

RIVERS SMITH SALMON ECOSYSTEMS PLANNING SOCIETY

SUMMARY OF MEETING

March 10, 2009

9:30 a.m. to 4:00 p.m.

Airport Inn

Port Hardy

Present:

David Stevenson, Misty MacDuffee, Karl Wilson, Cindy Hanuse, Ted Walkus, Sandie MacLaurin, Julian Sturhahn, Rick Routledge, Frank Whitney, Vern Sampson

1. Coordinator's Report:

David gave a brief update on the status of RSSEPS. The RSSEPS financial records have been reviewed and the summary financial statements have been accepted by the Management Committee. It was agreed at the Management Committee meeting that surplus funds from 2007 and 2008 would be transferred to 2009 projects. The balance of \$9,600 will be used for the Johnston Coho Enhancement Project. The balance of \$8,600 will be used for the Nekite Chum Mark Recapture project. Other funding may come from the Sports Fishing Lodges and the Community Salmon Project of the PSF. This project may need to be downscaled due to the smaller amount of funds available.

The Northern Fund Committee is scheduled to meet in April to review the status of the fund investments and will determine whether they are in a position to fund projects in 2009. We have applied for funding for the Johnston Creek Coho Enhancement project and the Nekite Chum Mark Recapture Project Phase 2. The Tula Foundation has agreed to fund the Coordinator's position for one more year.

We continue to work on the development of the Wild Salmon Policy as it relates to the Rivers Smith stocks. We had one meeting on developing benchmarks but we have had to wait for a PSARC paper by DFO staff on benchmarks. Misty and Aaron Springford have continued to work on an alternative salmon management model. Their paper will be circulated when it is available. The proposed projects for 2009 include:

- stage 2 of the Nekite Chum Enumeration project,
- stage 2 of the Johnston Creek Coho Enhancement project,
- habitat assessment of all watersheds in Rivers and Smith Inlets
- further support of the marine use planning process.
- development of benchmarks for the Wild Salmon Policy
- development of a watershed strategic plan for Rivers and Smith Inlet

Action #1 David to circulate the final Nekite Chum Phase 1 report.

2. Central Salmon Stock forecast for 2009

Julian gave an overview of the stock abundance outlook for 2009 for the Central Coast.

Chinook:

- Ocean-type chinook stock returns in 2009 continue to be influenced by poor early marine survival in the spring of 2005 (returning as 5.1's)

- Wannock chinook fall into this category. 2008 age data indicated a very low contribution of age 4's and there is some concern for the age-5 female component returning in 2009. The majority of ocean-type females return at age 5.
- Reconstructed deadpitch return data at age back to brood year to look for a sibling relationship between 4's and 5's. If a reliable relationship existed we may be able to predict returns of 5's based on the previous year 4 returns. The regression failed to demonstrate a meaningful relationship. This is not surprising as even in the North where very good catch and escapement data (Kitsumkalum) are available, the sibling relationship is weak.
- Looking forward to 2009, we expect a decent 4-yr old component from a good escapement in 2005(index of 4500), however, there may be a lower than average 5-yr old female component.
- Additional management options to reduce Wannock harvest for 2009 were discussed at the recent CCSFAB meeting and no additional measures have been determined at this point. The current economic situation is likely to have a significant impact on sport fish angler effort and some central coast lodges are reporting a decline of up to 40% in bookings for the coming season. This is expected to result in lower central coast recreational chinook catch. In addition, a 15% harvest reduction in the SEAK fishery will begin in 2009. The WCVI troll harvest reduction will be 30%.
- Atnarko Chinook-
 - After a lower than average return in 2008, we are expecting a better return in 2009 with higher brood year contributors of around 17,000.
 - The Sentinel Stock Committee of the PSC has approved funding for the Atnarko River as a North Coast exploitation rate indicator. This program will include a juvenile component to better establish the various life history strategies present, increased enhancement and marking efforts, an intensive mark recapture experiment and a sampling program to determine CWT mark rates in all terminal fisheries.
- Dean River Chinook-
 - Returns from the 2005 sea entry year are complete for these stream-type chinook and we anticipate an average return of approx. 3000 in 2009. A low return of 1100 in 2008 is attributed primarily to the 5.2 dominant age class which migrated to sea in the spring of 2005.

Sockeye:

- Continue to see declining return rates in the Central Coast.
- Smith Inlet returns in 2008(16K) were very disappointing considering the large brood year return of 179K in 2003. We are now heading into several years with lower brood year contributions and if survivals remain low, escapements may decline further.
- The 2009 forecast for Smith Inlet sockeye is 16K with a target escapement of 100K.
- The 2009 forecast for Rivers Inlet sockeye is 111K with a target escapement of 200K.
- Atnarko sockeye return in 2008 was poor with an index of escapement finalized at 900 fish. Assessment activities will increase in 2009 with more on the grounds effort to establish distribution of spawners. Consultation with the Nuxalk will continue as strategy

is developed to determine the best course of action in response to the population decline. A STAD draft paper summarizing the background and historical data will be available shortly.

