Salmon Conservation

What to conserve
&
How to conserve it?

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For the
MCC

Check against delivery

There are many ways to define Conservation

- In a quick search I found 25 definitions of conservation. They talk bout wise use, and sustainable benefits, and the management of the biosphere.

- None of them provide any useful guidance concerning how best to manage a salmon stock (the Devil’s in the details)

A useful definition of salmon conservation:

- has broad public support,
- provides clear guidance to decision makers,
- holds the decision making process accountable,
- respects aboriginal rights
- respects Canada’s domestic and international legal obligations

The Wild Salmon Policy

The Wild Salmon Policy is our best attempt to date to agree on an operational definition of salmon conservation

but

Were not out of the woods just yet. Implementation is proving to be just as difficult as expected

The Wild Salmon Policy

- By mandating protection for each conservation unit of Salmon, the WSP makes mixed stock fisheries much more difficult to prosecute.
- Addressing conservation concerns in mixed stock fisheries will lead to more harvest opportunities in terminal areas.
- How are we doing so far?

Fraser sockeye and Fraser chum management

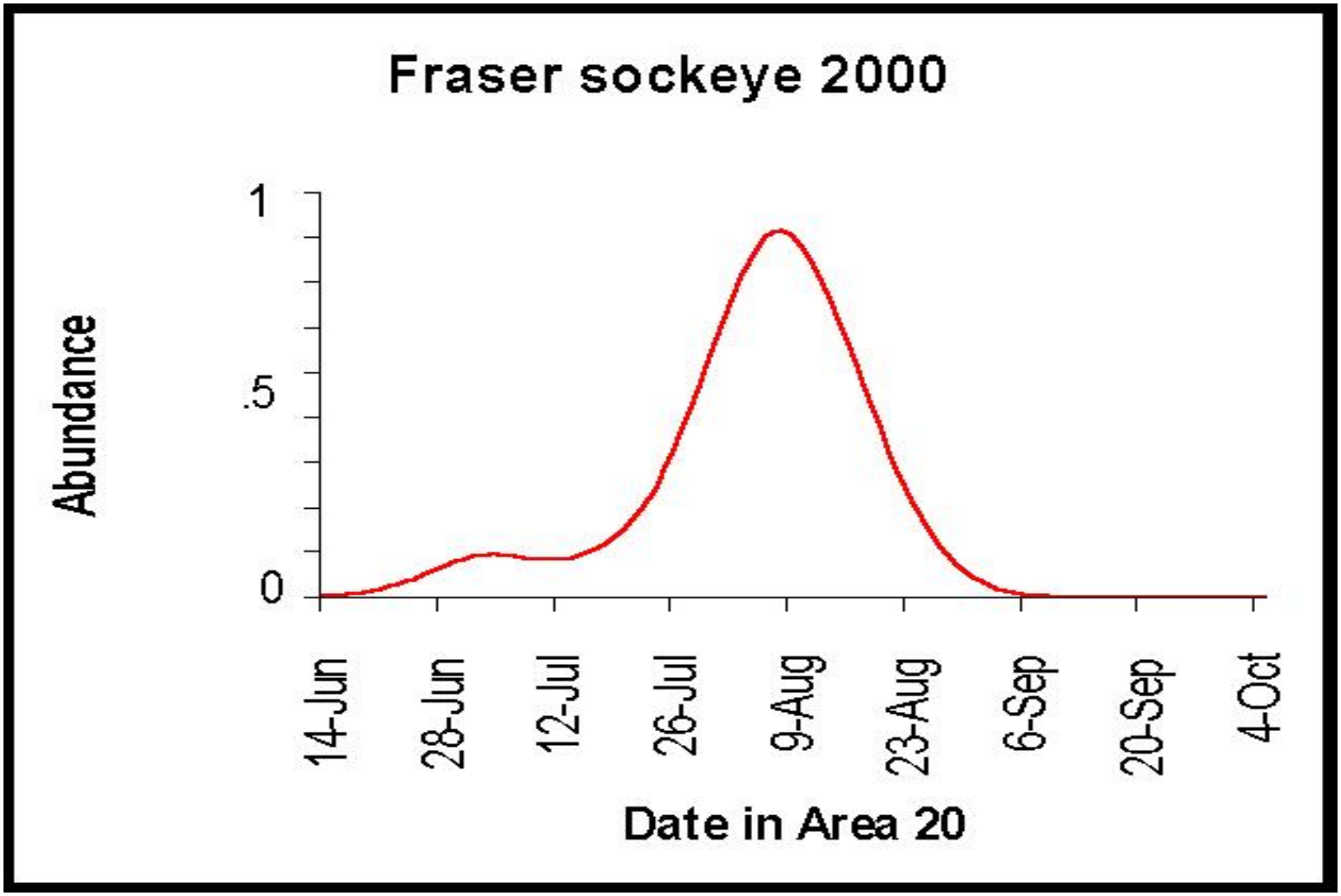
- DFO has developed a ‘new’ management approach for Fraser sockeye that they feel is consistent with the WSP.
- DFO is implementing a new South Coast/Fraser chum management process .
- These new processes should reflect DFO’s understanding of the WSP and their obligations as managers

