

Timber, Fish, & Wildlife Policy Committee  
October 3, 2019 Meeting Summary

Final v.12.5.19

Action	Responsibility
<b>Request input from the Eastside Tribal caucus on the ENREP project for Policy to consider at its October 31 meeting.</b>	Jim Peters
<b>Begin coordination of a joint Policy/CMER workshop to discuss an Extensive Monitoring Strategy. Add this as a topic to the October CMER meeting agenda.</b>	Chris Mendoza
<b>Update the Technical Type Np Prescriptions Workgroup charter as discussed at the October 3 Policy meeting.</b>	Mark Hicks
<b>Invite legislative directors or policy staff from caucuses to the October 31 Policy meeting for an in-depth discussion of legislative updates. Inform the Policy Co-Chairs of interested attendees.</b>	Policy representatives

Decision	Notes
<b>Approve the September meeting summary as amended.</b>	The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.
<b>Recommend that the Amphibian Genetics Findings Report does not warrant action by the Board.</b>	The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.
<b>Accept the Riparian Characteristics and Shade Charter.</b>	The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.

Welcome, Introductions, & Old Business – Policy Co-Chair Curt Veldhuisen, Skagit River System Cooperative (SRSC), opened the meeting and reviewed the day’s agenda.

Curt reminded Policy that the November 7, 2019 Policy meeting was rescheduled to October 31, 2019.

Jim Peters, Northwest Indian Fish Commission (NWIFC), introduced Janelle Black, the new lead scientist at CMER. Janelle previously worked as a CMER project manager. She has a background in forest hydrology, stream ecology, geomorphology, and fish habitat studies. She looks forward to working with the CMER team and the Scientific Advisory Groups (SAGs).

Ken Miller, Washington Farm Forestry Association (WFFA), shared that the Small Forest Landowner Alternate Plan Template Workgroup is close to finishing their review of the prescriptions. They will meet again on October 9 and 16, 2019 to discuss possible prescription amendments to meet the needs of all the caucuses. The Workgroup will present their products to Policy at the October 31 Policy meeting. Ken noted that he anticipates that a motion will be made to start a Dispute Resolution process.

Chris Conklin, Department of Fish and Wildlife (WDFW), noted that his colleague Don Nauer will attend the October 31 Policy meeting in Chris's stead as the WDFW representative. Chris also shared that he is working on a list of recommendations for Adaptive Management Program (AMP) future study suggestions drawn from multiple findings reports.

Curt noted that Policy representatives are encouraged to invite legislative directors or staff to upcoming Policy meetings to share goals for the upcoming session.

Mark Hicks, Adaptive Management Program Administrator (AMPA), reported that the Bull Trout Overlay Add-On study was approved by Independent Scientific Peer Review (ISPR). Additionally, Mark is seeking clarification that the Buffer Characteristics Integrity and Function (BCIF) study was accepted by CMER.

The group reviewed the September meeting summary. Some amendments were suggested, and the document was edited on screen.

**Decision:** Approve the September meeting summary as amended. The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.

CMER Update – Doug Hooks, Washington Forest Protection Association (WFPA) and CMER Co-Chair, provided Policy with an update from the September 2019 CMER meeting. Highlights are listed below.

- CMER discussed displaying the Code of Conduct and Ground Rules during meetings and running exercises to increase awareness and observance of these policies.
- CMER heard recommendations about potential meeting facilitation or conflict resolution at CMER meetings. CMER considering having a collective discussion about how facilitation could benefit both CMER and Policy.
  - It was noted that CMER and Policy would both need to be in support of allocating money in the AMP budget towards facilitation.
- CMER has been working on its PSM Chapter 8 update. CMER members were asked to provide comments.
- CMER delivered Policy's questions to the Eastside Type Np Riparian Effectiveness Project (ENREP) project team and asked the team to respond to the questions within their expertise. The project team responded to questions 2-4. CMER formed a subgroup to answer question 1. Once this has been completed, CMER plans to approve the whole package and then deliver it to Policy. There has been no information to indicate that the project plan or management will be changed soon.
- CMER approved the Hard Rock Extended Phase II to go to ISPR, as well as an additional question related to temperature monitoring.
- CMER reviewed the six questions for the Hardwood Conversion Summary Report. They did not reach consensus and instead called for dispute resolution. An informal meeting is scheduled for November 9 to resolve the issue as quickly as possible.
- The answers to the six questions for the Extensive Riparian Status and Trends Monitoring Project - Stream Temperature Westside Type F/S and Type Np was approved by CMER. The final report was already approved and the Findings Report (Final Report, Answers to the six questions, cover letter from AMPA) will be delivered to Policy for their October meeting.
- CMER assigned three reviewers for The Extensive Riparian Vegetation Monitoring Model Transferability Testing Report. Reviewer edits and comments are due Oct 24, 2019.

Quarterly Budget Update – Mark Hicks, AMPA, updated Policy on the Adaptive Management Program (AMP) budget and Master Project Schedule (MPS). He noted that this update is an interim report and the numbers may change. Highlights are listed below.

