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## MEMORANDUM

**Date:** April 5, 2017

**To:** Hans Berge, Adaptive Management Program Administrator, Forest Practices Division  
Washington Department of Natural Resources

**From:** Phil Roni, Principal Scientist; Ray Timm, Senior Scientist, Watershed Sciences Lab,  
Cramer Fish Sciences; and Pete Bisson, Aquatic Biologist, Bisson Aquatic Consulting LLC

**Subject: Review of Revised Fish Habitat Assessment Water Typing Proposals**

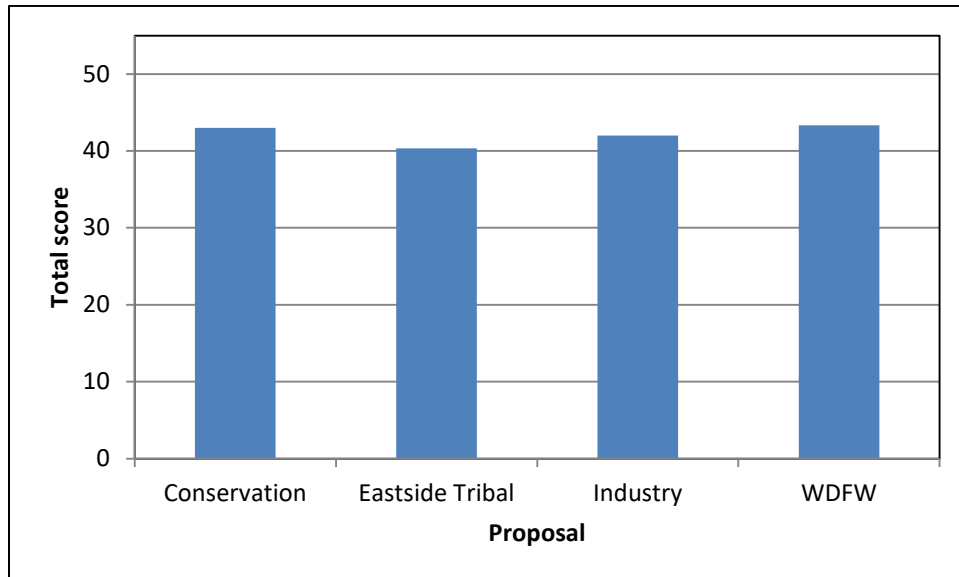
Per your request, we reviewed and scored the four fish habitat assessment method (FHAM) proposals for water typing. Prior to receiving the proposals on March 30, 2017, we agreed upon an approach for scoring the proposals which included the following criteria and breakdown.

1. Does proposal include basic components? – 10 points
2. How well does it address criteria provided by Policy? – 10 points
3. How well does it address criteria in Table 1 of our previous review memo? – 10 points
4. Overall technical merit of proposal – 20 points

Thus the maximum score a proposal could receive was 50 points. Each reviewer scored the proposals separately and without seeing each other's scores. The final score for a proposal was an average of the three reviewer scores.

We received the proposals on March 30, reviewed and scored them individually between March 31 and April 3. We then met April 4 to discuss, finalize scores and provide our recommendations. Below we summarized the scoring and recommendations.

First, all proposals were much improved from the earlier drafts we reviewed in February (see 23 February 2017 memo). They were strikingly similar in approaches and both the similarity and quality of the proposals made ranking them a little challenging. Final scores (averages of the three individual reviewers) ranged from 40 to 43 points with the top proposal (WDFW) being only 0.3 points higher than the second ranking proposal (Figure 1). Again, this emphasizes both the similarity and quality of the proposals. We would like to compliment the authors on their responses to our suggestions and questions.



**Figure 1.** Average scores for each of four caucus proposals.

The four proposals outlined very similar survey protocols and presented feasible approaches with some minor differences in the definition of natural barriers, starting point of electrofishing, and treatment of lateral tributaries. All proposals seemed to treat man-made barriers and deformable barriers in a similar way. It appears the largest differences among the proposals were the definitions of natural barriers to fish passage. The review team felt that this was the key issue that the caucuses need to resolve and reach consensus on. The WDFW and Conservation Caucus proposals ranked the highest overall, with the WDFW proposal being less than one point higher than the Conservation Caucus proposal. The Eastside Tribal Caucus proposal was very similar in approach to WDFW proposal.

Because the WDFW proposal was written like an actual rule, and clearly addressed the criteria considered, it received the highest score. We recommend using it as a starting point and incorporating a few key components from the other proposals to create a single proposal and final rule. Specifically, we felt that the following items should be added to the WDFW proposal:

- Agreed upon definition and criteria for natural barrier.
- Consider the Conservation Caucus approach as a starting point for electrofishing (this minimizes electrofishing and is most consistent with the intent of the current WAC).
- The Industry Caucus gradient nodes concept is encouraging and should continue to be pursued if it can be shown to increase accuracy and precision of locating an appropriate Type N starting point. There may be potential challenges in applying the node concept statewide; however, this may be something to consider in future.

We believe that all caucuses should take ownership of the final rule and should be willing to reach consensus on what we feel are resolvable issues. The proposals we reviewed are much more alike than different, which suggests that agreement is possible. Nevertheless, we would be happy to provide a technical review of the final proposal and rule if appropriate.