Fraser sockeye

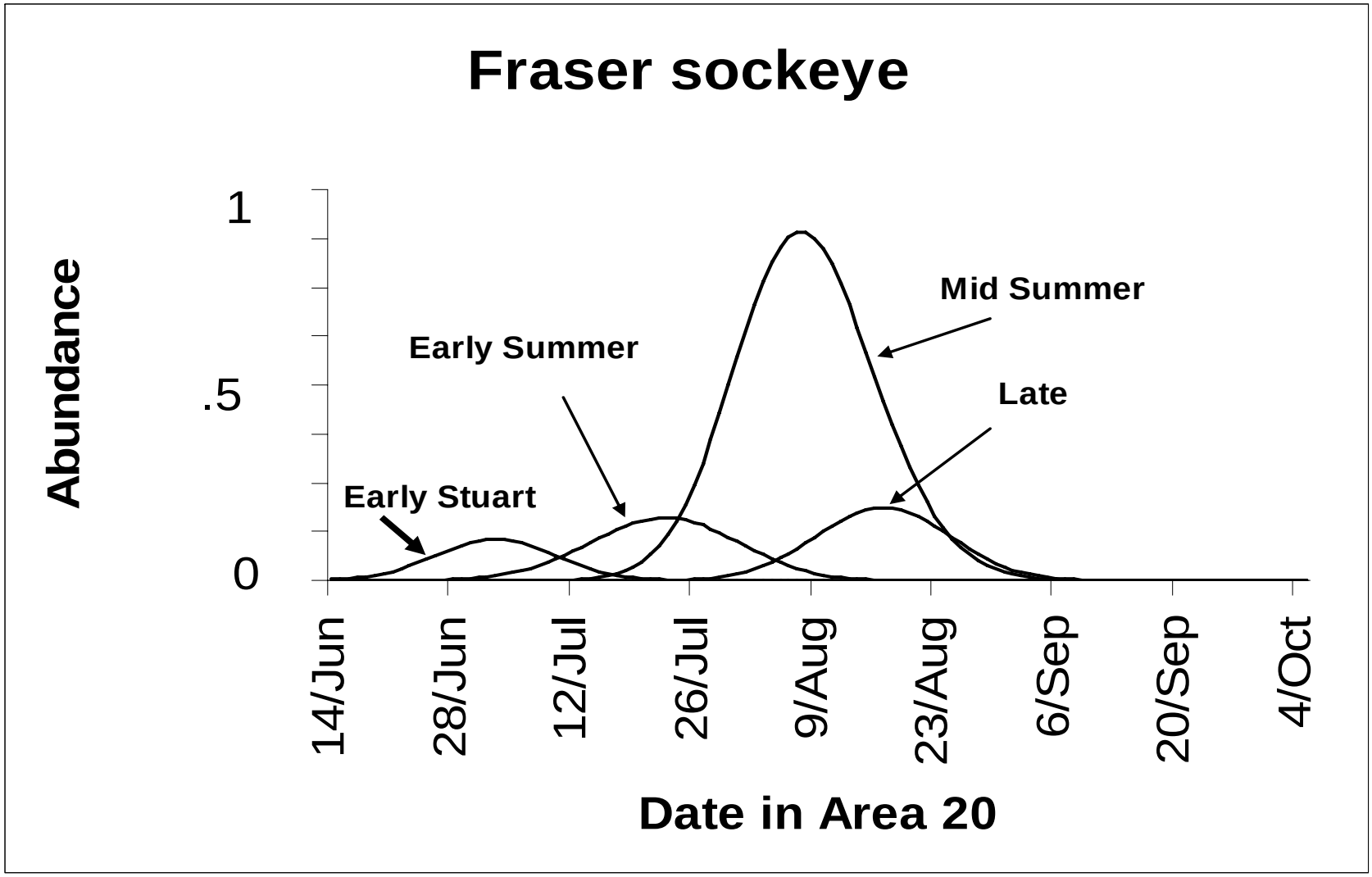
- Fraser sockeye are managed and harvested as four timing groups, and not as individual stocks or CU’s
- There are many spawning stocks in each group, but only one shared escapement goal

