PROJECT CHARTER

EASTSIDE TYPE N RIPARIAN EFFECTIVENESS PROJECT (ENREP)

August 9, 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 to be updated (version #2, #3, etc.) to communicate those changes.

PROJECT CHARTER APPROVAL DATES

CMER – April 23, 2019
*update 08/23/2022

Policy – May 2, 2019

OVERSIGHT COMMITTEE

Scientific Advisory Group – Eastside (SAGE)

PROJECT TEAM MEMBERS

Name, Affiliation, Contact Info	Role
Timothy Link, University of Idaho tlink@uidaho.edu	Principal Investigator
Charles (Chuck) Hawkins, Utah State University chuck.hawkins@usu.edu	Principal Investigator
Anna Toledo, Washington Department of Natural Resources anna.toledo@dnr.wa.gov	Project Manager
Rachel Rubin, Washington Department of Natural Resources rachel.rubin@dnr.wa.gov	CMER Scientist
Greg Stewart, Northwest Indian Fisheries Commission gstewart@nwifc.org	CMER Scientist
Paul Robinson, University of Idaho probinson@uidaho.edu	Field Manager, UI
Lana Cohen, University of Idaho lcohen@uidaho.edu	Staff Scientist, UI

Daniel Nelson, Utah State University daniel.nelson@usu.edu	Staff Scientist, USU
Mark Teply, Mark Teply Consulting markteply@msn.com	Field Scientist
TBD, Department of Ecology	

PROBLEM STATEMENT

The ENREP is needed to determine if, and to what extent, the prescriptions found in the Type N Riparian Prescriptions Rule Group are effective in achieving performance targets and water quality standards, particularly as they apply to sediment and stream temperature in eastern Washington.

Importance of the Issue

Headwater streams make up a large portion of the total stream length and are important sources of sediment, water, nutrients, and organic matter to downstream fish bearing streams (Gomi et al., 2002). Type N Rule Group prescriptions are intended to protect functions provided by the Type N network, yet the effectiveness of the rules remains largely untested. Given the scientific uncertainty of the Type N rules, the Cooperative Monitoring, Evaluation and Research Committee (CMER) ranked the Type N Riparian Effectiveness Program first in importance among 16 research programs in the 2014 Work Plan:

> *"The effectiveness of the Type N riparian management prescription package is uncertain because there are many gaps in the scientific understanding of headwater streams, their aquatic resources, and the response of riparian stands, amphibians, water quality, and downstream fish populations to different riparian management strategies. Consequently, prescriptions are based on assumptions that have been neither thoroughly studied nor validated".*

Scientific Uncertainties and Complexity

Headwater basins exhibit a particularly large amount of natural variability because they are the landscape elements where hillslope processes transition into stream networks (Montgomery, 1999; Gomi et. al., 2002). The discharge regime of headwater streams exerts fundamental control over a number of functions including water temperature and sediment transport. Although the effect of forest management on discharge has been studied for more than half a century, it is still not possible to fully predict management-related changes in discharge timing or magnitude, because of the large variability in headwater attributes and functions. In addition to the large variability characteristic of all headwater streams, many eastside Type N streams contain varying lengths and configurations of dry channel, and some have no surface connection to the downslope stream network. These hydrologic characteristics introduce added variation and complexity into the relationships between forest practices and aquatic functions including the transport of wood, sediment, thermal energy, nutrients, and detritus, as well as the maintenance

of aquatic habitat quality.

PURPOSE STATEMENT

The purpose of this project is to test the effectiveness of eastside forest harvest prescriptions contained in the Washington State Forest Practices Rules (Title 222 WAC) and to determine the extent to which those prescriptions are effectively achieving performance targets, particularly as they apply to sediment and stream temperature and their effects on aquatic life in eastern Washington. As an effectiveness monitoring project, the ENREP is also expected to inform whether the current rule is effective in meeting these targets.

As with the Westside Type N effectiveness studies, the ENREP incorporates a Multiple Before-After/Control- Impact (MBACI) experimental design. Spatially blocked sets of treatment and reference sites were identified, and data collection conducted for at least two years pre-harvest and two years post-harvest, with a one-year harvest window in between. After this project is completed as currently designed and approved by CMER, Timber, Fish and Wildlife (TFW) Policy, and funded by the Forest Practice Board (Board), additional monitoring beyond two years post-harvest may be considered.

