The Board's direction is that recommendations for water typing rules, guidance and/or future research will be delivered to the Board in November 2016. Therefore, TFW Policy Committee did not implement the Type N Strategy during the reporting period.

The capacity of TWF Policy and CMER participants remains finite. Although many projects were continued in 2016 and significant milestones were met on others, human resource scarcity

limited progress on projects. The TFW Policy Committee recognized this and efforts were made to adjust the Master Schedule for Adaptive Management Program projects and review the Lean process at CMER.

Clean Water Act Assurances

Upon the completion of the *Forests and Fish Report* in 1999, the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency agreed to provide Clean Water Act assurances to the State of Washington for a period of ten years. It was assumed ten years would be sufficient time to determine if implementation of the revised rules and Forest Practices program—including adaptive management—were effective in either meeting water quality standards or putting impaired waters on a trajectory toward meeting those standards. Ecology reviewed the Forest Practices program to determine if the Clean Water Act assurances should be retained and produced a report of their findings in July 2009. On Ecology's webpage Non-point pollution from Forestry, click on: *2009 Clean Water Act Assurances Review of Washington's Forest Practices Program* (Ecology 2009). This report was transmitted to the Forest Practices Board in October 2009. Ecology committed to providing the Board with periodic updates on the progress being made to meet milestones established for retaining the CWA Assurances for the forest practices rules and associated programs. See Appendix 1 for a current update.

3.6 Adaptive Management Program Websites

Refer to the following websites (underlined) for more information about the Adaptive Management Program.

Adaptive Management Program:
http://www.dnr.wa.gov/programs-and-services/forest-practices/adaptive-management

CMER:
http://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/cooperative-monitoring-evaluation-and-research

3.7 Electrofishing Report

One of the conditions of the Incidental Take Permits relates to electrofishing for research. United States Fish and Wildlife Service and National Marine Fisheries (NMFS) asked for an accounting of any electrofishing related to Adaptive Management Program research. However, the ITPs do not cover operational water typing. Refer to the NMFS ITP "Specific Conditions number 4" which states: "This incidental take permit does not apply to operational water typing by individual landowners: these activities would need incidental take authorization through other means."

Electro-fishing Activity

Research:

Electrofishing conducted for research by the Adaptive Management Program is covered by the Services' incidental take permits. No electrofishing surveys were conducted between July 1, 2015, and June 30, 2016, as part of the Adaptive Management Program's research.

4. Forest Practices Operations

4.1 Introduction

Forest Practices Operations is responsible for administering and enforcing the Forest Practices Rules on approximately 12.7 million acres of private, state, and other non-federal public forestlands. The Forest Practices Rules protect public resources related to forestland in Washington State, which are defined as: water, fish, wildlife, and capital improvements of the state or its political subdivisions. The Forest Practices Rules establish some of the highest standards for resource protection on forestlands in the nation. They give direction on how to implement Washington's Forest Practices Act and Forest Practices HCP.

4.2 Forest Practices Positions and FPA/N Workload

Forest Practices Operations consists of both office and field staff. Forest Practices forester field positions are directly responsible for reviewing new FPA/Ns, and complying and enforcing Washington's Forest Practices Act and Rules on active FPA/Ns. During this reporting period, there were approximately 94 full-time positions statewide in Forest Practices Operations. Of the 94 positions, 63 were field positions. This is an increase from the 2015 report of one full-time position that resulted from increased personnel related to fully implementing the Forest Practices Hydraulic Project transfer from WDFW to DNR.

During this reporting period, Forest Practices Operations staff processed 4,255 new Forest Practices Applications/Notifications (FPA/Ns), 621 (13%) FPAs less than the prior year (reporting period). The table below provides a breakdown of this information by DNR region.

Decisions for FPA/Ns Received/Renewed During Fiscal Year 2016

Region	Approved	Closed	Disapproved	Renewed	Total by Region
Northeast	726	16	20	21	783
Northwest	471	29	16	28	544
Olympic	492	34	5	28	559
Pacific Cascade	1,389	53	9	54	1,505
South Puget Sound	601	44	24	24	693
Southeast	152	15	3	1	171
Total by Decision	3,831	191	77	156	4,255

Closed means the FPA/N was withdrawn by the applicant.

Additionally, there were a total of 15,109 active (not yet expired) approved and renewed FPA/Ns statewide, just 125 (0.8%) fewer active FPAs than during the prior reporting period.

4.3 Priorities

Forest Practices Operations has three over-arching functions: FPA/N processing, FPA/N compliance, and FPA/N enforcement. The following information focuses on topics that have had the largest impact on workload during this reporting period.

Unstable Slopes – "In or Around the Area of"

Beginning in June 2015, a new training was developed to help explain a rule modification (WAC 222-20-010 (9)) which affirmed DNR's ability to establish the form and content of an FPA/N. The rule modification supports a request for more information when an FPA/N associated with unstable slopes requires additional information to adequately class the FPA/N and review the proposal.

The new training covered the DNR FPA review process as a whole for FPAs associated with potentially unstable landforms; the description of "in and around the area of" as it is used in FPA questions 11 and 12; and, the amended Board Manual section 16 *Guidelines for Evaluating Potentially Unstable Slopes and Landforms*.

Between February 2016 and May 2016 the training was provided to all DNR region Forest Practices program staff. Each region then presented similar training to forest practices program TFW cooperators at DNR region TFW meetings.

DNR's Strategic Plan 2014-2017: Update to *the Goldmark Agenda* (DNR June, 2014) – *Goal 3: Deliver Exemplary Public Resource Protection through the Forest Practices Program*

The Strategic Plan identified two major initiatives to be achieved by Forest Practices Operations:

- Support DNR staff with improved tools and resources to consistently implement, ensure compliance with, and enforce the forest practices rules, and
- Achieve a compliance rate of 90 percent or greater for all riparian, unstable slopes, and road prescriptions.

Accomplishments during this reporting period that have been part of the successful completion of the first initiative include the following:

- The forest practices program has continued developing new curriculum for the training program for DNR staff and external stakeholders –
  - A new Forest Practices Training Manager was hired in January 2016 ending a year and a half vacancy.
  - The program updated, enhanced and delivered unstable slopes training to program field staff and began to revise program-wide enforcement training that is scheduled for October 2016.
- The forest practices program is ensuring Road Maintenance and Abandonment Plan deadlines stated in the forest practices rules are met. See chapter 11 RMAPS for additional information.

- During the last annual RMAP reporting cycle, concerns of not meeting the RMAP deadline were discussed with landowners who did not have approved extensions.
- Forest Practices Operations held internal discussions regarding the upcoming October 2016 deadline for the completion of RMAPS operational work, annual report compilation and completion by June 2017.
- Region RMAP specialists were polled to ascertain which landowners lacking approved extensions may not complete RMAPs as required by October 31, 2016. Starting in November 2016 (for the duration of the next annual RMAP reporting cycle) incomplete RMAPs will receive enforcement actions aimed at achieving compliance within a short timeline.

The second Goldmark initiative has been successfully completed. The 2014-2015 Compliance Monitoring Report shows that all prescriptions analyzed achieved a compliance rate of 90 percent or better. For more information refer to *Chapter 9 - Compliance Monitoring Program.*

New engineering positions

Forest Practices Operations hired two forest engineers to assist with forest practices hydraulic permits throughout the state. The positions are new and have been beneficial to the program in several ways. During this reporting period, the engineers co-led a hydraulic projects checklist committee which revised checklists for hydraulic project plans and example hydraulic project plans (drawings) as compendiums to the checklists. These checklists are tools used by DNR region FPA/N intake staff to ensure that hydraulic project plans submitted with FPAs meet minimum standards for quality and information provided. The checklists and example plans were also made available to the public (landowners, designers, consultants) as part of educational outreach and placed on the DNR website. Additionally, the engineers have helped by testifying in hearings and assisted with hydraulic projects in DNR regions where needed.

Forest Practices Program Guidance

Forest practices guidance supplements the Forest Practices Rules and Board Manual. The Forest Practices HCP is a programmatic HCP based on the forest practices program. Therefore, creating forest practices guidance when needed, an integral part of the forest practices program, is also part of implementing the Forest Practices HCP.

The complexity of the Forest Practices Rules, details of program administration, and variability in the forested environment pose unique challenges for landowners and DNR Forest Practices staff in implementing the Forest Practices Rules across the landscape. Situations arise in which neither the rules nor the Board Manual provide enough specificity to resolve a particular implementation issue. Therefore, DNR Forest Practices develops internal guidance that provides direction consistent with established program goals, resource protection objectives, and performance targets. New guidance or changes to existing guidance is communicated to region forest practices staff in writing. Guidance that affects cooperating agencies, organizations, and landowners is shared outside the agency.

DNR Forest Practices created several guidance documents between July 1, 2015, and June 30, 2016. The following is a summary description of the written guidance that has been shared with Forest Practices staff:

Summary of Written Guidance Issued to DNR Forest Practices Staff July 1, 2015 – June 30, 2016

Date	Reason for guidance	Accomplishment
8/25/2015	Processing of Water Type Modification Forms during minimum staffing	During the 2015 fire season, many regions were below minimum staffing due to many severe fires in the Pacific Northwest. Regions were directed to continue to receive Water Type Modification Forms but not to begin the concurrence process until further notice.
8/26/2015	Evaluation of FPAs during staffing shortage	Due to regions falling below minimum staffing while supporting the firefighting efforts, the memo provides an FPA condition to be used if the region feels the FPA did not receive adequate review. The condition states that the department approves the FPA but no operations can take place for 60 days, during which time additional FPA review and resulting required changes may take place. This memo was sun-setted on October 21, 2015 (see next memo).
10/21/2015	Memo rescinding the two previous memos.	Previous two memos were rescinded.
2/19/2016	Fish Survey Season – Water Level and Streamflow	An annual letter from DNR in consultation with WDFW providing a statewide forecast for water abundance for the fish survey season. The memo reminds landowners who to contact if they are planning to electro-fish.
3/8/2016	Unstable Slopes review expectations	A memo was issued that described expectations for (1) presentation of unstable slopes training at regular region TFW meetings, and (2) Forest Practices staff's roles during FPA/N processing.

WDFW contribution to Forest Practices Operations as written by WDFW

Forest Practices Hydraulic Projects (FPHP)

WDFW's goal, pertaining to FPHPs, is to review all FPAs containing FPHPs. It is important to note that each FPA may have multiple FPHP projects, which may be a combination of concurrence-required reviews and standard 30-day DNR Forest Practices reviews. Therefore, WDFW has tracked numbers of projects rather than numbers of FPAs. From July 1, 2015,

through June 30, 2016, WDFW biologists reviewed 1,307 FPHPs, which included 182 concurrence-required project reviews and 1,125 standard FPHPs associated with 30-day FPA/Ns. Each FPHP was reviewed for consistency with fish protection standards. WDFW biologists also provided assistance to forest landowners and to DNR Forest Practices to help assure that project plans and designs would be successful for the landowner in terms of meeting fish protection standards. WDFW encourages landowners to engage in pre-application consultation and on-site technical assistance as often as the opportunities arise. During this time period, WDFW provided consultation on 377 pre-application site visits.

Other

Other forest practices operational work conducted by WDFW biologists included review of over 930 Water Type Modification Forms and participation in field reviews to validate those proposed water types, participation on ID teams for multiple forest practices issues, road maintenance and abandonment plan (RMAP) review, review and technical assistance on alternate plans for both large and small forest landowners, and technical assistance on other aquatic resource protection issues.

5. Small Forest Landowner Office

5.1 Introduction

The Small Forest Landowner Office (SFLO) serves as a resource and focal point for small forest landowner concerns and policies. Its mission is to promote the economic and ecological viability of small forest landowners while protecting public resources. The office was created as a result of the 1999 Salmon Recovery Act, when the Forests and Fish Rules were passed. These new Forest Practices Rules resulted in increased size of riparian buffers and created further measures to protect water quality and restore salmon habitat in the forests of Washington State. The State Legislature recognized that the Forests and Fish Rules would have a disproportionate economic effect on small, family-owned forests. To help small landowners to navigate the regulatory system, the legislature authorized the creation of a Small Forest Landowner Office within DNR to provide technical assistance. The Forest Practices HCP is a programmatic HCP based on the forest practices program. The SFLO is an integral part of the forest practices program helping small forest landowners in implementing the protective measures for aquatic species found in the forest practices rules. The integral nature of the SFLO to the forest practices program makes the SFLO an important part of implementing the Forest Practices HCP and protecting federally listed species habitat.

It is estimated that more than 215,000 small forest landowners manage 3.2 million acres of forests in Washington—approximately half of the private forest acreage in the state. Their forests tend to be concentrated in the lower elevation habitats along lakes and streams, which are key locations for providing ecosystem functions. Their forests also tend to be subject to development pressures, making it especially important to support them in their efforts to maintain their land in forestry. Due to population growth and a shrinking commercial forest land base, these landowners are absorbing heavy impacts on their forests from increasing demands for timber; fish, wildlife, and water protection; recreational uses; and aesthetics.

The Small Forest Landowner Office focuses on several efforts including: small forest landowner assistance through the Forestry Riparian Easement Program (FREP), the Family Forest Fish Passage Program (FFFPP), the Forest Stewardship Program, and small forest landowner technical assistance, as well as outreach to inform landowners of the various assistance programs available to them. Another program now administered by the office, which assists both small and large forest landowners, is the Rivers and Habitat Open Space Program (RHOSP), which is described in Chapter 7 of this report.

5.2 Forestry Riparian Easement Program

Provisions included in the 1999 Salmon Recovery Act established the Forestry Riparian Easement Program (FREP). This easement program acknowledges the importance of small forest landowners and the potential for a disproportionate financial effect of Forest Practices riparian protection rules on them.

The Forestry Riparian Easement Program compensates eligible small forest landowners for "Qualifying timber" within the riparian management zones in exchange for a 50-year conservation easement. "Qualifying timber" includes those trees that the landowner is required to leave unharvested in the riparian zone as a result of Forest Practices Rules protecting Washington's aquatic resources. Landowners cannot cut or remove any Qualifying timber during the life of the easement. The landowner still owns the property and retains full access, but has "leased" the trees and their associated riparian function to the state. Funding for the program has been allocated by the Washington State Legislature since 2002.

Applications and Acquisitions

Since FREP began, funding has not kept up with demand. There remains a backlog of eligible applications waiting funding for the cost of acquiring the easements. During the 2016 fiscal year, 20 new applications were received and 6 conservation easements were acquired. As a result, as of July 1, 2016, the backlog of unfunded FREP applications is 141.

In the 2015 legislative session, DNR requested $11.2 million to complete the acquisition of the entire FREP backlog. The legislature funded FREP at $3.5 million for FY 2015-17.

The table on the following page summarizes the Forestry Riparian Easement Program's acquisition activity over time.

State of WA, Dept. of Natural Resources
Forest Practices Division

Small Forest Landowner Office
Forestry Riparian Easement Program

Easement and Application Numbers by Fiscal Year

	FY 2002-2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Totals
Queue Balance at Beginning of FY	-	93	90	104	114	130	127	-
Complete Applications Received	403	18	17	25	32	25	20	540
Number of Easements Purchased	278	12	0	13	9	16	6	334
Applications Ineligible / Rejected	32	9	3	2	7	12	0	65
Queue Balance at End of FY	93	90	104	114	130	127	141	-
Acres Purchased	4,793	148	0	110	122	166	94	5,433

5.3 Family Forest Fish Passage Program

The Washington State Legislature established the Family Forest Fish Passage Program (FFFPP) in 2003 (RCW 76.13.150) to provide a cost share program for small forest landowners to comply with the Forests and Fish Rule requirement for the removal of fish passage barriers. The voluntary program allows these landowners to sign up for assistance to correct fish passage barriers on their forest road stream crossings. The program is a continuing success, recognized as a model for interagency cooperation and for assisting landowners.

In general, the 2003 law required:

- Washington State was required to create a cost-share program that would provide from 75-to-100 percent of the cost of removing fish barriers on small forest landowner lands.
- Washington State was required to annually rate and then rank barriers and repairs based on specific criteria explained below in "WDFW Ranking".
- Washington State was required to relieve landowners, who sign up for the program, of any forest practices obligations to fix a fish passage barrier until funding is made available to complete the project.

Three state agencies and a stakeholder group cooperate to manage and fund the program:

- The Washington State Department of Natural Resources (DNR) Small Forest Landowner Office is the main point of contact for program information, assisting landowners, providing outreach, and coordinating additional funding sources.
- The Washington State Department of Fish and Wildlife (WDFW) is responsible for evaluating the barrier, assessing habitat quality of the stream, and ranking barriers for correction.
- The Washington State Recreation and Conservation Office (RCO) administers program funding and provides information on program contracts, billing, and reimbursement.
- The Washington Farm Forestry Association (WFFA) represents the small forest landowner community on the steering committee; providing program oversight and assisting with project approval.

WDFW Ranking of Fish Passage Barriers for the Family Forest Fish Passage Program

Program legislation (RCW 77.12.755) directs the repair of the worst barriers first starting with barriers lowest in the watersheds. To identify and prioritize the worst barriers, WDFW rates the barriers enrolled in the Family FFFPP on the following criteria:

- How many fish species benefit from the repair?
- What will be the amount and quality of habitat opened?
- What is the degree of fish barrier (that is, the degree to which fish are prevented from moving up or down stream)?
- What are the number and location of other barriers and the degree of those barriers?

- Is there concurrence from lead entity watershed groups (groups that take the lead on salmon habitat recovery plans in the watershed) on the repair?
- What is the cost effectiveness of the project?

Projects are scored to provide an initial list that is evaluated by the three state agencies; DNR, RCO, and WDFW. This information, along with project cost estimates, is provided to the FFFPP Steering Committee for final funding decisions.

Information on the fish passage barriers obtained during site visits is placed in the WDFW Fish Passage Barrier Inventory. The inventory includes those stream crossings that have been identified through Washington State Department of Transportation inventories, local government inventories, barriers identified in FFFPP stream surveys, and local inventories funded by the Salmon Recovery Funding Board.

When a small forest landowner signs up for the FFFPP, they are then relieved of responsibility to correct that fish passage barrier until it becomes a funded high priority for correction under FFFPP, or if the barrier becomes a threat to public resources. If a landowner does not sign up for the FFFPP, it is the landowner's responsibility to correct the fish passage barrier.

