



Apr 6th, 9:30 AM - 9:45 AM

Increases in synchrony among Central Coast salmon populations in British Columbia over the last 60 years

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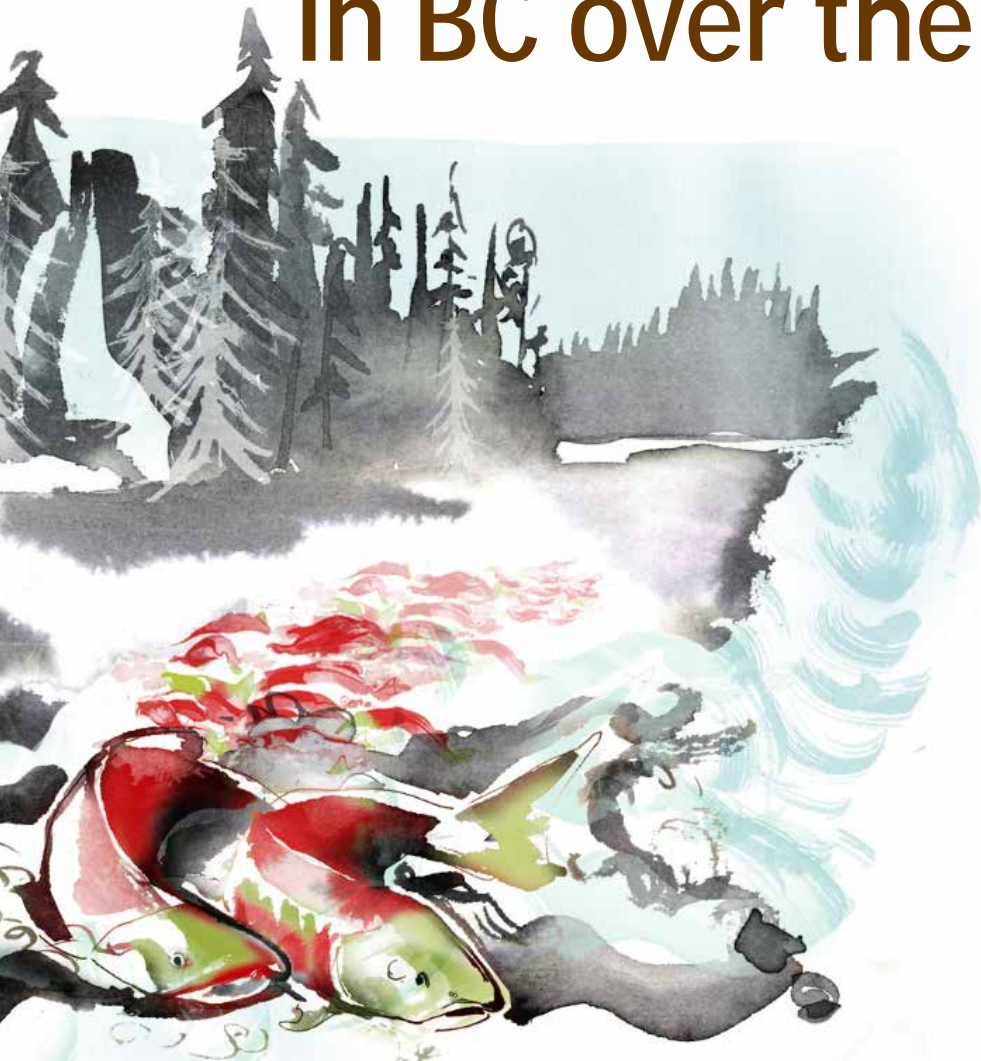
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Hertz, Eric; Connors, Brendan; Connors, Katrina; and Reynolds, John, "Increases in synchrony among Central Coast salmon populations in British Columbia over the last 60 years" (2018). *Salish Sea Ecosystem Conference*. 476.

<https://cedar.wvu.edu/ssec/2018ssec/allsessions/476>

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Increases in synchrony among central coast salmon populations in BC over the last 60 years



Eric Hertz (ehertz@psf.ca)
B. Connors, K. Connors,
J. Reynolds



**SALMON
WATERSHEDS
PROGRAM**

Salmon Watersheds Program

1. Collate and expand baseline scientific information

2. Assess status of salmon populations and their habitats

3. Make information broadly available



Pacific Salmon Diversity in BC



sockeye



pink



Chinook



coho



chum

450+ Conservation Units
in BC and the Yukon

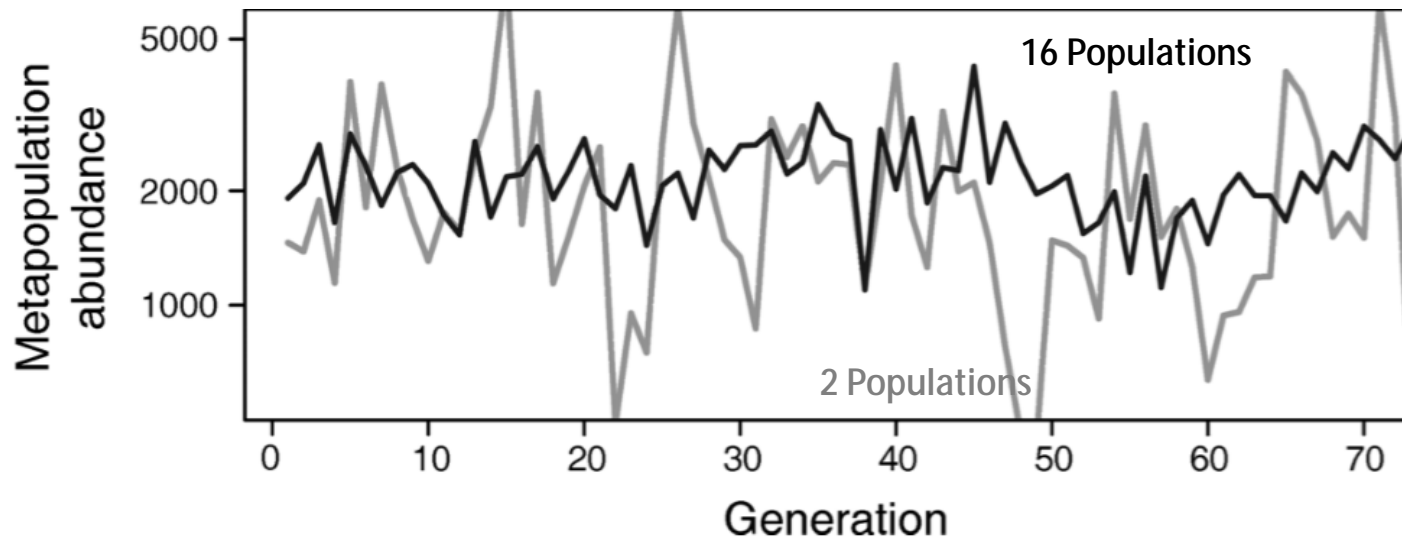
*Conservation Unit (CU) = genetically,
geographically, and ecologically
distinct groups of wild salmon*



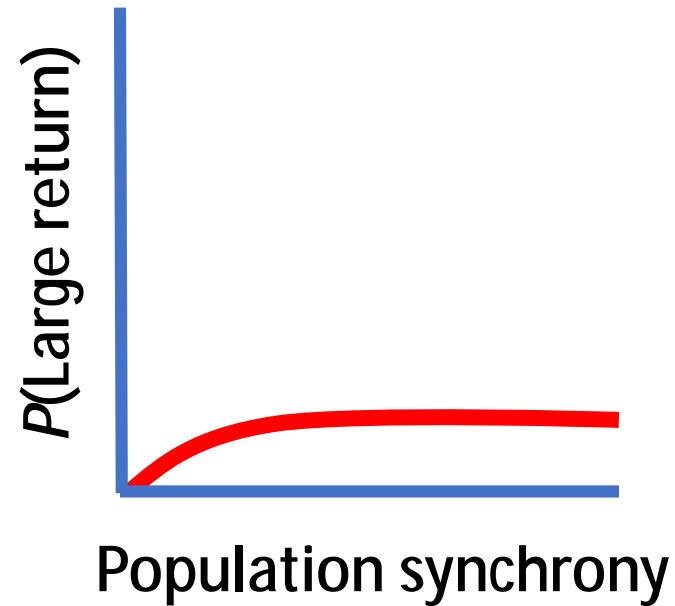
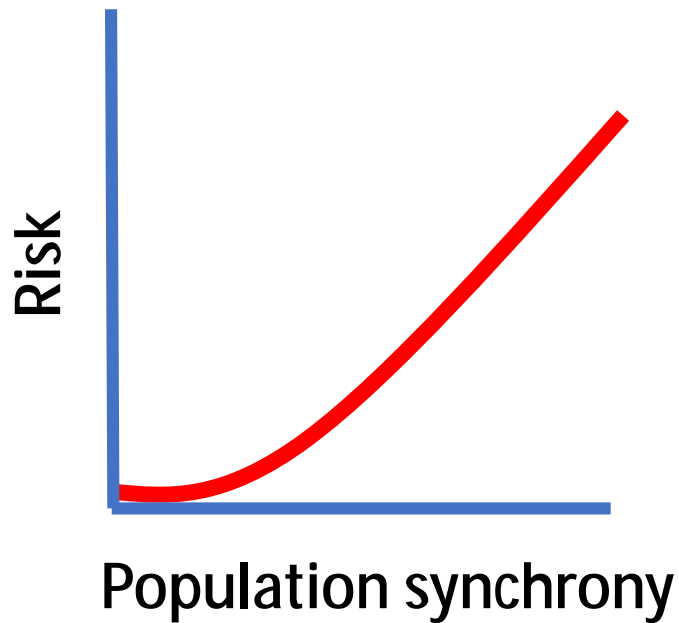
Estimated ~9,000 salmon
stocks in BC and the Yukon

