

# Steelhead Stock Status Review British Columbia

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Pacific Coast Steelhead Management Meeting  
Walla Walla, WA  
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# Outline

- Province-Wide Angling Trends
- Regional Trends, Status and Major Issues
  - From north to south

A map of British Columbia, Canada, showing the Steelhead Range. The range is outlined in red and covers a large portion of the province, from the coast in the west to the interior in the east. The map is color-coded to show different types of habitats or populations, with green and blue areas representing different regions. The coastline is visible on the left side of the map.

## 423 Populations

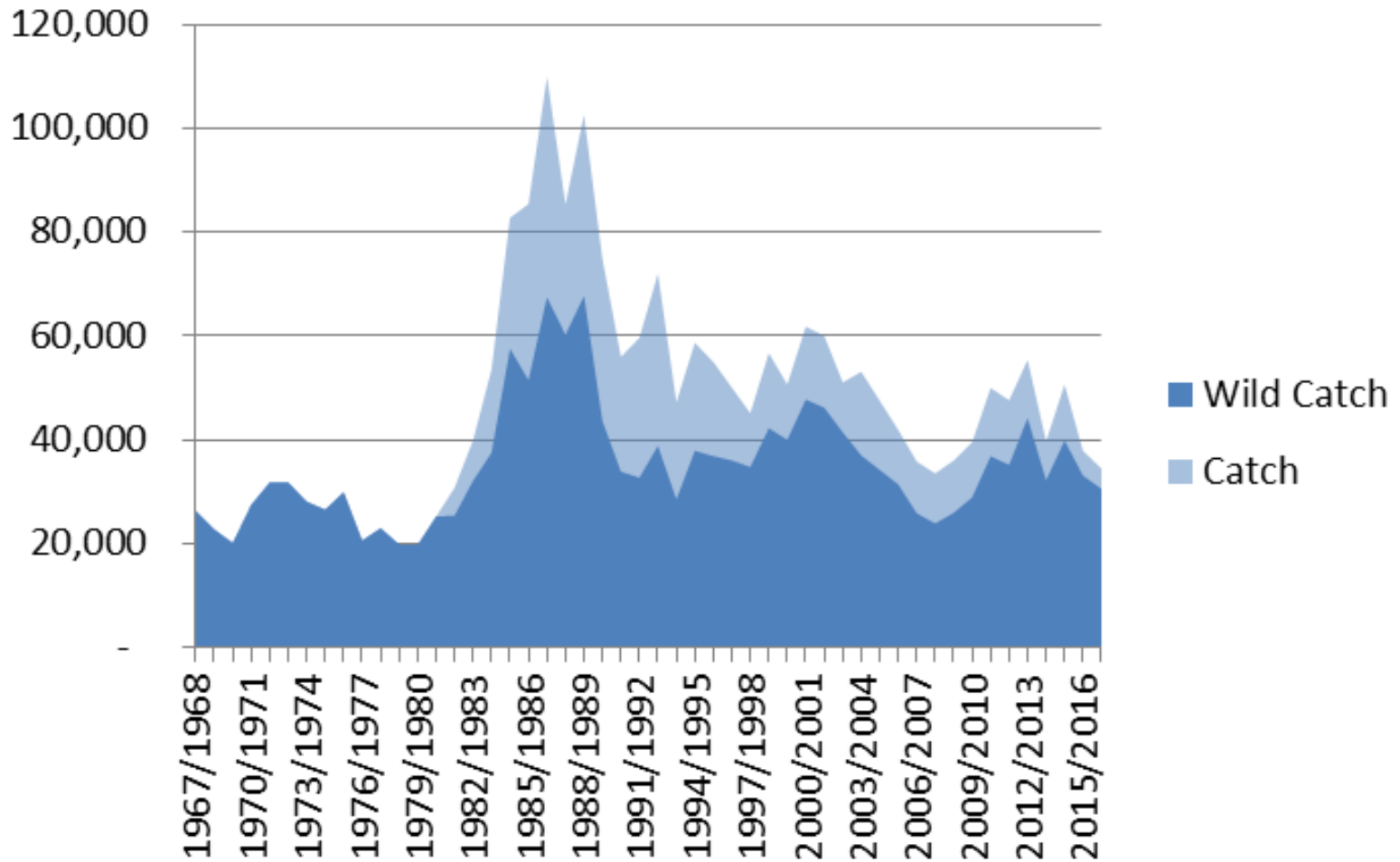
Coastal Summers (47)

Interior Summers (59)

Winters (317)