In addition to providing adequate funding, the two greatest challenges for the FFFPP are filling data gaps in the fish passage barrier inventory information and getting the word out to landowners who would benefit from the program. DNR and cooperating partners continue to pursue funding for inventory related work. Each biennium, the SFLO submits a request for $300,000 to conduct fish barrier inventories in areas where inventory information is limited. The SFLO has never received funding to conduct these needed activities.

The Small Forest Landowner Office has developed a targeted marketing campaign for the Family Forest Fish Passage Program. The FFFPP staff are broadening their demographic understanding of small forest landowners through the use of a new method of outreach through the Sustaining Family Forests Initiative Tools for Engaging Landowners Effectively (TELE). This marketing approach is explained further in Section 5.6 *Small Forest Landowner Office Outreach*.

In the 2016 field season, the FFFPP completed 20 fish barrier removal projects opening 44 miles of upstream fish habitat. Below is a table showing the FFFPP accomplishments since its creation in 2003.

Family Forest Fish Passage Program Accomplishments Since 2003

Numbers and Costs	FY 2016	Cumulative Since 2003
Eligible Small Forest Landowner Applications	87	942
Eligible Barriers	130	1,335
Barriers Corrected	20	413
Stream Miles Opened Up	44	947
Cost of Completed Projects	$2.3 million	$33.3 million

5.4 Small Forest Landowner Forest Roads

In the 2015 FPHCP Annual Report, the State described an effort to collect data and report on the progress of small forest landowners in meeting road maintenance and abandonment requirements.

Of the 9,296 small private forestland owners contacted during the Statewide Roads Assessment Project, only 222, or 2 percent, provided feedback. The minimal reporting requirements for small forest landowners hampers DNR's ability to monitor and assess the state of forest roads on private lands. Part of the lack of data is due to the fact that small forest landowners are only required to provide information on the condition of roads that are part of an FPA, instead of all roads on their entire ownership. Small forest landowners have fewer RMAP reporting requirements because, in an effort to minimize the economic hardship on small forest landowners, the 2003 Washington State Legislature passed an RMAP bill (HB1095) that modified RMAP requirements for small forest landowners. Small forest landowners have the option to submit a "checklist" RMAP with each Forest Practices Application or Notification covering only roads within the forest practices application, rather than providing a plan for their entire ownership (such as that required for large landowner RMAPS).

The low voluntary participation of small forest landowners in the statewide small forest landowner roads assessment, and lack of reporting requirements on the RMAP checklist filled out by small forest landowners, hamper the State's ability to determine the effectiveness of forest practices road construction and maintenance rules on small forest landowner forestland.

5.5 Long-Term Applications

Washington's forest practices rules allow a landowner to apply for a forest practices permit to engage in forest practices, which is valid for three years, and in certain cases up to five years. Permits are renewable under certain conditions. The three-year permit works well for those who frequently conduct forest practices such as timber harvesting and road building. Landowners who harvest small volumes of timber and harvest infrequently often find that the application process can be complex, time consuming, and challenging.

To ease the paperwork burden and allow more flexibility in timing harvests with the market, small forest landowners may apply for a Long-Term permit that is valid for up to 15 years. To

prepare for a longer time period, landowners need to plan further ahead than the typical permit requires, while the flexibility will allow landowners to react quickly to changing markets and unforeseen events such as forest health problems or weather related disturbance.

The Long-Term Application permit process was implemented in 2007, and DNR has seen a steady increase in Long-Term Applications since that time. As of June 30, 2016, DNR's Forest Practices Activity Review database reported 220 approved Long Term Applications for small forest landowners. This was an increase of 25 Long-Term Applications approved during this reporting period.

5.6 Small Forest Landowner Office Outreach

The Small Forest Landowner Office communicates with agencies and the public to foster a mutual understanding, promote public involvement, and influence actions with the goal of serving as a resource and focal point for small forest landowners' concerns and policies. One of the challenges of the Small Forest Landowner Office is reaching small forest landowners to make them aware of technical, educational, and cost-share assistance programs to protect water quality, fish and wildlife habitat, improve forest health, reduce the risk of wildfire, and help small forest landowners retain their forestland.

Staff continue to utilize demographic tools from the Sustaining Family Forests Initiative Tools for Engaging Landowners Effectively (TELE) in support of outreach efforts. The Sustaining Family Forests Initiative, which is a collaboration between the Yale School of Forestry & Environmental Studies, the U.S. Forest Service, and the Center for Nonprofit Strategies, aimed at gaining and disseminating comprehensive knowledge about family forest owners throughout the United States. They created "Tools for Engaging Landowners Effectively", or TELE, which is a marketing strategy for landowner outreach that offers data and techniques to help target outreach activities to specific types of landowners.

Rather than using a broad-brush approach that tries to appeal to everyone, TELE uses a methodology called targeted marketing. Targeted marketing means designing communications that bring about a specific behavior change in a selected group of people. It seeks to reach people through their preferred channels, using messages that are most likely to appeal to them based on an understanding of their specific values, preferences, and other characteristics.

Targeted marketing has been successfully applied to many social issues and brings the same thinking to natural resource challenges and landowner outreach. It works because it creates specific programs and materials that directly tap the imagination and values of different types of landowners.

The Small Forest Landowner office now has a growing list of subscribers to the Small Forest Landowner Newsletter which totals over 6,000 subscribers. The newsletter is distributed quarterly. Landowners can subscribe at www.dnr.wa.gov\sflo or request by email to sflo@dnr.wa.gov. Readers can catch up on Archived Small Forest Landowner News editions.

5.7 Technical Assistance for Small Forest Landowners

The Small Forest Landowner Office revised the SFLO Outreach/Grant Writer Specialist position. This position still conducts outreach activities in support of the Small Forest Landowner Office programs, but the majority of the duties are related to serving as the designated technical expert in western Washington who assists small forest landowners in understanding the Forest Practices Rules, timber harvest systems, small forest landowner alternate plan templates, 20-acre exempt harvest rules, long-term applications, low impact harvest activities, and road construction techniques. The SFLO completed a successful recruitment process toward the end of the reporting period, and the new technical assistance forester will begin on July 5, 2016.

6. 20-Acre Exempt Riparian Forestland

6.1 Introduction

The 1999 Washington State Legislature exempted certain forestland parcels from some riparian protection measures in the Forest Practices Rules derived from the 1999 Forests and Fish Report. Exempt parcels include those that are 20 contiguous acres or less and are owned by individuals whose total ownership is less than 80 forested acres statewide. These parcels are commonly referred to as "exempt 20-acre parcels." While not subject to some forest practices riparian protection rules, exempt 20-acre parcels must still provide protection for public resources in accordance with the Forest Practices Act.

In arriving at their ESA permitting decisions in 2006, the federal Services concluded that they would condition the Incidental Take Permits regarding 20-acre exempt forest practices. Conditions include:

- The Permits require leave trees to be left along Type Np (non-fish-bearing, perennial) waters for riparian function.
- The Permits establish eligibility criteria for coverage of 20-acre exempt parcels under the Incidental Take Permits.
- The Permits define coverage thresholds for 20-acre exempt parcels in each watershed administrative unit and water resource inventory area.
- The Permits identify certain spawning and rearing habitat of bull trout (also known as "Bull Trout Areas of Concern") where Incidental Take Permit coverage may not apply.

6.2 Type Np Water Leave Tree Requirement

By Washington State Regulation, DNR requires trees to be left on Np (non-fish-bearing, perennial) waters on 20-acre exempt parcels where needed to protect public resources, defined as water, fish, and wildlife. The Services concluded that leaving trees along Np waters is necessary in most situations. The Forest Practices HCP Incidental Take Permits say that "permittee (Washington State) shall require trees to be left along Type Np waters under the 20-acre exemption unless such leave trees are not necessary to protect covered species and their habitats." In order to implement this permit condition, a guidance memo was written September 26, 2006 and delivered to DNR region forest practices staff clarifying that "henceforth Forest Practices Applications (FPAs) should be conditioned to require leave trees along Type Np waters within exempt 20-acre parcels unless DNR determines this is not necessary". See the 2007 Forest Practices HCP Annual Report for a copy of the guidance memo. Leave tree requirements are detailed in WAC 222-30-023(3): "…leave at least 29 conifer or deciduous trees, 6 inches in diameter or larger, on each side of every 1000 feet of stream length within 29 feet of the stream. The leave trees may be arranged to accommodate the operation."

There were thirteen Forest Practices Applications associated with 20-acre exempt parcels that had Type Np waters during FY 2016. Twelve applications were conditioned according to the Np

guidance memo or did not propose harvest within 29 feet of the Np water and one application did not have the statement on the FPA.

6.3 Watershed Administrative Unit and Water Resource Inventory Area Thresholds

In the Incidental Take Permits, the Services defined permit coverage thresholds for watershed administrative units (WAU) and water resource inventory areas (WRIA). The Services placed a 10 percent threshold on cumulative reduction in riparian function (as measured by the amount of recruitable large woody debris such as snags and tall trees that could fall across a stream or other water body) within a watershed administrative unit for 20-acre exempt parcels. Additionally, the Services placed a 15 percent stream length threshold within water resource inventory areas. The 15 percent threshold is based on the cumulative stream length of the affected streams within each WAU in the WRIA that has reached the 10 percent threshold. When a threshold within a watershed administrative unit or water resource inventory area is reached, subsequent FPAs on 20-acre exempt parcels within those units or inventory areas will not be covered by the Incidental Take Permits unless the landowner chooses to follow standard Riparian Management Zone (RMZ) rules. Washington State has adopted a method, approved by the Services, to estimate cumulative percent reduction of potential large woody debris recruitment function, by watershed administrative unit, and percent cumulative stream length affected, by water resource inventory area.

6.4 Cumulative Reduction in Function Calculation Methodology

A formula called the Equivalent Area Buffer Index (Buffer Index) is used to estimate the percent reduction in function, as measured by potential large woody debris that could be recruited along fish-bearing streams. The Buffer Index was developed for the Forest Practices HCP Environmental Impact Statement (EIS) (USFWS et. al 2006) as a tool for comparing management alternatives in terms of the level of ecological function conserved through various management practices. The Buffer Index for large woody debris recruitment potential is a quantitative measure that evaluates the potential of a riparian forest to provide trees and other woody debris across and into streams originating from tree mortality, windthrow and bank undercutting. The Buffer Index is expressed as a function of slope distance from the stream channel in relationship to tree height. The methodology takes into account management activities within the buffer zone. The Buffer Index value is determined based upon the ‘mature conifer curve of large woody debris recruitment potential’ by McDade et al (1990). It relates the cumulative percent of large woody debris recruitment with the distance from the stream bank in terms of tree height. The Environmental Impact Statement (EIS) for the Forest Practices HCP provides average Buffer Indexes for western and eastern Washington. These averages are used each year to estimate the potential cumulative reduction in large woody debris recruitment function from 20-acre exempt Forest Practices Applications submitted to DNR during the fiscal year.

Example explaining Buffer Index formula for fish-bearing stream in western Washington

- **Step 1 — Consider a fish-bearing stream (Type F).**
  The assumptions for this stream's Riparian Management Zone include a Channel Migration Zone (CMZ) that is 10-feet wide, followed by a 50-foot core zone of forest along the stream, followed by a 60-foot inner forest zone in which a light selection harvest is assumed (30 percent volume removal), followed by a 45-foot outer zone in which a moderately heavy selection harvest is assumed (70 percent volume removal). This gives a total RMZ width of 155 feet including the 10-foot CMZ. The total RMZ width of 155 feet is based on an average of Site Class II and III areas [(140+170)/2], which represent the most common site classes on forestland covered by the Incidental Take Permits.
- **Step 2 — Refer to the McDade (1990) mature conifer curve.**
  The McDade curve has been standardized for 155 feet, as the buffer distance that assumes full protection for the 100-year Site Potential Tree Height. This curve shows the cumulative percentage of large woody debris contribution in relation to the distance from the stream. In our example, we need to determine the percent of the total large woody debris contributed by the different RMZ zones (e.g., 0-10 feet, 10-60 feet, 60-120 feet and 120-165 feet). The values from McDade are 17 percent for the 0-10 foot zone, 62 percent for the 10-60 foot zone, 18 percent for the 60-120 foot zone, and 3 percent for the 120-165 foot zone.
- **Step 3 — Multiply the contribution percentage by the tree retention percentage for each RMZ zone, and sum them up.**
  (0.17 x 1.0) + (0.62 x 1.0) + (0.18 x 0 .7) + (0.03 x 0.3) = 0.925
- **Step 4 — Results**
  Therefore, the RMZ on Type F streams in western Washington would provide for an estimated 92.5 percent of large woody debris recruitment potential, given the assumption that full recruitment potential is achieved at a buffer width equal to the 100-year Site Potential Tree Height.

Annual in-office calculations of reduction in function based on proposed harvests

An estimate of potential reduction in function by watershed administrative unit is calculated annually and reported in the Forest Practices HCP annual report. The impact is "potential" because the calculations are based on "proposed" harvests, not "completed" harvests and estimates of stream impact are made in-office from information supplied on the FPA, not on-the-ground measurements. Average Buffer Index values are used to calculate the overall possible reduction in function by WAU. The average Buffer Index values used for the annual report calculations are taken from the Final EIS (Appendix B page B-28) for the Forest Practices HCP. These average Buffer Index values were obtained through modeling harvests based on both Forests and Fish Rules, and pre-Forests and Fish Rules. Many assumptions went into the modeling effort including degree of harvest, width of riparian area, stream width, etc. An end result of the harvest modeling was the development of average values for an overall Buffer Index for eastern and western Washington for harvests complying with Forests and Fish Rules, as well as with pre-Forests and Fish Rules.

The EIS average Buffer Index values for Forests and Fish Rules are used in our calculations without modification; however, an additional 15 percent was added to the EIS average Buffer Index values for pre-Forests and Fish Rules because the 1999 Salmon Recovery Act required 20-acre exempt landowners to protect an additional 15 percent of riparian trees above pre-Forests and Fish Rules. The average reduction in function value was calculated by subtracting the pre-Forests and Fish Rules Buffer Index values from the Forests and Fish Rules Buffer Index values for a percent reduction in function.

Below are the Buffer Index values and reduction in function factors used for the Forest Practices HCP Annual Report.

Buffer Indexes for Western Washington:
Buffer Index average for Forests and Fish Rules = 0.93
Buffer Index average for Rules prior to Forests and Fish = 0.60
Buffer Index average for 20-acre exempt rules = 0.60 x 1.15 = 0.69
Average Reduction in function factor = 0.93 – 0.69 = 0.24

Buffer Indexes for Eastern Washington:
Buffer Index average for Forests and Fish Rules = 0.91
Buffer Index average for Rules prior to Forests and Fish = 0.67
Buffer Index average for 20-acre exempt rules = 0.67 x 1.15 = 0.77
Average Reduction in function factor = 0.91– 0.77 = 0.14

The estimated number of feet of fish bearing stream potentially affected by harvests through Forest Practices Applications is tracked throughout the year. The total number of feet of stream length on fish bearing waters in each watershed administrative unit that are potentially affected is calculated for the fiscal year and then multiplied by 0.24 in western Washington and 0.14 in eastern Washington to derive the total stream distance over which large woody debris recruitment functions are reduced in function. These numbers are summed over the years and then divided by the GIS calculated total fish bearing stream length on lands regulated by forest practices in the watershed administrative unit to determine potential percent cumulative reduction in function

The following table contains the cumulative in-office estimates of reduction in function by watershed administrative unit for the time period of June 5, 2006 to June 30, 2016. A visual representation of the 20-acre Exempt Forest Practices Applications accounted for in the following table can be found in Appendices #2a and #2b. The two maps in these appendices show the location of the 20-acre exempt applications for FY 2016 and the location of all 20-acre exempt applications since June 2006. Maps showing 20-acre exempt Forest Practices Applications in previous fiscal years can be found in previous Forest Practices HCP annual reports.

