


Changes to the structure and function of an albacore fishery reveal shifting social-ecological realities for Pacific Northwest fishermen

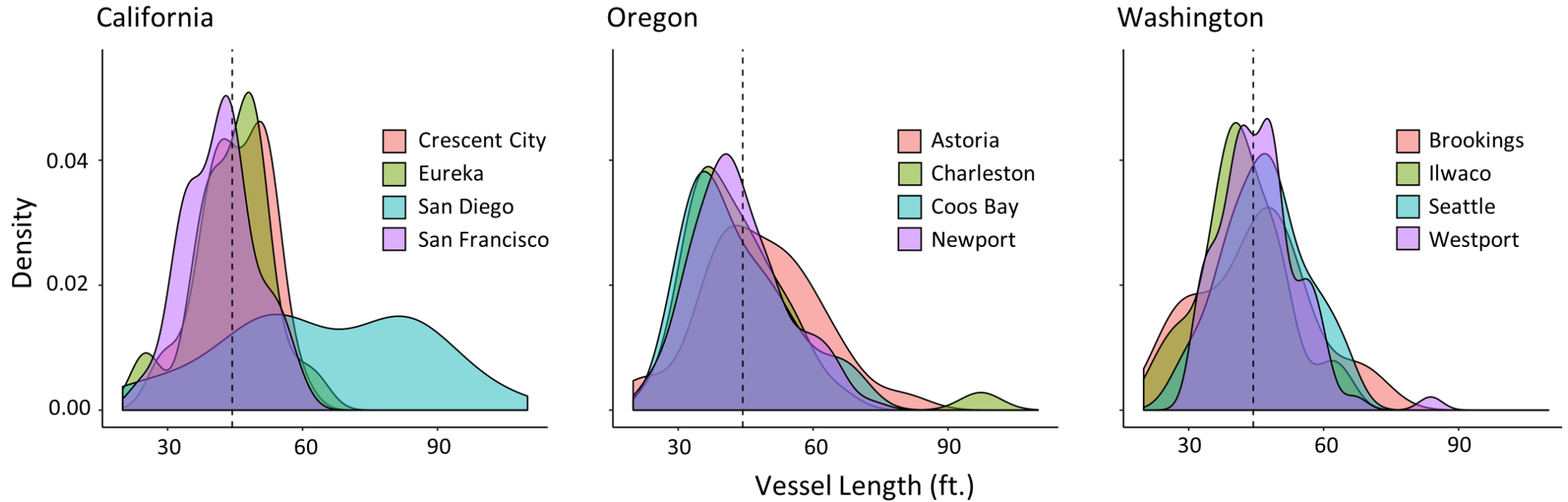
Timothy H. Frawley^{1,2}  | Barbara A. Muhling^{2,3} | Stephanie Brodie^{1,2} |
Mary C. Fisher⁴ | Desiree Tommasi^{2,3} | Gwendal Le Fol^{2,3} | Elliott L. Hazen^{1,2} |
Stephen S. Stohs³ | Elena M. Finkbeiner^{5,6} | Michael G. Jacox^{1,2,7}