Portfolio effects and salmon

Increased Diversity → Decreased Synchrony = Greater Stability



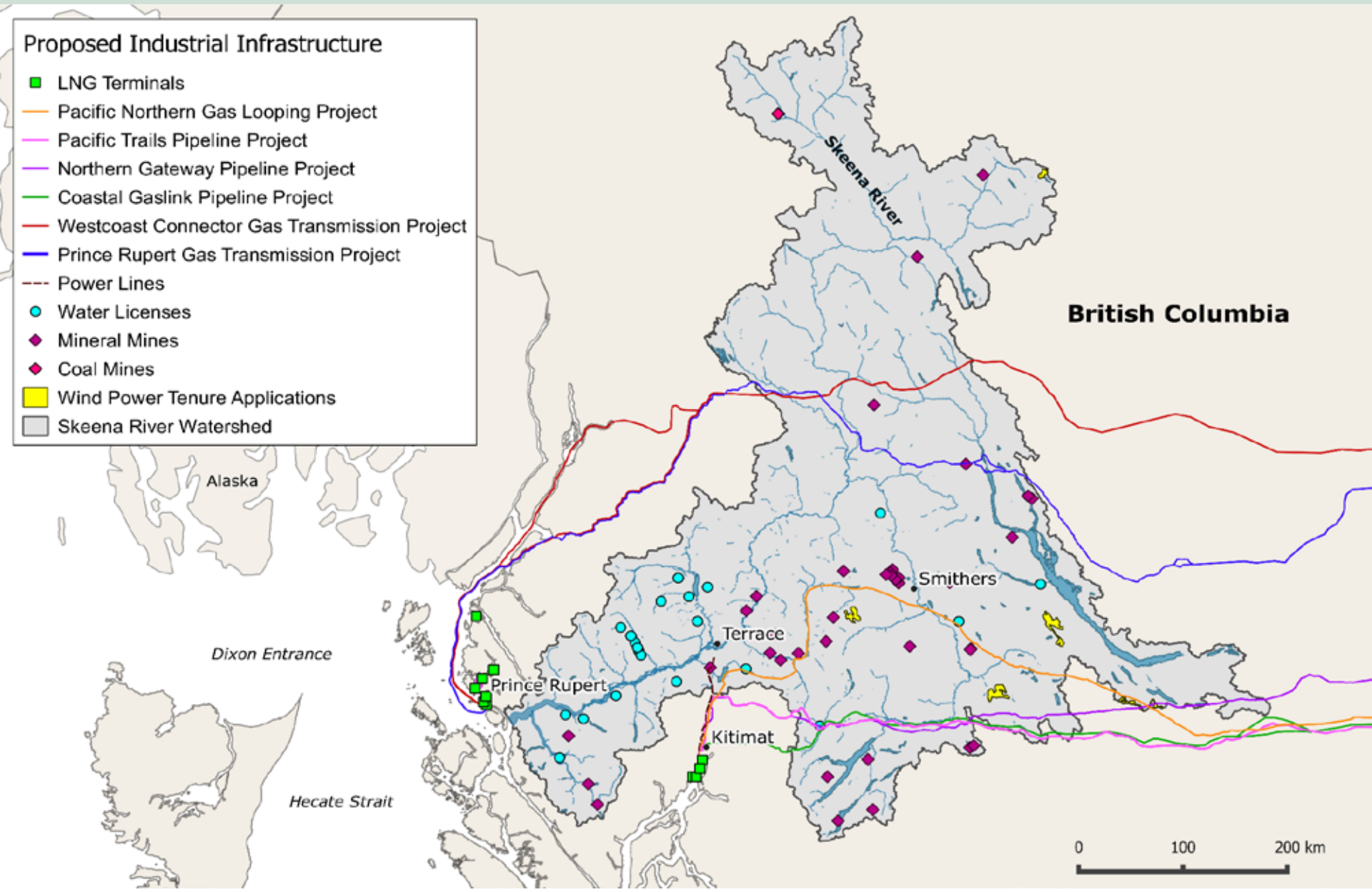
Portfolio effects and salmon



Salmon Watersheds Program



Future development

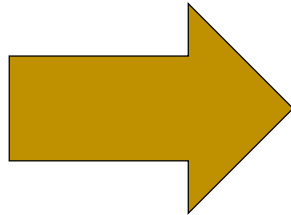


Questions

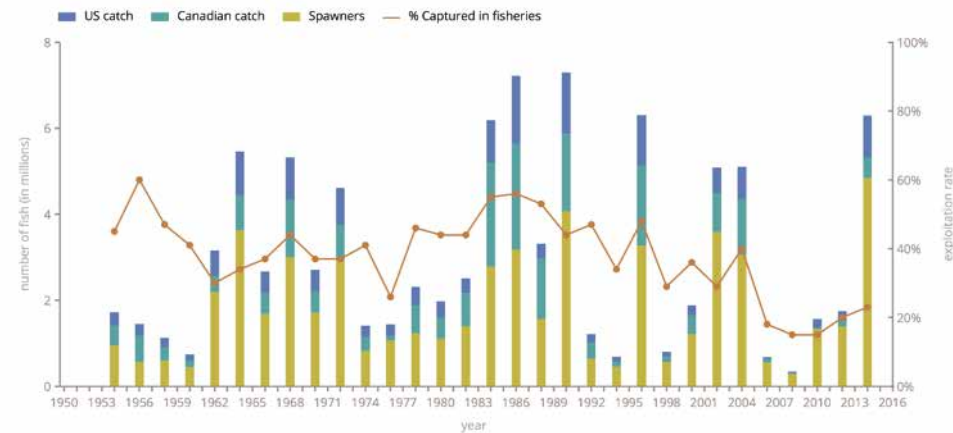
- 1) How has the abundance of salmon changed across the north and central coast?
- 2) Do changes in synchrony explain observed changes in abundance?



Data sources



Catch and Run Size



Questions

- 1) How has the abundance of salmon changed across the north and central coast?
- 2) Do changes in synchrony explain observed changes in abundance?

