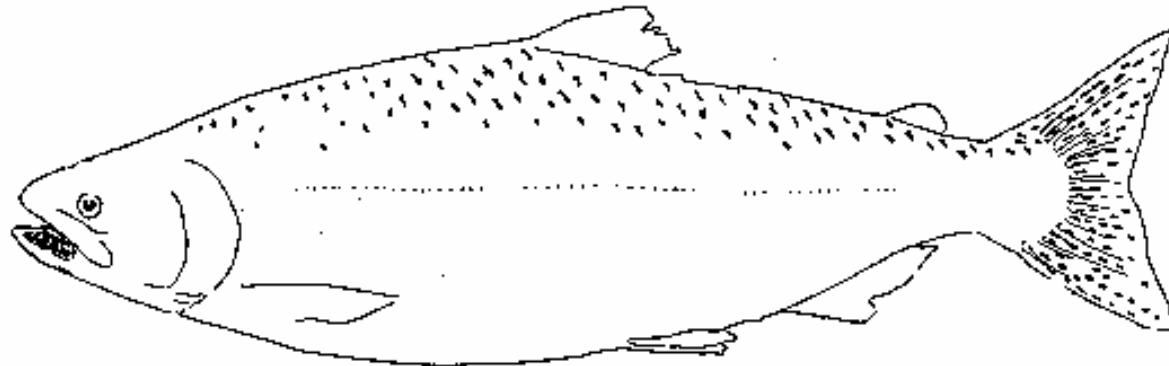




Chinook Salmon Conservation and Proposed Management Approach for 2010



Forum on Conservation and Harvest Planning for
Fraser Salmon
March 18, 2010





Outline

- Background
- 2010 Proposed Management Approach
- Next Steps



South Coast Chinook: Overview

- A number of South Coast chinook populations continue to decline or are depressed
- The Department is preparing a recovery plan for South Coast chinook and will be consulting with First Nations and other stakeholders on its development
- A range of management measures have been taken in recent years to reduce exploitation rates



South Coast Chinook

- Common challenges facing a number of South Coast Chinook populations including:
 - WCVI wild populations
 - Fraser stream rearing populations (Spring 4₂, Spring 5₂ and Summer 5₂)
 - Lower Georgia Strait (Cowichan)
- These populations are facing:
 - depressed and/or declining spawner abundance,
 - reduced and variable marine (and freshwater) survival rates
 - high uncertainty about future marine production regimes
 - Other factors may include: pressures on freshwater habitat, increased predation, ecosystem effects from climate changes...
- As productivity declines, management measures to reduce exploitation rates are required.

Fraser Chinook

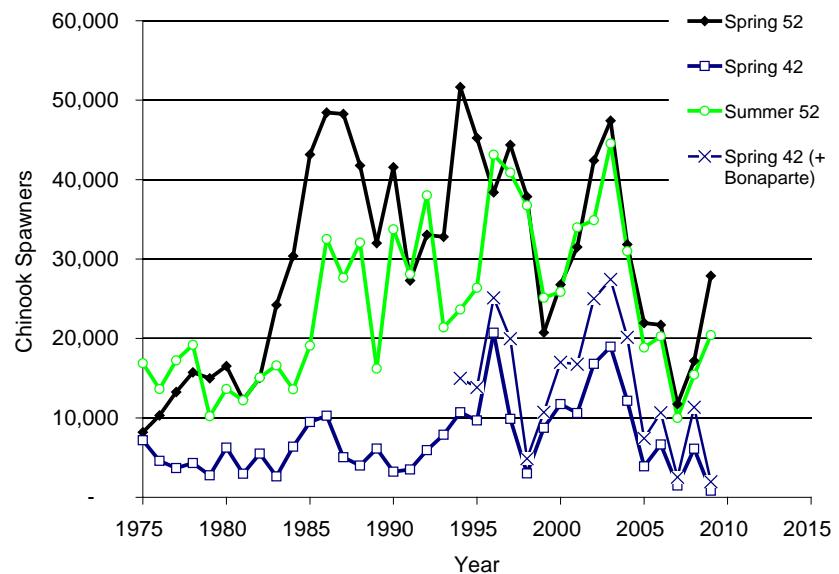
Spring Run 4₂ includes 2 CU's : Outlook status 1, *stock of concern* (last year = 1)

