

## Forum on Conservation and Harvest Planning for Fraser Salmon

Tier 2 • January 26, 2011 • Executive Airport Plaza • Richmond, BC

### ATTENDANCE:

Mike Staley, FRAFS	Fred Sampson, Siska
Ken Wilson, Musqueam	Juanita Alec, Nazko
Chris Cook, Namgis/IMAWG	Louis Julian, Matsqui
Michelle Edwards, St'at'imc Chiefs Council	Tony Malloway, Tzeachten
Christina Ciesielski, Carrier Sekani Tribal Council	Ken Malloway, Kwaw Kwaw Apilt/FRAFS
Kim Charlie, Chehalis	Tony Roberts Jr., A-Tlegay/Campbell River
Les Antone, Kwantlen	Ernie Crey, Sto:lo Tribal Council/FRAFS
Brenda Morgan, Matsqui	Thomas Alexis, Tl'azt'en/FRAFS
Penny White, FRAFS	Aimee Arsenault, FRAFS
Dean Joseph, Yekooche	Terri Bonnet, DFO
Tekeyten, Kwantlen	Jeff Grout, DFO
Brandon Gabriel, Kwantlen	Les Jantz, DFO
Andrew Meshue, Williams Lake	Greg Thomas, DFO
Gord Sterritt, Northern Shuswap Tribal Council/FRAFS	Jamie Scroggie, DFO
Shamus Curtis, UFFCA	Diana Trager, DFO
Dave Loewen, Takla Lake	Barry Rosenberger, DFO
James Pepper, Okanagan	Ann-Marie Huang, DFO
Dominic Hope, Yale	Beth Pechter, DFO
Wilfred Robbins, Esketemc	Adrian Wall, DFO
Deana Machin, First Nations Fisheries Council	Steve Ratko, DFO
Mark Duiven, Semiahmoo	Gerry Kelly, DFO
Kevin Cook, Semiahmoo	Jason Mahoney, DFO
Kelsey Campbell, A-Tlegay/Campbell River	Diana McHugh, DFO
Jeff Thomas, Snuneymuxw	Janet Gagne, DFO
Greg Wadhams, Namgis/IMAWG	Brian Matts, DFO
Susan Anderson Behn, IMAWG	Ian Redan, DFO
Ray Silvey, IMAWG	Brent Hargreaves, DFO
Lee Spahan, Coldwater	Merv Mochizuki, DFO
David Coutlee, Nicola Tribal Association	David Norton, DFO
Tracy Sampson, Nicola Tribal Association	

### AGENDA:

1. Welcome and opening prayer
2. Introductions and opening comments
3. Preliminary Post-season report for 2010 south coast salmon fisheries (Greg Thomas)
4. 2010 Fraser River Review: Chinook, Coho, Chum (Jamie Scroggie)
5. Strategy for Southern Chinook Management Framework (Brent Hargreaves)
6. 2011 Salmon Outlook (Jeff Grout)
7. Sockeye 2010 Review (Ann-Marie Huang)

### DISCUSSION:

## 1. Welcome and opening prayer

- Welcome and opening prayer by Mary Charles, Musqueam Band

## 2. Introductions and opening comments

### Opening comments by Marcel Shepert:

- Marcel raised a number of questions regarding the Chinook process to keep in mind throughout the meeting.
- What “policies” / “fisheries management” actions should be considered for future Chinook management?
- Technical processes: What is the role? Does it need to establish TOR early on to avoid conflict? How will a FN technical process relate to other technical processes, i.e. how will the bilateral process fuse with the multilateral?
- Is 2011 a realistic target date to establish a multilateral Chinook management framework?
- Are FN open to the idea of using a “multilateral type management framework” as a “sounding board” for DFO? Will it be duplicating the efforts of other advisory processes?
- The CCIC group might be comprised of members of the FRAFS FN Executive, FNFC, Island Marine WG, province, DFO, SFAB, CSAB, WCVI AMB, Fraser Basin Council etc. Not responsible for drafting the plan or representing any interests; functions by bringing perspectives to the discussion.
- Is this model achievable?
- What about the role(s) of other processes: IHPC, local roundtables, UFFCA, LF Fisheries Alliance, WCVI AMB, Union of BC Municipalities, BC Cattlemen’s Assoc, etc.
- Does this model of engaging with these groups at their existing meetings, through the communications/outreach plan, make sense?