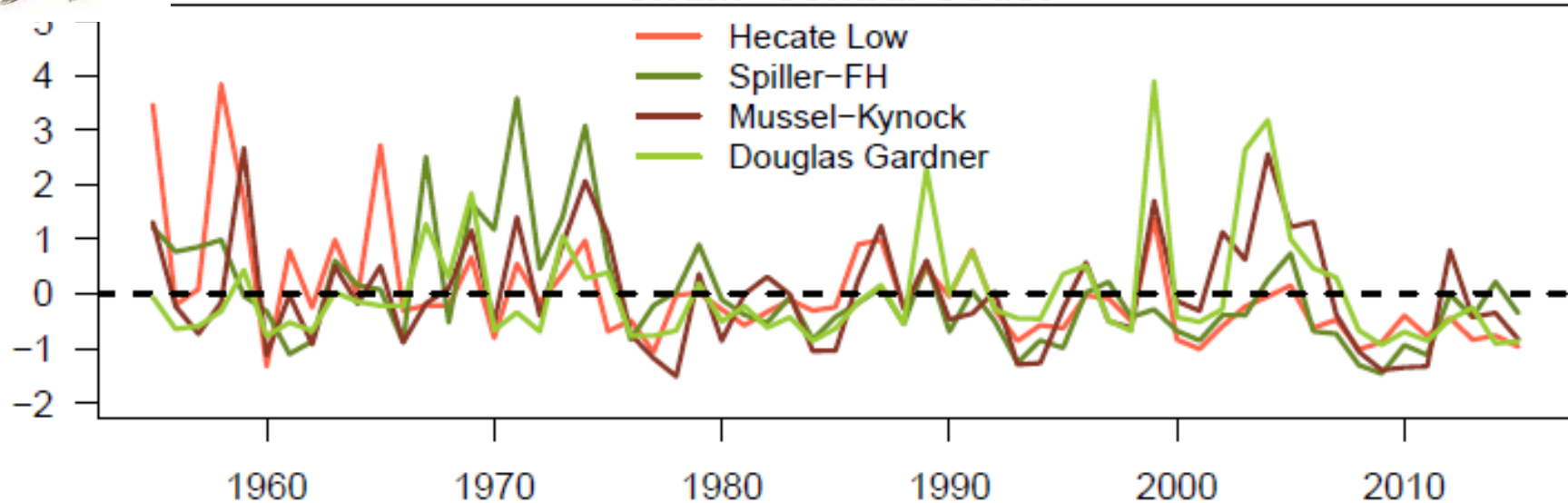




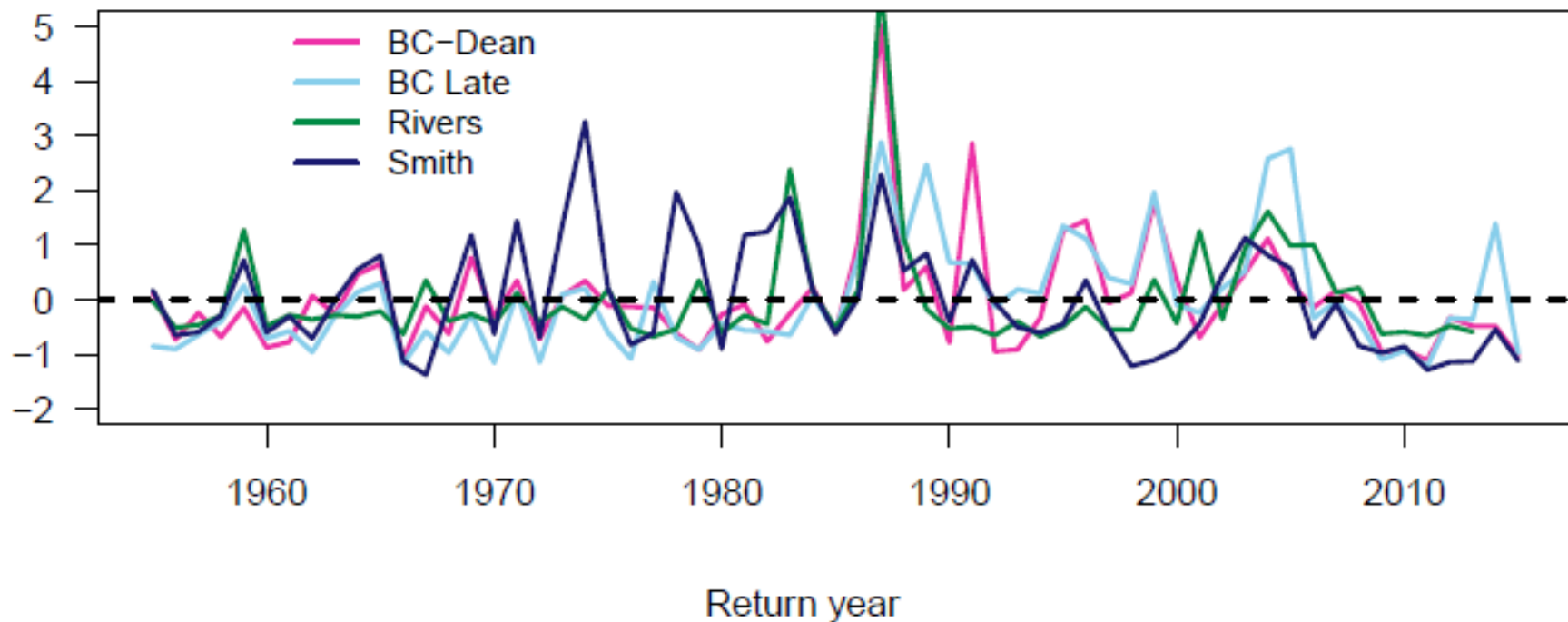
Chum-Central Coast

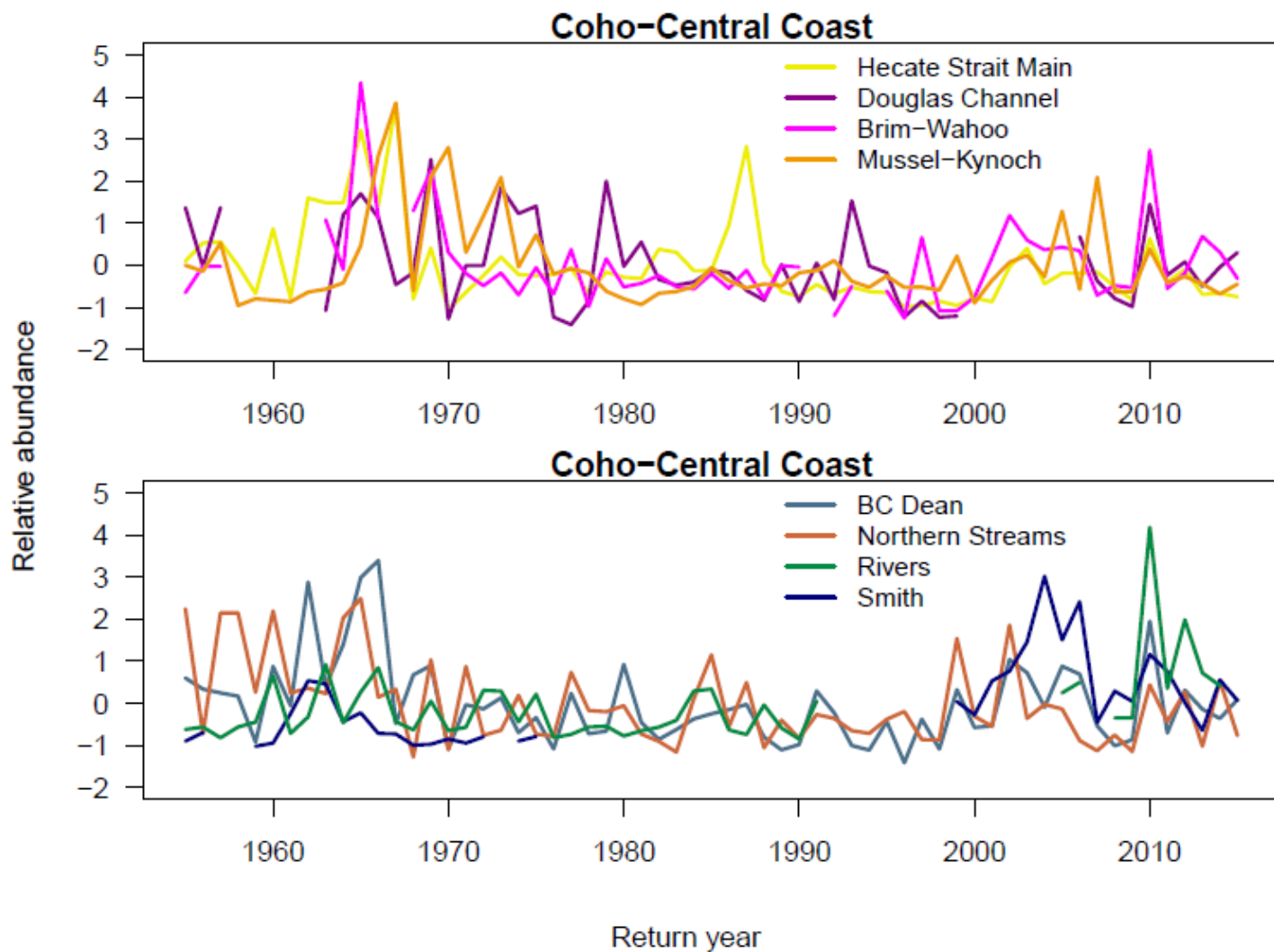
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Relative abundance



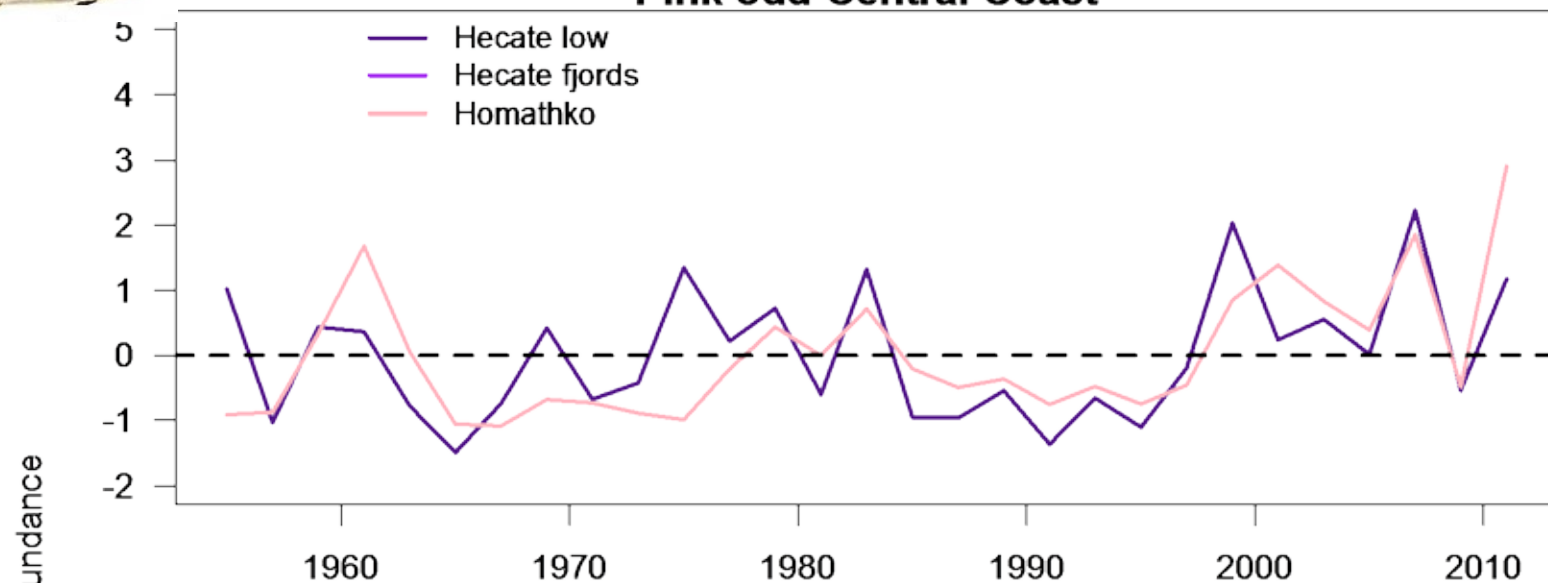
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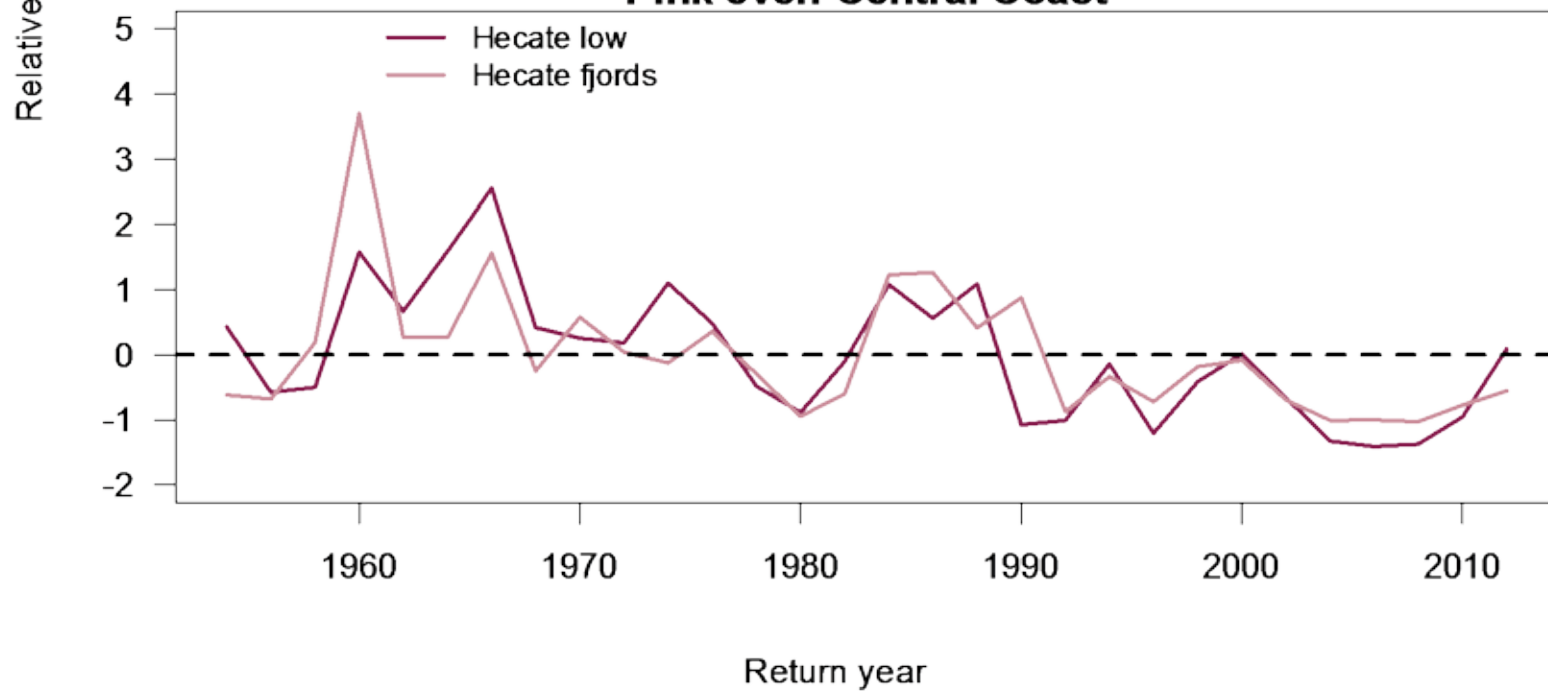




