Alternate Harvest Prescription
Monitoring and Evaluation Strategy Request
For CMER
December 9, 2020

Introduction

The purpose of the Workgroup is to evaluate the site-specific conditions (e.g. site class, bankfull widths, forest stand conditions, stream reach lengths, etc.) that are necessary to develop experimental alternative harvest prescriptions for SFL specific to conifer restoration and conifer thinning which will:

i. meet the alternate harvest (restrictions) as outlined in RCW 76.13.110 (3) to:
   a. promote the development of small landowner options through alternate harvest restrictions (prescriptions);
   b. contain criteria to be adopted by the forest practices board into rules and guidance;
   c. include evaluation of the cumulative impacts of the alternate harvest prescriptions on essential riparian functions at the sub-basin or watershed level; and
   d. allow for the adjustment of the prescriptions in a manner that will minimize the cumulative, negative impacts on essential riparian functions within a sub-basin or watershed;
ii. provide protection for public resources at least equal in overall effectiveness to the riparian protection provided in the Forest Practices Rules, including all six riparian functions as listed in WAC 222-16-010;
iii. are repeatable and enforceable; and
iv. are operationally feasible.

1. Monitoring and evaluation components to inform subsequent CMER project development. Components include the identification of Schedule L-1 functional objectives and performance targets for the six riparian functions, and key monitoring elements such as pre-existing stand conditions to qualify, windthrow, reforestation, canopy response, residual tree species, diameter-breast-height, and tree spacing; as well as preferred evaluation criteria and reporting needs necessary to inform Policy's future decision-making process.

Purpose Statement

Develop a monitoring program to evaluate the extent to which the conifer restoration and conifer thinning experimental alternative harvest prescriptions successfully regenerate and thin conifers in RMZs while providing protection for public resources at least equal in overall effectiveness to the riparian protection provided in the Forest Practices Rules.

Monitoring Objectives

FP HCP Resource Objectives/Performance Targets (from DNR FP HCP Schedule L-1)	**Monitoring objectives**
<u>Heat/Water Temperature</u> • **Shade** *Type F & S streams: that produced by shade model or, if model not used, 85-90% of all effective shade.* • Stream temperature (NA)	Quantify changes to effective shade levels due to application of a harvest prescription.

• Groundwater temperature (NA)	
<u>LWD/Organic Inputs</u> • **Riparian Condition** *Westside riparian stands are on pathways to meet Desired Future Condition (DFC) targets (species, basal area, trees per acre, growth, mortality)* • Litter fall (NA) • Pool Frequency (NA) • In-stream LWD (NA) • Residual Pool depth (NA)	Estimate changes to RMZ growth rates and development trajectories from application of a harvest prescription. (DFC) Describe changes to RMZ shrub and tree composition and structures due to application of a harvest prescription. (DFC) Quantify planted and volunteer conifer regeneration survival and growth rates after application of a harvest prescription. (Conifer regeneration) Quantify RMZ residual tree survival rates and growth responses due to application of a harvest prescription. (Response to thinning) Quantify windthrow and occurrence of large wood delivery into streams after application of a harvest prescription. (Buffer Integrity/LWD)
<u>Sediment</u> • **Streambank/equipment limitation zone disturbance** *Type S&F: no streambank disturbance outside road crossings.* • Mass wasting sediment delivered to streams (NA) • Road sediment delivered to streams (NA)	Quantify occurrence of streambank disturbances and sediment delivery to streams after application of a harvest prescription. (Streambank integrity/sediment)
<u>Hydrology</u>	NA
<u>Chemical Inputs</u>	NA
<u>Stream Typing and Fish Passage</u>	NA

Questions of Interest

--- To be finalized once objectives are approved. ---

How do levels of effective shade change based on application of the conifer thinning and conifer restoration alternative harvest prescriptions? Immediately after harvest? Five, ten years after harvest?

Are the stands in the RMZs on a trajectory of conifer basal area accumulation over time after application of the conifer thinning and conifer restoration alternative harvest prescriptions?

How do the compositions and structures of shrub and tree plant communities change five (ten?) years after application of the conifer thinning and conifer restoration alternative harvest prescriptions?

What is the density of free to grow conifers in the RMZs five (ten?) years after application of the conifer thinning and conifer restoration alternative harvest prescriptions?

What is the survival rate and change in growth rates of conifers in the RMZs after application of the conifer thinning and conifer restoration alternative harvest prescriptions?

How many leave trees blow over in the RMZs two years and five (ten?) years after application of the conifer thinning and conifer restoration alternative harvest prescriptions? What direction did these trees fall relative to the location of the stream and how many of them entered the stream?

What is the frequency of disturbances to streambanks and delivery of sediment into streams due to application of the conifer thinning and conifer restoration alternative harvest prescriptions?

Workgroup Recommendations to TFW Policy

1. Approve Objectives and Questions of Interest document.
2. Add the task of developing a scoping document and study plan to CMER's Master Project Schedule based on these objectives and questions of interest, pending approval of the conifer thinning and conifer restoration alternative harvest prescriptions by the FP Board.