### Opening comments by Ken Malloway:

- The FRAFS EC has adopted new TOR for the new Forum Planning Committee (FPC). The previous committee (FRAWG) was too large, and focused too much on issues rather than coordination. The new FPC has 1 Fraser FN, 1 Island FN, 1DFO, plus alternates. As the FRAFS EC Chair, Ken will also chair the FPC.
- Had a good sockeye run this year, but fish still are not reaching the communities in the upper Fraser.
- Spring 4<sub>2</sub> Chinook remains a serious issue, e.g. timing of the information. Last year the sport fishery out-fished FN, and FSC needs were not met. This is inconsistent with priority as outlined by the SCC in the Sparrow decision.
- Chinook productivity is still low; fish aren’t replacing themselves even with no fishing.
- There is concern about the IFMP process, and lack of FN representation at the IHPC.

### Opening comments by Barry Rosenberger (DFO):

- The Forum process is important to DFO. The more inclusive we are, the better we can understand the impacts, and implications of decisions we’re making.
- Hoping to discuss coho and chum approaches for the coming years and into the future at upcoming Forum meetings.
- Information on Chinook is still preliminary. Escapement information will be presented today. Will try to construct a table that identifies all recommendations from the Forum process, as

well as independent feedback and recommendations from FN, and identify how it influenced management approaches for 2010.

### **3. Preliminary post-season report for 2010 south coast salmon fisheries (Greg Thomas)**

#### **South coast Chinook:**

- AABM and ISBM fisheries:
  - 2 types of fishing areas on the coast: AABM (aggregate abundance based management area) and ISBM (individual stock-based management). AABM (regulated by the PST) used in offshore mixed-stock fisheries, i.e. WCVI areas 121-127 and areas 21-27 prior to June 15. ISBM is used for all other areas.
  - Fisheries constrained by Chinook stocks of concern (e.g. Fraser spring and summer Chinook, lower Georgia Strait Chinook, low abundance stocks in WCVI). Fisheries organized to avoid these stocks as much as possible.
  - FN fisheries were primarily troll on WCVI. Management actions for recreational fishery: bag limits (2/day), conservation corridor and terminal closures on WCVI, and non-retention and closed areas in the Georgia Strait. Commercial fisheries were primarily Area G troll in AABM and Nootka gill net.
- Status: Generally low or near target. Hatcheries provide modest terminal surplus. Lower Georgia Strait and WCVI Chinook remain stocks of concern.
- Total allowable catch for Oct 2009-Sept 2010 on WCVI AABM Chinook:
  - WCVI abundance index: 0.96 pre-season (post-season under review)
  - WCVI Chinook: pre-season 143,700 (post-season under review)
  - Recreational: pre-season 55,000; post-season 52,698
  - FN: pre-season 5000; post-season 5839
  - Area G troll: pre-season 83,700; post-season 79,123
  - Post-season total AABM catch: 137,660
- 2010 ISBM catch:
  - Total FN (including FSC and ESSR): 25,780
  - Total rec (including Juan de Fuca, Georgia Strait, Johnstone Strait; WCVI): 62,840
  - Total commercial (WCVI net): 1740
  - Total 2010 ISBM Chinook catch: 90,360

#### **South coast coho:**

- Abundance based management under PST (harvest constrained based on status of stock groups); domestic fisheries constrained to 3% exploitation on interior Fraser coho.
- FN fisheries primarily terminal harvest of hatchery surplus; rec fisheries generally 2/day; commercial fisheries generally non-retention.
- 2010 status: survivals low in strait of Georgia, but modest improvement observed in 2010; North Van Island – survivals higher in upper Area 12; WCVI abundance varies annually, low abundance in 2010.
- 2010 catch:
  - Total FN (includes FSC and ESSR): 12,230
  - Total rec (includes Juan de Fuca, Georgia Strait, Johnstone Strait, WCVI): 25,760
  - Total commercial (includes WCVI troll, terminal net): 1220
  - Total catch: 39,210