- Record low spawner abundance in 2009 (figure)

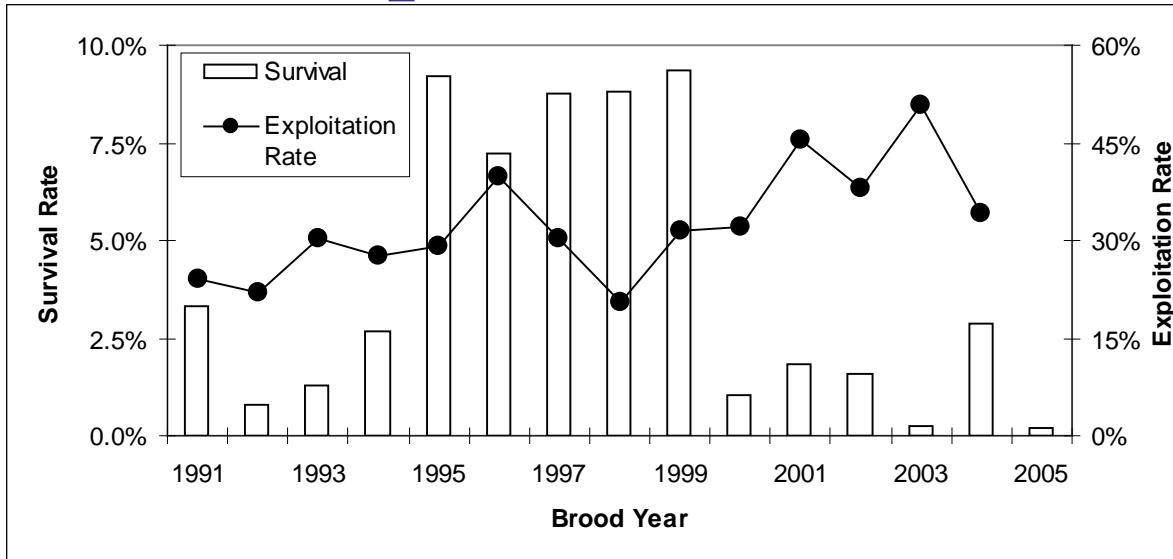
Spring Run 5₂ includes 6 Cu's : Outlook status 1, *stock of concern* (last year = 1)

Summer Run 5₂ includes 5 CU's : Outlook status 1, *stock of concern* (last year = 1)

- Very low returns projected if recent low survivals continue
- These 3 Fraser Chinook management units (MU's) contain 13 of 17 Fraser chinook CU's
- Early timed chinook are a sub-set stocks in 3 CU's contained in Spring 4₂ and 5₂ MU's