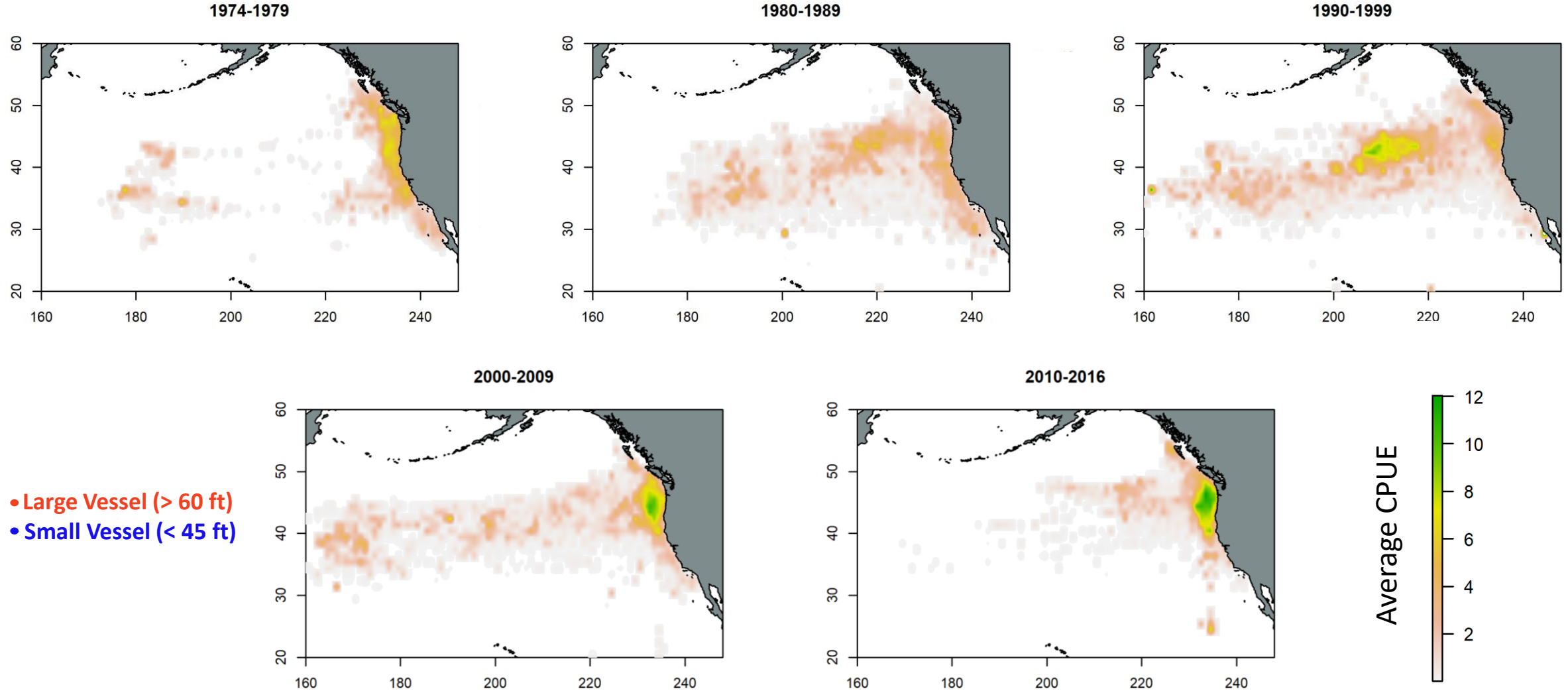
A Heterogeneous Fishing Fleet



Density of Tuna Fishing Vessel Sizes by Hailing Port



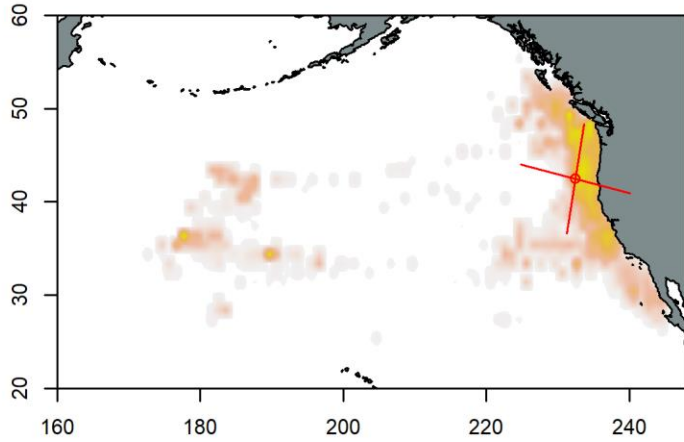
Decadal Shifts Albacore Distribution & Fishing Effort



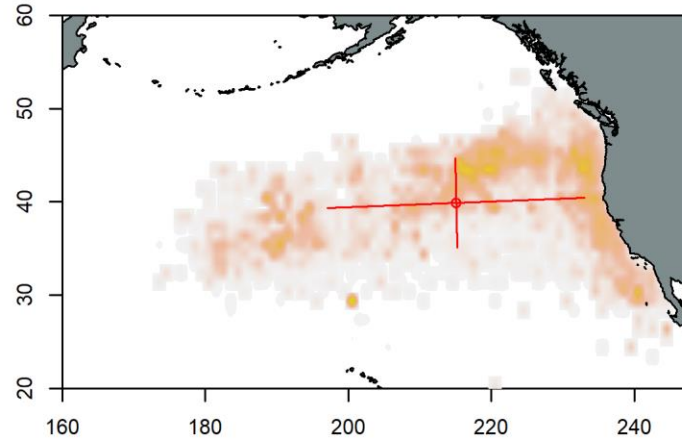
“End of the 90s, best fishing grounds were much further offshore, 1,000 to 1,200 miles offshore. Since then, fish has gotten closer, much closer.” –Interview Quote

Decadal Shifts Albacore Distribution & Fishing Effort

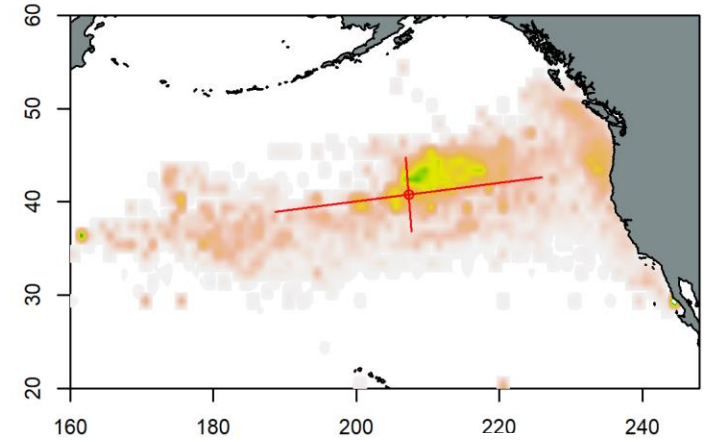
1974-1979



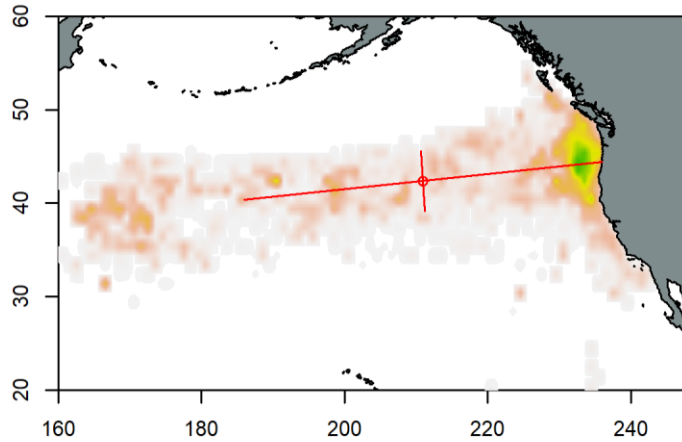
1980-1989



1990-1999

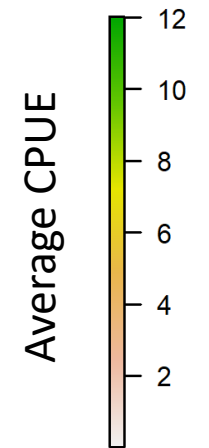
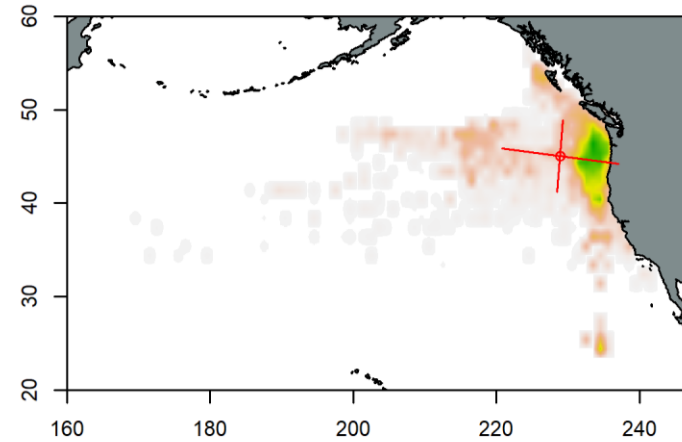