Fraser Sockeye

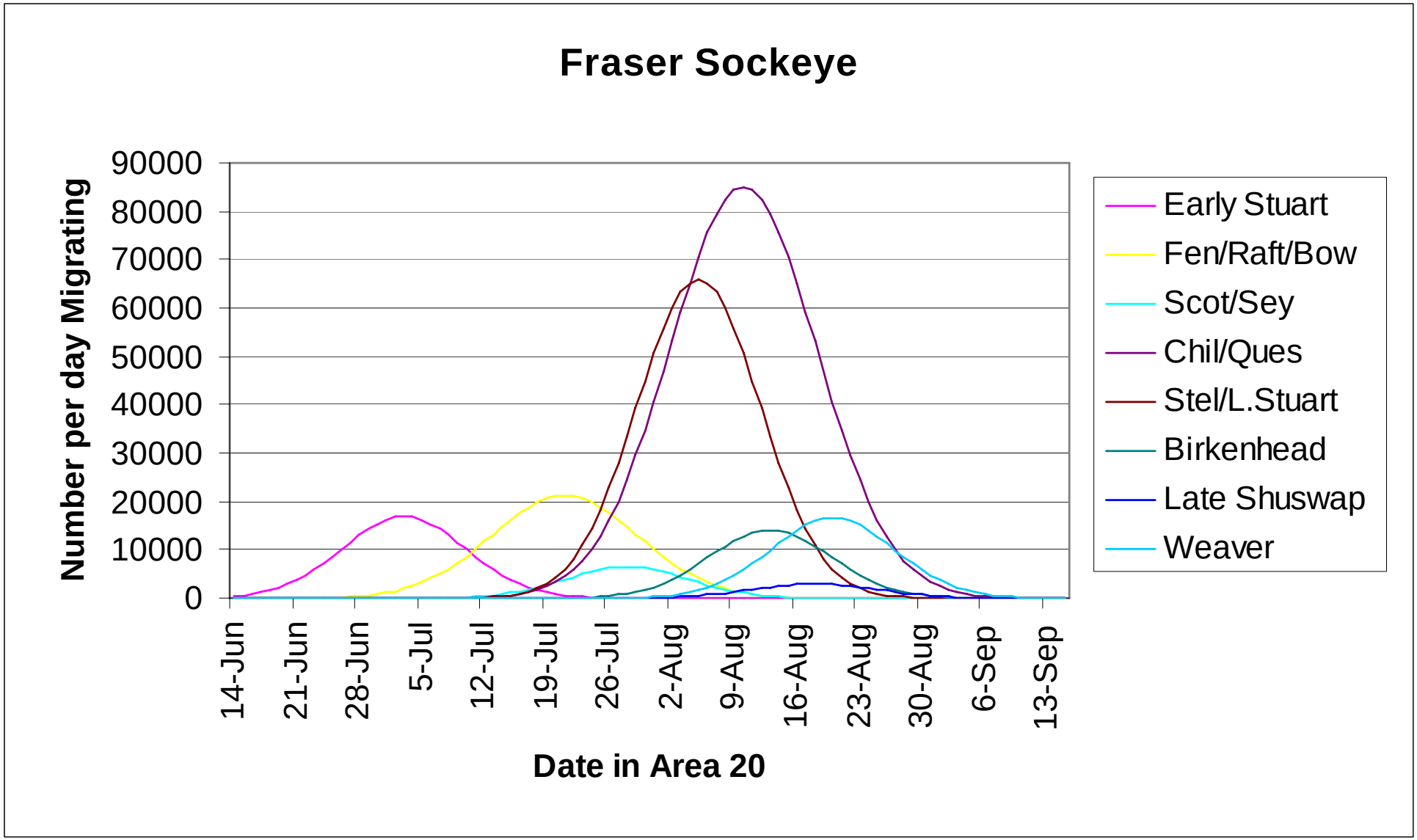
- Protecting weak stocks in a timing group makes it difficult to harvest stronger stocks
- Timing groups overlap significantly
- Harvesting an abundant timing group will harvest other less abundant timing groups



This curve shows the expected abundance of Fraser Sockeye passing through Area 20 each day



This curve shows the expected abundance of Fraser Sockeye from the four timing groups passing through Area 20 each day



Each timing group is in comprised of many stocks migrating together, but with slightly different timing.

Fraser sockeye

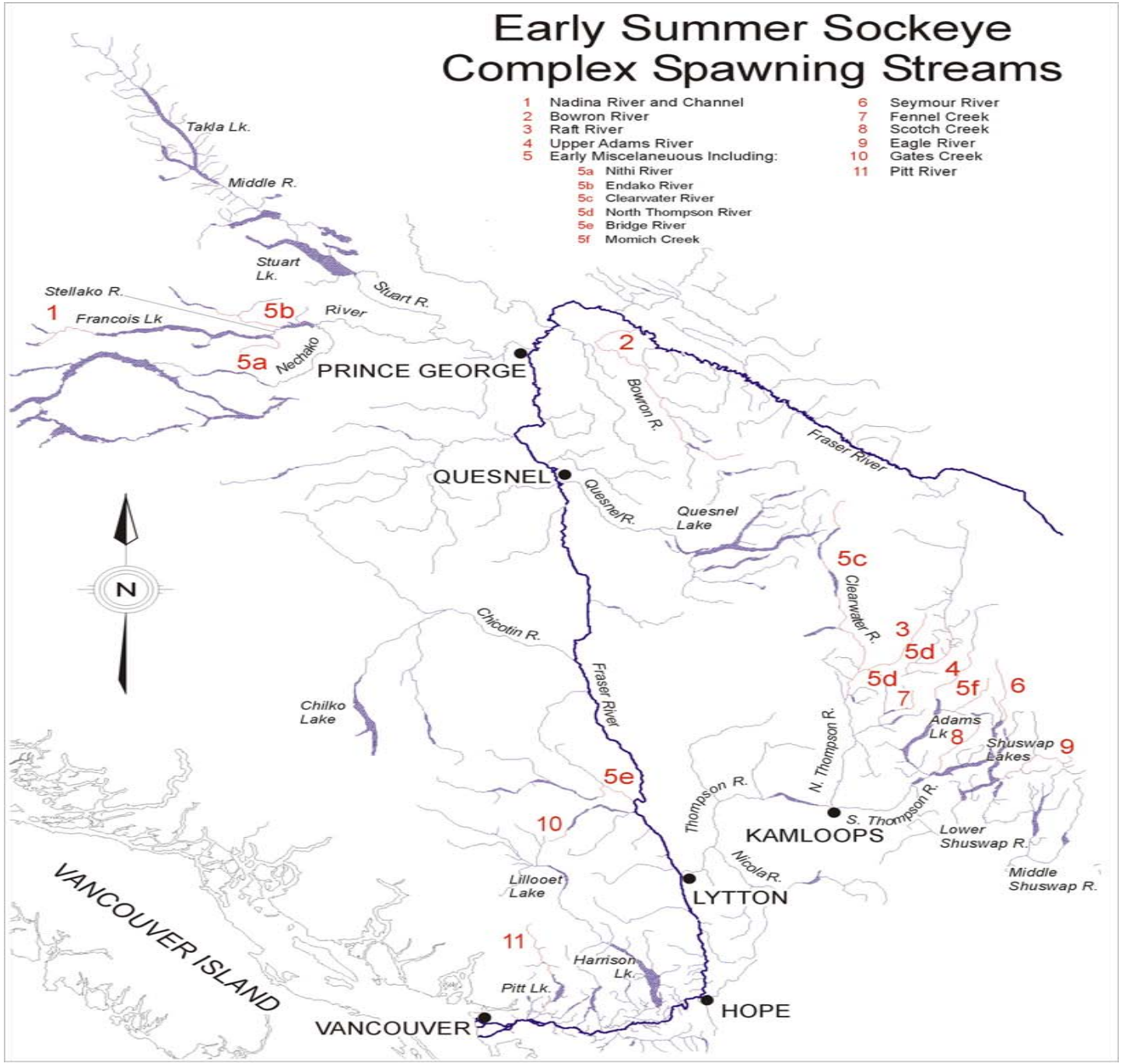
- The great majority of commercial harvest of Fraser sockeye is taken in the ocean in mixed stock fisheries.
- Setting harvest objectives for timing aggregates is risky, because productive and less productive stocks, and stocks from other timing aggregates are harvested simultaneously

