

New approaches for sustainable Pacific salmon fisheries in Canada



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Outline

- Introduction to David Suzuki Foundation salmon fisheries reform project
- Brief overview of the status of Pacific salmon and the structure of current fisheries in Canada
- Review of key challenges, using examples from Fraser and Skeena River sockeye fisheries
- Recommendations with examples

Our work with salmon fisheries

- The David Suzuki Foundation, along with other Canadian conservation groups, participate in policy and planning
 - Wild Salmon Policy
 - Salmon Integrated Harvest Planning Committee
 - Fraser River Panel (Pacific Salmon Commission)
- Review fisheries management performance
- Role of access structure and market design

Status of Pacific salmon in Canada

- 3 populations scientifically identified by government science body as endangered, 1 as threatened
- IUCN has added ~12 subpopulations of sockeye to the Red List of threatened species
- Overfishing, freshwater habitat loss, production-scale enhancement and changing ocean conditions have been identified as contributing to these declines

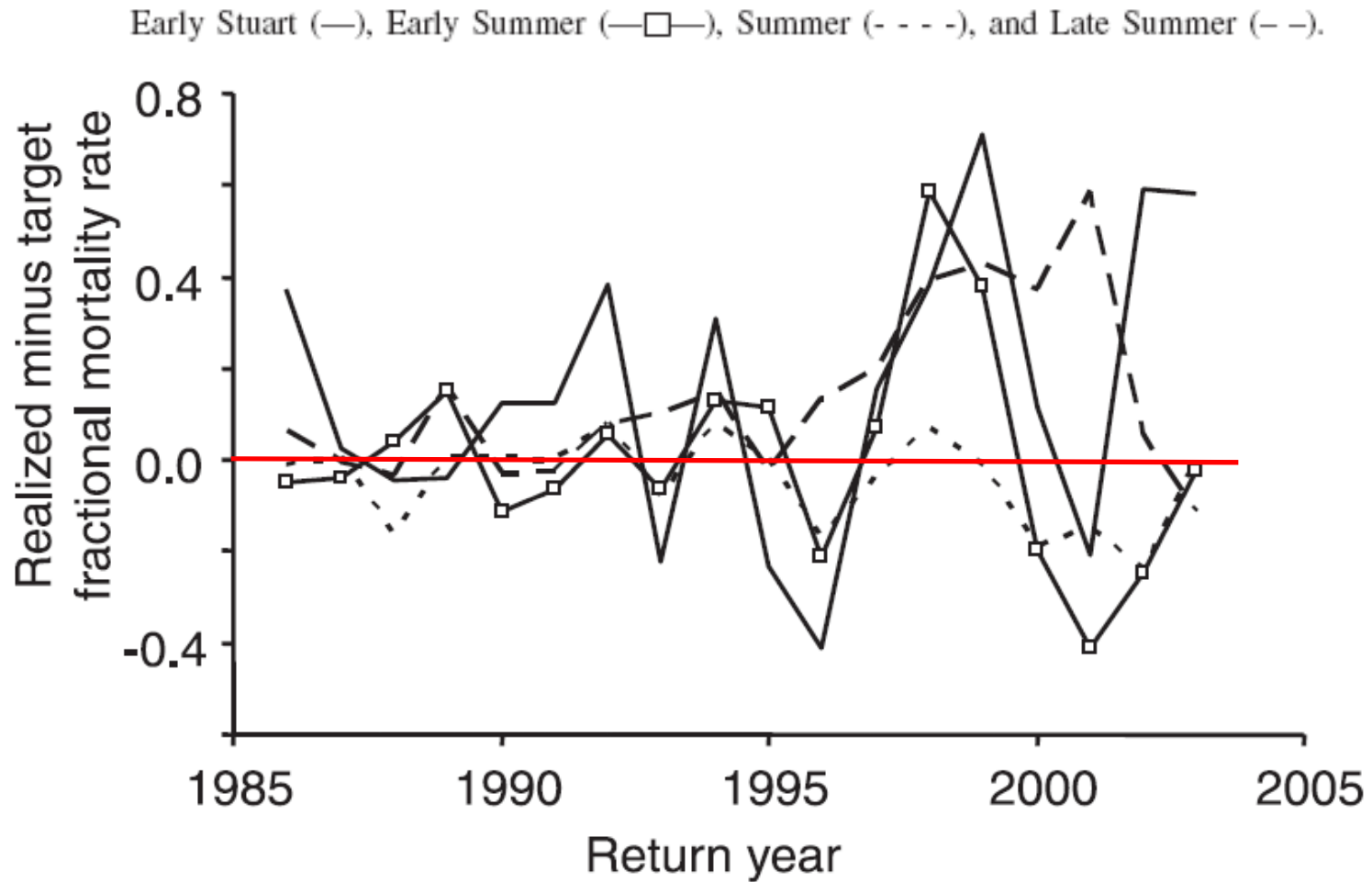
Canadian commercial Pacific salmon fishery

- 5 species of Pacific salmon (*Oncorhynchus* sp.) caught
- Mostly competitive mixed stock fisheries with area-based licensing
- Pre-season forecasting of annual abundance
- Joint management with United States under the Pacific Salmon Treaty
- Exploitation rate reductions since 1990's
- New Integrated Harvest Planning processes

Fraser River sockeye salmon fisheries

- Mixed stock commercial fisheries: coast and lower river
- Coastal, lower river, and up river First Nations food, social, and ceremonial (FSC) fisheries
- Recreational fisheries along coast and lower river
- Joint management under the Pacific Salmon Treaty (Fraser River Panel)
- Four run timing aggregates used in management: Early Stuart, Early Summer, Summer, Late Run
- 44 conservation units identified under the Wild Salmon Policy
- One conservation unit identified as endangered, but others also struggling