**South coast pink:**

- 2010 off year for Fraser Pinks; limited terminal abundances in mainland inlets systems and Quinsam
- FN fishery catches generally by-catch; rec fisheries supported by net pens in Strait of Georgia; commercial fishery catches generally by-catch in Fraser sockeye fishery.
- Status: Mainland Inlets even year pinks were dominant but in decline since 2004; 2010 return low; Quinsam River returns continue strong; support ESSR and pink net pens.
- 2010 catch:
  - Total FN (includes FSC and ESSR): 71,870
  - Total rec (includes Juan de Fuca, Georgia Strait, Johnstone Strait, WCVI): 8770
  - Total commercial (Johnstone Strait): 196,610
  - Total catch: 277,250

**South coast chum:**

- Johnstone Strait mixed stock chum fishery: target mixed Fraser, Mid-Vancouver Isl., and Puget Sound stocks; 20% harvest; PST lower threshold at 1 million return.
- Mid-Van Island fisheries target Qualicums and Puntledge hatchery stocks and Nanaimo, Cowichan and Goldstream wild stocks. WCVI fisheries target Nitinat and Conuma hatchery stocks and Barkley, Clayquot, and Esperanza wild stocks.
- Status: Forecasts unreliable. Returns generally low in recent years. Johnstone Strait return less than 1 million based on test fishery; fisheries suspended after the first week. Mid-Van Island returns low in 2010; no commercial fisheries. WCVI returns low; fisheries limited to small-bite gill net.
- 2010 catch:
  - Total FN (includes FSC and ESSR): 17,200
  - Total rec (includes Johnstone Strait): 970
  - Total commercial (includes Johnstone Strait, WCVI net, WCVI troll): 76,560
  - Total catch: 94,730

**South coast sockeye:**

- Major fisheries targeting Fraser and Somass stocks. 2010 returns of both stocks far exceeded pre-season forecasts and supported large fishery catches.
- Status: N. Van Island, Nimpkish abundant (other minor stocks low). St. of Georgia, Sakinaw remains stock of concern. WCVI, Somass return 2x forecast (other minor stocks remain low but supported some harvest in 2010).
- 2010 catch:
  - Total FN (includes FSC and ESSR): 306,000
  - Total rec (includes Juan de Fuca, Georgia Strait, Johnstone Strait, WCVI): 76,550
  - Total commercial (includes Area 29 off river, Johnstone Strait, Juan de Fuca): 7,082,529
  - Total catch: 7,465,079
- Somass total return: 1,561,860 (921,860 catch, 640,000 escapement)
- Henderson Lake return: 50,000

**QUESTIONS/DISCUSSION:**

- How were First Nations' recommendations addressed in the IFMP? Also requested a report on the results of conservation measures taken. DFO indicated that info is preliminary at this point. Escapement info will be discussed in presentations, but still waiting for CWT analysis.

DFO committed to constructing a table to identify a) all recommendations received from the Forum process; b) feedback and recommendations from individual First Nations; and c) how feedback and recommendations from First Nations were incorporated into 2010 management.