- The AMP is moving toward a large budget surplus due to project delays. This will increase the funds available in the second half of the fiscal year.

- There are currently five vacancies within the AMP. Mark noted that these vacancies leave the AMP short-staffed temporarily, and staff will be focusing on critical needs at this time. Mark estimated \$177,600 in savings from these vacancies.
- The next CMER conference will be postponed until 2021.
- Five projects overran their budgets and requested more contract money. This used all of the contingency funds for the current fiscal year.
- \$83,000 was reallocated to the next fiscal year to compensate Type Np Prescriptions Workgroup members.
- The estimate of total savings as of October 3, 2019 is \$572,764. Mark is working with his staff to refine these projections and anticipate how to accommodate the delayed funding needs in the next fiscal year.
- The Policy Budget Subcommittee is scheduled to meet on October 24, 2019 and will discuss recommendations for Policy's next steps.
- Jim Peters noted that NWIFC is spending more salary money than budgeted for because they hired back a previous CMER staff member at a higher rate.
- A Policy representative noted there may be money needed for an anadromous fish floor workgroup. Mark mentioned the Water Typing Strategy line item remains fully funded but it is unclear whether the AMP is prepared to spend this money within the fiscal year or biennium. Mark noted a need to tighten the budget to use money more efficiently.

CMER and Principal Investigator (PI) Response to ENREP Questions – Emily Hernandez, AMP Project Manager, and Bill Ehinger, Ecology, presented on the approved questions from CMER. Emily stated that the project update is a summary of the project team's learnings from their site visits. See attached for details. Emily noted that the project lost one pair of sites due to a conflict with spotted owl habitat; however, the ecosystem diversity is still represented among the remaining sites. Emily highlighted the budget summary and how the funds were adjusted based on project spending.

Bill expanded upon the scope of inference, referencing a graph (see page 10) of annual precipitation across project sites. The inferences made will be about the entire population of streams (averages across the landscape), rather than about individual streams. The loss of the Rattlesnake Hills site will allow for less confidence but will not narrow the scope of inference or range of watersheds about which inferences can be made.

Highlights from the discussion are listed below.

- A Policy representative expressed interest in seeing more replicates across varying hydrological conditions and with fewer response variables to avoid disagreement over whether the information is actionable when the findings report is delivered to Policy.
  - Bill Ehinger commented that the project team would like more sites, but it is very difficult to locate suitable sites. It was noted that more project sites could be added in the future.
- Mark Hicks, AMPA, noted that there was a lot of work put into this project and study design. The study design came back to Policy because the budget estimates increased over time. He pointed out that the most recent budget estimate timeline is distributed more evenly over time due to the change in site selection.
- Project PI Tim Link, University of Idaho, explained that upstream variables may confound the study and a different approach to control variables may be needed.
- In response to a question about the possibility of losing more sites to critical habitat designations, Emily Hernandez noted the team is waiting for confirmation that there are no other spotted owl nests at the sites but does not have reason for concern at this time.
- In response to a question, Bill Ehinger explained the highest proportion of dry Np channels are present in the Springdale site and all sites have some portion of intermittent dry streams.
- A Policy representative expressed concern about the increased budget. Emily noted that the budget concerns are primarily a timing issue. She clarified that the contracts with universities are

two-year contracts and that both these costs and overhead expenses increase as the timeline goes on. A representative expressed their caucus's concern about overhead costs and expressed interest in the AMP looking at other contract options beyond university contracts.

ENREP Budget Revision Discussion – Chris Mendoza, Conservation caucus and CMER Co-Chair, reported that a CMER workgroup is meeting on October 14 to discuss the answer to Question 1; however, CMER may or may not achieve consensus on an answer to question 1 in time for Policy's October 31 meeting. The project team noted there is information pertinent to Question 1 in the answers to Questions 2-4.

In response to a question, it was clarified there would not be a significant impact on the project's timeline if Policy returns an answer to the Board in February instead of November.

Curt Veldhuisen opened the floor for caucuses to discuss preferences toward approving the ENREP scope and budget versus recommending changes. Highlights are listed below.

- A Policy representative asked if there was interest in discussing a request for additional sites. Bill Ehinger mentioned that additional costs would be incurred in the site search and selection.
- It was clarified that landowner participation is a larger issue than site availability on this project.
- There was a discussion of how macroinvertebrates are being used in the study. Melissa Gildersleeve, Ecology, informed Policy there are metrics in the 303 D listing policy for macroinvertebrates called the Biological Index for Benthic Invertebrates (BIBI) used to survey macroinvertebrates and compare to reference conditions to identify impaired waters.
- Mark Hicks noted the project design team discussed collecting macroinvertebrates using more rigorous methods than in previous years. However, the team did not determine a recommended threshold for decision or acceptance criteria. It was noted the project team reasoned that if macroinvertebrates were excluded, the study would not be able to determine whether the macroinvertebrate communities are being protected.
  - It was recommended that Ecology present on their listing methodology at a future Policy meeting.
- Jim Peters, NWIFC, noted that in the past, the Eastside Tribal caucus was supportive of more Eastside studies and may have technical input. He offered to reach out to the Eastside Tribal caucus to find out their perspective on the ENREP study.
- It was clarified that sediment measuring is a minor cost in this budget assuming the study includes streamflow monitoring. Sediment measuring uses the same equipment as streamflow monitoring. The same method is proposed as was used in the Hard Rock and Soft Rock studies.