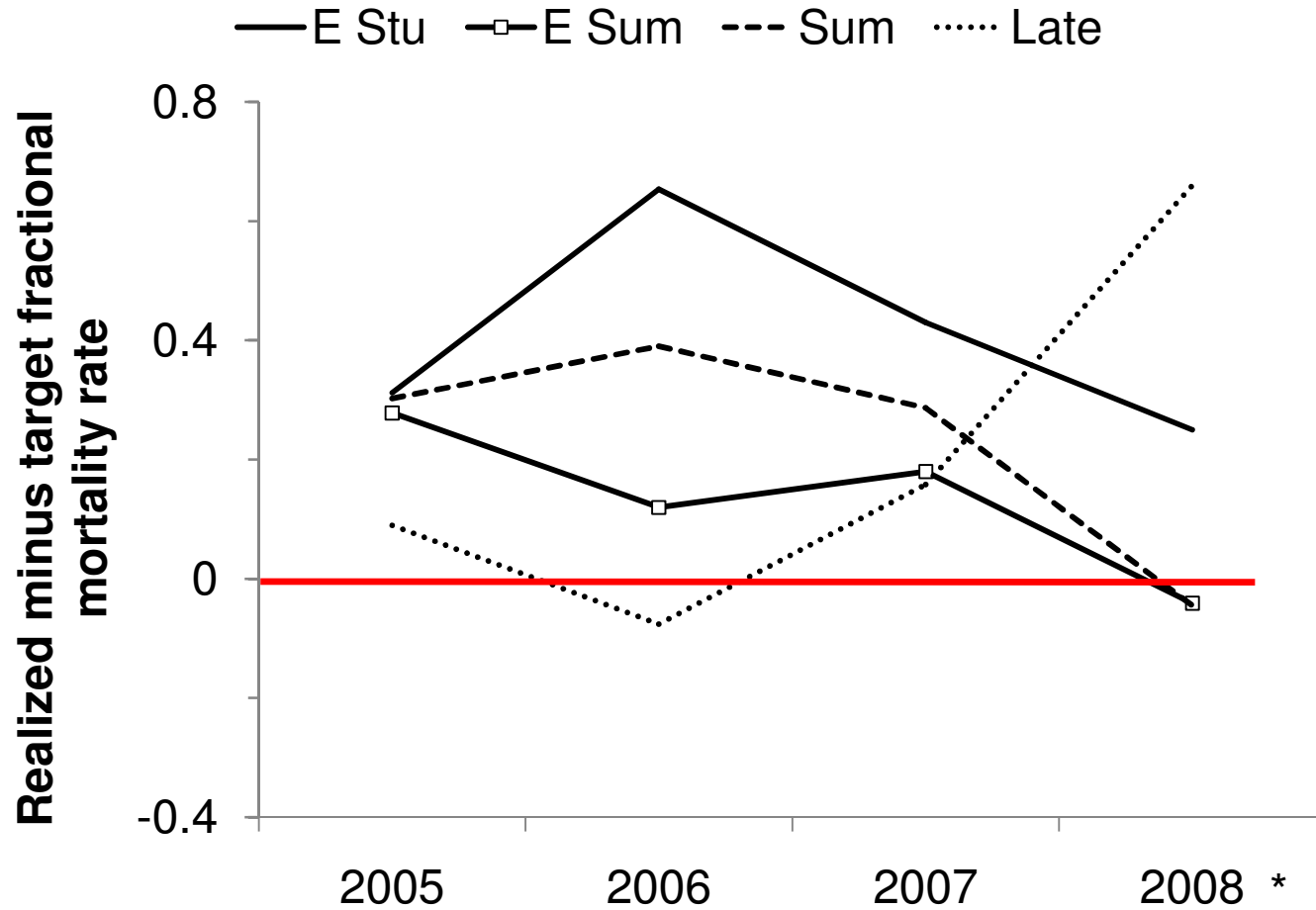
Fraser River sockeye salmon



Not meeting total mortality objectives

Holt and Peterman 2006. CJFAS 63:2722