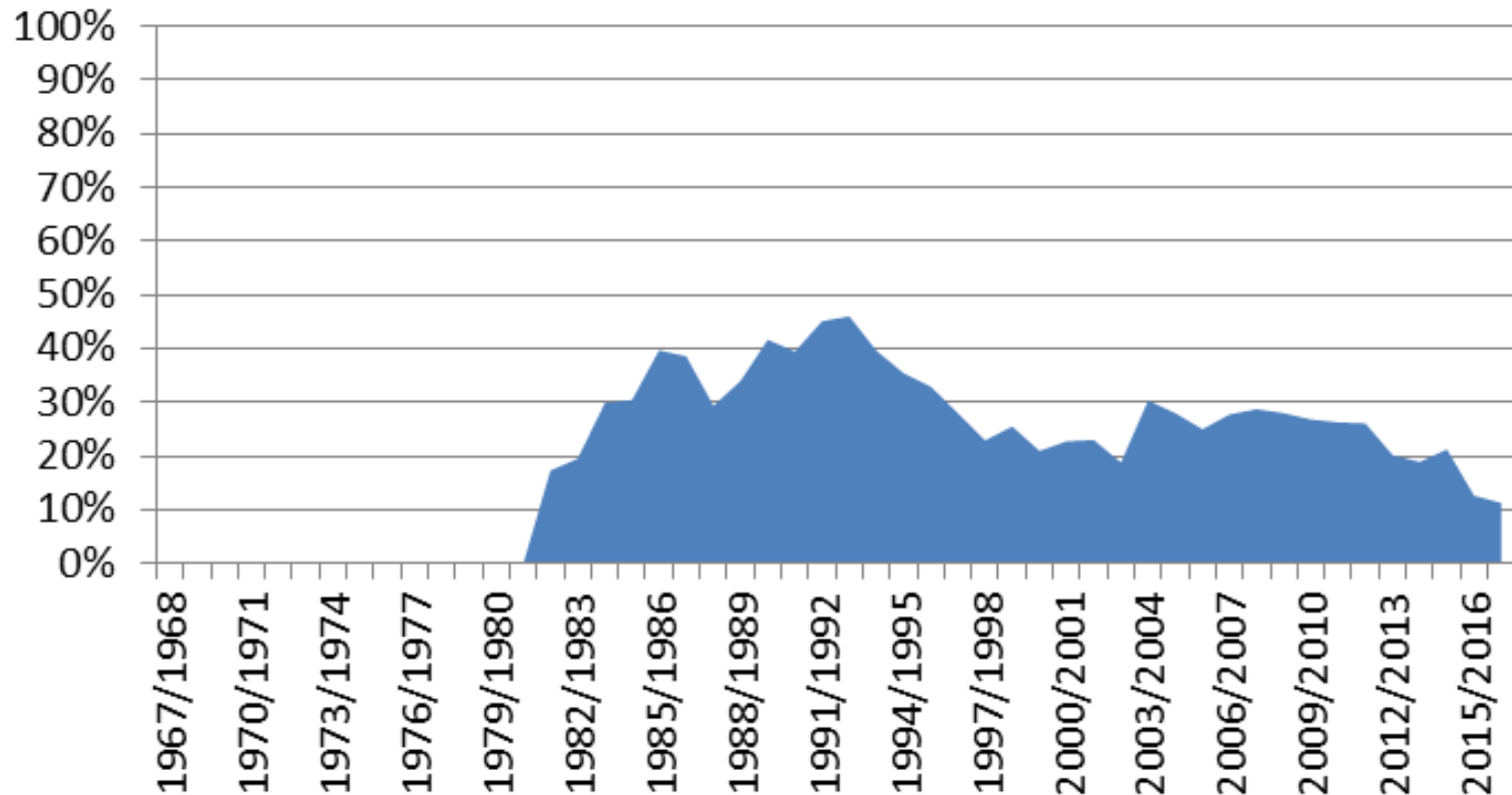
Steelhead Range  
within BC

# Province Wide Perspective



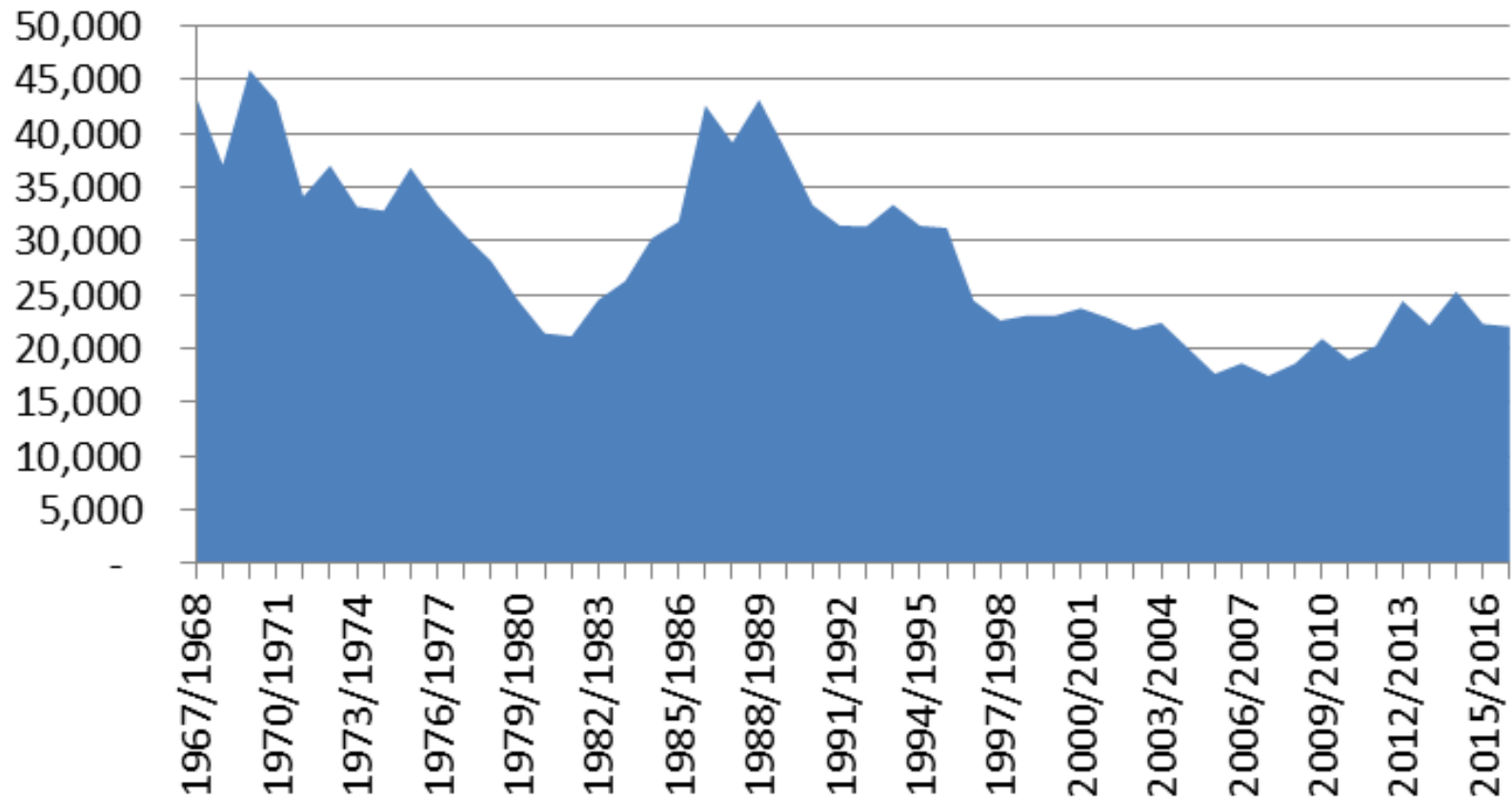
# Province Wide Perspective

## Proportion Hatchery Catch



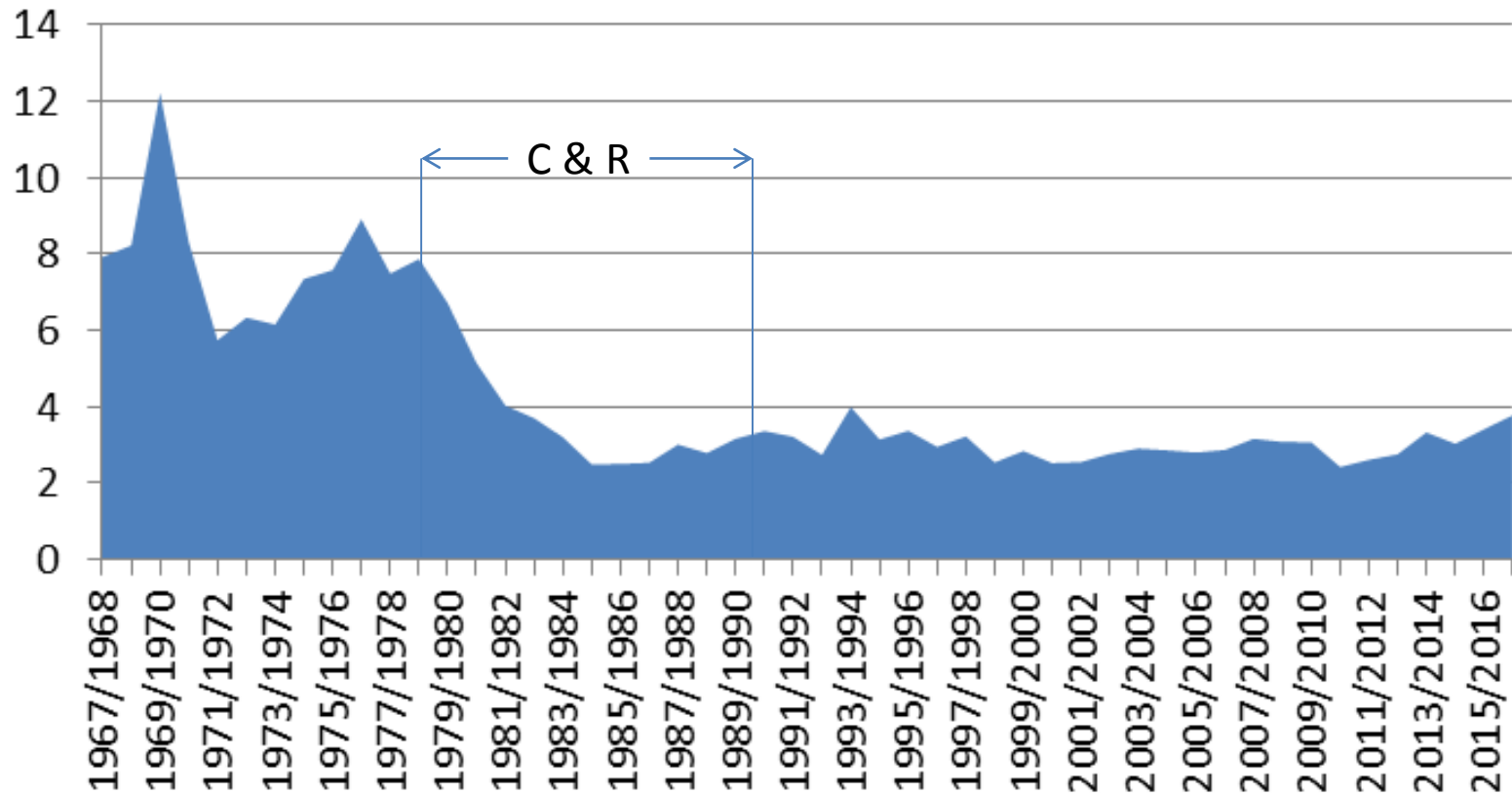
# Province Wide Perspective

## Anglers



# Province Wide Perspective

## Days per Catch



Alsek

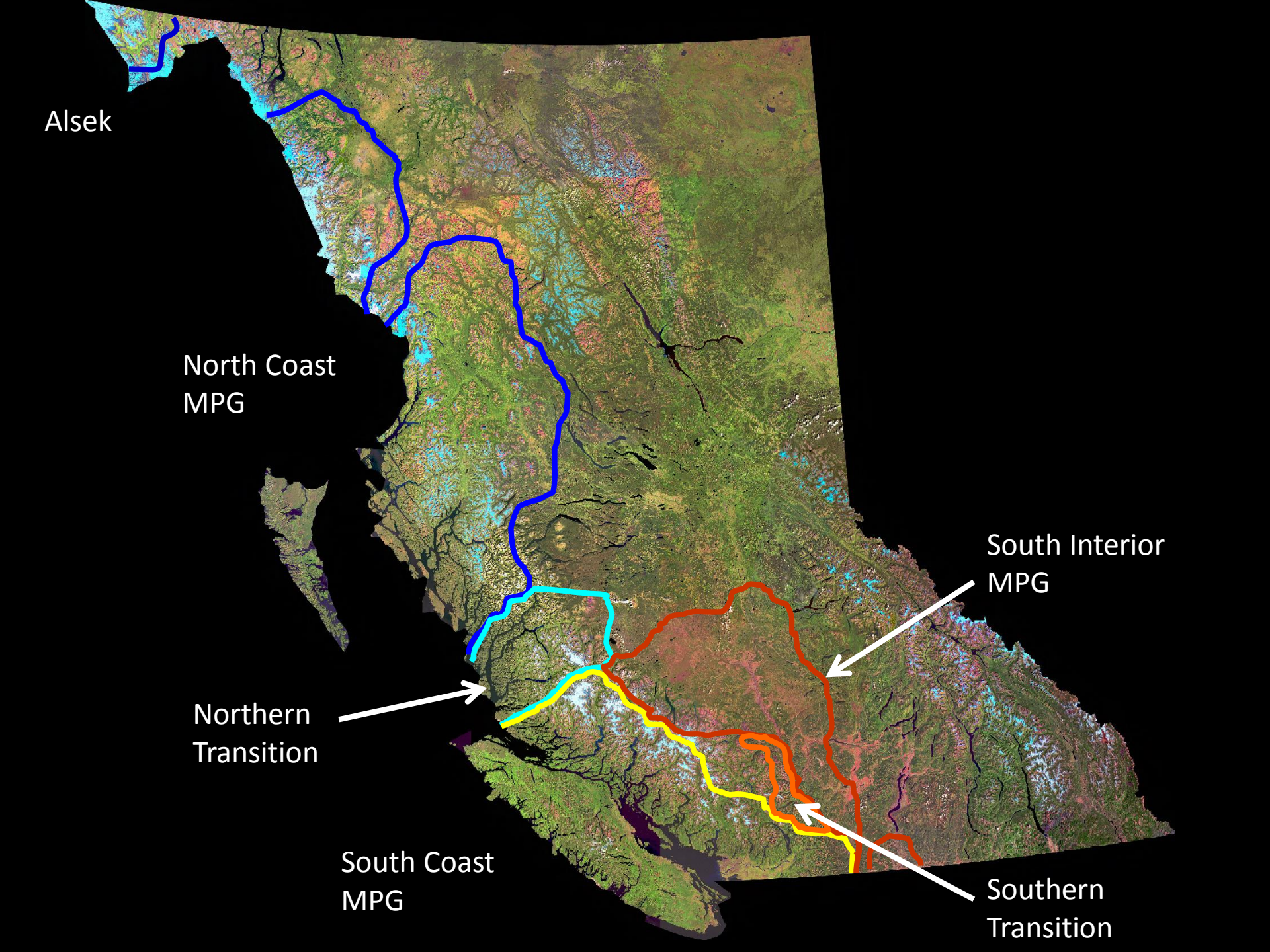
North Coast  
MPG

Northern  
Transition

South Coast  
MPG

South Interior  
MPG

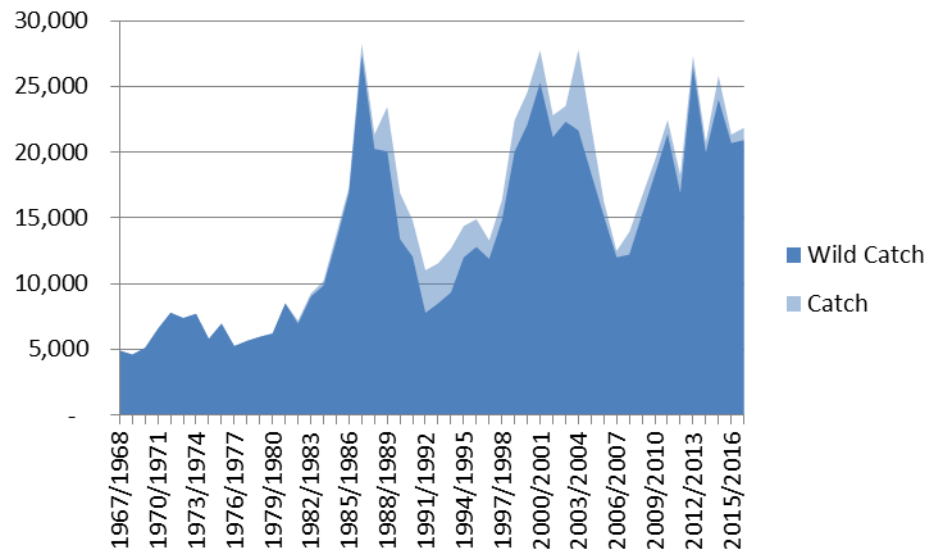
Southern  
Transition



# Northern BC

## 168 Populations

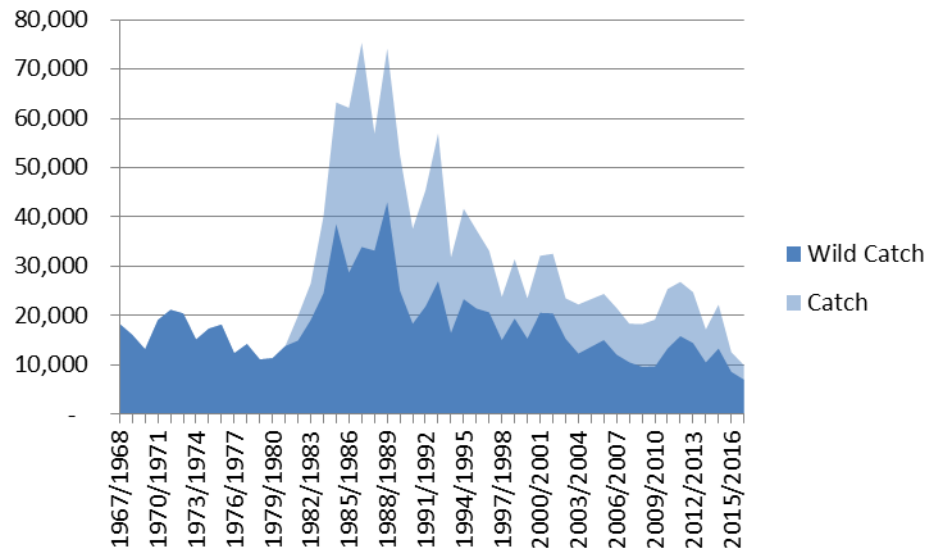
119 Winter-runs  
4 Coastal Summer-runs  
45 Interior Summer-runs



# Southern BC

## 228 Populations

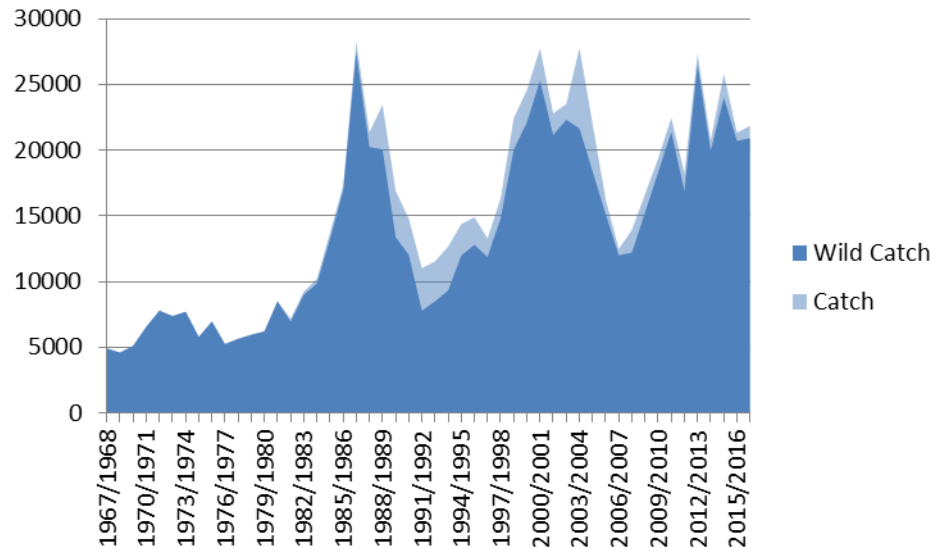
173 Winter-runs  
41 Coastal Summer-runs  
14 Interior Summer-runs



