

3. Adaptive Management Program

3.1 Introduction

This chapter provides a brief background on the Forest Practices Adaptive Management Program (AMP) and accomplishments to date. In large part, those accomplishments occur through the Cooperative Monitoring, Evaluation and Research Committee (CMER) projects. The CMER Committee's 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 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 the Timber, Fish, and Wildlife (TFW) organization to develop recommendations for the forestry module. The module would result in a set of recommendations to the Forest Practices Board and the Governor's Salmon Recovery Office to respond to fish listings and water quality problems in Washington State covering about 9.3 million acres of private and state-owned forestland. This module later became the 1999 [*Forests and Fish Report*](#).

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 prior to July 1, 1999;
- the Forest Practices Board's adoption of permanent rules implementing the recommendations of the report;
- the provision of adequate funding for the implementation of the recommendations contained in the *Forests and Fish Report*;
- the 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 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 an 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 rules and guidance for protecting aquatic resources to achieve resource goals and objectives. The program was created to ensure that programmatic changes will occur as needed to protect resources; to ensure that there is predictability and stability in the process; and to ensure that there are quality controls applied to scientific study design, project execution and the interpreted results.

From 2000-2011, more than \$25 million in federal funding through the Pacific Coastal Salmon Recovery Fund was spent to help implement the 1999 *Forests and Fish Report*, including funding for development of an Adaptive Management Program, a multi-landowner Forest Practices Habitat Conservation Plan, and information systems; for designing and implementing research and monitoring projects, workshops, and science conferences; and for field implementation of Forest Practices Rules related to aquatic resources.

A significant outcome of the federal funding was the establishment and implementation of the Forest Practices Adaptive Management Program covering aquatic species on state and private forestlands in Washington State. 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. As significant as the program itself was the unique model of collaborative decision-making used in developing the program. In addition, an independent scientific peer review process 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 (or 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 screens, or the achievement of specified stand conditions, such as the ‘desired future riparian condition’ basal area target (DFC). 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 streams.

A report entitled *Monitoring Design for the Forestry Module* of the Governor's Salmon Recovery Plan, July 2002, was commissioned by Forests and Fish 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 available science 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, federal agencies, landowner groups, counties, and the conservation caucus. The open, transparent, collaborative process continues to be used in the Adaptive Management Program to review and revise Forest Practices Rules, and other guidance on state and private forest lands based on research and monitoring projects and other information.

The Forest Practices Adaptive Management Program research and monitoring efforts that were funded already have led to revisions in the Washington State Forest Practices Rules and in guidance to small forest landowners. For example, the rules containing the target threshold for the riparian desired future conditions 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

The Cooperative Monitoring Evaluation and Research Committee (CMER) represents the science component of the Adaptive Management Program and oversees research and monitoring. The CMER Committee 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) and a revised Board-approved Schedule L-1 (2001) serve as the foundation for the work plan, and more specifically guide the development of projects described in the [2013 CMER Work Plan](#).

It is likely that research and monitoring priorities will change over time as adaptive management proceeds, new information becomes available, and ways are found to use the information to improve forest practices. Major research priorities presented in the CMER work plan have not changed substantially at the program level since the most-recent prioritization in 2002. However, at the project level some reprioritization has taken place to answer questions related to Clean Water Act (CWA) assurances in a timelier manner. While at the discretion of the Board, changes

to resource objectives, performance targets and research and monitoring priorities typically would be reviewed and agreed to by the Forests and Fish Policy Committee.

While the first few years of the Adaptive Management Program focused on rule tools, in the last few years, the program has focused much of its effort on effectiveness monitoring and extensive (status and trends) monitoring projects. The effort to more-fully integrate research and monitoring across spatial and temporal scales is ongoing and will continue in Fiscal Year (FY) 2013 (July 1, 2012 to June 30, 2013).

Several of the Adaptive Management Program caucus representatives (tribes, state and federal government, large and small forest landowners, and conservation groups) have worked together over the last three years (FY10, 11 and 12) to seek long-term funding for the program. Additionally, in FY10 the program submitted to the federal Environmental Protection Agency three funding proposals for research and monitoring. A proposal for partial funding of a Type N buffer effectiveness project—emphasizing water temperature and sediment delivery—was chosen by EPA for funding in early FY11, and an EPA-required Quality Assurance Project Plan was developed and approved by CMER in late FY11.

3.4 CMER Work Plan and Activities

The CMER work plan is intended to inform participants, the Forest Practices Board, the Forests and Fish Policy Committee and the public about CMER activities. The [2013 CMER Work Plan](#) can be found on the “[Forest Practices Adaptive Management Program](#)” web page (see section 3.6 below) under the “Files” header. The current 2012 CMER work plan contains more than 90 projects. Approximately 32 projects have been completed and 24 projects are ongoing (i.e., undergoing study design development, or being implemented or reviewed). The CMER Committee work plan is updated annually.

