



Rivers and Smith Salmon Ecosystems Planning Society

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MINUTES OF MEETING

April 21, 2004

9:00 AM to 4:00 PM

**Hampton Inn, Point Grey Room
Vancouver**

Present : Doug McCorquodale, Rick Routledge, , David Stevenson, Sharon Chow, Alex Chartrand, Frank Hanuse, Nigel Haggan, Gary Taccogna, , Jonathan Hepples, Bruce Burrows (by phone), George Cronkite

Review and confirmation of Agenda

The agenda was introduced by the Chair, David Stevenson and was accepted as presented.

Agenda items and Discussion

1 Hydro Acoustic Enumeration - Wannock River presentation by George Cronkite:

George Cronkite presented his report on the work he has done on using the hydro acoustic equipment to enumerate salmon. He set up the equipment at the head of the Wannock. He also tried it at two other sites. The First Narrows site was not a good site as it was too noisy and too busy. The Third Narrows site had the same problems with fish moving and milling back and forth. Mixed species showing up also posed a problem. The Wannock site showed more potential. One problem is to determine fish numbers when there is the milling of the fish as some do not go straight through the beam but hold and go up and down. The equipment tracks the migrating fish. George was asked: how he can track the fish performance outside the beam and how does he determine species composition.

. He explained that it should be possible to figure out how long they mill. The Didson imaging equipment would be useful to measure fish migration as well. You can see the actual fish like on a video. Tagging studies can also be used but they are expensive. When you ignore the milling fish and only count the migrating fish, you get an index of the number of fish going up. 75 % of the river is covered by the beam. George was asked how he accounts for the overlap sections (displayed on the slide) and water levels and dead zones . He presented some numbers from 2002 which monitored one bank only. His data shows that there were 174,000 migrating fish. In 2003, almost 40% of the fish traveled the left bank. In 2003, his data showed 340,000 fish of mixed species ,using both banks for counting.

Could the beam pick up smolts migrating downstream? No the beam is set higher to avoid smolts. There is no way to confuse fish with smolts or seals. An acoustic count has limitations. It cannot give an exact count of sockeye in the river. No technique can do this. It can give a timely in season estimate of the minimum run size, timing of the run, strength of the run and detect behavioral features of the run.

While visual counts from river walks can be approximate and inaccurate they are still needed to augment the information from the hydro acoustic count for now. Also test fishing is needed with acoustics to determine species composition.

Because George will not be available for the 2004 season, a general discussion followed on different strategies to make use of the equipment. He suggested that using a drift net at the site would improve numbers on species composition. There was a general discussion on equipment purchase, personnel training, the transfer of operations and responsibilities involved. Also, the person that he trained over the last two years would be essential this season. The DFO group that George works for is not an operational group, they develop the technology and then hand it on, but they are available for consultation. How extensive is the training required to run this equipment? You need two people to do it. Operators need both field skills and computer skills and a grasp of acoustics. Last years operator, Dave can set it up an run it this year.

Alex asked if a weir can work on the Wannock. George said it would not be practical; it would be too expensive. Discharge of water is too variable and there is too much debris coming down the system. We need to look for ways to increase the accuracy of the count. Nigel asked about the quality of the equipment used elsewhere - is there better technology available? George said no, the Wannock is a tough system and there are not many options out there. The number is an index, but indexes are important. An index for the Wannock would be useful. Is the Didson imaging equipment possible this year? George answered no as he would be too busy to operate it. If new technology comes along can we adapt it and can we still use the data in a new system? George said that people are reluctant to use new technology because it undermines the validity of their previous data. So you need to continue with spawning counts and test fishing as well. Some questions followed: How reliable is the data that George produces? How many fish are milling? How long do they mill? What percentage of the sample is milling fish? George said it is very difficult to answer. If the fish mill there is an energy cost - how long can they afford to mill there? Underestimates are possible and over estimates are possible. George is currently writing a paper on the analysis of his data. It will go to PSARC for validation. Jonathan pointed out that from the Stock Assessment point of view, hydro acoustics is well proven technology and the data is reliable. There was some discussion of the validity of the technique.

Alex asked about other locations for the hydro acoustic equipment. George said the Wannock location was the best. The cost to purchase the equipment would be about \$150,000 for both systems. The locations at First Narrows and the Third Narrows present real problems. Species composition and species milling is a problem in those sites. There is no direct migration there.

