



# Rockfish Road Trip:

## Spatial variation in life history traits of black rockfish (*Sebastes melanops*) in the California Current and Gulf of Alaska

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PICES, Yokohama, Japan, November 11, 2025



**Oregon State University**  
Coastal Oregon Marine  
Experiment Station

**Black rockfish (*Sebastes schlegelii*)**



Found off the coast of China, Korea, and Japan

**Black rockfish (*Sebastes melanops*)**

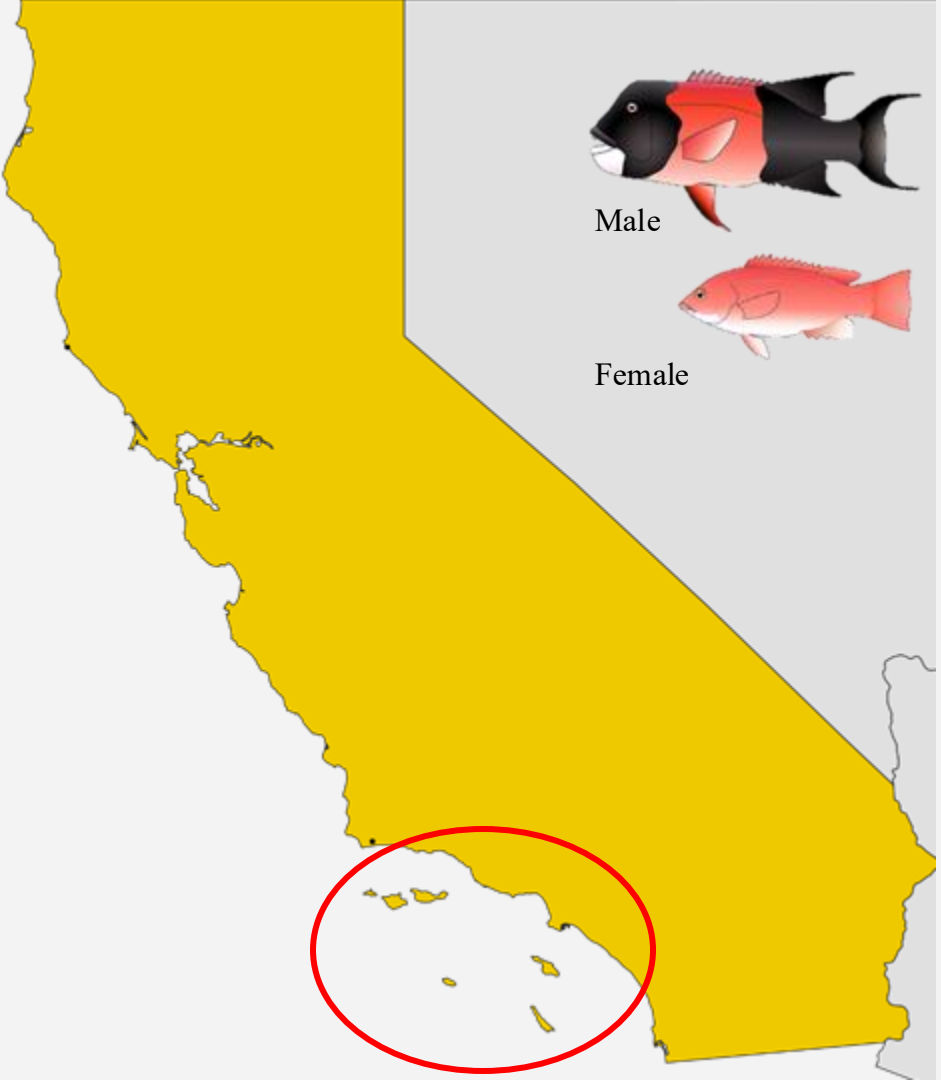
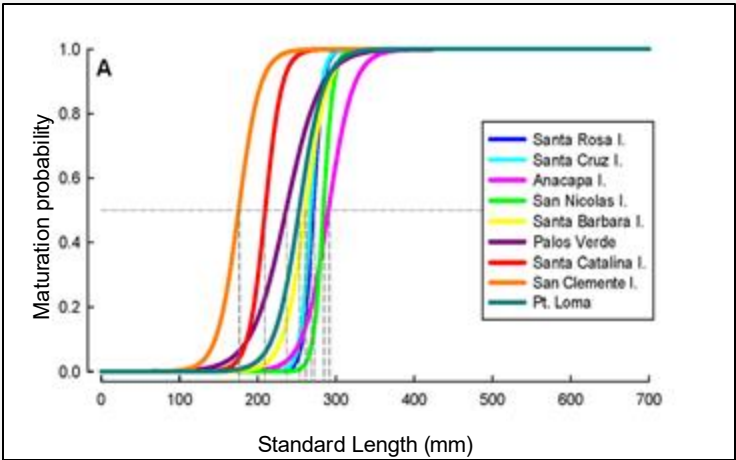
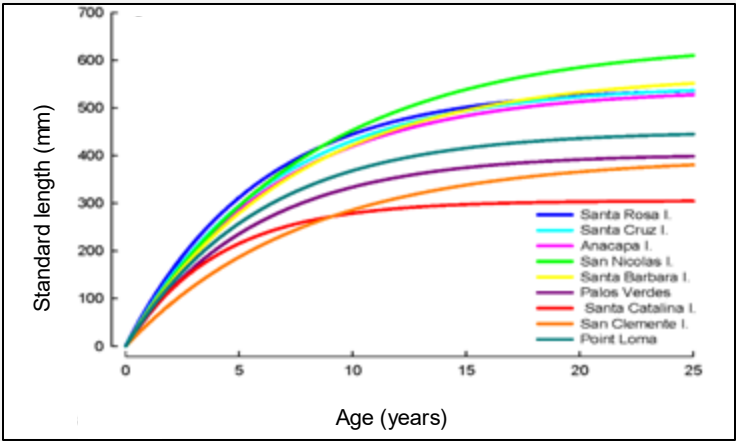


