



Status of Salmon Populations in the Gulf Region

Gulf Nova Scotia Program

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Gulf Region

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Data collected in 2019...

- Kelt Recapture Fishery
- Smolt Wheel
- Juvenile Electrofishing Survey
- Volunteer Angler Logbooks
- License Stub Returns



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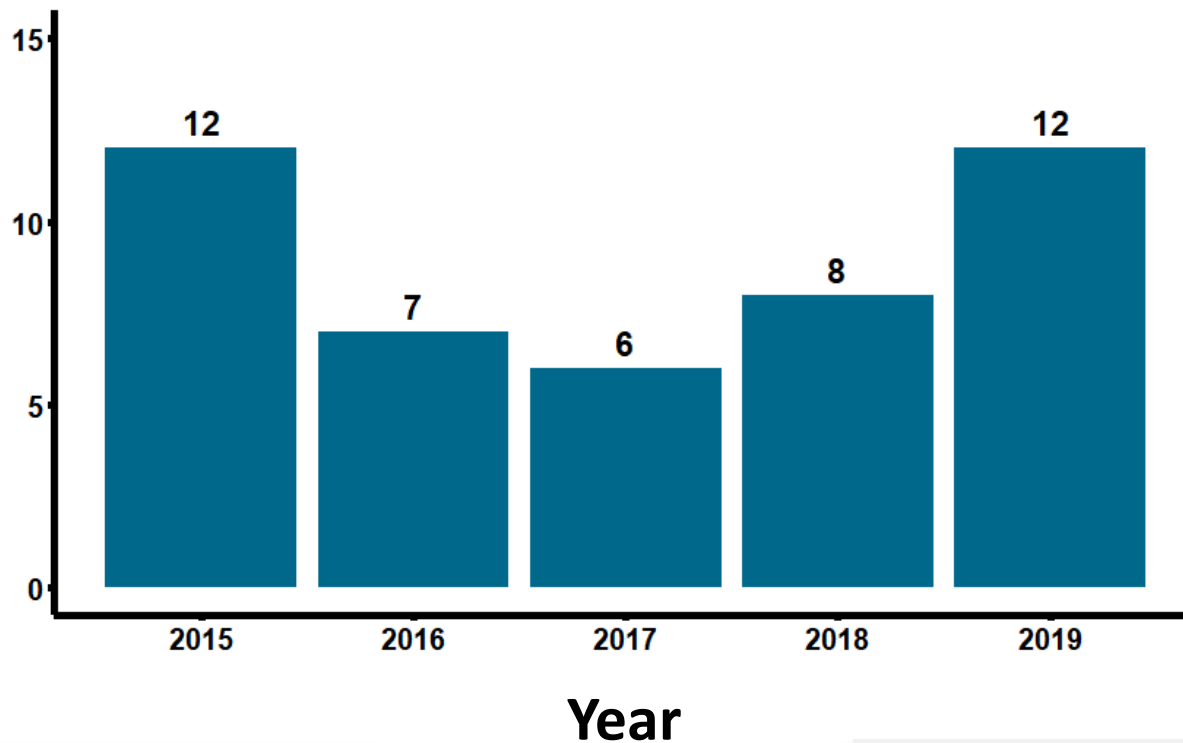
Also, from 2018...