2000-2009



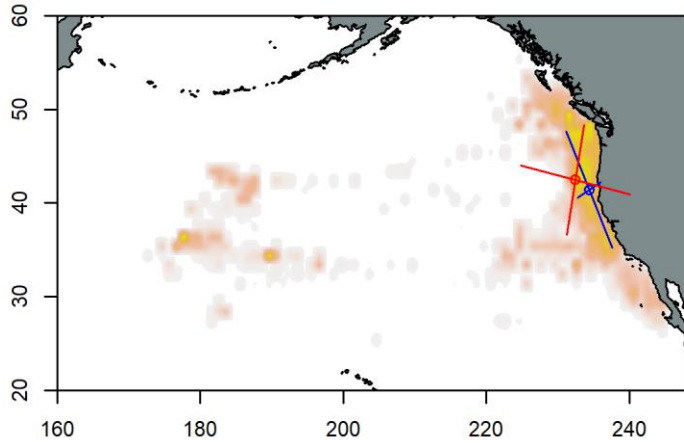
- Large Vessel (> 60 ft)
- Small Vessel (< 45 ft)

2010-2016

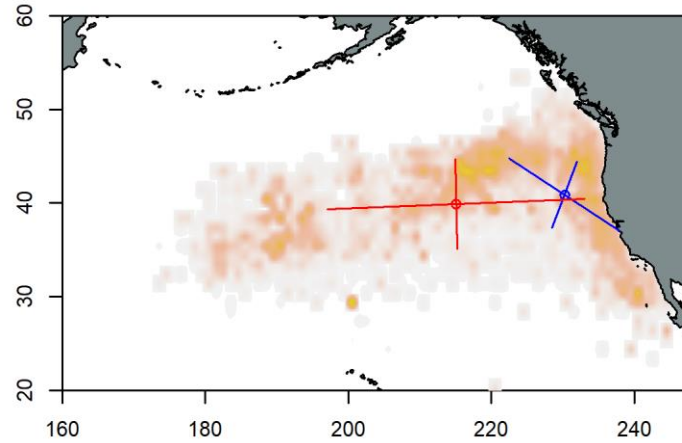


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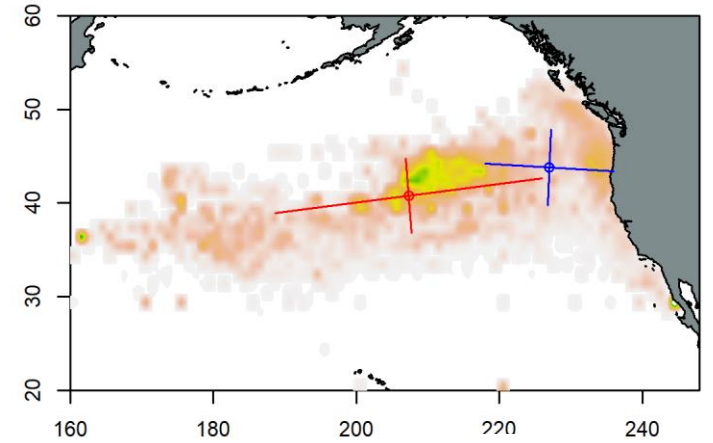
1974-1979