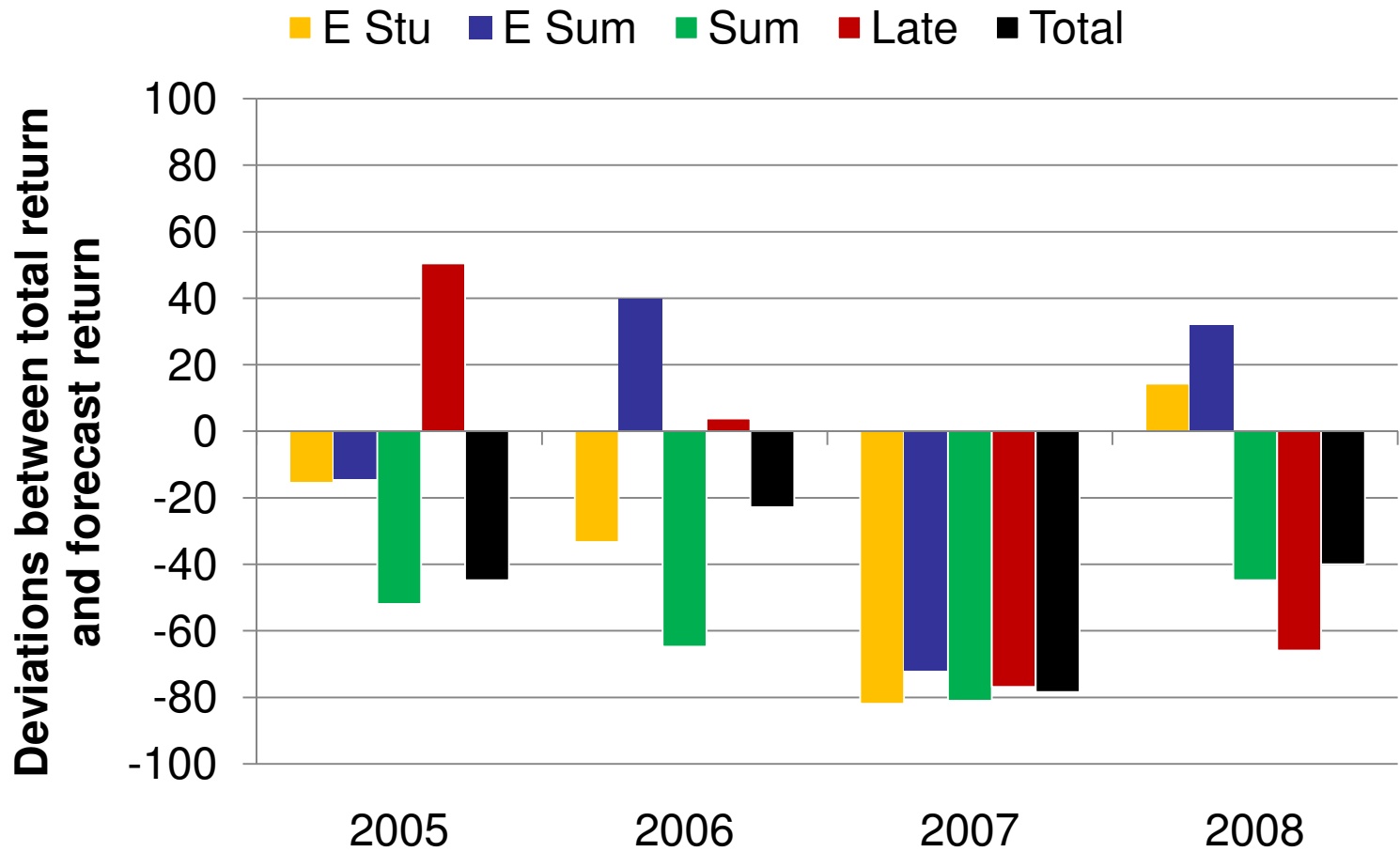
Fraser River sockeye salmon continued



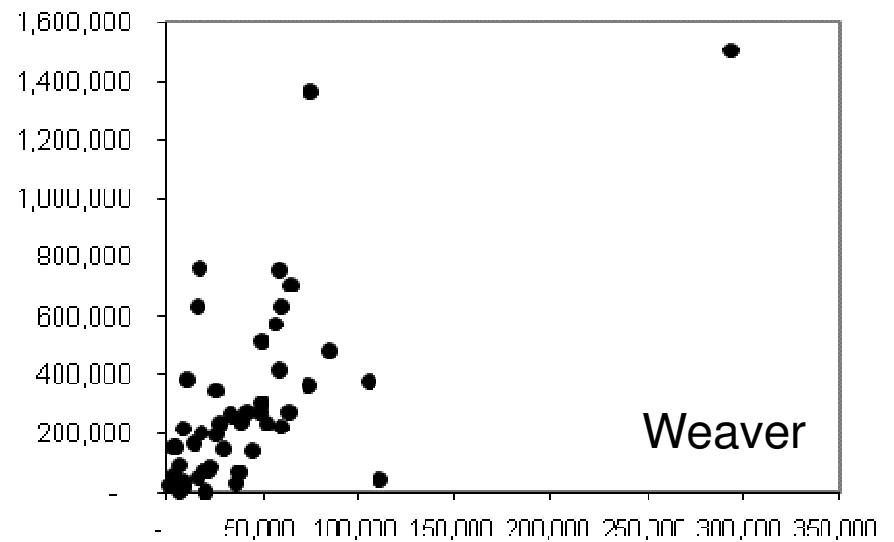
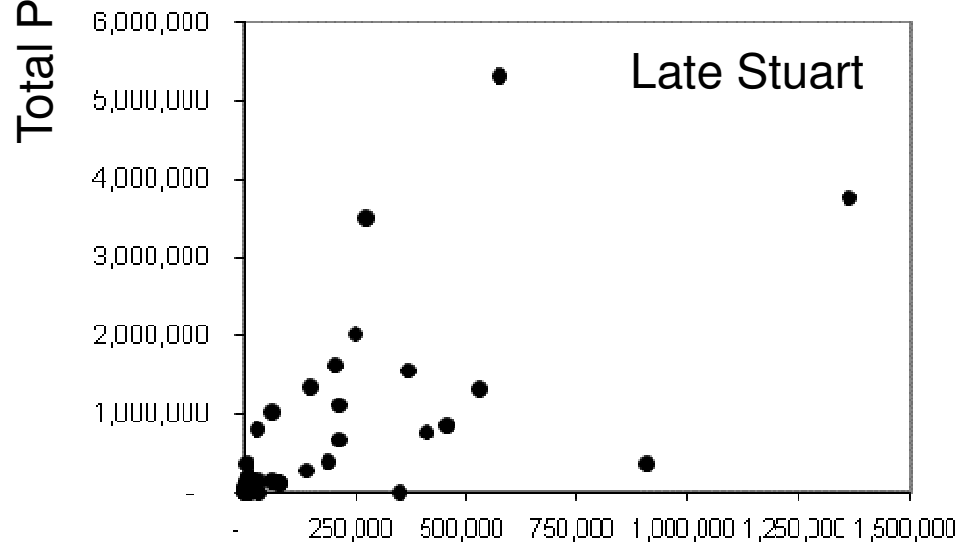