- Update of Indicators
- Temperature



Kelt Recapture Fishery

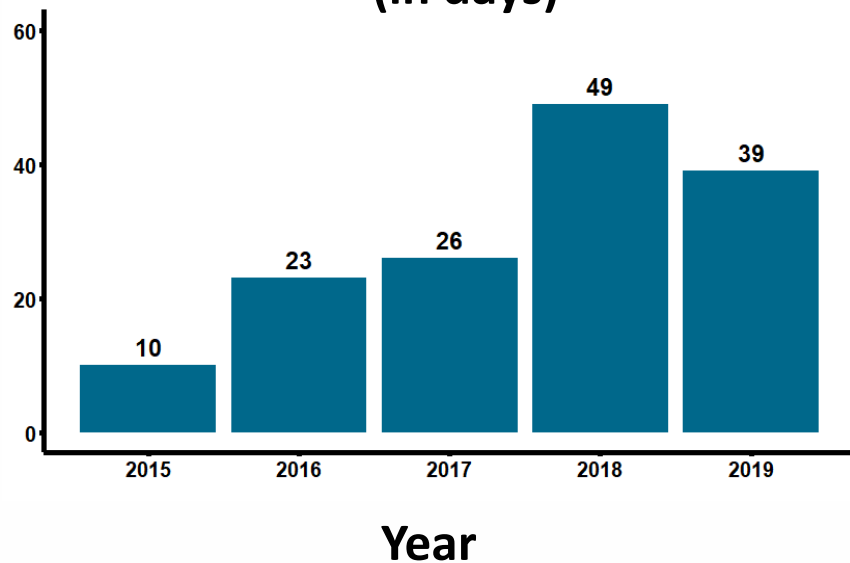
**Number of
Logbooks
Returned**



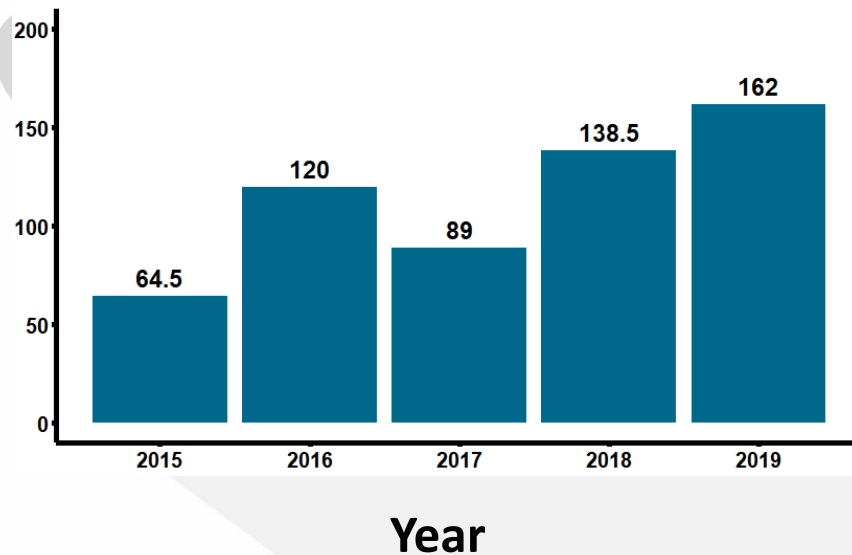


Kelt Recapture Fishery

**Duration of Kelt Fishing Season
(in days)**



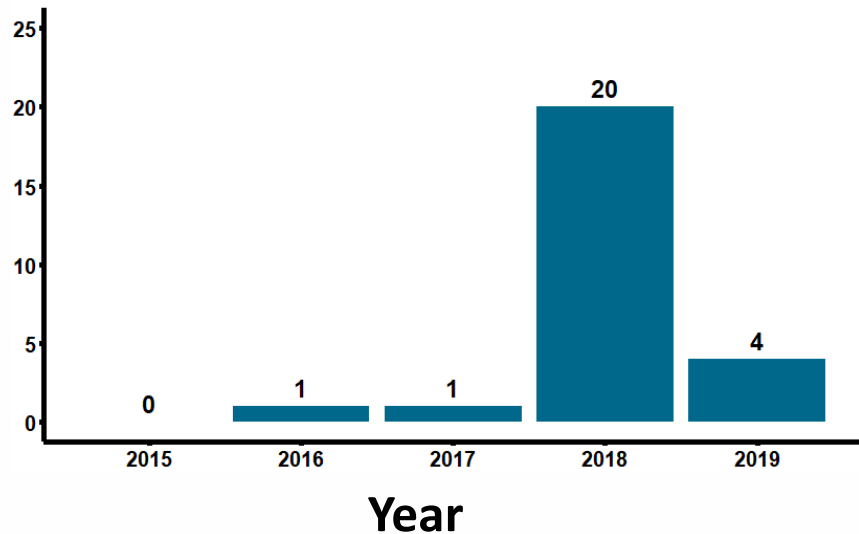
Effort: Total Fishing Hours



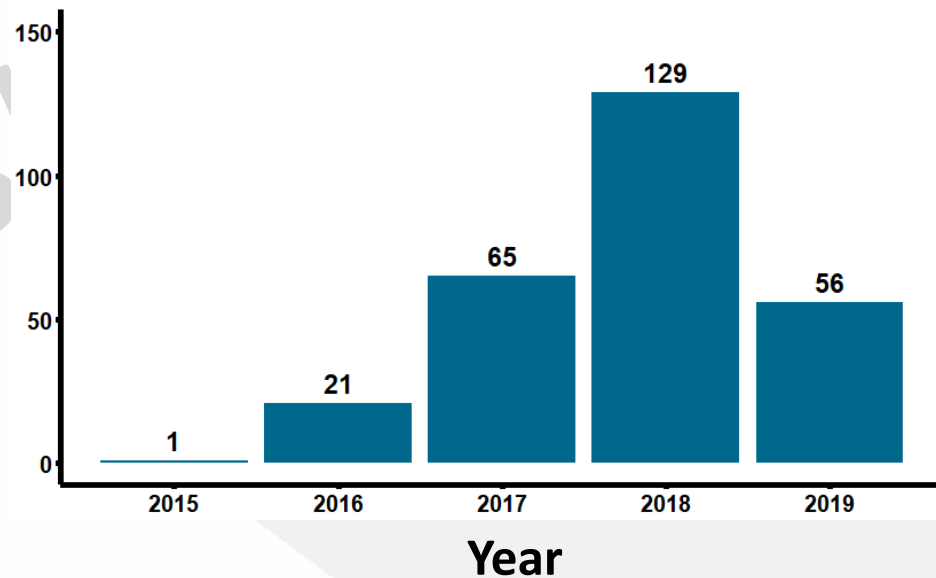


Kelt Recapture Fishery

Grilse (<63cm)



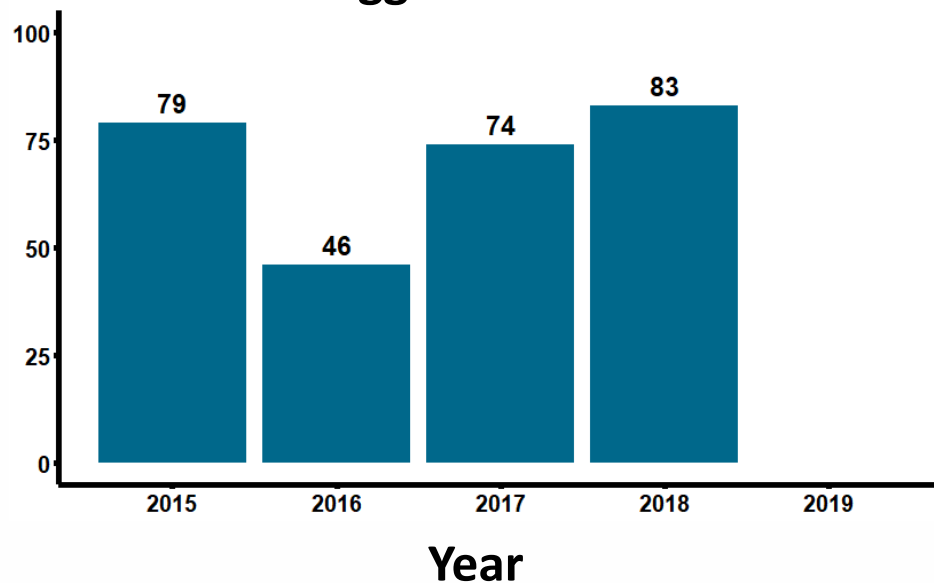
Salmon (>63cm)



