Update on Eulachon from Canada

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Eulachon State of the Science and Science to Policy Forum
August 21st, 2015
Acknowledgements

- Ken Fong, Offshore small mesh survey
- Bruce McCarter, Egg and Larval in-river survey
- John Candy, Genetics
Overview

• Eulachon in Canada
• DFO Led Research Initiatives
• Listing and Recovery Activities
Eulachon DUs

- **Fraser River**
  - Genetic data indicates isolation from other Canadian spawning populations
  - Drain basin extends inland

- **Central Pacific Coast**
  - Genetic data indicates separation from rivers to the north and south
  - Headwaters of rivers in Coast Mountain range

- **Nass / Skeena**
  - High degree of genetic separation between these two rivers and the other rivers in Canada
  - Headwaters in BC interior
Conducted by DFO in lower Fraser River since 1995
Eggs and larvae are enumerated by set
SSB was derived by applying daily river flow data (m³/sec) and relative fecundity to measured egg and larval densities using a 1:1 spawner, sex ratio assumption
• Several hundred samples collected twice weekly over 7 week period
• Bongo nets with flow meters measure water volume
• Daily Fraser River discharge data was measured by the [Water Survey of Canada](https://www.water surveys.ca) at Hope, B.C
Fraser River Eulachon Spawners (with 150t action level)

Red = South Arm (dash line = 95% Confidence intervals)
Blue = North Arm (dash line = 95% Confidence intervals)
Fraser River Egg and Larval Survey

Fraser River Eulachon Spawning Stock Biomass (SSB)

Note: Log SSB scale. Violet line=150t action level.

Estimated SSB Index for 2015:
317 tonnes
Small Mesh Multi Species Survey

- Three areas of WCVI & Queen Charlotte Sound
- CCG W.E. Ricker
- Survey conducted in May
- Fixed station survey design
- Primary goal is to inform shrimp stock assessment
Length frequencies from offshore samples binned across all areas.

Blue and red line are approximate modal means.
Length Frequency from WCVI survey
LF for southern portion of WCVI survey
GENETICS

- 14 microsatellites for population identification.
- Results re-ran from 2012 with updated baseline data and correction of location assignments

**Estimate percentage by DU**

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Conservation Actions to Date

• Shrimp Trawl bycatch reductions
  ▪ Bycatch reduction devices (BRDs)
  ▪ Eulachon Action Levels
  ▪ Closure in Queen Charlotte Sound

• Fisheries closures
  ▪ Recreational fisheries (all tidal waters)
  ▪ Commercial and test fisheries (Fraser River)

• Dredging suspension during spawning (Fraser)

• Reduction in FSC fisheries

• Research initiatives

• HSP/AFSAR funded community projects
Future directions

• Continue egg and larval survey in Fraser
• Continue WCVI offshore multi-species survey
• Re-establish QCSound multi-species survey
• Re-establish Eulachon data collection on Chatham Sound
• Continue to support non-DFO led initiatives
  – Egg and larval survey in Nass, Skeena and Bella Coola rivers
  – Collection of ATK by various First Nations
  – Research by independent investigators
  – Listing consultation under SARA
For further information

DFO - SARA
•  http://www.dfo-mpo.gc.ca/species-especes/home_e.asp

DFO – WAVES
•  http://waves-vagues.dfo-mpo.gc.ca/waves-vagues/

SARA public registry
•  http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=645

Province of BC
•  http://www.speciesatrisk.bc.ca/index.asp?type=single&section=Search_by_Species&sid=40&id=157

COSEWIC
•  http://www.cosewic.gc.ca

Environment Canada
•  http://www.speciesatrisk.gc.ca/default_e.cfm

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