The programs 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, 1999) and incorporated into the Forest Practices HCP (Washington DNR, 2005). CMER projects address the needs of higher priority programs first to ensure that the most important questions about resource protection are answered before the questions with lower scientific uncertainty or lower resource risk. Projects were re-prioritized in 2010 to focus over the next few years on Clean Water Act assurances. The plan is a dynamic document that is revised annually in response to research findings, changes in the Forest Practices Board and Forests and Fish Policy Committee objectives, and available funding.

CMER takes on many other ad hoc projects in addition to their normal course of business. One project taken on in FY10 included developing a table that shows how resource goals, objectives and performance targets are addressed by the studies found in the CMER work plan. The table can be found beginning on page 183 in Fiscal Year [2013 CMER Work Plan](#) (Washington Cooperative Monitoring, Evaluation, and Research Committee, 2012). For each project, the table displays the status, task type, goals, resource objectives, and performance targets addressed by the project. Construction of this table has allowed the committee to review all of its projects in a

comprehensive way. It provides valuable information to the Policy and CMER committees for their assessments and decisions about where to focus efforts. It also helps answer questions about the balance of types of research and monitoring undertaken, e.g., ‘rule tools’ vs. monitoring. The table is revised annually.

In the Fiscal Year 2013 CMER Work Plan, under each research and monitoring program is a section titled “Link to Adaptive Management.” This section was added to the work plan primarily to help the Forests and Fish Policy Committee and the Board understand how critical questions are being addressed by the projects. Knowledge gained, identified gaps, and recommendations for addressing gaps are discussed for each critical question. The “Link to Adaptive Management” section is updated annually as projects are completed. The intent is to have this section completed for every program within the work plan.

Two projects were completed, approved by the CMER Committee and considered for action by the Policy Committee and Board in FY12. The projects were:

- Results of the Westside Type N Buffer Characteristics
- Integrity and Function Study Final Report
- Evaluation of the Effectiveness of the Current TFW Shade Methodology for Measuring Attenuation of Solar Radiation to the Stream

The Policy Committee did not recommend changes to rules resulting from the reports; however, they did recommend changes in guidance to landowners in the Board Manual related to road maintenance and abandonment planning— which the Forest Practices Board approved— based on results from the Washington Road Sub-basin Scale Effectiveness Monitoring First Sampling Event (2006-2008), a report completed in FY11.

One other draft final report was approved by CMER to go through Independent Scientific Peer Review (ISPR) in FY12. The draft report was “The Mass Wasting Effectiveness Monitoring Project: An examination of the landslide response to the December 2007 storm in Southwestern Washington”. The report has been revised based on Independent Scientific Peer Review (ISPR) reviewer comments, but CMER has not yet accepted the report as final.

The status of “[Active CMER Projects](#)” can be found on the Forest Practices Adaptive Management Program web-page under “related links” (See section 3.6). There also is a link to final reports for completed projects under this same header. Agendas of CMER and Forests and Fish Policy Committee meetings can be found under “related links” on the [CMER webpage](#).

3.5 Forests and Fish Policy Committee Activity (July 1, 2011 – June 30, 2012)

General Policy Activity

The Forests and Fish Policy Committee held a budget meeting in April 2012 and reviewed the Fiscal Year 2013 CMER Work Plan and budget. The Forest Practices Board approved the work plan and budget at its May 2012 meeting. Most of the FY13 research and monitoring projects have been in place for at least a year, with many likely to be completed by the end of FY13. CMER will implement one new project in the field in early FY13 and the CMER Work Plan

proposes implementing the scoping and study design phase of two new projects during the year CMER completed two project reports, described above. Neither study resulted in a Forests and Fish Policy Committee action or recommendation to the Board. Those study results, and results of studies completed in the next two years, will be considered for potential rule- or Board-guidance changes.

As reported in the 2009 Forest Practices HCP Annual Report, during 2008 a considerable amount of Policy Committee time was devoted to developing an Adaptive Management Program Strategic Plan (Plan) (Washington DNR, 2008). The Plan has goals to address four major topic areas:

1. Adaptive Management Program efficiency and effectiveness
2. Caucus relationships
3. Program funding and communications
4. Research capability and knowledge

The Policy and CMER committees worked on the goals on many fronts.

Relative to the first goal, it has been about 12 years since the 1999 *Forests and Fish Report* was completed and 10 years since the adoption of revised Forest Practices Rules (“rules”) based on that report. Substantial investments have been made in a science-based program to provide relevant and timely information for the Adaptive Management Program, as intended by the 1999 report and required by the rules. These collective efforts—organized and implemented by the CMER Committee—have attempted to address all the information needs and priorities set forth by the Adaptive Management Program. In spring 2009, Stillwater Sciences completed the first independent review of the collective contribution and progress from the various CMER research and monitoring studies, and offered recommendations. CMER reviewed the report and developed a response to the recommendations in FY12.