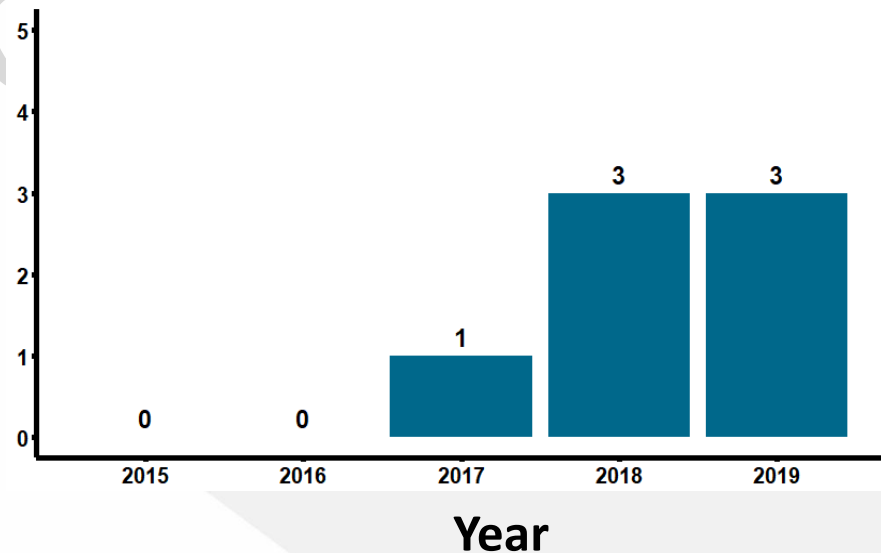


Kelt Recapture Fishery

Tagged Salmon



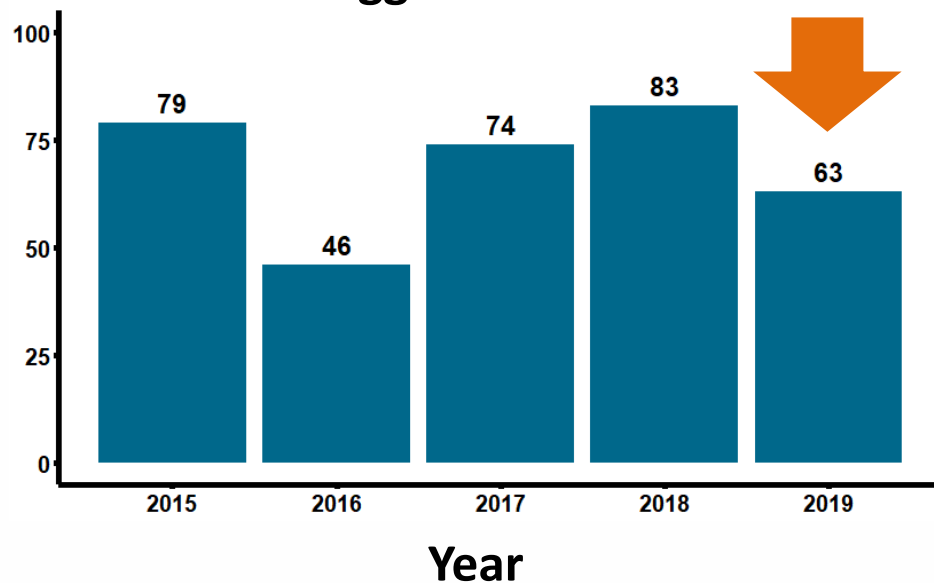
2019 Recaptures



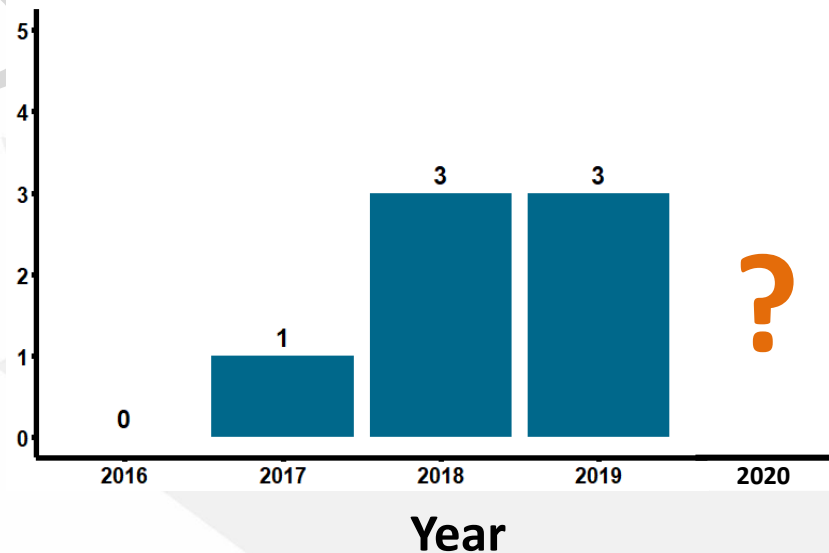


Kelt Recapture Fishery

Tagged Salmon



2020 Recaptures





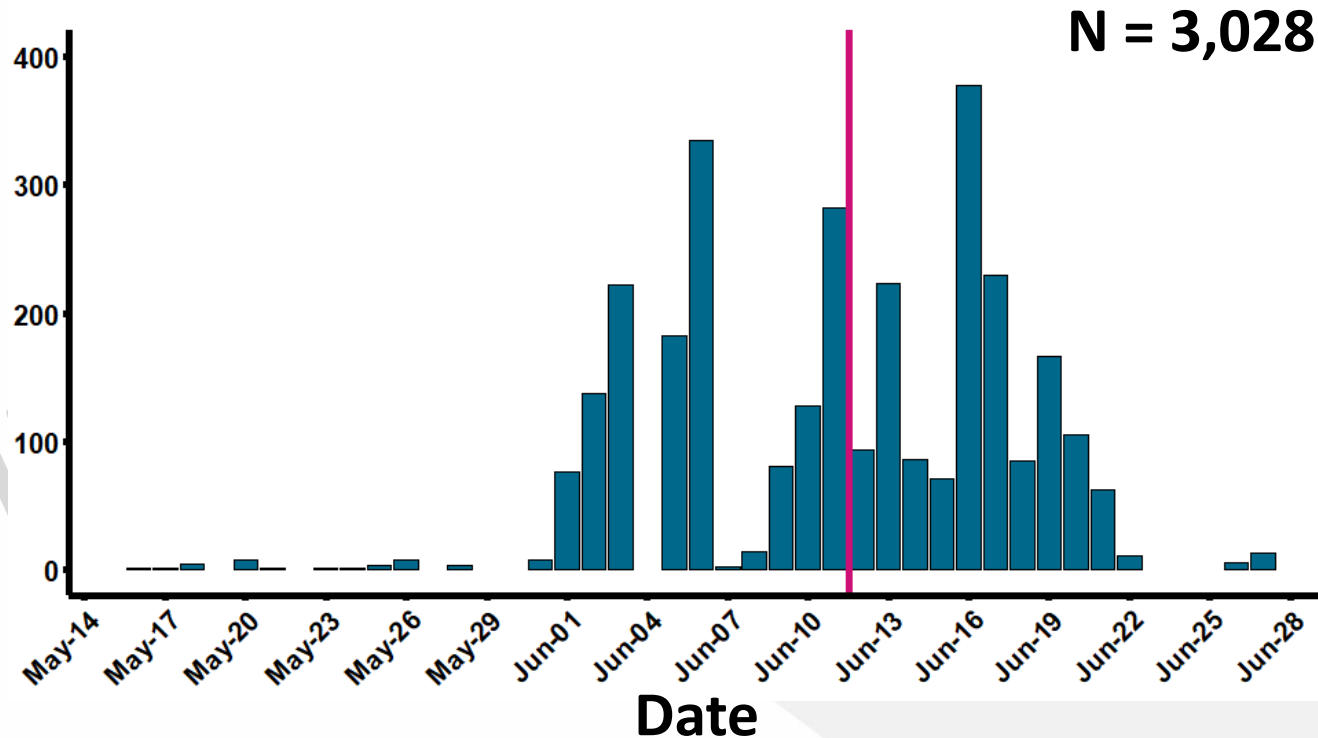
Smolt Wheel





Smolt Wheel

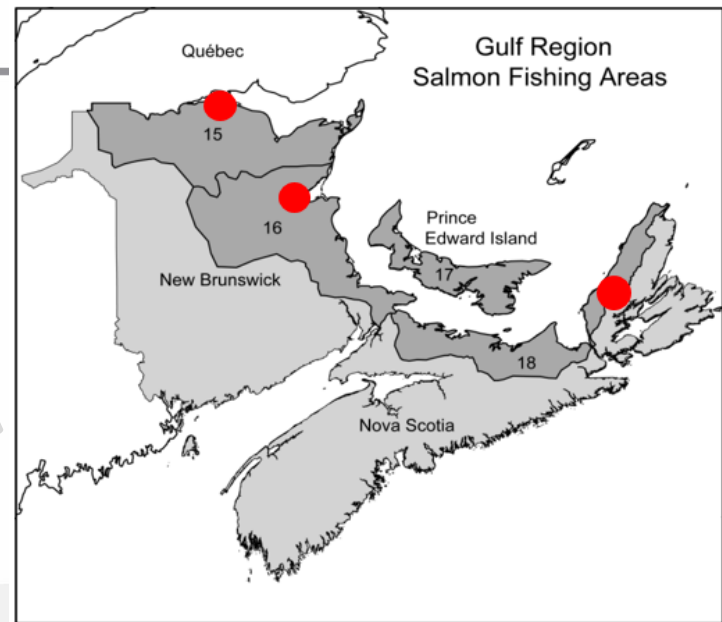
Wild Smolts
Caught



Smolt Wheel

Study designed by Dr. Cindy Breau

- Objective: Are smolts experiencing episodic acid and aluminium events in rivers of the Gulf Region?
- pH monitored
- Collected smolt tissue samples
- Samples were submitted for lab analysis of metals



