Evaluation of Research Priorities for the Oregon Plan, 2001-2003

Executive Summary

An excerpt from:

Independent Multidisciplinary Science Team. 2001. Evaluation of Research Priorities for the Oregon Plan, 2001-2003. IMST Technical Report 2001-2 to the Oregon Plan for Salmon and Watersheds. Oregon Watershed Enhancement Board. Salem, Oregon.

EXECUTIVE SUMMARY

The Oregon Plan for Salmon and Watersheds, Technical Reports from the Independent Multidisciplinary Science Team (IMST) and numerous other documents identify an extensive array of research needed to recover depressed stocks of wild salmonids in Oregon. The limitation of such listings is that they do not prioritize the research needs, making them appear equally important. Given limited resources, a focus on the higher priority needs would increase the likelihood of success of the Oregon Plan. The 1999 Oregon Legislature's Joint Legislative Committee for Stream Restoration and Species Recovery and, independently, the Director of the Oregon Watershed Enhancement Board requested that the IMST identify the higher priority research needed to help ensure salmonid recovery.

This IMST Report identifies priority areas for research and puts them in broad priority groupings (highest, high, moderate, and low). The priority categories emphasize ***when*** specific research topics should be addressed, ***not if***, since they are all important. The highest priority items should be addressed first and the lower priority items addressed as funding and personnel become available. The priorities we assign are based on our reviews of recommendations for research already made by the IMST and others.

The challenge in developing this report is dealing with research needs that differ significantly in scale and scope. Each priority listed is fairly broad and we hope that this will facilitate interdisciplinary research, interagency collaboration, and the use of new technologies. The danger of this report is that the exclusion of a research area may lead to the incorrect conclusion that it is not important. In fact, it might be critically important at a specific site or local scale, but less important when considered against other needs that operate across the landscape, which is where we put our emphasis.

Highest Priority

- Assess the status of anadromous salmonid stocks (coho, chinook, and chum salmon, sea-run cutthroat trout, and steelhead) and the risk for their extinction by integrating dynamic ocean conditions, habitat availability and quality, and human activities. We see three sub-elements.
    1) Understanding interactions among basin populations, metapopulations, ocean survival rates, life history stage (survival) trends, and population viability.
    2) Integrate analysis of habitat characteristics and spawner surveys with models to assess trends in population dynamics and conduct sensitivity analysis of models and model parameters.
    3) Determine distribution of spawner abundance relative to spawning habitat of differing quality.

High Priority

- Determine how changes in plant communities, including riparian and upland vegetation, can affect salmonid habitat quality.
- Determine relationships between habitat quality and population trends of salmonids in estuaries, lowland streams, and urban/suburban and agricultural settings.
- Determine the effects of wild-hatchery fish interactions and the impacts of hatchery management programs on wild stocks.
- Test the assumptions about survival differences between hatchery and wild fish.
- Determine the origin and the temporal and spatial distribution of wild ocean-caught fish.
- Determine the spawning escapement rate of steelhead.
- Determine the genetic basis of various life history strategies in salmonids**.**

Moderate Priority

- Determine the impacts of declining wild salmonid populations on ecosystem processes (such as the transport of nutrients from ocean to upland settings).
- Determine the effects of predation on salmonid recovery and how predation interacts with other environmental factors.

Low Priority

- Determine the impact of non-indigenous (exotic) aquatic and terrestrial species on salmonid recovery.
- Determine the cause and effects of disease, tumors, and other abnormalities of fish on the population dynamics of the fish and the implications for ecosystem and human health.