Fraser Spring 4₂ Survival and Exploitation

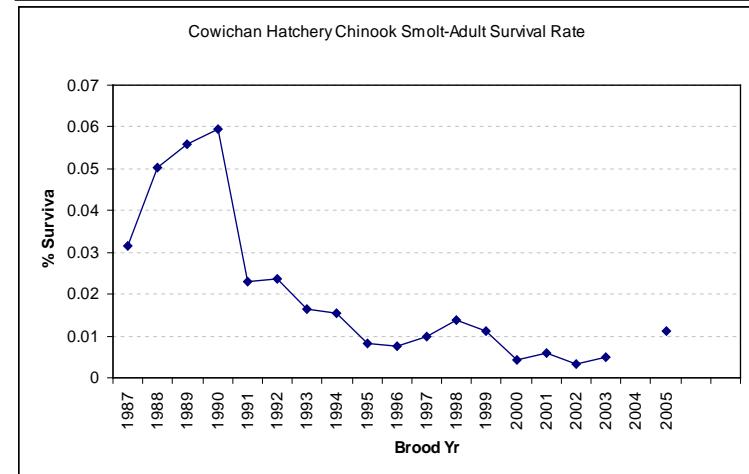
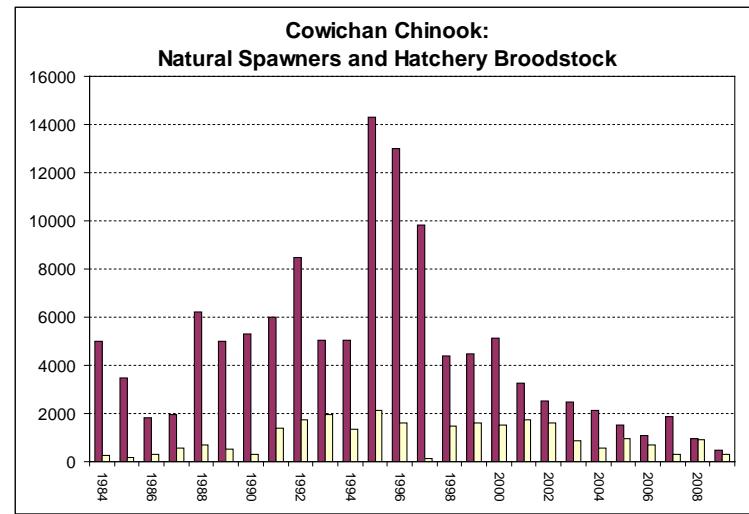


- Survival rate time series developed from Nicola CWT data
- Brood Year exploitation rates have been variable but show an increasing trend
 - Reduction in 2004 BY associated with increased management actions in 2008
 - sustainable exploitation rates estimated at 63-65% for average productivity conditions
- Exploitation rates post BY 1999 need to decrease in response to low survival
- Sustainable exploitation rates currently estimated in 8-11% range for low survival period; populations declining at current exploitation rates.

Cowichan Chinook

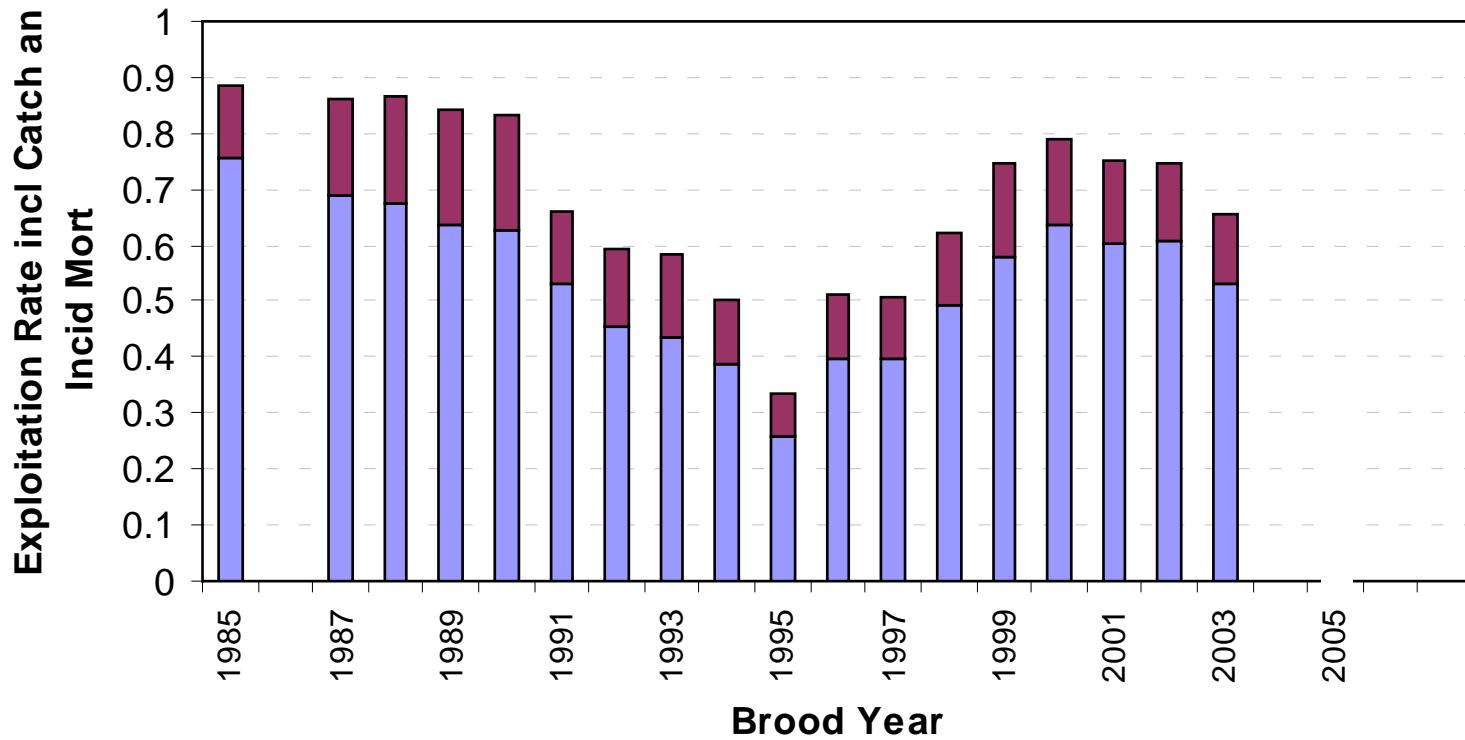
Outlook status 1, stock of concern (last year = 1)