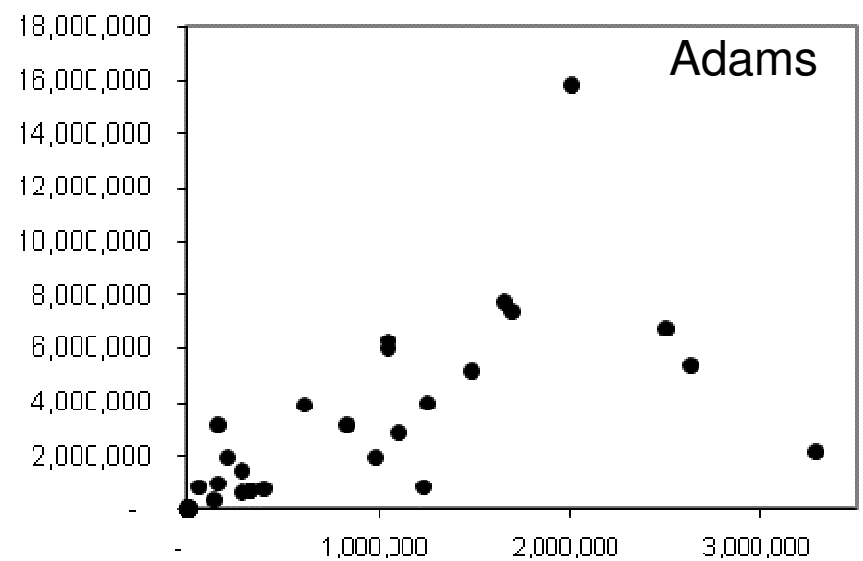
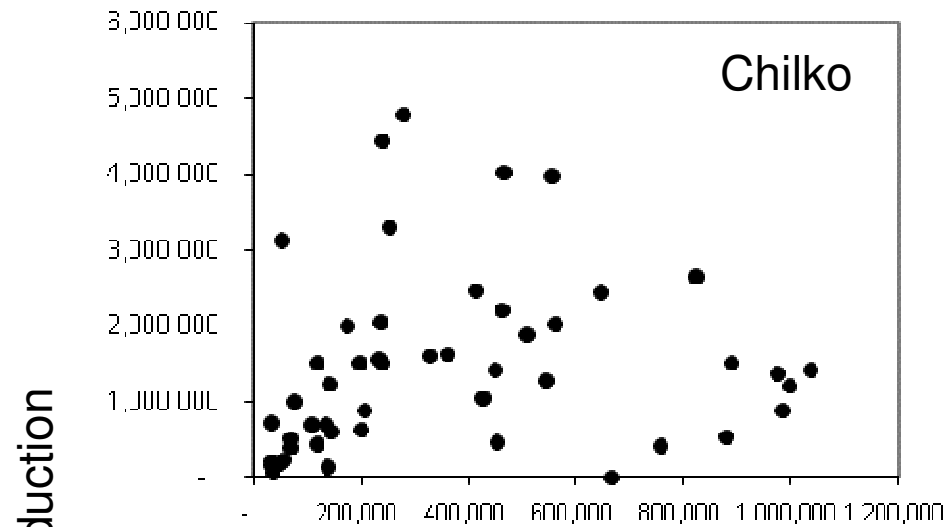
Still not meeting total mortality objectives