Found off the US West Coast and Alaska

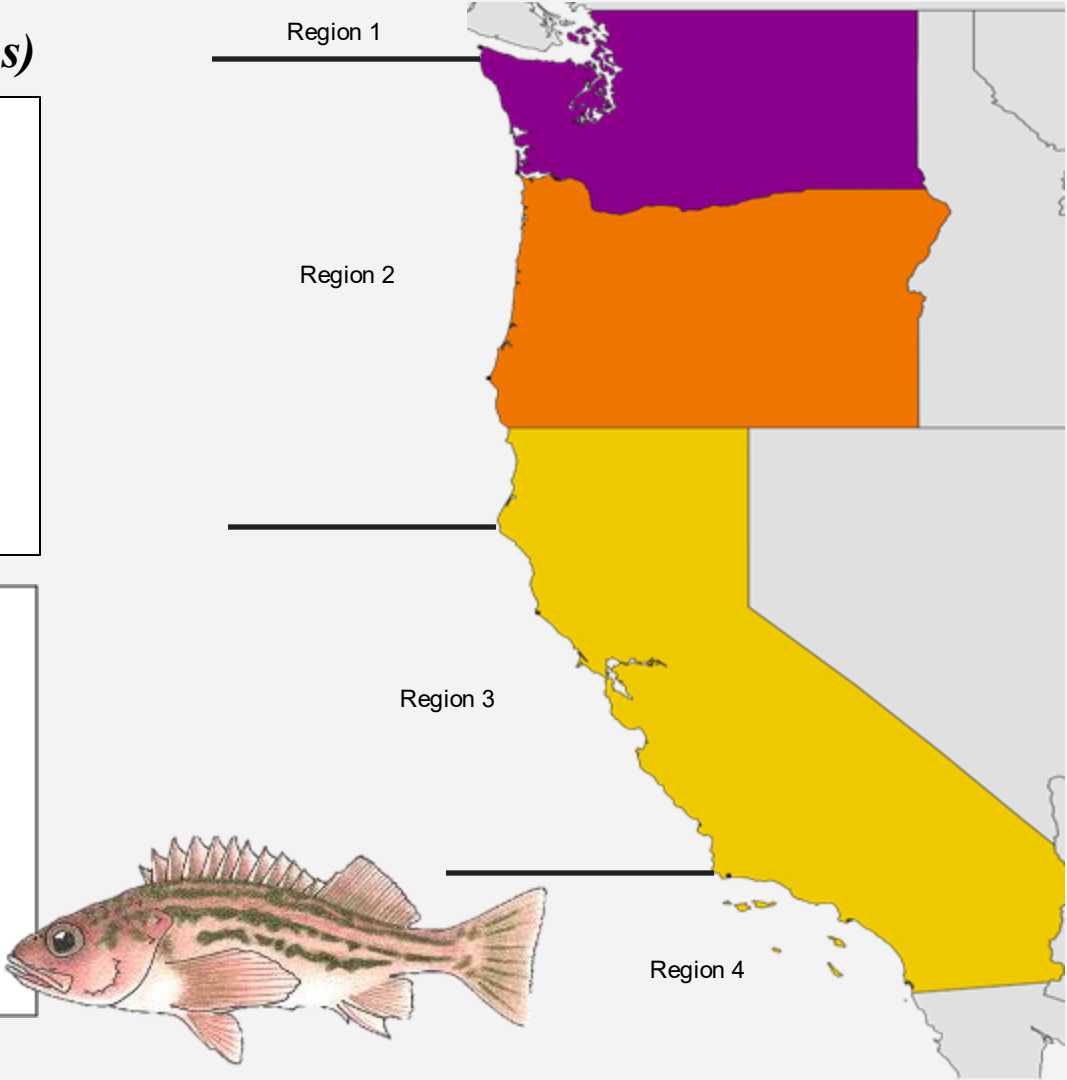
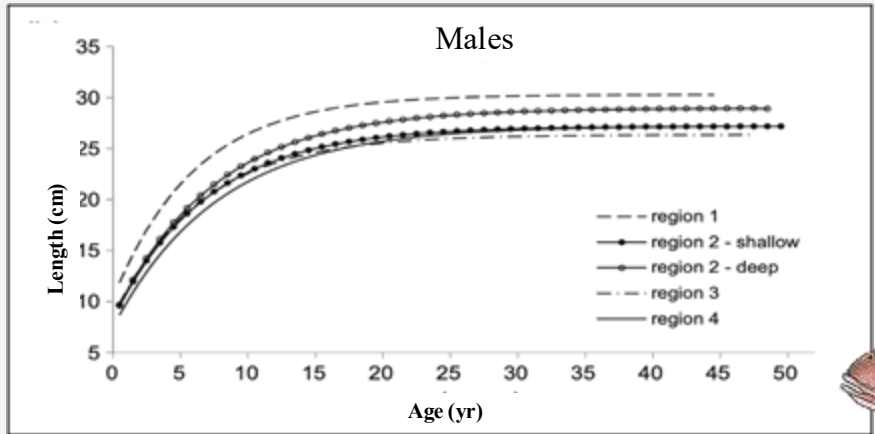
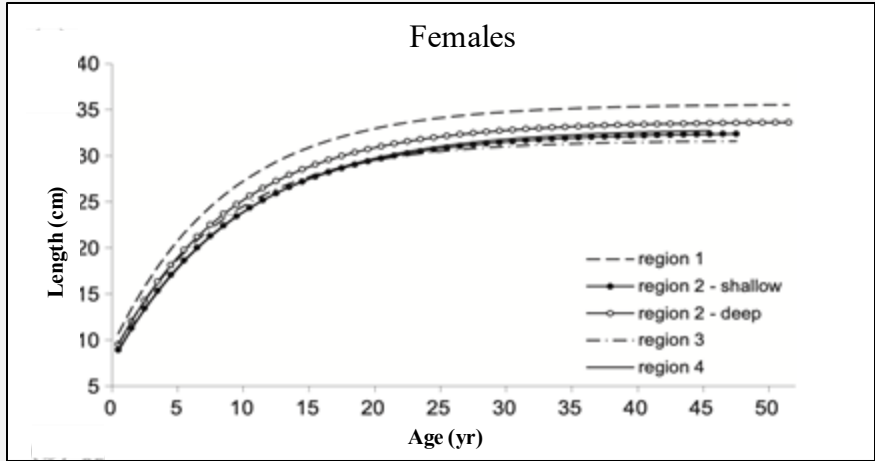