Policy representatives expressed a preference to wait until Policy has the answers to all four questions requested from CMER. Policy will resume its discussion about the ENREP budget at its October 31 meeting.

Action: Jim Peters will contact Ray Entz to request input from the Eastside Tribal caucus on the ENREP project to share at the next Policy meeting.

Amphibian Genetics Findings Report – Aimee McIntyre, WDFW, gave a brief synopsis of the Amphibian genetics study. She reminded Policy the study did not find evidence of immediate effects of treatment on amphibian populations; however, the Study team qualified the study may not have had the power to detect slow and gradual changes over the long term. Therefore, existing results have limited ability to infer effects across further generations. The team recommended that the study could be further fortified by funding resamples into the future.

Policy representatives presented the following questions and Aimee's comments.

- Is there a performance target or predetermined level of change for this study?

- The performance targets for amphibians are loosely defined in the Schedule L-1 as maintaining population viability over the long term. “Population viability” and “long-term” are not defined. The project team recommended that there would be value in revisiting the definitions of certain terms in the Schedule L-1.
- What would be the best time to resample?
  - Fourteen to sixteen years post-treatment would be a good timeframe. There is money in the budget for a resample in 2022. There may be different timing needs for genetics versus demographics; it is possible these could be decoupled in the budget. Alternatively, the project team could look into using upgraded genetic analysis technology. This method may be less expensive but would require the team to re-analyze the samples from the first collection.

Aimee McIntyre offered to reach out to the geneticist on this project for more information on the differences in cost, efficiency, and power of different genetics analysis methods. Policy members expressed preference to delay the budget decisions concerning the Amphibian Genetics project.

Scott Swanson, Washington State Association of Counties (WSAC), moved that Policy move forward the findings report to the Technical Type Np Prescriptions Workgroup. The motion was not seconded. Policy representatives expressed interest in making the findings report available to the Workgroup, but this does not need a formal motion. The AMPA reminded Policy that it will cost the AMP money to have the contracted Workgroup members review studies, and not all of the members may be qualified to review all of the studies. It was suggested that the Workgroup Co-Chairs oversee which studies the Workgroup members review. Scott rescinded the motion.

Jim Peters moved that Policy recommend the Amphibian Genetics Findings Report does not warrant specific action by the Board. The motion was seconded.

**Decision:** Recommend that the Amphibian Genetics Findings Report does not warrant action by the Board. The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.

**Technical Type Np Prescriptions Workgroup Charter** – Policy reviewed the updated timeline (Section VI) as revised by the AMPA and Policy Co-Chairs. The AMPA noted that this timeline will continue to shift. Some Policy representatives expressed a preference not to formally approve the timeline because Policy has no control over the timeline. Others stated that they sought to approve the charter to provide the Co-Chairs with a clean document to present to the Board. There was a discussion of whether to impose a hard deadline or timeline on the Type Np Workgroup process. Some caucuses expressed a willingness to only extend the timeline if there is a legitimate reason for the delay. It was suggested that the AMPA provide regular updates to Policy on the Type Np Workgroup timeline and causes for any delays.

There was a small change made in the Charter to clarify the final Type Np study report is expected in December 2020. Scott Swanson moved that Policy accept the Type Np Charter as amended. The motion was seconded. There was further discussion of the original charter language that acknowledged the timeline will change frequently.

Policy took a vote on the above motion. The Federal caucus and Eastside Tribal caucus were absent; the Conservation caucus voted thumbs down; all other caucuses voted thumbs up. The motion failed. The Conservation lead explained that he felt that formal approval was unnecessary.

Policy representatives expressed support for the changes to the charter’s timeline brought forward by the AMPA on October 3, 2019. Policy representatives expressed support for regular updates from the AMPA about the Type Np timeline without the need to reapprove the charter. If a caucus takes issue with extensions of the timeline, that caucus or Policy will respond as appropriate.

**Action:** Mark Hicks will Update the Technical Type Np Prescriptions Workgroup charter as discussed at the October 31 Policy meeting.

Extensive Riparian Status and Trends - Temperature Monitoring Presentation – Bill Ehinger, WDFW, presented on the Extensive Riparian Status and Trends – Temperature Monitoring findings report. See slides and Attachment 2 for details.

Policy representatives presented the following questions and Bill’s comments:

- Was this study intended to last for more years than it did (i.e. 2008 & 09)?
  - It had been thought this study could go on for over a decade; however, it is difficult to connect observed changes to specific practices over the long term.
- Is it possible to go back to these established sites?
  - Conceptually, yes. The coordinates are all recorded.
- A Policy representative expressed support for the study because it provides data that is important to inform many other studies.