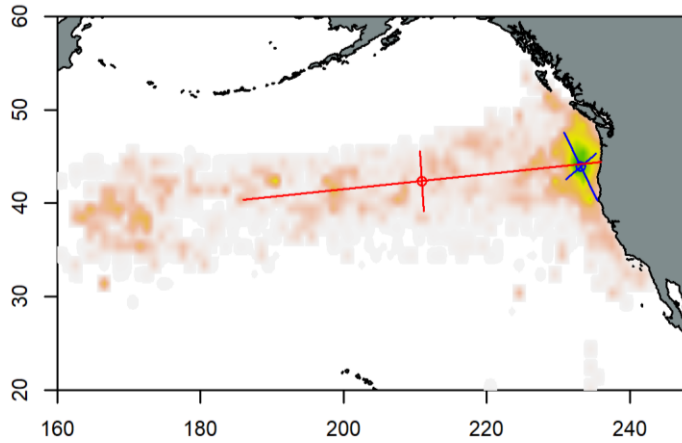
1980-1989



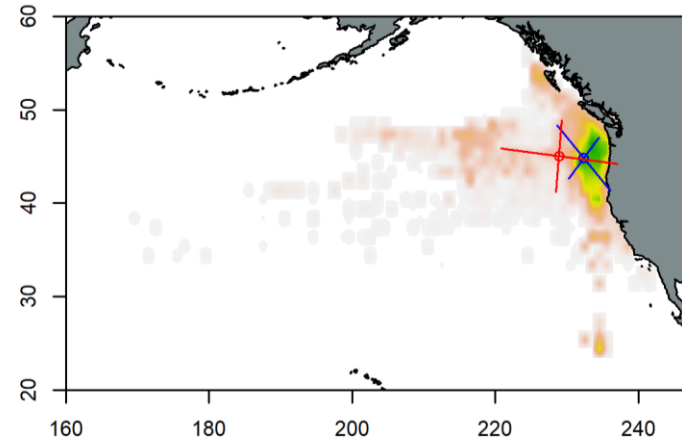
1990-1999



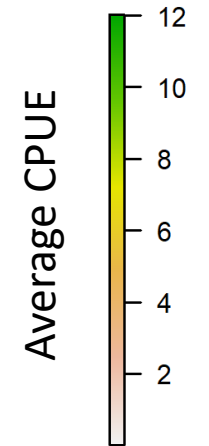
2000-2009



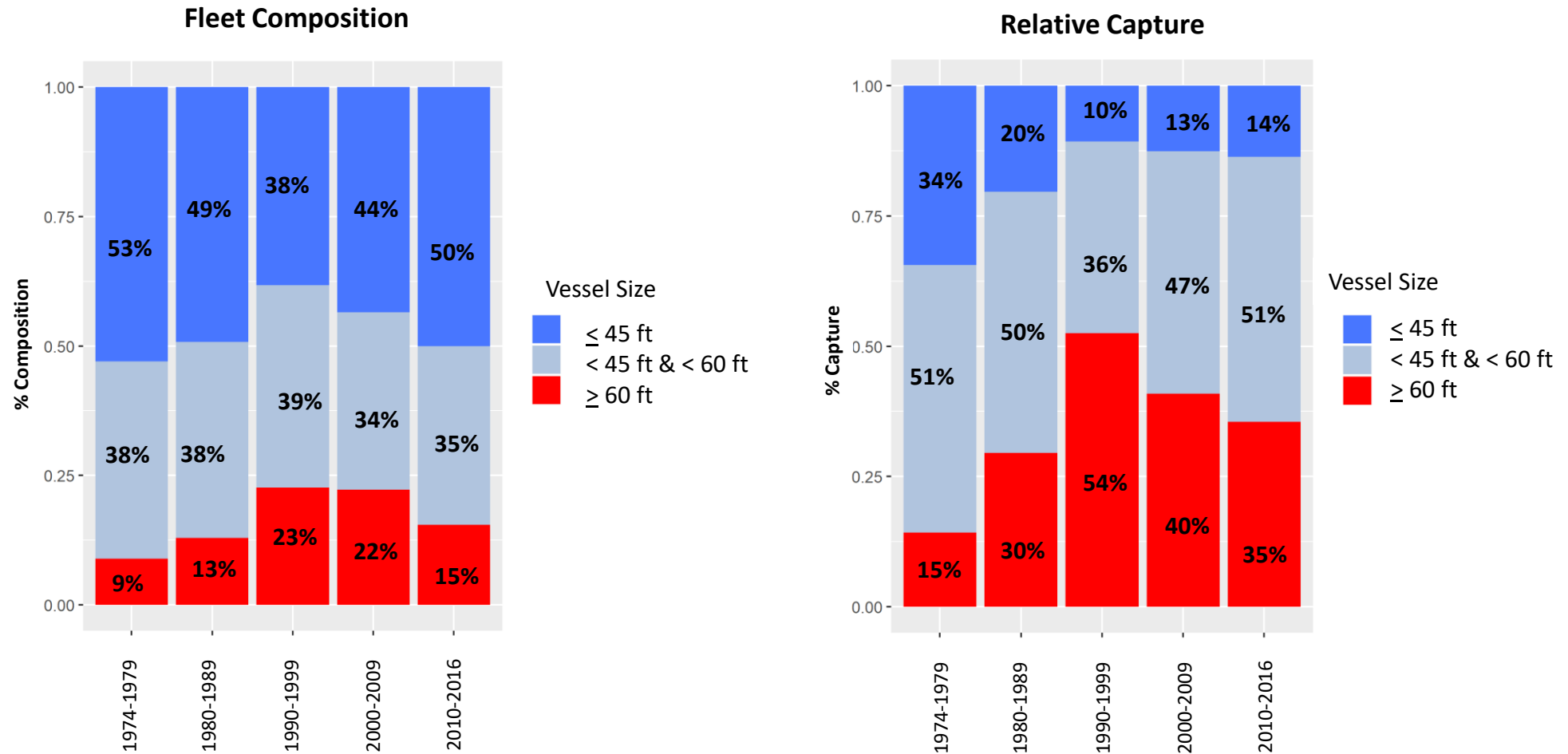
2010-2016



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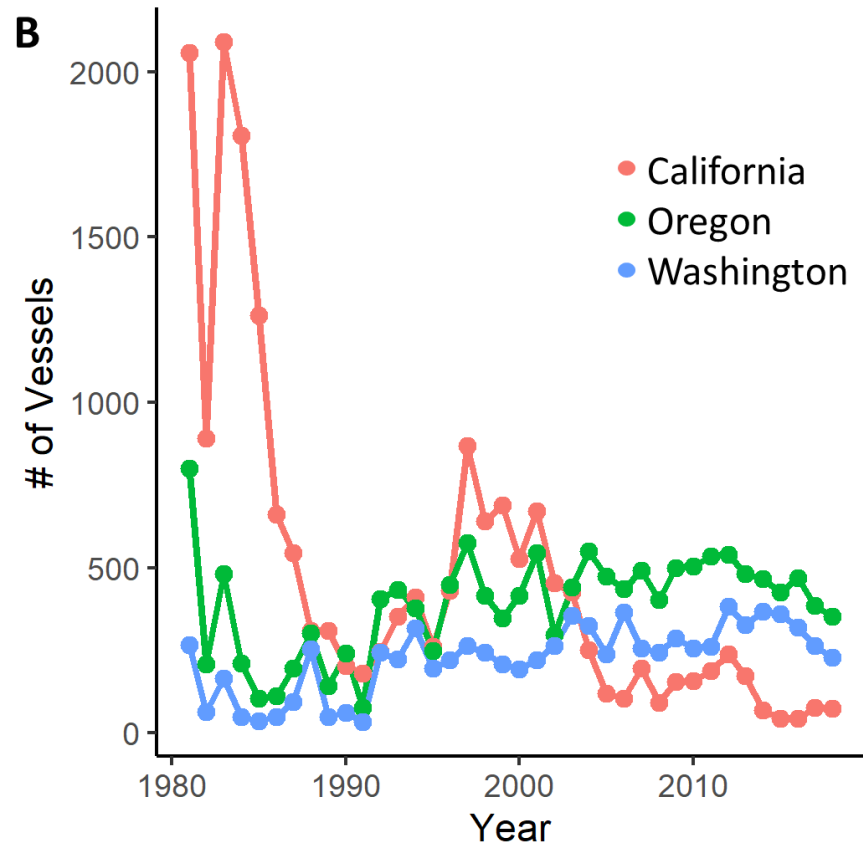
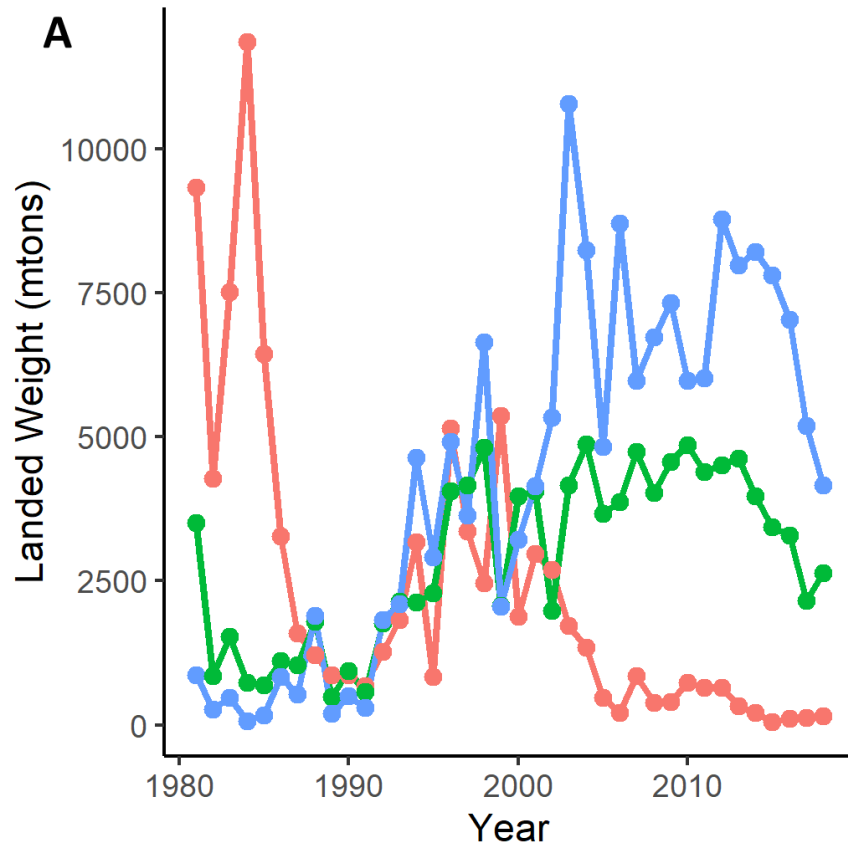