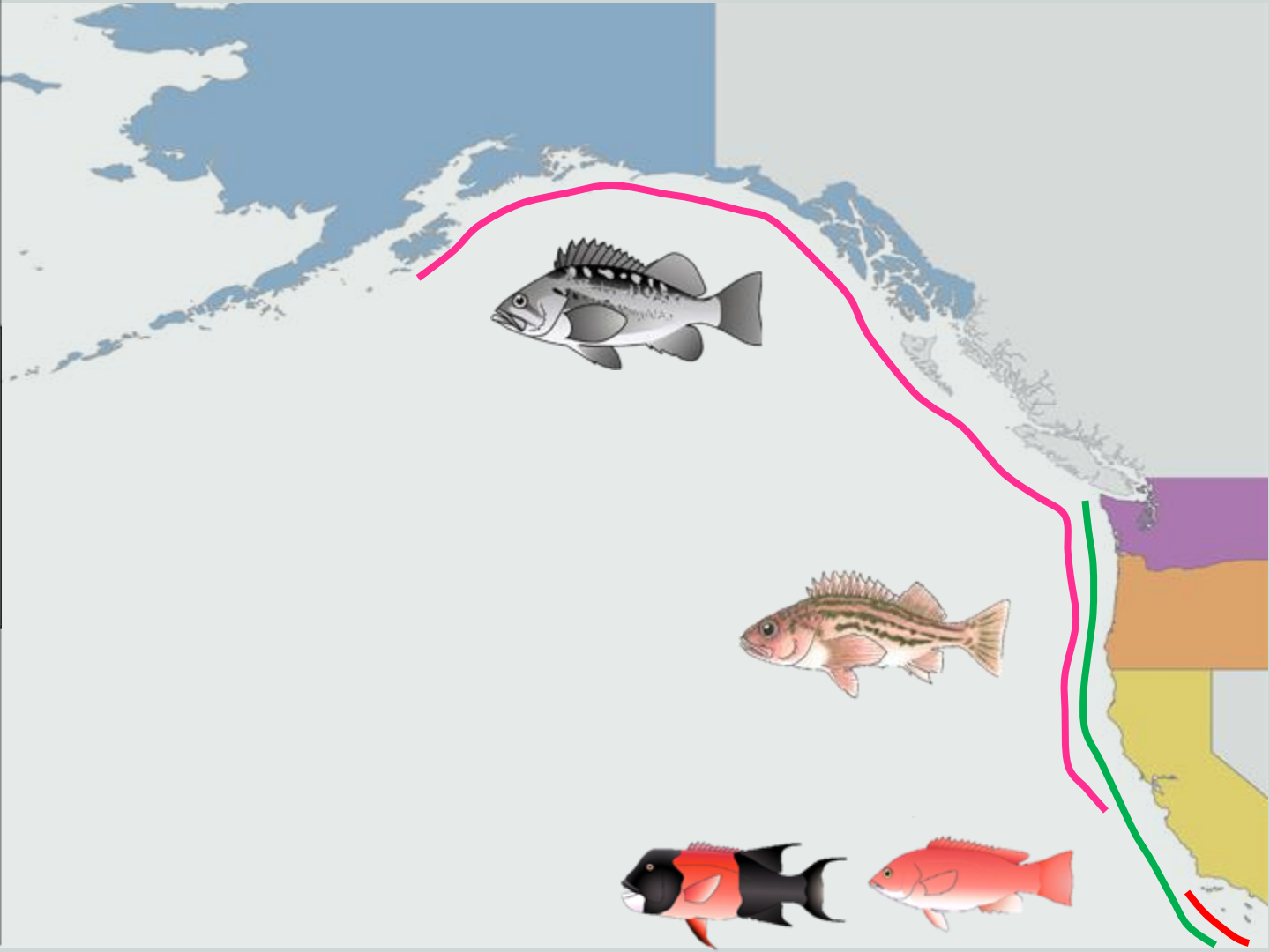
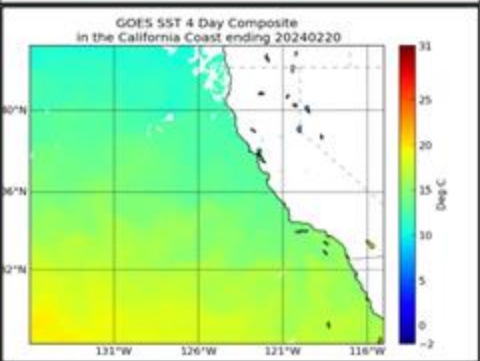
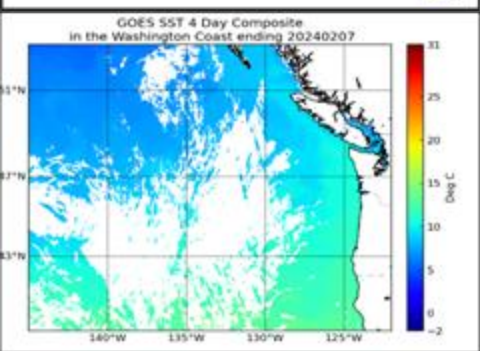
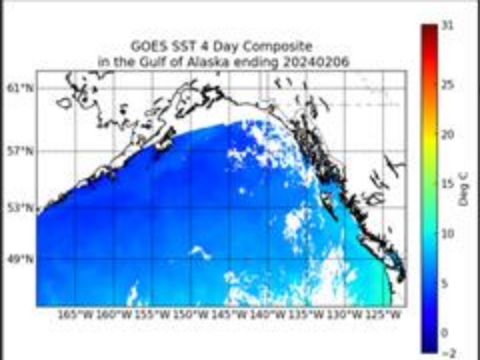