Estimated Potential Percent Loss of Large Woody Debris Recruitment Potential, by Watershed Administrative Unit	
Watershed Administrative Unit	Percent (%) Reduction in LWD Function in WAU
Abernathy	0.049
Acme	0.052
Antonie Creek	0.019
Bangor-Port Gamble	0.416
Bellingham Bay	0.131
Black River	0.008
Bogachiel	0.051
Blanchard Creek	0.040
Bunker Creek	0.167
Camano Island	0.200
Camas Valley	0.020
Carbon	0.076
Carpenter	0.144
Cathlapotl	0.210
Cedar Creek/Chelatchie Creek	0.539
Chehalis Headwaters	0.006
Chehalis Slough	0.191
Chimakum	0.049
Chinook	0.021
Church Creek	0.363
Cloquallum	0.085
Coal Creek	0.220
Columbia River/Rock Creek	0.017
Colvos Passage/Carr Inlet	0.138
Conboy	0.028
Connelly	0.166
Copper Creek	1.530
Corkindale	0.097
Cottonwood Creek	0.017
Cowlitz River/Mill Creek	0.118
Damfino	0.306
Davis Creek	0.114
Day Creek	0.247
Deadman Creek/Peone Creek	0.239
Delameter	0.046

Delezene Creek	0.119
Diobsud Creek	2.307
Discovery Bay	0.033
Dragoon Creek	0.085
Drayton	0.327
Dyes Inlet	0.185
East Creek	0.031
East Fork Hoquiam	0.141
East Fork Humptulips	0.099
EF Satsop	0.005
Electron	0.030
Elk River	0.067
Everett	0.056
Ferndale	0.179
French-Boulder	0.037
Friday Creek	0.768
Gibson Ck.	0.187
Gilligan	0.095
Grays Bay	0.034
Great Bend	0.039
Haller Creek	0.061
Hamilton Creek	0.045
Hansen Creek	0.342
Harstine Island	0.106
Hoko	0.004
Hope Creek	0.042
Horseshoe Falls	0.639
Huckleberry Creek	0.019
Hutchinson Creek	0.131
Independence Creek	0.152
Jim Creek	0.033
Johns River	0.062
Jordan	0.080
Key Peninsula	0.144
Kiona Creek	0.131
L. Pilchuck Creek	0.067
L.Snoqualmie River/Cherry Creek	0.005
Lacamas	0.106
Lacamas Lake	0.303

Lake Merwin	0.289
Lake Whatcom	0.121
Liberty Miller - Appletree	0.296
Lilliwaup	0.023
Lincoln Creek	0.036
Little Deep Creek	0.046
Little Spokane/Deer Creek	0.053
Little Washougal	0.206
Little White Salmon River	0.018
Long Beach	0.085
Lost Creek	0.905
Lower Chehalis/Elizabeth Creek	0.141
Lower Coweeman	0.214
Lower Cowlitz	0.183
Lower Deschutes	0.097
Lower Dosewllips	0.172
Lower Elochoman	0.171
Lower Humptulips River	0.039
Lower Kalama	0.070
Lower Naselle	0.023
Lower NF Stillaquamish	0.143
Lower Newaukum	0.488
Lower Pilchuck Creek	0.216
Lower Pilchuck River	0.285
Lower Quinault	0.665
Lower Riffe Lake	0.094
Lower Skokomish	0.066
Lower Snoqualmie River/Cherry Crk.	0.088
Lower Willapa	0.205
Lower Wind	0.046
Lower Wishkah	0.042
Lynch Cove	0.183
Magee Creek	0.109
Mashel	0.039
Mason	0.117
McLane Creek	0.022
MF Satsop	0.034
Middle Humptulips	0.043
Middle Sauk	0.021

Mill Creek	0.019
Mill Creek/Clugton Creek	0.032
Mitchel	0.038
Moran Creek	0.057
Mox Chehalis	0.107
Mt Zion	0.032
Muck Creek	0.228
Naselle Headwaters	0.008
Nemah	0.038
NF Granite Creek	0.034
NF Newaukum	0.045
Nineteen Creek	0.190
Nookachamps	0.014
North Headwaters	0.049
North-Middle Forks Deer Creek	0.059
Ohop	0.018
Olequa	0.327
Ostrander	0.324
Otter Creek	0.041
Packwood Lake	0.245
Patit Creek	0.052
Pend Oreille/Cedar Creek	0.040
Pilchuck Mtn.	0.013
Port Angeles	0.154
Porter Canyon	0.031
Possession Sound-N. Elliot Creek	0.139
Quilceda Creek	0.278
Quillisascut Creek	0.126
Quinault Lake	0.114
Raging River	0.026
Reese Creek	0.049
Rock Creek	0.159
S. Sinclair Inlet	0.032
Salmon Creek	0.046
Salt Creek	0.251
Samish Bay	0.090
Samish River	0.112
Sammamish River	0.038
San Juan	0.045

Satsop	0.140
Scatter Creek	0.011
Sekiu	0.022
Sequim Bay	0.087
Siebert McDonald	0.063
SF Skokomish	0.061
SF Skykomish River	0.020
SF Willapa	0.070
Silver Lake	0.175
Smith Creek	0.036
Smith Point	0.769
Sol Duc Lowland	0.030
Sol Duc Valley	0.014
Squalicum Creek	0.071
St. Peter-Lambert	0.025
Stahley Mtn.	0.150
Stillaguamish Flats	0.037
Sultan River	0.042
Sumas River	0.121
Sutherland Aldwell	0.283
Tacoma Creek	0.103
Tanwax Creek	0.224
Toandos Peninsula	0.059
Toutle River	0.140
Upper Chehalis/Rock Creek	0.088
Upper Coweeman	0.033
Upper Little Pend Oreille River	1.48
Upper NF Stilly	0.071
Vancouver	0.628
Vashon Island	0.050
Vedder	0.761
Verlot	0.053
Vesta Little N.	0.009
Warnick	0.060
West Fork/Mid Fork Hoquiam	0.026
West Fork Wasougal	0.069
Whidbey Island	0.191
White Salmon/Buck Creek	0.023
Wilkeson	0.032

Willapa Headwaters	0.008
Winston Creek	0.024
W. Kitsap	0.023
Wishkah Headwaters	0.081
Woodland Creek	0.506
Woods Creek	0.075
Wynochee River System	0.017
Yacolt	0.346
Yelm Creek	0.237

The table above shows estimated percent of loss of potential large woody debris recruitment in each watershed administrative unit containing one or more 20-acre exempt FPAs over the elapsed ten-year period of the Incidental Take Permits. There are a total of 846 watershed administrative units in the state, of which 200 have had 20-acre exempt FPAs approved. Currently, in-office calculations indicate that each watershed administrative unit affected by 20-Acre Exempt applications, except for three, has less than one percent potential cumulative reduction in function relative to standard Forest Practices prescriptions. The largest possible impact is in the Diobsud Creek WAU in the Upper Skagit WRIA, which has a total of only 18,197 feet of fish-bearing stream on HCP covered forestland in the watershed unit. In-office calculations of proposed applications show a possible 2.307 percent potential reduction of large woody debris recruitment function in the Diobsud Creek WAU. The Copper Creek WAU in the Lewis WRIA, with 17,464 feet of Forest Practices HCP covered forestland fish-bearing stream, shows a possibility of 1.53 percent potential reduction of large woody debris recruitment function. And the Upper Little Pend Oreille River unit in the Colville WRIA, with 8,978 feet of Forest Practices HCP covered forestland fish-bearing stream, shows a possibility of 1.48 percent potential reduction of large woody debris recruitment function. None of the three WAUs with potential reduction in function over one percent are near the 10 percent threshold (explained in 6.3) established in the ITPs. Eighty-three watershed administrative units indicate a potential of reduction in function between 0.1 and 0.9 percent: and the remaining 114 watershed administrative units listed in the above table show the possibility of less than 0.1 percent reduction in function since the 2006 issuance of the Incidental Take Permits.

6.5 Data Collection for Watershed Administrative Unit Threshold

Cumulative Stream Length for Water Resource Inventory Areas

A fish-bearing Forest Practices HCP covered stream baseline length was calculated for all WRIAs. As in-office calculations indicate that the 10 percent threshold may be approaching in watershed administrative units, DNR will compare the total Forest Practices HCP covered stream length in each watershed administrative unit to determine when the 15 percent threshold might be reached for the water resource inventory area. DNR will then inform landowners that subsequent Forest Practices Applications associated with 20-Acre Exempt parcels within the area will no longer be covered by the Incidental Take Permits, unless individual landowners choose to

apply standard Riparian Management Zone rules on their 20-Acre Exempt forest practice. Currently, there are no watershed administrative units approaching the 10 percent threshold for reduction in function; therefore, no areas currently are at risk for reaching the 15 percent stream threshold.

6.6 Bull Trout Areas of Concern

The USFWS placed conditions on its Incidental Take Permit regarding specific, identified spawning and rearing habitat areas for bull trout. These areas are of concern because of extremely low populations of bull trout. The condition states that a forest practice that qualifies for and uses the 20-Acre Exempt riparian rules and falls within these bull trout areas of concern will not be covered by the Incidental Take Permits unless the forest practice is shown to not measurably diminish the level of riparian function. The function is measured by potential large woody debris recruitment and is compared to the level of function that would have been provided by the standard Forest Practices Rules. The State and USFWS together developed a process to track forest practices in these bull trout areas of concern. The process was described in the 2009 Forest Practices HCP Annual Report. There were no Forest Practices Applications associated with 20-Acre Exempt parcels in the bull trout areas of concern during the reporting period from July 1, 2015, through June 30, 2016. However, there was one 20-ac exempt FPA that was near a bull trout area of concern. The landowner chose to use standard RMZ buffers (instead of 20-ac exempt RMZ buffers) to help protect bull trout habitat, even though the land was not in a bull trout area of concern.

6.7 20-Acre Exempt Forest Practices Application Data

Of the 4,255 Forest Practices Applications processed throughout the reporting period, 3,831 were approved, and of those, 63 were new, approved non-conversion 20-Acre Exempt applications adjacent to fish-bearing streams.

Number of 20-Acre Exempt Forest Practices Applications (July 2014 – June 2015)

20-Acre Exempt Forest Practices Applications with Specific Characteristics	Number
Number of 20-Acre Exempt applications with fish-bearing water	67
Number of 20-acre Exempt applications that were conversions with fish-bearing water	4
Number of 20-Acre Exempt applications with fish-bearing water that were not conversions	63
Number of 20-Acre exempt applications that were in Bull Trout Areas of Concern	0

Twenty-acre exempt non-conversion applications along fish-bearing water comprised approximately1.6 percent of all approved applications submitted during the 2015-2016 reporting period. Twenty-acre exempt conversion FPAs are not included in the calculation because the Incidental Take Permits do not cover Forest Practices Applications that are conversions.

7. Alternate Plans, Rivers and Habitat Open Space Program

7.1 Introduction

This chapter provides information about two areas of interest to the Services – Alternate Plans, and the Rivers and Habitat Open Space Program. The Forest Practices HCP is a programmatic HCP based on the forest practices program. Both alternate plans and the Rivers and Habitat Open Space Program are codified in forest practices rules, which are the foundation of the forest practices program. This then makes alternate plans and the Rivers and Habitat Open Space Program an important part of the Forest Practices HCP.

Alternate Plans are forest practices plans that deviate from standard Forest Practices Rules but provide public resource protection equal in overall effectiveness as the standard rules. The Rivers and Habitat Open Space Program is used to establish permanent forestland conservation easements between landowners and the State. Eligible for this program are lands with timber located along the area of active channel of a stream that is prone to move, also called channel migration zones. In 2009, the Legislature expanded the program to allow acquisition of conservation easements on forestland habitat for critical habitat for state-listed species identified as threatened or endangered.

7.2 Alternate Plans

An Alternate Plan is a tool forest landowners can use to develop site-specific management plans for forest activities regulated under the Forest Practices Act. An Alternate Plan may deviate from the standard Forest Practices Rules, as long as the plan provides protection to public resources at least equal in overall effectiveness to that provided by the Forest Practices Act and rules. WAC 222-12-0401 describes the Alternate Plan process, including the review by interdisciplinary teams.

The following table shows the number and status of Forest Practices Applications submitted that included an Alternate Plan during the period from July 1, 2015 to June 30, 2016:

Forest Practices Applications with Alternate Plans during FY 2016

Landowner Type	Status of Forest Practices Applications with Alternate Plans				Total
	Approved	Disapproved	In Review	Closed Out*	
Small	91**	3	7	6	**107**
Large	38	0	1	1	**40**
Total	**129**	**3**	**8**	**7**	**147**

***Closed Out** means that the applicant asked that the FPA be withdrawn and closed.
**This includes 3 long term applications (LTAs).

7.3 Rivers and Habitat Open Space Program

Like the Forestry Riparian Easement Program (see chapter 5), the original Riparian Open Space Program was a product of the 1999 Forests and Fish Law. It was codified in the Forest Practices Act and adopted by the Board as a forest practices rule. The 2009 Legislature amended the Riparian Open Space Program to be broader in scope. The Forest Practices Board then amended the forest practices rules to include the revisions in statute made by the legislature and changed the name of the Program to the Rivers and Habitat Open Space Program. The effective date of the revised rules was June 19, 2011.

The Rivers and Habitat Open Space Program is available to all forest landowners, not just small forest landowners. The Program promotes long-term conservation of aquatic resources and upland habitats through the purchase of conservation easements. The program establishes conservation easements on lands and timber within a specific type of channel migration zone known as an “unconfined channel migration zone.” It also establishes easements to conserve habitat of state-listed threatened and endangered species.

A channel migration zone is the area where the active channel of a stream is prone to move in the near term. Unconfined channel migration zones are generally larger water bodies, have less than 2 percent gradient and are found in a valley more than four times wider than the bank-full width of the channel. These areas typically have very high ecological value as spawning and rearing habitat for salmon and other fish species. Under the Forest Practices Rules, no timber harvesting or road construction may occur within channel migration zones due to their ecological importance and sensitivity.

The Forest Practices Rules protect critical habitat of ten upland species, two of which are the northern spotted owl and the marbled murrelet. ‘Critical habitat’ is a designation to protect the

important habitat characteristics that will assist in the recovery of the federally threatened or endangered species. Landowners of forests determined to be critical habitat for these species are eligible to grant to the State a perpetual conservation easement under the Rivers and Habitat Open Space Program.

The Northern Spotted Owl Implementation Team (NSOIT), established by the Forest Practices Board in 2010, consists of stakeholders representing conservation, state government, industry, land trusts, and small forest landowner interests. Among other things, the Forest Practices Board tasked the NSOIT in 2010 to develop strategic voluntary incentive mechanisms on nonfederal lands in Washington to contribute to northern spotted owl conservation. In 2010, the Forest Practices Board also directed the NSOIT to form a technical team to "assess the spatial and temporal allocation of conservation efforts on nonfederal lands using best available science." On November 8, 2013, the NSOIT sent a memo to the Washington Forest Practices Board which included current consensus recommendations on habitat incentives priorities for voluntary northern spotted owl conservation on nonfederal lands in Washington, which was informed by the technical team analysis. The NSOIT finds that strategic additions of northern spotted owl habitat can make meaningful contributions to the species' conservation and have recommended an initial set of conservation incentive priority areas.

DNR screens applications, prioritizes qualifying applications, and acquires conservation easements based on available funding. There is $1,000,000 allocated for the Rivers and Habitat Open Space Program for the FY 2015-17 funding period. Applications for conservation easements for channel migration zones are prioritized separately from applications for habitat of threatened and endangered species. Applications are prioritized based on conservation benefits and landowner management options. There are 18 applications held over from last biennium's open application period. Two of them are CMZ easement applications and 16 are Critical Habitat State easement applications. The first half of the biennium is the open period for new applications. This biennium had eight new applications; three CMZ easement applications and five Critical Habitat State easement applications.

The following chart shows the budget allocated by the Washington State Legislature for the Rivers and Habitat Open Space Program, and the acres purchased since program's inception.

Budget, and Acres Purchased under Rivers and Habitat Open Space Program

Fiscal Year	Budget Allocated	Amount Spent	Number of Transactions	Acres Purchased
01-03	$1,000,000	$1,000,000	3	387
03-05	$1,000,000	$500,000	5	197
05-07	$2,000,000	$0	0	0
07-09	$2,200,000	$2,200,000	4	339
09-11	$500,000	$460,000	4	119

11-13	$0	$0	0	0
13-15*	$500,000	$500,000	1	25
15-17	1,000,000	Not yet determined	Not yet determined	Not yet determined
Total	8,200,000	4,660,000	17	1,067

*13-15 was the first year money was allocated for Critical Habitat State

The $500,000 left over from FY 2003-05 was reallocated for FY 2005-07. All of the $2 million from FY 2005-07 was reallocated for FY 2007-09. There were no transactions for FY 2005-07 because applicants withdrew due to values lower than anticipated, or the lands were not eligible. There were 11 applications for FY 2009-11, of which eight were eligible. DNR assembled a technical selection committee that determined the priority of funding of the eligible applications for the $500,000 allocated for the FY 2009-11 funding period. There were no funds allocated for fiscal years 2011 to 2013. In the 2013-15 biennium, money was provided for the first time for Critical Habitat State, and one 25-acre easement was purchased with the $500,000 allocation for Critical Habitat State. It is the program's intent to allocate the 15-17 budget in a 30% - CMZs and 70% - Critical Habitat State split as described in Board Manual chapter 18 *Rivers and Habitat Open Space.*

8. Enforcement

8.1 Introduction

Working in conjunction with forest landowners, timber owners, and operators, the Forest Practices Program is responsible for ensuring forest practices activities are conducted in accordance with the Forest Practices Act and Rules, and any conditions placed on the approved Forest Practices Application/Notification. This is also a responsibility under the Forest Practices HCP because the Forest Practices HCP is a programmatic HCP based on the forest practices program.

Forest Practices Applications are classified depending on the level of potential risk the proposed activity has on public resources. This classification helps forest practices foresters prioritize compliance inspections.

Prioritization of compliance inspections is related to the potential risk to public resources posed by an activity. For example, landowners constructing road in steep terrain where there is potential for sediment delivery to a stream will receive a higher level of compliance inspections than a proposal that has limited road construction on gentle slopes that have no associated risk of sediment delivery to a stream.

The classification of FPAs and the prioritization and targeted approach to compliance helps ensure the most effective and efficient use of a Forest Practices foresters' time.

Four classes of forest practices

- **Class I** – Class I FPAs are determined to have no direct potential for damaging a public resource.
- **Class II** – Class II FPAs are determined to have a less than ordinary potential to damage a public resource.
- **Class III** – Class III FPAs are determined to have an average potential to damage a public resource.
- **Class IV- Special** – Class IV-Special FPAs are determined to have potential for a substantial impact on the environment.
- **Class IV-General –** Class IV-General FPAs are being converted to a use other than forestland or determined to have a higher potential for a conversion to a use other than forestland.

Regardless of the classification, all forest practices activities must be carried out in compliance with the Forest Practices Act and Rules. More detailed information on forest practices classifications can be found in WAC 222-16-050.

Compliance inspections are an important part of a Forest Practices forester's job in large part because the inspections are a means of ensuring landowner compliance with Forest Practices

Rules. Additionally, the information gathered during compliance inspections coupled with Compliance Monitoring Program (Chapter 9) data can help inform the forest practices program of areas of the program that could benefit from modification. Modifications may include things such as clarification of rule language or Board Manual chapters, improving forms and administrative processes, development of guidance documents, and development of needed training. Compliance inspections are an integral component of the continuous forest practices program feedback loop.

When an activity is found to be out of compliance with the forest practices rules, program staff have several enforcement options available: Notices to Comply (NTC), Stop Work Orders (SWO), civil penalties, Notice of Intent to Disapprove (NOID), and criminal penalties. The Forest Practices Act and rules encourage informal, practical, result-oriented resolution of alleged violations and actions needed to prevent damage to public resources. A progressive approach to enforcement is used that begins with consultation and voluntary efforts to achieve compliance while reserving civil penalties (monetary fines) for more serious infractions. Often informal conference notes (ICN) are used to document conversations and decisions which are not related to enforcement actions, or to document the process when or if future enforcement actions may be necessary.

8.2 Enforcement Activity

During the reporting period, the DNR forest practices program had approximately 63 Forest Practices program field staff statewide who enforced and helped ensure compliance with the Forest Practices Act and Rules.

