PROJECT MANAGEMENT PLAN

Riparian Characteristics and Shade Response Study
June 8, 2022

PROJECT MANAGEMENT PLAN OVERVIEW

The Project Management Plan breaks down project work into logical steps to help provide a framework to efficiently allocate resources, reliably estimate project costs, and help guide schedule, budget development and project scope. Previously in the CMER Protocols and Standards manual (PSM), this document was titled an implementation plan. The Project Management Plan documents and tracks the progress of a CMER project through its various stages. The contents of the Project Management Plan will vary depending on the type and complexity of the project. The Project Team is the primary audience for the Project Management Plan; however, SAG/CMER members are encouraged to provide feedback on the plan.

OVERSIGHT COMMITTEE

Riparian Scientific Advisory Group (RSAG)

BACKGROUND

In 2001, the Washington State Forest Practices Board (Board) approved a comprehensive set of new forest practice rules based on the Forest and Fish Report (FFR). One of the goals of these rules is to protect water quality, including aquatic life, in streams on non-federal forest lands in Washington State. In concurrence with the approval of the FFR, the Board adopted a Forest Practices Adaptive Management Program (AMP). The purpose of the Forest Practices AMP is 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 for aquatic resources to achieve resource goals and objectives". To provide the science needed to support adaptive management, the Board established the CMER Committee which has been tasked with performing research in support of the AMP.

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 the effects of 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 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 regarding other untested buffer configurations permitted under forest practices rules, or their statewide applicability.

The purpose of this study is to quantify how stream shade responds to a 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. 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.

PROJECT MILESTONES AND TASKS

Project Milestones	Dates by Fiscal Year (Actual* or Estimated)						
	2022	2023	2024	2025	2026	2027	2028
Update Charter	May						
Project Management Plan	May						
CMER/SAG Review & Approval of PM Plan	June						
Field Trial – Site Selection and Access Permits	Mar-Jun						
Field Trial – Team Hiring	Jun						
Field Trial – Data Collection		Jul-Sep					
Field Trial – Data QA/QC		Sep-Oct					
Field Trial – Data Analysis		Oct-Nov					
Field Trial Memo		Dec-Jan					
Site Selection and Access Permits	Mar 2022-Mar 2023: Westside		Mar 2024-Mar 2025: Eastside				
Field Team Hiring		Jan-Mar: Westside		Jan-Mar: Eastside			
Field Team Training and Data		Apr-Jun: Westside	Apr-Jun: Westside	Apr-Jun: Eastside	Apr-Jun: Eastside		

Collection Prep							
Data Collection		Jun: Westside	Jul-Sep: Westside Jun: Westside	Jul-Sep: Westside Jun: Eastside	Jul-Sep: Eastside Jun: Eastside	Jul-Sep: Eastside	
Photo Processing						Oct-Nov	
Data QA/QC, Analysis						Dec-Jan	
Final Report Development						Jan-May	
Final Report for RSAG/CMER Review						Jun	
Final Report Revisions & CMER Approval							Jul-Aug
ISPR Review							Sep-Nov
Final Report Revisions & ISPR Approval							Dec-Jan
6 Questions Development & Review							Feb-Mar
6 Questions CMER Revisions & Approval							Apr-May
6 Questions and Findings Report to Policy							Jun

*Use asterisk to distinguish actual dates.

PROJECT DELIVERABLES

Deliverable	Responsible Team Member	Completion Date (Actual* or Estimated)
Update Project Charter	PM	June 2022
Project Management Plan	PM	June 2022
Field Trial Access Permits	PM, PI	Summer 2022
Field Trial Memo	PI	January 2023
Access Permits	PM, PI	Winter 2023-2026
FPAs for Selected Sites	PM, PI	Winter 2023-2026
Field Data Analyzed	PI	January 2027

Final Report (RSAG, CMER, and ISPR approved)	PI and Project Team	January 2028
6 Questions Document	PI and Project Team	May 2028
Findings Report and Final Repot Presentation to TFW Policy	PI and Project Team	Jun 2028
Monthly Updates to RSAG	PM	At Monthly RSAG Meeting
Quarterly Progress Reports	PI	September 30th, December 31st, March 31st, and June 30th.

*Use asterisk to distinguish actual dates.

PROJECT TEAM MEMBERS

Name, Title, Affiliation, Contact Info	Roles and Responsibilities
Anna Toledo, Project Manager, DNR	• Monitors project activities and the performance of the Project Team. • Communicates progress, problems, and problem resolution to the Adaptive Management Program Administrator (AMPA), CMER, and RSAG. • Works with RSAG/CMER, and Project Team to manage Project Charter and other managing documents, and keeps them updated. • Works with the AMPA, RSAG/CMER, and Project Team to monitor contract performance, and provide input on budgeting, schedule, scope changes, and contract amendments. • Works with RSAG, 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, Rachel Rubin (CMER Staff)	• Executes the technical and scientific components of the project, including protocol development and refinement, site selection, data collection, 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 RSAG, CMER, and Policy. • Communicates project status and issues to the PM and Project Team. • Coordinates project meetings as needed.
Project Team Members, Greg Stewart Jenelle Black Joe Murray Doug Martin Jenny Knoth Mark Meleason Harry Bell	• Support the technical and scientific components of the project. • Provide technical expertise for successful implementation of project components. • Assist with review of Final Report and Six Questions for Policy. • Participate in project meetings and conference calls.