In an effort to improve program efficiency, Policy Committee participants recommended that the Board direct the Adaptive Management Program to review its methods using LEAN process improvement methodologies. In FY12, the program conducted an “opportunity assessment” using a LEAN consultant to determine which program processes were most suitable for LEAN reviews. The program chose to conduct a review on the CMER Committee processes for developing, reviewing, and approving scoping documents and project study designs. The LEAN review was conducted and CMER agreed to carry out a pilot on two- to- three studies on its project list using the process that had been developed.

The recent recession had severe negative effects on lumber and timber markets. As a result, working with the governor’s office, forest landowners requested that the Policy Committee consider extending the time period for completing work on projects to meet Road Maintenance and Abandonment Plan (RMAP) commitments, which would also reduce the annual cost of the RMAP program. The Governor’s Office was particularly interested in providing support to the Family Forest Fish Passage Program, and also to assess the risk for small forest landowner roads. A Policy Committee sub-group worked with the Governor’s Office and caucuses on funding

alternatives to accelerate the Family Forest Fish Passage Program, assess the roads, and work collaboratively to seek additional funding for small landowner and county fish passage barrier repair.

The Forest Practices Board considered a recommendation by the Forests and Fish Policy Committee to extend the RMAP deadline, and modify the Board Manual. The Board approved draft rules language at its May 2011 meeting and adopted the final rule proposal in August, amending WAC 222-24-050 and 222-24-051. The amended rules became effective on October 3, 2011.

The Policy Committee initiated discussions on two priority items: development of a Type N Water strategy and development of a strategy for transitioning from the interim water typing rule (Type F/N Water break) to a permanent rule to ensure protection of fish habitat. Developing the Type N Water strategy is the Policy Committee's highest priority. The purpose of the strategy is 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.

Clean Water Act Assurances

Upon the completion of the *Forests and Fish Report* in 1999, the Washington State Department of Ecology (Ecology) and the 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 meeting water quality standards, or putting impaired waters on a trajectory to meeting 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](#) (Washington State Department of Ecology 2009). This report was transmitted to the Forest Practices Board in October 2009.

The report concluded that while much has been accomplished, much remains to be done. In particular, Adaptive Management Program research and monitoring projects designed to determine if the rules are effective in meeting water quality standards are not yet complete. Consequently, Ecology was unable to determine the effectiveness of the rule. The report contained milestones of accomplishments related to the Adaptive Management Program deemed important for Clean Water Act assurances, including a schedule for individual research and monitoring projects. The assurances document also identified some operational milestones that needed to be implemented. Ecology conditionally extended Clean Water Act assurances based on the need to satisfactorily accomplish the milestones. DNR established a project management tracking system for the 22 milestones. The Adaptive Management Program Administrator was

lead on six and co-lead on one of the 22 Clean Water Act milestones. Four of the seven Adaptive Management Program- related milestones have been completed. The remaining three program-related milestones are in various stages of completion.

Forests and Fish Policy Committee Priorities for Fiscal Year 2012-13

The Forests and Fish Policy Committee prioritized their work list in fall 2011 and submitted a letter to the Board in November 2011. Subsequent to that, the 2012 Washington Legislature passed a bill (2ESSB 6406) integrating hydraulic project permits currently regulated by Washington Department of Fish and Wildlife into the associated Forest Practices Application, administered by DNR.

In addition, the State negotiated a settlement agreement with the Forests and Fish Conservation Caucus and the Washington Forest Protection Association concerning the 2006 *Forest Practices Habitat Conservation Plan (Appendix 6)*. The settlement agreement establishes a renewed commitment by all parties to collaboration, a streamlined decision making process, a more rigorous schedule for scientific research that will inform needed rule changes over time, and a stronger plan for ensuring that the Adaptive Management Program is adequately funded. Both the integration of the hydraulic project permits and the settlement agreement will require action by the Policy Committee and, potentially, the Forest Practices Board. Consequently, Policy's work list is a dynamic document. Priority work items now include:

1. Implementing high priority Clean Water Act assurance milestones identified in Ecology's July 2009 review, including completion of the Type N Water strategy discussed above;
2. Developing permanent water typing rules;
3. Integrating hydraulic project permits previously administered by the Washington Department of Wildlife into the Forest Practices Permits administered by DNR;
4. Improving Adaptive Management Program processes and developing a master schedule of CMER projects based on the recently signed settlement agreement related to the Forest Practices HCP; and
5. Implementing other high priority tasks in the Adaptive Management Plan strategic plan.