# California sheephead (*Semicossyphus pulcher*)



# Greenstriped rockfish (*Sebastes elongatus*)





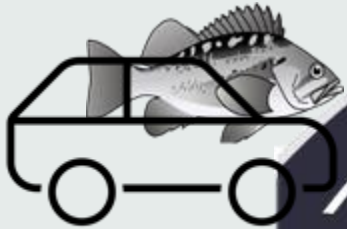


**What we currently understand about  
black rockfish and their management**

**Age and maturity data**

**Collaborative efforts**

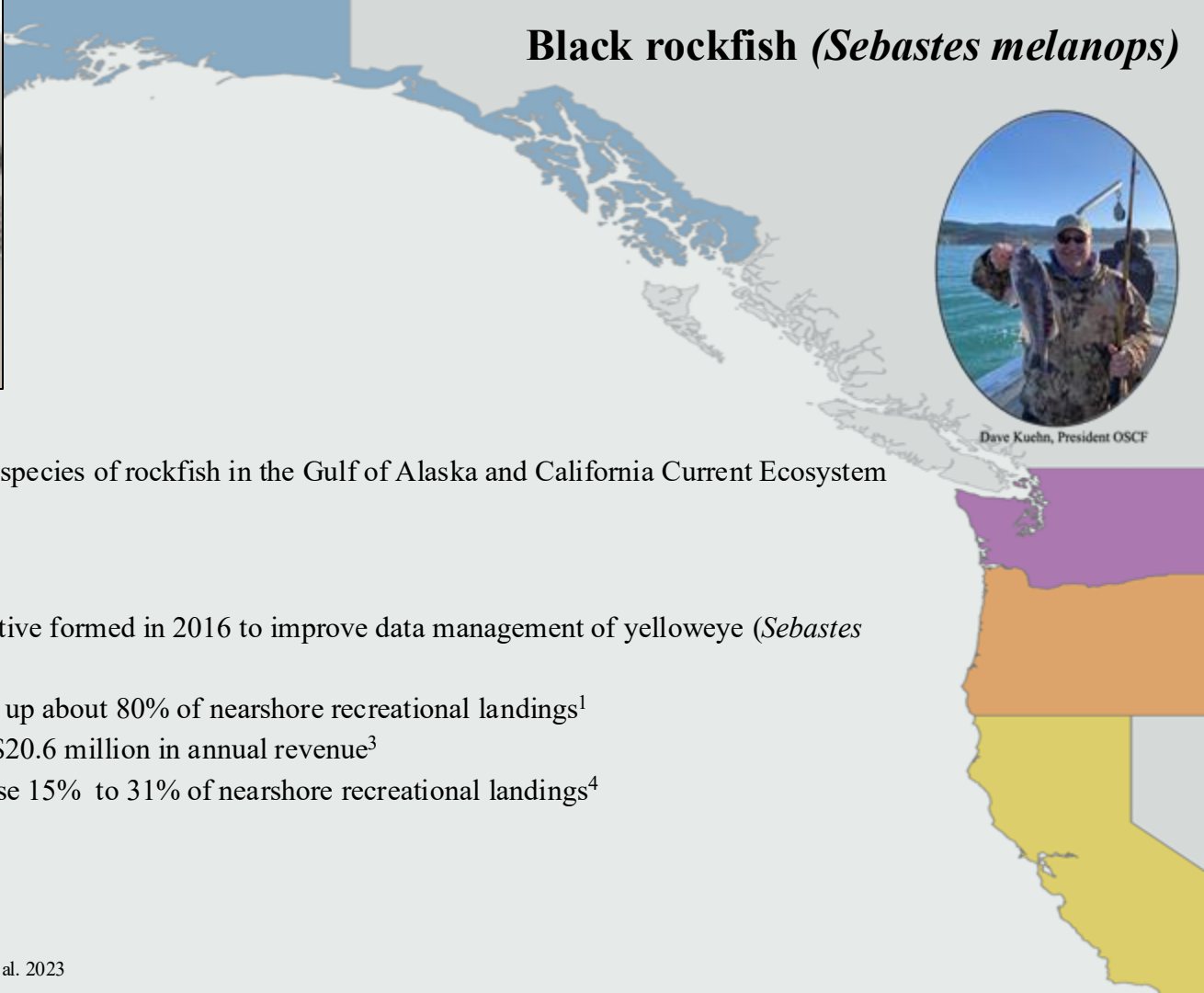
**3,145 Taylor Swift songs**








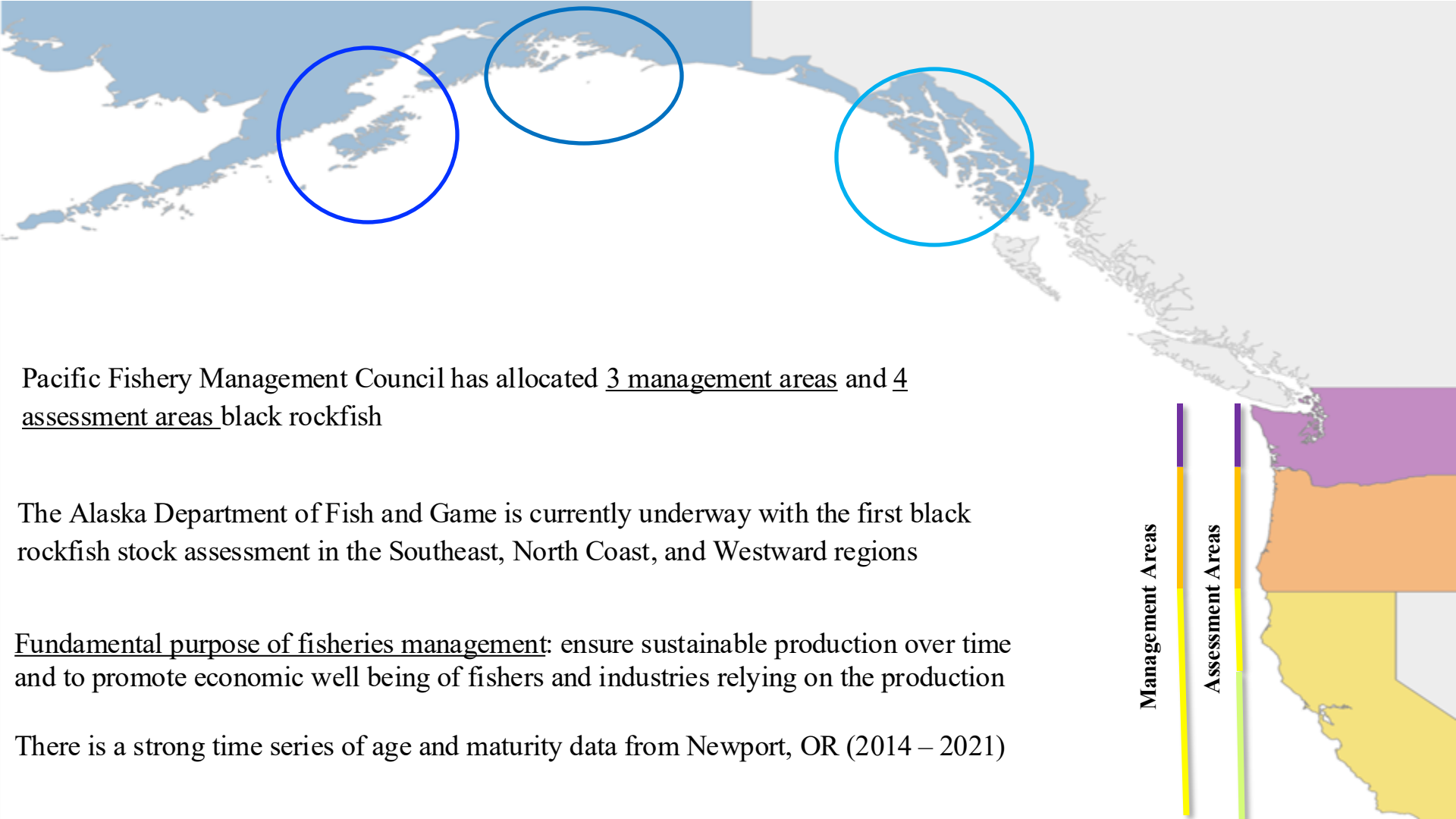
## Black rockfish (*Sebastes melanops*)



 Black rockfish are one of more than 60 species of rockfish in the Gulf of Alaska and California Current Ecosystem

 Valuable species!

- Alaska: Statewide Rockfish Initiative formed in 2016 to improve data management of yelloweye (*Sebastes ruberrimus*) and black rockfish<sup>2</sup>
- Washington: black rockfish make up about 80% of nearshore recreational landings<sup>1</sup>
- Oregon: black rockfish brings in \$20.6 million in annual revenue<sup>3</sup>
- California: black rockfish comprise 15% to 31% of nearshore recreational landings<sup>4</sup>



Pacific Fishery Management Council has allocated 3 management areas and 4 assessment areas black rockfish

The Alaska Department of Fish and Game is currently underway with the first black rockfish stock assessment in the Southeast, North Coast, and Westward regions

Fundamental purpose of fisheries management: ensure sustainable production over time and to promote economic well being of fishers and industries relying on the production

There is a strong time series of age and maturity data from Newport, OR (2014 – 2021)

A map showing the coastline of Alaska, the Pacific Northwest, and California. The map is divided into three colored regions: a purple region in the north (Alaska and British Columbia), an orange region in the middle (Washington and Oregon), and a yellow region in the south (California). A black arrow points upwards from the text 'What about comparing coast wide data?' towards the Gulf of Alaska. Two other black arrows point from the text 'Research Question: How does growth and maturity of black rockfish vary in the California Current and Gulf of Alaska?' to the orange and yellow regions respectively.

**Black rockfish (*Sebastes melanops*)**

What about comparing coast wide data?