Policy will discuss whether or not to recommend action on the Extensive Riparian Status and Trends – Temperature Monitoring findings report at the October 31 Policy meeting.

Extensive Monitoring Strategy Presentation– Joe Murray, Merrill & Ring and RSAG co-chair, presented to Policy on a strategy for extensive monitoring. See Attachment 3 for details. This strategy was developed by RSAG and CMER upon Policy’s 2018 request.

Joe reviewed completed extensive status and trends deliverables and projects. He offered to provide to Policy a copy of the document completed in 2014 called “Use of Remote Sensing to Conduct Extensive Riparian Monitoring.”

Joe then reviewed the thirteen questions that are included in the proposed strategy framework intended to help readers understand how the tool might be used to make work easier. He asked for Policy’s input on any recommended changes to the list of questions.

Policy representatives presented the following questions and Joe’s comments:

- What is the timeframe in which an observed pattern is considered a trend?
  - This depends on the type of data; one needs to look across the landscape to determine what frequency of measurement is necessary.
- Was there a discussion about how to prioritize questions?
  - The team did not do this but could do this with some effort. Joe highlighted the following topics as important for consideration:
    - Desired level of resolution of data
    - Statewide monitoring, or only eastside or westside
    - Frequency of remeasurement
    - Budget needs
  - Joe recommended that if Policy is interested in pursuing the implementation of an extensive monitoring strategy, they should ask CMER for a charter and a scoping document.

Chris Mendoza summarized that CMER is looking for direction from Policy whether Policy is interested in moving forward with the strategy, which will determine whether extensive monitoring is valuable and what level of resolution Policy needs to decide on a particular project. This will guide CMER and the project teams in determining what methods are available and appropriate to obtain the desired level of data. It was suggested that Policy hold a workshop to engage in an interactive dialogue with CMER about past work on extensive monitoring, available tools and costs, and the questions in the proposed strategy. Policy representatives expressed support for this idea. It was noted that it may take time to prepare for the workshop and find speakers.

Mark Hicks reminded Policy this proposed program has budget implications. Joe stated that RSAG will search for alternatives in the scoping process.

**Action:** Chris Mendoza will begin to coordinate a joint Policy/CMER workshop to discuss an Extensive Monitoring Strategy. He will add this as a topic to the October CMER meeting agenda.

**Riparian Characteristics and Shade Study Charter** – Teresa Miskovic, AMP, presented the Riparian Characteristics and Shade Study Charter. See Attachment 4 for details. The purpose of the study is to quantify how stream shade responds to different buffer widths and thinning treatments. The study would also use data and analysis to refine Ecology’s stream shade model (SHADE.xls). The current deliverables include a final study design approved by RSAG, CMER, and ISPR. The project would contract with Siskowet, a technical consulting company.

During the discussion, it was clarified the study scope lists no-cut buffers of 25’, 50’, and 75’, as well as various levels of thinning? treatments within some of these buffers. Additionally, Chris Mendoza mentioned the study design was intended to be completed by the end of fiscal year 2019, but was delayed, and therefore the timeline was updated.

There was some discussion of the review and approval process. It was clarified that the charter was approved by RSAG and CMER, and the study plan is in concurrent review by these committees.

**Decision:** Policy accept the Riparian Characteristics and Shade Charter. The Eastside Tribal caucus and Federal caucus were absent; all other caucuses voted thumbs up.

**Next Steps** – Policy reviewed the monthly workload document and the meeting schedule for the remainder of 2019. Timing for other items will be updated in the monthly workload document.

The October 31 meeting agenda will include deliverables from the Small Forest Landowner Template Workgroup, discussion of CMER’s responses to Policy’s ENREP questions, and legislative updates from any caucuses that choose to present.

**Action:** Policy representatives will invite legislative directors or policy staff from their caucuses to the October 31 and subsequent Policy meetings for discussions of legislative priorities. Caucuses should inform the Policy Co-Chairs of interested attendees and their availability.

**Next meeting date:** The next Policy meeting will occur on Thursday, October 31, 2019.

The meeting was adjourned at 3:30 p.m.