# North Coast MPG

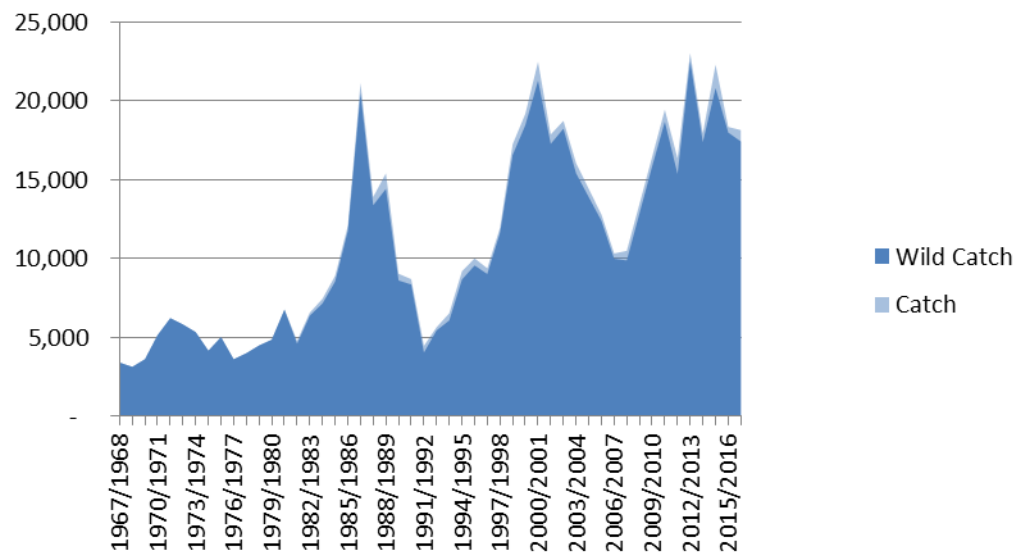
## 168 Populations

119 Winter-runs  
45 Interior Summer-runs  
4 Coastal Summer-runs



# Skeena Summers

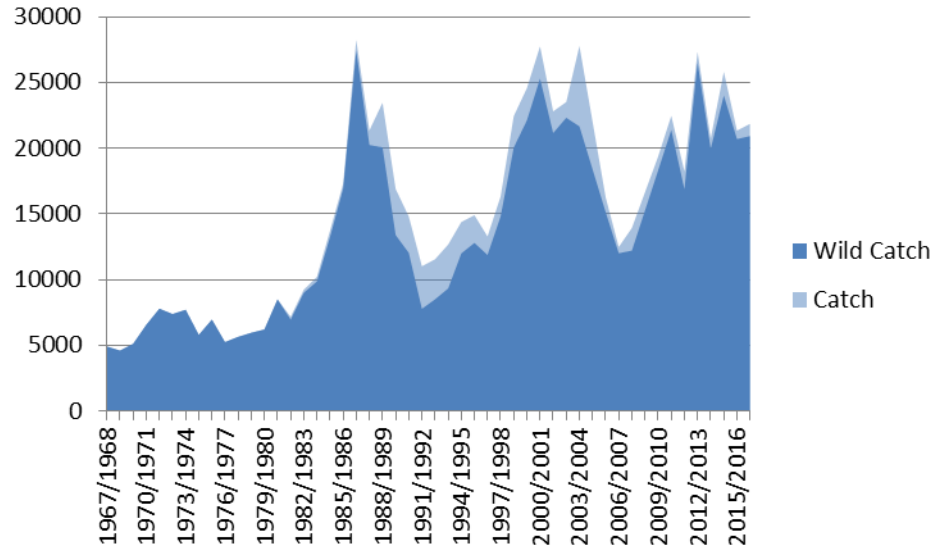
## 24 Interior Summer-runs



# North Coast MPG

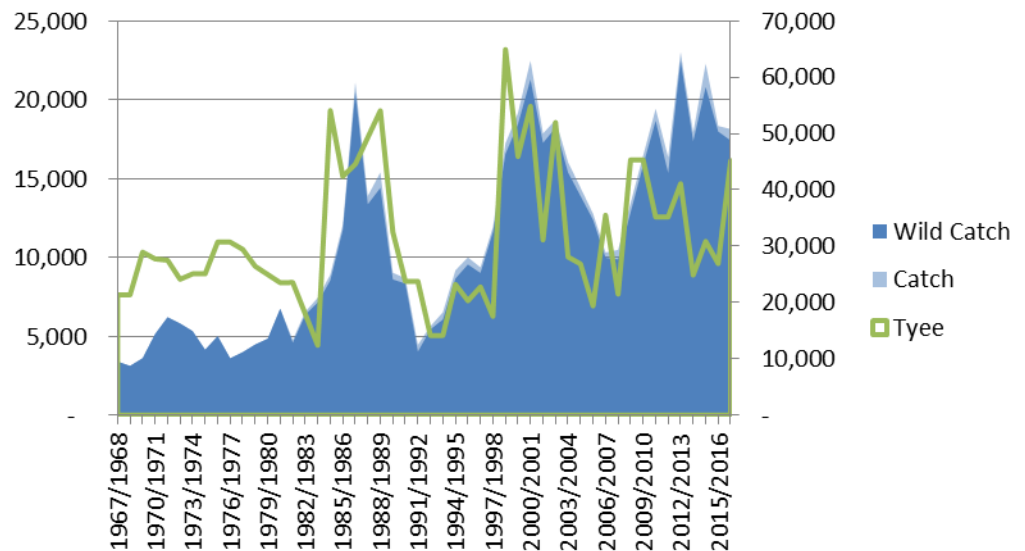
## 168 Populations

119 Winter-runs  
45 Interior Summer-runs  
4 Coastal Summer-runs

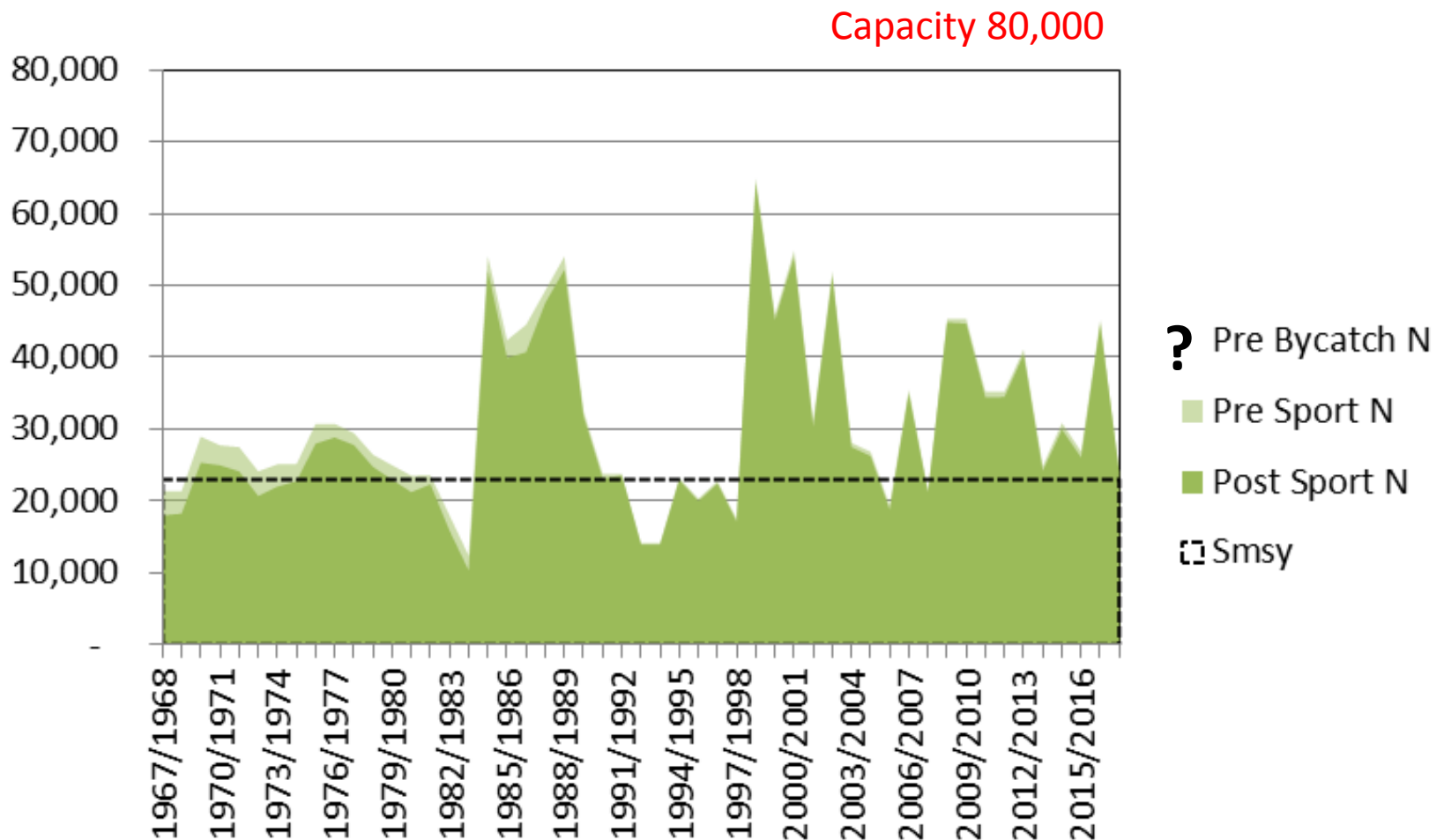


# Skeena Summers

## 24 Interior Summer-runs



# Skeena Summer Run Abundance Status



# Skeena Summer Run

## Chronology of Salmon Enhancements

- Moricetown Blasting 1928-29
- Moricetown Fishway 1951 (pink)
- Hagwiget Rock Slide 1959 (original blockage in 1824)
- Fulton Channel 1965 and 1971 (sockeye)
- Pinkut Channel 1968 (sockeye)
- Meziadin Fishway 1966 (sockeye)
- SEAK Hatcheries (general onset in 1980's)
  - Southern Southeast (8 hatcheries in 2012)
  - Northern Southeast (9 hatcheries in 2012)

# North Coast MPG

## Other Intercepted Summer Runs

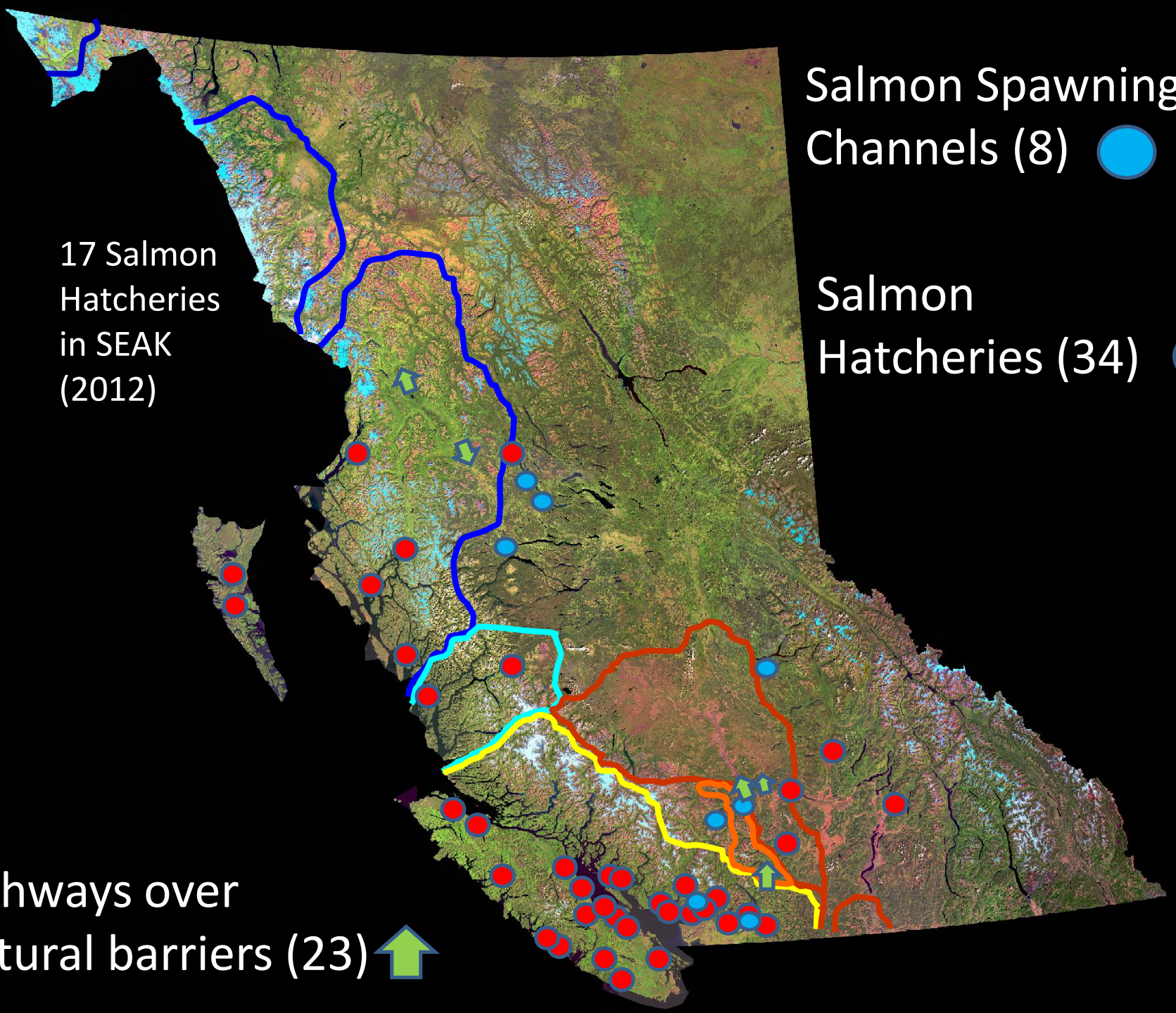
- **Nass**
  - Meziadin Fishway (sockeye range expansion)
  - SEAK Hatcheries
  - Cranberry Access Improvement (proposed chinook expansion)
- **Stikine**
  - Tahltan (sockeye hatchery stocking)
  - SEAK Hatcheries (chum, coho, king)
- **Taku**
  - Canada - Tatsemine and Little Trapper (sockeye hatchery stocking and future range expansion)
  - SEAK Hatcheries (chum, sockeye, coho, king)