The ENREP is a successor to the eastside Forest Hydrology Study (FHS) which describes the spatial distribution of late summer flow and channel characteristics in eastern Washington Type N streams. As part of the CMER Type N Riparian Effectiveness Program, the ENREP study is a companion to:

- The Westside Type N Buffer Characteristics, Integrity, and Function (BCIF) Project;
- The Westside Type N Experimental Buffer Treatment Project in Hard Rock Lithologies;
- The Westside Type N Experimental Buffer Treatment Study in Incompetent Lithologies.

PROJECT OBJECTIVES

The objectives of the project are to quantify the magnitude of change in stream flow, canopy closure, water temperature, suspended sediment transport, wood loading, and aquatic life within eastern Washington riparian management zones (RMZ) following harvesting within current rule constraints; and to evaluate the effect of these changes on downstream waters where possible.

CRITICAL QUESTIONS

The ENREP addresses the following non-fish-bearing (Type N) Riparian Prescriptions Rule Group critical questions from the CMER work plan (CMER 2019-2021 Biennium Work Plan):

- *Are riparian processes and functions provided by Type Np (non-fish perennial) buffers maintained at levels that meet resource objectives and performance targets for shade, stream temperature, large woody debris (LWD) recruitment, and aquatic life?*

- *Do different types of Type N channels explain the variability in the response of Type N channels to forest practices?*
- *What is the effect of buffering or not buffering spatially intermittent stream reaches in Np streams?*

Additional questions developed by the Study Design team:

- *What is the magnitude of change in water temperature, canopy closure, and stream cover of Type N channels in the first two years after harvest?*
- *What is the magnitude of change in stream flow and suspended sediment export from the Type N basins in the first two years after harvest?*
- *What is the relationship between aquatic life (and their supporting resources) and observed changes in hydrology, sediment, and temperature associated with forest management activity?*

CMER RULE GROUP AND PROGRAM

This project is part of the CMER, Type N Riparian Prescriptions Rule Group and Type N Riparian Effectiveness Program.

PROJECT TASKS AND TIMELINE

The following table depicts the tasks, responsible team member for completing the task, and estimated completion dates for work associated with this project.

Task	**Responsible Team Member**	**Estimated Completion Date** *Dates subject to change.*
Task 1. Conduct initial survey of study basins		
Subtask 1.1. Initial survey of all study basins.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by November 2018. Coxit and Fish Creek by July 2020.
Task 2. Complete Installation of Monitoring Equipment of Biophysical Variables and Complete First Year of Pre-Harvest Monitoring		
Subtask 2.1. Begin installation of all biophysical and aquatic life variables monitoring equipment at all study basins.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by November 2018. Coxit and Fish Creek by August 2020.
Subtask 2.2. Complete first year pre-harvest and aquatic life monitoring of biophysical variables at all sampling locations.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by November 2019. Coxit and Fish Creek by November 2021.

Subtask 2.3. Complete QA/QC and data management of first year pre-harvest sampling data.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by April 2020. Coxit and Fish Creek by April 2022.
Task 3. Complete Second Year of Pre-Harvest Monitoring		
Subtask 3.1. Complete second year pre-harvest monitoring of biophysical variables at all sampling locations.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by November 2020. Coxit and Fish Creek by November 2022.
Subtask 3.2. Complete QA/QC and data management of second year pre-harvest sampling data.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale, Blue Grouse, and Tripps by April 2021. Coxit and Fish Creek by April 2023.
Task 4. Basin Harvest Activities		
Subtask 4.1. Complete harvest period monitoring at all sampling locations.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale and Tripps by November 2021. Blue Grouse by November 2022. Coxit, and Fish Creek by November 2023.
Subtask 4.2. Complete QA/QC and data management of harvest period sampling data.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale and Tripps by April 2022. Blue Grouse by April 2023. Coxit and Fish Creek by April 2024.
Task 5. Complete First Year of Post-Harvest Monitoring		
Subtask 5.1. Complete first year post-harvest monitoring of biophysical variables at all sampling locations.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale and Tripps by November 2022. Blue Grouse by November 2023. Coxit, and Fish Creek by November 2024.
Subtask 5.2. Complete QA/QC and data management of first year post-harvest sampling data.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale and Tripps by April 2023. Blue Grouse by April 2024. Coxit and Fish Creek by April 2025.
Task 6. Complete Second Year of Post-Harvest Monitoring		
Subtask 6.1. Complete second year post-harvest monitoring of biophysical variables at all sampling location in the Northern Rockies Ecoregion and Eastern Cascades Slopes and Foothills study basins.	Biophysical variables - Timothy Link (UI) Aquatic Life variables – Charles Hawkins (USU)	Springdale and Tripps by November 2023. Blue Grouse by November 2024. Coxit and Fish Creek by November 2025.