Corresponding Changes in the Fleet Composition & Capture (Vessel Size)

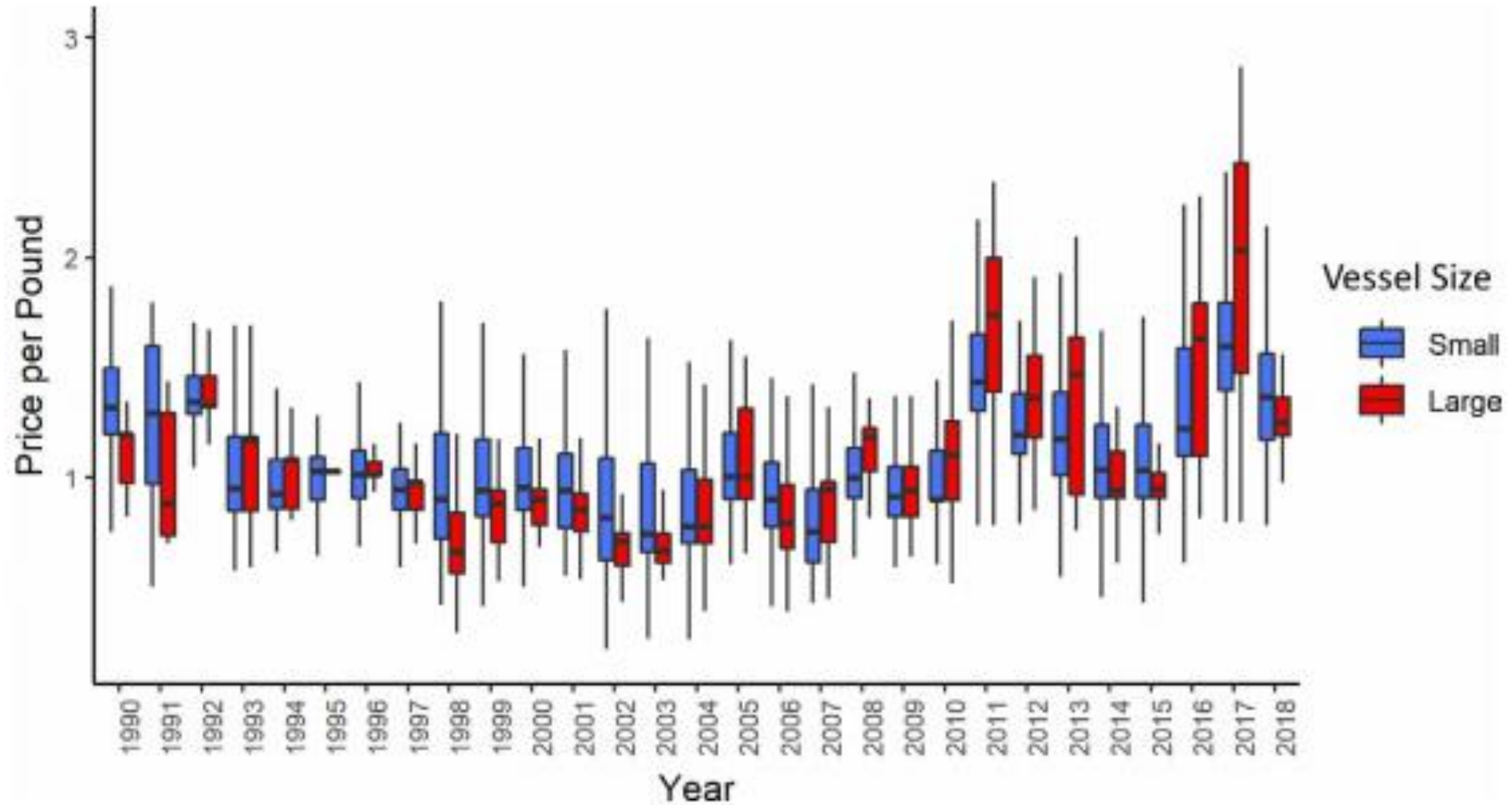


“Now that albacore can be so close to shore it makes it easier for smaller boats to target it opportunistically.”-Interview Quote

Corresponding Changes in the Fleet Composition & Capture (State)