Enforcement documents can be used for violations or non-violations. Violations are forest practices activities that violate a law or rule or have resulted in damage to a public resource. Non-violations are situations where damage to a public resource has not occurred but the Forest Practices forester has determined that damage is imminent if the activity or condition is not addressed. For example, if an operator does not have adequate road surface drainage on a haul road for use in the rainy season, the operator could be issued a non-violation Notice to Comply requiring the road be improved and maintained so it does not pose a threat to public resources during heavy rains. The following table shows enforcement activity between July 1, 2015 and June 30, 2016.

Stop Work Orders and Notices to Comply Issued in Fiscal Year 2016

DNR Region	Stop Work Orders		Notices to Comply		Total
	Non-Violation	Violation	Non-Violation	Violation	
Northeast	0	1	7	5	13
Northwest	1	7	4	11	23
Olympic	0	1	0	7	8
Pacific Cascade	0	3	1	9	13
South Puget Sound	0	4	0	9	13
Southeast	0	1	0	3	4
Total	1	17	12	44	74

Fiscal Year 2016 Enforcement Data Summary

*Approved and/or Renewed Forest Practices Applications

Number of active Forest Practices Application/Notifications (FPA/Ns) through June 30, 2016 (See chapter 4 for information about FPAs received or renewed during Fiscal Year 2016.)	15,109*
Number of Notice To Comply / Stop Work Orders issued for violations	61
Ratio of Notice To Comply / Stop Work Orders violations to total number of active FPA/Ns (61/15,109)	0.4%
Number of Notice To Comply / Stop Work Orders issued for non-violations	13
Ratio of Notice To Comply / Stop Work Orders non-violations to total number of active FPA/Ns (13/15,109)	<0.1%
Total number of documents issued (violation & non-violation)	74
Ratio of all documents issued to total active FPA/Ns (74/15,109)	0.5%

The table above compares the number of Notice to Comply and Stop Work Order documents issued in FY 2016 to the number of active (that is, not yet expired) Forest Practices Applications through June 30, 2016. Overall, the intent is to encourage landowners to successfully implement the rules to protect public resources.

The majority of violations do not require additional enforcement action, such as issuance of a civil penalty or Notice of Intent to Disapprove. The majority of initial enforcement actions have proven to bring landowner behavior into compliance with the Rules without a need to take more severe levels of enforcement action. When determining the appropriate level of enforcement a number of factors are taken into consideration. These include:

- § Is there failure to comply with the terms or conditions of a Forest Practices Application /Notification or Stop Work Order?
- § Is there the existence or probability of more than minor harm to the environment as the result of non-compliance?
- § What is the extent of damage to the public resource?
- § Is there a history of past violation of the same rule or law by the same landowner or operator?

The table below shows the number of Civil Penalties and Notices of Intent to Disapprove that became a Final Order (all appeal processes have concluded) during FY 2016.

Fiscal Year 2016 Civil Penalties and Notices of Intent to Disapprove

Region	Civil Penalties	Notice of Intent to Disapprove
Southeast	0	1
Northwest	0	0
South Puget Sound	0	0
Northeast	0	0
Pacific Cascade	0	0
Olympic	0	0
Total	0	1

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9. Compliance Monitoring Program

9.1 Introduction

DNR is mandated by law to conduct compliance monitoring. WAC 222-08-160(4) states:

> "DNR shall conduct compliance monitoring that addresses the following key question: 'Are forest practices being conducted in compliance with the rules?' DNR shall provide statistically sound, biennial compliance audits and monitoring reports to the Board for consideration and support of rule and guidance analysis. Compliance monitoring shall determine whether Forest Practices Rules are being implemented on the ground. An infrastructure to support compliance will include adequate compliance monitoring, enforcement, training, education and budget."

The Compliance Monitoring Program (CMP) is a key component of the Forest Practices program. As such, CMP is also a component of the Forest Practices HCP because the Forest Practices HCP is a programmatic HCP based on the forest practices program. DNR's compliance monitoring program uses detailed field protocols to produce statistically reliable compliance determinations. Compliance monitoring provides feedback on how well operators and landowners are complying with the Forest Practices Rules when conducting forest practices activities. The information gained through the CMP (as well as from the daily efforts of onsite region Forest Practices foresters) provides critical feedback to the Forest Practices program about where to focus training efforts and where improvements may be needed in forest practices application review, compliance, or enforcement and where rule clarification or board manual revisions might be warranted.

When initial funding for the CMP was allocated by the legislature in 2006, DNR, with input from other stakeholders, developed a compliance monitoring program design and implemented a pilot sampling effort. The CMP has completed annual compliance monitoring sampling every year since the 2006 pilot. The program has also produced biennial reports that provide and explain results of the field reviews.

All completed reports can be found on the compliance monitoring program website: http://www.dnr.wa.gov/programs-and-services/forest-practices/rule-implementation.

The CMP is administered within DNR by a compliance monitoring program manager and is staffed by a manager and a program specialist. Survey teams of four to five professional foresters, geologists, and biologists conduct the monitoring. The professionals come from DNR, Ecology, WDFW, and several tribes. Landowners are invited to attend the field assessments.

Input to the program is provided by the Compliance Monitoring Stakeholder Committee, which includes representatives of DNR, Washington Department of Fish and Wildlife, Department of Ecology, tribes and tribal organizations, the Services, Washington Farm Forestry Association,

Washington Forest Protection Association, industrial landowner representatives and the conservation caucus. This forum meets regularly and provides advice on:

- Clarification of rule elements when questions arise,
- Consistent implementation of program protocols, and
- Recommendations from the committee for Compliance Monitoring Program improvement.

Compliance monitoring is limited by mandate and staffing which results in a focused program with a well-defined, yet limited, scope. Compliance monitoring does not:

- Focus on individual landowners and compliance specific to those landowners, but rather focuses on the two overall groups of small and large forest landowners.
- Focus on individual region results. All data collected informs the overall population sample for a particular activity.
- Enforce forest practices rule violations: When field reviewers encounter rule violations, the appropriate DNR regional staff is notified for further action, or
- Modify water types: Field reviewers do, however, record observed differences between water type documentation on forest practices applications and on-the-ground physical features.

The Compliance Monitoring Program currently evaluates compliance with those rules considered to have the greatest impact on the protection of aquatic and riparian species and their habitat (riparian, wetland, road construction and maintenance, and haul route rules).

The Compliance Monitoring Program monitors by “rule prescription type”. Prescription types are groupings of similar Forest Practices Rules that apply to a forest practices activity. Forest practices activities are operations such as timber harvest and forest road construction that are subject to Forest Practices rules. For example, forest practices activity types such as road construction and timber harvest are evaluated based on options available for implementing a particular activity – such as the many options available for harvest in the riparian management zone (RMZ) (desired future condition (DFC) Option 1, DFC Option 2, etc.); and by function/feature being protected such as water quality and wetlands. In compliance monitoring reports, for example, DFC Option 1 is called a prescription type. The compliance monitoring program monitors and reports compliance monitoring findings by each of the prescription types.

The prescription type rule groupings allow for statistical estimation of compliance by those specific rule groups rather than an overall forest practices compliance rate. This enhances the ability to determine where additional training or education or forest practices compliance efforts might be needed to increase compliance with forest practices rules. The compliance monitoring program, with stakeholder input, determines which forest practices rule prescription types are sampled each year and then estimates the sample size required for each rule prescription to

obtain the desired statistical precision. The compliance monitoring field team then collects data from the required number of samples for each rule prescription type.

Some forest practices rules are monitored annually and are referred to as the *standard sample*. In addition, certain rule groups (or prescription types) are monitored periodically and these are known as an *emphasis sample*. The standard sample monitors the following rules:

- Riparian protection (WAC 222-30-021 and WAC 222-30-022)
- Wetland protection (WAC 222-30-020(7) and WAC 222-24-015)
- Road construction, maintenance, and abandonment (WAC 222-24)
- Haul routes for sediment delivery (WAC 222-24)

In addition, the physical criteria of waters (that is, stream width, stream gradient, etc.) are observed to estimate the number of occurrences where water types recorded on forest practices applications are different than what is observed on-the-ground.

9.2 History of Compliance Monitoring Program Design

2006 – A statewide working group led by DNR completed a compliance monitoring program design focusing on RMZ Forest Practices rules for all typed waters and road activities. The program design also included a detailed protocol for field assessments, field form revisions, and data collection templates. A pilot sampling effort was completed.

2008 – The Board recommended technical review of the program design. Five reviewers were selected that had operational monitoring experience and the report results were presented to the Board in February of 2008.

2008 – In response to the 2008 review, four significant changes to sampling were implemented for 2008-2009.

1. A protocol was added to capture observed differences between water type classification at the time of application approval and at the time of the compliance review.
2. Compliance with the rules as they are applied on the ground is assessed in addition to compliance with what was stated on the approved application.
3. The Forest Practices Application selection strategy was modified to sample each DNR region proportional to their representation in the entire population of applications statewide. This was to assure representation of each region in the sample.
4. DNR contracted with a professional statistician to review and approve the program design.

2011 – An interim annual report between biennial reports became a required element of the program.

2012 – The Compliance Monitoring Program made significant changes in the sample design to increase confidence in statistical estimates for each prescription type observed. Previously, the

design was based on a random selection of forest practices applications stratified by the proportion of the population found in each DNR region. The sample size for each prescription type was dependent on what prescription types were observed on the selected forest practices applications. Beginning in 2012, the sample design randomly selected instances of each sampled prescription type occurring in the population. An estimated sample size was calculated for each prescription type which met a desired confidence interval for a biennium sample. This change in selection design allowed for some control in the level of statistical confidence in results and provided a larger information set to help determine causes of deviation from the rules. It also added flexibility in the future to add or remove different prescription types from the sample as needed while still providing the desired confidence intervals for each prescription type.

This change instituted in 2012 was designed to improve the confidence of the compliance estimates for the less frequently occurring prescription types. The design included using a finite population correction factor to estimate the sample size needed to provide a $\pm$ 6% confidence interval (CI) for all prescription types assessed. The $\pm$ 6% CI was selected because it was perceived to be the best precision achievable within the program budget. As a result, the 2012-2013 biennium sample saw a modest improvement in confidence but the implementation cost was too high to sustain.

2014 - The Compliance Monitoring Program made significant study design modifications to increase precision in statistical estimates for each prescription type observed. The updated study design divides the number of compliant rules by the number of total sampled rules within each prescription type, resulting in an average compliance rate by prescription. This change increases statistical precision in results and provides more information to help determine causes of noncompliance associated with rule interpretation and implementation. The modified design adds flexibility for future sampling to add or remove different prescription types from the sample as needed, while still providing the desired confidence intervals for each prescription type. Additionally, the No Inner Zone Harvest prescription, and No Outer Zone Harvest prescription have been combined into one sampled prescription. The cluster analysis method has distinct advantages:

- The method requires a smaller sample of FPAs which allows more flexibility for possible emphasis samples or sampling upland prescriptions.
- The revised method observes the same prescriptions assessed in the 2012-2013 report, which has not resulted in substantial changes to field data collection procedures.
- The program can use data from previous biennia and produce results using the cluster sampling ratio method which will allow a comprehensive comparison of compliance trends.
- This method benefits the program in detecting the specific rules or guidance that will require additional clarification and training. This could also inform the adaptive management program in regard to effectiveness monitoring studies that could be engaged by the Cooperative Monitoring Evaluation and Research Committee.

Each analysis method provides a different metric which are not directly comparable with each other. However, the change from binomial ratio analysis will still allow for analysis of past data using the cluster sampling ratio method because past data were collected with the same method. During this reporting period, the Compliance Monitoring Program analyzed previous biennia data using the cluster analysis method and will present the results in the 2014/ 2015 biennium compliance monitoring report.

2016 – The Compliance Monitoring Program incorporated an ongoing trend analysis project to discern patterns of changes in compliance rates measured over time. Data collected prior to 2014 were transformed to be consistent with current data collections, and analytical protocols. Data for rules were combined and compared through time within each corresponding prescription type. Trends in average compliance with prescriptions, and individual rule compliance are tracked to maintain consistency with current methods. Weighted least squares multivariate linear regression was used to predict general trends in average compliance across all prescription types through time.

9.3 Compliance Monitoring Program Reports and Findings

The *2014 and 2015 Biennium Forest Practices Compliance Monitoring Report* will likely be published in spring 2017. The Compliance Monitoring Program submitted the 2014-2015 biennial report, as well as current sampling and analytical methodology for Independent Study Peer Review. The program goal for submittal of the report and methodology for peer review is a strengthening of the overall statistical validity of the methodology and results. The biennial report summarizes results for the two-year period in which randomly selected and approved forest practices applications were assessed for compliance with the forest practices rules.

2014-2015 Biennial Report

During the 2014 and 2015 field seasons, data were collected and analyzed for the standard sample prescriptions, and trend analysis. There were no emphasis samples. Trend analysis was performed using 2010-2015 transformed data for each prescription type, excluding the Np prescription. As a result of data transformation issues, Np data collected from 2010 and 2011 were excluded from trend analysis results.

Riparian Prescription Standard Sample Findings

2014-2015 Riparian Prescription Standard Sample Findings

Riparian Prescription type	Percent (%)Compliant	Number Observed
Statewide Type F or S No Outer Zone Harvest	94%	25
Statewide Type Np Activities	94%	35
Statewide Type Ns Activities	97%	35
Statewide Type A&B Wetlands	94%	35
Statewide Forested Wetlands	97%	23
Western WA Desired Future Condition 1	94%	20
Western WA Desired Future Condition 2	98%	14

Statewide Water Typing Findings

In the initial years of compliance monitoring, compliance monitoring field team observations indicated that at times water types observed on-the-ground did not match water type classifications provided on submitted and approved forest practices applications. This led to concern regarding consistency and accuracy of water type information on forest practices applications because the width and length of riparian buffers required under forest practices rules are directly linked to water type. Stream and wetland type classification is a fundamental aspect of determining which forest practices rules apply to forest management activities taking place adjacent to typed water. Observed typing accuracy, as reported in the CMP biennial reports, has gone from 83% during the 2008-2009 biennium to 90% during the 2013-2014 biennium.

During the 2014-2015 seasons, the Compliance Monitoring Program evaluated 187 riparian related prescriptions involving typed water or wetlands. The number of typed waters and wetlands that were either accurately typed (160) or overtyped (protected) (10) was 170, or 91 percent of the total observed.

The total number of typed waters (including over-typed, under-typed and indeterminate) or wetlands where the compliance monitoring field team found discrepancies was 27 or 14 percent of the total observed. The inconsistencies occurred when typed water was under-classified on the forest practices application (for example, the forest practices application depicts a Type Np water that is found to actually be a Type F stream); or over-classified (for example, the forest practices application depicts a Type F water that is found to actually be a Type Np stream); or indeterminate (that is, not enough information was available to accurately make a water type determination). The number of waters under-classified was 11, or 5.8 percent of the 187 observed waters or wetlands. This means that 5.8 percent of the observed waters or wetlands received less protection than provided by Rule due to the misclassification error. The number of

waters or wetlands over-classified was 10, or 5.5 percent of the 187 observations. This means that 5.5 percent of the observed waters or wetlands received more protection than required by Rule. The number of waters or wetlands indeterminate was 6, or 3.2 percent of the 187 observations. This means that 3.2 percent of the observed waters or wetlands could not be typed by the Compliance Monitoring field team. Indeterminate observations are the result of physical impediments that preclude field staff from adequately assessing water type, or the indicated water typing break is physically located on another landowner's property.

Roads and Haul Routes Findings

In 2014 and 2015, road construction and abandonment activities were assessed as compliant on 98 percent of the 13 FPAs where the road construction or abandonment was sampled.

The rate of compliance for haul routes was 90 percent. Sixty-seven miles of haul routes were sampled.

Trend Analysis Findings

Trend analysis was conducted on Desired Future Condition Option 1, Desired Future Condition Option 2, No Inner Zone Harvest, Non-fish bearing perennial streams, Non-fish bearing seasonal streams, A and B wetlands, Forested wetlands, and Road construction and abandonment prescription types. Trends of annually increasing prescription compliance rates were observed for DFC2 (1.5%), No Inner Zone Harvest (1.0%), and Road Construction and Abandonment (1.4%). These percentages represent an average increase in compliance year over year. No statistically-significant increasing or decreasing trends were observed for DFC2, Np, Ns, A and B wetlands, and Forested wetlands.

9.4 Forest Practices Program Changes Based on Compliance Monitoring Program Feedback

One of the primary goals of the Compliance Monitoring Program is to provide feedback from compliance monitoring for the purposes of improving compliance with the forest practices rules.

Leave tree, Desired Future Condition, and RMZ length rule and Board Manual clarifications are currently under review and have been scheduled in the 2017 Forest Practices Board work plan. Board Manual clarifications for chapter 7 *Guidelines for Riparian Management Zones (RMZ) (Measuring Widths and Tree counts)* were presented at the May 2015 Forest Practices Board meeting.

9.5 Future Plans for the Compliance Monitoring Program

With the addition of Forest Practices Hydraulic Projects to DNR Forest Practices Applications, the Compliance Monitoring Program has been working on developing sampling methodology to determine compliance rate for the new FPHP rules. The Compliance Monitoring Program is also planning to develop sampling methodology for evaluating compliance with unstable slope rule prescriptions.

9.6 Funding

On an ongoing basis, the Forest Practices program actively seeks state funding from the legislature and support from the program's partners to effectively implement the Compliance Monitoring Program. DNR has received funds from the legislature since 2005 that supports staff from the Department of Ecology and the Department of Fish and Wildlife to work with DNR in the Compliance Monitoring Program. This funding was continued in the 2015-2017 legislative appropriation.

10. Training/Information/Education

10.1 Introduction

Training is a key element to successful implementation of, and compliance with, the Forest Practices Rules — some of the most comprehensive and function-based rules in the nation. Training is also an important element to successful implementation of the Forest Practices HCP because the Forest Practices HCP is a programmatic HCP based on the forest practices program. Forest Practices Rules require DNR to "conduct a continuing program of orientation and training, relating to forest practices and rules thereof, pursuant to RCW 76.09.250" (WAC 222-08-140). DNR conducts ongoing training to educate internal agency staff, forest landowners, and staff from cooperating agencies and organizations on implementation of forest practices rules.

