

Drivers of Spiny Lobster (*Panulirus argus*) Population Trends and Emerging Risks to Sustainability in Florida

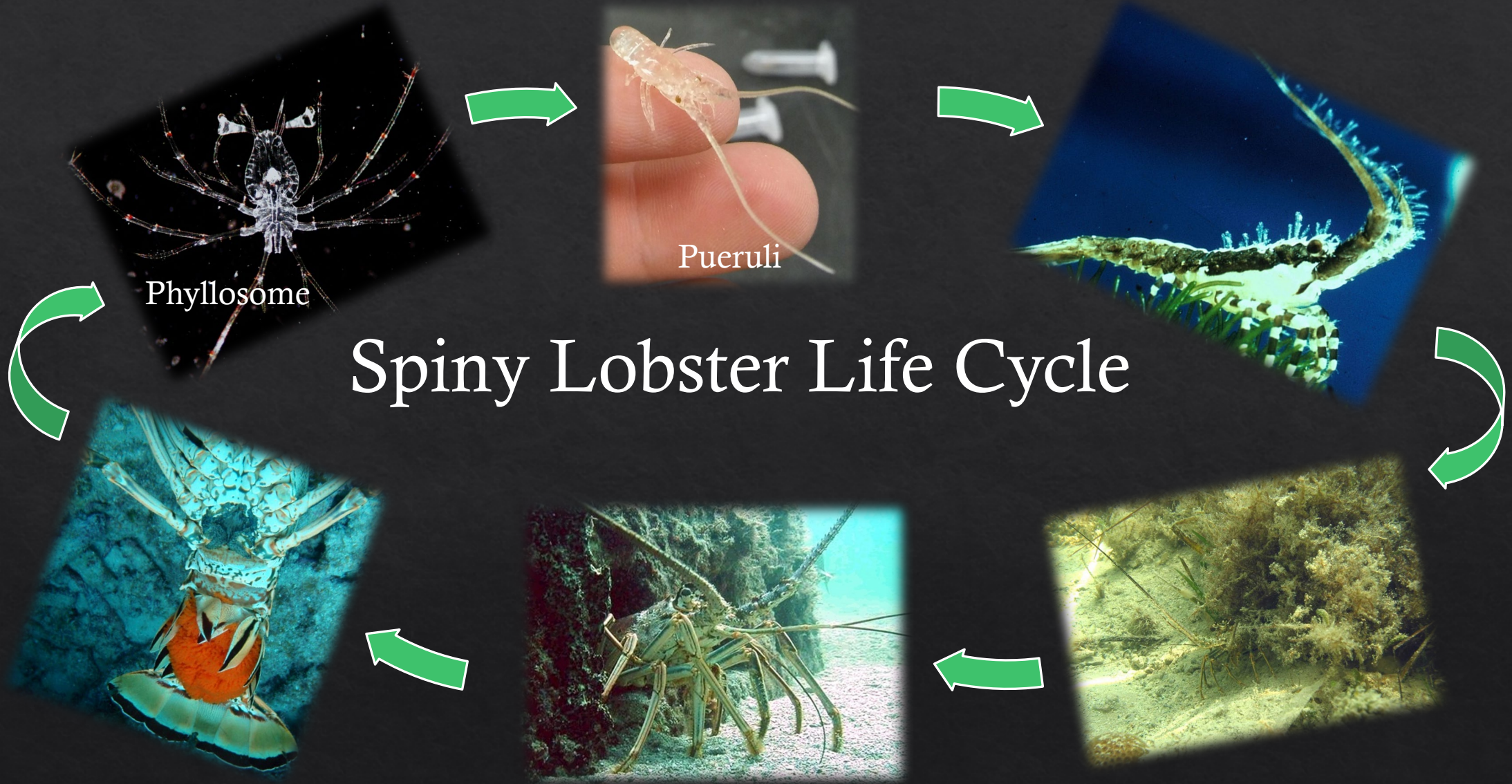
Thomas R. Matthews and Gabrielle Renchen