* 2008 data preliminary

Fraser River sockeye salmon deviation from forecast



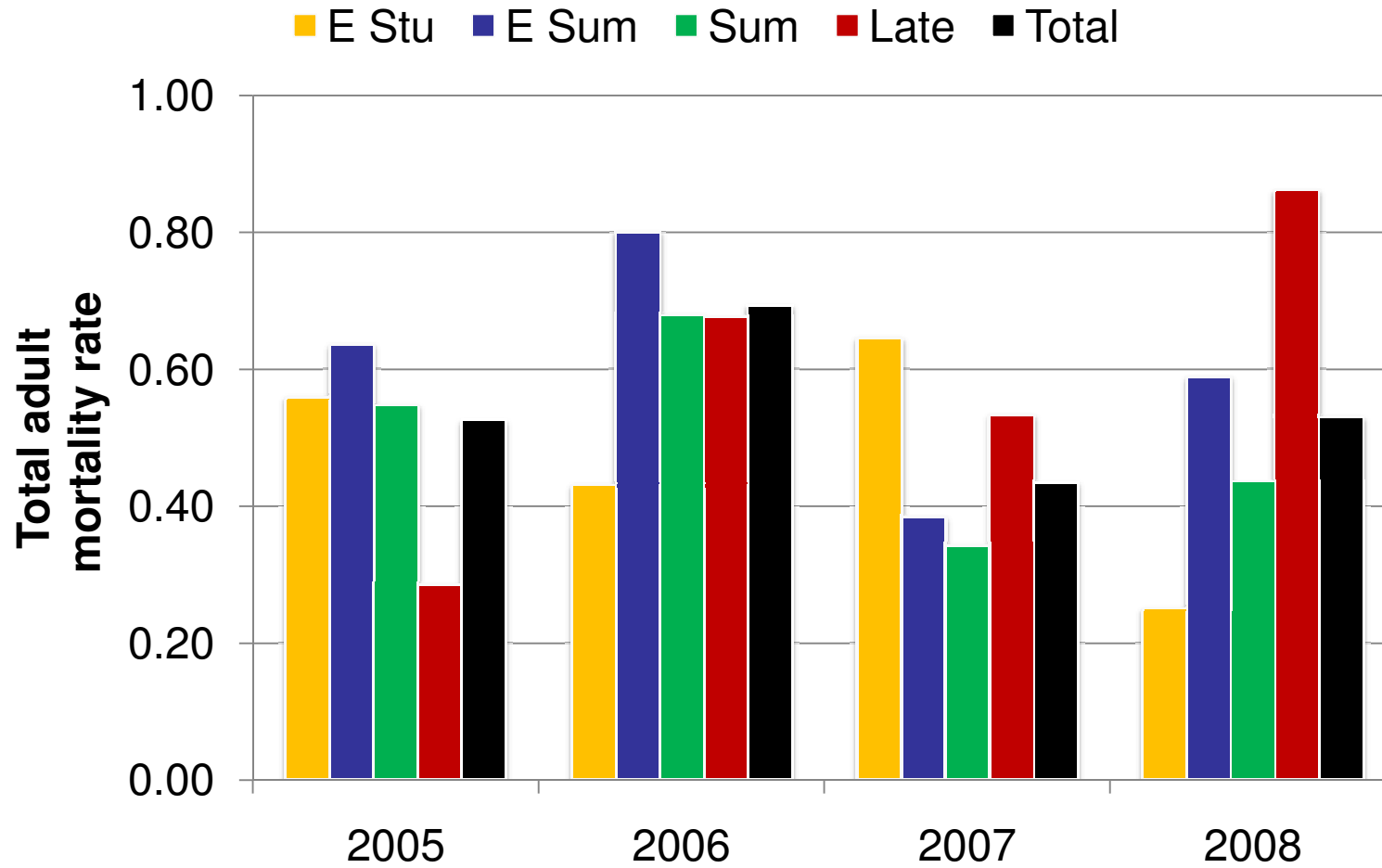
Poor forecasting accuracy



Spawning stock