Subtask 6.2. Complete QA/QC and data management of second year post-harvest sampling data.	Timothy Link (UI) & Charles Hawkins (USU)	Springdale and Tripps by April 2024. Blue Grouse by April 2025. Coxit and Fish Creek by April 2026.
Task 7. Data Analysis and Report Writing		
Subtask 7.1. Complete data analysis.	Timothy Link (UI) & Charles Hawkins (USU)	TBD
Subtask 7.2. Participate with other collaborators on preparation of draft report for SAGE and CMER review.	Timothy Link (UI) & Charles Hawkins (USU)	TBD
Subtask 7.3. Participate with other collaborators on a presentation of all report components at a CMER meeting.	All team members	TBD
Subtask 7.4. Participate with other collaborators to revise draft report to address comments from SAGE and CMER. At a minimum, response to SAGE and CMER comments will include preparation of a revised draft report and comment matrix.	All team members	Completed within 60 days of receipt of SAGE and CMER comments.
Subtask 7.5. If necessary, participate with other collaborators to address any remaining comments from SAGE and CMER re-review of revised report.	All team members	Completed within 30 days of receipt of SAGE and CMER comments.
Task 8. Independent Scientific Peer Review (ISPR) Review and Final Report		
Subtask 8.1. Participate with other collaborators to prepare a draft report for transmittal to ISPR for peer review.	All team members	Completed within 30 days of receipts of CMER approval.
Subtask 8.2. Participate with other collaborators to revise draft report to address ISPR comments. At a minimum, response to ISPR comments will include preparation of a revised draft report and comment matrix.	All team members	Completed within 60 days of receipt of ISPR comments.
Subtask 8.3. If necessary, participate with other collaborators to address any remaining comments from ISPR re-review of revised report.	All team members	Completed within 30 days of receipt of ISPR comments.
Task 9. Findings Report and Presentation at Policy		
Subtask 9.1. Participate with other collaborators on preparation of draft findings report for SAGE and CMER review.	All team members	Completed within 60 days of receipt of final ISPR approval of final report.
Subtask 9.2. Participate with other collaborators to revise draft findings report to address comments from SAGE and CMER. At a minimum, response to SAGE and CMER	All team members	Completed within 60 days of receipt of SAGE and CMER comments.

comments will include preparation of a revised findings report and comment matrix.		
Subtask 9.3. Participate with other collaborators in presentation at a TFW Policy meeting.	All team members	Completed within 30 days of CMER approval of the Findings Report.
Subtask 9.4. Transfer of all final reports, presentations, data (raw and QA/QC) and return of all DNR owned equipment to DNR Project Manager.	Timothy Link (UI) & Charles Hawkins (USU)	Fall 2027