Wednesday, October 29, 2025

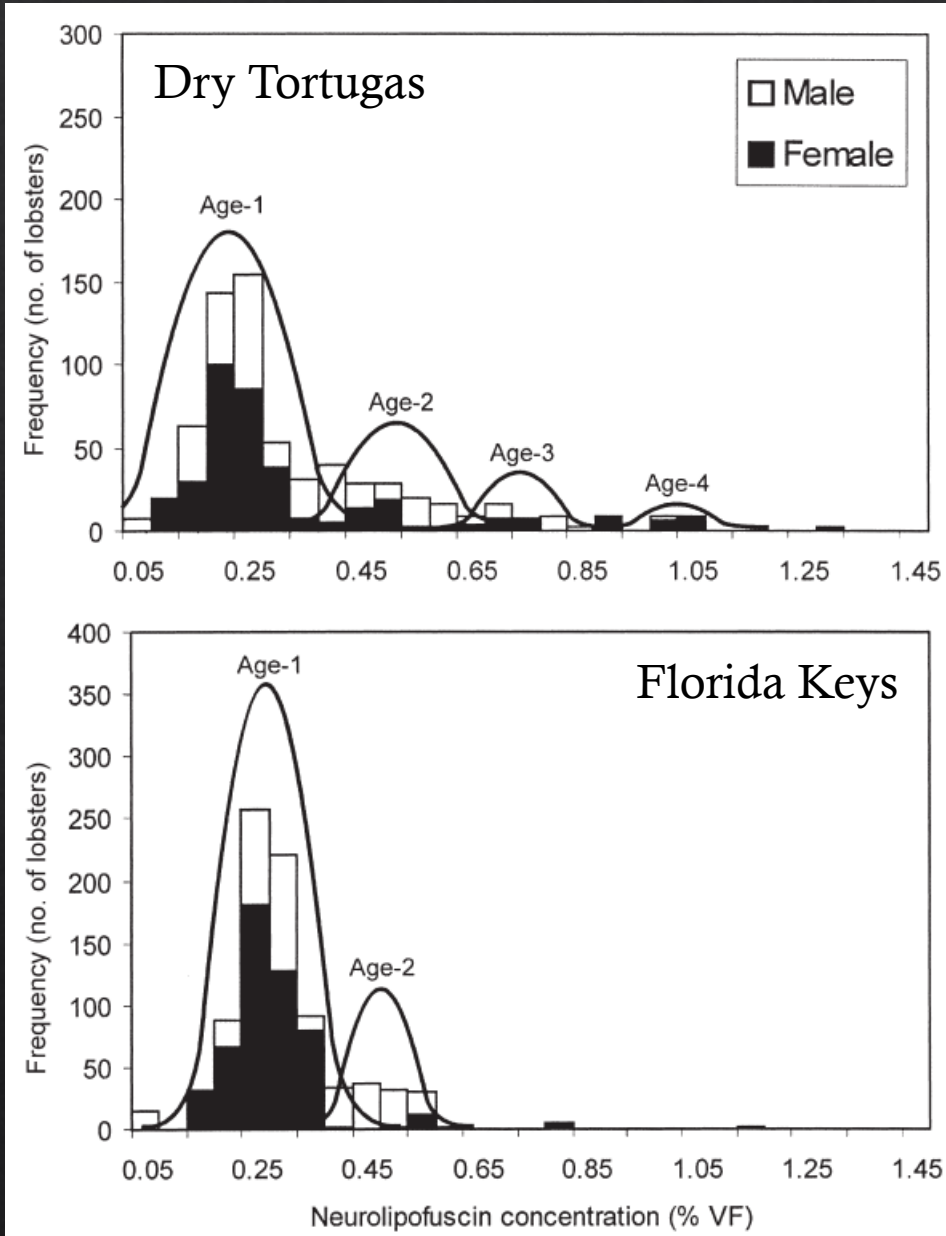
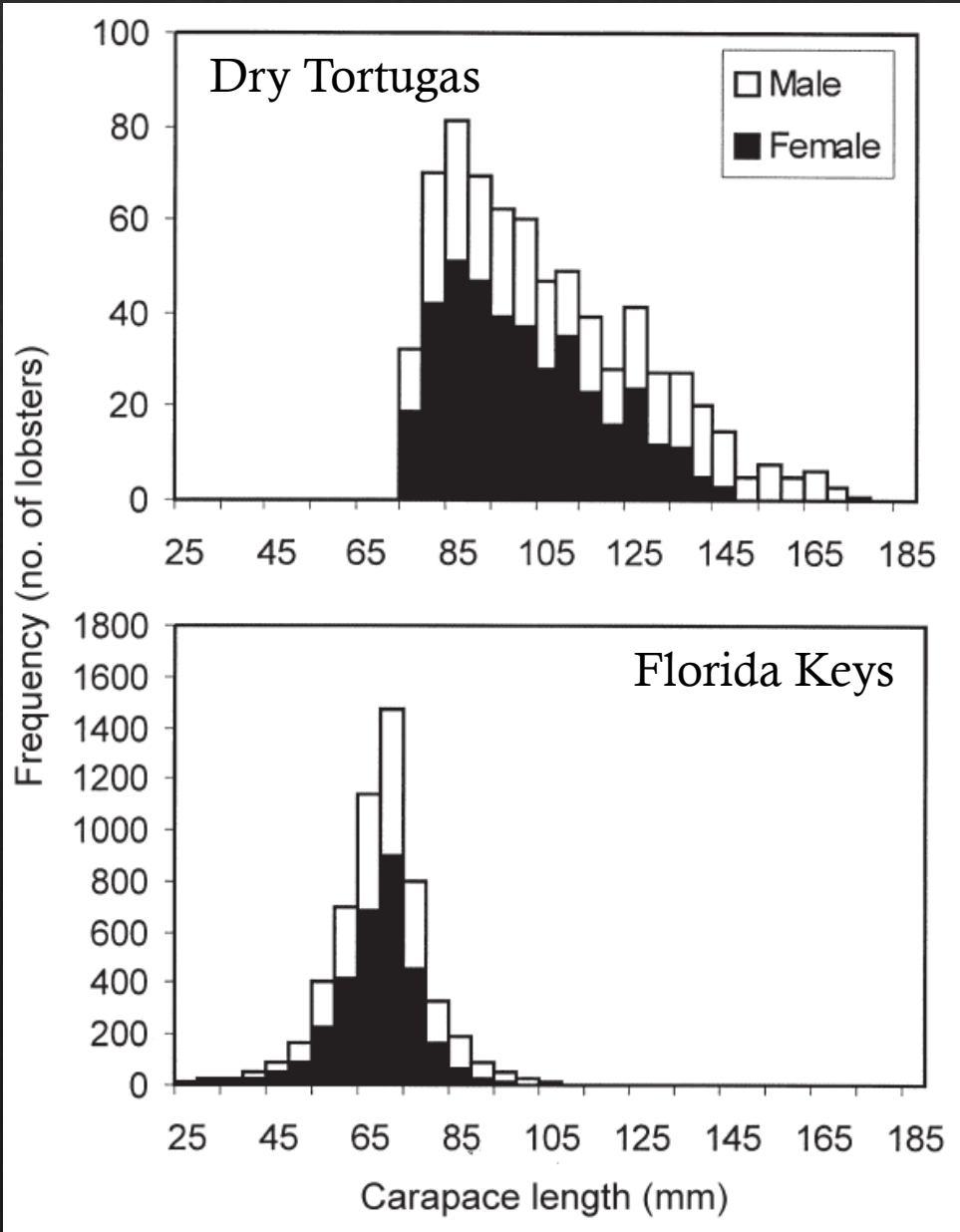


