

Riparian Characteristics and Shade Response Study

PROJECT CHARTER

~~May 2022~~ June 8, 2022

PROJECT CHARTER OVERVIEW

The purpose of the Project Charter is to describe the project and give the Project Manager and the Project Team the authority to begin utilizing program resources and spending allocated project funds (CMER Protocols and Standards Manual (PSM) Chapter 7, Section 4). In general, Project Charters should be brief and updated as needed as the project is implemented to accurately, reliably, and concisely communicate the projects' basic elements and objectives. When substantive changes are considered necessary, which amend the scope of the project (i.e., study design, budget, or schedule), the charter should be updated (version #2, #3, etc.) to communicate those changes.

PROJECT CHARTER APPROVAL DATES

CMER – February 26, 2019

*update 06/28/2022

Commented [TA(1)]: Pending CMER approval

Policy – March 7, 2019

OVERSIGHT COMMITTEE

Riparian Science Advisory Group (RSAG)

PROJECT TEAM MEMBERS

Rachel Rubin – Principal Investigator

Anna Toledo – Project Manager

Greg Stewart

Jenelle Black

Joe Murray

Doug Martin

Jenny Knoth

Mark Meleason

Harry Bell

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 **shade** 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~~ or their statewide applicability.

PURPOSE STATEMENT

The purpose of this study is to quantify how stream shade responds to a **continuum-suite** 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 **shade** 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.

Commented [HJR(2)]: This aspect of the study was dropped a couple of years ago - a Policy committee decision, supported by RSAG and CMER.

CMER RULE GROUP AND PROGRAM

This project ~~will be in the new general riparian rule group section of the Work Plan, 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.

Commented [HJR(3)]: As an experimental study intended to develop a "rule tool", this is not part of extensive monitoring, even though it might prove useful for interpretation of some aspects of extensive monitoring data.

CMER WORK PLAN TYPE N AND TYPE F RIPARIAN PRESCRIPTIONS RULE GROUP CRITICAL QUESTIONS (CMER 2021-2023 Biennium Work Plan)

This project may inform the following Critical ~~q~~Questions:

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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 [shade] prescriptions and the [bull trout overlay] 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 2021-2023 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? How does stream shade respond to riparian harvest treatments with different stream-adjacent no-harvest zone widths and adjacent-stand harvest intensities?
2. How does the shade provided by the tested buffer configurations vary by stand type (e.g., Douglass fir, hemlock spruce, Ponderosa pine)? How does stream shade response to the riparian harvest treatments vary among ecoregions where commercial timber harvest commonly occurs?
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? What are the important patterns, trends, and relationships between stand characteristics and stream shade response to the riparian harvest treatments?
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. Estimate stream shade response to a range of riparian harvest treatments that combine different stream-adjacent no-harvest zone widths and adjacent-stand harvest intensities (i.e., thinning treatments or clear-cut). 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. Examine how stand composition and structure characteristics influence stream shade response to the riparian harvest treatments. To determine relationships between stream

Commented [HJR(5)]: The distinction is between two different parts of the shade rule – applicable to areas within and outside of the bull trout overlay – not between the standard eastside riparian Rx and one part of the shade rule. As with the DFC rules on the west side, the eastside Rx do not have any internal shade element. They simply indicate that the shade rules also apply.

Commented [TA(6R5)]: Flag in work plan

Commented [HJR(7)]: Not sure how or why this question is under Extensive Monitoring since it is an effectiveness question. Extensive Monitoring might assess the stand conditions, but likely not the effects of those conditions.

Commented [TA(8R7)]: Will be moved to general riparian rule group

Commented [TA(9)]: Updated to match ISPR-approved Study Design

Commented [HJR(10)]: Suggest adding QMD and/or diameter distribution.

Commented [TA(11R10)]: Include as a research question

Commented [HJR(12)]: This aspect of the study was dropped.

Commented [TA(13)]: Updated to match ISPR-approved Study Design

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.

Commented [HJR(14)]: Same as previous comment.