- Request for a table or diagram showing relative timing of Chinook population returns. DFO produced a calendar of DFO management actions, which helps to show timing information.
- Rec fishers were allowed to retain 55,000 Chinook around Vancouver Island, despite Chinook concerns. DFO discussed the various management actions taken to protect ET Chinook in WCVI and Juan de Fuca (constrain offshore troll fishery, constrain recreational fisheries through offshore conservation corridor, PST 30% reduction of harvest on WCVI, closed areas, non-retention areas, etc.)
- DFO accounts for other users of the salmon resource, e.g. killer whales. Predators are included under natural mortality.
- Concern expressed about IFMP process, particularly the timing, which does not allow for adequate consultation.
- Concern expressed about the inaccuracy of recreational numbers (voluntary head recovery). First Nations are also concerned about having all species under one license, no area licensing, fishing open 24/7, etc. The sport sector is trying to get more halibut quota. Other issues such as the adjacency policy also raise serious concerns. Need to ensure that DFO is not hearing First Nations' concerns. DFO indicated that they have raised these recreational concerns internally (as well as issues related to adjacency policy, priority access, etc.) but that the Forum is not the right place to deal with higher level policy issues and other species. The focus is on Fraser salmon.
- Need to hear from people who research killer whales, as whales are impacting spring 4<sub>2</sub> Chinook.
- Fishing is not just for food, it's a vital part of First Nations culture to use our traditional fishing methods.
- Next tier 1 session: discuss consultation with Fraser First Nations about Island First Nations' access to Fraser stocks.
- Food needs are not being met. DFO is even having difficulty meeting treaty obligations (Tsawwassen caught less than half of their allocated FSC).
- Chum fisheries are based on a conservative harvest rate. No definitive estimate of the return is produced in-season, but test fishery does offer some data. DFO has gone to an approach allowing a modest harvest targeted on a number of stocks, not just Fraser. Catch goes up when the stocks are strong, down when stocks are weak. The allowed harvest rate shouldn't compromise conservation, as it's managed based on an effort limit that accounts for First Nations and recreational catches as well.
- First Nations have suffered a loss of culture because there's no fish. It's an emotional issue, so when answers are not provided right away, it's hurtful. Suggested that providing answers right away would alleviate tension between First Nations and DFO. There is little trust. Trust can't grow while First Nations don't feel that their needs are being put first. Commercial and recreational sectors get so much, while many people in the river are getting nothing. DFO people work hard, but don't have the same emotional investment as First Nations.
- Raised the importance of the fish head for preparing traditional foods; this is a key reason why more heads are not returned to DFO from First Nations for CWT processing.

#### **4. 2010 Fraser River review: Chinook, coho and chum (Jamie Scroggie)**

**Fraser Chinook:**

- Fraser Chinook stocks overview:
  - Spring 4<sub>2</sub> escapements close to brood levels (Nicola esc was 4,722).
  - Spring 5<sub>2</sub> averaged 94% of brood year (some stocks better, others remained poor)
  - Summer 5<sub>2</sub> averaged 96% brood (returns patchy and many failed to meet brood esc levels; some stocks declined steeply)
  - Summer 4<sub>1</sub> returns strong, marginally exceeding previous record esc of 2006
  - Preliminary estimates for some Lower Fraser spring Chinook returns improved
  - Summer 4<sub>1</sub> had strong return exceeding parental brood year
  - Lower Fraser fall Chinook had improved returns
- Management actions:
  - Renegotiated PST chapters with specific focus on Chinook
  - Significant reductions in southeast Alaska (15%) and WCVI (30%) fishery areas
  - Guidelines for north coast harvest reductions based on status of key stocks, but domestic conservation objectives may constrain harvest
  - Effects of new PST harvest reductions implemented in 2010 season will not be assessed until April 2011
  - Range of stock-specific management actions also implemented.
- 2008 and 2009 management:
  - Measures taken to reduce exploitation rates on ET Chinook: FN opportunities for FSC reduced, delayed start to the season, and voluntary closures in some areas; rec fishery had size restrictions and partial MSF (e.g. hatchery) in Juan de Fuca, non-retention of Chinook off the mouth and inside Fraser; Area G troll had a 2 month closure in SWVI (area 123/124) and cap on overall catch/effort levels in SWVI and NWVI. No spring 4<sub>2</sub> CWTs encountered in 2008 and 2009 in Area G.
  - In-season abundance assessment of spring 5<sub>2</sub> and summer 5<sub>2</sub> Chinook with management actions to maintain spawner abundance over 30,000. Actions in 2008 but not 2009 (populations were above 30k); methodology approved by CSAP (PSARC).
- 2010 management:
  - Shifted from an ET focus to Spring 4<sub>2</sub> management
  - In-season abundance assessment of Spring 5<sub>2</sub> and Summer 5<sub>2</sub> Chinook continued; however, the zoned approach would warrant management actions at an estimated terminal run at or below 60,000.
  - Any additional management actions to protect Spring 5<sub>2</sub> and Summer 5<sub>2</sub> may also protect Spring 4<sub>2</sub>
- Spring 4<sub>2</sub> mortality:
  - Overall reduction in exploitation by approx 20% in 2008. Reduced from average of 42.9% in 2006/07 to 24% in 2008.
  - No current CWT indicator stocks for spring 5<sub>2</sub> and summer 5<sub>2</sub> management units; however, substantial timing overlaps with spring 4<sub>2</sub> Chinook.
  - Increased exploitation in 2009 to 53.7% in Canada. 2009 management designed to protect ET Chinook, and no additional actions taken for spring/summer 5<sub>2</sub> based on in-season abundance at Albion.
  - Management actions shifted in 2010 to include more stocks than ET Chinook (spring 4<sub>2</sub> MU). Also, there was no sport fishery at the mouth of the Nicola in 2010 (unlikely for that to occur in 2011 also). Additionally there were 5<sub>2</sub> spring and summer management actions that will likely benefit the spring 4<sub>2</sub> aggregate.