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One Caribbean Population Connected by Larval Transport



Panulirus argus Size and Age Distribution in South FL



Panulirus argus Population and Major Fisheries



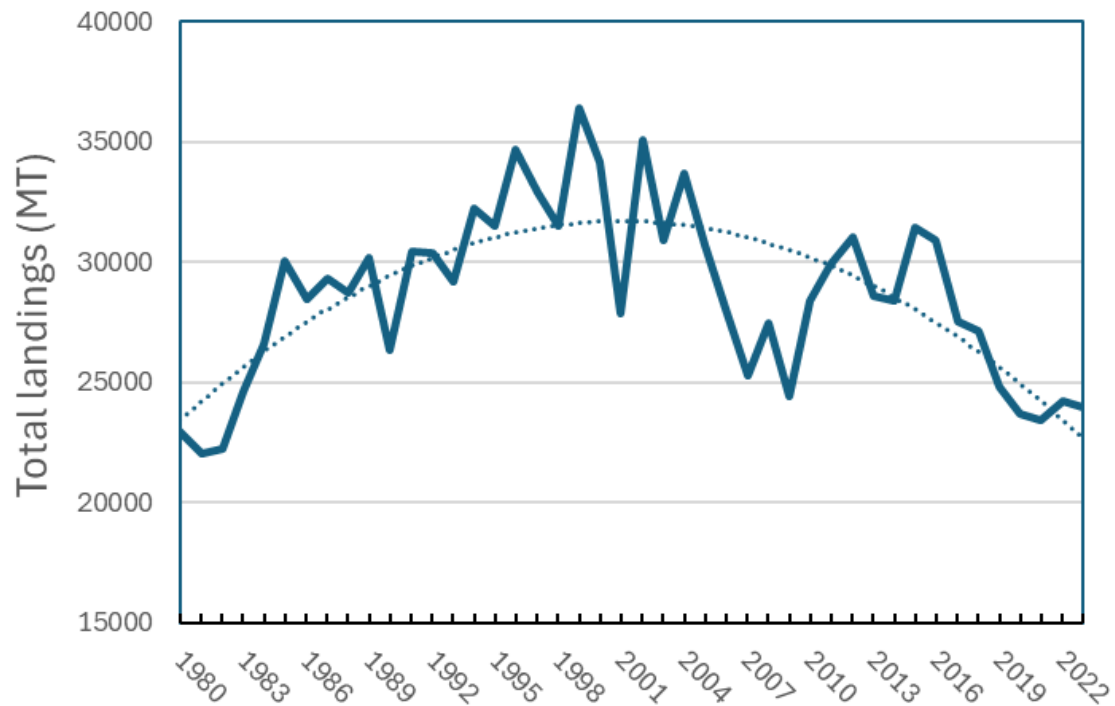
Location 2014-23	Whole Weight (mt)	Percent of Total
The Bahamas	6,807	25.6%
Nicaragua	4,570	17.2%
Cuba	3,940	14.8%
Florida	2,302	8.7%
Dominican Republic	1,675	6.3%
Honduras	3,884	14.6%
Other	3,375	12.7%
Total Catch	26,554	100.0%