There are four major venues in which the Forest Practices program provides training:

- Forest Practices program training;
- Subject-based training;
- Region staff provided training; and
- Washington Contract Loggers Association (WCLA) training.

10.2 Status of Forest Practices Training Programs

A new Forest Practices Training Manager was hired in January 2016, ending a year-and-a-half long vacancy. This position provides oversight of forest practices specific training for staff, stakeholders, and landowners. The Forest Practices Training Program is currently being updated and reimagined. Existing courses are being evaluated for content revisions and new methods of presentation, such as web courses, are being explored.

ELearning (online) Course Development

The training program intends to develop eLearning courses that can be delivered on demand without further cost. To that end, the Forest Practices training program has invested heavily into software platforms to produce and deliver eLearning opportunities. The training program is currently producing an eLearning series on unstable slopes that will allow presentation of the lecture portion of this class on demand to both internal and external stakeholders.

Forest Practices Enforcement and Compliance

The second area of emphasis this year was developing a comprehensive Forest Practices Enforcement and Compliance class (classroom/instructor lead) to be delivered in October 2016. This course is designed to be a cornerstone class for all Forest Practices staff. The course will review and discuss application evaluation, enforcement rules, compliance methods, complaint response, maintaining public safety and minimizing damage to public resources. Planning and preparation for this class began and has been ongoing since January 2016. The assembled training cadre includes some of the best and most experienced Forest Practices staff from across the state.

Forest Practices Program Training
Subject-based training sessions are provided for complex subjects that require larger blocks of time. Region staff that are trained during subject based training sessions share the information they learn in the class with landowners and other stakeholders at region TFW meetings.

A major training effort in FY 2016 was developing and providing an unstable slopes presentation to DNR region staff and then to TFW cooperators. This training was conducted formally as a centralized program delivered course, and specialized presentations given by DNR licensed engineering geologists specifically regarding the topic of "In and Around" as it applies to unstable slopes.

The Forest Practices' staff continues to receive short, focused training sessions (forest practices program training) during scheduled program meetings. These short duration trainings typically take place during regularly scheduled Forest Practices Operations Meetings. The meetings are held four times a year with the purpose of division and region staff sharing information and addressing program concerns. Training topics this year included hydraulic projects, stream typing, Forest Practices Application Mapping Tool (FPRAM) and State Environmental Policy Act (SEPA) information. After these short-duration training opportunities, the participants share the information they learn with other program staff and stakeholders as appropriate.

Subject Based Training
Compliance Monitoring
The Compliance Monitoring Program provides annual training for staff from DNR, Department of Ecology, WDFW and tribal field staff who participate in onsite review of completed forest practices applications. The one-day classroom session held in March 2016 focused on the protocols used to collect compliance monitoring data. Protocols, which are updated periodically to reflect design changes, were reviewed to ensure understanding of field procedures and their purpose. Additional field coaching and on-the-job training is done using experienced staff to promote consistency in observations by new program participants.
– 25 people attended the training.

Information Technology
On April 14, 2016, the Forest Practices Division and the Information Technology Division implemented a new system to facilitate the processing and review of Water Type Modification Forms (WTMF). The Water Type Modification Form Tracking Application (WTA) is an Oracle-based system which was developed internally by DNR. WTA replaces multiple tracking spreadsheets and centralizes and standardizes the data associated with WTMF's. WTMF stakeholder reviewers benefit from automatic email notifications and the centralized capture of reviewer comments and feedback. Over 100 WTMFs from across all DNR regions were processed in the WTA during the reporting period.

As part of the role-out of the new WTA application an overview and demonstration of the system was given via internet-based GoTo Meetings to key DNR region staff. WTA trainings and user support for WTA will continue as needed through the year.
– 12 people attended these sessions

*Unstable Slope*s
The demand for the established two-day unstable slopes training was very high during this reporting period. A class was provided in May 2016 in Olympia. The target audience was DNR program staff, agency stakeholders, landowners, and consultants. The course objectives were to improve the ability to recognize unstable slopes and landforms, improve consistency in recognition of these features, and identify when a specialist is needed for further consultation. Of the 84 people who attended, approximately half were DNR employees and the others were forestry consultants and stakeholders.
– 84 people attended the training

Small Forest Landowner Training
The Small Forest Landowner Office provided a variety of information outreach opportunities to small forest landowners around the state. Topics included Family Forest Fish Passage Program, Riparian Easement Program, wildlife habitat, forest excise tax, and forest land management information. (See Small Forest Landowner Office chapter 5 for more information).
- 98 people attended the training

Training Conducted by Region Staff
DNR forest practices region staff deliver both statewide and region-specific training. One of the forums used for region training are the regularly held region TFW "cooperator" meetings. During these meetings, the Forest Practices staff train on such topics as changes in forest practices rules, rule implementation, and application processing. Region staff also organize informal meetings where technical or scientific information is presented to keep field practitioners informed about recent research findings.

Regions completed or sponsored many training presentations and meetings during the reporting period. The topics varied widely and included, but were not limited to: enforcement documents, bankfull width/water typing, archaeological/historical protection, channel migration zones, compliance monitoring results, water type modification forms, road maintenance plans, hydraulic projects, alternate plans, and general forest practices rule topics.

Washington Contract Logger Association Training
DNR forest practices staff taught select classes to the Washington Contract Logger Association (WCLA). WCLA annually conducts a four-day training course, which includes one day of Forest Practices Rules training and one day of forest silviculture and ecology for operators seeking WCLA Master Logger certification. DNR Forest Practices program and other agency (WDFW and Ecology) staff teach subjects including water typing, riparian and wetland management

zones, cultural resources, road maintenance, hydraulic projects, and general information regarding the Forest Practices Application/Notification process.
– 124 WCLA members attended the training

11. Road Maintenance and Abandonment Planning for Large Forest Landowners

11.1 Introduction

Forest Practices Rules include a Road Maintenance and Abandonment Program to help prevent sediment and hydrology-related impacts to public resources such as fish and water quality and to fix fish passage barriers. The Road Maintenance and Abandonment Plan (RMAP) rules require large forest landowners to plan and schedule all of the work needed on their lands necessary to improve and maintain their forest roads to meet new standards specified in upgraded chapter 222-24 WAC. RMAP implementation is a critical component of Forest Practices rules and, therefore, of the forest practices program, for protecting public resources. Since the Forest Practices HCP is a programmatic HCP based on the forest practices program, RMAPs is also an important part of implementing the Forest Practices HCP and protecting federally listed species habitat.

Large forest landowners were required to have all roads within their ownership covered under a DNR approved RMAP (WAC 222-24-051) by July 1, 2006, and to bring all roads into compliance with forest practices standards by October 31, 2016. This includes all roads that were constructed or used for forest practices after 1974. An inventory and assessment of orphaned roads (i.e., forest roads and railroad grades not used for forest practices since 1974) must also be included in the plan. Forest Practices Rules require large forest landowners to prioritize road maintenance and abandonment work based on a "worst first" principle, – starting with road systems where improvements would produce the greatest benefit for public resources – and schedule their RMAP work to be metered throughout the time period on an "even-flow" basis so as not to wait until the last few years to complete all the work. Within each plan, maintenance and abandonment work is prioritized as follows:

- Remove blockages to fish passage;
- Prevent or limit sediment delivery;
- Correct drainage or unstable side-cast in areas with evidence of instability that could adversely affect public resources or threaten public safety;
- Disconnect the road drainage from typed waters;
- Repair or maintain roads that run adjacent to streams; and
- Minimize road interception of surface and ground water.

Board Manual Section 3 *Guidelines for Forest Roads* explains requirements and processes in the RMAPs program.

11.2 Extension of RMAP Deadline

On August 9, 2011, the Board amended WACs 222-24-050 and 222-24-051 to allow forest landowners to extend the deadline for completing the road work scheduled in their RMAPs

beyond October 31, 2016. The rule change allowed for an extension of the deadline for up to five years, or until October 31, 2021. While landowners had made substantial progress in meeting their RMAP commitments, the Board adopted this rule amendment because of the impact of the 2008 economic downturn on forest landowners. The cutoff for extension requests was September 3, 2014, (with requests approved by October 31, 2014). A total of 58 RMAPs have approved extensions.

11.3 Road Maintenance and Abandonment Plan Implementation

Following are three tables:

- *Statewide Road Maintenance and Abandonment Plan Accomplishment Report 2001-2015*;
- *Statewide Cumulative Road Maintenance and Abandonment Plan Accomplishment Report*; and
- *Fish Passage Barrier Information for Large Landowners*

These tables detail the progress that has been made by forest landowners from July 2001 until December 2015. The information provided is derived from data supplied by landowners as part of their annual accomplishment review. Following the *Statewide Road Maintenance and Abandonment Plan Accomplishment Report 2001-2015* is a description of each reporting element In addition, several of the descriptions include reasons why some reporting element numbers fluctuate, and provides additional in-depth information about why earlier accomplishment reports include data that differ from this report.

Statewide Road Maintenance and Abandonment Plan Accomplishment Report 2001-2015										
DNR Region	Number of approved RMAPs	Miles of forest road assessed	Miles of forest road identified needing improvement*	Miles of road improved	Miles of road abandonment	Miles of orphaned roads	Number of fish passage barriers identified	Number of fish passage barriers corrected	Miles of fish habitat opened	Total of RMAP checklists from small forest landowners
Northeast	89	7,625	568	5,687	303	96	834	809	451	4,032
Northwest	27	6,979	498	3,416	1,291	702	499	454	147	1,793
Olympic	34	8,442	1,473	1,733	145	247	1,522	1,141	504	1,050
Pacific Cascade	69	19,482	3,272	11,931	921	291	2,896	2,656	1,850	3,708
South Puget Sound	26	5,972	1,088	1,363	531	397	917	571	275	1,228
Southeast	15	6,500	303	1,459	642	498	689	455	280	821
Statewide Totals	260	55,000	7,202	25,589	3,833	2,231	7,357	6,086	3,507	12,632

The content of this table is based upon data provided by landowners who are responsible for the facts and accuracy of the information presented herein.

The numbers in columns 1 and 2 can change based on changes in land ownership.

Note:*Beginning with the 2011 RMAP reporting cycle (January 1, 2011, to December 31, 2011), landowners provided a new data element — "*miles of forest road identified needing improvement"*— based on the definition below. The data was first incorporated in the 2012 *Forest Practices HCP Annual Report.*

Reporting Elements

Number of Approved RMAPs

The number of approved RMAPs represents those plans submitted predominantly by large forest landowners. Many large landowners have more than one plan. There are 12 small forest landowners that could have opted to submit a "checklist" RMAP, but have chosen (in writing) to continue to follow their pre-2003 submitted RMAP, or have decided to submit a plan as described in WAC222-24-0511(2). This does not include land previously owned by a large landowner covered under an approved RMAP, which has been sold to a small forest landowner that chooses not to continue or implement an RMAP.

The number of approved RMAPs is dynamic in nature. Large landowners may have one RMAP for large land holdings or multiple RMAPs covering several road management blocks within the large land holding. Landowners may choose to change their strategy on the number of RMAPs they manage. Property transactions can lead to an increase or decrease in the number of approved RMAPs. Decisions by small landowners to discontinue their RMAP plans and obtain checklists instead would result in a decrease of RMAPs reported. Another reduction in the number may be due to a large forest landowner's decision to discontinue or reduce the amount of harvest, and submit a request to be released from the program due to qualifying as a small forest landowner (WAC 222-16-010).

Some landowners that received extensions on specific land holdings requested a new RMAP number for accurate tracking purposes.

Miles of Forest Roads Assessed

Landowners arrived at this number by conducting an inventory and assessment of all forest roads contained within a specific RMAP. This number includes roads that meet Forest Practices Rule standards as well as those that need to be improved.

Miles of Forest Road Identified Needing Improvement

Implementing the definition as described below, *Miles of Road Improvement*, the data was partially completed (dependent upon each landowners RMAP accomplishment reporting date) and first reported in the 2012 Forest Practices HCP Annual Report.

Miles of Road Improvement

For Road Maintenance and Abandonment Plan purposes, an improved road or road segment is defined as locations where actions have been taken to address issues associated with:

- Fish passage;
- Delivery of sediment to typed waters;
- Existing or potential slope instability that could adversely affect public resources;
- Roads or ditch lines that intercept ground water; and
- Roads or ditches that deliver surface water to any typed waters.

The improvements are to meet the current Forest Practices Rule requirements and are identified in the landowner plan, or problematic road conditions are subsequently discovered and actions are identified for inclusion within the time period associated with an approved RMAP.

Once a landowner identifies that a road or road segment is brought up to current rule standards, it is captured in that year's accomplishment report. Accomplishment reports are provided per the landowner's annual RMAP date. This date ranges from November to May of the following year after the operational road work season is complete. The DNR RMAP specialist may concur with the reports, meaning the road no longer will be identified as an RMAP obligation; therefore, the road or road segment would not be included in subsequent reporting years for miles of road needing improvement. Over time, the "miles of forest road identified needing improvement" will decrease as the "miles of road improved" increases. All roads not under an RMAP obligation are subject to standard Forest Practices Rules found in Chapter 222-24 WAC.

Miles of Road Abandonment

The number of road abandonment miles includes those that have been reported under an approved Road Maintenance and Abandonment Plan as abandoned per WAC 222-24-052(3). Roads are not considered 'officially abandoned' until the DNR RMAP specialist or Forest Practices forester reviews the on-the-ground abandonment to ensure it meets the requirements. Reported road abandonment miles reflect some road miles that may not have been officially abandoned at the time this report was distributed.

Miles of Orphaned Roads

The number of miles of orphaned roads includes those that have been reported under an approved RMAP as orphaned. Inventory and assessment of orphaned roads will be used to help in the evaluation of the hazard-reduction statute and to determine the need for cost-share funding (RCW 76-09-300).

This information is challenging to track precisely due to the difficulty in locating orphaned roads on the landscape; they often are obscured by brush and forest cover and do not appear on any map. Some orphaned roads have been converted to active forest roads, some abandoned, and some may be scattered throughout the landscape with present status unknown.

Number of Fish Passage Barriers Identified

The total number of fish passage barriers includes those identified as part of an approved RMAP inventory.

The total number of fish passage barriers will fluctuate over time, depending on when landowners verify on-the-ground physical characteristics and/or perform a protocol survey or other approved methodology for verifying fish presence or absence. In cases in which a stream type has been changed from 'Type F' to 'Type N'—therefore negating the landowners' obligation to remove fish passage barriers—sizing of the culvert will be assessed to ensure that it

is able to pass a 100-year flood level event plus debris. Due to limited habitat gained, barriers also may be removed from the total number, if the structure was determined in consultation with Washington State Department of Fish and Wildlife to be partially fish passable and sufficient to remain until the end of its functional life. Also, a barrier may be removed from the list if the structure was determined to play an important role in maintaining pond or wetland habitats; these decisions are made with stakeholder consultation.

Number of Fish Passage Barriers Corrected
The corrected number of fish passage barriers includes the total number that have been permanently removed or fixed with a fish-passable structure.

Miles of Fish Habitat Opened
The 'miles of fish habitat opened' refers to stream habitat opened for fish use after the fish passage barrier has been removed or replaced. This number is an estimate, due to the inability to always measure stream length on the ground. The measurement often is based upon aerial photos or maps.

This number of miles of fish habitat opened may fluctuate depending on when, or whether or not, a stream type verification survey occurs. This number is reflected by large forest landowner data or topographical information when there are no protocol surveys to pinpoint exact breakpoints. It also is difficult for landowners to determine this number if the stream enters another ownership.

Number of RMAP Checklists Submitted by Small Landowners
The 'number of RMAP checklists' is the total submitted to the DNR regions by small forest landowners since the 2003 rule change. Small forest landowners may submit more than one RMAP Checklist.

The following table, *Statewide Cumulative Road Maintenance and Abandonment Plan Accomplishment Report* displays the data cumulatively by year, rather than by DNR region.

Statewide Cumulative Road Maintenance and Abandonment Plan Accomplishment Report

Year	Number of Approved RMAPs & Submitted Checklists	**Total # of RMAP Checklists from Small Forest Land-owners	***Miles of Forest Road Identified Needing Improvement	Miles of Road Improved	Miles of Road Abandoned	Miles of Orphaned Roads	Miles of Habitat Opened	# of Fish Passage Barriers Corrected
2001-2002	4,066	---	---		645	502	52	46
2001-2003	5,530	---	---		1,007 / *362	1,246	175/ *123	355 / *309
2001-2004	7,401	---	---		1,587 / *580	1,944	647 / *472	1,217 / *908
2001-2005	8,419	---	---		1,856 / *269	2,107	775 / *128	1,363 / *146
2001-2006	9,950	---	---		2,068 / *212	2,313	982 / *207	1,819 / *456
**2001-2007	107	8,121	---	13,140	2,153 / *85	2,293	1,221/ *239	2,248 / *429
2001- 2008	130	8,628 / *506	---	15,019/ *1,879	2,431 / *278	2,305	1,448/ *227	2,871 / *623
2001-2009	126	8,804 / *176	---	16,195/ *1,176	2,621/ *190	2,305	1,569/ *121	3,141/ *270
2001-2010	262	9,187 / *383	---	18,475/ *2,280	2,915/ *294	2,333	1,772/ *203	3,769/ *628
2001-2011	247	9,696/*509	7,413	18,738/ *263	3,090/*175	2,393	2,189/ *417	4,258/*489
2001-2012	254	10,268/*572	7,568	20,026/ *1,288	3,275/*185	2162	2659/ *470	4,846/*588
2001-2013	263	10,971/*703	8,886	22,793/ *2,767	3,417/*142	2,356	3,130/ *471	5,298/*452
2001-2014	266	11,854/*883	7,811	24,282/ *1,489	3,550/*134	2,059	3,419/ *290	5,730/*432
2001-2015	260	12,632/*778	7,202	25,589/ *1,307	3,833/*283	2,231	3,507/ *88	6086/*356

* Number represents the increase from the previous year's report.

** Beginning in reporting year 2007 and thereafter, checklists have been separated from the 'Number of Approved RMAPs' and tracked separately.