BUDGET

Budget/Cost Items	Past Expenditures (FY 15-21)	FY 2022 Budget	FY 2023 Budget	FY 2024 Budget	FY 2025 Budget	FY 2026 Budget	FY 2027 Budget	FY 2028 Budget
Inter-Agency Agreements (IAAs)	**$1,730,282**	**$575,838**	**$588,672**	**$637,190**	**$565,752**	**$489,632**	**$330,688**	**$276,442**
University of Idaho	$1,126,694	$389,420	$421,772	$458,773	$396,995	$381,981	$219,191	$226,442
Utah State University	$380,926	$161,418	$166,900	$163,417	$153,757	$107,651	$111,497	$50,000
Dept. of Ecology	$99,389	$25,000	-	$15,000	$15,000		-	-
Upper Columbia United Tribe	$123,274		-	-	-		-	-
Service Contracts	**$220,818**	**$27,120**	**$18,072**	**$19,513**	**$15,618**		-	-
West Fork Environmental	$174,390		-	-	-		-	-
Siskowet	$17,411		-	-	-		-	-
Cramer Fish Sciences	$28,677		-	-	-		-	-
Louis Briggs	$340	-	-	-	-	-		
Mark Teply Consulting	-	$27,120	$18,072	$19,513	$15,618			
Project Team Personal Service Contracts	**$146,723**		-	-	-		-	-
Utah State University	$27,431		-	-	-		-	-
University of Idaho	$21,846		-	-	-		-	-
Woodsmith Watershed Consulting	$97,446		-	-	-		-	-
Supply and Expense	**$2,870**		-	-	-		-	
DNR Supply Purchase & Motorpool	$827		-	-	-		-	
MOU – DNR NE Forester	$2,043		-	-	-		-	-
Summary Totals	**$2,100,693**	**$602,958**	**$606,744**	**$656,703**	**$581,370**	**$489,632**	**$330,688**	**$276,442**

PROJECT TEAM ROLES AND RESPONSIBILITIES

Position	Roles and Responsibilities
Project Manager (PM): Anna Toledo, Washington Department of Natural Resources	• 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 SAGE. • Works with SAGE/CMER, and Project Team to help develop, update, and maintain Project Charter, Project Management Plan, and all other project documentation. • RFQQ or RFP development and facilitation through review and selection process. • Monitors contract performance, and completes all budgeting, scheduling, scope changes, and contract amendments. • Works with SAGE, CMER, and Project Team (including PIs, contractors, and other Team members) to resolve problems and build consensus. • As a member of the Project Team, works with PIs and Project Team members to develop interim and final draft reports. • Ensures communication between all team members is clear, concise, and consistent. • Functions as a point of contact with landowners for final agreement and development of landowner access agreements. • Ensures coordination between SAGE/CMER, Project Team and landowners. • Coordinates all technical reviews and responses in a timely fashion. • Facilitates archiving of all 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. • Responsible for communicating or authorizing communication with all project-related contractors. • Overall as lead of the Project Team, is primarily responsible for all aspects of project management, which includes: planning, maintaining project accountability, project communication, facilitation of administrative tracking. • Assists with oversight of harvest treatments to ensure project objectives are being met. • Serves as primary point of contact for work on sites with DNR ownership.

Principal Investigators (PI): Timothy Link, University of Idaho (UI)	• Executes the technical and scientific components of the biophysical elements of the project according to the Project Plan and Study Design. • Works with the PM and SAGE to identify additional technical expertise and time commitments needed. • Provides materials needed by the PM and assists with the development of the Project Charter and Project Management Plan. • Helps implement study design, including site selection, managing field crews, and data collection. • Oversees field crew training for implementation of data collection. • Assists with flume installation oversight. • Oversees data analysis and QA/QC of data provided by staff. • Prepares quarterly progress reports of project status. • Leads in the development and writing of interim and final draft reports. • Presents technical findings to SAGE, CMER, and TFW Policy as necessary. • Works with the PM to coordinate the site selection process. • Acts as team/project contact with all landowners for communication associated with identifying potential study sites, access permissions, and key acquisitions necessary. • Completes field reconnaissance, analysis, and communicates the results of the selection of study basins to the Project Team. • Works with PM to acquire and maintain landowner permission to use specific sites for CMER research. • Communicates project status and issues to the PM and Project Team and participates in Project Team meetings. • Assists with oversight of harvest treatments to ensure project objectives are being met. • Serves as primary point of contact for work on sites with IEP and Manulife ownerships.
Principal Investigator (PI): Charles Hawkins, Utah State University (USU)	• Executes the technical and scientific components of the aquatic life elements of the project according to the Project Plan and Study Design. • Works with the PM and SAGE to identify additional technical expertise and time commitments needed. • Provides materials needed by the PM and assists with development of Project Charter and Project Management Plan. • Helps implement study design, including site selection, managing field crews, and data collection. • Oversees field crew training for implementation of data collection. • Oversees data analysis and QA/QC of data provided by staff. • Prepares quarterly progress reports of project status. • Assists in the development and writing of interim and final draft reports.