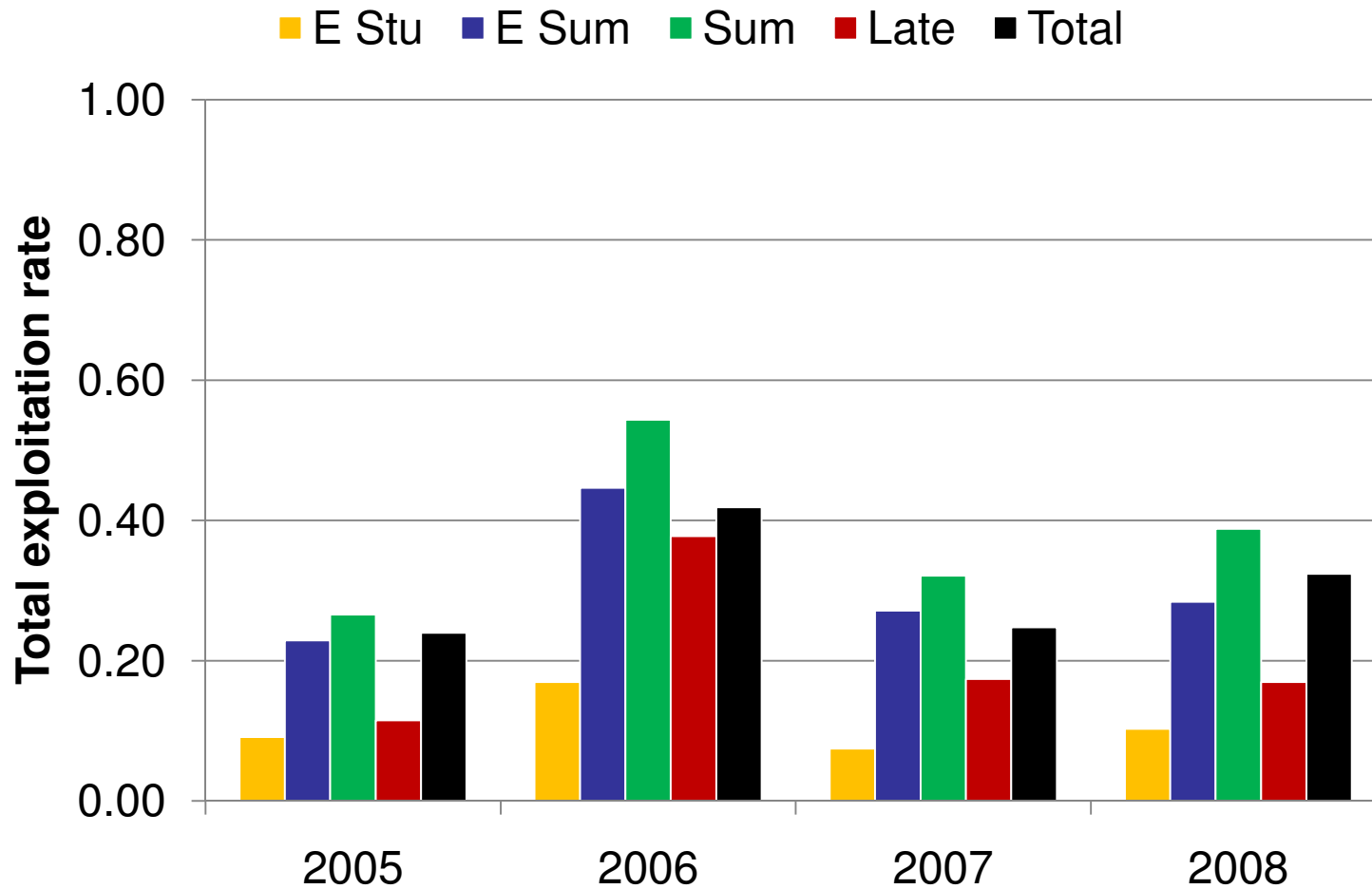
Weak stock-recruit relationships

Fraser River sockeye salmon adult mortality



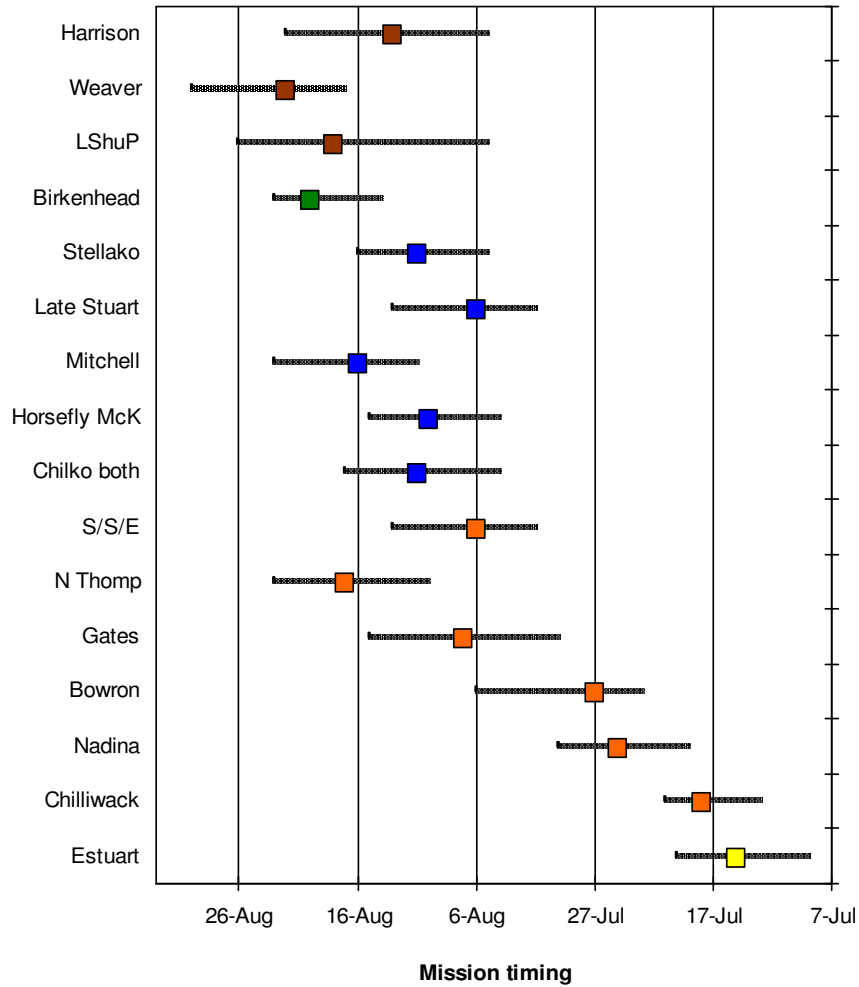
Estimated total mortality rates are high

