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MEMORANDUM

May 20, 2021

TO: TFW Policy Committee

FROM: Mark Hicks, Adaptive Management Program Administrator 

SUBJECT: Wetland Intrinsic Potential (WIP) Tool Transmittal

The purpose of this memo is to transmit the findings of the Wetlands Intrinsic Potential (WIP) Tool developed under the oversight of the Cooperative Monitoring, Evaluation, and Research (CMER) Committee. Attached are the final CMER approved study report, and CMER's responses to the 6 questions posed in the Framework for Successful CMER-Policy Interactions document.

Wetlands occurring within forested areas can be particularly difficult to identify using traditional aerial photos, and conducting thorough field inspections of large areas can be prohibitively costly. This study was designed to develop an effective method for using remote sensing to identify wetlands in an effort to improve the program's ability to find sites for wetland studies. Using remote sensing to identify wetlands in watersheds of interest will more create the opportunity to choose wetlands of similar size, HGM class and spatial location within watersheds for study. Currently, the WIP tool is intended to be used to help find study sites for the Forested Wetland Effectiveness Project (FWEP) and the Wetland Management Zone (WMZ) effectiveness programs.

The WIP tool is a model that uses LiDAR data to identify probable wetlands. Topographic- and hydrologic-based features associated with known wetlands are used to train the model. These features generally are used to indicate areas where water will concentrate and produce wetlands. When trained using a data set from the Puyallup Watershed, the WIP model provided a high level of efficiency in identifying wetlands even under canopy cover (97% overall accuracy, 16% error of omission). The model's performance decreased only slightly when tested against a data set for an adjacent watershed (untrained model comparison in the Mashel watershed). Although generally favorable performance may occur outside the area where the model has been trained, this would be dependent on the areas sharing similar climatic and geologic traits. For example, the authors found that model performance decreased further when tested against data sets from two watersheds (in the Puget Lowlands, and Olympic Peninsula) that were not in the immediate geographic proximity of the Puyallup watershed where the model was initially developed. Thus

some regional refinement of the model will likely be needed to support region wide use of the WIP Tool. This would require field data be found or collected and used to develop additional models across the region.

The WIP research effort was carried out in conformance with the established protocols for study development in CMER, and was approved by consensus by the Wetland Scientific Advisory Committee (WetSAG) and CMER (expected May 25, 2021). Since the tool is to be used only to aid in site selection, the report did not go through the independent scientific peer review process.

The WIP Tool is intended to be used to assist in finding sites for future wetlands field studies. As such I do not recommend TFW Policy ask the Board to take any rule or guidance related action.

At this time, CMER has not developed any specific follow up action beyond the general intent to use the model for site selection. This may, however, lead to the need to develop additional intra-regional models to more effectively predict wetland presence across the western Washington.