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/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_am_program.aspx)

http://www.dnr.wa.gov/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_am_program.aspx

[CMER:](http://www.dnr.wa.gov/AboutDNR/BoardsCouncils/CMER/Pages/Home.aspx)

<http://www.dnr.wa.gov/AboutDNR/BoardsCouncils/CMER/Pages/Home.aspx>

- [Active CMER Projects:](http://www.dnr.wa.gov/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_cmer_active_projects.aspx)
http://www.dnr.wa.gov/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_cmer_active_projects.aspx.
- [Completed CMER Projects:](http://www.dnr.wa.gov/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_cmer_completed_projects.aspx)
http://www.dnr.wa.gov/BusinessPermits/Topics/FPAdaptiveManagementProgram/Pages/fp_cmer_completed_projects.aspx

3.7 Electro-fishing Report

One of the conditions of the federal Services' Incidental Take Permits relates to electro-fishing. Electro-fishing is used to determine if listed fish species are in a stream. A shocking device is used to stun fish so they can be counted. United State Fish and Wildlife Service and NOAA Fisheries asked for an accounting of any electro-fishing related to Adaptive Management Program research.

Electrofishing Activity

Only two projects have incorporated electro-fishing as part of a research project. One is the ongoing project (Type N Experimental Buffer Study – Hard Rock) that was reported in the 2011 Forest Practices Annual Report. The other is a new project (Westside Type N Buffer Effectiveness Study – Soft Rock) involving electro-fishing related to Adaptive Management Program research between July 1, 2011 and June 30, 2012.

**Electrofishing Conducted for Adaptive Management Research
Pre- and Post-Activities Report, FY2007
(as required under the Incidental Take Permit for the Forest Practices HCP)**

Pre Electro-fishing

1. Name of project: Type N Experimental Buffer Study – Hard Rock

Date of project implementation for 2010 field season: July-October, 2010

Primary contact for project: Bill Ehinger/Marc Hayes

Names of watersheds where surveys will be conducted:

Extreme headwater tributaries to: Willapa River, North River, Wishkah River, Clearwater River, Humptulips River.

2. Estimate the number of listed fish or miles of listed-species habitat affected by electro fishing activities:

0 miles.

3. Provide names and qualifications of the staff, contractors, or cooperators who will be supervising the field work:

Aimee McIntyre, Project Technician, Washington State Department of Fish and Wildlife.
Jason Walter, Senior Aquatic Research Technician, Weyerhaeuser Company.

4. Provide a copy of the operating protocols designed to reduce effects to listed fish while maintaining the efficiency of the surveys and monitoring (operating protocol includes guidelines by National Marine Fisheries Service (NMFS 2000) and any subsequent updates):

None required. No sampling in streams containing listed fish.

Post Electrofishing

1. Document the length of stream-survey and electrofishing activity:

800 meters total stream length sampled twice yearly.

2. Document any listed-fish encounters:

None.

3. Document any effects that rose to the level of incidental take (harm to habitat or listed species) including mortality:

None.

4. List the apparent condition of all listed fish specimens encountered:

N/A

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**Electrofishing Conducted for Adaptive Management Research
Pre- and Post-Activities Report, FY2012
(as required under the Incidental Take Permit for the Forest Practices HCP)**

Pre Electrofishing

1. Name of project: Westside Type N Buffer Effectiveness Study – Soft Rock

Dates of project implementation: 4/3/12, 4/11/12, 4/19/12

Primary contact for project: Bill Ehinger/Mark Hicks

Names of watersheds where surveys will be conducted:

Extreme headwater tributaries to: Elochoman River, Bear Branch, West fork of the Grays River.

- 2. Estimate the number of listed fish or miles of listed-species habitat affected by electro fishing activities:**

360 meters.

- 3. Provide names and qualifications of the staff, contractors, or cooperators who will be supervising the field work:**

Welles Bretherton, Technician, Washington State Department of Ecology. Megan MacClellan, Specialist, Washington State Department of Ecology. Eric Lund, Wildlife Biologist, Washington State Department of Fish and Wildlife.

- 4. Provide a copy of the operating protocols designed to reduce effects to listed fish while maintaining the efficiency of the surveys and monitoring (operating protocol includes guidelines by National Marine Fisheries Service (NMFS 2000) and any subsequent updates).**

Post Electrofishing

- 1. Document the length of stream-survey and electrofishing activity:**

1859 meters.

- 2. Document any listed-fish encounters:**

None.

- 3. Document any effects that rose to the level of incidental take (harm to habitat or listed species) including mortality:**

N/A

- 4. List the apparent condition of all listed fish specimens encountered:**

N/A

***Make sure to submit any Federal and State permits that were obtained.**