Attachment 1 – Participants by Caucus at 10/3 Meeting\*

**Adaptive Management Program – DNR**

Emily Hernandez, DNR  
Mark Hicks, DNR Adaptive Management Program Administrator  
Teresa Miskovic, DNR

**Conservation Caucus**

\*Alec Brown, WEC  
Chris Mendoza, Conservation Caucus, CMER co-chair

**County Caucus**

\*Scott Swanson, WSAC

**Industrial Timber Landowner Caucus**

\*Darin Cramer, WFPA  
Doug Hooks, WFPA, CMER co-chair  
Martha Wehling, WFPA  
Joe Murray, Merrill & Ring

**Small Forest Landowner Caucus**

\*Steve Barnowe-Meyer, WFFA  
Ken Miller, WFFA  
Harry Bell, WFFA

**State Caucus – DNR**

\*Marc Engel, DNR  
Emily Hernandez, DNR  
Teresa Miskovic, DNR

**State Caucus – Ecology & WDFW**

\*Melissa Gildersleeve, Ecology  
\*Chris Conklin, WDFW

**Tribal Caucus – Westside**

\*Jim Peters, Northwest Indian Fisheries Commission  
Ash Roorbach, Northwest Indian Fisheries Commission  
Curt Veldhuisen, Skagit River System Cooperative and Co-Chair

\*caucus representative

**Others**

Annalise Ritter, Triangle Associates  
Janelle Black, CMER staff

Attachment 2: Extensive Riparian Status and Trends Monitoring – Temperature Study Transmittal of Findings

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Date: September 26, 2019  
To: Curt Veldhuisen and Terra Rentz, TFW Policy Co-Chairs  
Form: Mark Hicks, Adaptive Management Program Administrator  
Subject: Extensive Riparian Status and Trends -Temperature Study

The purpose of this memo is to transmit the final CMER and ISPR approved study report for the ***Extensive Riparian Status and Trends Monitoring Project - Stream Temperature Westside Type F/S and Type Np*** and the CMER approved Findings Report which summarizes key elements of the study by addressing 6 requisite questions.

This study was initiated to provide data needed to evaluate landscape-scale effects of implementing the forest practices riparian prescriptions and to evaluate progress toward meeting Clean Water Act (1977) requirements and riparian resource objectives.

A probability-based (random) sampling design was used to sample stream temperature and canopy closure on Type F/S (fish-bearing) and Type Np (non-fish-bearing perennial) streams on land regulated under the Forest Practices Rules in western Washington over a two year period (2008 and 2009). Because only about half of the sites were monitored in 2008 due to delays in acquiring permission to access the sites, the statistics presented were based only on the 2009 sample year (July-August). Monitoring included 61 Type F/S stream sites and 54 sites on Type Np streams.

For each stream type, cumulative distribution function (CDF) plots were presented to illustrate the distribution of water temperature and canopy closure across each stream type, along with the estimated 25%-tile, median, and 75%-tile values (see below), for maximum summer stream temperature, the seven-day average maximum stream temperature (7DADM), canopy closure, and change in the 7DADM ( $\Delta$ DADM) between the top and bottom of the sample site.

Stream Type	Metric	25%-tile	Median	75%-tile
F/S	Canopy closure	39%	78%	96%
	Maximum temperature	16.0 °C	18.7 °C	20.4 °C
	7DADM	15.4 °C	18.1 °C	19.5 °C
	$\Delta$ DADM	-0.2 °C	0.1 °C	0.4 °C
Np	Canopy closure	73%	93%	98%
	Maximum temperature	14.0 °C	16.2 °C	17.3 °C
	7DADM	13.2 °C	15.2 °C	16.5 °C

$\Delta$ DADM

-0.2 °C    0.8 °C    2.3 °C

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Future and continued data collection is possible if interest exists at Policy and the Board. However, the long-term trend monitoring component of this study was not funded in part because many small forest landowners were unwilling to allow access to their lands, the inability of status and trends monitoring to assess prescription effectiveness.

Work is ongoing to explore the extent to which remote sensing can be used to fulfill some of the original goals of the status and trends monitoring program (see Extensive Vegetation Monitoring Project); and to overcome the problem of small landowners not allowing their ownerships to be sampled. Taking into consideration of some streams being mistyped and the difficulty of accessing many small forest landowner properties, the study retained 70% and 68% of the original sample frame for Type F/S and Type Np streams, respectively.

Given the study represents a single status measurement of temperature across the landscape subject to the Forest Practices Rules, it cannot be used determine if temperatures have been cooling since the Forests-and-Fish-based rules were put into to place. It additionally does not provide any information on the extent that the forest practices rules affected the temperatures observed. Thus it is not possible to make an assessment of the effectiveness of the regulations using this study. For these reasons, I do not recommend TFW Policy take or recommend the Board take any specific action at this time in response to this report.

Riparian Scientific Advisory Group and  
Cooperative Monitoring Evaluation and Research Committee  
Extensive Status and Trends Monitoring  
March 13, 2019

At the November 5, 2018 Timber Fish Wildlife Policy (Policy) Committee meeting, the Committee approved requesting RSAG and CMER to consider an approach to extensive monitoring and to prepare recommendations that would come back to the Policy (November 5, 2018 Policy meeting minutes). This document is in response to Policy's request.

### Background

Extensive monitoring is a component of the Forest Practices Habitat Conservation Plan (FPHCP) and the Cooperative Monitoring Evaluation and Research (CMER) Committee Work Plan.