Sources and Transport of Phyllosomes

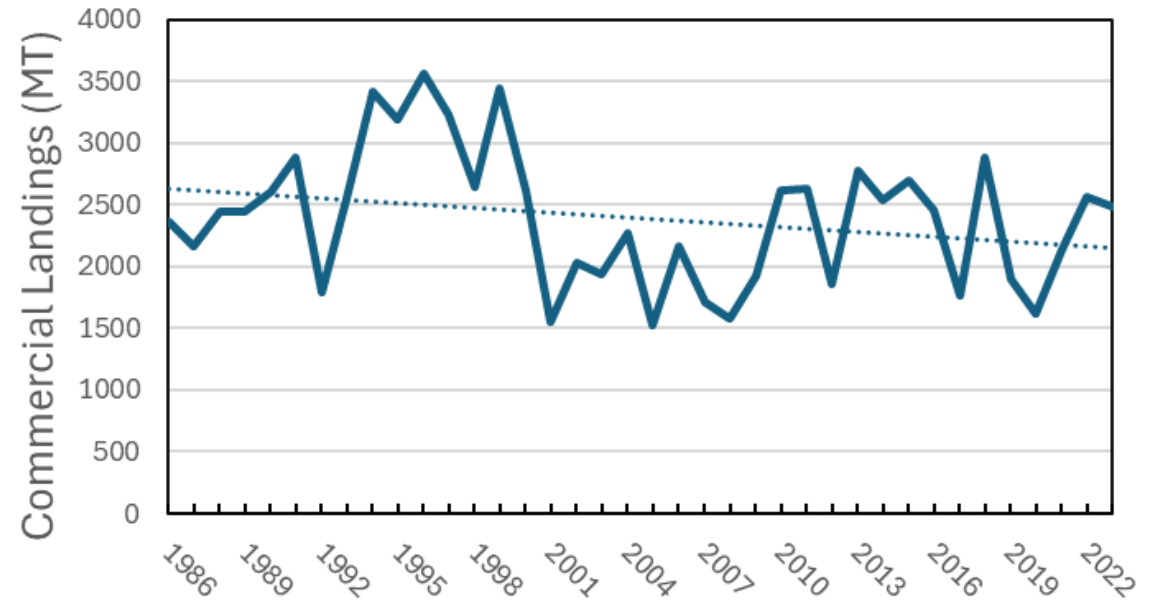


Panulirus argus Caribbean and Florida Landings Trends

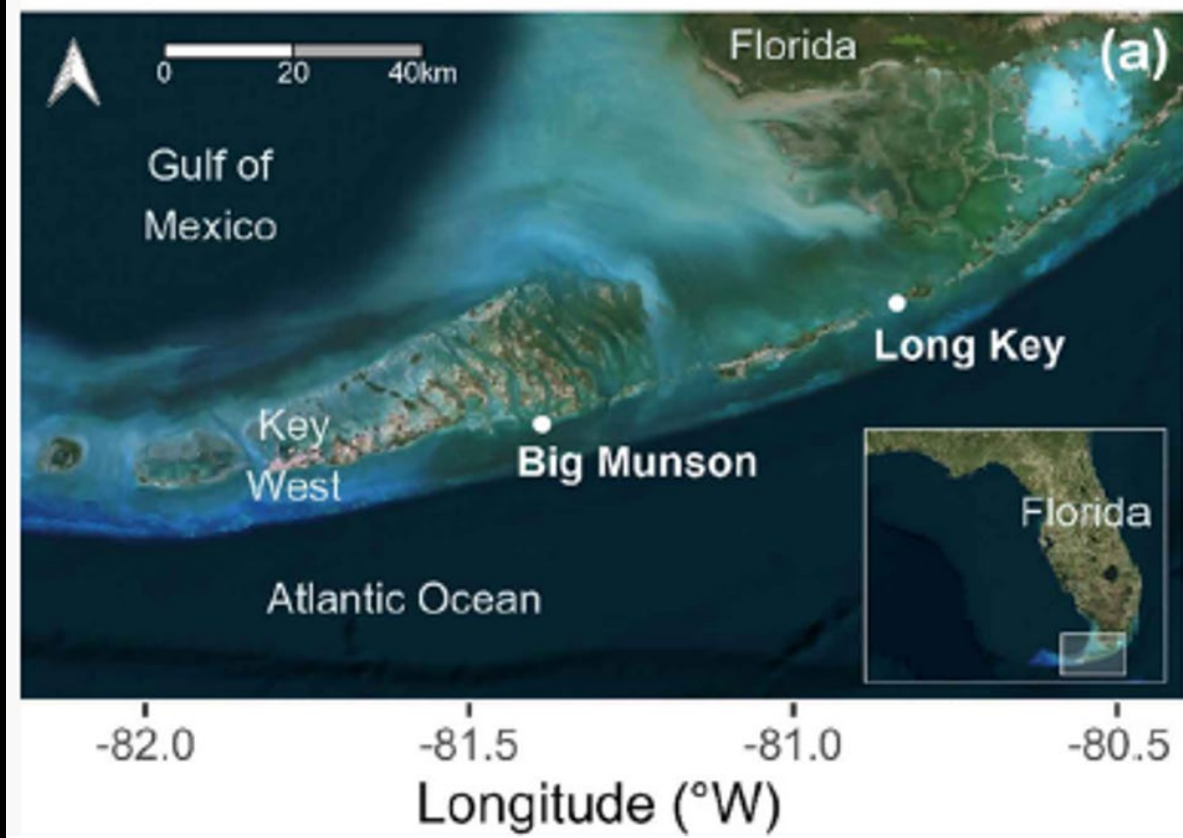
All Countries (excluding Brazil)