Smolt Wheel

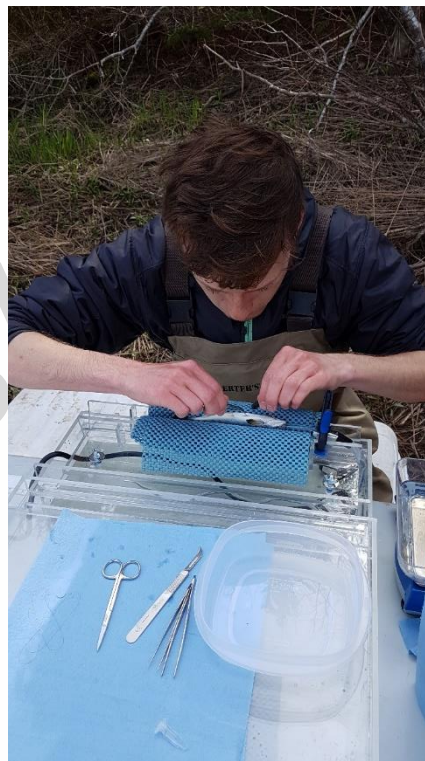
Using salmon smolts, Hunter investigated:

1. If differences in gene expression exist throughout a single river population?
2. Differences in gene expression between populations across Atlantic Canada.
3. Are differences in gene expression associated with differences in survival rates during the migration from natal rivers to feeding grounds near Greenland?



Smolt Wheel

- Margaree (NB), Miramichi (NB), Western Arm Brook (NFL), Trinité River (QC) .
- Small gill clip taken for genetic analysis.
- VEMCO V8-4x tag inserted.
- VEMCO VR-2W receivers placed near estuary mouth.
- Receivers operated by the Ocean Tracking Network can also read the tags.



Juvenile Electrofishing Survey



Indicate our 4 closed sites



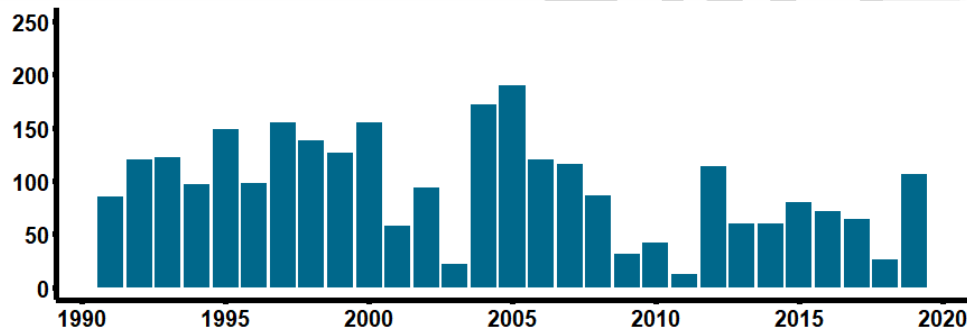
Indicate our 8 open sites



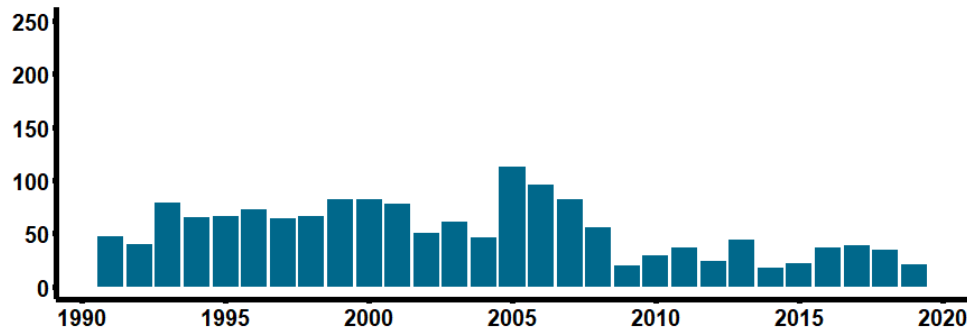
Juvenile Electrofishing Survey

Margaree

Fry per
 100m^2



Parr per
 100m^2



Year



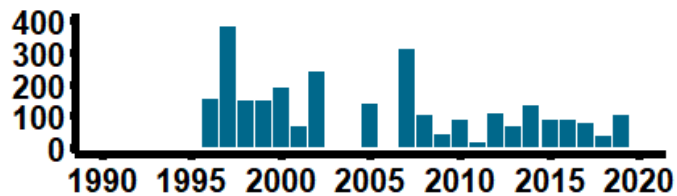
Juvenile Electrofishing Survey



Indicate our 18 open sites on Gulf NS mainland

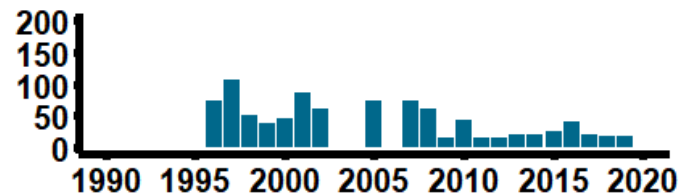
Antigonish

Fry per 100m²



Year

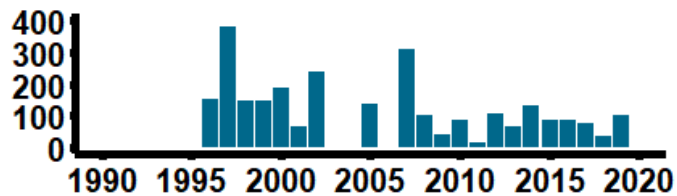
Parr per 100m²



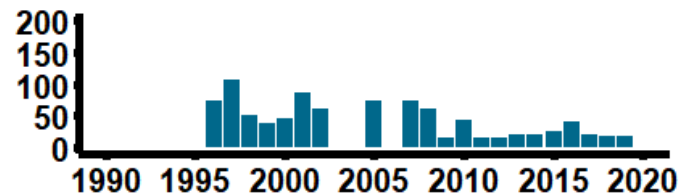
Year

Antigonish

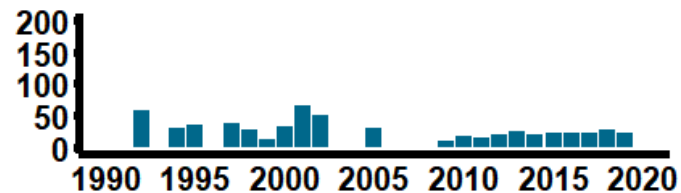
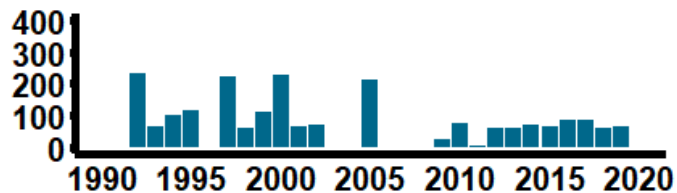
Fry per 100m²