Pink odd-Central Coast

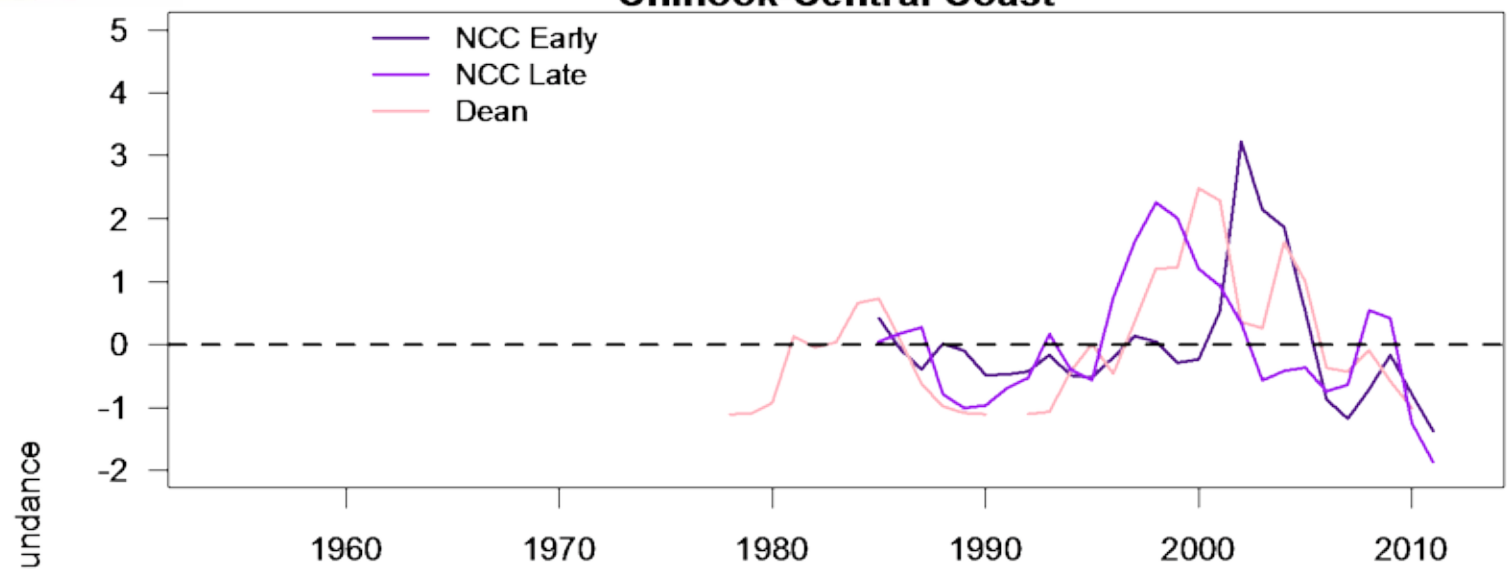


Pink even-Central Coast

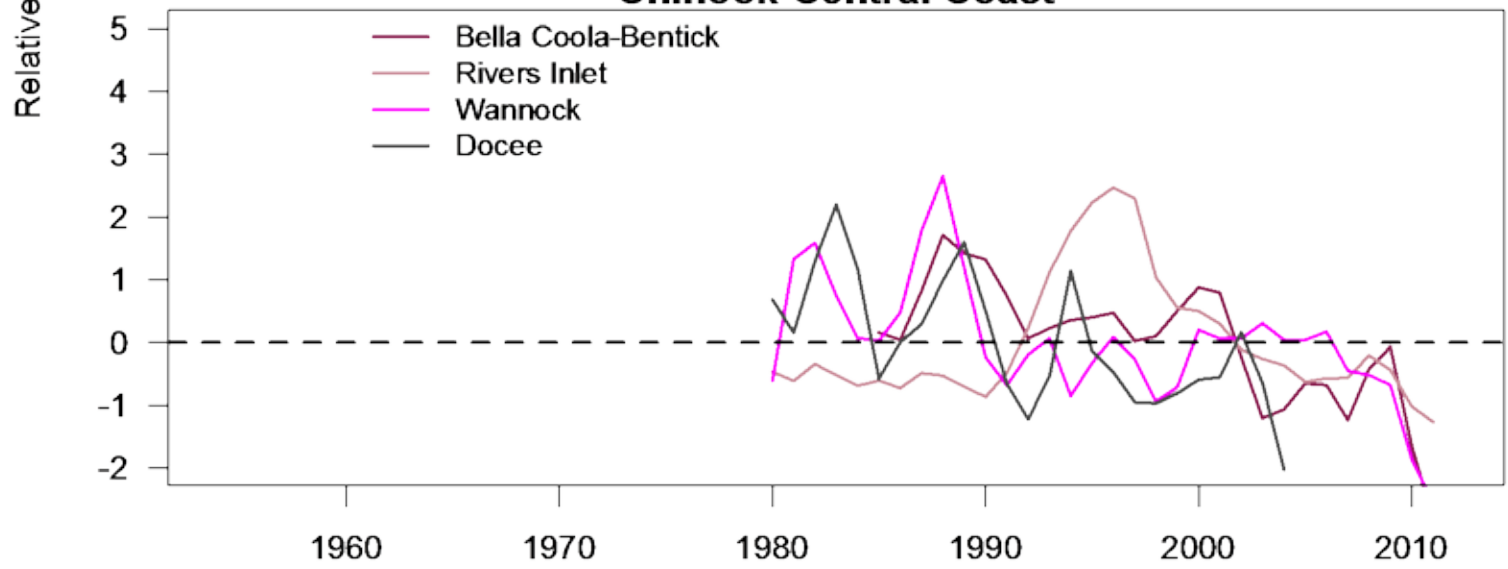




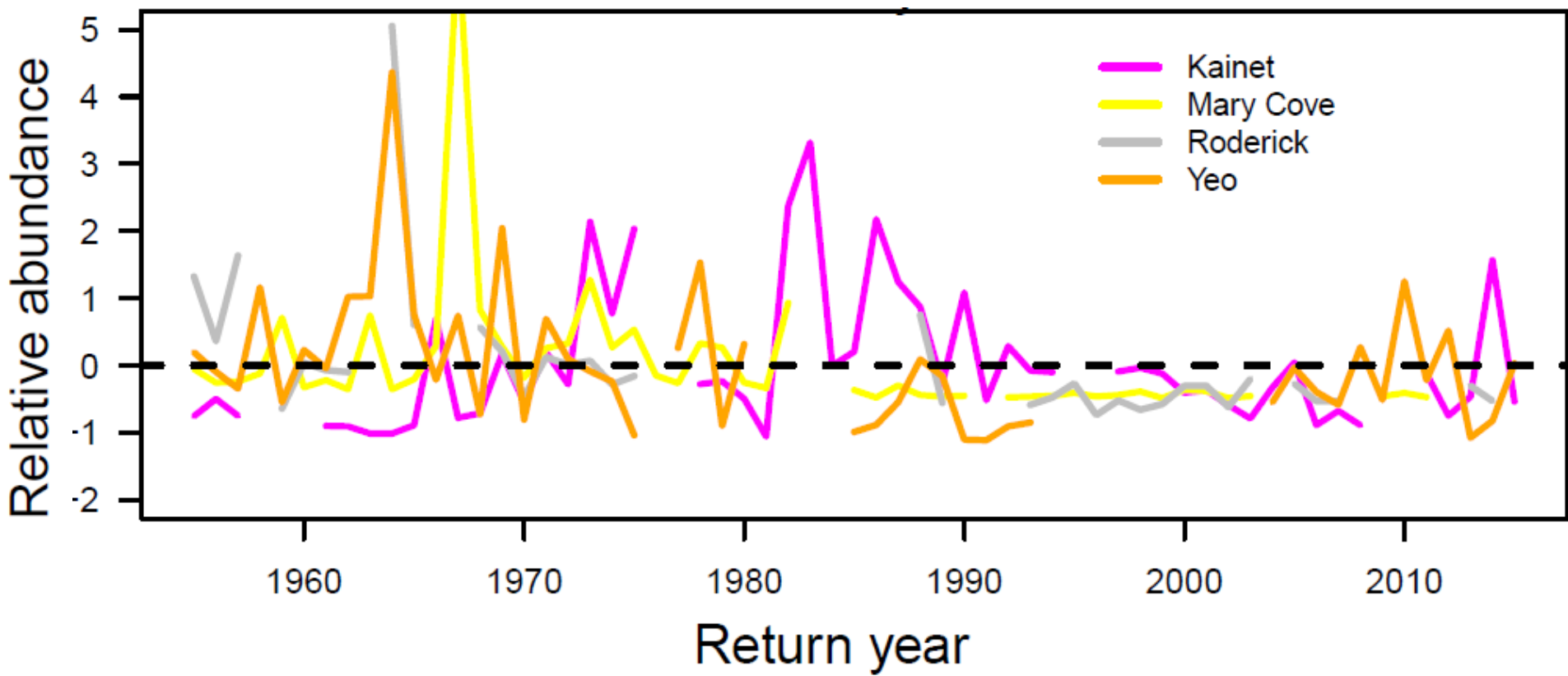
Chinook-Central Coast

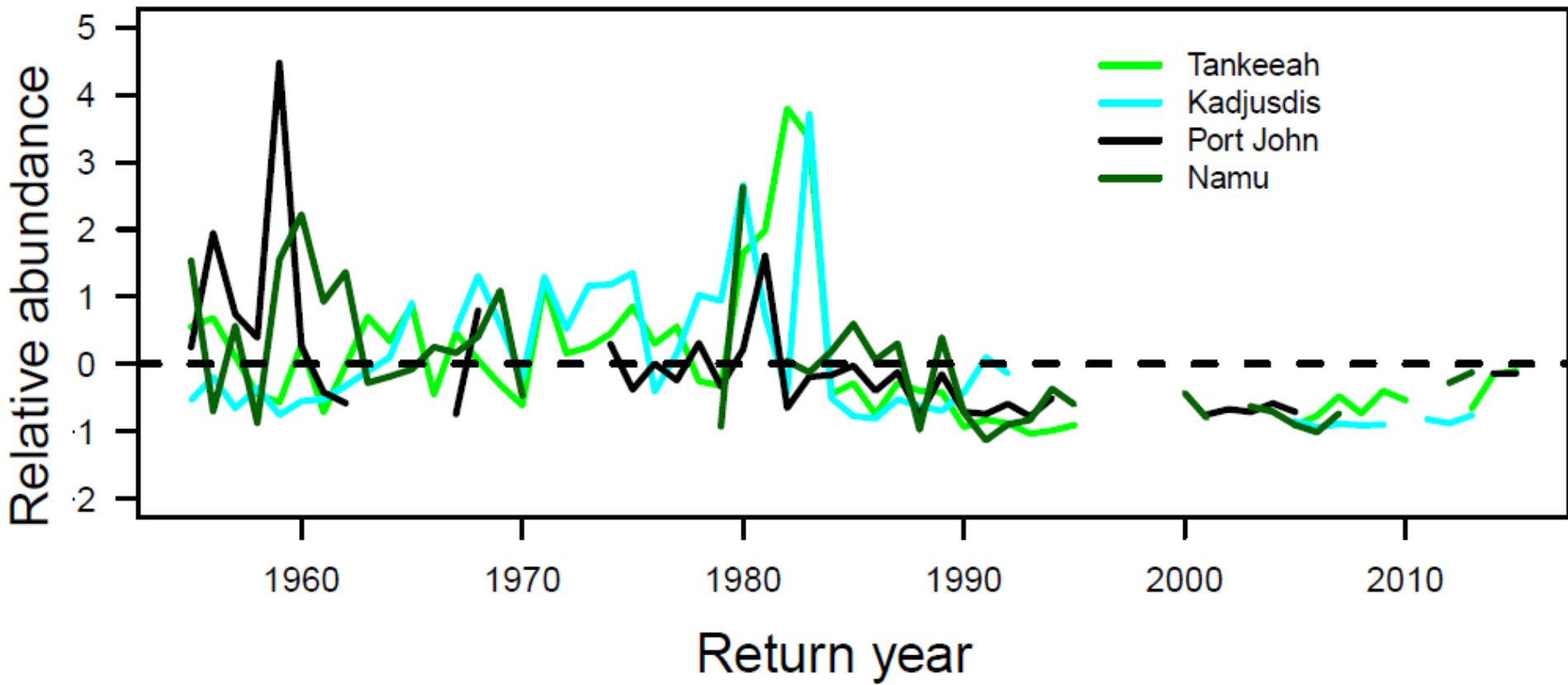


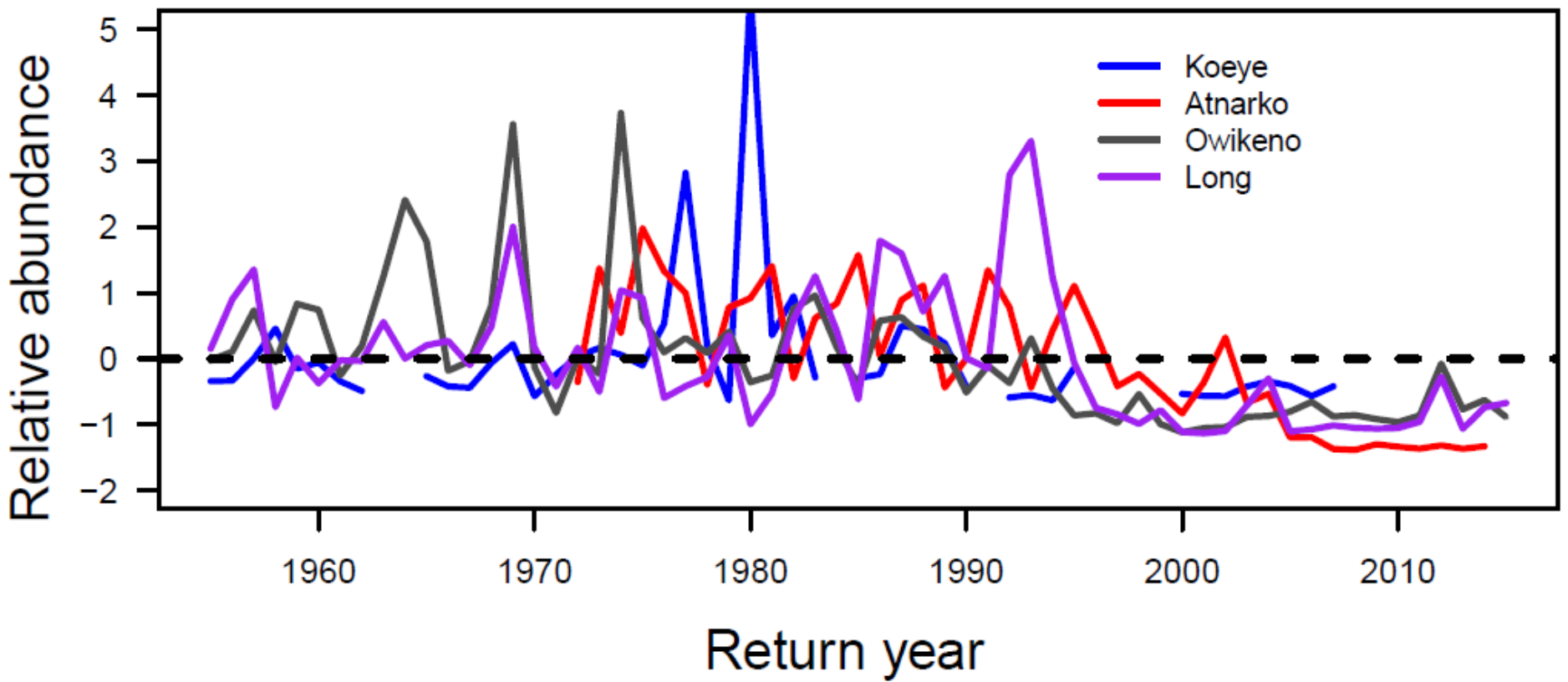
Chinook-Central Coast