PROJECT CONSTRAINTS AND ASSUMPTIONS

Project constraints are limiting factors (internal or external) that affect the initiation, planning, execution, monitoring & control, and close-out of a project. Constraints restrict or dictate the actions of the project team. There are four specific constraint types that will be considered herein: schedule constraints, budget constraints, human resource constraints, and resource constraints. Assumptions on the other hand are factors in the planning process that are considered to be true, real, or certain, without proof or demonstration and are outside the total control of the project team.

Schedule constraints:
- Finding viable sites with landowner agreement to participate in the study and harvest the non-RMZ to study requirements on a defined schedule will be the most challenging schedule constraint.
- Harvest treatments and associated photo collection need to occur from June-September to meet the leaf-on conditions required for this study. Additionally, hemispherical photos cannot be taken if it is raining. Harvest delays or rainy weather may delay or impede data collection.
- Hemispherical photos must be taken when no direct sunlight is visible, at pre-dawn, post-sunset, or under an evenly overcast sky. Since the photos must be taken during the summer months, this further constrains the schedule, as the photos must be taken very early or very late in the day.

Budget constraints:
There are no specific budget constraints at this time.

Human resource constraints:
- The CMER scientist position assigned to this project has recently been hired. There may be some delays while getting this new staff member up to speed. While existing staff may be able to provide some support, they will not have full capacity to dedicate to this project.
- It is necessary to hire seasonal field technicians each summer to collect data. If there are hiring delays it could make it difficult to meet the data collection schedule.
- Project team members, contractors, and/or technicians may not be permitted to work as usual due to the limitations on workflow presented by COVID-19 restrictions and/or social distancing requirements.
- Fieldwork may be delayed during episodes of unhealthy air quality or extreme fire risk to ensure personnel safety.

Resource constraints:
- Finding suitable sites where the owners' and operators' harvest timing conforms to study requirements.
- Ability to get Alternate Plan FPAs/Board Pilot Rules approved for each site.
- We will not have management control of the study sites, although we will have landowner access agreements. We could lose access to a site or harvest could be delayed, making field data collection impossible.
- A priori restrictions by landowners on site access, before or after randomization of the list of possible candidate sites, imposes a constraint on the ability to draw a solid random sample, which in turn constrains statistical power and scope of inference.
- The risk of fire is a possibility that could compromise study sites. If a fire burns through a site, the viability of keeping the site or replacing it will have to be assessed.

Project assumptions:
The following are key assumptions for implementation of this project:
- The core members of the Project Team are identified and stay on the team throughout the majority of the project.
    a. If a core member becomes unavailable, time could be lost in replacing them.
    b. Loss of certain expertise could limit or slow the ability to execute some portions of the study design.
- The project will maintain access to the study sites throughout the time of the study.
    a. Private land ownership or management changes could potentially compromise keeping the sites in the study.
- Data collection will not be significantly hindered by periods of extreme fire risk and/or unhealthy air quality.
- Funding for the project remains stable.

A separate Risk Management Plan will be developed. The process for developing a detailed Risk Management Plan is outlined in section 7.11 of the PSM. A Risk Management Plan identifies potential actions to avoid, reduce, and/or mitigate impacts to a project.

DECISION-MAKING AUTHORITY

The Forest Practice Board (Board) has approval authority over proposed CMER projects, annual work plans, and expenditures. The Board manages the Timber, Fish and Wildlife Policy Committee (Policy), the Cooperative Monitoring, Evaluation, and Research (CMER) Committee, and the Adaptive Management Program Administrator (AMPA) to assist with the Board's directives. Policy assists the Board by providing guidance to CMER and recommendations on adaptive management issues. CMER is responsible for understanding available scientific information that is applicable to the questions at hand, selecting the best and most relevant information and synthesizing it into reports for Policy and the Board. The AMPA coordinates the flow of information between Policy and CMER according to the Board's directives. Decision-making authority described in this section needs to be consistent with CMER process and ground rules per the Board Manual section 22.

Decisions related to science and/or technical items are the responsibility of the PIs and the Project Team. If needed, decisions for scientific and/or technical items should be expanded to include the SAG and CMER. Final documents will be prepared by the project team and then reviewed and approved by the SAG, CMER, Independent Scientific Peer Review (ISPR), and Policy. Although the PM will assist in the facilitation of the discussion and decision-making process, the PM will not be directly involved in decisions related to science and/or technical items.

Decisions related to contractual (scope of work, RFQQ, contract process, contractor interaction, etc.) and budgetary items are the responsibility of the PM along with input from the Project Team. Requests for additional funding will be approved by the PM and Project Team and sent to the SAG and CMER for formal approval. Minor budgetary or contractual items will be handled directly by the PM with notification provided to the Project Team. Major budgetary or contractual items will be decided between the PM, Project Team, and AMPA. If needed, decision making for budgetary items may require CMER and/or Policy input and/or approval.