**Research Question: How does growth and maturity of black rockfish vary in the California Current and Gulf of Alaska?**

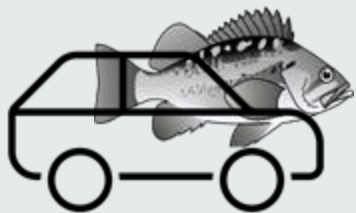


Alaska

Washington

Oregon

California







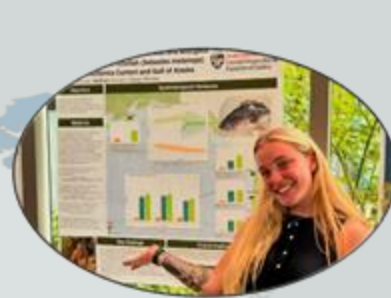
Peri Gerson, OSU



Landon Sharrar, OSU Undergraduate



Oregon South Coast Fishermen (OSCF)



Sadie Lockwood, OSU Undergraduate



Steve Godin, President Oregon Coast Anglers



CCFRP Angler



Grace Godfrey, OSU Undergraduate



Sara McDonald, OSU Undergraduate



Wes Langell, HMB Charter Captain



Holland Vernon, WSU Undergraduate



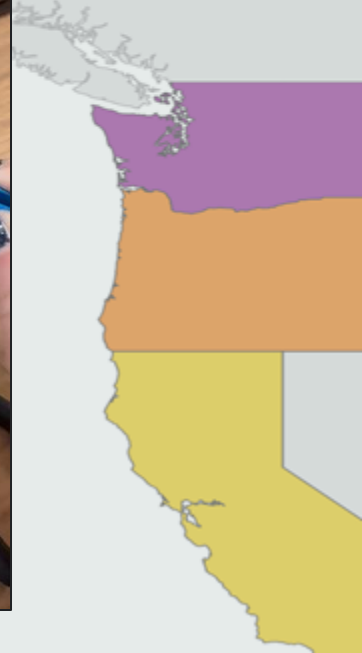
Issac Nyameke, ADFG/UAF



Dave Kuehn, President OSCF



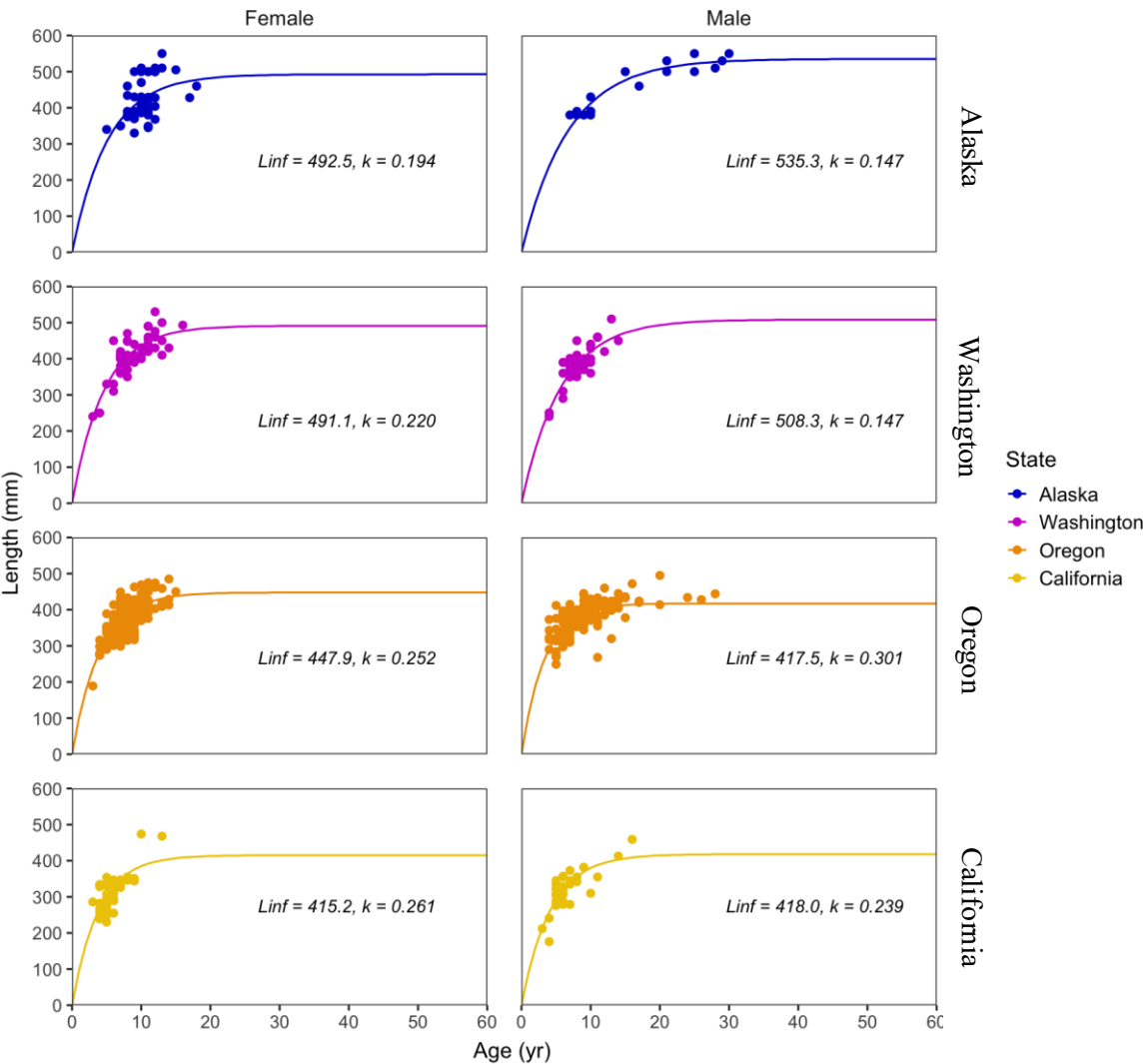
## Estimating fish age by counting rings







