

## Technical Report Project 1A – Hatchery Disease Impact

**Project description:** This project will evaluate the potential impacts of hatchery and spawning channel disease occurrence and frequency to determine their role in the reductions in Fraser sockeye productivity. If feasible, the researchers will evaluate the role of hatchery diseases in the 2009 run failure as well as the longer-term decline in Fraser sockeye productivity over the past 20 years.

**Researchers:** The Centre for Coastal Health (CCH) is an independent, non-profit organization whose mission is to identify and understand the interactions of human, animal and environmental health. This is accomplished by undertaking problem-oriented research, risk assessments, research planning, policy development, field investigations, program evaluations, and education. CCH provides objective solutions to health issues and does not take advocacy positions. Scientists from CCH have considerable experience evaluating fish disease in Pacific salmon populations.

~~~~~

The objectives of this report were to review the scientific literature and disease data and reports from salmon enhancement facilities (hatcheries or spawning channels) to evaluate the ability to assess the risk of diseases present in those facilities. If possible, the researchers would try to evaluate the disease risks arising from salmonid (salmon and/or trout) enhancement facilities in the Fraser River watershed and the Strait of Georgia on Fraser sockeye.

Two methods were used to evaluate the risks from salmon enhancement facilities. The first was a literature review to look for a relationship between diseases caused by salmonid enhancement and Fraser sockeye production. The second method was an examination of data for risk assessment provided by the Cohen Commission, which included salmonid enhancement disease diagnostic data, hatchery-level health records and production data.

There does not exist sufficient published literature to provide enough evidence showing a relationship between diseases associated with salmon enhancement facilities and Fraser sockeye production. It was also not possible to determine from published literature the likelihood of salmon enhancement-associated diseases impacting Fraser River sockeye, the magnitude of possible impacts, or the ability of these facilities to prevent risks.

The examination of data for risk assessment concluded that it is possible for infectious diseases to transfer to Fraser sockeye, however due to limitations in scientific understanding, lack of ongoing surveillance of wild and cultured fishes, and lack of data, the researchers were unable to assess risk. Due to the limitations in available information, the researchers could not determine if diseases in salmon enhancement facilities present potential for serious harm to Fraser River sockeye.

## **Recommendations**

To improve the effectiveness of fish health programs in risk management, the researchers developed 10 main recommendations in the following areas in order to improve hatchery disease management:

- Shift the emphasis and organization of fish programs from diagnostic services for disease treatment to comprehensive health management for health promotion and disease prevention
- Promote a systems perspective that allows for fish disease and population data to be integrated
- Improve auditing and oversight