Northwest **Power** and **Conservation** Council

June 6, 2017

MEMORANDUM

TO: **Fish and Wildlife Committee members**

FROM: **Nancy Leonard**

SUBJECT: **Bull Trout Vulnerability to Changing Climate, presentation by USGS**

BACKGROUND:

Presenter: Jason Dunham, Aquatic Ecologist (USGS)

Summary: This presentation describes a range-wide effort to model and map vulnerability of threatened bull trout to the potential effects of climate and land use change. It will also summarize concurrent efforts to adapt the model to local decision support applications. Collectively these efforts offer a framework for systematically tracking recovery of the species on a range-wide basis and for applying these findings to prioritize restoration actions at a local level.

Relevance: Bull trout is one of the focal (important) resident fish species for the program (Appendix N). Bull trout are addressed under the *Resident Fish Mitigation* and the *Mainstem Hydrosystem Flow and Passage Operations* Program Strategies. The 2014 Program has an interim bull trout population objective of maintain a stable and increasing population trend. Bull Trout is one of the species targeted as part of the Program's *refine program goals and objectives task*.

Background: Recovery of threatened bull trout involves designated critical habitat that covers 5 western states and an estimated cost of recovery that exceeds

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$1.5 billion dollars. For conservation purposes, the vast geographic range of bull trout is divided into 116 core areas. Each of these core areas represents a unique configuration of ecological conditions, institutions, and social context, all of which can influence the success of recovery. The Range-wide Climate Vulnerability Assessment for bull trout has quantified ecological threats to the species across its range, and provided new tools for updating the status of bull trout as new information becomes available. In short, it is an adaptable framework for quantitatively tracking species status across its range within the conterminous United States.

Concurrent efforts to apply this assessment, in concert with local information on specific threats to bull trout within core areas, provides a means to directly benefit on-the-ground management decisions. These efforts apply elements of structured decision-making. Completed examples include the Clackamas River bull trout reintroduction, and recovery of bull trout in Sycan River in the upper Klamath River basin. Ongoing efforts in the lower Pend Oreille, Yakima, and Boise River basins will provide additional applications and examples. There is also a move to more explicitly study social factors that contribute to the success of bull trout recovery on the ground. This suite of studies and associated tools should provide a solid foundation for moving forward on recovery of bull trout as we address increasing threats in coming decades.

More Info:

- Range-wide Climate Vulnerability Assessment for Threatened Bull Trout https://nccwsc.usgs.gov/display-project/4f8c64d2e4b0546c0c397b46/5006f464e4b0abf7ce733f90