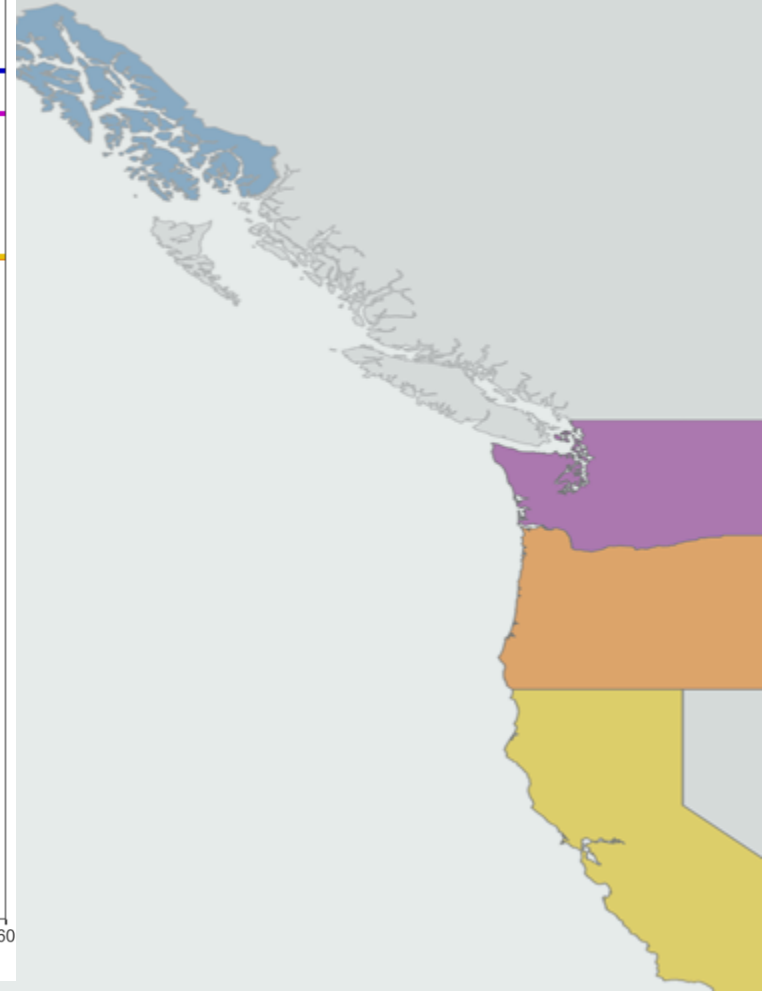
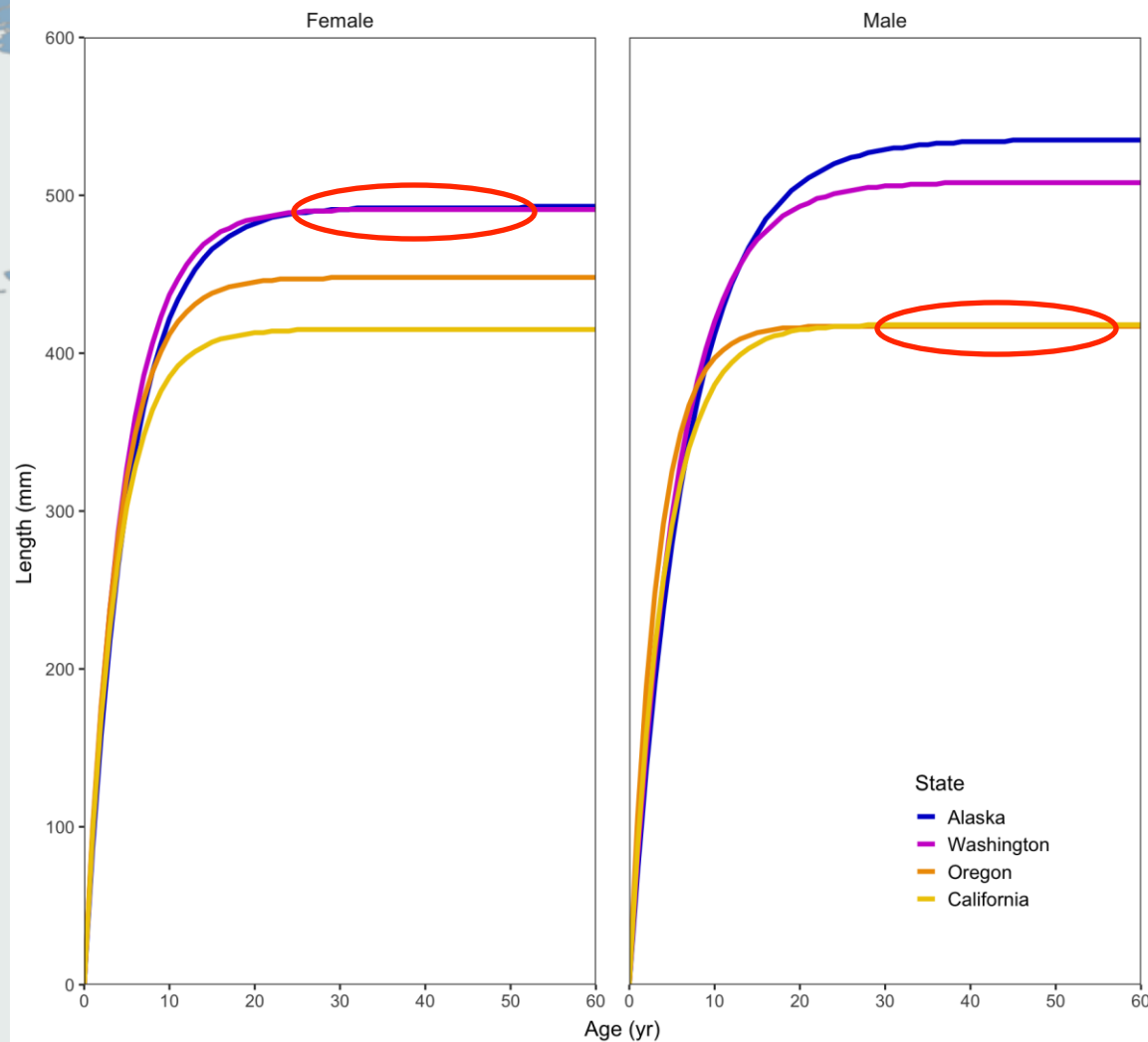
# von Bertalanffy Growth Curves



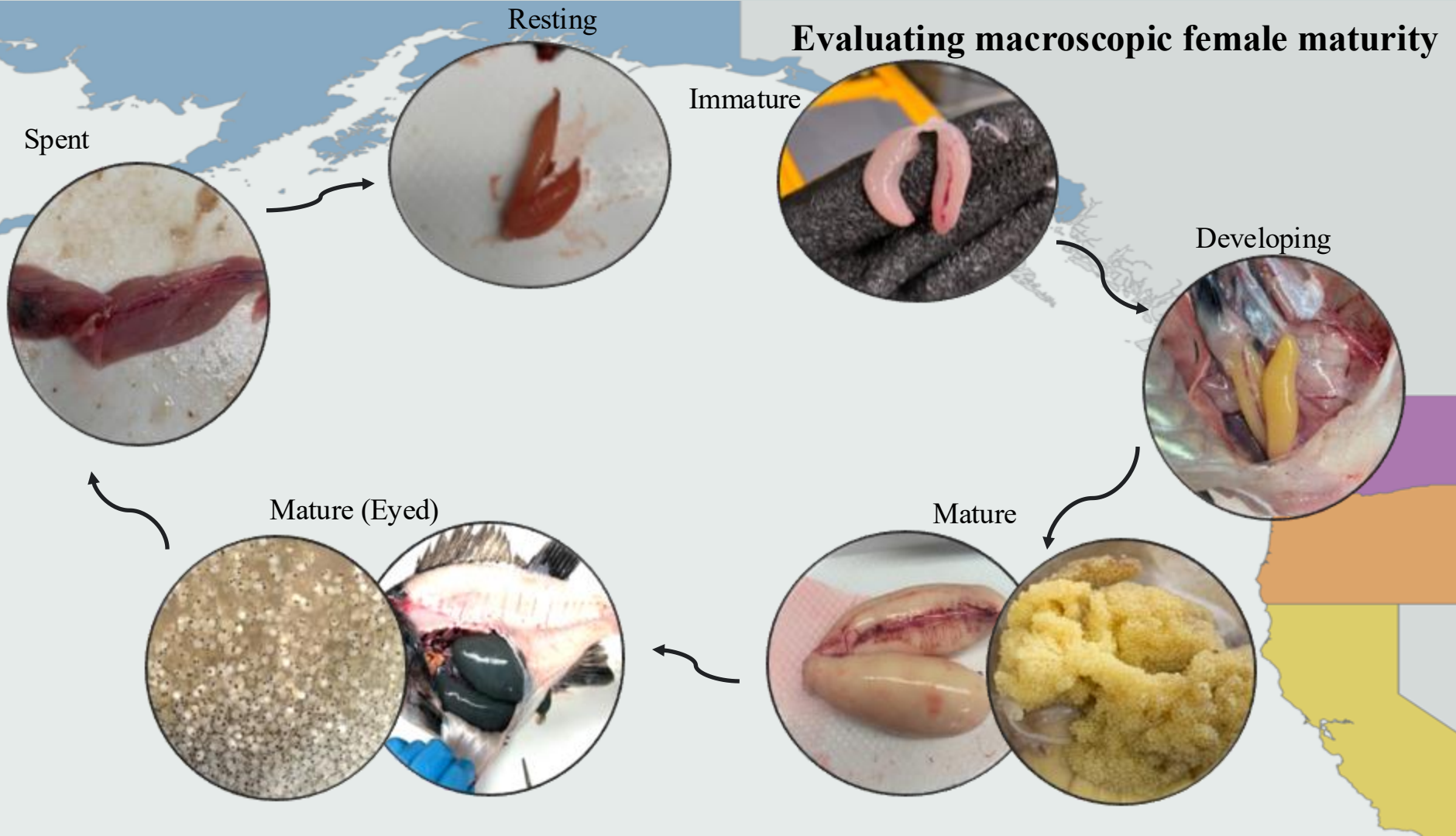
$L_{\infty}$  = theoretical maximum length  
(average max length expected)

