Fish…
A Cowichan Watershed Overview

Prepared for the Cowichan Water Board

July 24, 2010

The next 15 minutes….

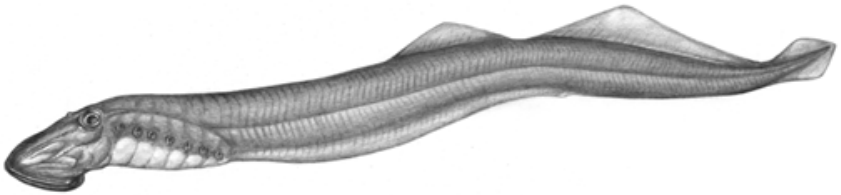
- The importance of fish - an Ecosystem perspective…
- Overview of species
- Salmonids
- Challenges and Limiting factors
- The good news…
- Moving Forward

The Importance of fish

- Cultural
- Economic
- Ecological

Fish, Fish, Fish……..

- Cowichan Lake Lamprey
  - COSEWIC listed/Threatened Status
- Exotic species
  - Eg. Pumpkinseed Sunfish
  - Brown Trout
- Salmonids



Salmonids

Salmon

- Steelhead
- Chum
- Coho
- Chinook
- Kokanee

Trout

- Coastal Cutthroat
- Brown Trout
- Rainbow trout

Char

- Dolly Varden

Cowichan Lake Project Update
Project Overview

Background

Large Lakes Planning – Provincial Priority
Cowichan Lake

- High value fishery
- Declines in effort, catch, success
- Stock declines suspected ~1990
- Data gaps

Project Objectives

1. Gather data on the fishery.
2. Gather biological data on cutthroat, rainbow and Dolly Varden.
3. Determine density of kokanee.
4. Develop management objectives and long-term management plan for Cowichan Lake.

Cowichan Lake Project Update
Project Overview

- Activities
- Conduct weekly creels and angler surveys at Cowichan Lake (2009 - 2013).
- Conduct a gillnetting assessment at Cowichan Lake (August, 2009 and 2012).
- Conduct acoustical and trawl assessments (2010).
- Determine production targets, management objectives and long-term plan (2013).

Cowichan River Steelhead

•**Significant freshwater life history phase**

<u>Wild Stock Trend:</u>

•**Currently stable at moderate abundance ("conservation concern" for MoE)**

•**Estimated annual wild adult returns 500-800 (early Dec – Mar) over last 10 years**

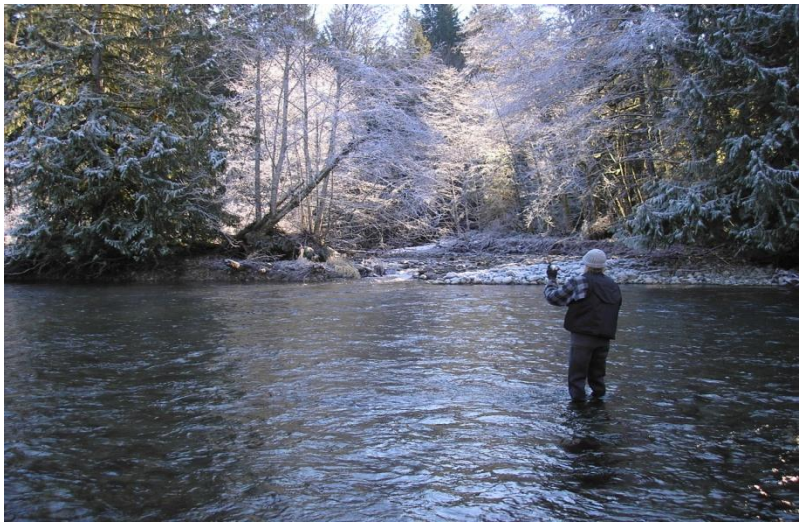
•**Peak annual returns in mid 1980's were likely 2,000 or more, reflecting much higher marine survival of juvenile steelhead for southern BC coastal stocks**