Salmon Spawning  
Channels (8) ●

Salmon  
Hatcheries (34) ●

17 Salmon  
Hatcheries  
in SEAK  
(2012)

Fishways over  
natural barriers (23) ↑



# North Coast MPG

- Management of angler crowding
- Implementation of catch and release
- Bycatch and salmon enhancement
- Other major industrial developments.
  - Bitumen and LNG Pipelines deferred indefinitely
  - LNG Ports deferred except for Nass proposal
  - Oil refinery proposal Terrance/Kitimat
  - Stikine/Iskut - Forest-Kerr Hydroelectric

Northern  
Transition

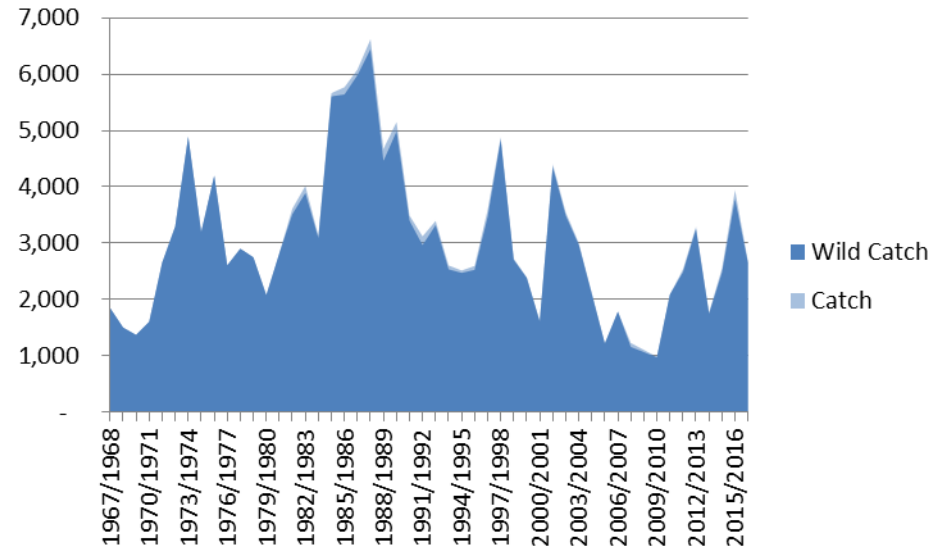


# Northern Transition

## 27 Populations

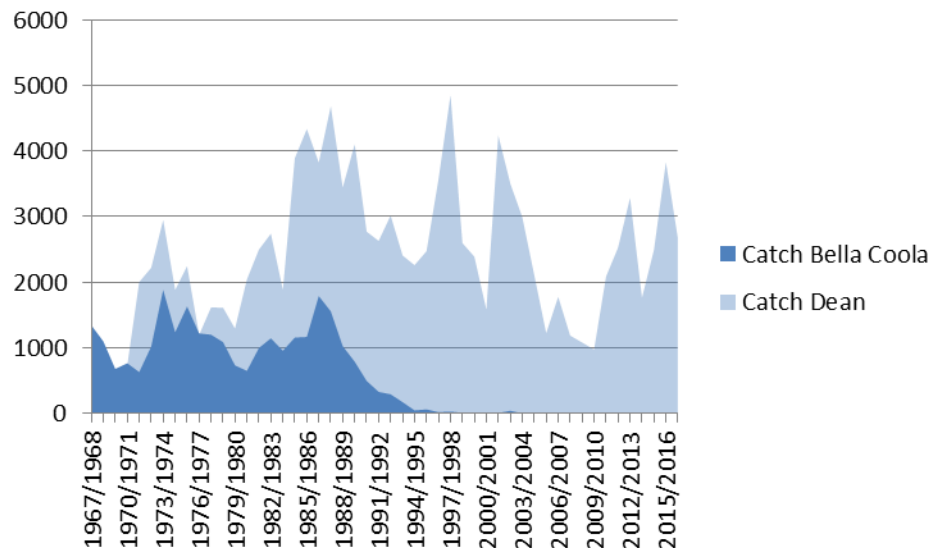
25 Winter-runs

2 Coastal Summer-runs

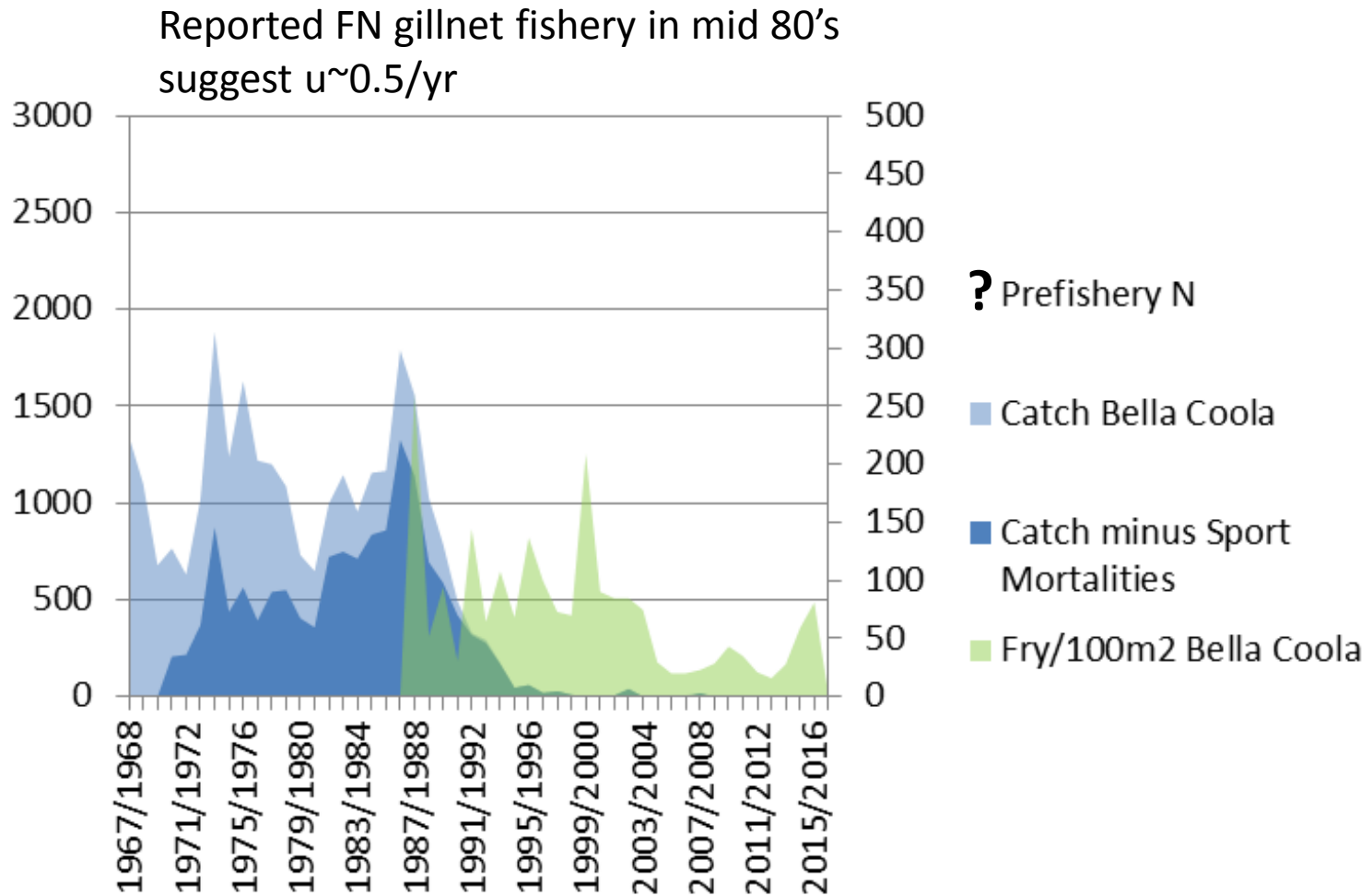


## Dean and Bella Coola

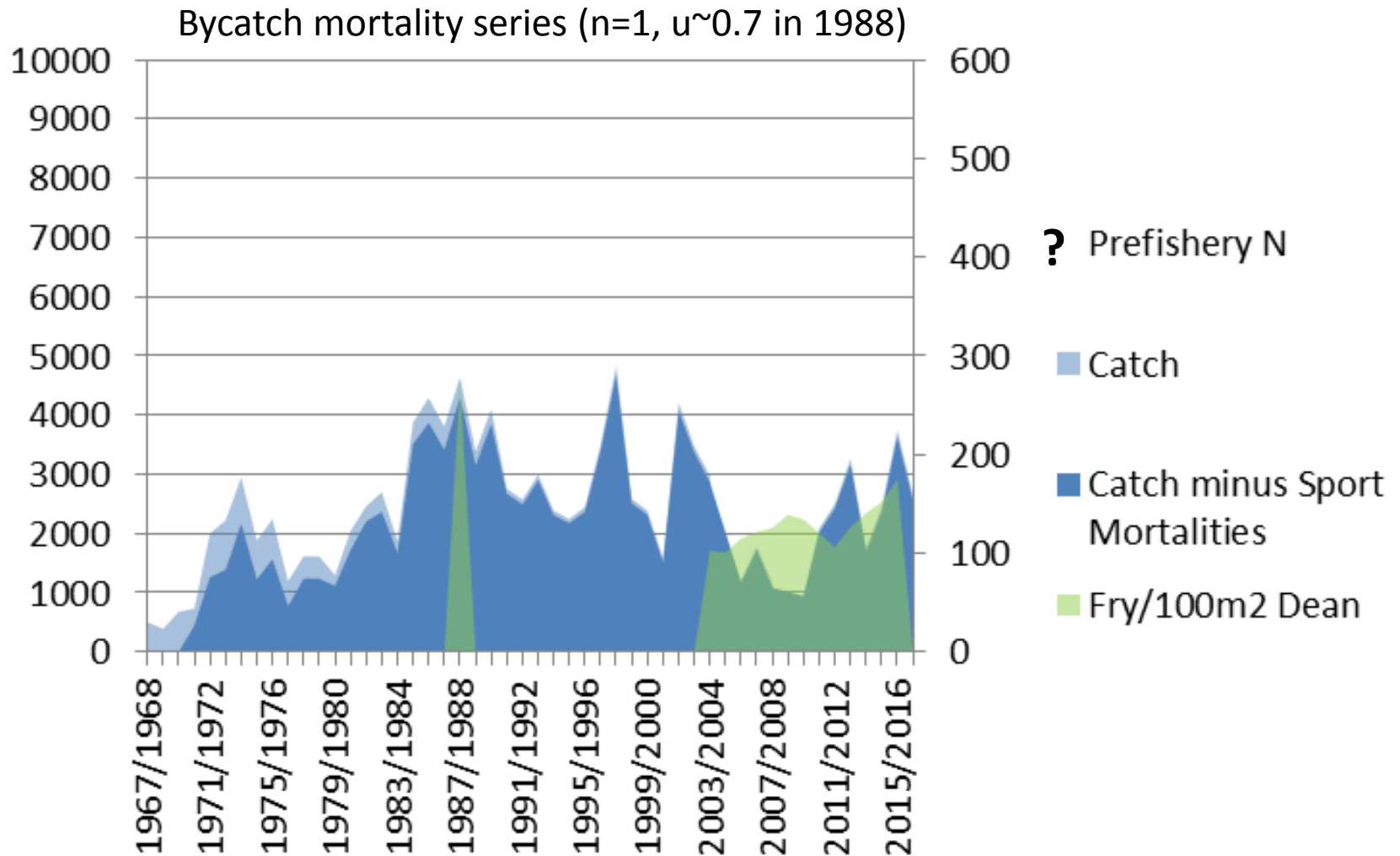
Bella Coola sport fishery closed in 1995.