$k$  = growth coefficient  
(how quickly an individual is  
expected to grow)

# von Bertalanffy Growth Curves



# Evaluating macroscopic female maturity

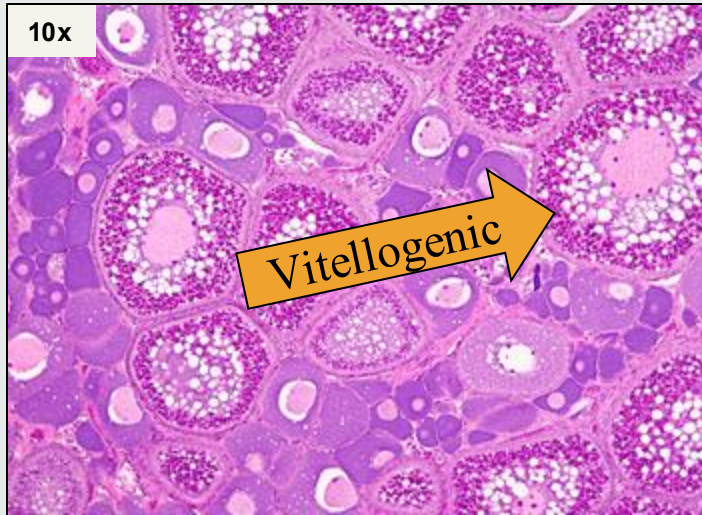


## Estimating microscopic female maturity



Atresia - resorption of mature oocytes

Vitellogenic – mature oocytes

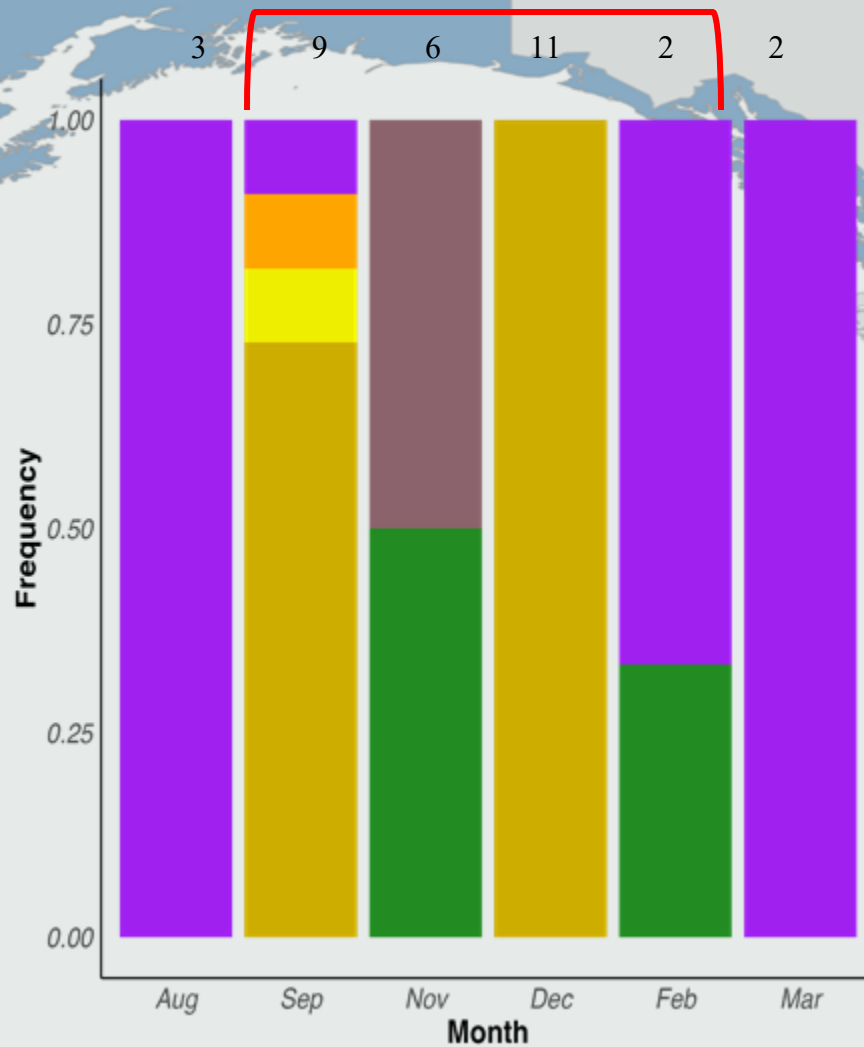


Biological maturity - capable of reproduction

Functional maturity - potential spawners in a given year



# Preliminary maturity



3

9

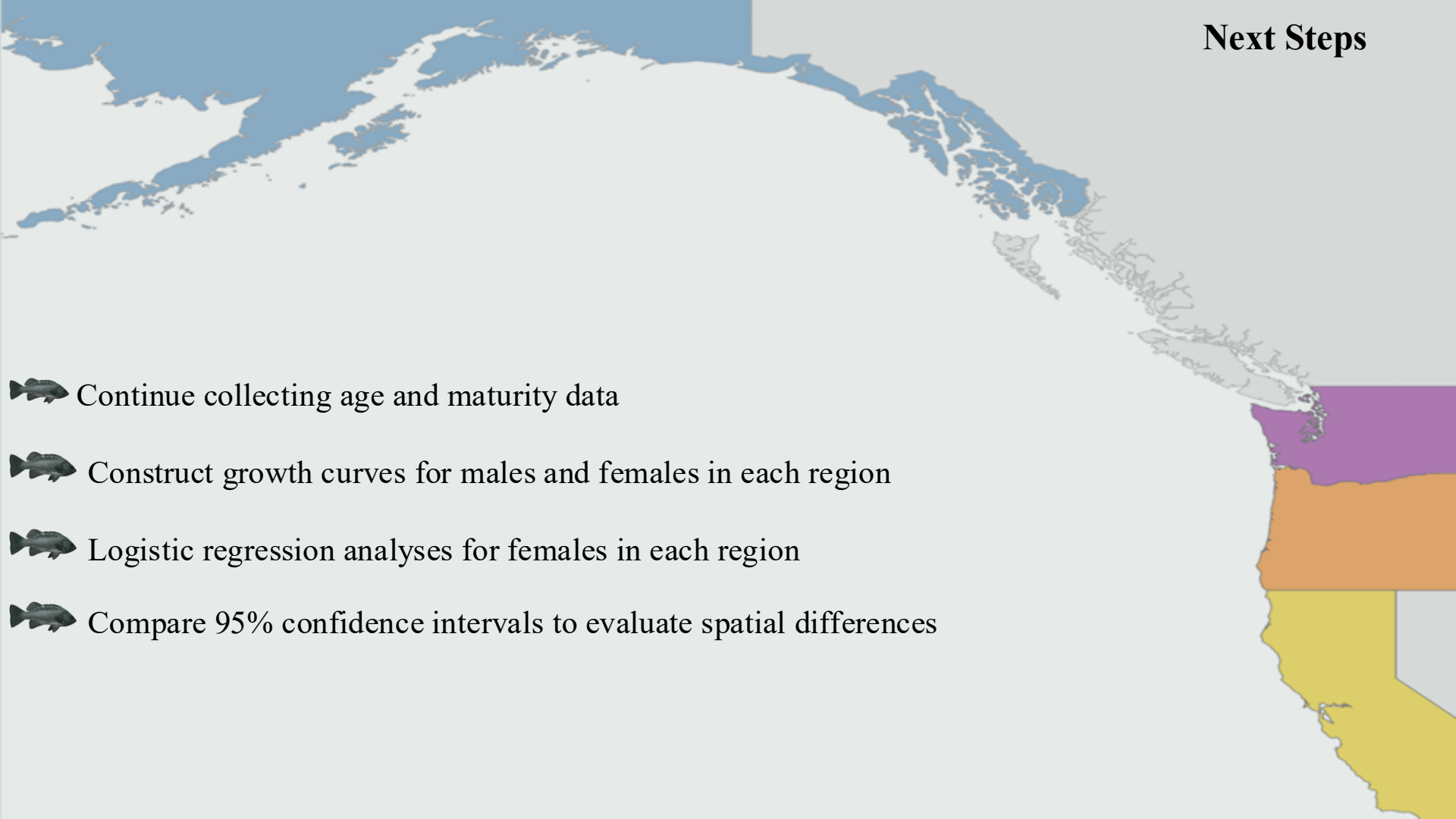
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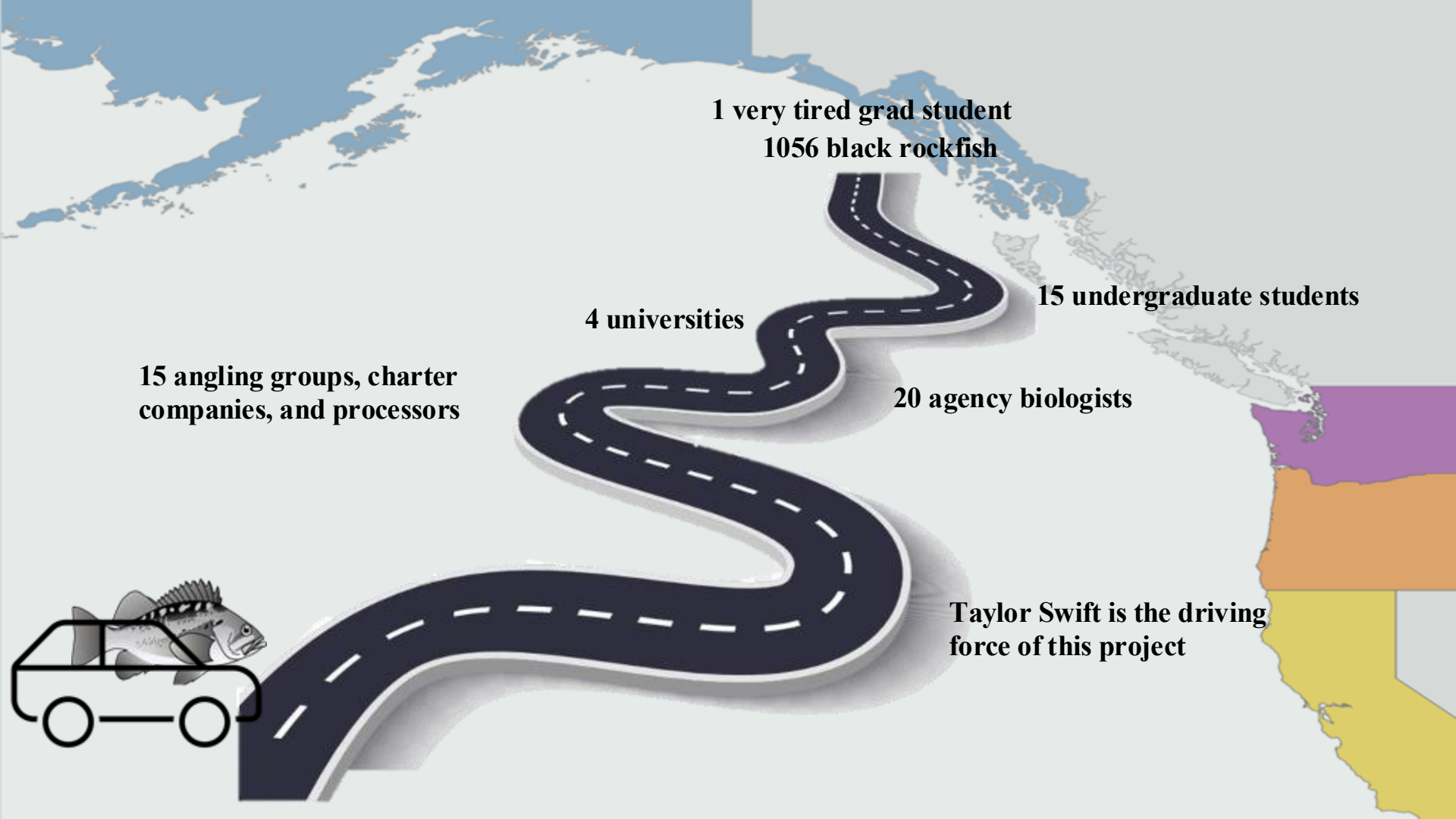
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2

## Next Steps

- 
- 🐟 Continue collecting age and maturity data
  - 🐟 Construct growth curves for males and females in each region
  - 🐟 Logistic regression analyses for females in each region
  - 🐟 Compare 95% confidence intervals to evaluate spatial differences





**1 very tired grad student  
1056 black rockfish**

**4 universities**

**15 undergraduate students**

**15 angling groups, charter  
companies, and processors**

**20 agency biologists**

**Taylor Swift is the driving  
force of this project**

# Funding Sources



North Pacific Research Board



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Experiment Station

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Oregon Chapter, American Fisheries Society

Marine Studies Initiative 2024 Advancement Award

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McNeil Award

Coombs-Simpson Memorial Fellowship

Oregon State University



Oregon State University  
Marine and Coastal  
Opportunities



Oregon State University  
Hatfield



# This project would not be feasible without the collaboration and assistance of the following angling groups, charter companies, and biologists;



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Graduate committee: Cheryl Barnes, Scott Heppell, Leif Rasmuson, and Jason Cope

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**Thank you!**