We need to determine if we can we do it this year for \$50,000 and we need a plan for subsequent years. Bruce said that we need to get a commitment from last years equipment operator, Dave, to work for a couple of years and at the same time train someone from Wuikinuxv to replace him.

A question was asked about the maintenance costs. Maintenance costs of the equipment are zero; the annual operating costs are approximately \$50,000. Are there other uses for this equipment? It can do ocean work, but it is not very portable. This year will be more demanding on Dave the operator and he can't be pressured for numbers on a daily basis. We need to confirm the hydro acoustic project for this year' budget. There is time to plan for future years. We need a plan for the future to justify the costs to DFO. Doug expressed a concern about how long the technology would last.

Alex explained that there were some things happening at the political level for the Wuikinuxv. He asked if this table was willing to go further to develop on going strategies for both the Smith and Rivers Inlets. Their treaty negotiations are proceeding and they expect an AIP in one year. Coastal FN are developing marine use plans that may move the plans of the RSSEPS to a different level. More funding will be needed for the future. He said that we should look at ecosystem management as a whole. The Wuikinuxv Chief and council are looking for more activity from the RSSEPS and there is a need for the budget to be increased. He asked for a long term strategy based on the whole ecosystem. The Wuikinuxv have asked Nigel to work with them to develop higher level plans. Some coastal FN are working on marine use plan in conjunction with the Turning Point Initiative. Eight FN will start marine use plans very shortly. How this will impact the RSSEPS mandate to implement a recovery plan for the salmon needs to be discussed. Nigel said that we need an ecosystem approach not a project approach. He is producing a paper on this for the Wuikinuxv, which will be available in 2 weeks

2. 2004 Sockeye egg take

A discussion paper prepared by Sandie was presented by Gary. There was discussion on the decision rules that would govern the DFO decision to implement an egg take.

The decision to do an egg take would be based on the size of the run. There is not a lot of confidence in the numbers used in the paper. How are escapement estimates calculated? They are derived from data collected on streams walks times a multiplier to get a total escapement and then 5 year average models are used to determine what the escapement will be based on 4 - 5 year run timing. What assumptions did you make on the ocean survival? 4.5% was used. Limited Reference Points (LRP) are the numbers below which the stock is at risk of extirpation.

This is year 5 of the enhancement program which was planned to be a 5 year program. Funding for it ended last year. So DFO is looking for money elsewhere. There are no plans beyond this year to enhance the Owikeno stocks. It is important that the Sockeye enhancement program be evaluated to determine its success. This will require an increased dead pitch count this year to try and "recapture" the otolith-marked fish. The anticipated run size for this summer is poor Decision Rule #1 was discussed.

If we get the 215,000 escapement (i.e. 50% of the management target) for the whole system and one run was weak the DFO would still do the egg take.

Decision Rule #2 was discussed

Doug asked how the numbers would be determined if you don't have the reliable numbers from turbid systems? Jonathan answered that they look at the forecast and look at anecdotal on site information. If total forecast is less, we would take action. He explained how the rule would work. If the whole system is low and returns to some creeks are good, you decide on the

individual creeks. There is a need for experienced people to do the stream walks. Also you can do a Area Under the Curve analysis to get some idea based on the stream walk data. Rivers like the Shumahalt are very difficult to monitor because of the turbidity..

Alex: asked how the LRP numbers are arrived at. Jonathan explained that the minimum habitat spawning capacity and the habitat rearing capacity are used to determine the LRP. The LRP is not the same as the capacity of the system. 435,000 fish is the maximum yield unit of the whole system. Bruce argued that the Recovery Plan has over 1 million fish as the management target. He said that using 30% of LRP was not good enough. If the system is managed as one stock then 30% of LRP is not enough as individual streams may fall below the 30% and not be enhanced. They need to be managed as if they were separate stocks. Jonathan said the there was no genetic difference in the different sockeye stocks in Owikeno Lake.

Gary said that if we look at the behaviour of the different populations they do behave differently. He said we treat them as separate stocks for the egg take. Maybe we need to eliminate the 30% criteria from Rule # 2. A discussion of egg take numbers and how the rules would be applied followed.