- 2009 natural spawners
lowest on record adults
(top panel)
- Marine survival (smolt to adult) of Cowichan Hatchery is <1% (bottom panel)



Cowichan Exploitation Rates

Cowichan Hatchery Chinook: Total fishing mortality by brood

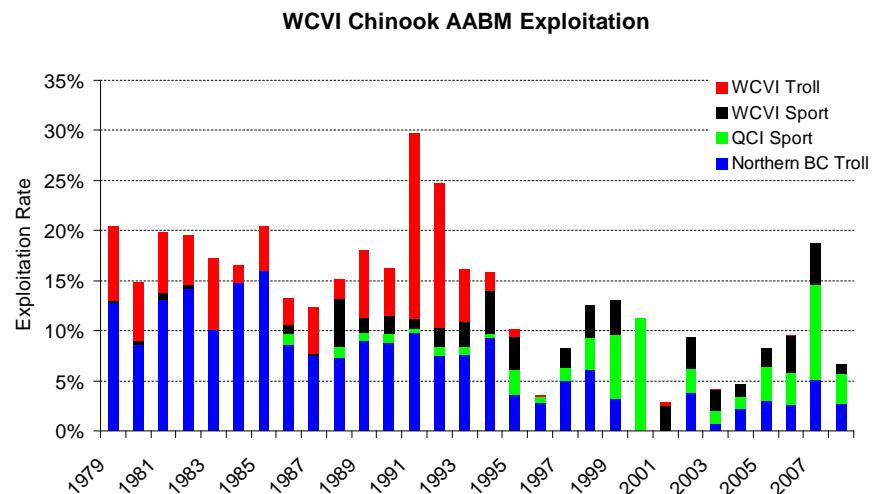
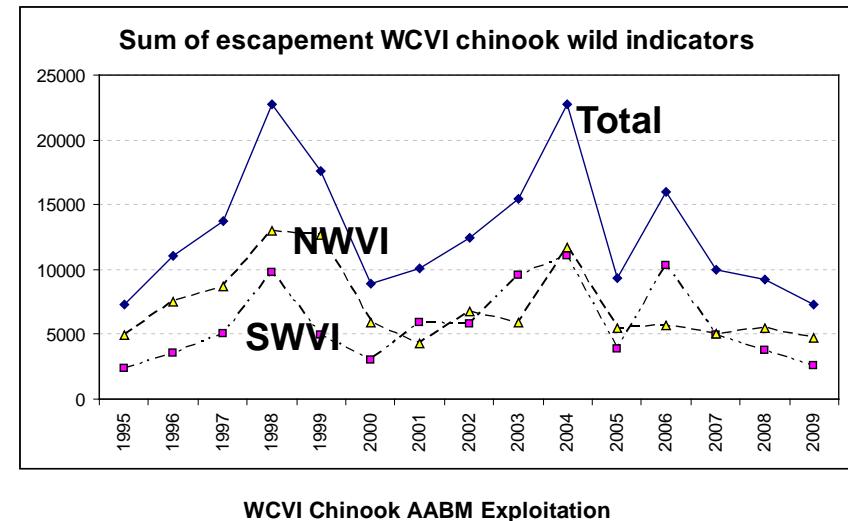