Cowichan River Steelhead

Winter steelhead sport fishery highest historic use on Vancouver Island

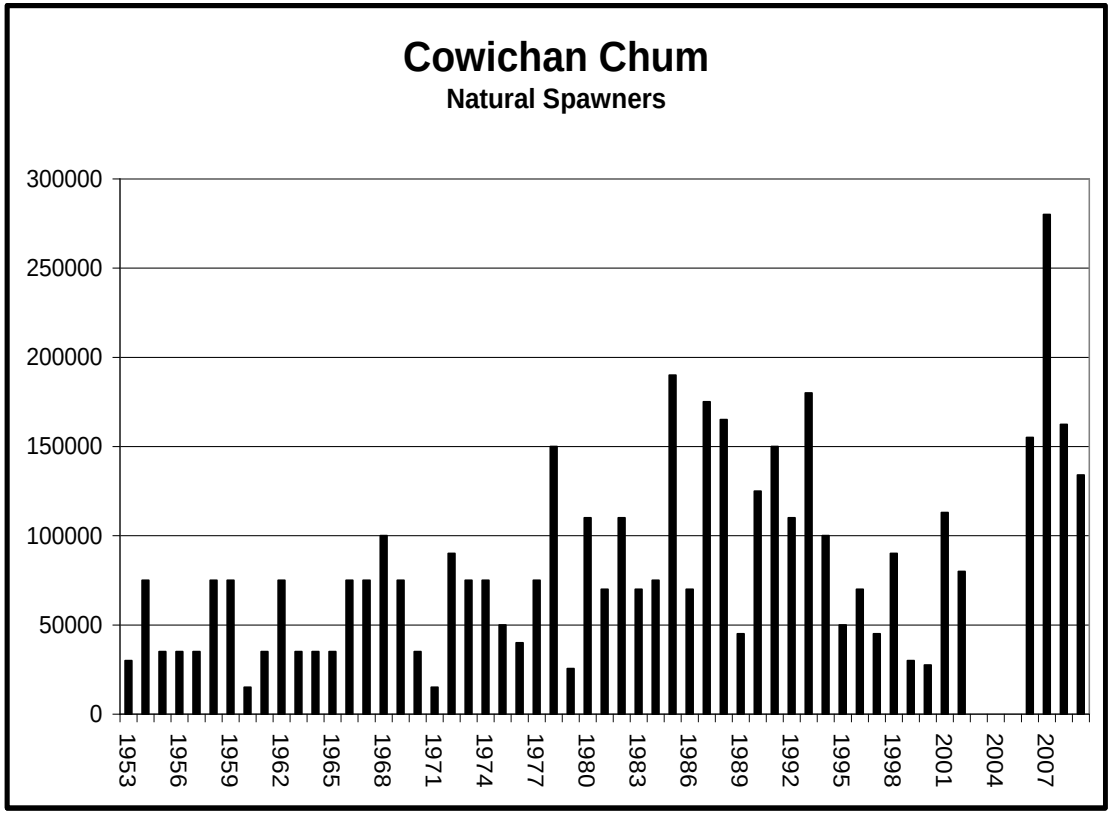
<u>MoE Objectives:</u>

- **Restore freshwater habitats to improve wild stock production**
- **Maintain mean annual angling effort of 6,000 angler days**
- **Maintain mean annual catch/release of 2,500 wild steelhead (includes multiple captures of individual fish)**

