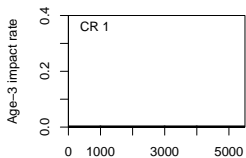
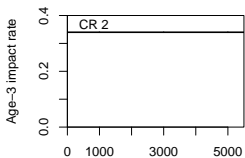


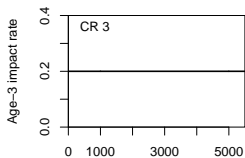
- Develop a winter run abundance forecasting approach
- Develop a suite of control rules with Council input
- Evaluate control rules using management strategy evaluation (MSE)



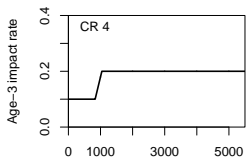
Age-3 escapement absent fishing



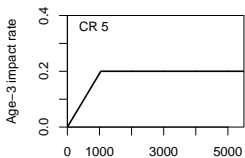
Age-3 escapement absent fishing



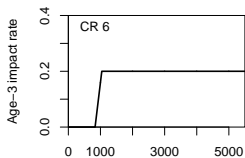
Age-3 escapement absent fishing



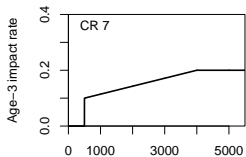
Age-3 escapement absent fishing



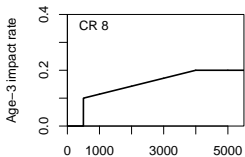
Age-3 escapement absent fishing



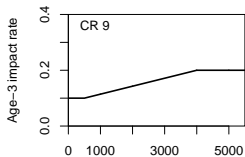
Age-3 escapement absent fishing



Age-3 escapement absent fishing



3-year geometric mean escapement



Age-3 escapement absent fishing

- Stochastic simulations of population dynamics and the management system

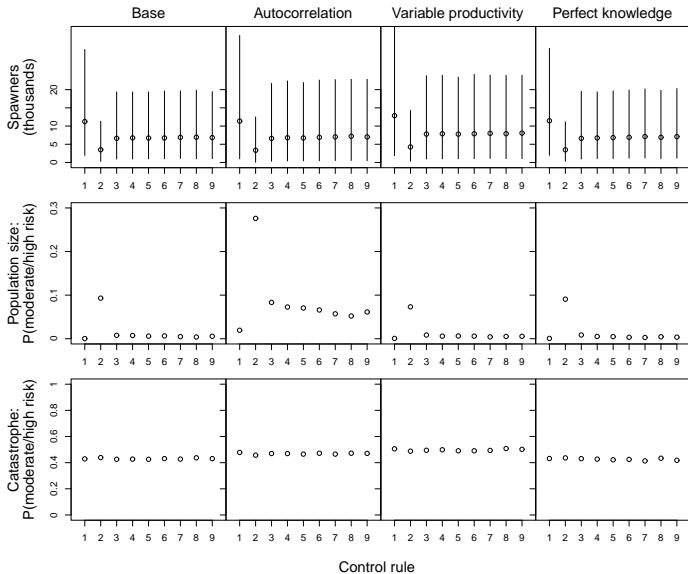
- Stochastic simulations of population dynamics and the management system
- Winter Chinook MSE updated and modified
 - New data
 - Abundance forecast
 - Temperature covariate in the egg-to-fry relationship

- Stochastic simulations of population dynamics and the management system
- Winter Chinook MSE updated and modified
 - New data
 - Abundance forecast
 - Temperature covariate in the egg-to-fry relationship
- Alternative scenarios considered
 - Base
 - Autocorrelated juvenile survival rate
 - Variable productivity (incorporate effects of severe drought)
 - Perfect knowledge of abundance

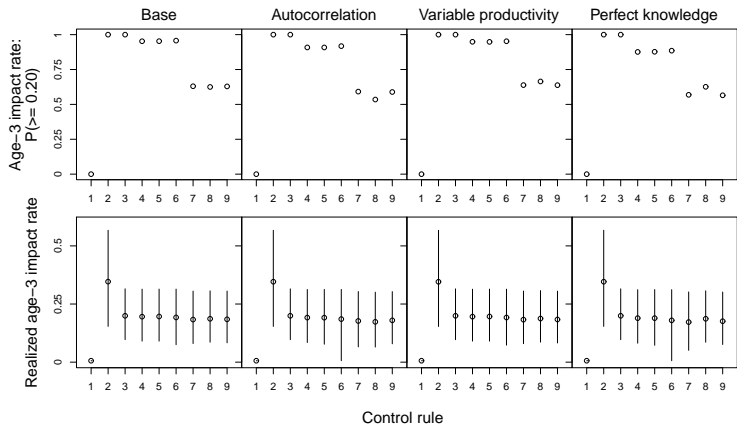
Performance measures

- Population
 - Spawner escapement
 - Moderate/High risk of extinction: Population Size (Lindley et al. 2007)
 - Moderate/High risk of extinction: Catastrophe (Lindley et al. 2007)
- Fisheries
 - Allowable impact rate = 0.20
 - Realized age-3 impact rate

Population results



Fishery results



Preliminary findings

- Small differences in mean escapement and extinction risk among control rules 3–9

Preliminary findings

- Small differences in mean escapement and extinction risk among control rules 3–9
- Autocorrelation in juvenile survival rates increased extinction risk relative to other scenarios

Preliminary findings

- Small differences in mean escapement and extinction risk among control rules 3–9
- Autocorrelation in juvenile survival rates increased extinction risk relative to other scenarios
- Highly accurate (perfect) abundance forecasts did not result in notable reduction in extinction risk

Preliminary findings

- Small differences in mean escapement and extinction risk among control rules 3–9
- Autocorrelation in juvenile survival rates increased extinction risk relative to other scenarios
- Highly accurate (perfect) abundance forecasts did not result in notable reduction in extinction risk
- Substantial differences in the frequency of reductions in the allowable impact rate among the control rules

Preliminary findings

- Small differences in mean escapement and extinction risk among control rules 3–9
- Autocorrelation in juvenile survival rates increased extinction risk relative to other scenarios
- Highly accurate (perfect) abundance forecasts did not result in notable reduction in extinction risk
- Substantial differences in the frequency of reductions in the allowable impact rate among the control rules
- Realized impact rates were similar for control rules 3–9