Fraser River sockeye salmon exploitation rate

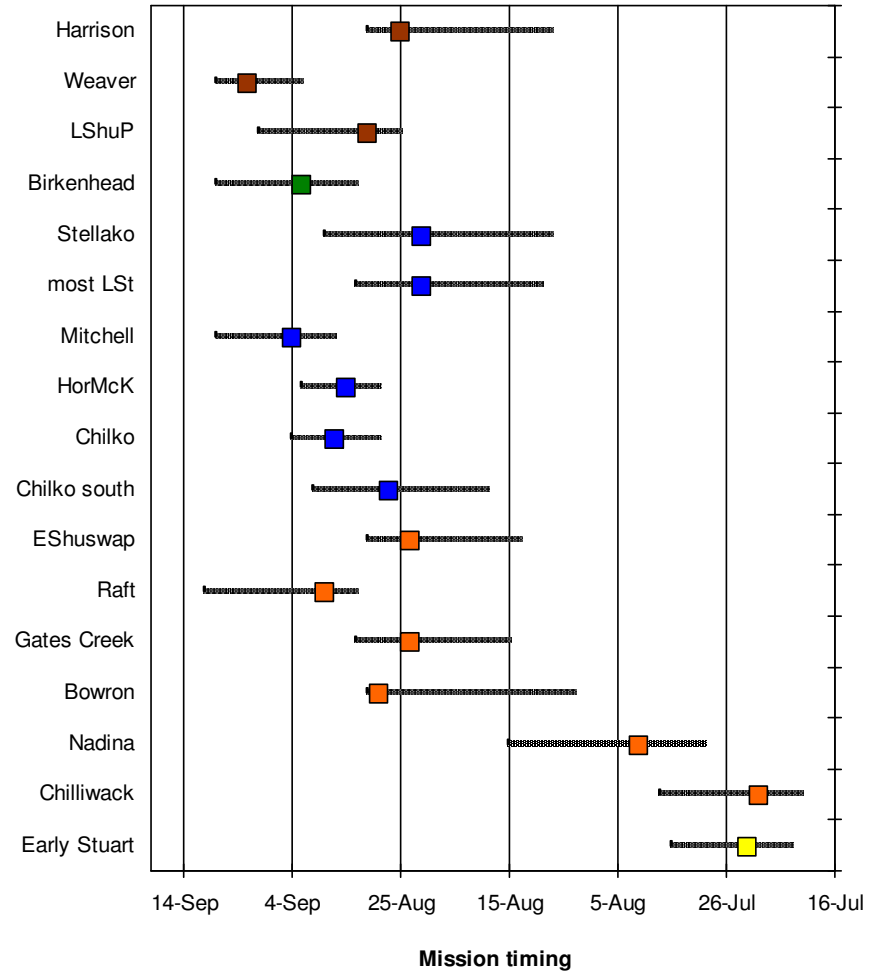


Some reduced harvest, but still fishing

2004



2005



Aggregate impacts not the same amongst stocks

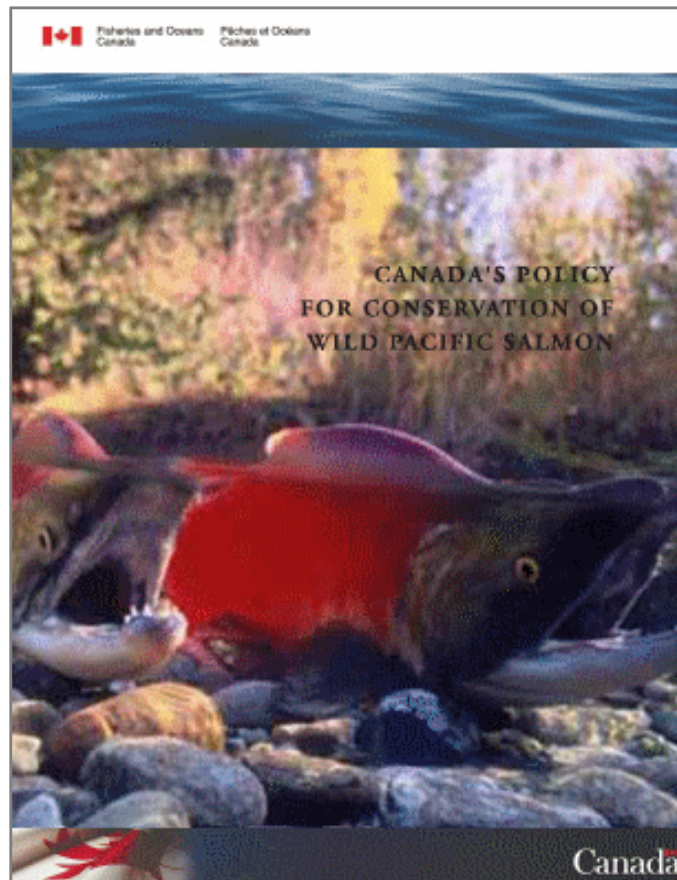
Pacific Salmon Commission 2009.

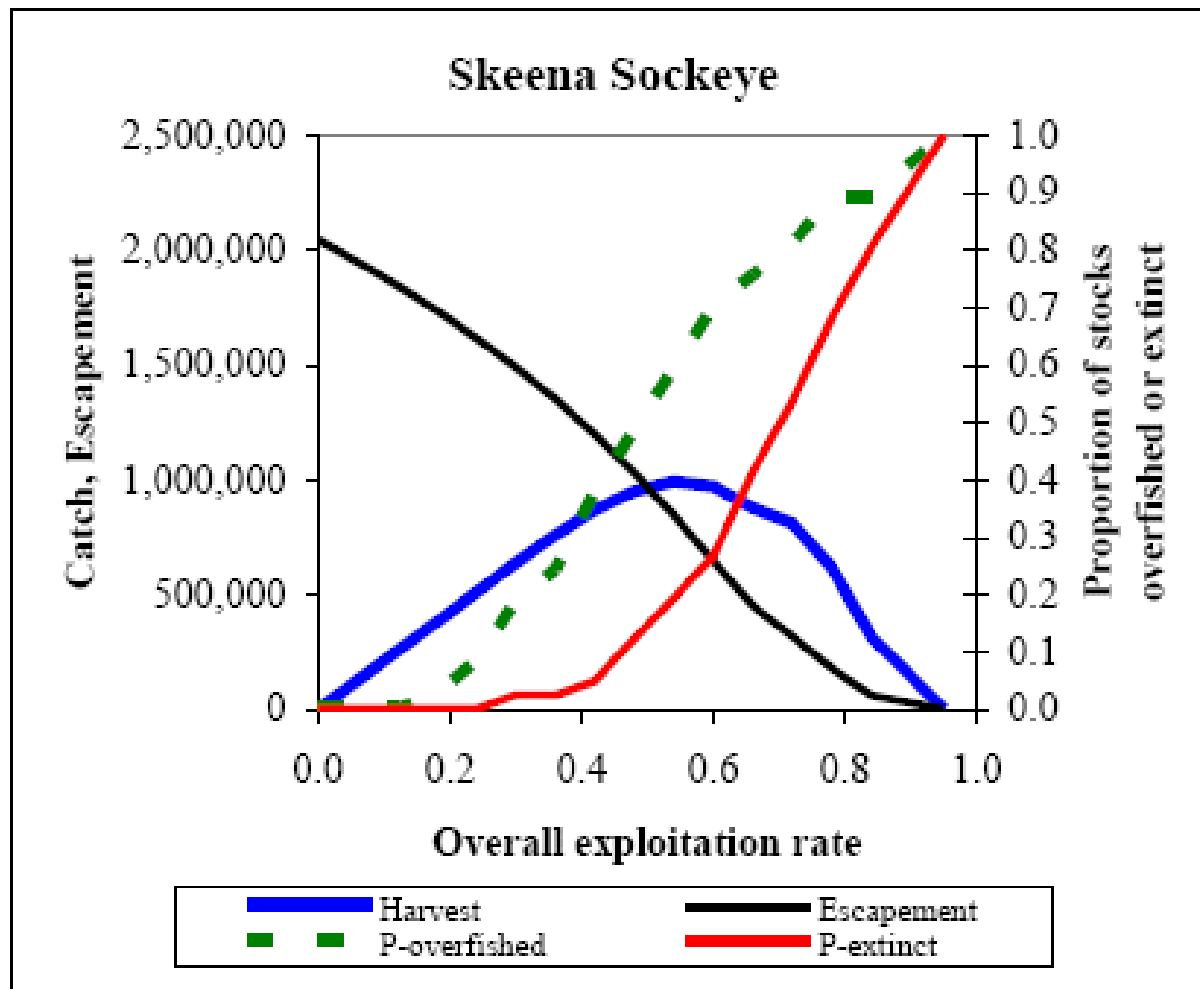
How can we improve?