FRISSI

- The Fraser sockeye spawning initiative (FRSSI) developed harvest objectives for these mixed stock fisheries by:
  - Using average historical productivity to estimate future productivity
  - Using simulation models to explore how the abundance of stocks within the timing groups respond to different harvest strategies

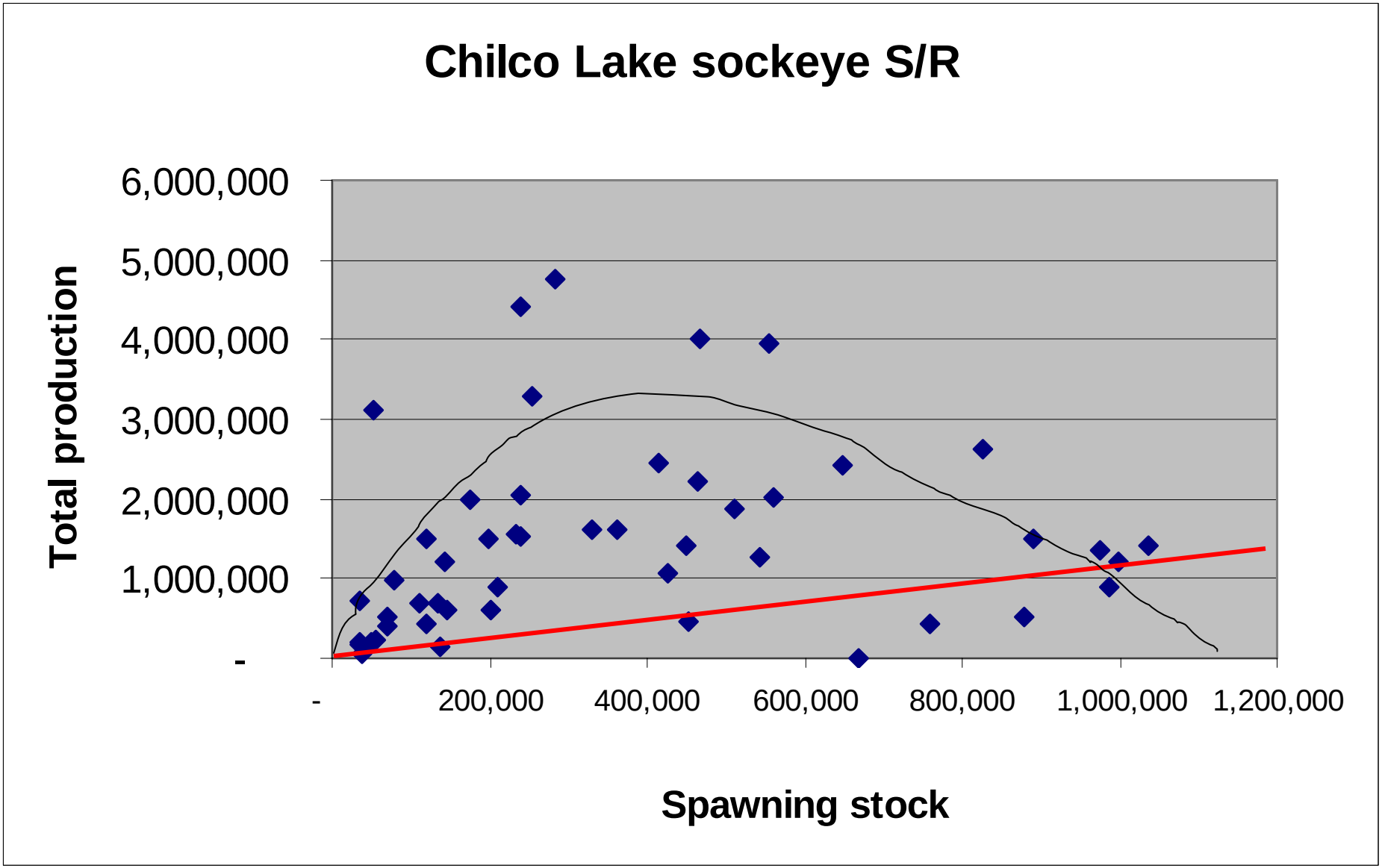
The conservation sector argued

- That the models were being used inappropriately because:
  - Fraser sockeye productivity was declining, not stable as assumed
  - Stock Recruit models used are often poor, and many stocks have not been adequately assessed.
  - The models made assumptions about run timing and harvest impacts that were unrealistic or untrue