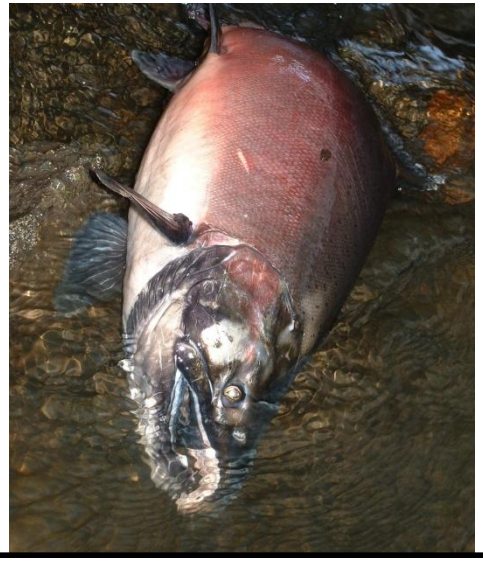


Chum

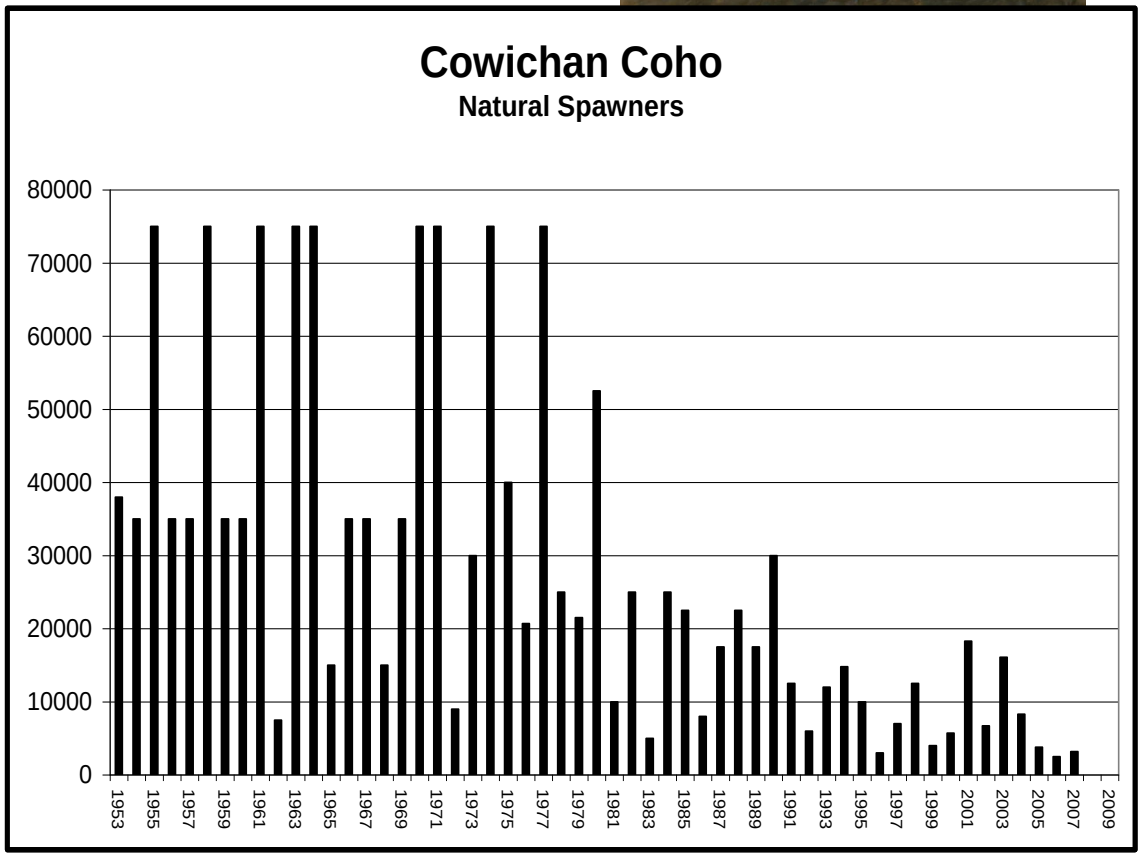
- Relatively stable healthy population
  - Recent escapements average over 150,000
- Marine nutrient pump
- Short freshwater life history



Coho

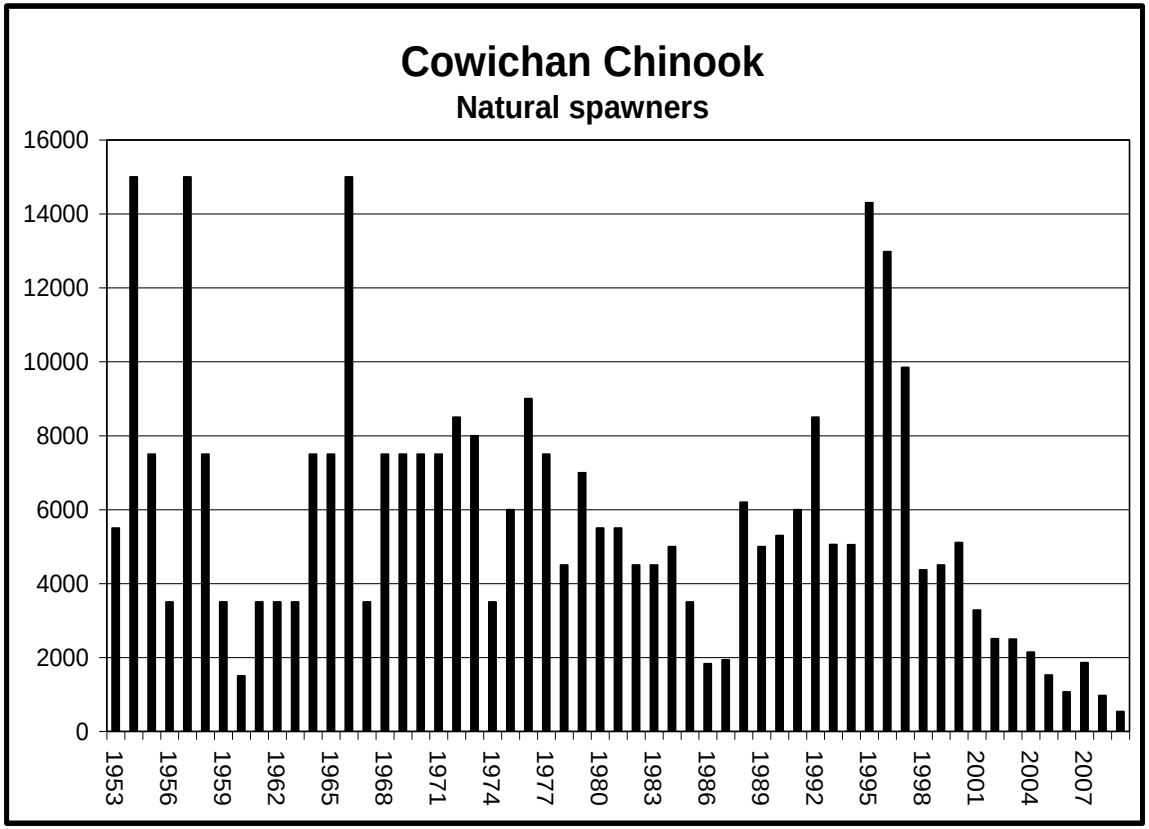


- Population at historic lows
- Significant freshwater life history phase
- Low sport and commercial catch rates
- Lack of good stock strength information