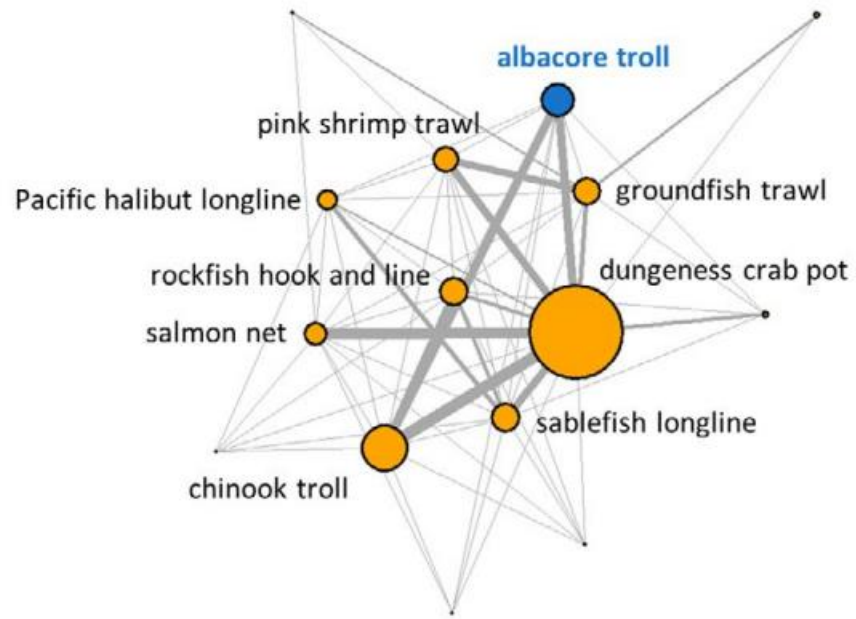
Increasing Value and Product Differentiation



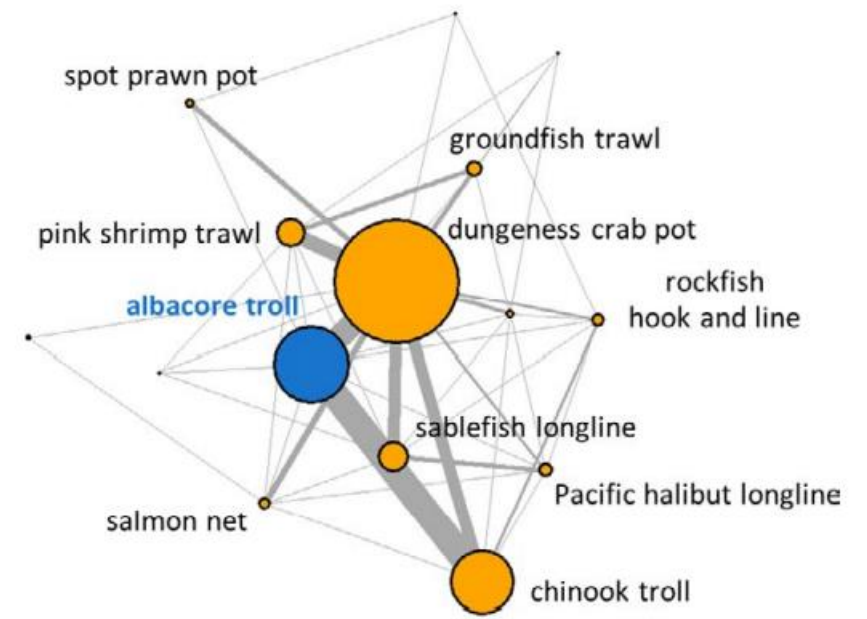
“Now the market has totally changed and we have like 25–30 separate buyers looking for different quantities and grades.” -Interview Quote