Coho:

- 2008 returns were poor throughout the Central Coast with Smith Inlet being the only bright light (6900). The 2009 return could be lower as the 2006 BY was only 3400. Typically these coho return as age 3.2 GR.
- Atnarko tower coho count (4K) was the lowest in 10 years. A low 2006 brood year isn't expected to provide much improvement in 2009.
- Sea entry conditions are believed to have been poor in 2007, although better than 2005. On a brighter note sea entry conditions observed in 2008 look significantly better. It should be noted that improvements in marine conditions won't be reflected in improved returns for several years.
- Coho were difficult to find in many of the streams we enumerate annually. In an effort to reduce commercial exploitation in the northern fisheries, all of the Central Coast areas are now closed to commercial coho retention including Areas 6-10 and 106-110. It is hoped these efforts will reduce pressure on these stocks allowing them to rebuild. In addition, sport limits for coho will be reviewed in the near future to determine whether these should be reduced.

Chum:

- 2009 returns are expected to be improved over 2008 especially in Area 8 with potential surpluses having been identified in the Post Season Review document.
- An abnormal flood event in the fall of 2004 combined with poor early marine conditions in 2005 contributed to recent poor returns.
- The Nekite chum mark-recapture program was successful despite a lower overall return and this project is expected to continue in 2009 with support from the RSSEPS group.

Pink:

- 2008 returns showed an improvement over 2006 and we expect an improvement in 2009 over the 2007 returns. Better ocean conditions should be reflected in this fall's returns.
- It should be noted that pink return rates have been highly variable.

3. Wannock Chinook

There was some discussion about the report that Northern Pollock fishery includes the by-catch of thousands of Chinook. In addition, the QCI sports fishery catches about 1100 Wannock Chinook each year. This is about twice the volume caught in Rivers Inlet. It was suggested that since the QCI lodges catch twice the Chinook of the Rivers' Lodges then they should contribute some funding to the Wannock Chinook egg-take costs.

4. Salmon Stamps

Each year, the Pacific Salmon Foundation works with Fisheries and Oceans Canada to produce the Salmon Conservation Stamp. An angler wishing to retain any species of salmon must purchase and affix a stamp to their license. A portion of revenues from the sale of these

stamps is used to fund salmon restoration and enhancement projects supported by the Foundation. Some of this money is used to fund the Community Salmon Program. This money goes to NGOs who have a large volunteer component to their salmon projects.
Action #2 David will forward information on the PSF salmon stamp to all members
Action #3 David and Sandie will explore the possibility of applying to the CSP for help in funding the Johnston Creek Coho Enhancement project.

5. Johnston Creek Coho Enhancement project:

There was support for moving remaining funds from previous projects to contribute to the Coho project. Sandy outlined budget, where shortfalls were and where some funds can be anticipated. There is enough funding to complete the 2007 brood release and rear the 2008 brood to June 2009. The challenge is to complete the 2008 brood
16,000 parr will go into net pens in Johnson Bay for release in May 2009-03-17
30,000 will go into net pens for release in 2010. David will work with Sandie to develop a funding proposal to the Community Salmon Program. The Rivers Inlet North Coast salmon Enhancement Association is in full support of this project will probably contribute some funding. DFO may be able to donate the coded wire tags. The project still looks doable. The project need to operate for 3 years so funding is needed for the 2009 brood egg take.

6. Salmon Productivity Models:

Misty discussed Productivity Methodologies, and the need to move ahead with the Wild Salmon Policy. She and Aaron Springford have developed a paper on which examines current fisheries management strategies. The paper analyzes the Maximum Sustainable Yield (MSY) model for calculating salmon populations. There is some concern that past approaches neglected predator needs and overlooked the role that 'surplus' salmon played in maintaining the conditions that allow this apparent surplus to be produced. As a result, some would argue conventional fisheries models are often useful only in the short term. The final paper will be circulated when it is available. She recommended that we review the productivity report done by Doug McCorquodale: Productive Capacity of Salmonids in the Owikeno and Long Lake Basins as a basis for our work on establishing benchmarks for Rivers and Smith Inlet salmon stocks. Julian commented that the productivity models should be biologically based and ecological values can be added after. Benchmarks are a measure of stock population status and they may be different from traditional DFO target escapement numbers. Misty proposed that we conduct a workshop on benchmarks to evaluate these different approaches to establishing benchmarks. Their final paper will be circulated when it is available.

Action # 4 David will circulate the paper when it is available.

Action #5 Misty and David will work on the plans for a benchmark workshop.

7. Wannock Chum

There was some discussion on the Wannock Chum. Previous efforts to find any Wannock Chum have failed. The population has drastically declined. There were 2 Wannock Chum found in the dead pitch. We have previously looked for a replacement population with no success. It was agreed that more effort should be made to find Wannock Chum for a captured brood program. It was also discussed that we should have a concerted effort to find juvenile chum and either mark them or catch them for a captured brood stock program.