Florida Commercial Landings



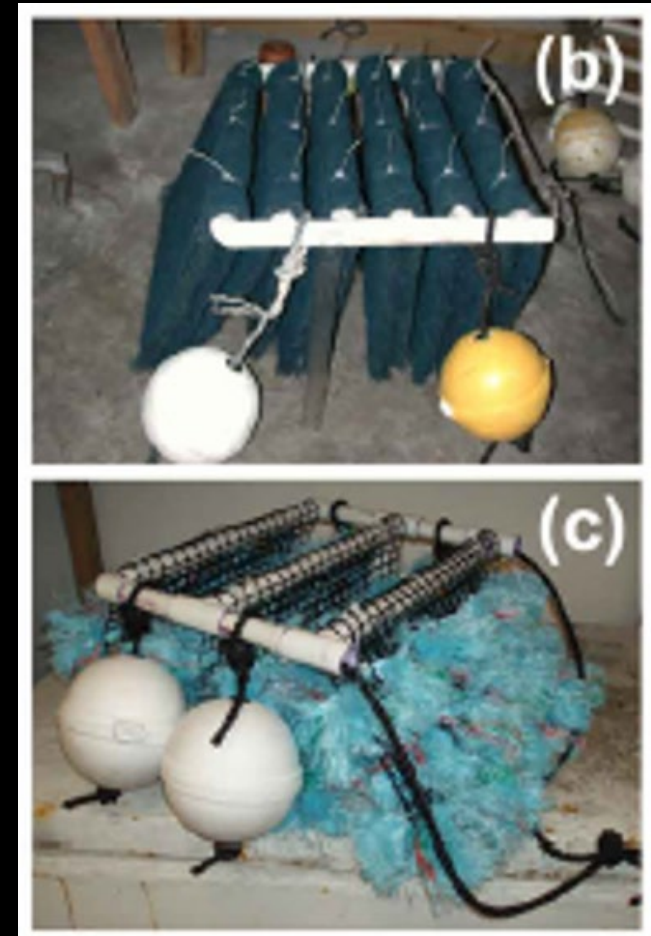
Counting Pueruli



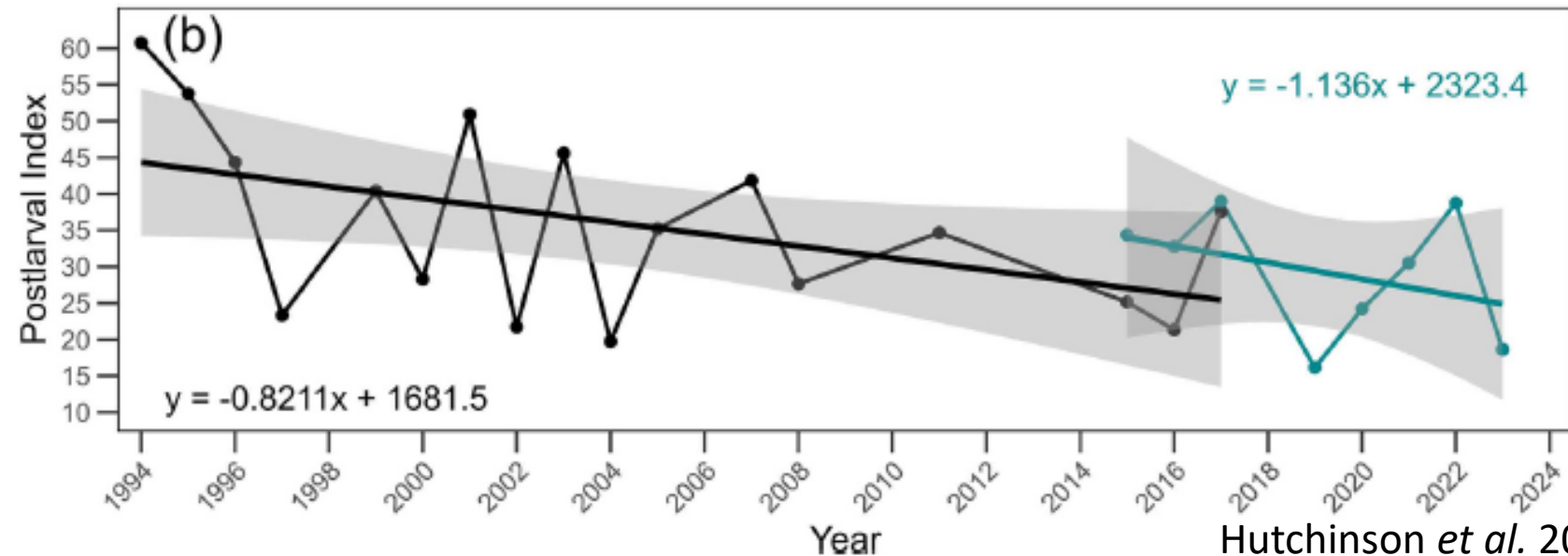
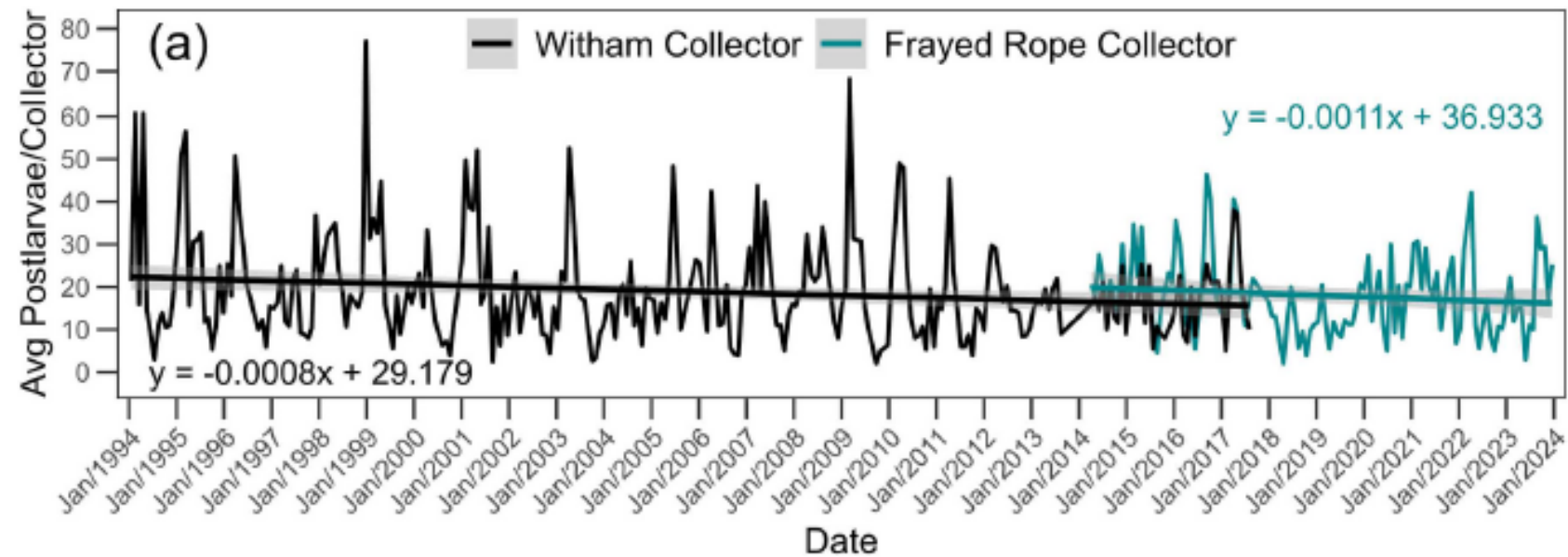
Landings Correlated with Pueruli Abundance