The CMER Work Plan includes four extensive monitoring programs:

- Extensive Status and Trends Stream Typing Monitoring (5.1.5),
- Riparian Status and Trends Monitoring for Vegetation and Temperature in Type F & N Streams (5.2.5),
- Mass Wasting Landscape Scale Extensive Monitoring (5.5.6.6),
- Extensive Fish Passage Monitoring (5.7.5).

Section 4a-4.2 of the Forest Practices Habitat Conservation Plan (FPHCP) states "Extensive monitoring evaluates the statewide status and trends of key watershed processes and habitat conditions across lands covered under the FPHCP. Extensive monitoring is a landscape-scale assessment of the effectiveness of forest practices rules to attain specific performance targets. This is different from effectiveness monitoring, which evaluates the effect of specific prescriptions or practices at the site scale."

Currently there is no comprehensive riparian forest inventory that monitors the status and trends of all the riparian forest resources and functions regulated under the Department of Natural Resources FPHCP.

Work completed in the Extensive Riparian Status and Trends Monitoring Program to date includes:

- Extensive Riparian Status and Trends Monitoring for Temperature in Type F & N Streams for the Westside to be completed in 2019;
- Extensive Riparian Status and Trends Monitoring for Temperature in F Streams for the Eastside of Washington was completed June 2013;
- Extensive Riparian Status and Trends Monitoring – Vegetation, Type F/N Westside and Eastside projects;
  - A pilot study evaluating different scales of aerial photos was completed in 2006;

- A literature synthesis review to evaluate the feasibility of applying remote sensing to assess riparian stand conditions was completed in November 2015;
- The Extensive Riparian Vegetation Monitoring Remote Sensing Pilot (see findings report) completed in June 2017;
- The Extensive Riparian Vegetation Monitoring Implementation Pilot (see finding report) completed in September 2018;
- Eastern Washington Riparian Assessment Project (EWRAP) completed 2016.

For additional context and background information, refer to the document prepared by RSAG February 12, 2014 titled “Use of Remote Sensing to Conduct Extensive Riparian Monitoring.” This document was prepared based on a directive from Policy, specifically, “Policy directed RSAG to consider high-level options for how to move forward on extensive monitoring as well as options for other extensive studies. This should include perspectives considering the past and future as well as existing technologies. RSAG should also consider other monitoring approaches to landscape-level performance.” (July 11, 2013 Policy meeting notes)

#### Purpose

“Evaluate the current status of key watershed input processes and habitat condition indicators across FP HCP lands, and document trends in these indicators over time as the forest practices prescriptions are applied across the landscape.” (CMER 2019-2021 Biennium Work Plan).

#### Problem Statement

To date:

- An unbiased landscape-scale representative inventory of riparian forest conditions across Forest and Fish Report (FFR) lands does not exist.
- There are no baseline data for assessing the status and trends of the riparian forest at the landscape-scale.

#### Guidance Questions

CMER is seeking guidance from Policy in order to clarify research/monitoring needs which will drive the development of proposals consistent with Policy’s intent for the Extensive Riparian Status and Trends Monitoring Program. Therefore, it is important for Policy to identify the Extensive Monitoring Questions and levels of resolution needed for decision making. To aid this process, CMER developed a list of potential questions (see table below) that Policy may want to address with extensive monitoring. The table provides a list of example questions with their utility for the types of information that may be gained from extensive monitoring. Clearly more questions or revised questions may result from Policy’s review.

**Examples of: purpose, questions, and utility of extensive riparian vegetation monitoring program.**

No	Purpose	Questions	Utility/Why do we want to know this?
1	status	What is the proportion and miles of streams currently typed as S/F and Ns/Np streams with buffer strips established post FFR?	This is a report card on how many stream miles are protected by FFR. This helps us understand the extent the FFR are applied across the landscape.
2	status/ trend	What proportion of streams dominated by hardwoods?	This can address questions about the extent of hardwood in RMZs and changes in hardwood dominance over time.
3	status/ trend	What is the spatial distribution of forest stand/structure types along F and N streams by region or WAU and how is it changing over time?	To identify the potential of these stands to provide ecologic function and how they change over time due to management, climate change, etc.
4	status	What is the proportion of buffers with disturbances such as windthrow, fire, disease/bugs?	This estimates the extent where buffers have been impacted by major disturbance and the associated loss of functions (e.g. shade and LWD) across the landscape.
5	context	How similar or dissimilar are the buffers in CMER effectiveness studies (e.g., composition, width, length) to those across the landscape?	Provides some spatial context to the results of CMER studies.
6	function	What proportion of RMZs provide various levels of shade and LWD?	This could inform questions about if and where buffer rules may or may not maintain shade and LWD.
7	status	What proportion of the riparian forest has reached the Desired Future Condition (DFC)?	Provides a measure for how well we are achieving the goals of FFR.
8	trend	What proportion of the riparian forest is on the trajectory to reach the Desired Future Condition (DFC)?	Provides a measure for how well we are achieving the goals of FFR.
9	status	What proportion of the stream network meets the state temperature standards?	This would give an estimate of the measure of success on lands which are not available for sampling because of access issues.
10	status	What proportion of RMZs have been thinned?	This would evaluate the proportion of RMZs thinned which may improve the riparian forest for fire resilience, forest health or to improve fish habitat.
11	status	What proportion of riparian forest have adjacent upland fire resiliency or forest health thinning treatments?	This would indicate the risk to RMZs from prescribed burning of the upland forests.
12	status/ trend	What proportion and total length of S/F and Np streams have riparian functions protected by rules <u>other than</u> the riparian prescriptions themselves (e.g.murrelets, unstable slopes etc.)?	Illustrates the contributions to riparian functions provided by these other prescriptions.