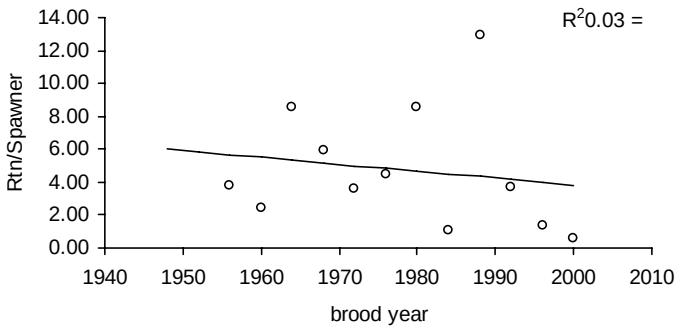


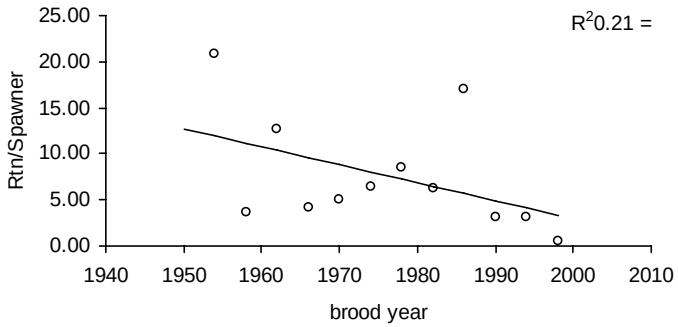
Map 2 Location of Early Summer spawning streams within the Fraser River Spawning streams in red.

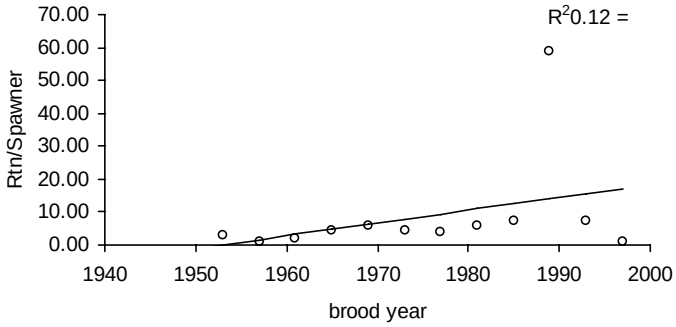
What relationship is evident from these data?