Return year





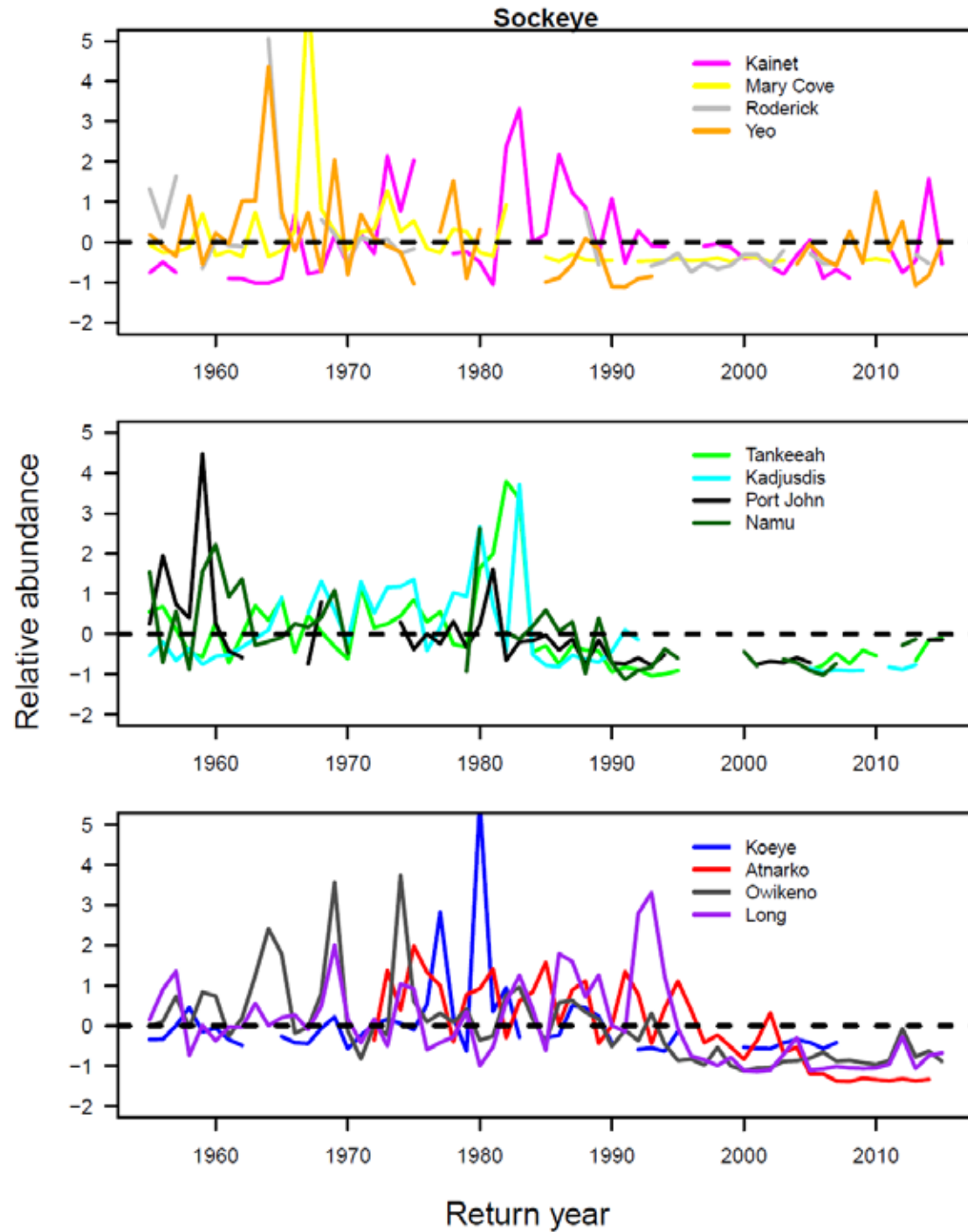




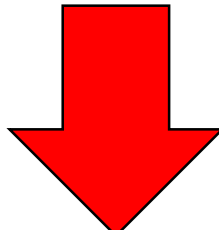
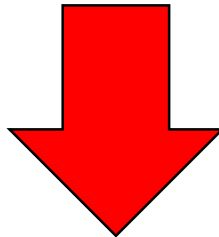
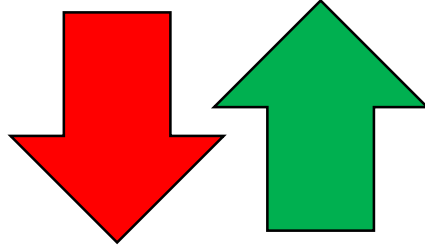
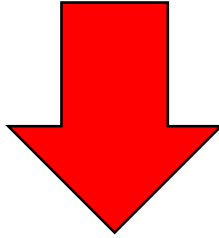
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ABUNDANCE