13	status/ trend	What total amounts and proportions of S/F and Np streams in the overall FFR footprint have been treated to date under each of the different riparian prescriptions (NIZH, DFC 1, DFC 2, etc.)?	In combination with the results of our prescription effectiveness studies, this will allow us to estimate the condition of the riparian forest at the landscape to state scales.
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**Riparian Characteristics and Shade Response  
Study**

**PROJECT CHARTER**

Project Charter 2<sup>1</sup> - Problem Statement, Critical Questions, and Objectives

Project Team members: Teresa Miskovic and Siskowet. Others TBD.

Overseeing Scientific Advisory Group: RSAG

September 19, 2019

**Problem Statement**

Washington's forest practices regulations include riparian prescriptions that include no-harvest buffers of varying width. These no-harvest buffers can be used alone, or in some cases be applied in combination with adjacent buffers of varying width within which some level of thinning is allowed. No study has been identified which examines a well-replicated range of riparian harvest treatments on stream shade across a broad range of forest types applicable to Washington State. Field research is particularly limited examining how changing the width of no-cut buffers along streams affects the ability to thin the adjacent riparian stands without detrimentally affecting stream shade. In addition to being of direct interest in assessing the effectiveness of the current riparian rules, this is a topic of great interest to policy makers who want to understand the implications to shade of using forest thinning as a tool to promote healthy forests on the Eastside and desired future conditions sooner on the Westside. While other existing and planned CMER research studies will support decisions on the effectiveness of the specific prescriptions tested, they will not inform policy makers of other untested buffer configurations permitted under forest practices rules, as well as their statewide applicability.

**Purpose Statement**

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<sup>1</sup> The purpose of the charter is to communicate project needs (goals, resources, budget, schedule, etc.). The charter should convey an appropriate level of detail to understand the primary concepts of the project to ensure sustainability overtime. When substantive changes are considered necessary, which amend the scope of the project (i.e. study design, budget, or schedule), the charter should to be updated (version#2, #3, etc.) to communicate those changes.

The purpose of this study is to quantify how stream shade responds to a continuum of buffer management thinning treatments of varying intensity across a range of stand types (or geo-physiographic regions) common to commercial forestlands covered under the FPHCP. The results would strengthen the ability of the AMP to interpret and respond to ongoing and future effectiveness monitoring studies that directly test both shade and temperature. The data collected on buffer and stand characteristics would also be used to test and make improvements to Ecology's SHADE.xls model. This would further expand our ability to estimate the response of shade to an even broader range of treatment prescriptions, including alternative prescriptions, over a broader range of riparian forest types and conditions than what we can test directly.

### **CMER Rule Group and Program**

This project is in the Type N Riparian Prescriptions Rule Group and the Extensive Riparian Status and Trends Monitoring Program. The project may also inform parts of several Type F and Type N Riparian Prescription Rule Group critical questions.

### **CMER Work Plan Type N and Type F Riparian Prescriptions Rule Group Critical Questions** (CMER 2019-2021 Biennium Work Plan)

This project may inform the following Critical questions:

Type N Riparian Prescriptions Rule Group Critical Question:

*How do other buffers compare with the forest practices Type N prescriptions in meeting resource objectives?*

Type F Riparian Prescriptions Rule Group Critical Questions:

*How does stream shading change with buffer width and intensity of management across a range of stand types and characteristics in Washington?*

*Are both the standard eastside prescriptions and the all available shade rule effective in protecting shade and stream temperature and in meeting water quality standards?*

### **CMER Work Plan Extensive Riparian Status and Trends Monitoring Program Research Question** (CMER 2019-2021 Biennium Work Plan)

*How does stream shading change with buffer width and stand conditions (e.g., basal area, density, age, height)?*

### **Study Design Critical Questions**

It is anticipated the study would address the following critical questions:

1. *How does stream shade change in response to a range of no-cut and thinned buffer zones used alone and in combination?*
2. *How does the shade provided by the tested buffer configurations vary by stand type (e.g.,*

- Douglas fir, hemlock-spruce, Ponderosa pine)?*
3. *What stand metrics (e.g., stand height, relative density, trees per acre, basal area, and crown ratio) alone or in combination, are the best predictor of shade and light attenuation; and how do these predictor variables vary by stand type?*
  4. *What parameter input values and/or changes in the Ecology SHADE.xls model (e.g., canopy density, light extinction, stream overhang) would improve prediction accuracy for timber stand types common to commercial forestlands covered under the FPHCP in Washington?*

**Project Objectives**

The study has three objectives:

1. To determine the effect of varying buffer width and the intensity of management (i.e., thinning) within the buffer on shade provided to adjacent streams.
2. To determine relationships between stream shade and common forest-stand metrics (e.g., mean canopy height, crown ratio, relative density, trees per acre, basal area per acre).
3. To refine and calibrate Ecology’s stream shade (SHADE.xls) model to improve application across the range of buffer configurations and timber stand types common to commercial forestlands in Washington.