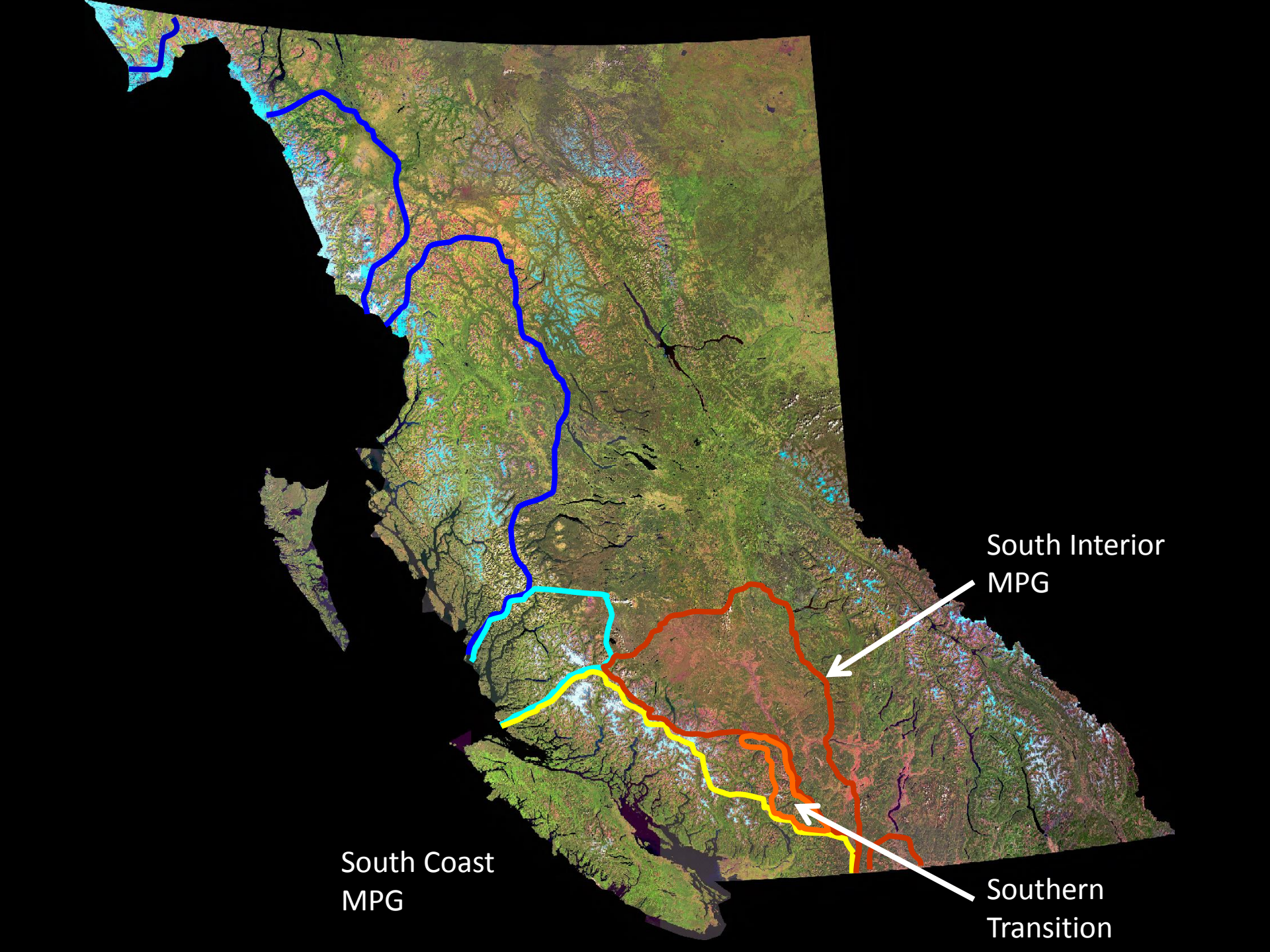


# Bella Coola



# Dean





South Interior  
MPG

South Coast  
MPG

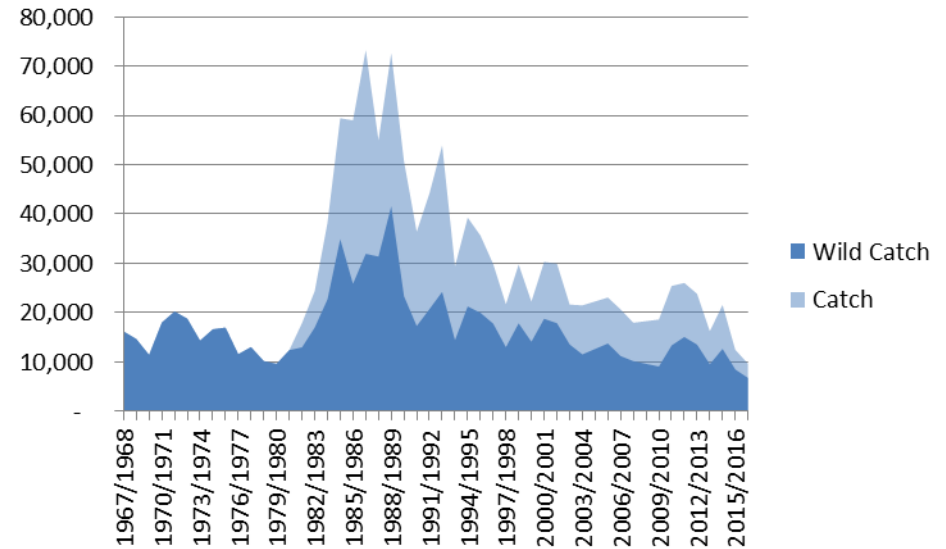
Southern  
Transition

# South Coast

## 214 Populations

173 Winter-runs

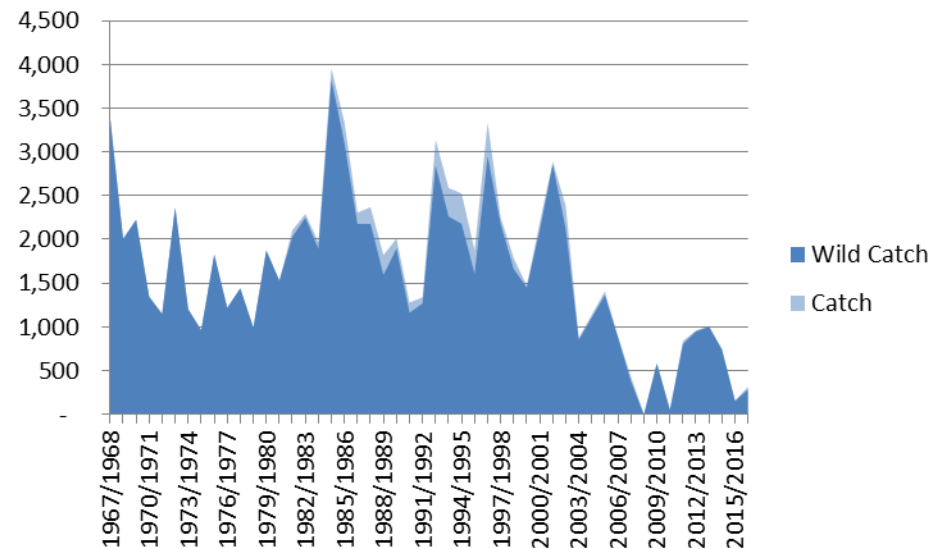
41 Coastal Summer-runs



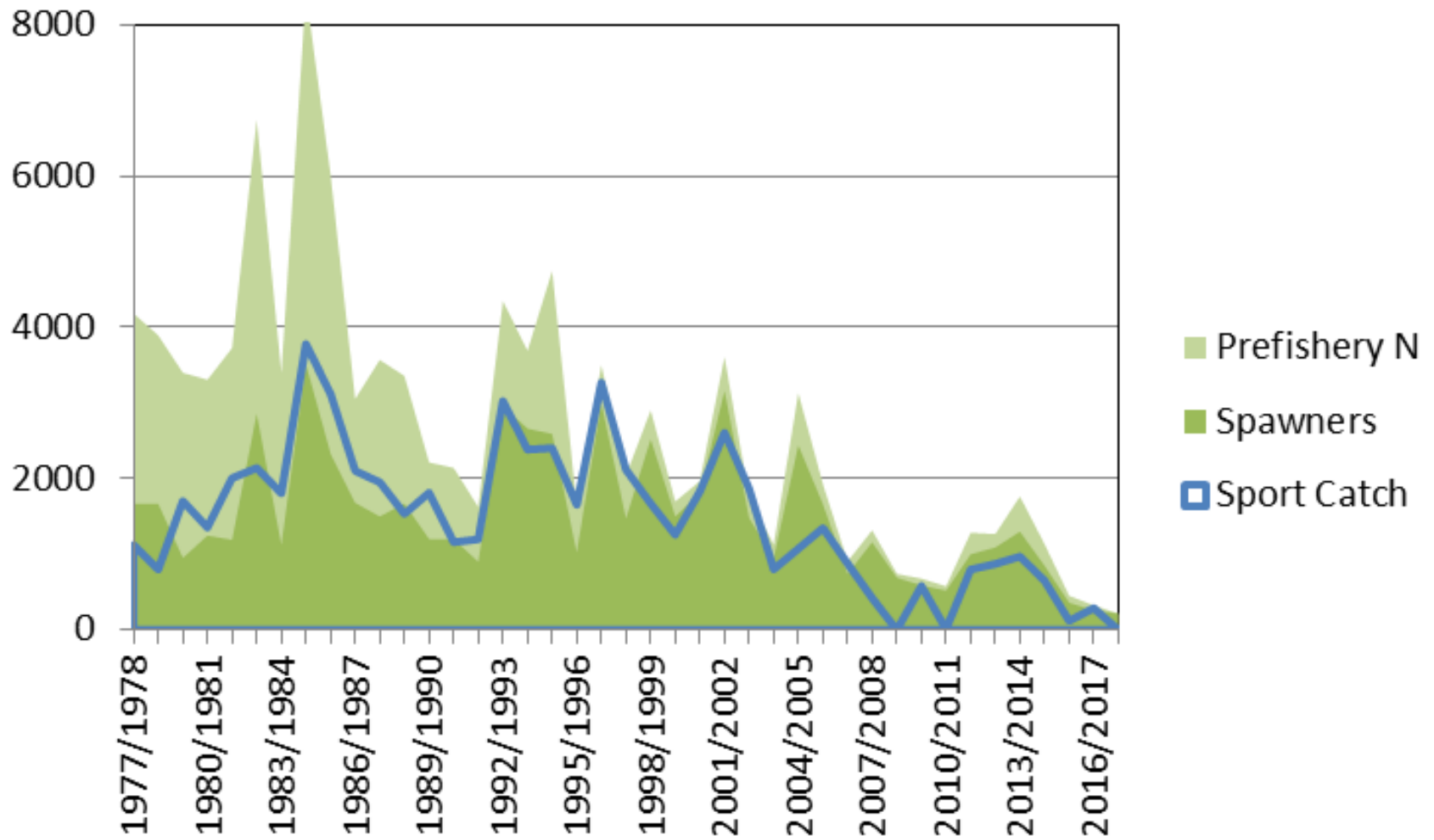
# South Interior

## Including South Transition

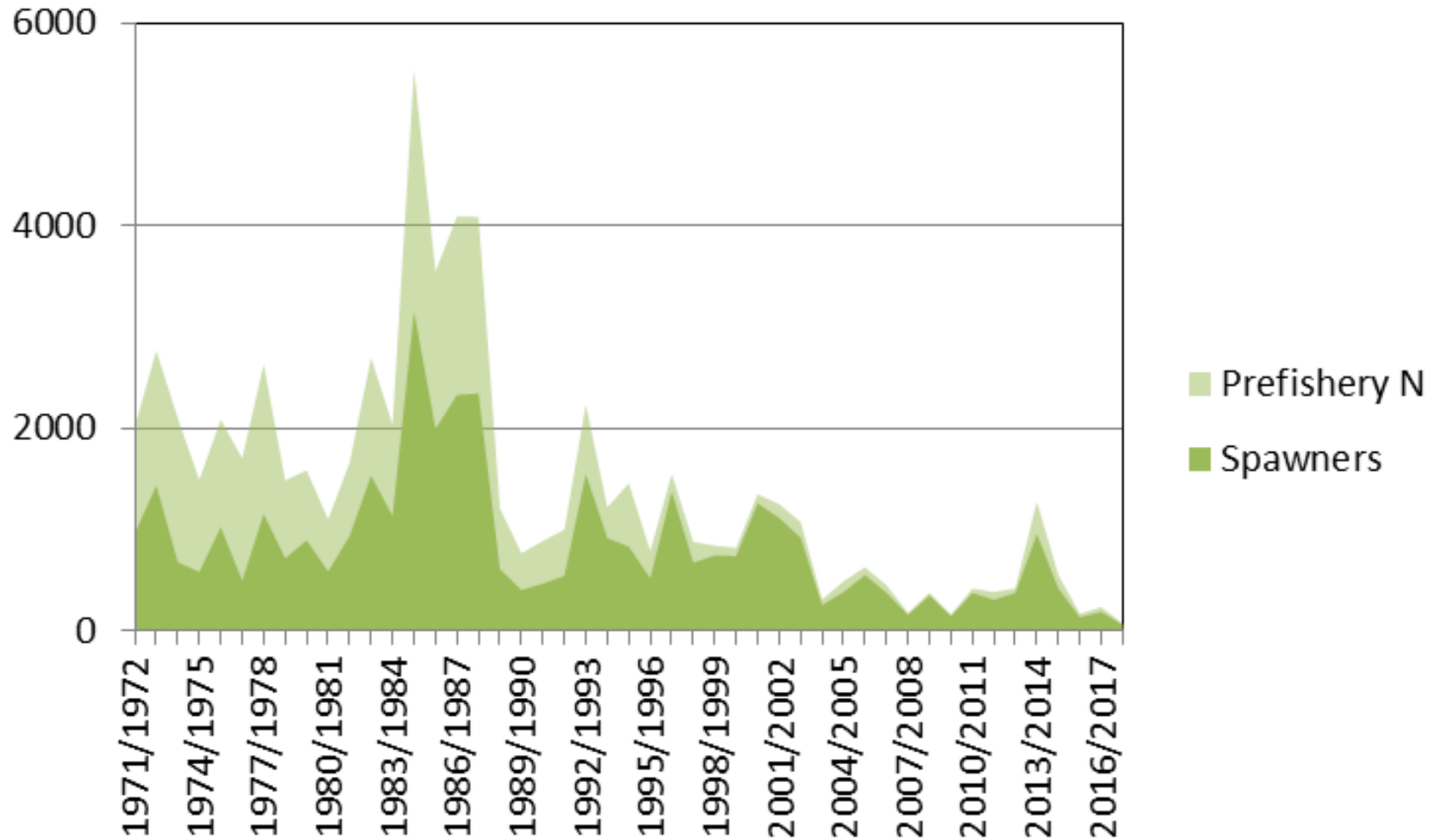
14 Interior Summer-runs