PROJECT DELIVERABLES AND PROJECT TIMELINE

Task	Deliverable	Responsible Team Member	Estimated Completion Date
Draft Study Design for RSAG approval	RSAG-Approved Study Design	PI, RSAG, Project Team	FY21 - completed
CMER review, Study Design revisions, and CMER approval	CMER-Approved Study Design	CMER, Project Team	FY21 - completed
ISPR review, Study Design revisions, and ISPR approval	ISPR-Approved Study Design	ISPR, Project Team	FY22 - completed
Develop Project Management Plan	Project Management Plan	PM	FY22
Initiate implementation of field trial	Project Management Plan and Updated Timeline	PI, Project Team	FY23
Develop field trial memo	Field Trial Memo	PI	FY23
Site selection	Approved FPAs	PI	FY23-24
Initiate project implementation	Project Management Plan and Updated Timeline	PI, Project Team	FY23 ⁴
Develop Final Report	Final Report	PI	FY28
Develop 6 Questions Document	6 Questions Document	PI	FY28

ESTIMATED PROJECT BUDGET

FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total Estimated Budget
\$10,000	\$105,448	\$177,993	\$142,238	\$178,914	\$283,914	\$20,000	\$918,507

PROJECT MANAGEMENT TEAM ROLES AND RESPONSIBILITIES

Position (Role)	Roles and Responsibilities
Project Manager (PM): Anna Toledo	<ul style="list-style-type: none"> Monitors project activities and the performance of the Project Team.

	<ul style="list-style-type: none"> • Communicates progress, problems, and problem resolution to the Adaptive Management Program Administrator (AMPA), CMER, and RCSRSAG. • Works with RSAGES/CMER, and Project Team to manage Project Charter and other managing documents, and keeps them updated. • Works with the AMPA, RSAGES/CMER, and Project Team to monitor contract performance, and provide input on budgeting, schedule, scope changes, and contract amendments. • Works with RSAGES, CMER, and Project Team to resolve problems and build consensus. • Works with PI and Project Team to develop interim and final draft reports. • Ensures communication between team members is clear, concise, and consistent. • Coordinates technical reviews and responses in a timely fashion. • Facilitates archiving of data and documents. • Ensures that contract provisions are followed. • Provides direction and support to the Project Team to achieve clear and specific scopes of work, schedules, and budgets within approved contracts. • Maintains sole responsibility for all aspects of project management even if other individuals are completing or helping complete parts of the project.
Principal Investigator (PI): Rachel Rubin (CMER Staff)	<ul style="list-style-type: none"> • Executes the technical and scientific components of the project, including protocol development and refinement, site selection, data collection, QA/QC, analysis, and reporting. • Develop a QA/QC plan. • Conducts QA/QC throughout the acquisition, compilation, and analyses of data. • Provides materials needed by the PM. • Prepares quarterly summary and progress reports of project status. • Conducts field data collection, hires staff and purchases supplies and equipment to support data collection. • Develops summaries and conducts statistical analyses to inform Final Report development. • Leads in the development and writing of the Final Report and Six Questions for Policy. • Presents study progress and/or findings to RSAGES, CMER, and Policy. • Communicates project status and issues to the PM and Project Team. • Coordinates project meetings as needed.
Project Team members:	<ul style="list-style-type: none"> • Support the technical and scientific components of the project.

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Greg Stewart Jenelle Black Joe Murray Doug Martin Jenny Knoth Mark Meleason Harry Bell	<ul style="list-style-type: none"> • Provides technical expertise for successful implementation of project components. • Assists with review of Final Report and Six Questions for Policy. • Participates in project meetings and conference calls.
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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 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 Board. This project [will be listed under the general riparian rule group](#) has been listed under the [Extensive Riparian Status and Trends Monitoring Program](#) in CMER's work plan.

Commented [HJR(16): Again, not really the appropriate place for this project.

RECOGNITION OF SUPPORT

Committee	Date of Acceptance	Reference
RSAG	February 21, 2019	meeting minutes
CMER	February 26, 2019	meeting minutes
TFW Policy	March 7, 2019	meeting minutes
RSAG	June 8, 2022	meeting minutes
CMER		meeting minutes