Parr per 100m²



Pictou

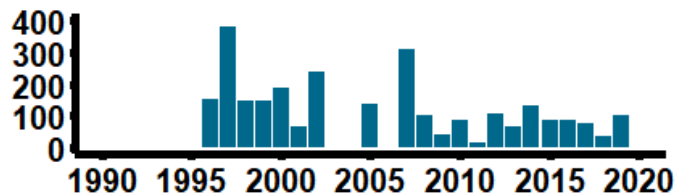


Year

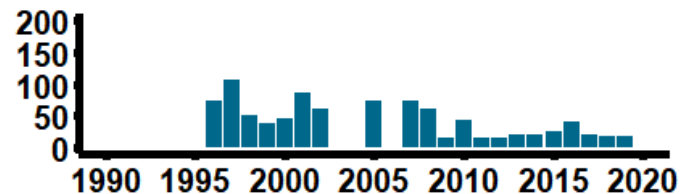
Year

Antigonish

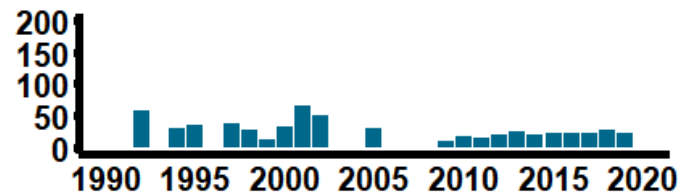
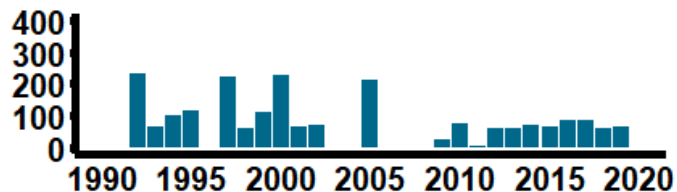
Fry per 100m²



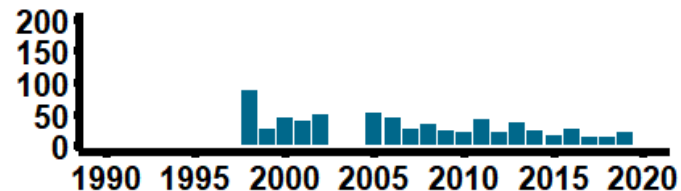
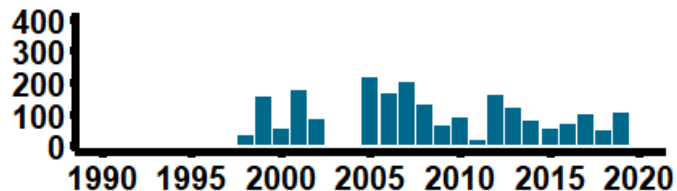
Parr per 100m²



Pictou



Philip



Year

Year



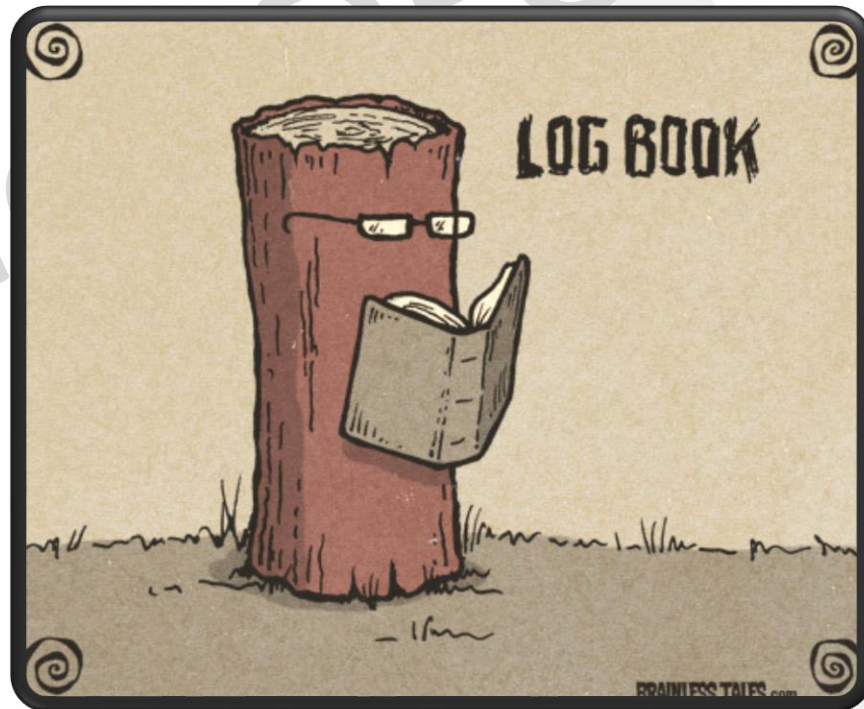
Volunteer Angler Logbooks

Information from these logbooks go into the algorithm for estimating Margaree egg densities

55 logbooks returned for 2019

Vs.