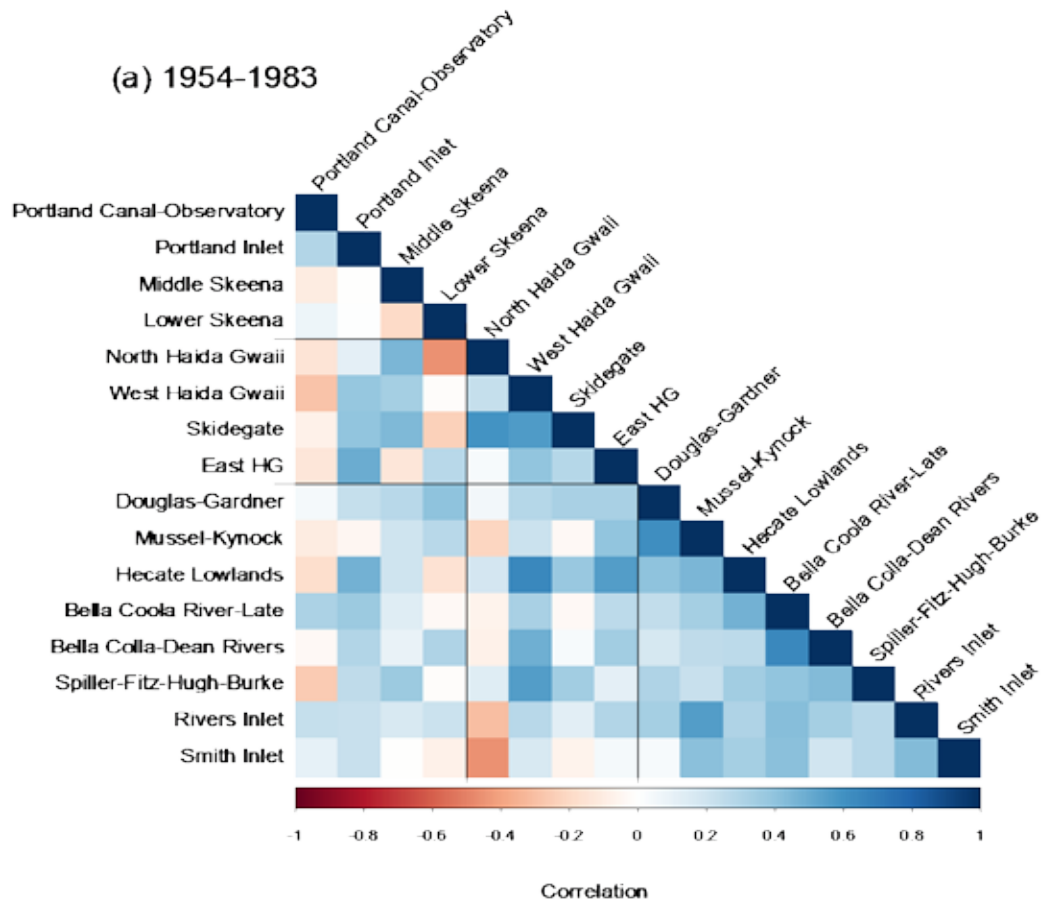
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(a) 1954-1983

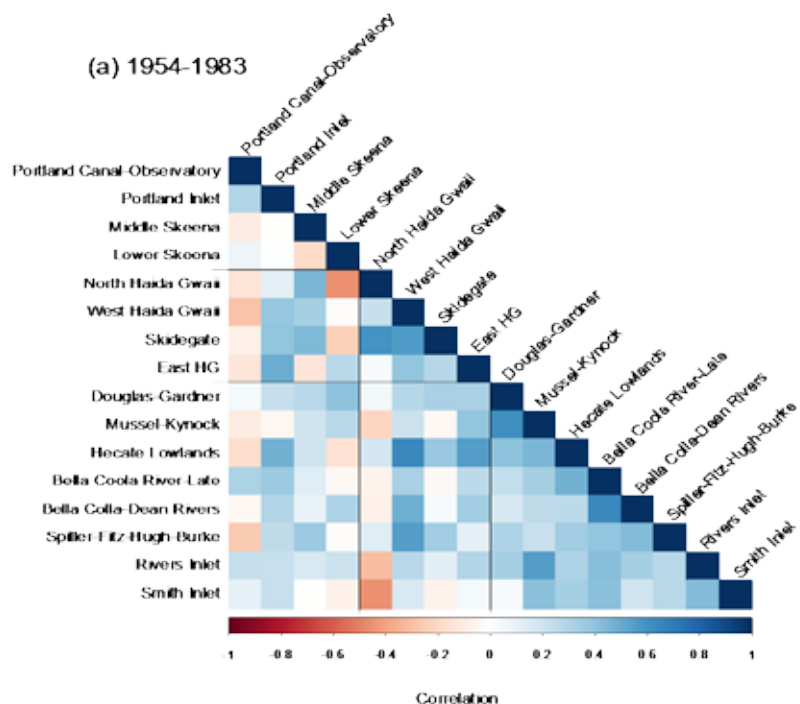


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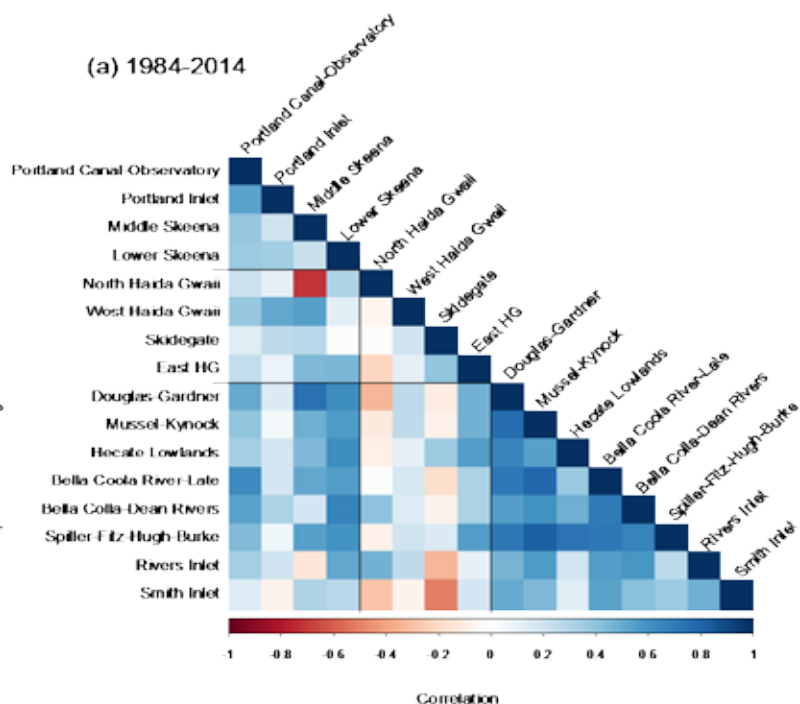


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(a) 1954-1983

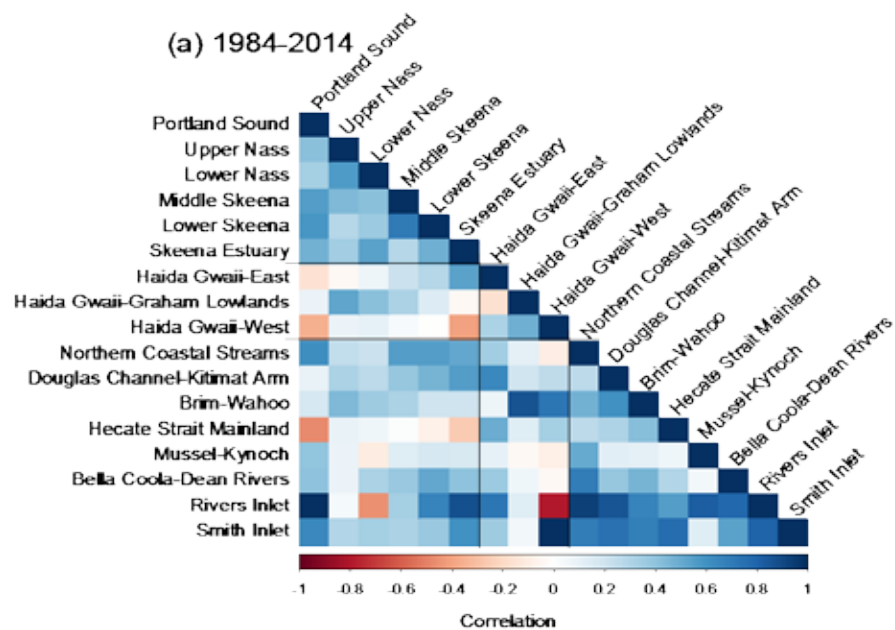
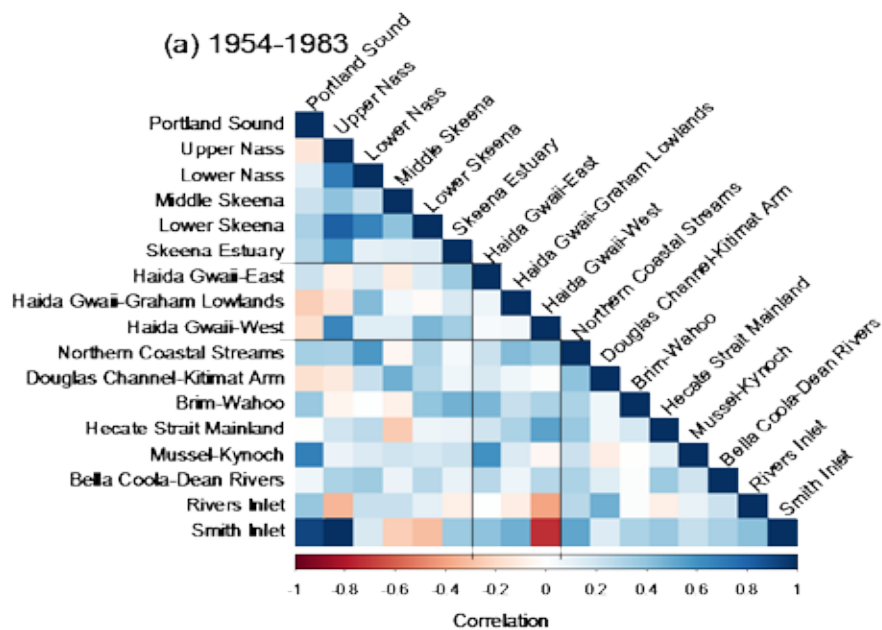