- CWT results will be available in April 2011.

**QUESTIONS/DISCUSSION:**

- Data display in pie charts is misleading. Request that data be displayed in a different way. DFO indicated that they changed the pie charts this year to the format recommended from the Forum meetings in 2010. Agreed that the pie chart is confusing because it tries to capture 2 different statistics in one diagram. DFO will discuss this in the JTWG and will make a change to how data is displayed.
- Regulation changes occurred in 2008, resulting in reduction to exploitation. How is success measured in terms of meeting conservation goals and distribution of priority? First Nations would argue that the “brunt of the burden of conservation” policy is not the right approach. But if DFO is using the “brunt of the burden” model, how do we implement it, and how do we measure to evaluate it? DFO indicated that based on the management actions taken in 2010, don’t expect to see the same impacts in 2010 as 2009, but the 2010 data is not yet available. In 2009, the data doesn’t suggest that the brunt of conservation was borne by recreational and commercial fisheries; DFO was surprised to see this.

**5. Strategy for southern Chinook management framework (Brent Hargreaves)**

- DFO is developing a new management framework for southern Chinook (need to rebuild).
- Chinook status is poor, declining since the 1990s, and not improving despite management measures to reduce exploitation (affecting FSC opportunities).
- DFO will consult First Nations and stakeholders on the development of this new framework.
- Objective: develop a management response to the decline in productivity of Southern B.C. Chinook salmon.
- Key considerations: Develop a short-term plan to provide stability. Develop a longer-term plan to respond to the decline and promote rebuilding.
- In the short-term, existing management processes will be used. For the longer-term objective, need to assess the status of stocks, enhancement, habitat, climate trends, fisheries management, and research. Then identify and evaluate options and tools, and create and implement an action plan.
- First Nations, commercial and recreational harvesters and conservation groups want to be directly involved in development and implementation. DFO plans to use existing processes as much as possible for technical input and consultation.
- Initial work:
  - DFO develops discussion paper (Jan-Feb 2011)
  - Assess status (Feb-Nov 2011) – Chinook stock status workshop proposed
  - Objectives: identify current state of knowledge, status of Chinook CUs, prioritize CUs, identify knowledge gaps and research needs, development of working paper for CSAP (Nov 2011).
- Subsequent work:
  - Identify options and tools to respond (2012) – provide stability and continuation of management actions similar to 2010 in the short term
  - Evaluate options (2012)
  - Develop action plan (2012 or 2013)
  - Implementation and review (2012 or 2013)

- Timeline for consultation: technical workshop on stock status (winter 2011); consultations (winter/spring 2011); short-term response (2011); longer-term response (2 years).
- Schedule for engagement includes workshop, consultations, IHPC, Forum and other meetings with First nations, SFAB, CSAB/Area Harvest Committees, and other meetings as requested.
- Forum advice to DFO:
  - Proposed technical workshop to assess Chinook status – does the Forum agree with this approach, and timing of workshop? Need to identify First Nations participants.
  - Chinook status working paper for CSAP in Nov 2011 – participation/contribution by First Nations (potential co-authors)?
  - Identify other ways that First Nations want to be involved in the development of the Southern B.C. Chinook Management Framework.