21 in 2018

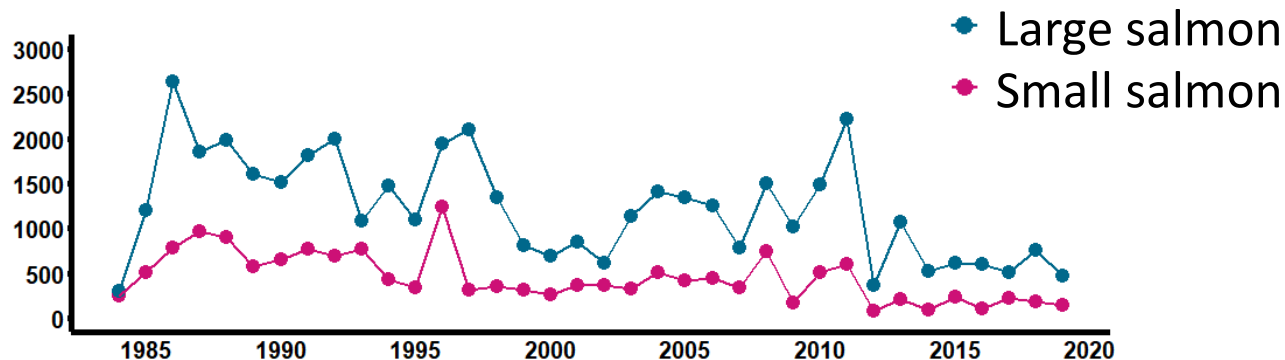




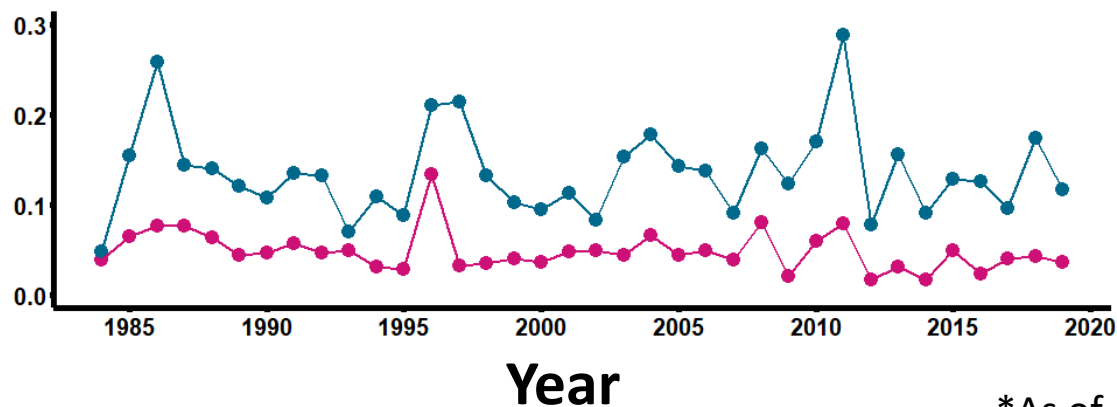
License Stub Returns*

Margaree

Number of
Salmon Caught



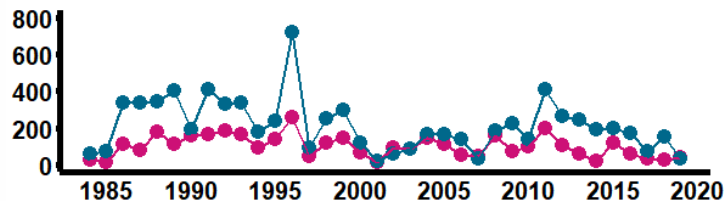
Salmon Caught
per Rod Day



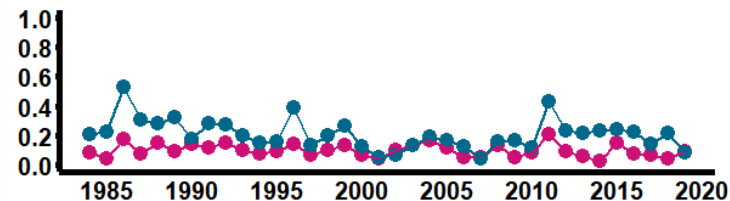
*As of Jan 7th, 2019

River Philip

Number of Salmon Caught



Salmon Caught per Rod Day



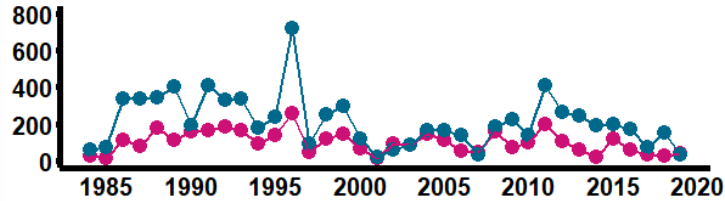
- Large salmon
- Small salmon

Year

*As of Jan 7th 2019

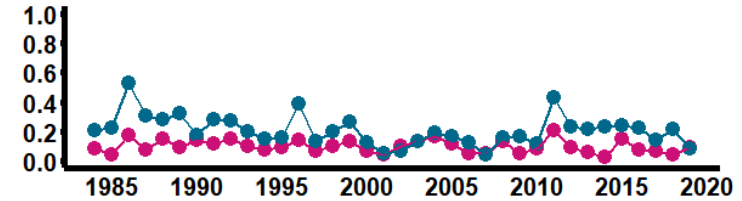
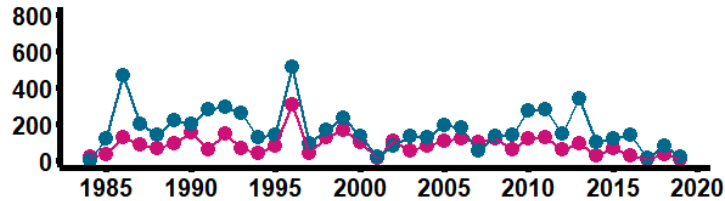
Number of Salmon Caught

River Philip

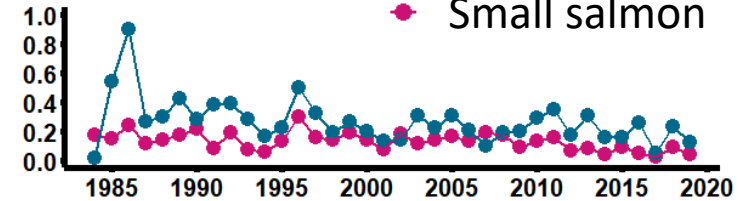


Salmon Caught per Rod Day

West River
Antigonish



Large salmon
Small salmon

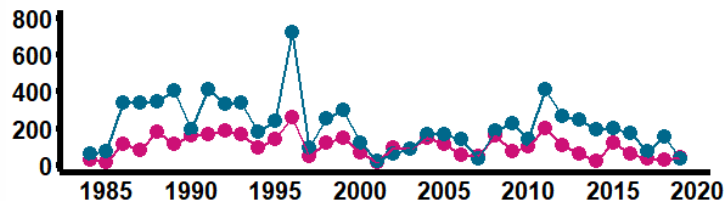


Year

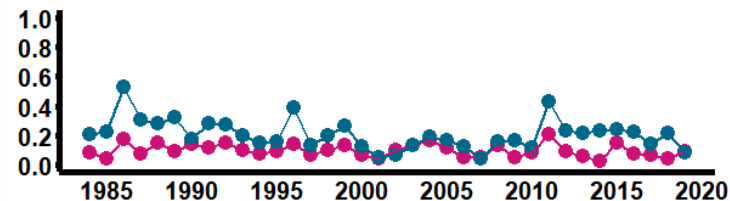
*As of Jan 7th 2019

Number of Salmon Caught

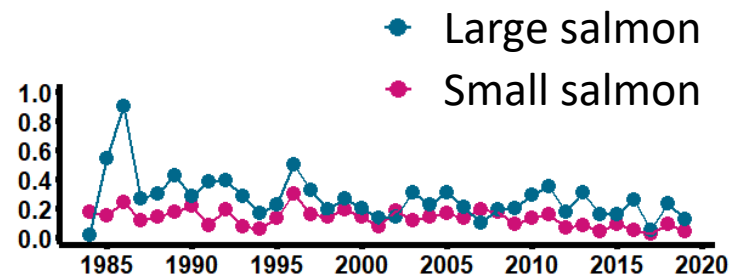
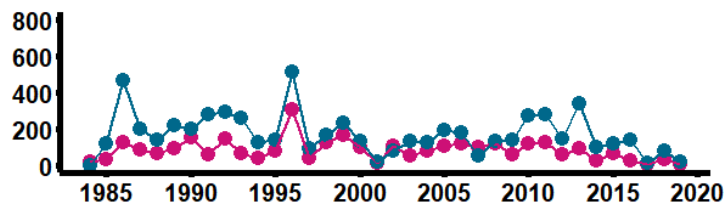
River Philip