(a) 1984-2014



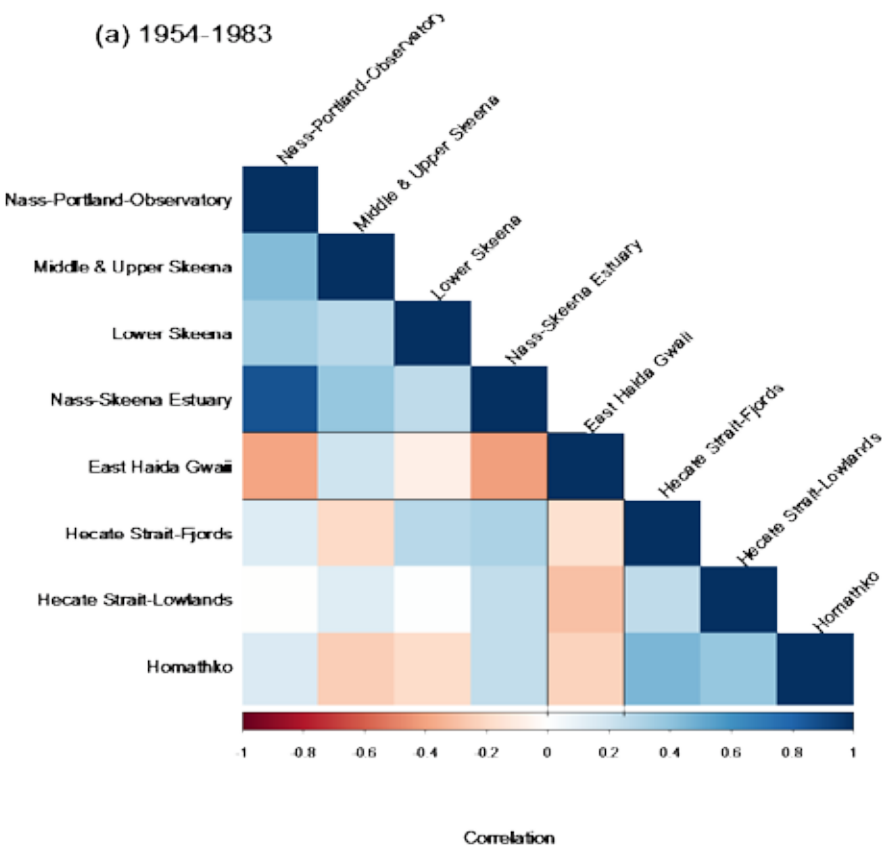


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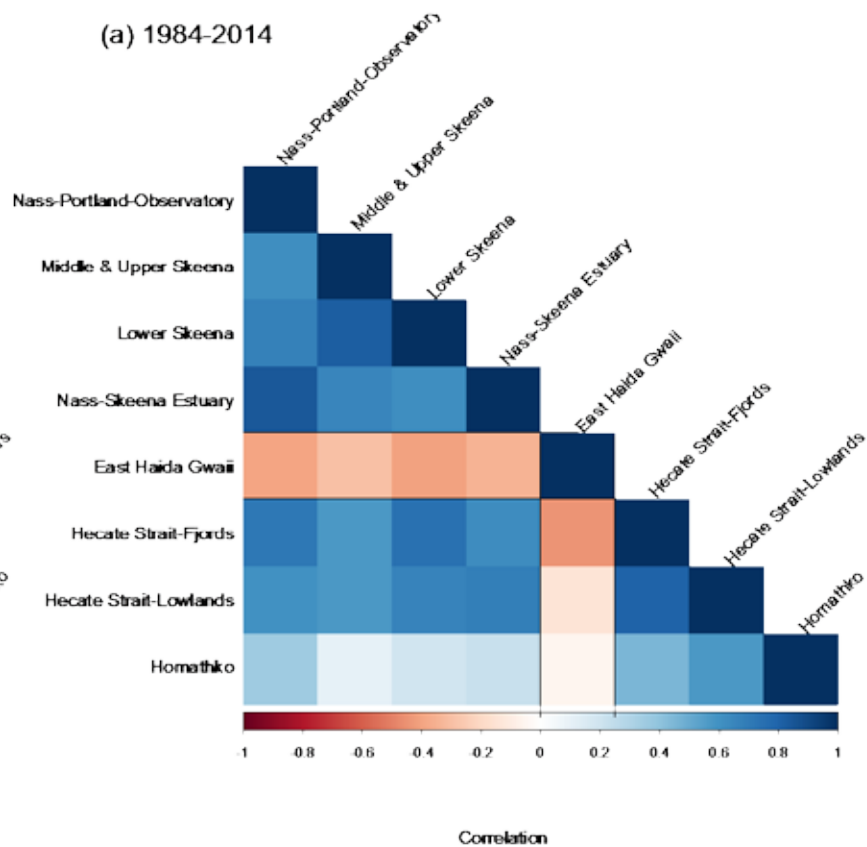




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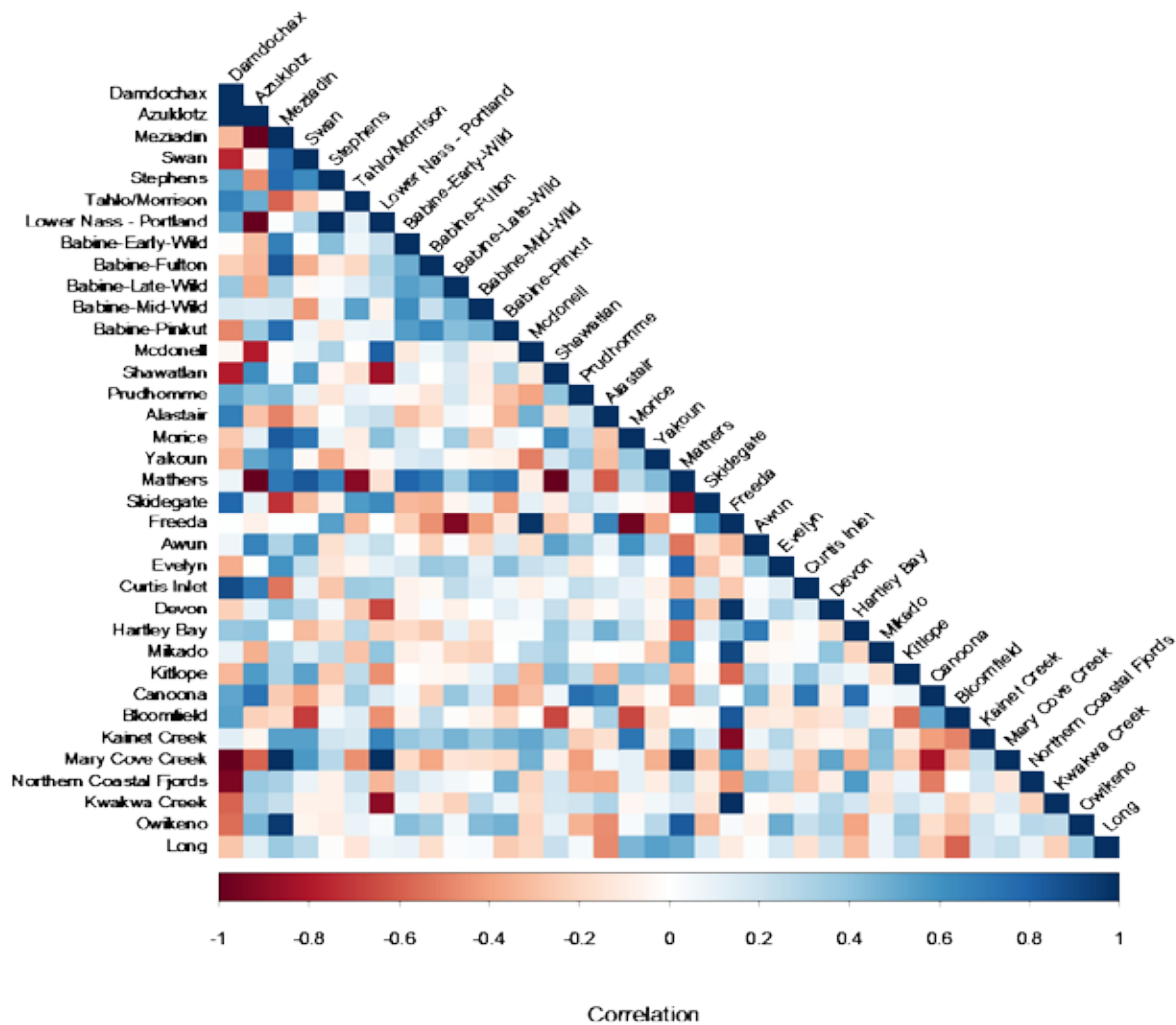
(a) 1984-2014





(a) 1954-1983

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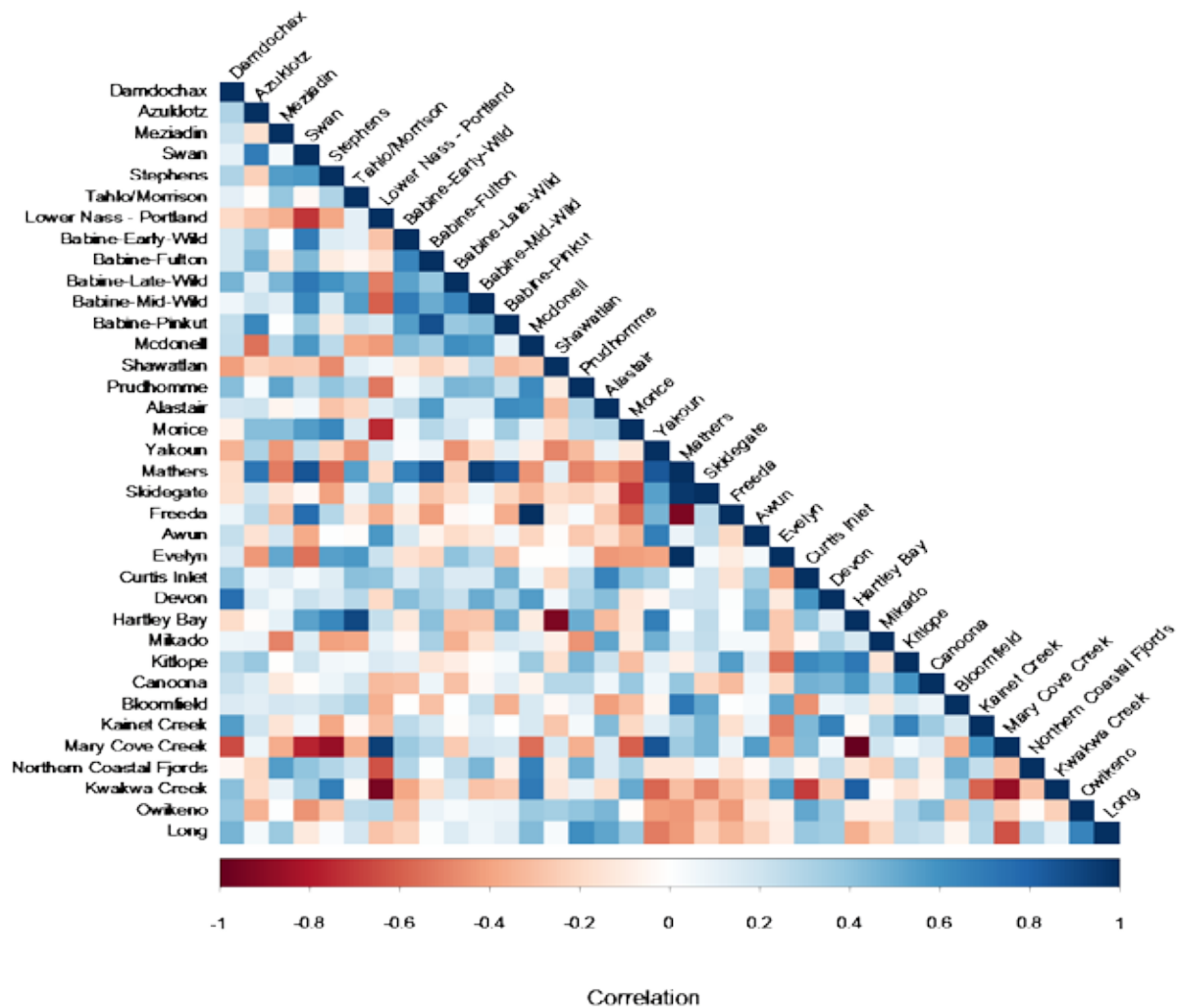