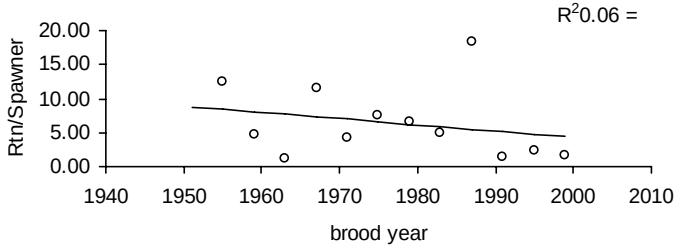


Chilko sockeye productivity is declining slowly for most cycle lines

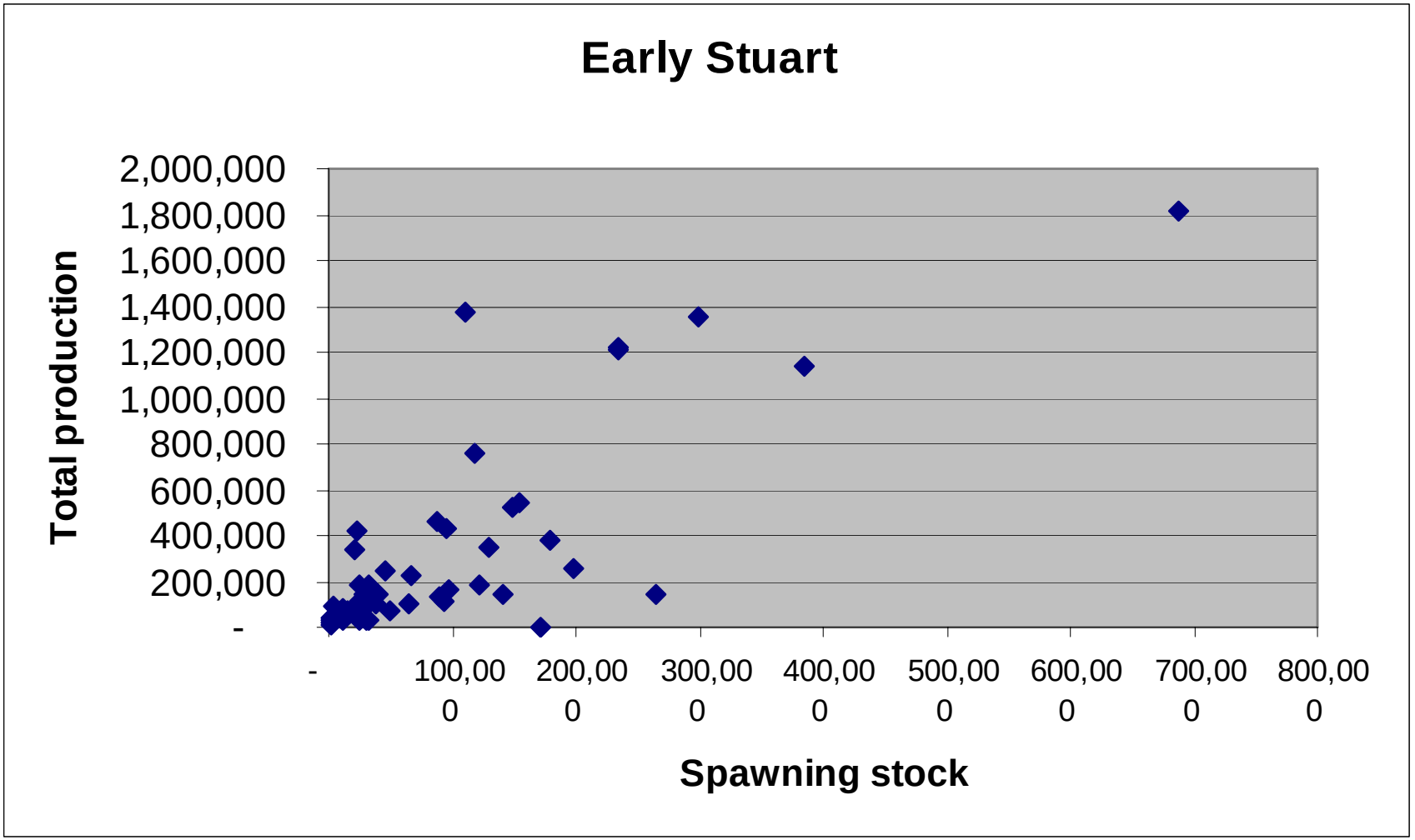




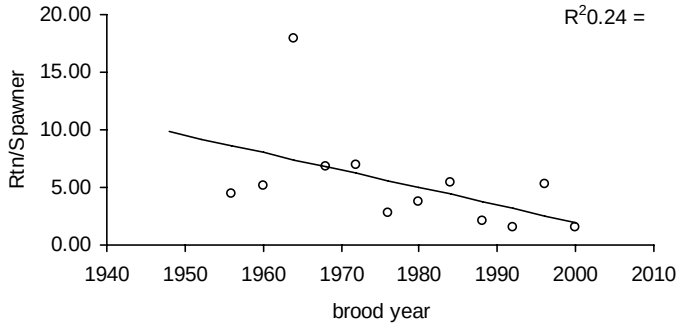


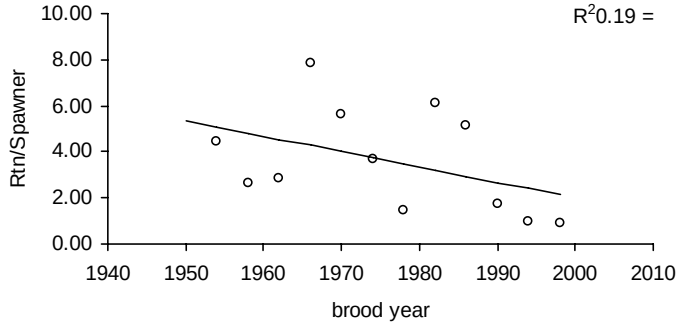


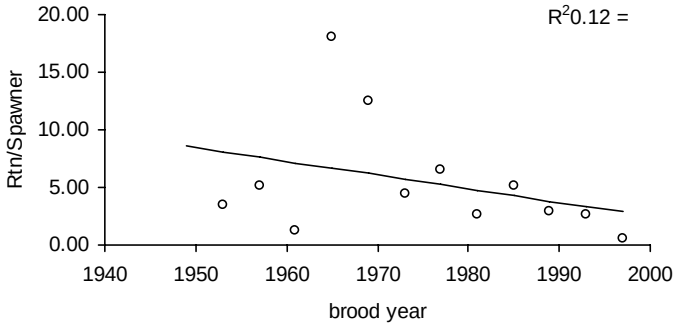
Is this relationship useful?

