

Title:

Non-target Taxa Monitoring

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Summary of Presentation:

Release of large numbers of hatchery origin salmon has the potential to negatively impact other taxa (non-target taxa, NTT). To determine changes in NTT status that could be related to hatchery smolt releases, we compared the abundance, size structure, and distribution of 14 non-target taxa before and five years after annual spring releases of about 1 million yearling smolts (coho and chinook) in the Yakima River, Washington. We compared any observed changes in status to predetermined containment objectives that were judged to reflect acceptable levels of impact. We utilized detection strategies that would balance our ability to detect changes and the chances of falsely associating a change with supplementation. With the exception of steelhead size, all of the changes we observed were within the containment objectives established for the project. The mainstem Yakima River steelhead size index has decreased through the post-supplementation period although the decrease was not significant (-1%, $P > 0.05$). Our analysis suggests that the depressed size of the steelhead index was not related to supplementation activities. For instance, we could not detect any differences in the sizes of rainbow trout between areas of high and low spring chinook abundance. Our results suggest that any impacts that might have been caused by releasing hatchery smolts into areas containing NTT were balanced or exceeded by the benefits (e.g., ecological release) of reducing the progeny of naturally produced fish or by the increase in nutrients provided by the hatchery and returning adults. The reduction of naturally produced fish in the river was the result of taking fish that would have spawned in the river into the hatchery. Results from status monitoring of 14 NTT after five years of hatchery releases suggest that risk containment actions are not necessary at this time.