**QUESTIONS/DISCUSSION:**

- Suggested that this new Chinook plan should be addressed by the JTWG and FWJTF before First Nations at the Forum provide input.
- First Nations have been saying for years to stop fishing endangered stocks and let them recover. DFO expressed that to stop fishing altogether is a simplistic response, and it won't work because Chinook travel up river with other stocks (would lose harvest opportunities on healthy stocks) and other species, such as sockeye.
- Who will fund this initiative? DFO will fund it to the extent that they can; however, the more groups that can participate, the faster and more effectively the project can get off the ground.
- Appreciation was expressed for DFO's efforts to engage First Nations at an early state of project development. Also encouragement for First Nations on the Fraser to establish a permanent technical process at the Tier 2 level.

## 6. 2011 Salmon Outlook (Jeff Grout)

- Lower spawner abundance is associated with the 2011 return; therefore, low abundance is expected for 2011.
- Sockeye outlook: returns moderate to near target for major stock groups. Stocks of concern include Early Stuart, wild Skeena, Cultus, Georgia Strait, Johnstone Strait and WCVI.
- Chinook outlook: Stocks of concern include Georgia Strait wild, WCVI wild, and Fraser stream-type (including Birkenhead). Fraser early-timed and spring/summer stocks (4<sub>2</sub> and 5<sub>2</sub>) are declining rapidly. Large abundance of Fraser fall run ocean-type stocks (4<sub>1</sub>).
- Coho outlook: improved survival in recent years. Stocks of concern include Thompson, upper Fraser, lower Fraser, and Georgia Strait.
- Pink outlook: Central and north coast brood escapement good, above average returns expected. Strait of Georgia and area 11/13 returns highly variable (moderately low to near target). Above average returns expected for the Fraser.
- Chum outlook: forecasts highly uncertain. Stocks of concern include Skeena/Nass and coastal area 5/6. Stocks in the south coast at or below target.
- Chinook AABM fishery abundance: 2010 pre-season values near 1979-1982 average for northern BC and WCVI. 2011 pre-season expectations for north are similar to 2010 and WCVI, about 15% lower than 1979-1982.
- Observations for 2007-2009 sea entry years:

- 2007 sea entry resulted in very low survival for several stocks (most Fraser sockeye, Fall-lower Fraser Chinook, Interior Fraser and lower Fraser coho)
- 2008 sea entry resulted in high survival for several stocks (Fraser pinks, Somass and Fraser sockeye, Fall-lower Fraser Chinook); low survival for late summer-south Thompson Chinook, spring-lower Thompson Chinook, mid/upper Fraser, Thompson and lower Fraser coho.
- 2009 sea entry had favourable conditions, but less than 2008; low survival for late summer-south Thompson Chinook.
- Improved survival conditions may have contributed to increased abundance for some (e.g. Fraser sockeye) but not all stocks (e.g. WCVI Chinook).
- Despite relatively improved ocean conditions in 2008 and 2009, many BC salmon populations remain depressed due to low numbers of brood-year spawners, partially attributed to survival and production during the mid 2000s.
- A table of management actions was distributed by DFO; it was proposed that the 2010 plan be the starting point of what will take place in 2011.

#### **QUESTIONS/DISCUSSION:**

- There are data timing challenges working with Chinook. CWT was confirmed to be the best tool coast-wide for assessing Canadian and US Chinook stocks (expert panel report). DNA may be a useful tool in the future, but CWT is currently the most accurate. However, have to collect heads, process, etc. Sometimes have to wait 2 years for data. Canada has tried micro-satellite, snips, and other DNA methods, but not enough confidence in those methods. DNA is sometimes used to enhance CWT data.
- DFO does not have a tool that directly measures success on meeting priority.
- It was suggested that First Nations should monitor and retrieve/process heads from recreational fisheries.
- Mandatory head recovery for recreational fisheries would require a complete program redesign, require resources to maintain depots for heads, etc.