	• Presents technical findings to SAGE, CMER, and TFW Policy as necessary. • Communicates project status and issues to the PM and Project Team and participates in Project Team meetings.
Hydrogeologist: TBD, Washington State Department of Ecology	• Provides technical assistance to the Project Team and participates in Project Team meetings. • Participates in the development of specific sampling plans. • Participates in data analysis phase of project. • Assists PIs with writing and reviewing reports. • Coordinates with WCC crews for trail clearing at each site.
Field Manager: Paul Robinson, University of Idaho	• Supervises field crews. • Manages UI project budget. • Manages field calendar. • Purchases equipment and supplies. • Manages equipment inventory and insurance. • Conducts site assessments. • Collects biophysical data. • QA/QCs and manages field data. • Installs, operates, and maintains field equipment.
Staff Scientist: Lana Cohen, University of Idaho	• Supervises field crews. • Contributes to field calendar. • Conducts site assessments. • Collects biophysical data. • QA/QCs and manages field data. • Installs, operates, and maintains field equipment. • Purchases equipment and supplies.
Staff Scientist: Daniel Nelson, Utah State University	• Conducts site assessments. • Collects aquatic life data. • QA/QCs and manages field data. • Assists in aquatic life data analysis and reporting.
Project Team Member: Mark Teply, Mark Teply Consulting	• Establishes riparian vegetation transects in each of 10 basins. • Collects riparian vegetation data per the study design and field protocol. • Data QA/QC, analysis, and summary report for riparian vegetation. • Assists with oversight of harvest treatments to ensure project objectives are being met. • Contribute to the post-harvest buffer assessments at Coxit and Fish Creek basins.
CMER Scientist: Greg Stewart, Northwest Indian Fisheries Commission	• Assists with site selection. • Provides technical assistance to the Project Team as needed. • Participates in the data analysis phase of project as needed. • Assists PIs with writing and reviewing reports as needed. • Conducts stream cross section measurements.

	• Assists with harvest compliance as needed.
CMER Scientist: Rachel Rubin, Washington Department of Natural Resources	• Provides technical assistance to the Project Team as needed. • Participates in the data analysis phase of project as needed. • Assists PIs with writing and reviewing reports as needed. • Assist with oversight of harvest treatments to ensure project objectives are being met. • Assists with data collection as needed.

AUTHORIZATION

The Washington Forest Practices Board (Board) has empowered the CMER committee and the TFW Policy committee 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 TFW 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 biennial work plan approved by TFW Policy and the Board.

RECOGNITION OF SUPPORT

Committee	Date of Acceptance	Reference
SAGE	April 9, 2019	April 2019 meeting minutes
CMER	April 23, 2019	April 2019 meeting minutes
TFW Policy	May 2, 2019	May 2019 meeting minutes
SAGE	August 9, 2022	August 2022 meeting minutes
CMER	August 23, 2022	August 2022 meeting minutes
TFW Policy		

REFERENCES

Cooperative Monitoring Evaluation and Research (CMER) Committee. (2013), Fiscal Year 2014 Work Plan. http://www.ndr.wa.gov/publications/bc_CMER_WorkPlan.Pdf.

Cooperative Monitoring Evaluation and Research (CMER) Committee. (January 2019), 2019-2021 Biennium Work Plan. https://www.dnr.wa.gov/publications/fp_cmer_2019_2021_workplan_20190119.pdf?o9uq19w.

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Montgomery, D.R. (1999), Process Domains and the River Continuum, Journal of the American Water Resources Association, 35(2), 397-410.

Protocols and Standards Manuel (PSM). (2017), CMER Review5 06_19_2017 Final Draft, Chapter 7, Section 4.

Protocols and Standards Manuel (PSM). (2017), CMER Review5 06_19_2017 Final Draft, Chapter 7, Section 6.3.

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