Increasing Importance of Albacore in PNW harvest portfolios

1990-1999

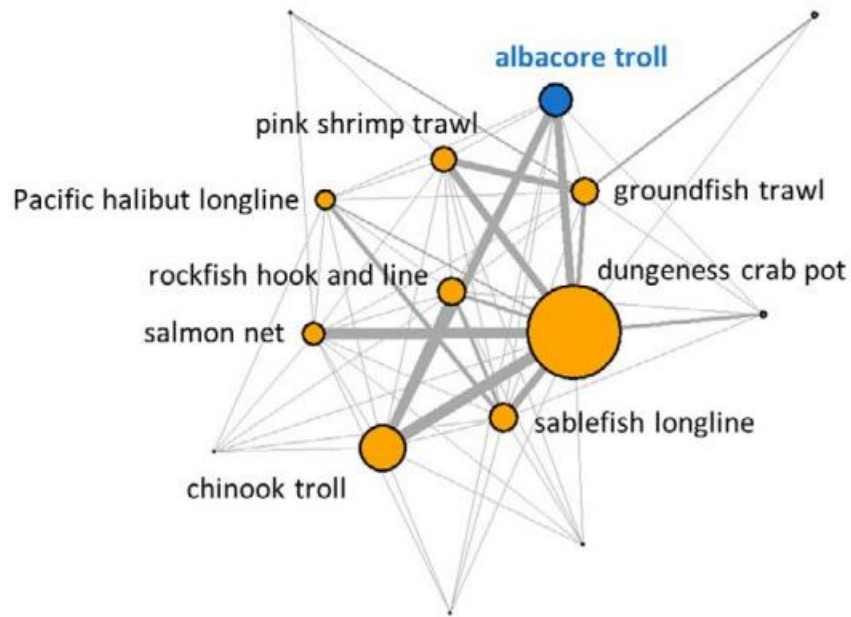


2010-2018

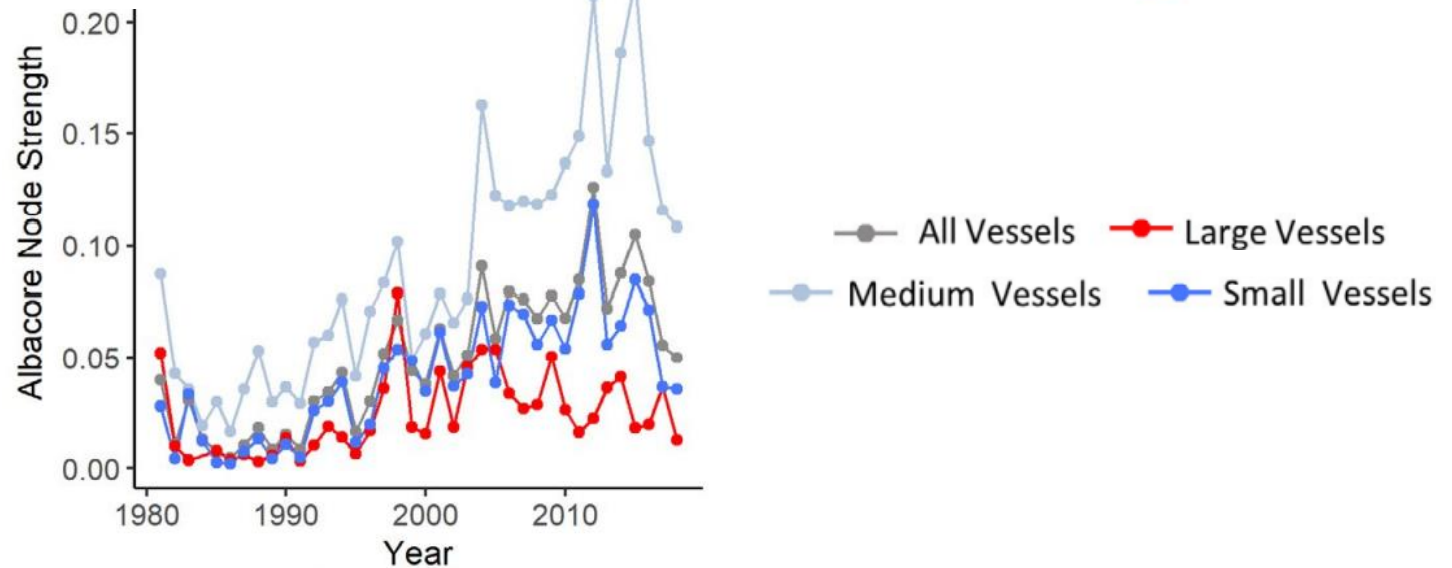
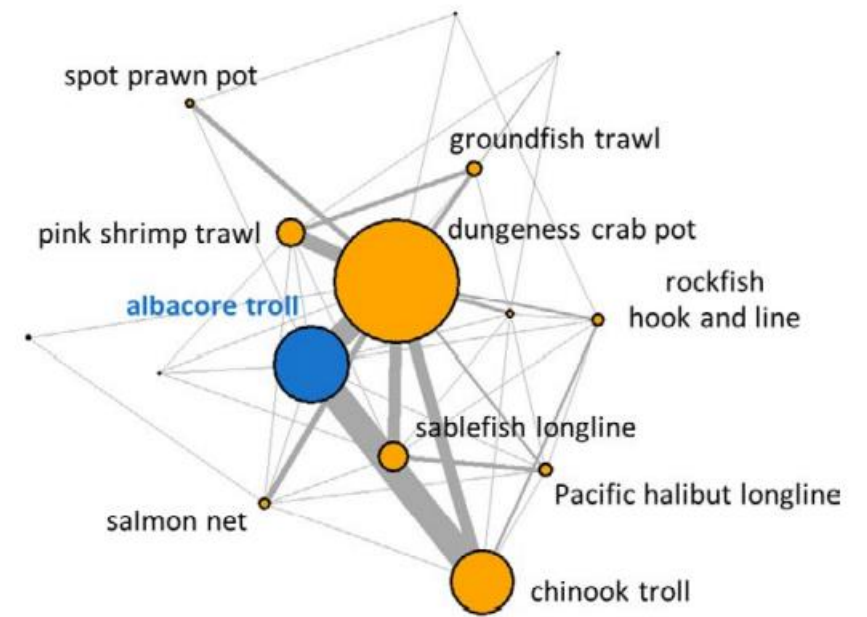


Increasing Importance of Albacore in PNW Harvest Portfolios

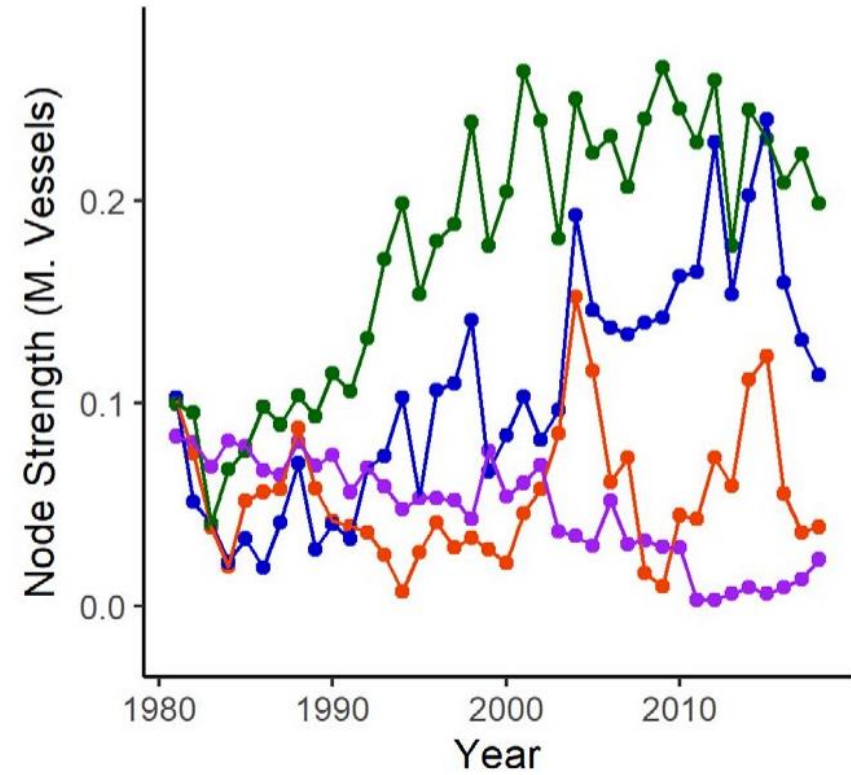
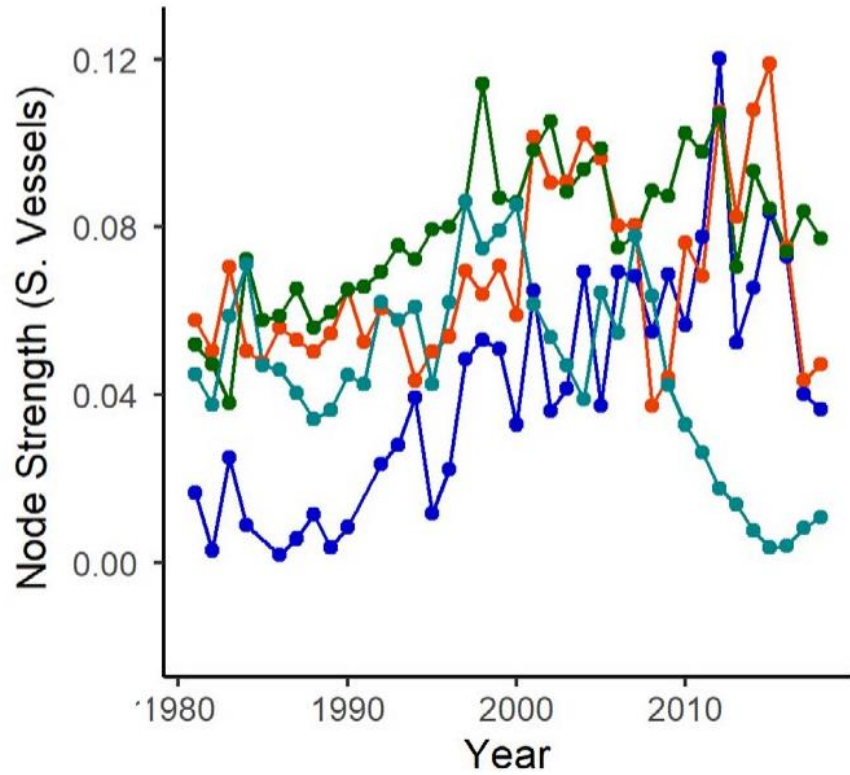
1990-1999