(a) 1984-2014

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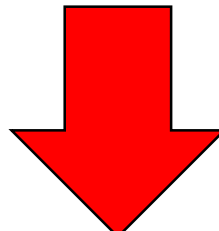
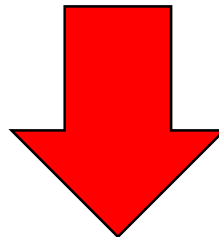
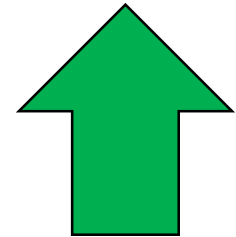
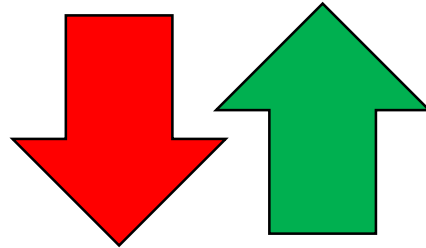
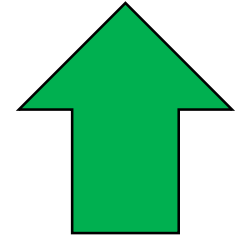
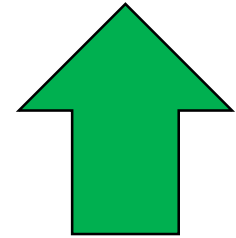
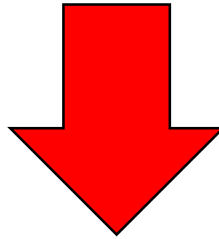


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ABUNDANCE

SYNCHRONY



Comparison with Salish Sea

Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 7:116–134, 2015

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DOI: 10.1080/19425120.2015.1012246

Salish Sea Chinook salmon exhibit weaker coherence in early marine survival trends than coastal populations

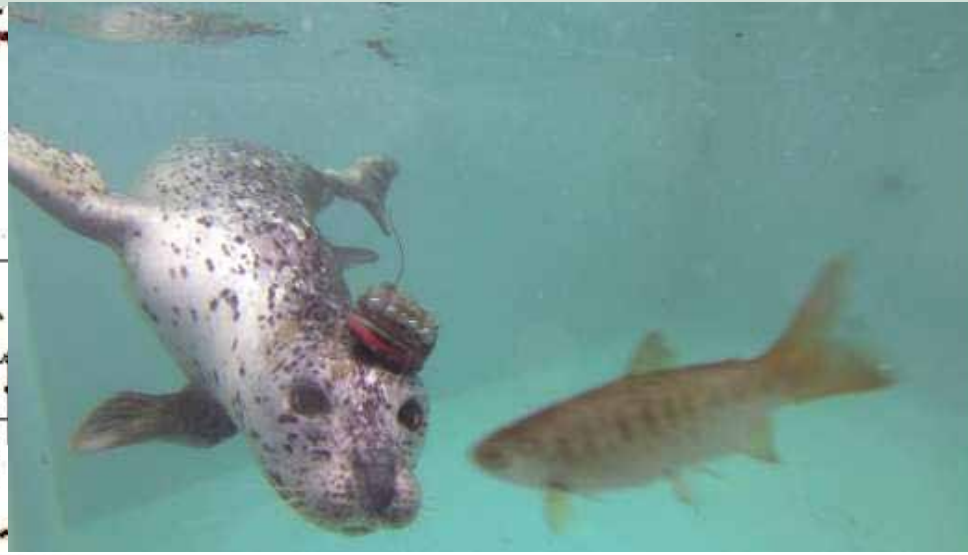
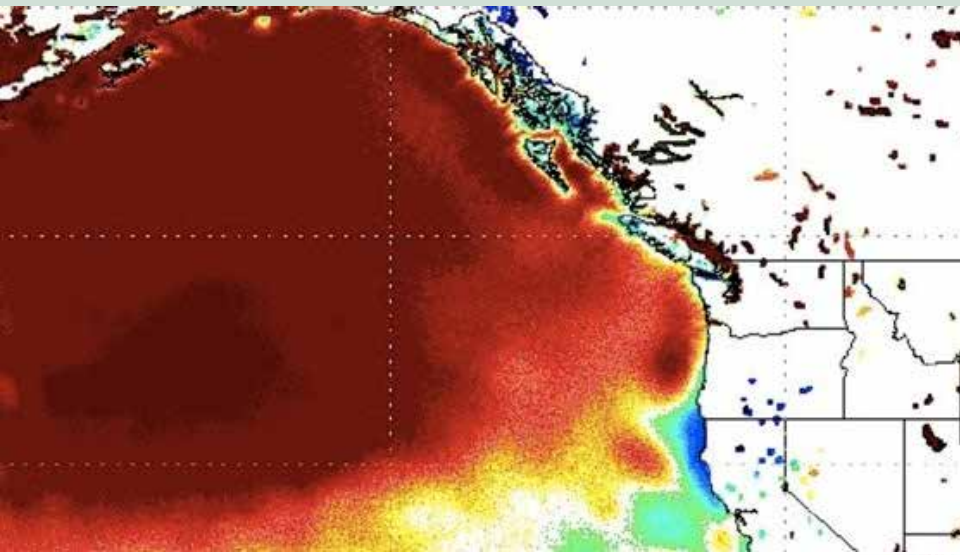
Declining patterns of Pacific Northwest steelhead trout (*Oncorhynchus mykiss*) adult abundance and smolt survival in the ocean

Coherent population dynamics associated with sockeye salmon juvenile life history strategies

Cameron Freshwater, Brian J. Burke, Mark D. Scheuerell, Sue C.H. Grant, Marc Trudel, and Francis Juanes



So what is going on with salmon?





SALMON WATERSHEDS PROGRAM

Photos

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Brian Huntington

Illustrations

Aimée van Drimmelen

ehertz@psf.ca

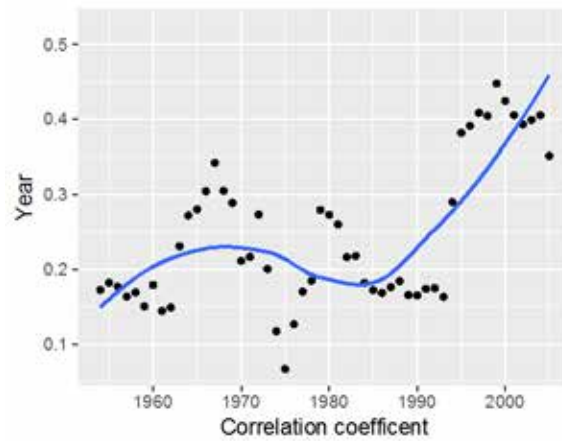
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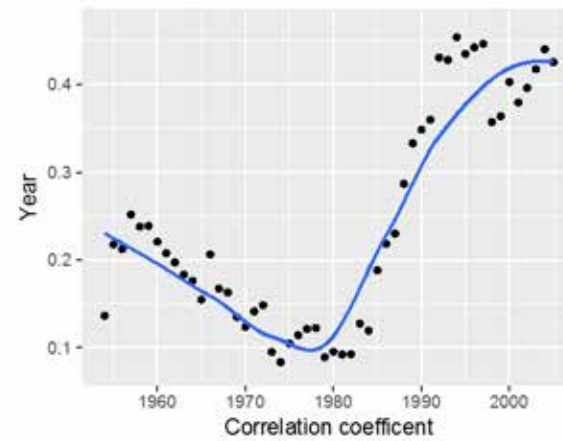
Questions?



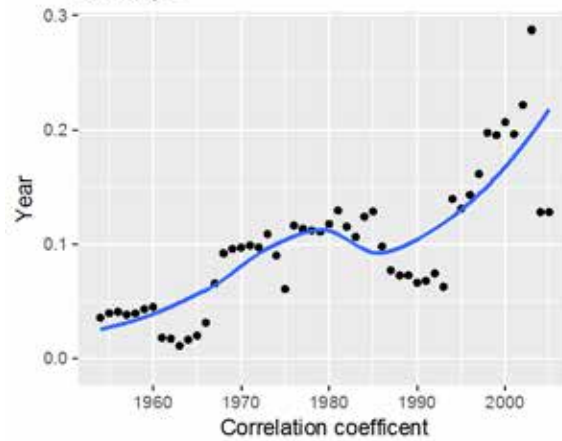
Chum



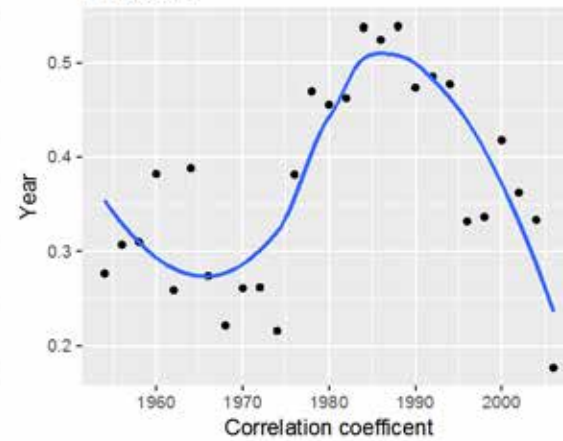
Coho



Sockeye



Pink even



Pink odd