*** This was a new reporting element beginning with the 2011 RMAP reporting cycle.

Note: Miles of Road Abandoned for 2001-2012 was changed to 3,275 miles (from 5,002 miles previously reported in the 2013 FPHCP Annual Report) due to an error in the 2012 data for NW Region. The number of miles of road abandoned in NW Region for 2001-2012 was 1,075 miles (not 2,801 miles as previously reported in the 2013 FPHCP Annual Report.

Fish Passage Barriers

In addition to the fish barrier information in the above tables, the following table, "*Fish Passage Barrier Information for Large Landowner*s" displays how many barriers have been repaired

cumulatively since 2001; the total repaired in calendar year 2015, and the percent of total repaired as of December 31, 2015.

Fish Passage Barrier Information for Large Forest Landowners

DNR Region	Number of fish passage barriers identified*	Number of fish passage barriers corrected from 2001-2015	Number of fish passage barriers corrected in 2015	% of total fish passage barriers corrected as of 12/31/2015
Northeast	834	809	31	97%
Northwest	499	454	25	91%
Olympic	1,522	1,141	133	75%
Pacific Cascade	2,896	2,656	111	80%
South Puget Sound	917	571	42	62%
Southeast	689	455	14	66%
Totals	7,357	6,086	356	83%

*This number may fluctuate annually as water types are confirmed and/or modified.

11.4 Washington Department of Fish and Wildlife Efforts written by WDFW

Biologists from the Washington State Department of Fish and Wildlife (WDFW) provide an essential role in the review and implementation of RMAPs. WDFW biologists reviewed RMAPs and the associated forest practices hydraulic projects, and provided assistance to landowners and DNR to assure that project plans and designs would be successful and meet fish protection standards. Since integration of WDFW's hydraulic code into forest practices rules, WDFW is no longer able to track which FPHPs are specifically associated with RMAPs. However, most of the FPHPs pertaining to fish-bearing streams are related to roads. Therefore, the numbers of FPHPs reviewed in Chapter 4 should be a close estimate. From July 1, 2015, through June 30, 2016, WDFW biologists reviewed 1,307 FPHPs, which included 182 concurrence-required project reviews and 1,125 standard FPHPs. It is important to note that each FPA can have multiple FPHPs.

12. Cultural Resources

12.1 Introduction

The federally recognized Indian tribes in Washington State are key cooperators in the Forest Practices Program. The sovereign status of Tribal governments requires a government-to-government relationship between DNR and the tribes. The Commissioner's Order on Tribal Relations serves as the department's overall tribal relations policy and commits the department to conduct relations with the tribes as one government to another. DNR's Tribal Relations Liaison assists the department in maintaining good communications and collaborative efforts, building stronger working relationships with the tribes. Table 1.1 in the Forest Practices HCP lists reporting elements to be reported on in the annual and five year reports submitted to the Services. One of the reporting elements listed is: "landowner/tribal meetings and process improvements pursuant to WAC 222-20-120."

The Forest Practices Board (Board), under the authority of Forest Practices Act chapter 76.09 RCW, adopts forest practices rules that foster cooperative relationships and agreements with affected tribes. These rules direct DNR Forest Practices staff to notify and consult with affected Indian tribes when developing and implementing many parts of the Forest Practices Program. (RCW 76.09.010, WAC 222-12-010). In the forest practices rules, "*affected Indian tribe means any federally recognized Indian tribe that requests in writing information from the department on forest practices applications and notification filed on specified areas*" (WAC 222-16-010).

Tribes in Washington—as well as some tribes in Oregon and Idaho—currently participate as forest practices cooperators to varying degrees. Tribes are members of the Forest Practices Adaptive Management Program's Timber/Fish/Wildlife Policy Committee and Cooperative Monitoring, Evaluation, and Research (CMER) Committee. Tribes and tribal organizations participate side-by-side with landowners and natural resource agencies on the Timber/Fish/Wildlife Cultural Resources Roundtable. Tribes are members of DNR's Small Forest Landowner Advisory Committee.

Additionally, tribal members and their representatives work with staff from DNR's Forest Practices Program in the areas of: Forest Practices Applications/ Notifications review; technical expertise during DNR's interdisciplinary team reviews; water typing; and wetland typing. Tribal member also participate with other agencies and organizations that work with DNR to draft Forest Practices Rules and Board Manuals. Tribes also work with those landowners who are interested in pre-application planning of their forest practices activities.

Chapter 12 provides information on two areas of Forest Practices work specific to tribal relations.

- § Section 12.2 provides an annual summary specific to landowner-tribe meetings and process improvements regarding implementing and tracking of the forest practices rule in WAC 222-20-120, a Forest Practices HCP required reporting element.
- § Section 12.3 provides an annual update on the work being conducted by the Board's Timber/Fish/Wildlife Cultural Resources Roundtable (Roundtable).

12.2 Landowner/Tribe Meetings and WAC 222-20-120 Updates

Background

This Forest Practices HCP reporting element reads "*landowner/tribal meetings and process improvements pursuant to WAC 222-20-120*". See Table 1.1 FPHCP Reporting Elements, "Administrative and Regulatory Program Updates" (open the link, scroll to page 11 (Introduction page 9)).

Forest Practices rule WAC 222-20-120 titled "*Notice of forest practices that may contain cultural resources to affected Indian tribes"* requires:

- DNR to notify tribes of all proposed applications within the tribe's designated geographic area of interest and;
- When an FPA may contain cultural resources, DNR notifies the landowner of the requirement for them to contact affected tribes who will determine if a meeting is required. When a meeting is required, landowners meet with the affected tribe(s) to determine if the proposed activities within the forest practices activity area requires a plan to protect cultural resources. In the rule's definitions, *"cultural resources means archaeological and historic sites and artifacts, and traditional religious, ceremonial and social uses and activities of affected Indian tribes."* (WAC 222-16-010).

Currently, all but one of the federally recognized tribes in Washington has chosen and is signed-up to review Forest Practices Applications and Notifications, Multi-Year Permits, and Small Forest Landowner Long Term Applications. Several Washington state tribal organizations, the Northwest Indian Fisheries Commission, Skagit River Cooperative, and Upper Columbia United Tribes are also signed up to review Forest Practices Applications and Notifications.

Process

The Forest Practices Program continues to utilize its Forest Practices Risk Assessment Mapping tool (FPRAM) (previously Risk Assessment Tool) to review and appropriately classify proposed forest practices and implement WAC 222-20-120. FPRAM is the GIS-based interactive mapping and reporting tool which allows forest practices staff to see the geographic relationships between known environmental features and the location of proposed forest practices. FPRAM includes:

- § Data from the Washington State Department of Archaeology and Historic Preservation;
- § The 1893-1950 US Geological Service and Army Mapping Service maps for Washington State;
- § Bureau of Land Management Government Land Office historical maps; and

- Tribal Cultural Resources Contacts (each tribe's/tribal organization's designated geographic area of interest for cultural resources and the name and contact information of their designated cultural resources contact).

The Forest Practices Program funds one FTE in the state Department of Archaeology and Historic Preservation (DAHP) to review all FPAs for maintaining an archaeological and historic sites database. Through an interagency agreement, DNR has provided specific funding to help DAHP retain a staff position for database administration and Forest Practices Application and Notification review. For FY2016, DNR provided $72,000 for half of this DAHP staff position.

Landowner/Tribe Meetings

During this reporting period (July 1, 2015, to June 30, 2016), there were 16 Forest Practices Applications requiring a landowner-tribe meeting. All 16 successfully fulfilled the meeting requirement.

WAC 222-20-120 Updates

During FY2016, the TFW Cultural Resources Roundtable (Roundtable) continued to discuss and review the implementation including DNR FPA conditioning authority of WAC 222-20-120, *Notice of forest practices that may contain cultural resources to affected Indian tribes*.

In addition, DNR commenced a contract to provide professional facilitation services to work with leadership from tribes, landowners, and the state of Washington to discuss the next steps in cultural resources protection. The facilitated process will be completed during the first half of FY 2017 and it will involve further discussion of the commitments of the Timber, Fish and Wildlife Agreement of 1987 and the 1999 Forests and Fish Report to develop planning, protection and management strategies for Washington's cultural resources.

There is a desire by leadership within the tribes, forest landowners on state and private forest lands and the state to further discuss next steps in cultural resource protection. The facilitation services will allow leadership from all parties to express deeply held views and for all parties to gain an in-depth understanding of the important cultural programs to tribal communities.

In Section 12.3 below, see **Priority Issue Work** for a summary of the Roundtable's work on this priority issue.

12.3 Update on Timber/Fish/Wildlife Cultural Resources Roundtable

Background – Origin, Charter, and Participants

The Timber/Fish/Wildlife Cultural Resources Roundtable originated as the Timber/Fish/Wildlife Cultural Committee (Committee) of the 1987 Timber/Fish/Wildlife collaboration. The Cultural Committee continued to be active in various cultural resources endeavors. In 2001, the Board reconvened the Committee to work on the cultural resources commitments in the Forests and Fish Report (see below). Then in 2011, the Forest Practices Board formally accepted the

Roundtable's charter which formally changed the committee's name to Timber/Fish/Wildlife Cultural Resources Roundtable (Roundtable).

The Roundtable's purpose, as stated in its charter, is to:

- "foster cooperative protection and management of cultural resources as envisioned in the *Cultural Resources Protection and Management Plan*, and
- "facilitate the identification, protection, and management of cultural resources that are significant to the history and cultures of the people of Washington State, and which are located on the state's non-federal forest lands".

The Roundtable serves the Board's needs by providing insight on cultural resources issues affecting forest practices, providing consensus rule making recommendations for the Board's consideration, and as required by WAC 222-08-160, annually reporting on behalf of the department on how implementation of the *Cultural Resources Protection and Management Plan* is working. This plan is described below. Accordingly, the Board's website includes a TFW Cultural Resources Roundtable web page. Web page materials include meeting agendas and meeting notes, the *Cultural Resources Protection and Management Plan*, the Roundtable's charter, and cultural resources educational information.

Roundtable active participants vary depending on the topics being addressed. Roundtable participants have included the following tribes, landowners, and state natural resource agencies:

- Puyallup Tribe of Indians
- Confederated Tribes and Bands of the Yakama Nation
- Quinault Indian Nation
- Cowlitz Indian Tribe
- Jamestown S'Klallam Tribe
- Spokane Tribe of Indians
- Squaxin Island Tribe
- Upper Columbia United Tribes
- Washington Forest Protection Association
- Hancock Resource Management
- Green Diamond Resource Company
- Washington Farm Forestry Association
- Department of Archaeology and Historic Preservation
- DNR Forest Practices Division
- DNR Forest Resources Division

Other interested tribes, organizations, and persons are kept informed of the Roundtable's work through meeting agendas and meeting notes sent by the Roundtable via email. About 60 Tribal, landowner, and state agency representatives participate in the Roundtable or receive ongoing mailings from the Roundtable.

Background – Cultural Resources Protection and Management Plan
The *Cultural Resources Protection and Management Plan* is a voluntary cooperative approach towards the protection of cultural resources on non-federal forest land in Washington. This approach is based on mutual respect and an appreciation of tribal and non-tribal culture and history.

The *Cultural Resources Protection and Management Plan* was born of the two commitments in the *Forests and Fish Report* specific to cultural resources. Appendix G of the report specifically commits to cooperatively developing a watershed analysis cultural resources module. Appendix O of the report commits to completing a cultural resources plan to enhance cooperative relationships between landowners and tribes. In 2001, the Forest Practices Board asked the Roundtable (then Committee) to collaboratively develop a multi-caucus proposal to address these Forests and Fish commitments.

The Roundtable (then Committee) presented its consensus *Cultural Resources Protection and Management Plan* to the Board in 2003. The Board accepted the plan as fulfillment of both *Forests and Fish Report* commitments, as the plan's appendices included the proposed watershed analysis cultural resources module. The appendices also included proposed rules to implement the module, a proposed cultural resources question and instructions for Forest Practices Applications and Notifications, and a suggested process for implementing WAC 222-20-120. In May 2005, after completing the rule making process, the Board formally approved the watershed analysis cultural resources module for inclusion in Board Manual Section 11, *Standard Methodology for Conducting Watershed Analysis* as Appendix J, and adopted the rules in chapter 222-22 WAC implementing the module. The Forest Practices HCP (Washington DNR, 2005) incorporates the *Cultural Resources Protection and Management Plan* as Appendix I.

The *Cultural Resources Protection and Management Plan* is a "living" document. This means the plan is open to updates and changes to reflect progress and completion of tasks, as well as changes in priorities and direction of the plan. Therefore, updates are added occasionally by the Roundtable.

Priority Issue Work: WAC 222-20-120 Interpretations and DNR Forest Practices Application Conditioning Authority
The key topic addressed by the T/F/W Cultural Resources Roundtable during FY2016 was the review of interpretations of the implementation of and DNR Forest Practices Application conditioning authority under WAC 222-20-120, *Notice of forest practices that may contain cultural resources to affected Indian tribes*.

Ongoing Responsibilities Work
The Roundtable continues to implement commitments in the *Cultural Resources Protection and Management Plan*. For FY2016, the Roundtable fulfilled the following ongoing responsibilities:

§ On behalf of DNR, the Roundtable initiated preparation of the annual report to be presented to the Forest Practices Board at their November 2016 meeting. The report will address the implementation of the *Cultural Resources Protection and Management Plan*. The report provides the Board with continued evaluation of how this voluntary cooperative approach is working, per WAC 222-08-160 (1), including the results of annual surveys distributed to tribes, forest landowners, and state agency staff involved in forest practices.

13. Washington State Legislature

In 1974, the Washington State Legislature passed the Forest Practices Act declaring that:

> "forest land resources are among the most valuable of all resources in the state; that a viable forest products industry is of prime importance to the state's economy; that it is in the public interest for public and private commercial forestlands to be managed consistent with sound policies of natural resource protection; that coincident with maintenance of a viable forest products industry, it is important to afford protection to forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation, and scenic beauty" (RCW 76.09.010).

The Act was the State's first comprehensive law addressing the impacts of forest practices on the environment. The Act also created the Forest Practices Board, which sets the specific standards that are the basis for the Forest Practices program.

Each year, DNR monitors laws being passed by the Washington State Legislature for those that could impact the Forest Practices program and possibly the Forest Practices HCP. One bill was passed this year that the Forest Practices program was in support of. House Bill 2856 was passed into law which establishes the Office of Chehalis River Basin Flood Risk Reduction in the Department of Ecology and an account under the state treasury. The office is created for the purpose of administering funding for an integrated strategy of long-term flood damage reduction and aquatic species restoration in the Chehalis River Basin. It is unclear how the implementation of this law will impact DNR Forest Practices.

14. Information Technology

Information Technology-Based Tools Update

Information technology-based tools provide significant support for the administration of the Forest Practices program and therefore, also support the implementation of the Forest Practices HCP because the Forest Practices HCP is a programmatic HCP based on the forest practices program. These tools include information systems, such as the Forest Practices Application Review System (FPARS), Forest Practices Enforcement Tracking System (FPETS), Forest Practices Application and Mapping Tool (FPAMT) and the Forest Practices Risk Assessment Mapping (FPRAM) application, as well as discrete data sets, such as the DNR Hydrography Geographic Information System (GIS) data layer that forms the basis of the water typing system. Within DNR, the Forest Practices Division works closely with the Information Technology Division to develop and maintain these information technology tools.

Forest Practices Application Review System

The Forest Practices Application Review System streamlines the processing of Forest Practice Applications and provides the public with the ability to review proposed forest practices activities. It makes use of the internet, document imaging and management technology, interactive geographic information system (GIS) technology, and the Oracle database system to collect Forest Practices Application/Notification information, and distribute them for regulatory and public review. FPARS also supports risk assessments of proposed forest practices activities, and archiving Forest Practices Applications/Notifications.

Between July 1, 2015, and June 30, 2016, there were 4,255 FPAs received or renewed and entered into FPARS. Currently there are 1,208 reviewers receiving email notification.

Forest Practices Enforcement Tracking System

The Forest Practices Enforcement Tracking System (FPETS) provides the ability for region-based Forest Practices staff and Forest Practices Division staff to enter and report on data related to enforcement actions, civil penalties and appeals. It makes use of the internet, document imaging and management technology, and the Oracle database system to collect Forest Practices enforcement information.

By capturing enforcement data in a common database, FPETS streamlines data input by removing redundancies and enables automating reports in the enforcement tracking process. FPETS also includes a robust search tool that allows users to query on and search the FPETS database for information related to conference notes, enforcement actions, civil penalties and appeals.

Between July 1, 2015, and June 30, 2016, 781 Informal Conference Notes, 10 Notices of Conversion to Non-forestry Use, 56 Notices to Comply and 18 Stop Work Orders were entered into FPETS.

Forest Practices Risk Assessment Mapping
The Forest Practices Risk Assessment Mapping (FPRAM) application is a web-based interactive mapping and reporting tool. It gives DNR Forest Practices program staff, in both the division and the region offices, access to GIS data related to the implementation of the Forest Practices Rules. It allows staff to see and review the geographic relationships between environmental features, including streams, potential landslide areas, archaeological sites, northern spotted owl habitat, and the locations of proposed forest practice activities. There currently are more than 100 map layers that can be displayed or queried.

The DNR Hydrography Data Layer, Water Type Updates and Transportation Data Layer
The Forest Practices GIS section updates DNR's hydrography data layer with water typing information received on Water Type Modification Forms (WTMF). These updates are based on direct observations in the field by DNR personnel, forest landowners, fish survey contractors, and others.

During the reporting year, DNR GIS staff entered approximately 9,750 GIS stream segment (number of segments depend on how stream was input into GIS) updates representing approximately 1,070 miles into the hydrography data set based on 931 Water Type Modification Forms (WTMF). As of June 30, 2016, the WTMF backlog is 172. This is lower than the FY 2015 backlog of 365.

On April 14, 2016, the Forest Practices Division and the Information Technology Division implemented a new system to facilitate the processing and review of Water Type Modification Forms. The Water Type Modification Form Tracking Application (WTA) is an Oracle-based system that was developed internally by DNR. WTA replaces multiple tracking spreadsheets and centralizes and standardizes the data associated with WTMF's. WTMF stakeholder reviewers will benefit from automatic email notifications and the centralized capture of reviewer comments and feedback. As of June 30, 2016, over 100 WTMF's from across the State have been processed in WTA.