Hutchinson *et al.* 2024

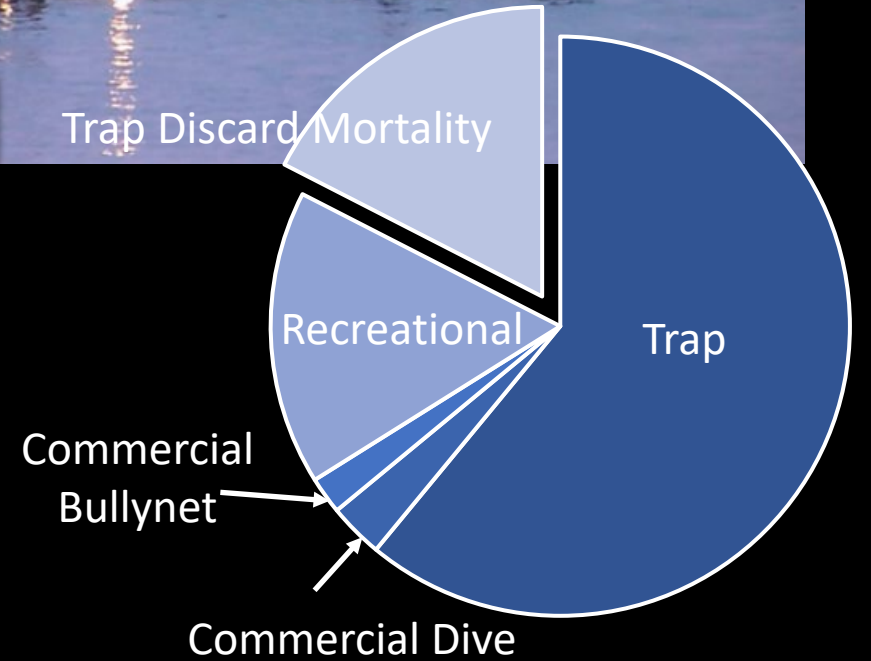


Larval Abundance Declined

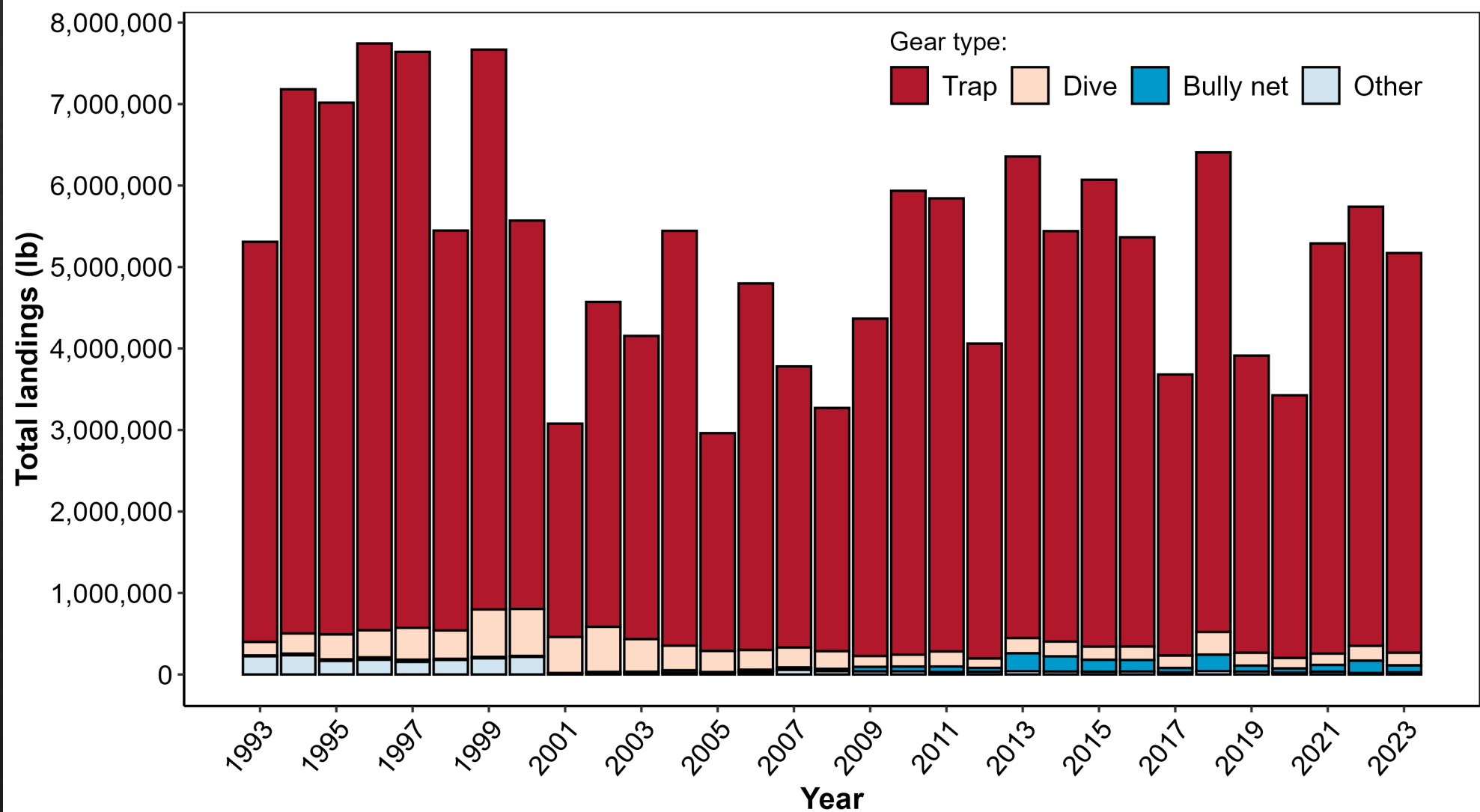