# Thompson

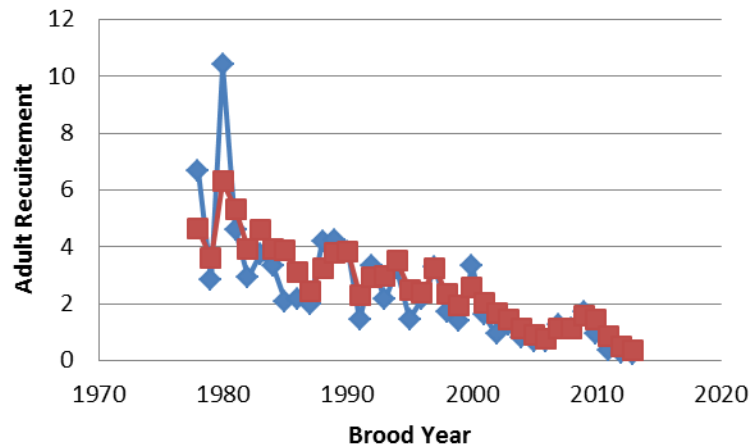


# Chilcotin



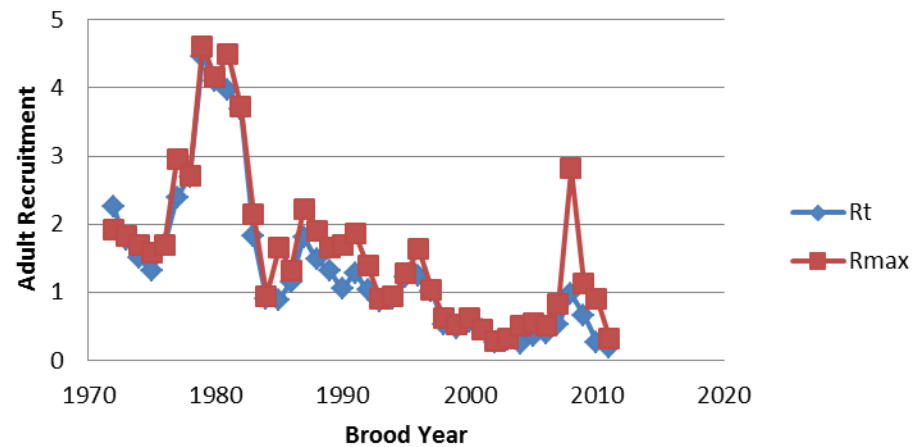
# Changing Recruitment Capacity

Thompson



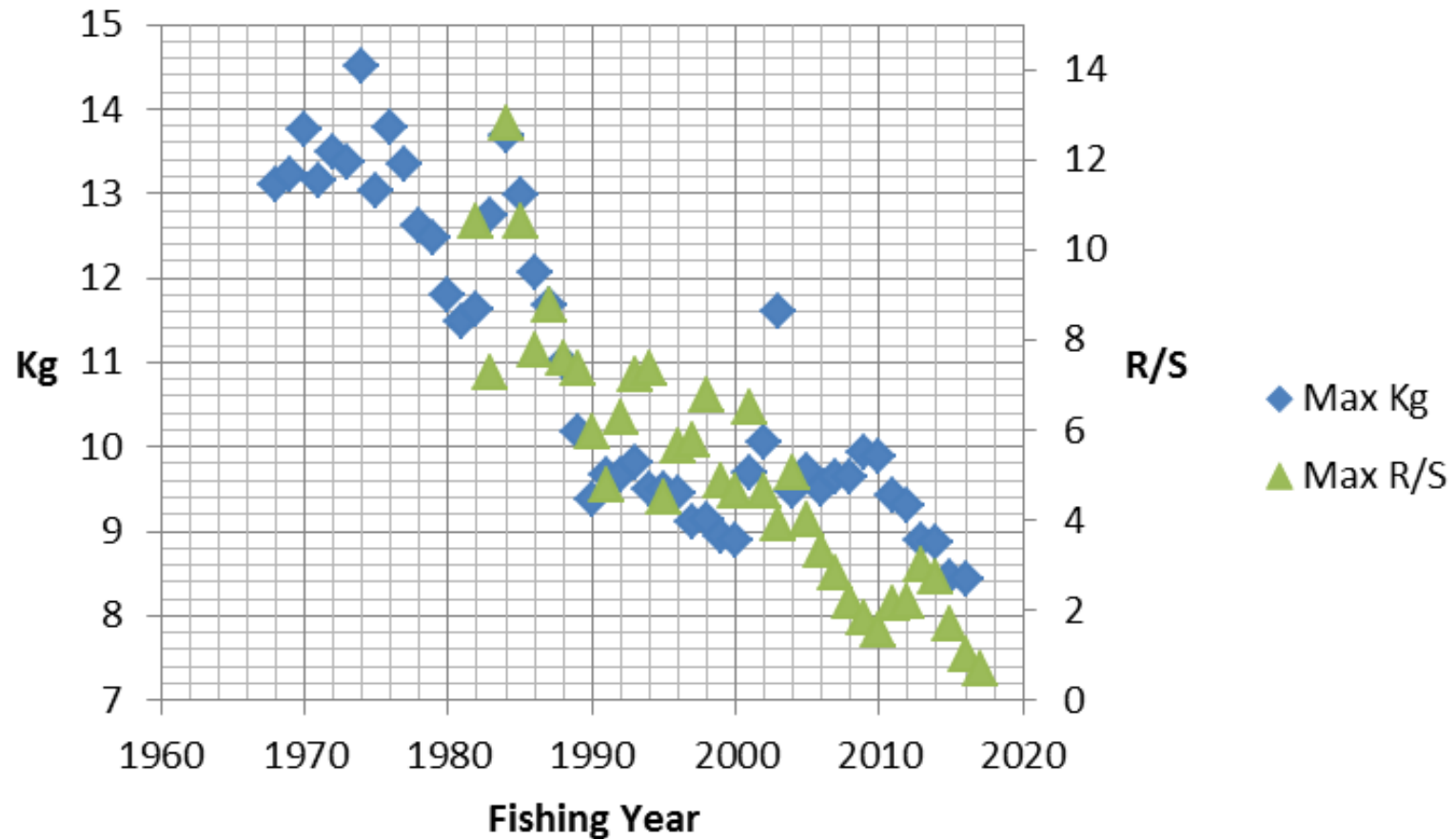
6% of max  $R_{max}$

Chilcotin

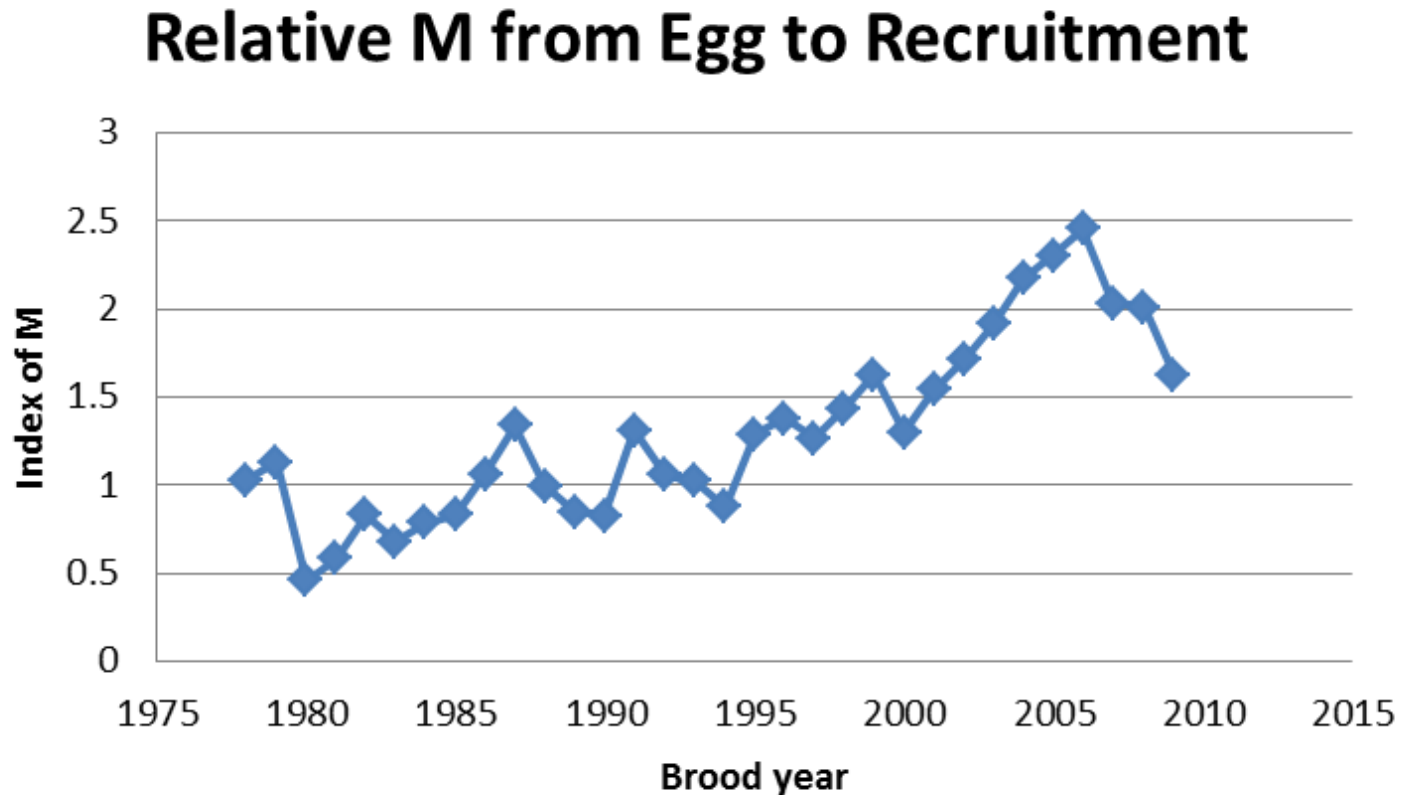


7% of max  $R_{max}$

# Productivity and Body Size (Fecundity)



However, change in fecundity alone does not explain all of the observed decline in recruitment capacity