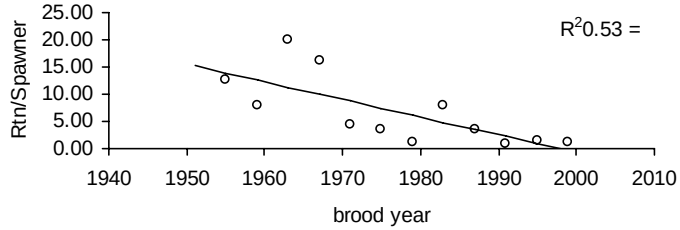


Early Stuart Sockeye productivity is declining rapidly on every cycle
Extinction appears imminent









FRSSI

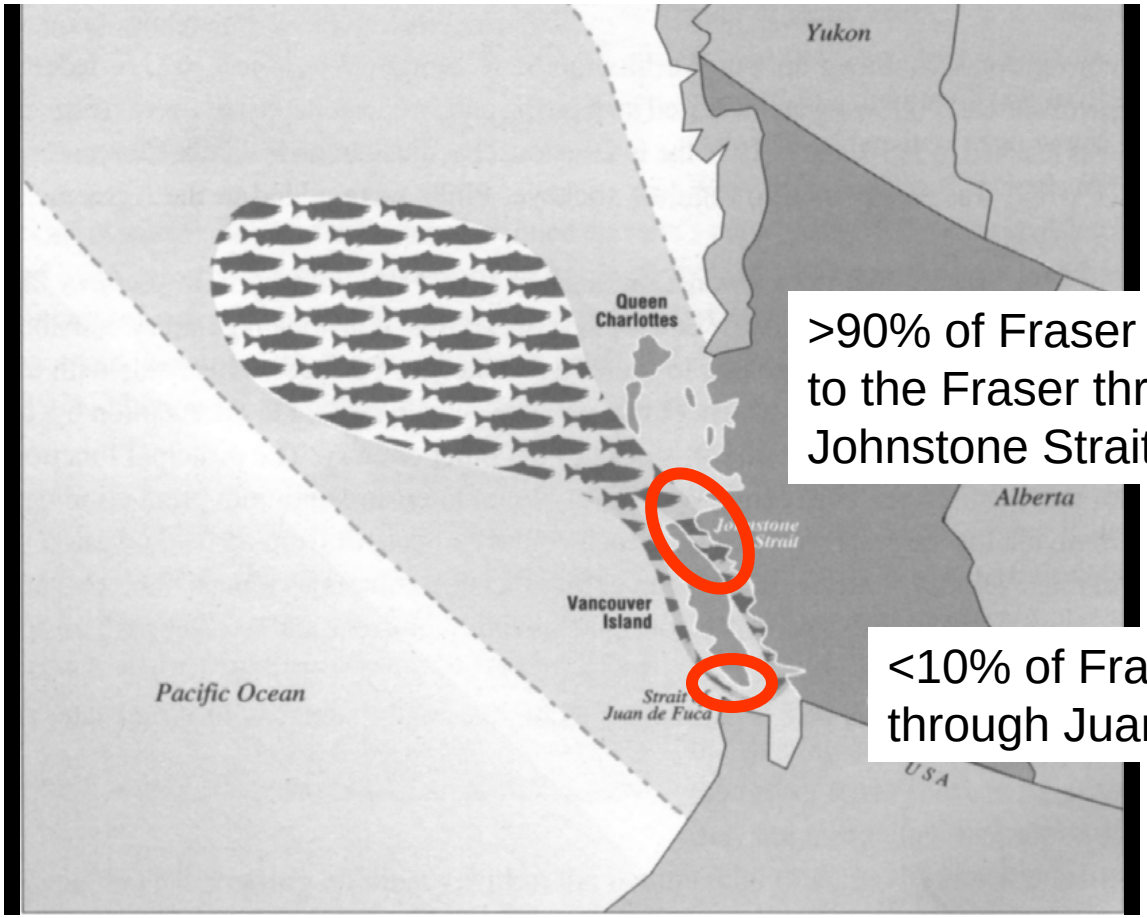
- The harvest objectives developed by FRSSI are imposed over the objections of the conservation sector.
- We continue to see individual conservation units in decline, while other stocks within the same timing unit grow.
- Fraser sockeye abundance is declining, productivity is declining, and diversity is declining.

Harvest of Fraser Chum Salmon

•Fraser chum migrate primarily through Johnstone Strait

• a small proportion (less than 10%) of Fraser chum are assumed to migrate through Juan de Fuca most years, but it is difficult to know

•Fraser Chum make up more than 50% of the Johnstone St. chum harvest most years (mixed with Nanaimo, Cowichan, Jervis, Goldstream, Sooke and US stocks)