- Exploitation rate appears to be declining from recent highs, but not enough years to be confident.
- Note: no info from 2004 brood year – age 3 in 2007 catch and age4 in 2008 catch. 2005 incomplete.

WCVI wild Chinook

Outlook status 1, *stock of concern* (last year = 1)

- Lowest wild spawner abundance since 1995 (top panel)
- Exploitation rates in major ocean fisheries (bottom panel) consistent with IFMP objective (<10% in marine fisheries) in most recent years.



Chinook Management Actions

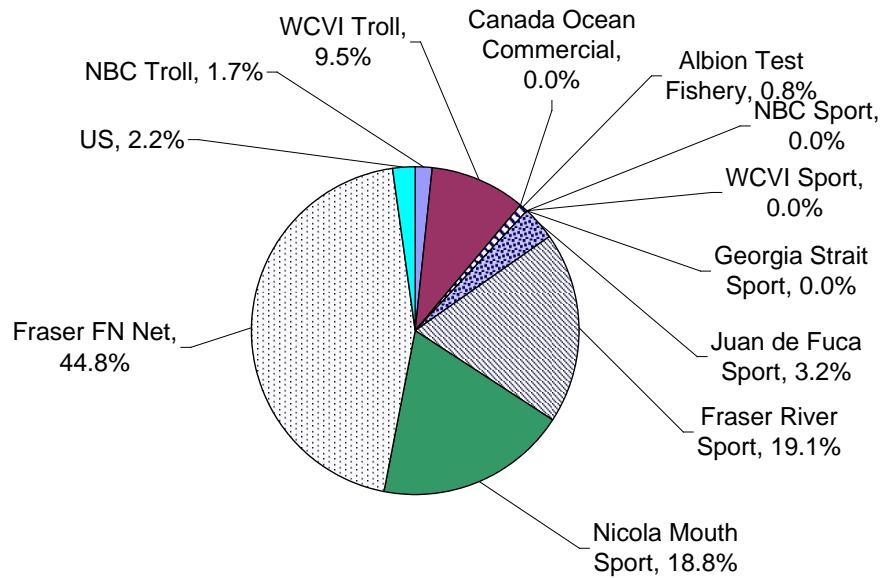
- Conservation concerns have resulted in a number of management actions over many years and fisheries.
- Renegotiated Pacific Salmon Treaty chapters with specific focus on chinook:
 - Significant fishery reductions in the Southeast Alaska (15% reduction) and West coast of Vancouver Island (30% reduction) fishery areas
 - Guidelines for North Coast harvest reductions based on status of key stocks (also applies to Alaska), however, domestic conservation objectives (e.g. WCVI chinook) may constrain harvest
 - Effects of new Pacific Salmon Treaty harvest reductions implemented in 2009 season will not be assessed until April 2010.
- A range of *stock specific* management actions have also been implemented.