2010-2018

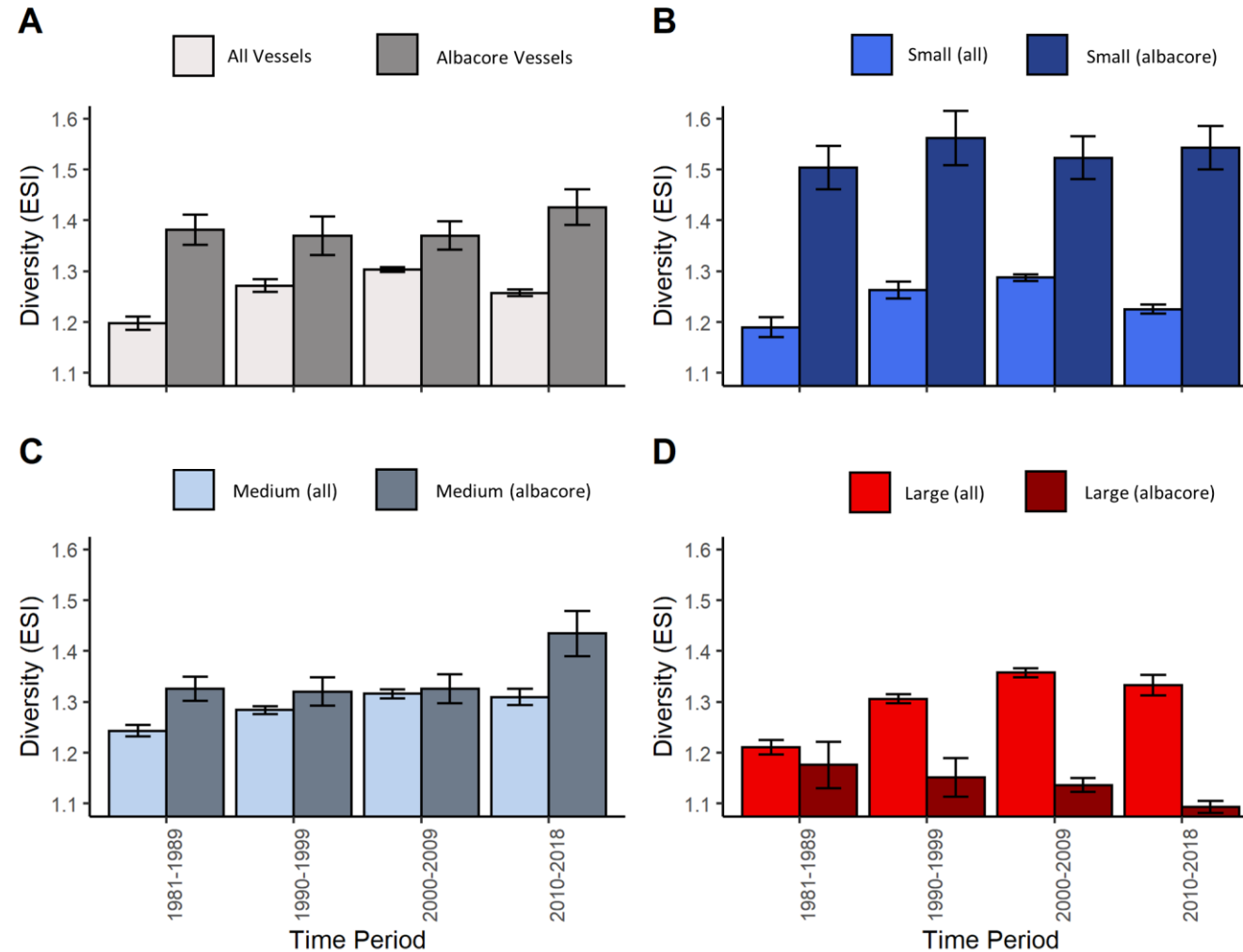


Changes in Portfolio Composition by Vessel Size



- Albacore_Troll
- Chinook_Troll
- Salmon_Net
- Dungeness_Crab_Pot
- Groundfish_Trawl

Albacore Sustains Diverse Fisheries Livelihood Approaches (especially for small-scale fishers)



“For me, albacore is everything. Because I am 43 years old, I’ve been on the non-receiving end of every IFQ that’s been instituted either in a State or Federal government. I’m talking about quotas, limited entry permits, charter licenses...” -Interview Quote

Conclusions

- Due to a combination of ecological, economic, and regulatory factors, the albacore troll and pole-and-line fishery has become an increasingly important component of the harvest portfolios of PNW fishermen.
- As limited entry licensing, quota-based management, and environmental change has functioned to restrict access to many fisheries, the albacore fishery has functioned as a lifeline to keep many small and medium boat operators afloat.
- Keeping resources resilient to harvesting pressure open access may help small-scale fishers and the coastal communities in which they are embedded navigate the shocks and uncertainty associated with system change.