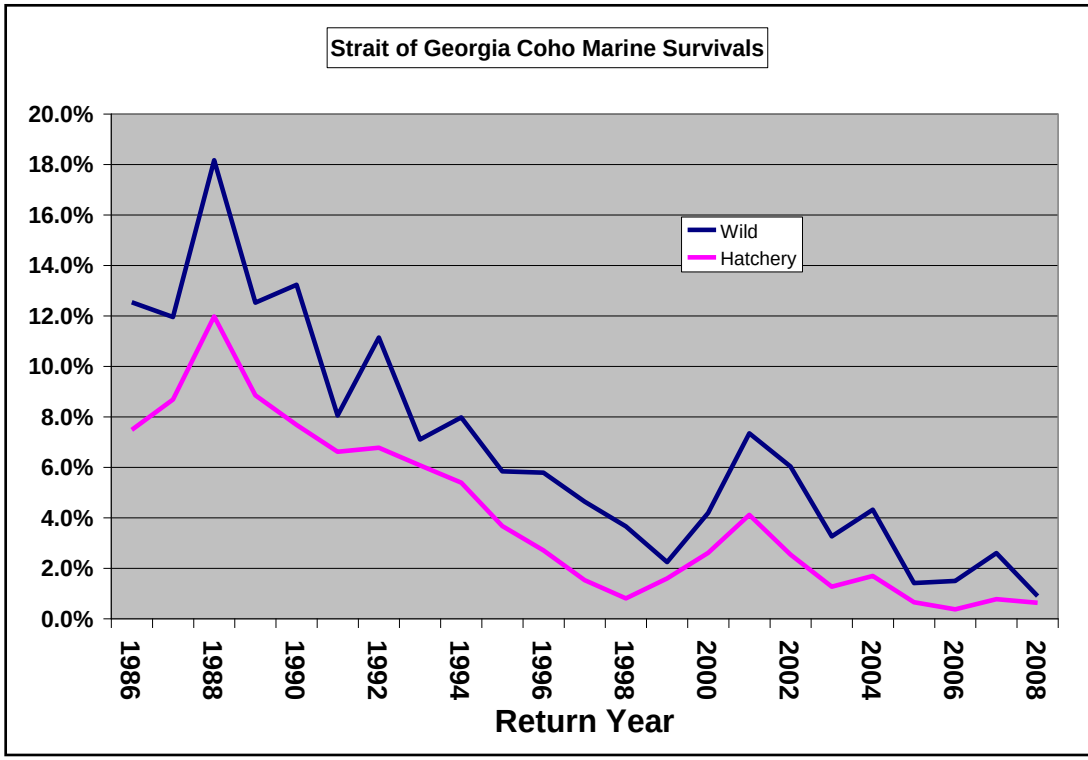
Chinook

- Complex life history
- Canada/US indicator
- An enhanced stock
- Concerns re stock strength
- Significant catch rate
- Multi-partner comprehensive recovery effort



Challenges and Limiting Factors

- Marine survivals
- Water quantity and quality
  - Summer low flows
  - Winter high flows
  - Sedimentation
- Estuary Health
- Off channel habitat
- Catch (Chinook)



Considerable Progress

- Working Together
- CSRT has recruited approx 2M towards restoration projects
  - Eg. Stoltz bluff, major side channel restoration
- Cowichan Basin Water Management Plan/Cowichan Water Board
- Dr D. Beamish leading research on inshore marine survival
- Innovative hatchery strategies
- 3 technical reports on Chinook to be released this fall
- Altered fishing plan to reduce chinook harvest

Moving Ahead….

Keys to ensuring sustainable Cowichan fish stocks include:

- Finding ways to work together focusing on common interests
- Taking a science based approach/ acknowledging and utilizing traditional and local ecological knowledge
- Major limiting factors must be better understood and addressed
    - Inshore Marine Survivals
    - Water for fish

Relevancy to Cowichan Water Board?

- Salmon/Fish and water are inextricably connected
- Salmon are a key indicator of watershed health
- Decisions made regarding water in the Cowichan valley will affect fish stocks and watershed health
- The new and innovative local governance models in the Cowichan Basin must have open and effective relationships
  - CWB, CSRT, CL&RSR, Somenos and Quamichan Stewardship groups