## **7. Sockeye 2010 Review (Ann-Marie Huang)**

#### **2010 sockeye pre-season:**

- Early Stuart:
  - Forecasted run size was 26k (p25) to 66k (p75), median (p50) 41k
  - 2010 is the first of 3 weaker cycles
  - Brood year had 15,900 spawners (close to average for this cycle)
  - Window closure to protect 90% of the run
- Early Summer:
  - Forecasted run size was 374,000 (p25) to 1,601,000 (p75), median 783,000 (p50)
  - Bowron brood year escapement <25% cycle average
  - Half of stocks forecasted to return at less than the cycle average
  - Dominant cycle for Scotch and Seymour
  - Weak Early misc. component; goal was to limit exploitation to 25%; Early Stuart window closure extended by one week to protect.
- Summer:
  - Forecasted return was 1.6 million (p25) to 4.3 million (p75), median 2.6 million (p50)
  - Brood year escapement (2006) roughly half of cycle average

- Large number of smolts observed leaving Chilko in 2008, similar to 2005 brood year; low survival rate was experienced by other stocks as well, so the exceptional number of smolts was not a likely cause for the low return in 2009.
- Lates:
  - Forecasted run size (incl. Birkenhead) was 5 million (p25) to 12.3 million (p75), median 8 million (p50)
  - Escapement in 2006 was below cycle average
  - Dominant cycle for late Shuswap
  - Cultus Lake sockeye – forecast similar to cycle average; large component of forecast is due to enhancement
  - Continued uncertainty around marine timing and in-river mortality in late stocks

#### **2010 sockeye in-season:**

- Early Stuart: final in-season estimate 105,000
- Early summer: final in-season estimate 3,800,000 – larger and later than expected
- Summer: final in-season estimate 5,200,000 – run a little larger, and later than expected
- Late: final in-season estimate 25,441,000 – much larger and later than expected. Many held in the Gulf prior to entering the river.
- Total in-season estimate for sockeye: 34,546,000
- All run-timing aggregates later, and higher than forecast. Forecasted high temperatures did not materialize, so appropriate pMA was uncertain. Recorded catches in test fisheries increased the uncertainty in assessments.

#### **2010 sockeye post-season:**

- Preliminary catch estimates: Recreational 289,000; Commercial 10,450,000; FN FSC marine 306,000; FN FSC Fraser 540,000. Canadian catch total 11,585,000. Test fishing 80,000; US catch 1,970,000. Total catch 13,635,000.
- Preliminary exploitation rate estimates: Early Stuart 6%; Early summer 33%; Early misc. 14%; Summer 45%; Late 40%; Cultus 37% (max exploitation for Cultus was changed in-season to reflect recovery objectives).
- Preliminary FN catch: Marine 306,000; Lower Fraser 1,220,000; Interior 450,000.
- Total Fraser sockeye escapement goal was 13,881,400; predicted escapement 15,852,990.
- Final in-season run size estimate is 34.5 million. There are preliminary indications that final in-season run size may be high (by approximately 5 million fish, using very preliminary in-season information); however, the FRP chose not to revise the official run size until additional spawning info was available (spring 2011). Any change to run size will mostly affect the late run.
- All run-timing groups exceeded pre-season 50p forecast. Highest return on record since 1913. Significant catch opportunities for all sectors.

#### **QUESTIONS/DISCUSSION:**

- No information available yet on en-route mortality. Harrison had relatively small pre-spawn mortality, Nadina had higher mortality in the first week. These are the only locations where pre-spawn mortality was observed.
- Seymour River had the largest rain and flow events; might have lost the entire spawn.
- No enumeration on sockeye in Semiahmoo and rivers in that area; coho and chum data will be available later in the year.

- Forest fires did not greatly affect enumeration at Nadina. DFO was able to make arrangements with firefighters to go in by helicopter. Might have been able to avoid the earlier mortality if the flow at the fence could have been changed. Staff was there regularly, every 3 days. Might have to do some calculations to extrapolate the available data, but it was better than they thought they would accomplish (80% accuracy vs the expected 65%).
- Numbers for sockeye enumeration will be available after the PSC meeting in Portland. DFO will send it to Aimee for distribution after February 18.
- Communities up river have not had a food fishery on Early Stuart in years. FSC fish are still very scarce.
- Want to have a Forum meeting in the north (Prince George?); this will be discussed by the Forum Planning Committee.