As part of the delivery of the new WTA application an overview and demonstration of the system was given via internet-based GoTo Meetings to key DNR regional staff. WTA trainings and user support for WTA will continue as needed through the year.

Road Maintenance and Abandonment Plan Point Data Set
The Road Maintenance and Abandonment Plan Points dataset is compiled from individual RMAP annual accomplishment and planning reports and other sources into a statewide data system. DNR continues to work to make the dataset as complete as possible. However, it is a work in progress. Not all points have been entered or updated. They represent the information that has been compiled to date from landowner annual reports. Revised datasets are posted periodically to the Forest Practices RMAP Program stakeholder review site.

DNR published revised versions of the Forest Practices RMAP points dataset in December 2015, March 2016 and June 2016. The forest practices RMAPs specialists in DNR regional offices continued to work diligently to update this data, providing many barrier replacement dates, and other data items that were previously missing.

15. Forest Practices Program Budget

15.1 Introduction

In 2015 the Governor and Washington State Legislature passed the 2015-2017 biennial operating budget bill which mandated a fund shift for the Forest Practices program and appropriated General Fund-State (GF-S) funding for the Adaptive Management Program. One-time funding from the State Toxics Control Account (Toxics) replaced 20 percent of the GF-S appropriation for the Forest Practices program. This budget package included an enhancement of $5.9 million in GF-S to support the accelerated research/monitoring projects in the Forest Practices Adaptive Management Program.

In 2016 the Governor and Washington State Legislature passed the 2016 supplemental operating budget bill which directed a fund shift for the Adaptive Management Program. The GF-S appropriation for the Adaptive Management Program was reduced by $557,000 per fiscal year and the Forests & Fish Support Account (FFSA) was increased per fiscal year by the same amount. The net impact of this supplemental directive preserved the research/monitoring funding level for the Adaptive Management Program. This supplemental budget package included additional GF-S funding for two additional regulatory geology experts for the Forest Practices program, which is operative next fiscal year (FY 2017).

In addition to the above-mentioned funding sources, the Forest Practices program continued to provide core programs utilizing the Forest Practices Application Account (FPAA) to fund the implementation of hydraulic project integration, and the FFSA to support project management and participation grants in the Adaptive Management Program. These foundational elements sustain the state's Forest Practices Habitat Conservation Plan (FP HCP) and federal Clean Water Act (CWA) assurances.

The 2015-2017 biennial allocation for the Forest Practices program exceeded the $22.7 million funding level minimum, measured in 2005 dollars, as identified in the 2012 HCP Settlement Agreement. The Forest Practices base biennial allocation by funding source and legislative fund shifts is reflected below (Table 1).

Table 1: 2015-2017 Biennium Operating Allocation

2015-2017 Base Allocation by Activity	GF-State & FY16 Supplemental	GF-State Proviso & FY16 Supplemental	FFSA & FY16 Supplemental	FPAA	TOXICS	TOTAL FUNDS
Forest Practices Act & Rules	15,603,100		314,800	1,439,800	2,872,700	20,230,400
Adaptive Management Program	330,900	4,780,000	9,659,200		158,700	14,928,800
Small Forest Landowner	286,500				113,800	400,300
Program Development					891,500	891,500
TOTALS	16,220,500	4,780,000	9,974,000	1,439,800	4,036,700	36,451,000

15.2 2015-2017 Biennial Allocation by Activity

The Forest Practices program is organized into four functional activities. Table 2 below lists program components and the funding source within each functional activity.

Table 2: 2015-2017 Functional Activities

Functional Activity	Activity Components	Funding Source
Forest Practices Act & Rules (Operations)	Application Processing, Compliance Monitoring, Enforcement, RMAPS, IT/GIS Development & Support & Stakeholder Assistance Training	GF-State & Toxics
	Department of Archeology & Historic Preservation Interagency agreement for GIS/Spatial data on forest practices applications with cultural resources.	FFSA
	Forest Practices Applications with activities carried out in water, such as the construction, removal, or replacement of a culvert or bridge. Department of Fish & Wildlife Interagency agreement for consultation on forest practices hydraulic projects.	FPAA
Adaptive Management Program	Adaptive Management Research/Monitoring Projects & Adaptive Management Administration Staff	GF-State & Toxics
	Adaptive Management Projects & Project Management Staff	FFSA
	Participation grants to tribes /tribal organizations; Participation grants to non-profits; & Interagency agreements with Ecology & Fish and Wildlife Departments.	FFSA
Small Forest Landowner Office	SFLO Program and Operations	GF-State & Toxics
Program Development	Forest Practices Board; Rule Making/Board Manual; and Forest Practices Habitat Conservation Plan.	GF-State & Toxics

15.3 2015-2017 Biennium Operating Expenditures by Activity

The Forest Practices program expended a total of $15.2 million in fiscal year 2016. A total of $1.7 million was expended from the Toxics account. Approximately $454,421 of the FPAA was spent continuing to finance an interagency agreement with Washington Department of Fish and Wildlife (WDFW) for consultation on forest practices hydraulic projects, statewide engineering assistance, and office/field staff in five regions.

Roughly $3.1 million of the FFSA continued to support project support, participation grants to tribal, non-profit public interest organizations and state agency involvement in the Adaptive Management Program. The Adaptive Management Program expended all of the provisoed $2.3 million GF-State for research/monitoring projects. The expenditures for this fiscal year are reflected in Table 3. These expenditures do not include the full time equivalent (FTEs) and budget for the federally-funded portion of the forest stewardship program or state capital funding utilized through the Small Forest Landowner Office (SFLO).

Table 3: FY 2016 Expenditures (July 1, 2015 – June 30, 2016)

FY 2016 Expenditures by Activity	GF-State	GF-State Proviso	FFSA	FPAA	TOXICS	TOTAL FUNDS
Forest Practices Act & Rules	7,071,731		82,585	454,421	1,292,623	8,901,360
Adaptive Management Program	159,966	2,390,000	3,102,501		49,676	5,702,144
Small Forest Landowner	115,770				27,570	143,340
Program Development					413,465	413,465
TOTALS	7,347,265	2,390,000	3,185,086	454,421	1,783,334	15,160,309

15.4 Full Time Employees

The Forest Practices program utilized 88 percent of the statewide allotted FTEs. Overall the program experienced a position vacancy rate of 8 percent during fiscal year 2016. The reasons for this are primarily due to promotions, retirements, transfers, and prolonged recruitment for licensed geologist positions. Forest Practices program staff also participated in DNR's statewide wildfire response program, which contributed to the differences in charging to the base forest practices program (that is, when staff is engaged in firefighting, employee time is not charged to the forest practice program). This staffing difference accounted for approximately 4 percent of the FTE under-utilization during FY 2016. Table 4 reflects the actual FTEs utilized during this fiscal year.

Table 4: Full-Time Equivalents (FTEs)

2015-2017 Allocation by Activity	15-17 BN* FTEs	Actual FY 16 FTEs	Difference
Forest Practices Act & Rules	106.93	94.32	12.61
Forest Practices Manage Adaptively	4.25	4.01	0.24
Small Forest Landowner	2.00	1.40	0.60
Program Development	4.99	4.27	0.72
TOTALS	118.17	104	14.17

*BN = biennium

16. Washington Timber Harvest Report

16.1 Introduction

The following Washington State Timber Harvest Report[1] summary, *Timber Harvest by Owner Class and Region*, provides a historical record of timber harvest activities, by landowner class from 1990 to 2015. Volumes in million board feet.

Calendar Year	State Total	FP Habitat Conservation Plan and other Aquatic HCPs						Federal/Tribal
		FPHCP, Aquatic HCPs[2]	Western WA	Eastern WA	Private[3]	DNR[4] (state lands)	Other Public[5]	Nat'l Forests, BLM , Others
1990	6,032	5,017	4,159	859	4,330	657	30	1,015
1991	5,276	4,390	3,585	806	3,822	535	33	886
1992	5,203	4,549	3,692	858	4,030	476	43	654
1993	4,521	3,991	3,135	862	3,513	461	17	530
1994	4,355	3,952	3,116	836	3,619	323	10	403
1995	4,622	4,236	3,332	904	3,720	496	20	386
1996	4,536	4,179	3,247	931	3,544	600	35	357
1997	4,497	4,066	3,190	884	3,390	645	31	431
1998	4,297	3,901	3,067	835	3,319	546	36	396
1999	4,717	4,257	3,320	937	3,580	662	15	460
2000	4,507	4,083	3,191	893	3,507	559	17	424
2001	4,041	3,638	2,825	813	3,116	496	26	403
2002	3,901	3,497	2,685	814	3,000	457	40	404
2003	3,377	3,241	2,759	481	2,697	510	34	136 *
2004	3,787	3,691	3,134	556	3,052	588	51	96 *
2005	3,571	3,490	2,914	576	2,864	594	32	81 *
2006	3,324	3,249	2,682	567	2,786	404	59	75 *
2007	3,264	3,169	2,593	576	2,685	448	36	95 *
2008	2,757	2,653	2,297	357	2,067	515	71	104 *
2009	2,217	2,116	1,877	239	1,423	641	52	101 *
2010	2,737	2,619	2,337	283	1,828	764	27	118 *
2011	2,984	2,876	2,529	347	2,206	637	33	108 *
2012	2,739	2,657	2,311	347	2,182	442	33	82 *
2013	3,298	3,088	2,673	415	2,525	513	50	210
2014	3,389	3,090	2,693	396	2,457	585	48	299
2015	3,003	2,729	2,248	481	2,237	462	31	274

*Tribal data is not included in these years

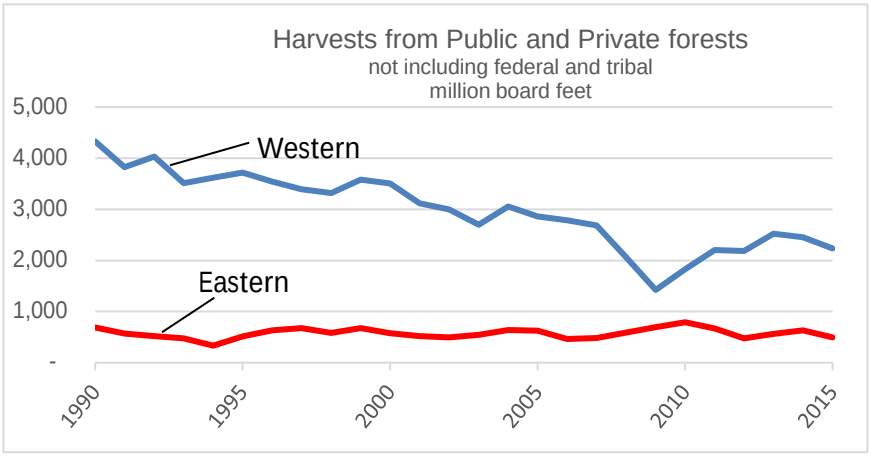
[1]Timber harvest statistics are based on data gathered by the Washington Department of Revenue.

[2]Total FPHCP and other Aquatic HCPs = Western WA + Eastern WA = Private + DNR + Other Public

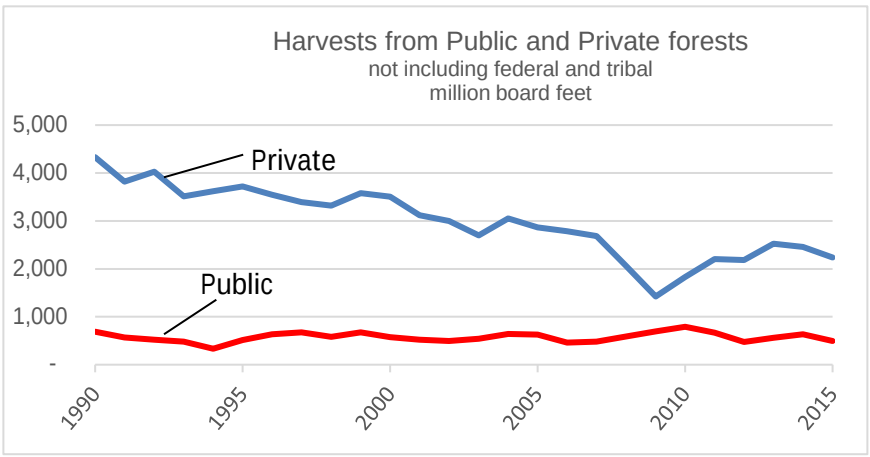
[3]Private includes large forest landowners, small forest landowners and industrial forest owner.

[4]Harvests from lands managed by the Washington State Department of Natural Resources (DNR).

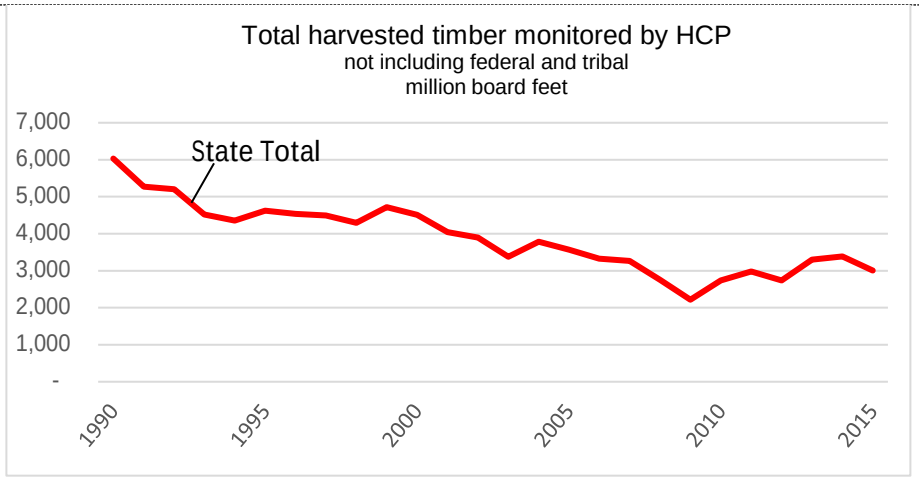
[5]Includes public lands owned by cities, counties, public utilities, and state agencies other than DNR.



With near rainforest levels of rainfall, western Washington is among the greatest producers of softwood timber in the U.S. Even arid eastern Washington contributes up to half a billion board feet of annual timber harvest, primarily in the pine forests of northeastern Washington...



The majority of timber harvested in Washington comes from privately owned – mostly industrial – forests. The harvest levels vary. In periods of low market prices, owners prefer to wait and allow the trees to grow another year. Most trees harvested from publicly-owned lands come from state-owned forests, managed by the Department of Natural Resources. The state agency generally harvests at uniform levels (400-550 million board feet per year)



In 2015 Washington's total timber harvest was 3 billion board feet, a level not reached since 2007. Harvest levels were between 5 billion and 8 billion board feet until 1992 when they began to drop. Compounded by the housing market collapse, harvest levels decreased to 2.2 billion board feet in 2009.

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18. List of Acronyms

Agencies and Organizations

the Board	Washington Forest Practices Board
DAHP	Department of Archaeology and Historic Preservation
DNR	Washington State Department of Natural Resources
RCO	Recreation and Conservation Office
SFLO	Small Forest Landowner Office
SRFB	Salmon Recovery Funding Board
USFWS	United States Fish and Wildlife Service
WCLA	Washington Contract Loggers Association
WDFW	Washington Department of Fish and Wildlife
WDOT	Washington Department of Transportation
WFFA	Washington Farm Forestry Association
WFPA	Washington Forest Protection Association
Ecology	Washington State Department of Ecology

Technical Terms

CMZ	Channel Migration Zone
DFC	Desired Future Condition
EBAI	Equivalent Area Buffer Index
GF-State	General Fund - State
GIS	Geographic Information System
FTE	Full Time Equivalent
FY	Fiscal Year
FPA/N	Forest Practices Application/Notification
FPRAT	Forest Practices Risk Assessment Tool
ICN	Informal Conference Note
LGE	Local Government Entity
LHZ	Landslide Hazard Zonation
LWD	Large Woody Debris
NTC	Notice to Comply
RMZ	Riparian Management Zone
SWO	Stop Work Order
Type F	Fish-bearing stream
Type Np	Non fish-bearing, perennial stream
Type Ns	Non fish-bearing, seasonal stream
WAU	Watershed Administrative Unit
WRIA	Water Resource Inventory Area

Personnel, Programs, Plans and Reports

AMP	Adaptive Management Program
AMPA	Adaptive Management Program administrator
CMER	Cooperative Monitoring, Evaluation, and Research Committee
CMP	Compliance Monitoring Program
FFFPP	Family Forest Fish Passage Program
FFSA	Forests and Fish Support Account
FPARS	Forest Practices Application Review System
FPETS	Forest Practices Enforcement Tracking System
FPHCP	Forest Practices Habitat Conservation Plan
FREP	Forestry Riparian Easement Program
FFR	Forests and Fish Report
HCP	Habitat Conservation Plan
IDT	Interdisciplinary Team
ISPR	Independent Scientific Peer Review
RMAP	Road Maintenance and Abandonment Plan
ROSP	Riparian Open Space Program
RP&S	Resource Protection and Services
SRC	Scientific Review Committee
TFW	Timber/Fish /Wildlife

Regulations, Acts and Permits

CWA	Clean Water Act
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ITP	Incidental Take Permit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
WAC	Washington Administrative Code

19. Appendix

Appendix #1

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Memorandum

July 19, 2016

TO: Forest Practices Board

FROM: Mark Hicks, Ecology Forest Practices Lead
SUBJECT: Clean Water Act Milestone Update

The Washington State Department of Ecology (Ecology) committed to provide the Forest Practices Board (Board) with periodic updates on the progress being made to meet milestones established for retaining the Clean Water Act (CWA) Assurances for the forest practices rules and associated programs. Our last update to the Board occurred at your May 2016 Board meeting.

Under Washington state law (Chapter 90.48 RCW and 76.09.040 RCW) forest practices rules are to be developed so as to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). The CWA assurances establish that the state's forest practices rules and programs, as updated through a formal adaptive management program, will be used as the primary mechanism for bringing and maintaining forested watersheds in compliance with the state water quality standards. The CWA assurances were originally granted in 1999 as part of the Forests and Fish Report (FFR). Those original assurances were to last for only a ten year period. After conducting a review of the program and hearing from stakeholders that they were committed to making the program work, Ecology conditionally extended the assurances for another ten years. This extension was based on the expectation that the program meet a list of process improvements and performance objectives. These are the milestones reported on in this update.