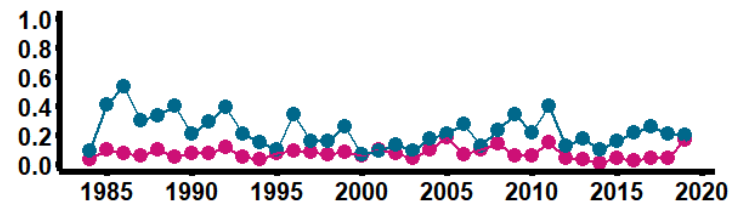
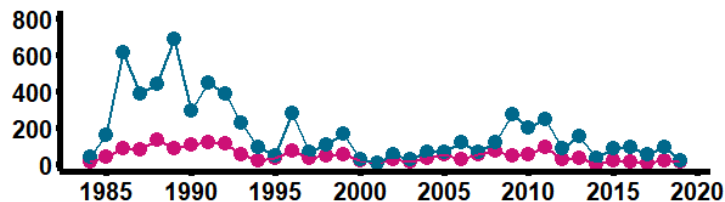
Salmon Caught per Rod Day



West River
Antigonish



East River
Pictou



Year

*As of Jan 7th 2019

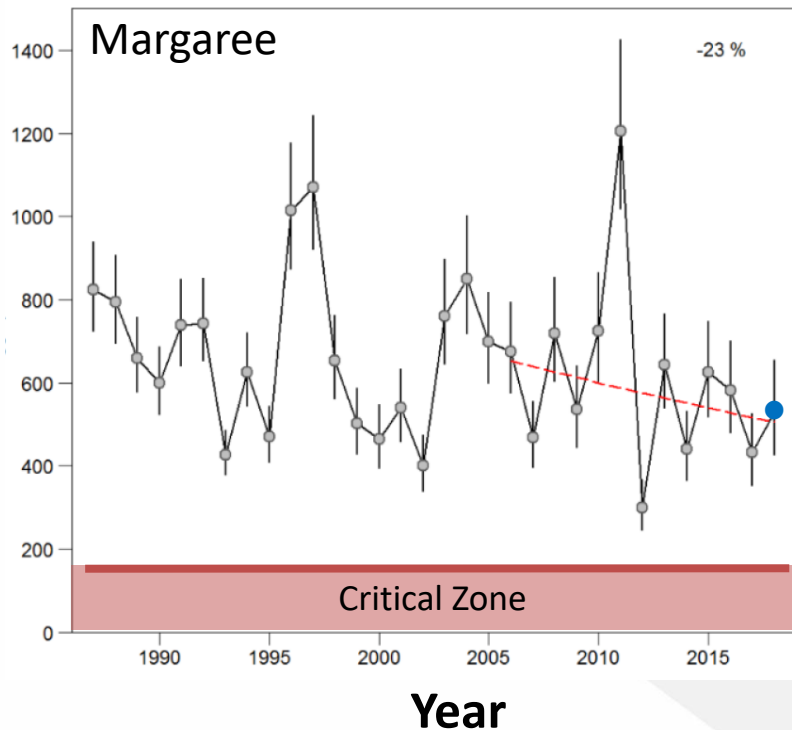


2018



Update of Indicators

Eggs per 100m²



2019 estimate
should be
available by
late February

**2018 estimate
= 529 (409 – 604)**

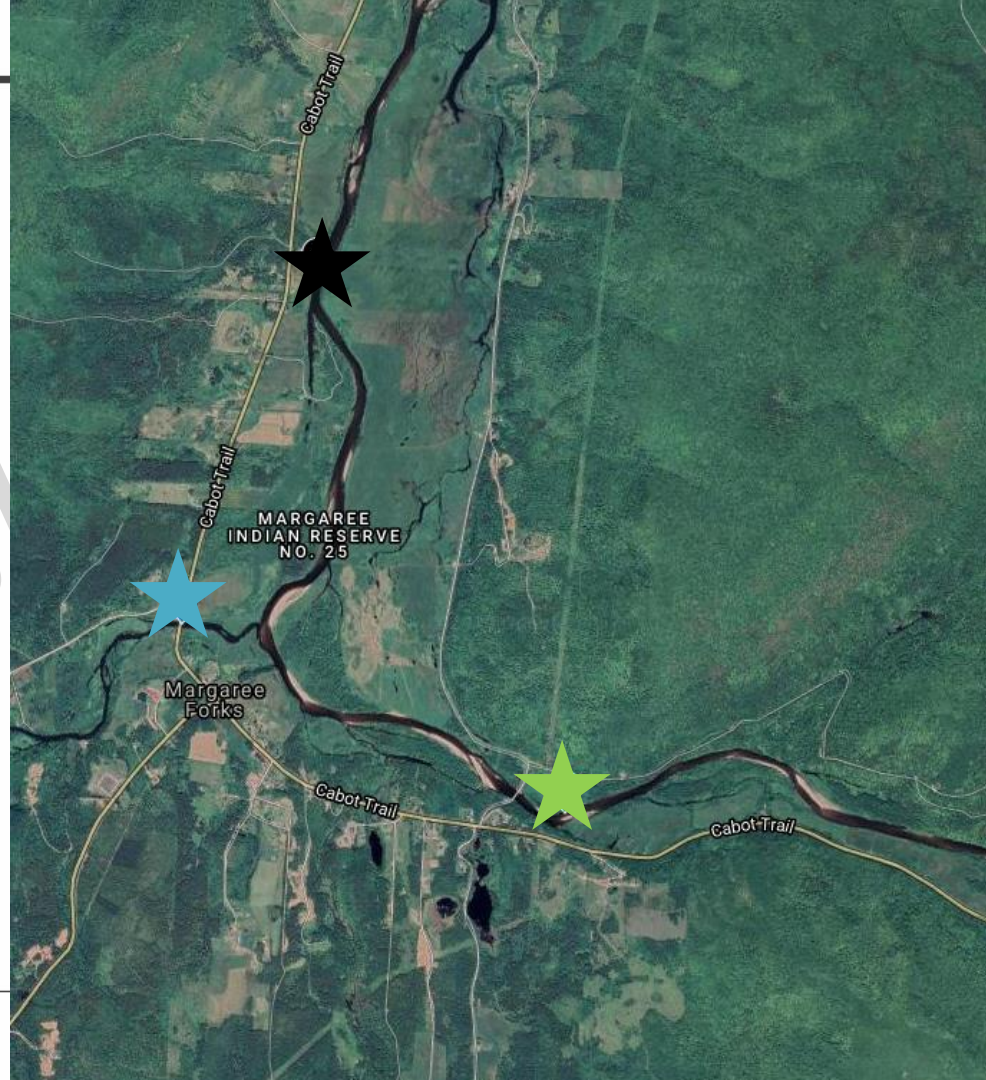
LRP (152)