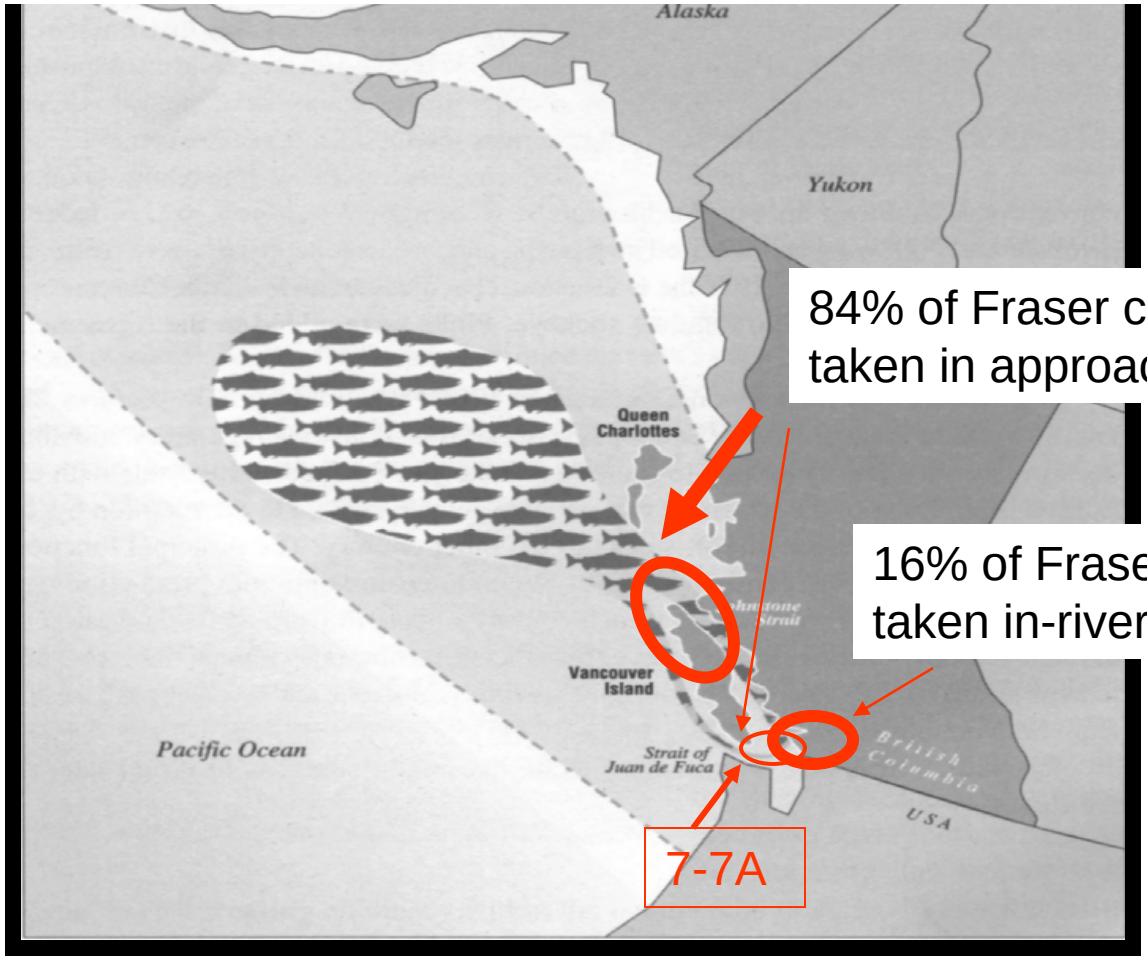


>90% of Fraser chum migrate to the Fraser through Johnstone Strait

<10% of Fraser chum migrate through Juan de Fuca?

Harvest of Fraser Chum Salmon

- Between 1996 and 2005 (the last 10 years for which data are available)
  - •84% of the harvest of Fraser chum was intercepted outside of the Fraser, primarily in Johnstone Strait
  - •16% of the harvest of Fraser Chum was taken in the Fraser River



Harvest of Fraser Chum Salmon

Fraser chum fisheries are regulated:

1. under Chapter 6 of the Pacific Salmon Treaty (New for 2009)

2. Through the Johnstone St. and Fraser Chum Sections of the IFMP (Integrated Fisheries Management Plan) approved by the IHPC

Proposed Chapter 6 language related to Johnstone St.

- No commercial fishing below a total run size in Johnstone St. of 1 million chum

- At runs above 1 million,
  - harvest in Johnstone St. will be fixed at 20% of the run (15% commercial and 5% FSC and Recreational)
  - US chum harvests in 7-7A capped at 120K (80% Fraser)

Proposed Chapter 6 language related to Fraser River/7-7A

- If the run into the Fraser is less than 900K, (As estimated by the Albion chum test fishery), Commercial fisheries in Canada and the US are closed.
- If the run is below 800K, Aboriginal food fisheries inside the Fraser are restricted

IFMP Johnstone St. Chum

- The IFMP considers chum harvests in Johnstone St. to be mixed stock fisheries, even though Fraser chum make up more than 50% of the ‘mixed stock’ harvest.
- The current IFMP calls for a 20% harvest of chums in Johnstone St. “regardless of total abundance”
- It is DFO’s position that this is ‘abundance based management’

Concerns

- Johnstone St. Chum fisheries are not abundance based as I define the term.
- At low run sizes, Fraser chum will be harvested commercially in Johnstone strait and US waters even if the Fraser run is below the escapement goal (800K)
- Commercial harvests in Johnstone St. take priority over Fraser Food fisheries at low run sizes.

Concerns

- Hatchery contributions to the Johnstone St. and Fraser chum runs, and to the escapement are very significant but not adequately monitored or considered.

- Fraser chum spawning escapement estimates are incomplete, and as a result, the reliability of the run size estimates based on the Albion test fishery is difficult to assess

Status of Fraser chum

- Conservation of other species makes it almost impossible to harvest the available TAC

- Escapements frequently meet or exceed goals

Progress to date?

- In the next two weeks the conservation sector will be making representation
  - to the Fraser Panel concerning the way Fraser sockeye stocks are grouped and managed
  - to the Integrated Harvest Planning Committee recommending changes to the way Fraser chum are managed in Johnstone St.

Key challenges

- Accepting the death of MSY and developing a new salmon management paradigm
- Coming to terms with the economics of exploitation and conservation
- Clarifying the roles of DFO scientists and harvest managers

Key challenges

- Developing, articulating and defending coherent ‘conservation values’
- Obtaining and allocating resources to engage in management processes as equal partners

Lessons learned

- What’s worked
  - Engaging in process
  - Demonstrating
  - Learning
- What hasn't worked

  Engaging in Process

  Lecturing

  assuming