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NATURAL RESOURCES**

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Date: October 23, 2019
To: Curt Veldhuisen and Terra Rentz, TFW Policy Co-Chairs
Form: Mark Hicks, Adaptive Management Program Administrator 
Subject: Hardwood Conversion Report

The purpose of this memo is to transmit the final CMER and ISPR approved Hardwood Conversion Study (HCS) Summary Report and the CMER approved Findings Report which summarizes key elements of the study by addressing 6 requisite questions.

The Cooperative Monitoring, Evaluation, and Research Committee (CMER) conducted the Hardwood Conversion Study to evaluate the effectiveness of hardwood conversions conducted in riparian areas of western Washington. Monitoring took place at eight study sites to evaluate the effectiveness and operational and economic feasibility of hardwood conversion treatments in reestablishing conifers in hardwood-dominated riparian stands.

Harvest and regeneration prescriptions were left to the discretion of landowners within the following constraints: no harvest within 25' feet of the edge of bank-full or CMZ; retain residual conifers in the core and inner zones and, where reforestation was required, after harvesting, the goal was to successfully re-establish conifer, and that conifer be on track to dominate the converted Riparian Management Zone. As a result, landowners employed may different strategies in terms of buffer retention, vegetation and predator control, and seedling selection.

Silvicultural results from the Study suggest:

- The highest survival 10 years after planting was associated with planting shade- and moisture-tolerant species, planting seedlings at high densities, and controlling competing vegetation.
- Competing vegetation, which increased in height and cover after harvest, appears to be the biggest challenge to successful regeneration of planted conifer seedlings.
- Height growth rates are greater once the leaders of trees are above competing vegetation.

Economic Results from the study suggest:

- Hardwood conversions are economically feasible when there was sufficient harvest volume to make conversion profitable.

- Per-acre harvest volumes tended to be lower in the conversion area, resulting in lower per-acre harvest revenue relative to upland areas.
- Harvest and regeneration costs were generally similar between conversion and upland areas.

The Hardwood Conversion Study does not tell us several important things:

- What effects do hardwood conversion treatments in riparian stands have on shade, stream temperature, and LWD recruitment? And what the effect of hardwood conversion practices is as a function of buffer width and length of stream treated.
- When or if conversions will be successful relative to the criteria set out in WAC 222-30-021(1)(b)(i)(D). As of the 10-year measurements, trees have not yet reached the 8-inch diameter at breast height (dbh) at 10 years after planting.
- If the findings from the case study results are representative of all potential hardwood conversion sites? With the spatial clustering of the case study sites, this study does not cover the extent of the forest area where conversion could happen.
- As Alternate Plan case studies, the study did not assess the effectiveness of the standard forest practices rule, Washington Administrative Code (WAC) 222-30-021(1)(b)(i).

This study provided valuable insights into the economic feasibility of hardwood conversion activities, and it could serve as a pilot study for helping to design a more rigorous hardwood conversion study. The study did not test the hardwood conversion rules directly, and as implemented as a series of case studies, it also does not provide a basis to assert what effect riparian harvest of hardwood stands have on many key riparian functions, such as stream temperature and large woody debris. I am not requesting that TFW Policy take any specific action at this time in response to this report. However, Policy should consider if they want to re-measure conditions at these sites over time to identify when they finally meet restoration target criteria required by rule. Policy may also want to consider having CMER initiate a more rigorous study to examine the effects of the rules on stream protection, and to more defensibly identify the best management practices associated with successful conifer restoration.