Temperature

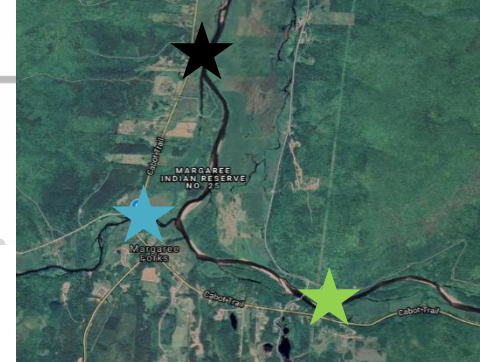
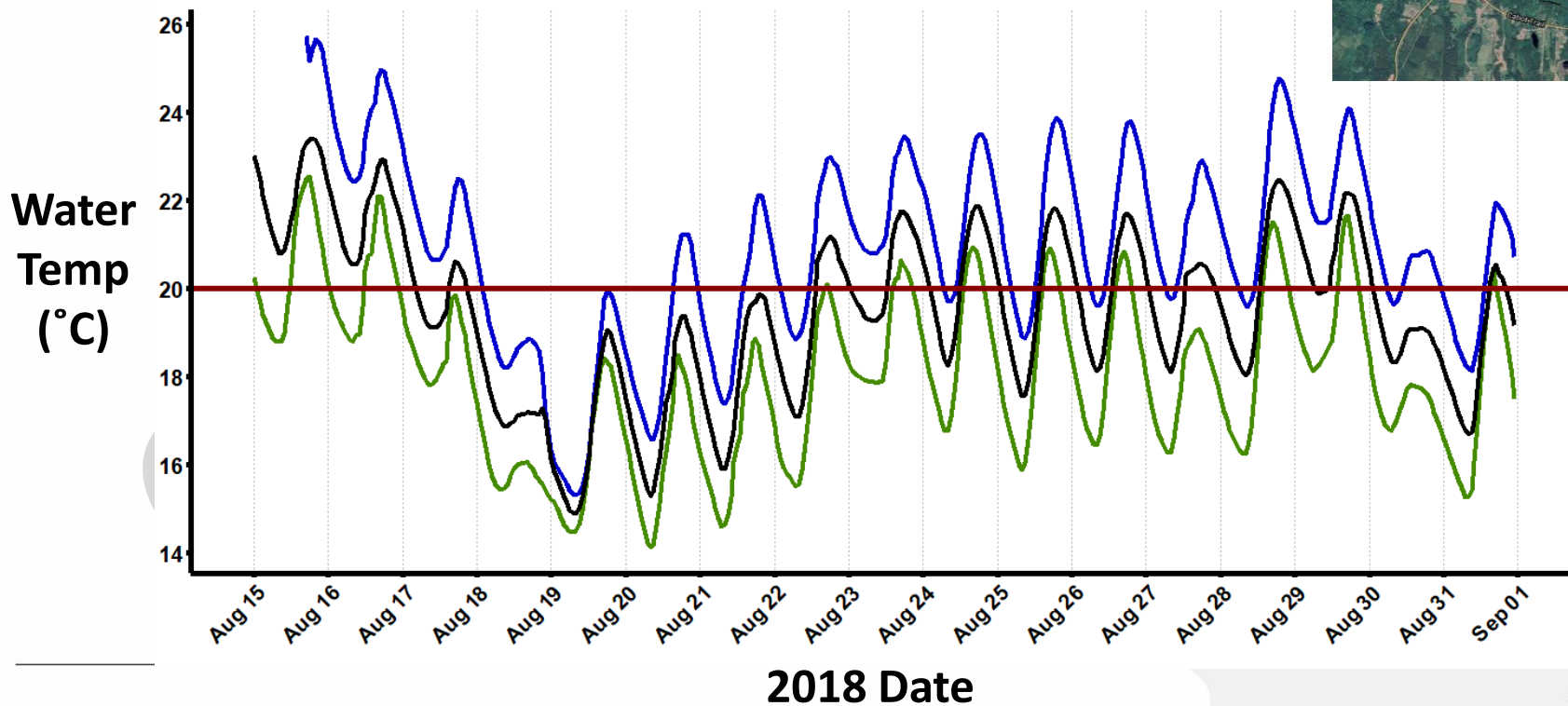
VEMCO data from...

- **Weather Station**
- **Creamery Bridge**
- **Doyles Bridge**





Temperature



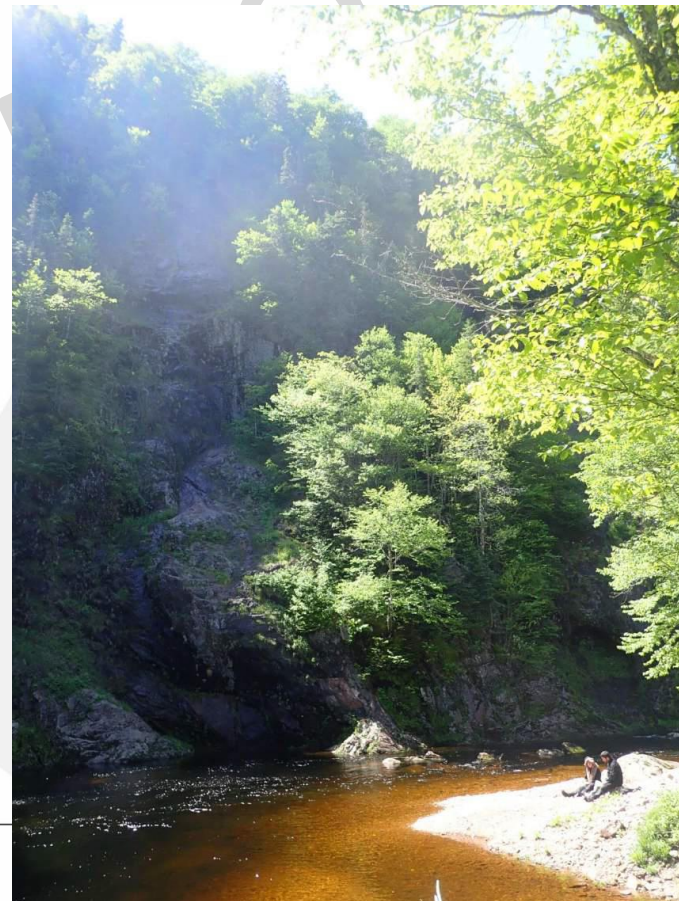


2020



Field Season 2020

- Kelt recapture fishery
 - Continue, and get some DFO bodies involved
- Smolt wheel
 - Continue to assess Margaree smolt production
 - Install ARIS to record fish behaviour
- Tagging adult salmon
 - Continue through coordinated seining events
- Electrofishing, angler logbooks, & license stub return
 - Continue as usual





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Questions?

