

# Fraser Salmon & Watersheds Program



Fraser Basin Council



## 2009/10 FINAL REPORT

<b>FSWP File Number*</b>	<b>FSWP 09 82</b>
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\* Please use the FSWP File Number provided in previous FSWP project correspondence.

### 1. Project Information

#### 1.1. Project Title

Fraser Sockeye Fisheries Model Integration, Coordination and Communication

#### 1.2. Proponent's Legal Name

IAS International Analytic Science Ltd.

#### 1.3. Project Location

British Columbia

#### 1.4. Contact for this report

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#### 1.5 Funding Amount

Original Approved Grant Amount:	Total FSWP Expenditures:	Final Invoice Amount:	Final Non-FSWP leveraging, including cash and in-kind:
\$61,800	\$61,248	\$7,314	\$13,400

### 2. Project Summary

Please provide a single paragraph describing your project, its objectives, and the results. As this summary may be used in program communications, clearly state the issue(s) that were addressed and avoid overly technical descriptions. Maximum 300 words.

Canada and the US through the Fraser River Panel of the Pacific Salmon Commission have been using a preseason model to plan fisheries that was developed over 10 years ago. Canada has contracted Simon Fraser University, to begin work on a similar modeling effort. The Minister of Fisheries and Oceans, in the announcement for PICFI, has indicated that salmon will be managed by defined shares. This will require a framework and model. First Nations treaty discussions include defined shares of salmon for both domestic and economic uses.

All of these initiatives need to be consistent with one another, with respect to their basic elements of fish stocks, migration and harvests. In addition, the broader interest in the models means they need to be understood as well as transferable and widely available. New internet tools and web based applications need to be utilized.

This project helped bring the various parties together to understand the strengths and weaknesses of the various objectives and approaches. Unfortunately the events of the 2009 and 2010 Fraser sockeye seasons distracted the agency staff. The advent of the Cohen Commission has delayed many activities and made the availability of

staff. Particularly DFO and PSC difficult. Also the need for and shape of new in season management systems may be fundamentally influence by the results of the Inquiry.

Research by the SFU group led by Professor Cox has suggested that there may be significant underlying biases involved the traditional “Box Car” approach to representing the movement of the fish. The research is still on going and any future model development needs to be informed by its results.

Exploration of web based tools to access and use these models seems promising. However, there are still a need for institutional coordination and focus on how to implement these tools.

**OPTIONAL** Please give a short statement (up to 100 words) of the most compelling activity or outcome from your project.

### 3. Final Project Results and Effectiveness

**3.1** Copy EXPECTED OUTCOMES from your detailed proposal and insert into this section. Add additional rows as needed. Then please list the FINAL OUTCOMES (the tangible end products resulting from this work) associated with expected outcome.

If FINAL OUTCOMES differ from the original EXPECTED OUTCOMES please describe why, and the implications for the project.

EXPECTED OUTCOMES	FINAL OUTCOMES
1 A compendium of the different approaches to models and an assessment of the strengths and weaknesses of these models will be developed with respect to their objectives and applications.	The compendium is still in development. It is awaiting published research from SFU. Their work is fundamental to understanding the issues related to modeling the movement of the fish both in the river and the ocean.
2. A better understanding of the issues and capabilities around these models of the potential user groups. Advice and identification of options, prepared from the users perspective.	Through coordinating and overseeing a Steering Committee for model development the main agencies and participants engaged in a though exchange of relevant issues.
3. A compilation of implementation and operational issues and a set of possible options to engage the various institutions and groups in the maintenance and continued development of these models.	Research and development of the “fish movement engine” is still underway. It is premature to fully understand implementation and model management issues.
4. Approaches to having wide web-based access to operational computer models. Prototype examples of web-based model access tools.	Web based implementation of these types of models is possible. Whether is it an appropriate approach still needs to be tested with a working model when they are available.

**3.2** Please evaluate the EFFECTIVENESS of your project in achieving Project Objectives. Please identify the indicators you have used to measure the effectiveness of your project. Please include any notable successes or challenges.

The project did not accomplish as much as was hoped. It was a project intended to coordinate ongoing activities of various groups including: DFO, PSC and SFU.

One of the most difficult aspects of this project was related to the intense issues of the 2009 and 2010 Fraser sockeye season. The apparent collapse and then record strong performance of the runs consumed the attention and most of the time and energies of key personnel in DFO and the PSC. The ensuing Commission of Inquiry has made it very difficult to focus other people's attention on the development of models until the outcomes and recommendations of the Inquiry are known.

The establishment of the Steering Committee engaging DFO, PSC the SFU researchers as well as LGL (who have developed a prototype model) made significant progress at setting some common ground for model development.

The workshops and presentations to the First Nations participants were informative. The general capacity level in the areas of mathematical modeling makes it very difficult for the participants to engage in any detail. If and when operational models are available extensive hands-on "training" will be needed.

**3.3 REQUIRED: attach all DOCUMENTATION of Final Outcomes, and LIST attachments here. These may include technical reports, maps, photos, evidence of communications, lists of meeting participants, etc.**

**3.4 Please describe how the benefits of this project will be sustained and/or be built upon into the future. What are the planned next steps, or recommendations for further work, if applicable?**

The Steering Committee is still active but is pacing developments awaiting the work of the Inquiry. The work will be supported and maintained by FRAFS until such time as the Inquiry reports and any recommendations that might affect the models are received.

**3.5 What are the top three lessons learned from this project that could be useful to communicate to others doing similar work in the Basin?**

1. Organizing and coordinating a diverse set of agencies and individuals is more difficult than first thought.
2. Model development needs to be done in isolation from the "emergencies" of the day while maintaining a link to the actual world in which the model will be used.
3. There is a need for capacity building in knowledge and skills to understand and use the types of models that will be needed to help manage salmon fisheries.