Fraser Chinook Management Actions

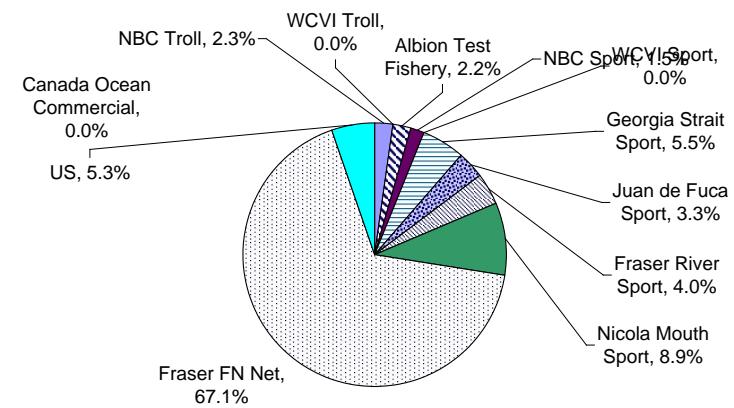
- 2008 and 2009 measures to reduce exploitation rates on Early timed Chinook by approximately 50%
 - ***First Nation***: opportunity for FSC harvest at reduced levels, delayed start to the season and voluntary closures in some areas.
 - ***Recreational***: size restrictions and partial mark-selective fishery (e.g. hatchery) in Juan de Fuca, non-retention of Chinook off the mouth and inside the Fraser.
 - ***Area G troll***: two month closure in south-west Vancouver Island (area 123/124) and cap on overall effort levels in SWVI and NWVI. No Spring 4₂ CWT's encountered in 2008.
- In season abundance assessment of Spring and Summer 5₂ chinook with management actions to maintain spawner abundance above 30,000
 - Albion Assessment Methodology has been reviewed and approved by PSARC.
- Additional management actions for WCVI wild and Cowichan chinook.

Distribution of Spring 4₂ (Nicola) Fishing Mortality

2006-07 Average



2008



Overall pie shape illustrative only. Not scaled to exploitation rate

- Overall reduction in exploitation rate by approximately 20% in 2008. Reduced from average of 44.2% (2006-07) to 35.8% (2008).
- Information for 2009 being worked on.
- No current CWT indicator stocks for Spring 5₂ and Summer 5₂ MU's. However, substantial timing overlaps with Spring 4₂ chinook.

2010 Fishery Planning

- Department is committed to providing priority for First Nations fishing for FSC purposes. Commercial and recreational fisheries take brunt of conservation measures.
- Last year's IFMP (2009/10) identified continued management actions for Fraser chinook likely required in 2010 for commercial and recreational fisheries; additional consultations with First Nations on 2010 fishing plans.
- Discussion of approaches for further exploitation rate reductions and potential additional management actions required to address low chinook returns:
 - Options for Spring 42 chinook required beginning March 2010.
 - Options for other Fraser and South Coast chinook to be included in draft Integrated Fisheries Management Plans (IFMPs)



2010 Proposed Chinook Management Plan

- WCVI Chinook
- Cowichan Chinook
- Fraser 4-2 Spring Chinook
- Fraser 5-2 Spring and 5-2 Summer Chinook
- Fraser 4-1 Summer Chinook

2010 Proposed Management Plan for WCVI Chinook

- IFMP Objective
 - The objective for West Coast of Vancouver Island (WCVI) chinook is to manage Canadian ocean fisheries (specified below) to an exploitation rate of 10%. The objective for North Coast chinook is to manage in accordance with the allocation policy, and to manage the northern troll fishery to a WCVI chinook exploitation rate of 3.2%.
- Proposed changes for 2010
 - Considering additional terminal management actions
 - Fisheries roundtable initiated in Clayoquot Sound
 - 2009 fisheries impact information available mid-March

2010 Proposed Management Plan for Cowichan Chinook

- IFMP Objective
 - The objective for Lower Strait of Georgia (LGS) chinook in 2010 is to reduce fishery exploitation in known areas of significant impact.
 - This objective is part of a comprehensive planning initiative, including: 1) reduced fishery impact; 2) improved enhancement, and 3) addressing habitat and ecosystem issues affecting this stock.
- Proposed changes for 2010
 - Considering further action pending 2009 fishery impacts information.
 - Roundtable process in Cowichan dedicated to chinook recovery.