PROJECT RESOURCE NEEDS

Project Resource	Quantity
Digital camera with battery, charger, and memory card	1
Hemispherical lens	1
Lens mounting system	1
Remote shutter release	1
Tripod	1
Lens cleaner and cloth	1
GPS receiver	1
Field notebook	1
Vehicle	1
Hemispherical photo analysis software	1
Safety plan	1
Tree and study plot marking materials	1
Tree measuring tools	1

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 SITES

Project sites will be selected using the site selection methods and criteria described in the Study Design.

COMPANION CMER DOCUMENTS

Document	Completion Date (Actual* or Estimated)
Scoping Document	June 2018*
Project Charter	March 2019*
Study Design	March 2022*
Field Manual	March 2023
Final Report	January 2028
6 Questions Document	June 2028

*Use asterisk to distinguish actual dates.

PROJECT COMMUNICATION OVERVIEW

Transparent and accurate communication between the different adaptive management parties (Project Team/SAG/CMER/AMPA/TFW Policy) is critical for the AMP to guide and oversee the work of the Project Team. This section provides a framework to manage and coordinate the communications needed for all phases of a project. If a separate Communication Plan is needed for a project, see section 7.6 of the PSM for detailed guidelines.

Two primary pathways exist for project communication to occur when working on CMER projects - 1) between the Project Team and project oversight committees (i.e. SAGs/CMER/TFW Policy), and 2) communication within the Project Team.

PROJECT OVERSIGHT COMMITTEE COMMUNICATION

This section covers communication between the Project Team and the project oversight committees (i.e. SAGs/CMER/TFW Policy). Project oversight communication includes three categories of documents/communication: 1) Project management documents that enable oversight committees to understand how projects will be managed, 2) Project tracking and communication to enable the oversight committee(s) to track project progress and provide guidance and approvals to move projects forward, and 3) communication with contractors.

1. **Project management documents**
   The PM is the lead author for the Project Charter, Project Management Plan, and other project management documents.

Project Management Documents*	Primary Author	Collaborators	Final Approval	Primary Audience
Project Charter	PM	PI and Project Team (if identified)	CMER and TFW Policy	Project Team, SAG, CMER, and TFW Policy
Project Management Plan (including communication and risk sections)	PM	PI and Project Team (if identified)	CMER	Project Team, SAG, and CMER
Document Management and closure plan	PM	PI	N/A	Project Team, SAG, and CMER

*For details regarding these documents, see PSM Section 7.6

2. **Project tracking and guidance documents**

The PM is responsible for ensuring that all reporting tasks are complete and provided on schedule. When preparing progress reports, the PI is responsible for providing detailed and comprehensive costs, schedule, and project updates, in writing, to the PM consistent with prior written agreement. The PM, in turn, is responsible for summarizing project update information into progress reports, and presenting these progress reports to the overseeing SAG and to CMER per the project schedule or as requested by the SAG or by CMER. The PM may delegate preparation or presentation of progress reports to the PI or other Project Team members, with their consent.

Project Tracking/Guidance Documents*	Primary Author	Collaborators	Final Approval	Primary Audience
Project updates	PM	PI	N/A	Project Team, SAG, CMER, and TFW Policy
CMER quarterly and annual project progress reports	PM	PI	N/A	SAG and CMER
CMER Requests	PM	Project Team	CMER	CMER
TFW Policy Requests/Check-ins	AMPA	Project Team	CMER	TFW Policy
Public Presentations	PI/PM	Project Team	N/A	Public

*For details regarding these documents, see PSM Section 7.6

3. **Contractor Communications**

In all cases, the PM is primarily responsible for facilitating open and transparent communication between contractor(s) and RSAG. RSAG, CMER, and Project Team members other than the PI and PM should generally not directly communicate with the contractor(s) about substantive project elements outside of formally organized meetings,

conference calls, or PM-facilitated group e-mail discussions, unless specifically authorized in pre-established contract terms, or approved in advance to do so by the PM. The PM may grant written authorization, and the rest of the Project Team and oversight committee members should be informed when this occurs. The PM is responsible for informing the contractor(s) of this policy as well.

INTRA-PROJECT TEAM COMMUNICATION

The PM provides assistance to Project Team members by coordinating communication (e.g. one-on-one and group meetings, conference calls, etc.) when needed as well as maintaining the e-mail distribution list for the Project Team. The PM also ensures that any communication resulting in a formal decision about the project occurs in a transparent and inclusive way.

The PI is responsible for preparing and writing technical reports for CMER. How the PI communicates and works with other Project Team members to produce these documents will vary based on the nature of the project and dynamics of the Project Team. The PI works together with the PM to coordinate communication with other team members as needed.

Communication by individual team members includes participation at meetings and conference calls, providing feedback on draft documents, researching specific topics/issues, taking the lead on writing report sections, and/or acting as co-author(s) of CMER documents. The expectation is that Project Team members, including PMs and PIs, who communicate outside of normal project meetings, conference calls, and other venues will share substantive, project-related conversations they have with the rest of the Project Team and other RSAG members. For additional details regarding project team communication see PSM section 7.6.3.

Communication structure