- Clearly define and communicate meaningful objectives
- Manage for inherent and increasing uncertainty
- Integrated approaches to science and management
- Implement processes to support making tradeoffs explicitly
- Use incentives, including appropriate user rights

Core objective: protect adaptive capacity

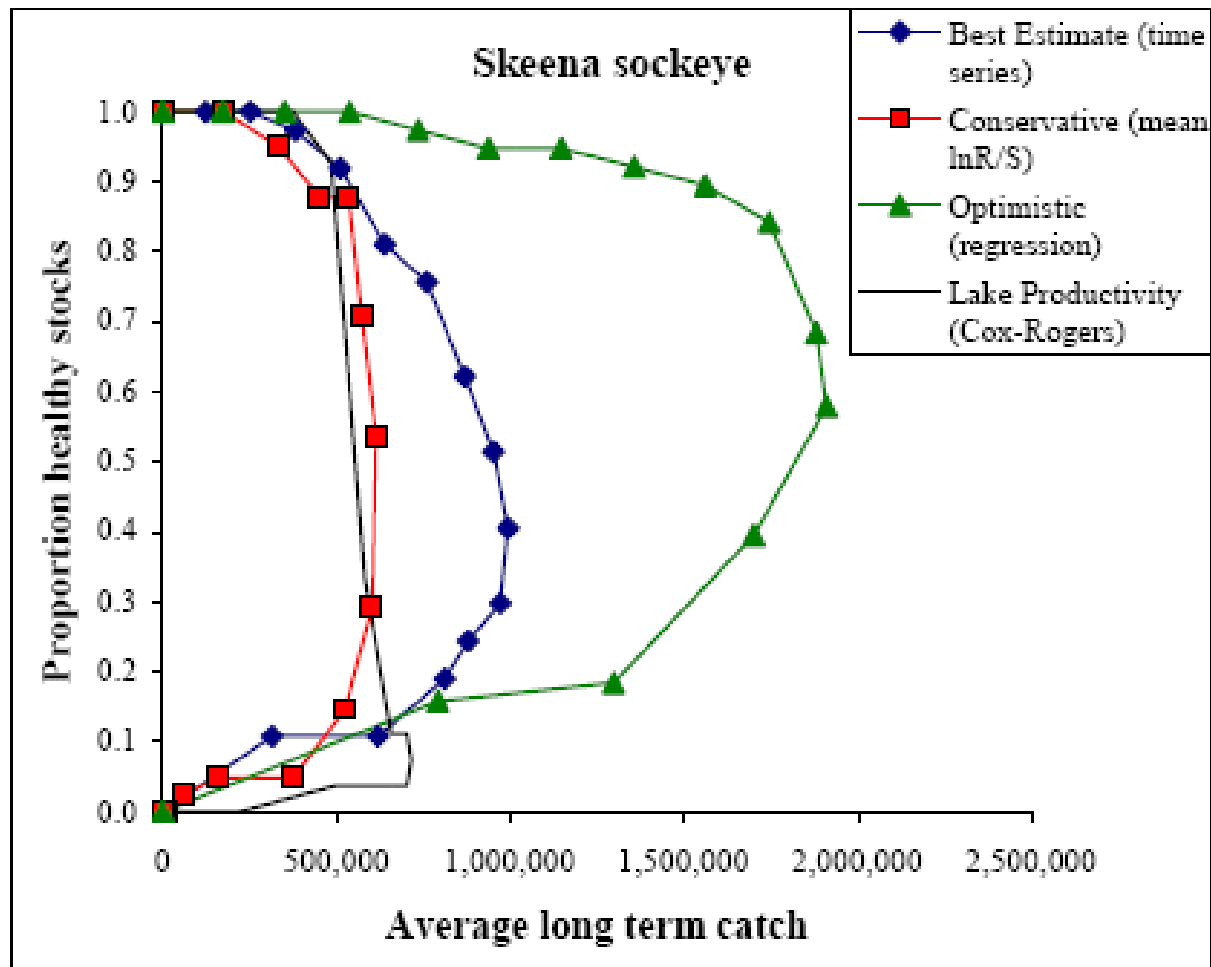
- Canada's Policy for the Conservation of Wild Pacific Salmon





Evaluate tradeoffs explicitly, and carefully

Walters, C.J., Lichatowich, J.A., Peterman, R.M. and Reynolds, J.D.
 2008. Report of the Skeena Independent Science Review Panel.



Understand how uncertainty affects outcomes

Walters, C.J., Lichatowich, J.A., Peterman, R.M. and Reynolds, J.D.
2008. Report of the Skeena Independent Science Review Panel.

Opportunities for change

- Fisheries science is demonstrating the importance of incentives in supporting sustainable fisheries
- Salmon fishery transferable share and effort demonstration fisheries have occurred
- Range of dedicated access options need to be explored, recognizing the unique management needs of salmon
- Re-structuring salmon fisheries access provides a key opportunity for implementing other recommendations

“In British Columbia, the salmon fishery remains the most controversial and contested fishery despite its steadily declining profitability.”

Lowe and Carothers, Enclosing the Fisheries, 2008