2010 Proposed Management Plan for Fraser 4-2 Spring Chinook

- IFMP objective
 - The objective for Fraser Spring 4-2 chinook in 2010 is to rebuild these populations by continuing to minimize incidental harvests in Canadian ocean fisheries. For directed fisheries in the Fraser River, the objective is to minimize directed harvests of Spring 4-2 chinook until July 15th. Fisheries beginning July 15th will be managed consistent with the management zone identified for Spring 5-2 and Summer 5-2 Fraser Chinook (see section 4.1.9) given timing overlaps between these populations for much of the adult migration period.
- Proposed changes for 2010
 - Closure of the Nicola sport fishery and reduced impacts in lower Fraser and Juan de Fuca sport fishery under consideration.
 - Increased impacts in lower river FSC fisheries needs to be addressed.



2010 Proposed Management Plan for Fraser 5-2 Spring and 5-2 Summer Chinook

- IFMP Objective
 - The objective for Spring and Summer (age 5-2) Fraser chinook is to continue rebuilding these populations consistent with the management zones outlined below.
- Zone 3 – Greater than 60,000
 - Rationale: Populations rebuilding towards maximum sustained yield (MSY) levels.
 - First Nations directed fisheries.
 - Directed recreational and commercial fisheries consistent with Allocation policy.



2010 Proposed Management Plan for Fraser 5-2 Spring and 5-2 Summer Chinook cont.

- Zone 2 – Below or Equal to 60,000
 - Rationale: Caution required to avoid population declines. Populations well below MSY levels.
 - Limited directed fisheries.
 - First Nations directed fisheries subject to abundance.
 - By-catch retention/ limited directed Fraser recreational fisheries may be initiated.
 - Management actions to reduce by catch or incidental harvest in commercial fisheries.



2010 Proposed Management Plan for Fraser 5-2 Spring and 5-2 Summer Chinook cont.

- Zone 1 – Below or Equal to 30,000
 - Rationale: Significant conservation concerns. Very high risk of extremely low spawning populations.
 - Directed fisheries minimized.
 - By-catch retention /limited directed First Nations fisheries.
 - Non-retention/closed recreational and commercial chinook fisheries in the Fraser River and tributaries
 - Management actions to reduce by catch or incidental harvest in other recreational and commercial fisheries.

2010 Proposed Management Plan for Fraser 4-1 Summer Chinook

- The management objective for the Fraser Summer 4-1 has not been established. However, the Department is working on developing a management objective for the PST process which requires an escapement objective to be developed consistent with maximum sustained yield (MSY) or other agreed biologically-based escapement goals.
- Directed fishing opportunities may occur on this stock group, provided that fisheries can be designed to limit impacts on co-migrating stocks of concern including: Spring 42 Chinook, Spring/Summer 52 Chinook, Fraser Fall Chinook, Fraser River Sockeye, and Interior Fraser Coho.

Next Steps

- Feedback on proposed approaches from the 2010 South coast IFMP by April 20th.
- Review of Final SC IFMP at May 6/7 IHPC meeting.
- Department developing comprehensive, longer term recovery plan to rebuild depressed Fraser River and other South Coast populations. Primarily harvest actions to date.
- Recovery planning will need to address:
 - Conservation objectives and harvest measures consistent with the Wild Salmon Policy (including development of benchmarks, etc...)
 - Habitat status and threats (including water use)
 - Role of enhancement activities (e.g. hatchery production)
 - Assessment and research
- Department will consult with First Nations and other stakeholders on development of recovery plan.