The 2009 CWA Assurance milestones were established to create a path of steady improvement. The milestones were intended to spur efforts to gather critical information to assess the effectiveness of the rules in protecting water quality as mandated by state law. Equally important, was the intent to encourage process changes that would lead to cooperators working more productively together to create a more effective research program to test and adjust the rules long-term.

At the May 2016 Board meeting Ecology provided written material highlighting the agency's growing concern the programmatic improvements and specific corrective milestones the agency was seeking remain elusive. Board Chair Bernath committed the time of his staff to re-examine their ability to complete the remaining Non-Project operational milestones, and asked the Adaptive Management Program Administrator and the TFW Policy co-chairs to return at the August 2016 Board meeting to explain what is being done to meet the remaining milestones.

Since that May meeting, Ecology has met with DNR staff, and the milestones were discussed at the July 7th TFW Policy meeting in the context of funding items for the 2018-2019 biennial budget. This Ecology memo provides supplementary information on the outcome of these conversations and how they may affect current status and future plans for meeting the CWA milestones.

Enclosed are two tables showing the CWA milestones and summarizing their current status. The first table shows the non-CMER project milestones. These milestones are implemented outside of the CMER research program and are largely within the control of the Forest Practices Operations Section of the Department of Natural Resources (DNR) or the Timber Fish and Wildlife Policy Committee (Policy). For these non-CMER projects, three are off track and one has been started but is well behind schedule. The second table lays out the progress being made on the CMER research study milestones. Of the CMER milestones, two are off track and five are well behind schedule. Changes in status since your last briefing and points of note are highlighted in red font to support more effective communication.

Please contact me if you have any questions or concerns (360) 407-6477.

Enclosure

Summary of CWA Assurances Milestones and current status:

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
2009	July 2009: CMER budget and work plan will reflect CWA priorities.	**Completed** October 2010 Key research projects slipped well behind schedule affecting the overall priorities.
	September 2009: Identify a strategy to secure stable, adequate, long-term funding for the AMP.	**Completed** October 2010
	October 2009: Complete Charter for the Compliance Monitoring Stakeholder Guidance Committee.	**Completed** December 2009 DNR intends to strengthen the cooperative approach used to involve the committee in design and prioritization decisions of the Compliance Monitoring Program.
	December 2009: Initiate a process for flagging CMER projects that are having trouble with their design or implementation.	**Completed** November 2010 The AMPA plans to review and update the existing process and use it to inform Policy at their monthly meetings.
	December 2009: Compliance Monitoring Program to develop plans and timelines for assessing compliance with rule elements such as water typing, shade, wetlands, haul roads and channel migration zones.	**Completed** March 2010
	December 2009: Evaluate the existing process for resolving field disputes and identify improvements that can be made within existing statutory authorities and review times.	**Completed** November 2010 DNR and Ecology will periodically remind staff of the formal process for resolving filed disputes.
	December 2009: Complete training sessions on the AMP protocols and standards for CMER, and Policy and offer to provide this training to the Board. Identify and implement changes to	**Completed** May 2016 Initial training completed with an expanded training regime incorporated as

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
	improve performance or clarity at the soonest practical time.	a standard procedure into the AMP. Issues identified for improvement were added to the Policy and CMER task lists for future action in 2010. Since that time Policy has reviewed FFR Schedule L1 research questions for both the Type N and the Unstable Slopes Research Programs. CMER has additionally updated 6 chapters of its' Protocol and Standards Manual and is working on Chapter 7. In May 2016 Policy updated its task list and reaffirmed items important to improve the program. Policy will regularly revisit the list to ensure these items are considered when prioritizing new work. This milestone is completed with recognition it includes a longer term obligation for implementation.
2010	January 2010: Ensure opportunities during Regional RMAP annual reviews to obtain input from Ecology, WDFW, and tribes on road work priorities.	**Completed** September 2011
	February 2010: Develop a prioritization strategy for water type modification review.	**Completed** March 2013
	March 2010: Establish online guidance that clarifies existing policies and procedures pertaining to water typing.	**Completed** March 2013
	June 2010: Review existing procedures and recommended any improvements needed to effectively track compliance at the individual landowner level.	**Completed** November 2010
	June 2010: Establish a framework for certification and refresher courses for all participants responsible for regulatory or CMP assessments.	**Completed** September 2013
	July 2010: Assess primary issues associated with riparian noncompliance (using the CMP data) and	**Completed** August 2012

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
	formulate a program of training, guidance, and enforcement believed capable of substantially increasing the compliance rate.	
	July 2010: Ecology in Partnership with DNR and in Consultation with the SFL advisory committee will develop a plan for evaluating the risk posed by SFL roads for the delivery of sediment to waters of the state.	**Off Track** Described below for 2013 report stage.
	July 2010: Develop a strategy to examine the effectiveness of the Type N rules in protecting water quality at the soonest possible time that includes: a) Rank and fund Type N studies as highest priorities for research, b) Resolve issue with identifying the uppermost point of perennial flow by July 2012, and c) Complete a comprehensive literature review examining effect of buffering headwater streams by September 2012.	**Off Track** A strategy was developed, and Policy and its' technical subgroups were working to implement the strategy. Conflict over providing default distances for defining the UMPPF stalled implementation, then the Forest Practices Board made Type F and mass wasting Policy priorities. This resulted in Policy setting aside work on completing the Type N milestone. Ecology agreed that due to the limited capacity of Policy, they needed to temporarily suspend work on resolving the Type N milestone in order to succeed in meeting the new Board priorities. But this Type N work remains necessary and overdue.
	October 2010: Conduct an initial assessment of trends in compliance and enforcement actions taken at the individual landowner level.	**Completed** November 2010

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
	October 2010: Design a sampling plan to gather baseline information sufficient to reasonably assess the success of alternate plan process.	**Completed** December 2014 DNR satisfied this milestone by releasing an Alternate Plan Guidance memo (12-10-14) designed to strengthen the overall process for issuing alternate plans. Success depends on how well the new directives are translated into action. DNR completed training in all regions regarding rule, alternate plan board manual and memo guidance. DNR has also committed to refresher training as needed for Alternate Plans. DNR will conduct a review of the ICNs associated with AP FPAs over the last year to assess whether the guidance is being effectively used. If not being used effectively, DNR will use outreach and/or training as necessary. DNR has invited Ecology to be part of meetings with DNR forestry staff to explain our focus on this milestone.
	December 2010: Initiate process of obtaining an independent review of the Adaptive Management Program.	**Off Track** Policy discussed this issue at their May 2016 meeting as part of reviewing their task list. At that meeting they agreed, with consensus, this outside audit is important but is really a responsibility of DNR to implement. No further conversations on how to accomplish this milestone have occurred.
2011	December 2011: Complete an evaluation of the relative success of the water type change review strategy.	**Completed** March 2013

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
		DNR will recheck current status to make sure the review process has not degraded over time. Additional programmatic improvements may be coming as part of the TFW Policy Committee's work on Type F delineation.
	December 2011: Provide more complete summary information on progress of industrial landowner RMAPs.	**Completed** September 2011
2012	October 2012: Reassess if the procedures being used to track enforcement actions at the individual land owner level provides sufficient information to potentially remove assurances or otherwise take corrective action.	**Completed** June 2012
	Initiate a program to assess compliance with the Unstable Slopes rules.	**Ongoing** The DNR Compliance Monitoring Program is evaluating methods for determining compliance with the unstable slopes rules. A pilot study is underway, with formal implementation targeted for 2017.

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2016[2]**
2013	November 2013: Prepare a summary report that assesses the progress of SFLs in bringing their roads into compliance with road best management practices, and any general risk to water quality posed by relying on the checklist RMAP process for SFLs.	**Off Track** DNR conducted a pilot project in its' NW region. A draft report was shared with Ecology in October 2014. Approximately 92% of SFLs did not respond or denied access. Eleven percent of roads surveyed were reported as delivering sediment to streams. DNR initiated additional SFL outreach efforts on a statewide basis in 2015 in an effort to conduct a more comprehensive roads assessment. The results of this assessment has not been provided. DNR is expanding their initial survey statewide by having their stewardship and landowner assistance foresters ask for permission to conduct road status surveys. However, without jurisdictional authority to conduct a representative survey, fully satisfying this milestone may not be possible.

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
2009	Complete: Hardwood Conversion – Temperature Case Study (Completed as data report)	**Completed** June 2010
	Study Design: Wetland Mitigation Effectiveness	**Completed** October 2010
2010	Study Design: Type N Experimental in Incompetent Lithology	**Completed** August 2011
	Complete: Mass Wasting Prescription-Scale Monitoring	**Completed** June 2012
	Scope: Mass Wasting Landscape-Scale Effectiveness	**Off Track** No work has occurred. Policy moved this project to the hold list pending review as part of developing the unstable slopes research strategy. It was also omitted from the MPS list that went to the Board. Policy discussed this issue at their July 7, 2016 meeting. They agreed to reaffirm the need to address this question by providing money in 2019 to conduct a project feasibility scoping effort. Funds are also in the MPS for outer years to develop a study if shown feasible.
	Scope: Eastside Type N Effectiveness	**Completed** November 2013
2011	Complete: Solar Radiation/Effective Shade	**Completed** June 2012
	Complete: Bull Trout Overlay Temperature	**Completed**

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
		May 2014
	Implement: Type N Experimental in Incompetent Lithology	**On Track**
	Study Design: Mass Wasting Landscape-Scale Effectiveness	**Off Track** Described above for 2010 scoping.
2012	Complete: Buffer Integrity-Shade Effectiveness	**Underway** This study was in dispute over concerns arising from the Spring 2013 ISPR comments. The report was rewritten and is now back from a second ISPR review. A final CMER review draft is expected sometime in the Fall of 2016.
	Literature Synthesis: Forested Wetlands Literature Synthesis	**Completed** January 2015
	Scoping: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting.	**Underway** Policy approved project objectives and critical questions June 2015 to guide scope of study. Work subsequently stopped due to the inability of TWIG members to meet and develop study design alternatives. UPSAG has taken over the work on this project and suggests they can develop a best available science alternatives analysis document in the Fall of 2016 for CMER review.

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
	Study Design: Eastside Type N Effectiveness	**Underway** Completed supplemental field work in 2014 to help in developing a study design in 2015. TWIG submitted two draft study designs for CMER review. Issues of concern were raised in 2015-2016 over what is being measured and the prescriptions proposed for testing. A formal process-based dispute appears to have been resolved at the June 28, 2016 CMER meeting. Disagreements over technical elements may have also been resolved at a special meeting held on July 12. If CMER agrees at their July 26 meeting with the way these issues were resolved, the study design will be sent to ISPR review.
2013	Scoping: Forested Wetlands Effectiveness Study	**Underway** Policy approved revised problem statement, study objectives, and research questions January 2016. The TWIG is working to develop study design alternatives.
	Wetlands Program Research Strategy	**Completed** January 2015
	Scope: Road Prescription-Scale Effectiveness Monitoring	**Completed** March 2016
	Study Design: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting.	**Earlier Stage Underway** Discussed above for 2012 scoping.

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
	Implement: Eastside Type N Effectiveness	**Earlier Stage Underway** Discussed above for 2012 study design.
2014	Complete: Type N Experimental in Basalt Lithology	**Underway** Expected July 2017.
	Study Design: Road Prescription-Scale Effectiveness Monitoring	**Underway**
	Scope: Type F Experimental Buffer Treatment	**Complete** December 2015 TWIG expects to deliver a draft study design to CMER in September 2016 for the first phase of this two part study.
	Implementation: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting	**Earlier Stage Underway** Discussed above for 2012 scoping.
	Study Design: Forested Wetlands Effectiveness Study	**Earlier Stage Underway** Discussed above for 2013 scoping.
2015	Complete: First Cycle of Extensive Temperature Monitoring	**Underway** One of the four strata is complete and two are now back from ISPR. Problems using the DNR hydro layer to find Type Np study streams on the eastside thwarted efforts to find sites for the final strata. Policy decided not to fund temperature monitoring on the final strata and deprioritized temperature trend monitoring for the others. Final reports on the three tested strata expected to be complete in fall 2016.

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
	Scope: Watershed Scale Assess. of Cumulative Effects	**Off Track** This project was intended to follow and be built on the lessons learned from other effectiveness monitoring studies which remain behind schedule.
	Scope: Amphibians in Intermittent Streams (Phase III)	**Not Progressing** Project milestone exists only if needed to fill research gaps left from Type N Experimental in Basalt Lithology. The Type N Basalt study is expected to be completed by 2018, so Policy established 2019 as a date to begin this study; if questions were not addressed.
2017	Study design: Watershed Scale Assess. of Cumulative Effects	**Off Track** Discussed above for 2016 Scoping.
	Study Design: Amphibians in Intermittent Streams (Phase III)	**Not Progressing** Discussed above for 2015 scoping.
2018	Complete: Roads Sub-basin Effectiveness	**Earlier Stage Underway** Resample for trend analysis planned for 2022. Ecology agreed to this later timeline since it is prudent to wait until RMAP time extensions have ended before conducting further sampling.
	Implement: Watershed Scale Assess. of Cumulative Effects	**Off Track** Discussed above for 2016 Scoping.
	Complete: Type N Experimental in Incompetent Lithology	**On Track**

CMER Research Milestones		
Description of Milestone		**Status as of July 2016[1]**
2019	Complete: Eastside Type N Effectiveness	**Earlier Stage Underway** Discussed above for 2012 study design.

Status terminology:

"Completed" - milestone has been satisfied (includes those both on schedule and late).

"On Track" - work is occurring that appears likely to satisfy milestone on schedule.

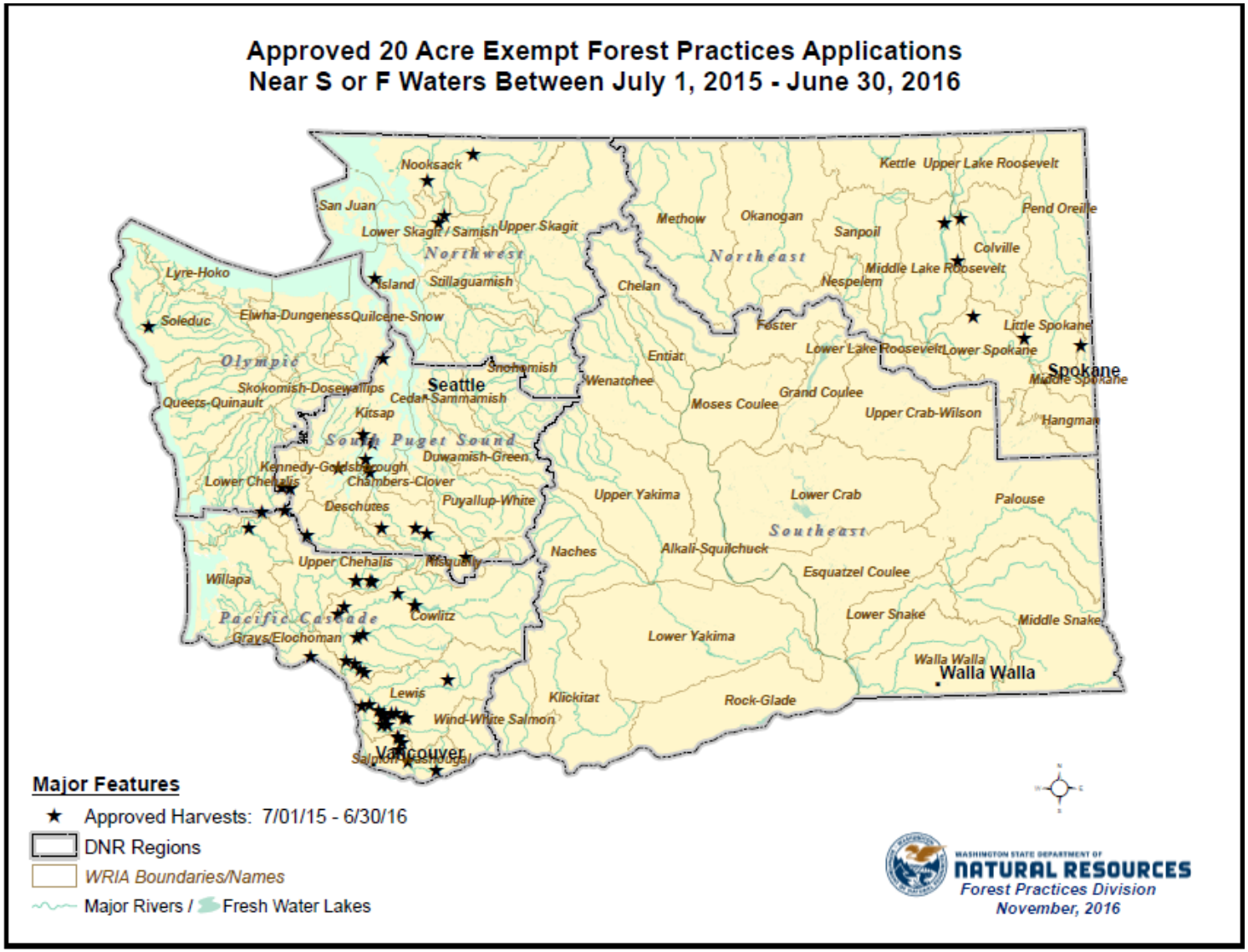
"Underway" - work towards milestone is actively proceeding, but likely off schedule.

"Earlier Stage Underway" – project initiated, but is at an earlier stage (off schedule) then the listed milestone.

"Not Progressing" - no work has begun, or work initiated has effectively stopped.

"Off Track" - 1) No work has begun and inadequate time remains, 2) key stakeholders are not interested in completing the milestone, or 3) attempt at solution was inadequate and no further effort at developing an acceptable solution is planned.

Appendix #2a: Approved 20-Acre Exempt FPAs Near S or F Waters 7/1/15 – 6/30/16



Appendix #2b: Approved 20-Acre Exempt FPAs Near S or F Waters 6/5/06 – 6/30/16