8. Early Marine Survival

Sandie asked Rick for clarification of his previous report. Rick explained that phytoplankton blooms in Inlet were early in spring 2008 (early April) vs late in the spring of 2007 (late April). Too much fresh water in the Inlet dilutes the salt water and inhibits nutrient production resulting in very little phytoplankton production in upper 5 m. Sunlight and silt are important for the nutrients needed in the top 15 m of the water column. The rate of smolt out migration is dependent on food availability. The March-April discharge levels are the best predictors of survival:

⇒ low discharge in March- April ⇒ good survival

⇒ high discharge in March –April ⇒ poor survival

In 2008, after the first big plankton bloom, freshwater outflows flushed the inlet, and it took about 3 days to recover conditions for plankton growth. Strong winds and cold water lead to poor plankton growth

9. State of the Ocean:

Frank Whitney, former DFO Oceanographer, gave a presentation on his research into Oxygen levels in the ocean. The following notes were recorded:

Diatoms (vs other phytoplankton) drive high trophic level production (larger fish)

Chlorophyll relates to fish biomass. You can get annual chlorophyll data from SeaWiFS web page. Strong chlorophyll blooms lead to high nutrient levels which have a high correlation with fish yields. The purpose of the Sea-viewing Wide Field-of-view Sensor (SeaWiFS) Project is to provide quantitative data on global ocean bio-optical properties to the Earth science community. Subtle changes in ocean color signify various types and quantities of marine phytoplankton (microscopic marine plants), the knowledge of which has both scientific and practical applications. The SeaWiFS Project will develop and operate a research data system that will process, calibrate, validate, archive and distribute data received from an Earth-orbiting ocean color sensor.

In strong El Nino years, waters below the sub-arctic front move into the salmon region
In 2008 there was a lot of cloud cover in May June, with very cold conditions. Chlorophyll bloomed but it was very late and created a mis match between chlorophyll production and zooplankton production, leaving no food for zooplankton production.

In general, coastal upwelling occurs when winds from the north push water away from the coast which allows deeper nutrient rich waters to move into the coast.

In the strait of Juan de Fuca there are lower salinity levels (about 31 ppt) due to freshwater inflows (Fraser, Skagit etc).

Freshwater has high silicate content, the more freshwater runoff from the land then the more silicate, there is and there is more diatom production. But phytoplankton production needs the sun and higher salinity conditions off WCVI, which is where the blooms occur. When silt is low, sunlight penetrates further. Most of the phytoplankton production is in the top 15 m.

Tidal mixing and tidal upwelling are important coastal processes

Estuarine circulation takes the nutrient poor waters out on the surface, and brings the cold, nutrient rich, higher saline waters in on the bottom

Decreased River flow \Rightarrow decreases the flushing \Rightarrow decreases inflow circulation in the bottom of the inlet

The importance of Oxygen:

Summer upwelling of low Oxygen waters leads to hypoxia, as the depth of the current is inhibited. This can cause death of marine life, for example there was a huge mortality of Oregon crab in 2006. The hypoxic threshold is about 20% O₂ saturation (anything less is inhabitable to most marine life). Oxygen enters the Pacific from the eastern Arctic, Siberian winds drive circulation, takes 10 -15 years to reach the BC coast. Global warming has altered wind and precipitation patterns. As a consequence more freshwater from increased glacial melt, means more evaporation in subtropical water.

Since dam construction on the Columbia rivers in the last 30 years +, Columbia discharge now flows North in the winter (in summer still flows south). This is creating a weaker supply of O₂ in the winter. Measured declines in Oxygen have been occurring over the last 25 years at a loss of about 1% year.

Ground fish populations are losing their deep sea habitats, and are migrating north (for example Hake) this puts pressure on other species for food and predation.

They are not expanding their range, it is outright displacement of habitat. They are moving their range out of the hypoxic waters and into tolerable waters.

Biomass overall is declining much faster than can be explained by the fishery

Ocean acidification is also occurring as well as oxygen depletion.

Bacterial consumption of oxygen, is contributing to more CO₂, lowering PH. This inhibits shell formation of coccolithifors and other calcium forming plankton. The long term effect on coral reefs will be negative.

10. Habitat Indicators

There was some discussion on the need to identify habitat indicators as part of overall habitat planning for Rivers and Smith Inlets. Cindy reported that the Tula Foundation is interested in funding a habitat monitoring program for Rivers Inlet/Owikeno Lake. Discussion of habitat indicators included: identifying habitat indicators such as the length of logging roads, making use of Data Loggers for consistent temperature monitoring, identifying any fish barriers, and major events such as landslides.

There was some concern expressed that a Habitat Monitoring plan should also identify economic opportunities such as trout fishing and bear watching. It may also provide opportunities for partnerships with lodges. The habitat assessment would also make use of Traditional Ecological Knowledge. Ted Walkus talked about the Wuikinuxv plan to have all of their streams BC classified with Rod Days being owned and leased out by the Wuikinuxv to anglers. He felt there was a huge economic opportunity there. Sandie mentioned that the *Bella Coola Watershed Based Fish Sustainability Plan* would be a good model to use in developing a Rivers/Owikeno Habitat Assessment project. Cindy said they would try and coordinate the habitat assessment project with work being done by Brian Hunt of UBC and Rick Routledge of SFU.

The meeting was adjourned at 3:30 p.m.