

## FUTURE SCENARIOS FOR CHEHALIS SALMON AND STEELHEAD

The integrated analysis project is asking people to help define a suite of scenarios for evaluation with the life cycle analysis tool (aka “Salmon Slider Model”). A scenario is defined here as a potential alternative future involving a combination of changes in factors limiting the status of salmon and steelhead populations. Factor categories include habitat (tributary, estuary and ocean), harvest, hatcheries, hydropower and other species including predators.

Scenarios are generally identified in this exercise as changes in the current condition for each factor category. Changes might be positive (improvements) or negative (deteriorations). Changes can be described by specific percentages, as low, moderate or high levels of effect; or tied to a particular strategy or action. Changes may reflect near, medium, or long-term improvement identified in restoration plans, projected changes from future development, or simply an expected or desired future condition. Changes may be specific to a particular salmon or steelhead population or more generally applicable to multiple species and populations.

The analysis will estimate the net effect of changes in factors on expected future fish abundance.

### ***Example Scenario “Shared Moderate Improvements”***

- ✓ 20% improvement in tributary habitat conditions as a result of restoration projects.
- ✓ Reductions in harvest by further restriction of ocean or freshwater fisheries.
- ✓ Significant benefits for wild fish as a result of fully-realized benefits of hatchery reforms.
- ✓ No significant hydropower/dam effects relative to existing conditions.
- ✓ Implementation of limited predator control efforts.
- ✓ No significant impact of climate change in the near term.

In addition to scenarios involving various combinations of factor-level changes, the analysis will also examine include sensitivity analyses which illustrate the scale of potential improvements which might be gained from any given factor. These are similar in nature to scenarios but are undertaken more to explore system dynamics than to represent realistic future expectations. Sensitivity analyses will include: 1) the impact of all factors is reduced to zero for each population; 2) the impact of each individual factor is reduced to zero; and 3) impacts of all factors are reduced proportionally (e.g., 10 percent, 30 percent, 50 percent). The figure below shows an example of sensitivity analysis results from the Columbia Basin Partnership project. Similar results would be produced for each scenario.