Hutchinson *et al.* 2024

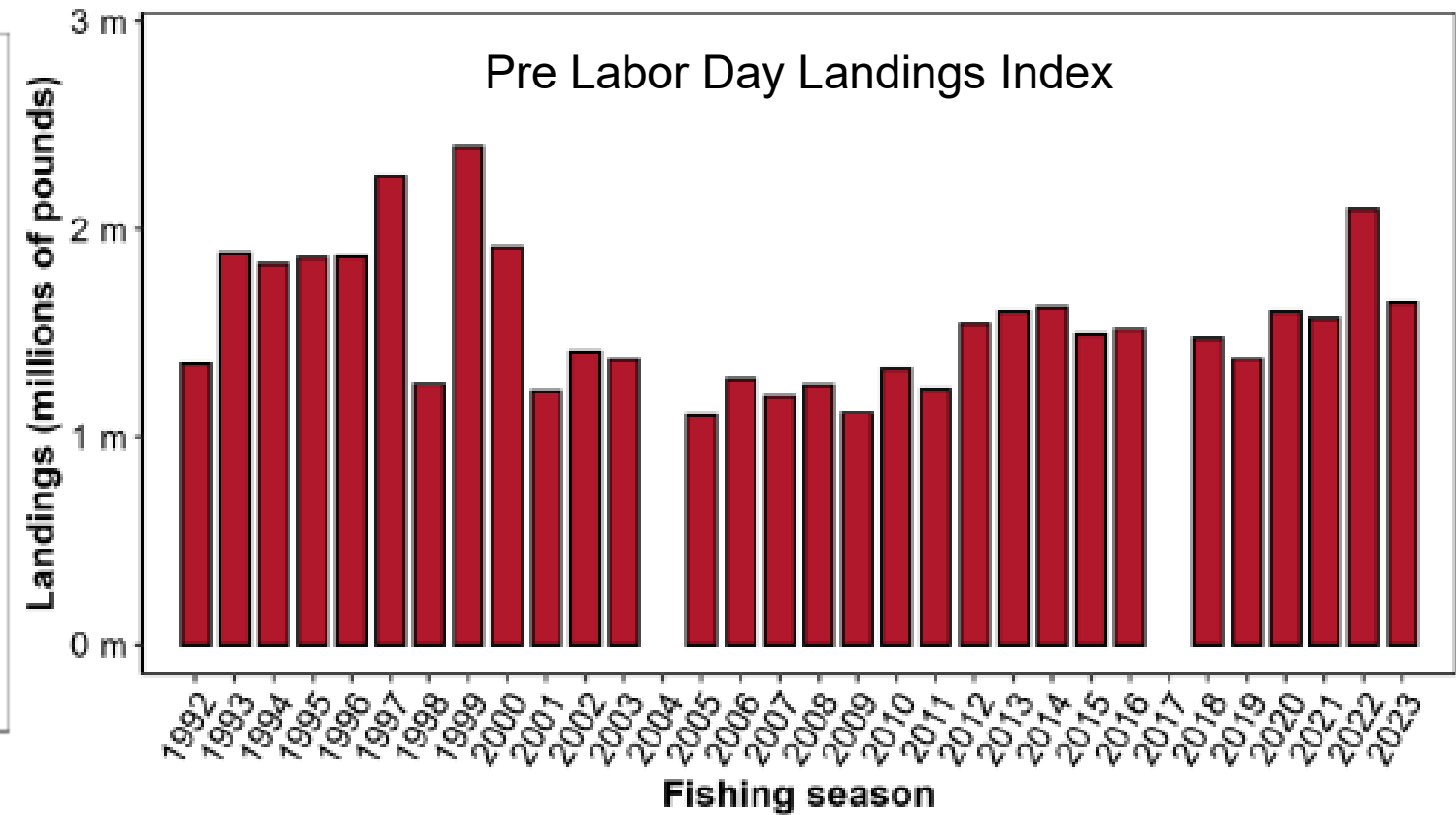
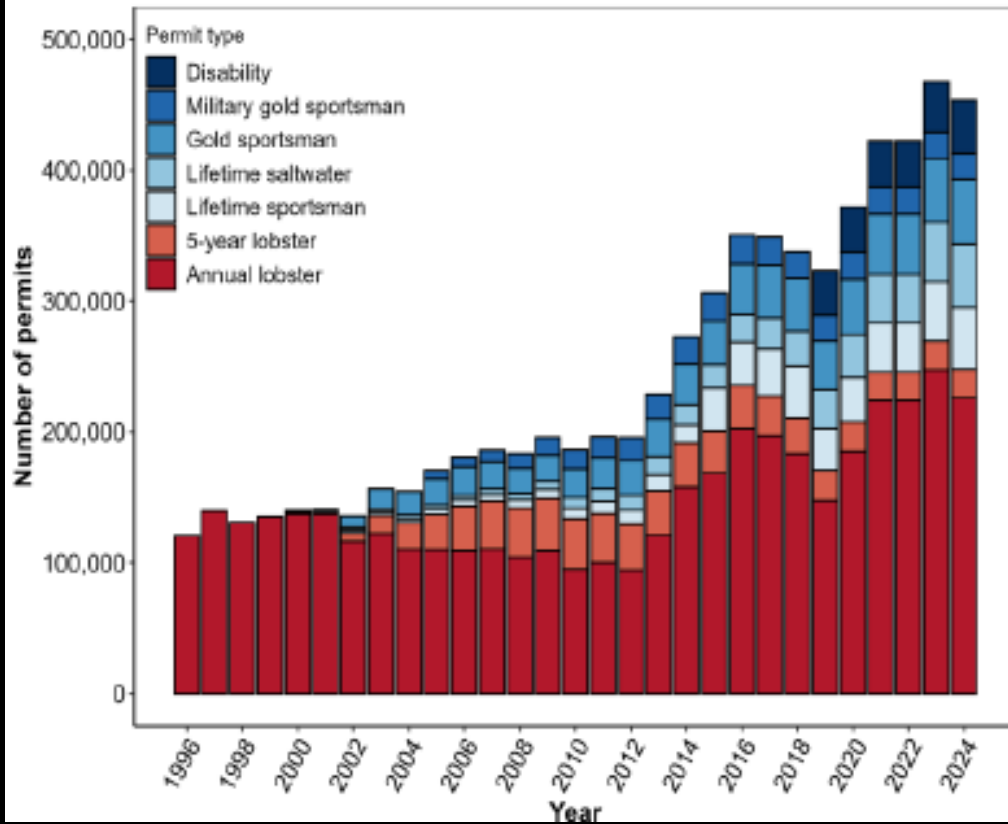
The Fishery