**Tangible Deliverables**

The work in this charter will be considered complete when the following deliverables have been completed:

- A final RSAG and CMER approved study design.
- A final ISPR approved study design.

**Project Management Team Roles and Responsibilities**

Position (Role)	Roles and Responsibilities
Project Manager: Teresa Miskovic, Adaptive Management Project Manager, DNR	<ul style="list-style-type: none"> <li>• Overall as a lead of the project team, the project manager is primarily responsible for all aspects of project management which include: planning, maintaining project accountability, project communication, facilitation of administrative tracking.</li> <li>• RFQQ development and facilitation through review and selection process.</li> <li>• Contract, schedule, budget, and scope of work development and approval.</li> <li>• Maintains the scope of work as specified in the project charter, scope of work, and contract.</li> <li>• Approves the expenditure of funds from the budget (signs invoices) when deliverables are approved.</li> </ul>

	<ul style="list-style-type: none"> <li>• Ensures Contractor complete tasks on time and within budget and ensures contract obligations are met.</li> <li>• Facilitates review process of final study plan.</li> <li>• Communicates project progress, problems, and problem resolution to the AMPA, CMER, Project Team, and RSAG.</li> </ul>
PI: Siskowet	<ul style="list-style-type: none"> <li>• Meet obligations of project contract and scope of work within budget and schedule.</li> <li>• Complete draft study design based on Scoping document and Contract Scope of Work.</li> <li>• Address RSAG and CMER review comments by revising study design accordingly.</li> <li>• Provide progress reports.</li> <li>• Communicate technical issues to PIs and PM.</li> <li>• Communicate contractual or budget issues to PM.</li> <li>• Provide statistical expertise for development of appropriate data analysis and other applicable elements of the final study plan.</li> </ul>
Other Project Team Members: TBD	<ul style="list-style-type: none"> <li>• Assist with development of RFQQ and review and selection process.</li> <li>• Assist with finding solutions to technical issues that arise during study plan development.</li> <li>• Provide expertise as necessary for successful completion of project study design.</li> <li>• Assist PM with developing project charter, implementation plan, and communication plan.</li> <li>• Provide constructive and timely feedback.</li> <li>• Assist as needed with communicating project information to RSAG and CMER.</li> <li>• Provide timely review and constructive feedback on project documents and study design.</li> <li>• Participate in project meetings and conference calls as needed.</li> </ul>

### Schedule

The following are tasks, responsible team member for completing task, and estimated completion date.

Task	Responsible Team Member	Estimated Completion Date
Development of RFQQ and facilitation through review and selection process	PM and Project Team	January 25, 2019
Negotiate and finalize contract	PM	February 14, 2019

RSAG approved Project Charter	PM and Project Team	February 21, 2019
RSAG approved Management Plan and Communication Plan	PM and Project Team	December 31, 2019
Draft Study Design	Contractor	April 12, 2019
Final RSAG and CMER approved Study Design	Contractor, RSAG, CMER, PM	October 31, 2019
ISPR of Study Design	ISPR	January 2020
Incorporation of ISPR comments into Study Design	PI	February 2020
ISPR concurrence with final Study Design changes	ISPR	March 2020
CMER approval of final Study Design	CMER	April 2020
Prospective findings report drafted and approved by RSAG	PI, Project Team, RSAG	June 2020
CMER approval of prospective findings report	CMER	June 2020

Timelines and deliverables for implementation will be estimated after completion of the study design and are not part of the initial contract.

### Budget

Timeframe	Budget	Phase
February 14, 2019 – June 30, 2020	\$62,415	Study Design development and RSAG, CMER, and ISPR review.
March 2019 – June 30, 2019	\$28,000	Purchase equipment

### Authorization

The Washington Forest Practices Board has empowered the Cooperative Monitoring Evaluation and Research Program (CMER) and the TFW policy committee (Policy) to participate in the Adaptive Management Program (AMP) (WAC 222-12-045(2)(b)). CMER is responsible for completing technical information and reports for consideration by Policy and the Forest Practice Board. CMER has been tasked with completing a programmatic series of work tasks in support of the AMP; these tasks are outlined in

CMER's annual work plan already approved by the TFW Policy committee and the Forest Practices Board. This project has been listed under the Extensive Riparian Status and Trends Monitoring Program in CMER's work plan.

**Recognition of Support**

This charter was approved by the AMPA on \_\_\_\_\_.

Date