Bruce said that his concern is with the 1999 sockeye run. If it is divided equally into 4 and 5 year olds in the Genesee, then you can get down to 50 fish and not do anything. He asked how the 30% number was arrived at. Jonathan replied that they were determined by other DFO biologists Hopi or Wood. Bruce asked if we could we remove the trigger number of 30% from the Decision Rule # 2 and go with the LRP number. The answer was yes we can.

After discussion, consensus was arrived at to remove the 30% trigger point and go with the LRP number only.. The Sockeye Strategic Enhancement (SSE) program needs to be evaluated and that is why we are emphasizing evaluation this year. There was discussion on whether hatchery enhancement can have negative impacts. A discussion of other hatchery experiences like in Alaska followed. They do sea ranching up there and catch there own fish in terminal fisheries. Alaska fish are doing well but they have better marine conditions. Discussion continued.

Rick suggested that we need a meeting of hatchery biologists to talk to us on hatchery impacts and we need a discussion of LRP numbers as well. He asked for a review of the Owikeno escapement targets. Gary said the time to do a review would be in the in the fall and it would have to go through PSARC so next spring is a more realistic time for a review of the LRP numbers.

Bruce asked how big the egg take is going to be this year. He wants to take as many eggs as possible. Gary said we need to do the evaluation first and then adjust the egg take numbers. Bruce said they need to do the maximum. Gary asked do we want to take the risk of removing more wild brood stock from the system until we know what works. Bruce responded that if runs are going to be low should we not do more eggs. Discussion continued. The target is 750,000 eggs this year, 500,000 for Owikeno Lake. Before we can increase the egg take we need to know what the impacts of the hatchery fish are.

Doug asked if we want 1 million eggs we need to take 3,000 fish out of the system and it is too big a risk. It was also pointed out that lake productivity would decline i.e. smolts may be smaller. Bruce suggested that we stay with the rule but take as many eggs as possible. The Snootli hatchery has the capacity for 1 million eggs but not the capacity to rear all of them. Also the seasonal crew has been reduced from last year, so we have fewer resources.

Decision rule #4 concerning the captive brood program was discussed. There is no money for such an expensive program and there is no place in which to do it. The 2000 DFO Recovery Plan indicates that a captive brood program would be triggered if escapements were below 25% of the LRP. Bruce asked if it was 25% of each stock or 25% of the entire run? He expressed concern that the 25% LRP point may be reached in some of the creeks this year. Gary pointed out that doing a captive brood program is like putting all your eggs in one basket. It is a tool that can be used but it is a last ditch effort and there is no money to do it. If necessary, we have to be prepared to take it to political level to find the funds.

3. 2004 Projects

1) hydro acoustic enumeration for the Wannock

Doug asked George about how the data was analyzed. Last year George and Dave discussed this each day and agreed on the results. The project requires 2 people to operate it. What if George is not there this year? Dave can do it. The other crew member would assist with the field work. Such a person needs white water training, in river experience and some knowledge of computers. The other crew member will be a Wuikinuxv person funded from the AFS budget. It was suggested that Dave would be a good teacher. The project lead will be George Cronkite.

Action: The Terms of Reference will be developed by Jonathan in 2 weeks.

The time frame for this project would be July 1 to about the third week of August. The end of season date can be adjusted. How is the cost of doing the test fishing going to be covered? Will it be covered by the ASF budget? It is recommended that it be a cautious test fishery depending on the strength of the run for sockeye. Jonathan suggested the use of a seine net at the lake pen site. You can localize it and there is less chance of getting hung up on sticks. George said a shallow drift would work. There is a need to get a representative sample. George suggested we should try the beach seine in order to identify species. Some numbers can be derived from the food fishery. The cost will come from AFS budget for the test fishery.

Action: The Terms of Reference will be developed by and Jonathan by May 4th.

2. ; Critical Habitat Survey of Long Lake Chinook

There was some discussion of the project to do a critical habitat survey of Long lake Chinook. Doug reported that the returns of this run are very low and that these fish are exceptionally large.. It was agreed that Jonathan, Doug and Gary will develop the ToR for this project.