Florida Commercial Landings by Gear Type

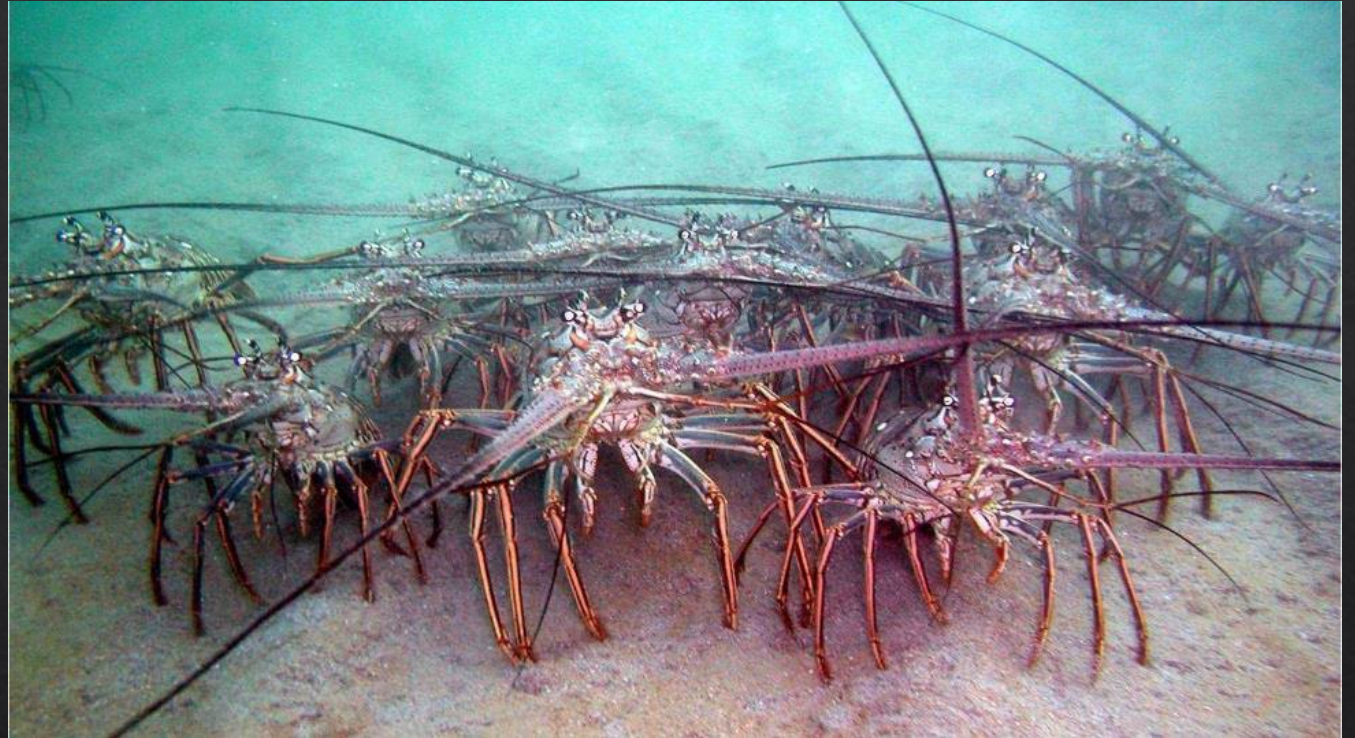


Recreational Fishing Licenses and Landings



Potential Emerging Risks

- Reduction in larval recruitment
- Habitat loss
- Compromised lobster health
- Altered migration patterns
- Growth rate reduction
- Marine heat waves



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