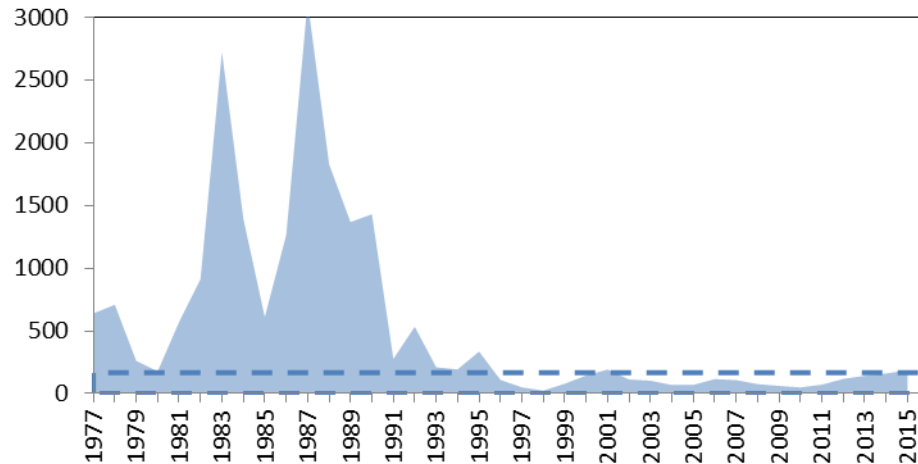




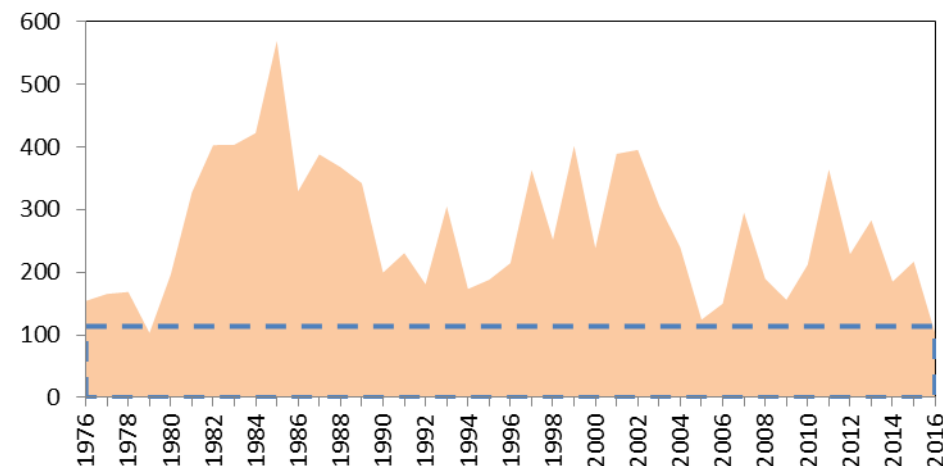
South Coast  
MPG

# South Coast Fishery Independent Monitoring

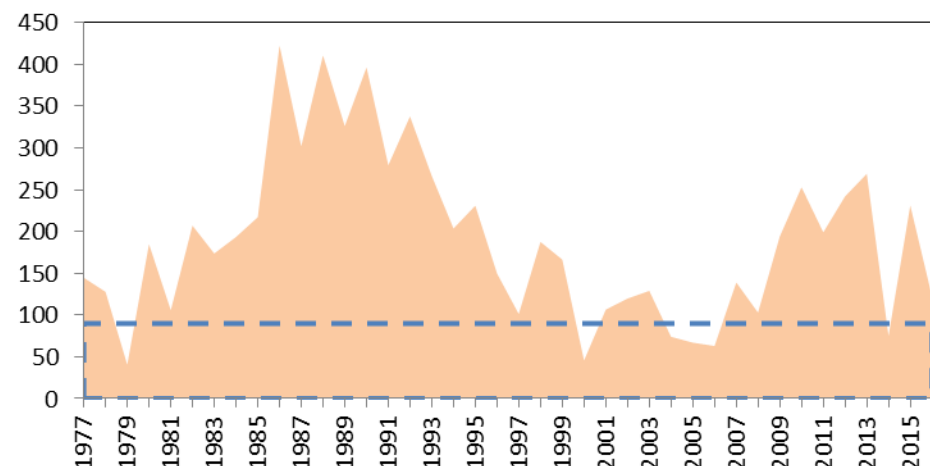
## Keogh (Wild) Winters



## Heber Coastal Summers

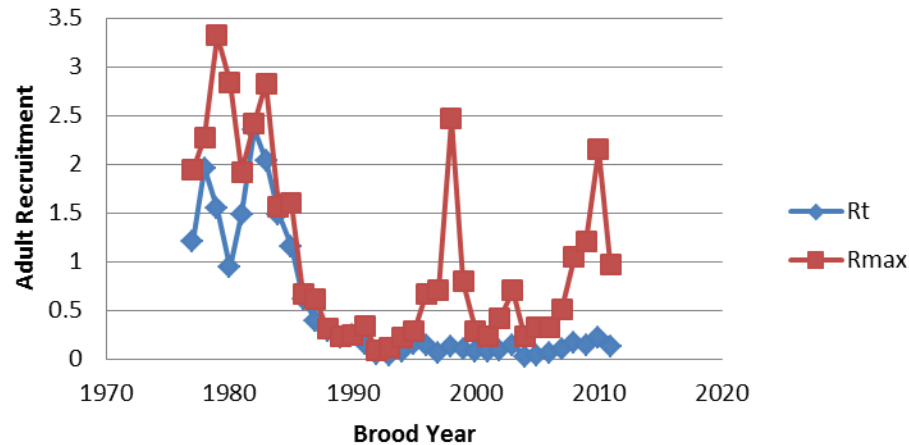


## Tsitika Coastal Summers

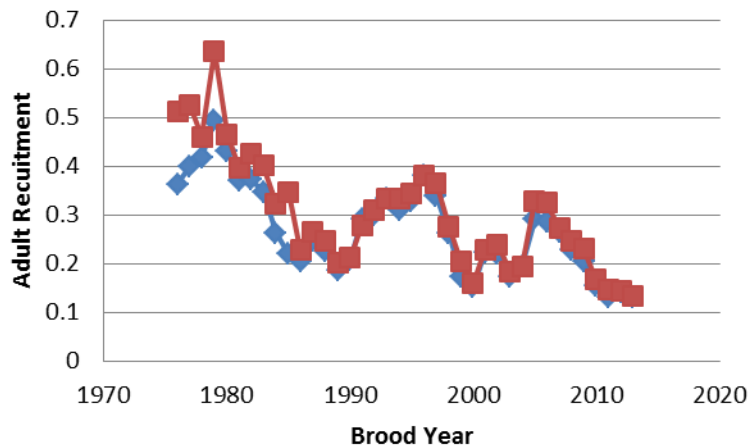


# Changing Recruitment Capacity

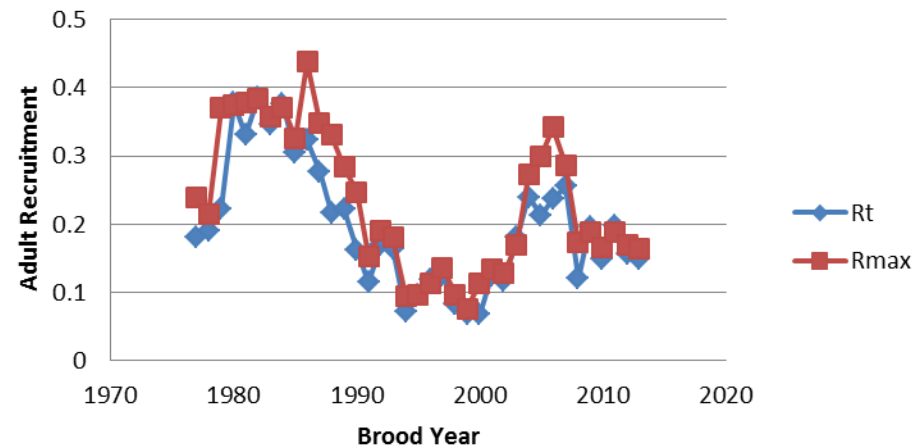
Keogh



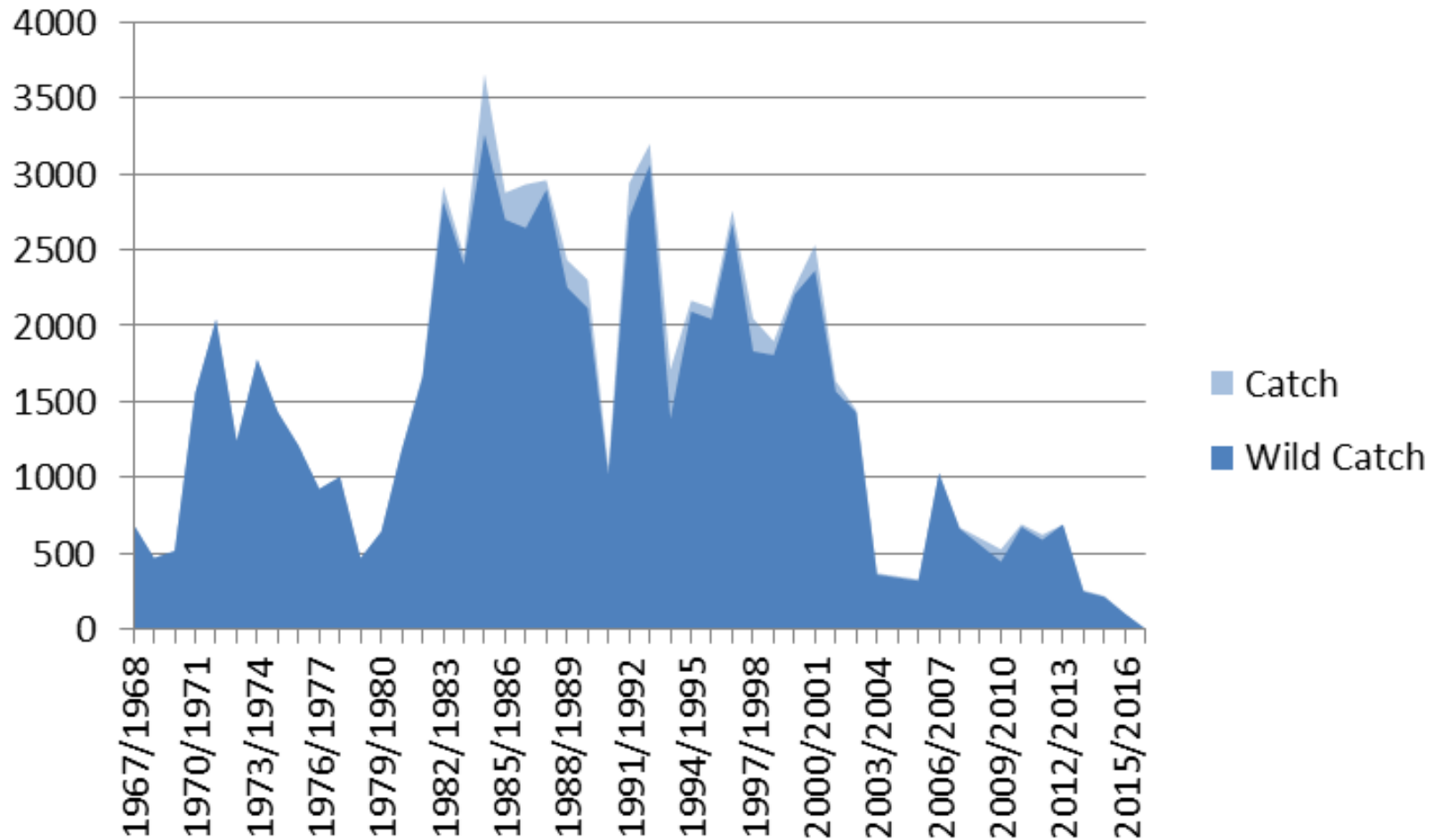
Heber



Tsitika



# Gold River



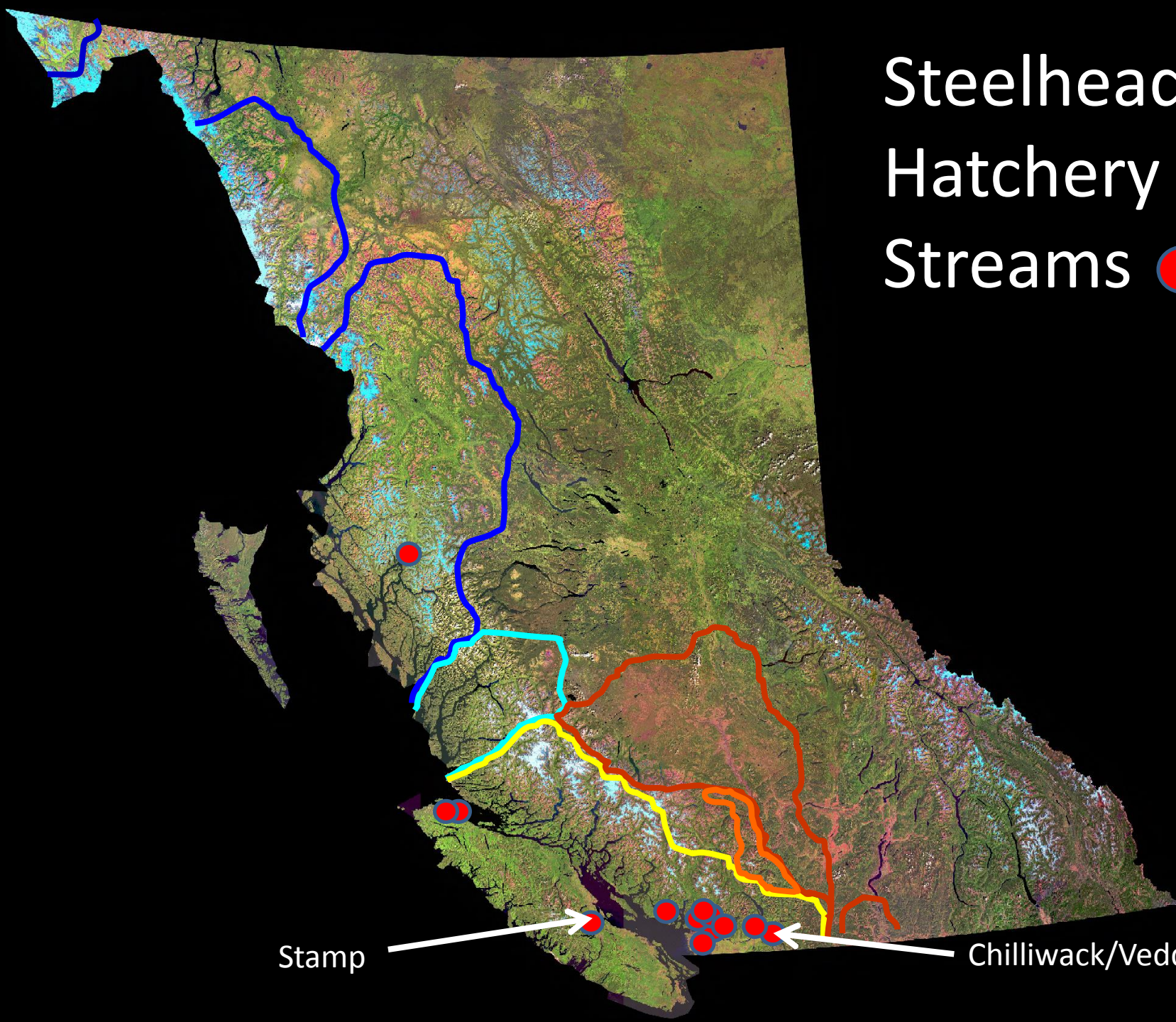
# Steelhead Hatchery Streams



Stamp

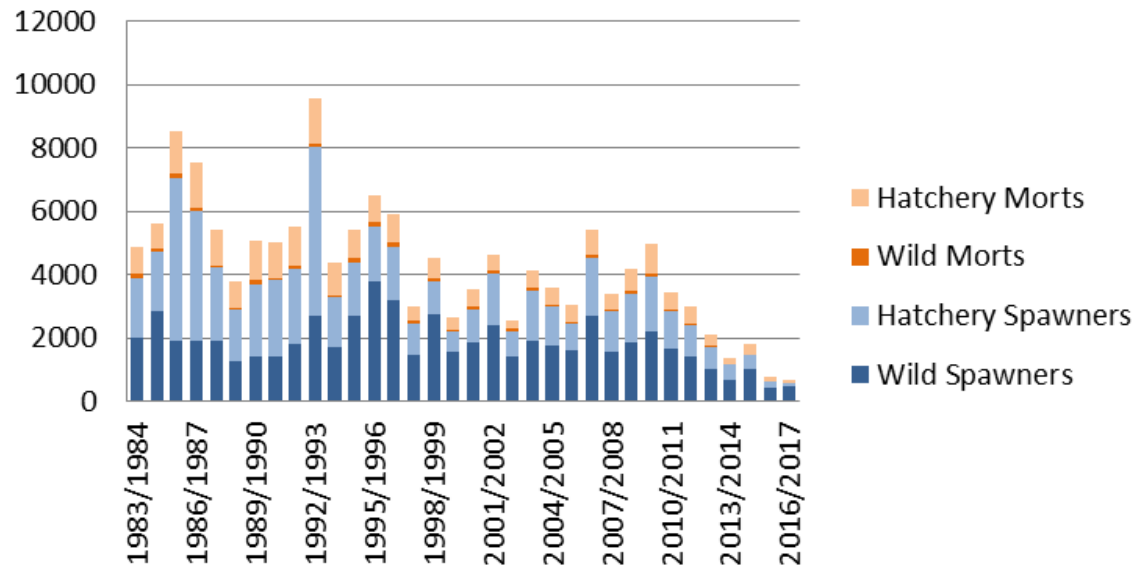


Chilliwack/Vedder

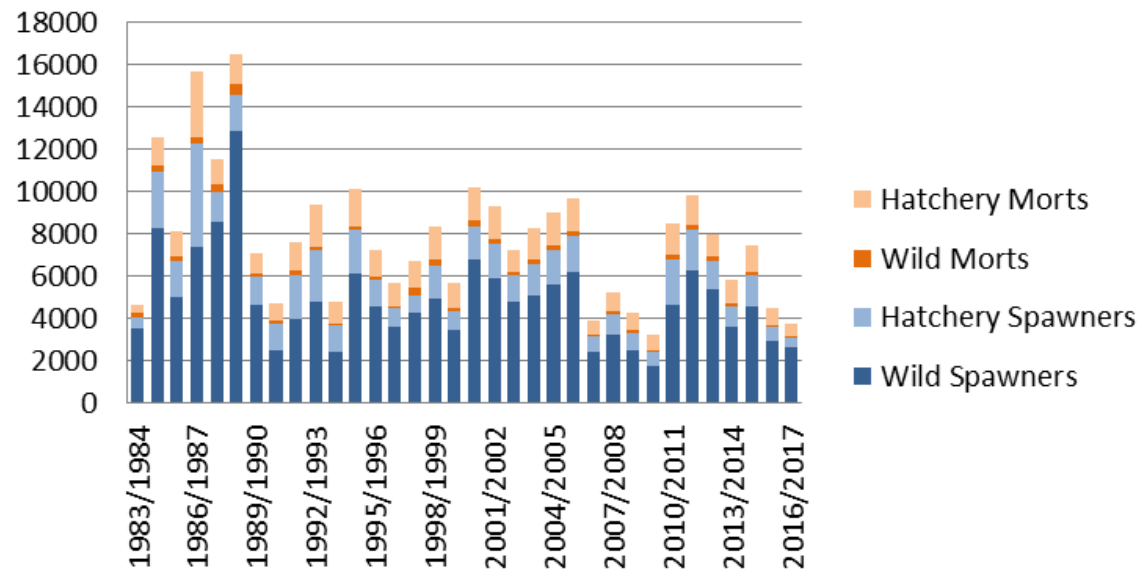


# South Coast Major Hatchery Streams

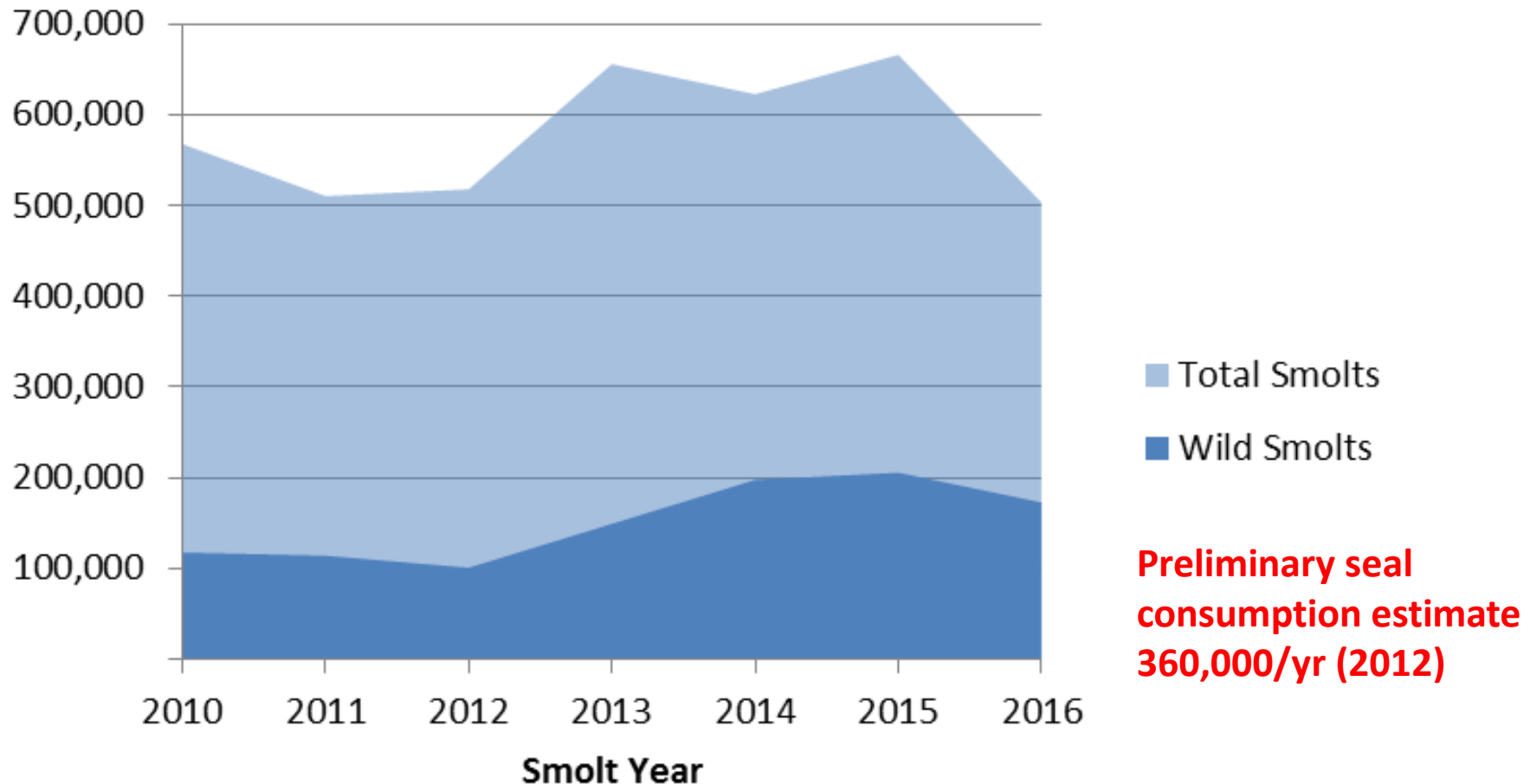
## Stamp



## Chilliwack



# Wild and Hatchery Steelhead Smolts in the Strait of Georgia



# South Coast MPG

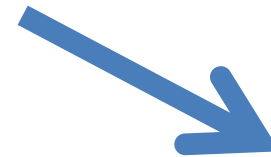
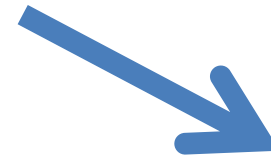
- Inshore and in-river predation by pinnipeds
- Extreme weather
  - Channel degradation
  - Hydrologic change
    - Longer summer low/no flows
- Forestry related stream degradation

# South Interior MPG and Southern Transition

- Inshore predation (pinnipeds)
- Offshore competition (body growth decline)
  - Oceanographic cycling and anomalies
- Bycatch in salmon fisheries
  - Pink range expansion and re-emerged markets
  - Naturally cyclical late-run sockeye
  - Chum fisheries and hatcheries

# Summary

- North Coast MPG – stable survival
- Northern Transition – declining survival
- South Interior MPG and Transition
  - declining recruitment capacity
  - endangered
- South Coast MGP
  - declining recruitment capacity
  - more dramatic in winter runs



# Acknowledgements

## Individuals

- Joseph DeGisi
- Trevor Davies
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- Ben Nelson, UBC

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## Consultants

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- Ecometric Research
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End