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

Timothy H. Frawley¹,² | Barbara A. Muhling²,³ | Stephanie Brodie¹,² | Mary C. Fisher⁴ | Desiree Tommasi²,³ | Gwendal Le Fol²,³ | Elliott L. Hazen¹,² | Stephen S. Stohs³ | Elena M. Finkbeiner⁵,⁶ | Michael G. Jacox¹,²,⁷
A Heterogeneous Fishing Fleet
Density of Tuna Fishing Vessel Sizes by Hailing Port
"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

- **Large Vessel (> 60 ft)**
- **Small Vessel (< 45 ft)**
Decadal Shifts Albacore Distribution & Fishing Effort

- **Large Vessel (> 60 ft)**
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“Now that albacore can be so close to shore it makes it easier for smaller boats to target it opportunistically.” - Interview Quote

Source: HMS Logbook Data
Corresponding Changes in the Fleet Composition & Capture (State)

A

Landed Weight (metric tons)

1980 1990 2000 2010

Year

B

# of Vessels

1980 1990 2000 2010

Year

- California
- Oregon
- Washington
“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
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1990-1999

- Albacore Troll
- Pink Shrimp Trawl
- Pacific Halibut Longline
- Rockfish Hook and Line
- Salmon Net
- Sablefish Longline
- Chinook Troll

2010-2018

- Albacore Troll
- Pink Shrimp Trawl
- Dungeness Crab Pot
- Groundfish Trawl
- Spot Prawn Pot
- Rockfish Hook and Line
- Pacific Halibut Longline
- Salmon Net

Albacore Node Strength

- All Vessels
- Large Vessels
- Medium Vessels
- Small Vessels

Year

1980 1990 2000 2010
Changes in Portfolio Composition by Vessel Size

![Graph showing changes in portfolio composition by vessel size. The graph displays node strength for small and medium vessels over the years 1980 to 2010. The x-axis represents the years, and the y-axis represents node strength. Different lines represent different types of vessels: Albacore_Troll, Salmon_Net, Chinook_Troll, Dungeness_Crab_Pot, and Groundfish_Trawl.](image-url)
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.