3. Limnology Study of Owikeno and Long Lakes

This project consists of taking water samples from both lakes for analysis of plankton composition. Doug, Jonathan and Gary will do the Terms of Reference for the Limnology Study. Long lake plankton tows were done last year and results indicate that it doesn't really need to be done. Rick Routledge did it in Long Lake. Al Hirst analyzed the data. The idea came from Bob Bocking to monitor long term effect of plankton populations. If you had base line data you could determine effect on fry growth. Rick said that it is important to do Long Lake as well because it was fertilized before. The Project Lead will be Rick Routledge. The suggested schedule is one tow in July, one in August and one in September and maybe one tow in May. It would be god idea to see what is there when the fry emerge. Bruce expressed some interest in supporting this.

4. Critical habitat review

There is a need for a review of the models used for determining capacity and critical habitat. Surveys. We can put out a RFP and put it out to tender. Jonathan agreed to be the Project Lead. The Braden Report has been done. Critical habitat and productive capacity are worth reviewing but they are two different activities and may need more time and money. This project should really be called **Productivity Capacity Review**

Action: Jonathan, Doug and Gary will do ToR for this one

5. Early Marine Survival Study

We already have a proposal from RR which will serve as a ToR. There was a request from Bruce to do some work in Fitzhugh Sound. Rick presented a brief proposal to do juvenile sockeye trawls in Fitzhugh Sound. The question is how will you determine out which fish they are that you catch. Rick pointed out that you could see what the small sockeye were doing. It is hard to determine where they come from. It would be an adjunct to what Rick has already proposed. His project starts in starts on May 11 and stops on the first neap tide in July, about July 10th and maybe one more neap tide. July 25 or 26. It was agreed to contribute \$3,000 for one day of samples from a trawl in Fits Hugh Sound.

6. Docee Fence Capacity Project

Action: Doug will do ToR schedule for the Docee Fence Capacity project. The start date is July 2. There is no coho extension this year. We budgeted \$20,000 last year for this and we need another \$10,000 to do it this year. All coho indicator projects have been eliminated this year so Jonathan thinks that we should go ahead with it. There is a new DFO Manager for Jonathan and there is a new PST budget. There are severe cuts coming down the line for DFO. The coho extension is from Aug. 1- to Sept. 30th.

7. Sockeye Enhancement Evaluation Program

The mark recapture program to evaluate the sockeye egg take is for the Inziana River and the Ambock Creek. A dead pitch program is necessary to obtain otoliths. The project is scheduled for 20 day for 2 crew. The work days need not necessarily be contiguous as runs are at different times. The whole project is extra to DFO projects. This is the first year that we would have a substantial number of marked fish. Sandie's budget is for \$37,752.80. Can RSSEPS pay \$25,000 for 2 technicians, their food and fuel etc? Reading otoliths costs \$8/ reading, so total required would be \$21,000 for just Inziana and Ambock creeks. Can the AFS budget cover these

2 crew costs? This needs to be discussed with Bruce. It was agreed the RSSEPS contribution to this project would be \$10,000. There are also issues of data coordination and data consistency so who is in charge is important. We need a proposal from Bruce to show his costs against the DFO costs of \$21,000. Do we need a contingency plan if DFO money is tight? If DFO money is tight egg take will have second priority to the otolith count. The budget discussion continued. The DFO budget is down 25% for salaries so egg take would be sacrificed to evaluation of the Sockeye Enhancement Program. We need to ask the Wuikinuxv to take on some of the costs from their AFS budget. If egg take targets are to be met then we need some money from somewhere.

7. Genesee River Fish Counting Fence

Action: Jonathan will to the ToR for this project

Jonathan said that a counting fence would enable us to get a quality index count at the Genesee River. A fence would give us an escapement number to compare to the dead pitch count. It would need to be bear proofed and it could be counted by the regular DFO crew. Visual counts usually underestimate the actual count so the fence would give us more dependable data. We can compare the Genesee River data to the Inziana and Amback Creeks data. The value of this data was discussed. It would be good to make comparisons to other systems survival estimates, presence or absence of hatchery fish. Those 3 Creeks, Inziana Ambock and Genesee usually have a high proportion of hatchery fish returning. You need to do at least three years of evaluating to determine the effectiveness of the hatchery system.

There was further discussion of RSSEPS budget which now totals \$141,000 out of \$150,000.

Action: David will do a spread sheet showing all projects and a proposed budget for consideration by the RSSEPS members.