Snohomish Salmon Recovery Forum
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Up to 10x decline in early marine survival

If juveniles can’t make it out, there aren’t adults to come back

RMIS 2012
Over 80 studies across the Salish Sea
Harbors seals are more abundant, eating 20-40% of the juvenile Chinook and coho.
Are Anchovies Buffering Predation?

Moore, Duguid – NOAA, U. of Victoria

Marine survival rate of steelhead through Puget Sound relative to years of high vs. low anchovy abundance.
STRATEGY: Recover forage fish to feed Chinook and their predators.
1. Key prey items have remained consistent - crab, amphipods, fish remains, euphausiids

2. The relative proportions of these key prey items have shifted to an increased dominance on crab larvae and amphipods and a reduced proportion of fish remains (mostly herring).

Neville et al unpublished 2017
...and a changing climate may be contributing
STRATEGY: Monitor zooplankton to track changes and forecast returns
Role of healthy estuaries
Juvenile Chinook salmon migration timing and size

Estuary entry size composition within adult returns

It helps the little guys.

Lance Campbell (Washington Department of Fish and Wildlife), unpublished 2016.
Juvenile Chinook salmon migration timing data courtesy of WDFW Wild Salmon Evaluation Unit
STRATEGY: Accelerate pace of estuary protection and restoration
Address impacts in freshwater
Disease and WATER QUALITY impact fish condition and survival
Reduce disease in juvenile steelhead in South PS

Parasite causes reduced swim performance and an increase in direct mortality
Reduce contaminants entering juvenile Chinook

O’Neill et al. unpublished 2014
Next steps of the

• Finish research in 2019, synthesize results across US-Canada
• Support 2019-2021 WA Operating and Capital Budget requests for monitoring, modeling, and solutions testing
• Develop local strategies to address local issues and incorporate in salmon recovery plans