

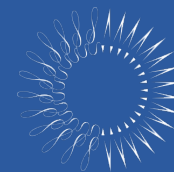
THE PEW CHARITABLE TRUSTS

Climate Variability and Fisheries

October 28, 2015

Lora Clarke
Officer, U.S. Oceans, Southeast

Environmental Initiatives



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Protecting Ocean Life

Our marine work is aimed at preserving the biological integrity of marine ecosystems and primarily focuses on efforts to curb overfishing, reduce bycatch and prevent the destruction of marine habitat.



Wilderness Protection

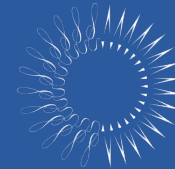
Pew works to protect wilderness areas and public lands, both within the United States and around the globe.



Energy

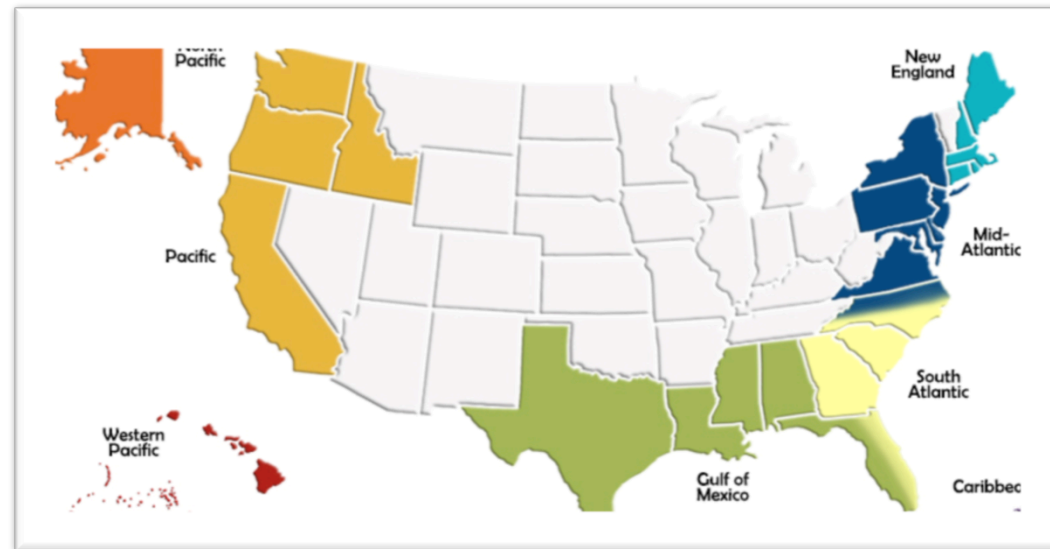
Advocating for national policies that promote the economic, environmental and national security benefits of the clean energy economy.

Protecting Ocean Life

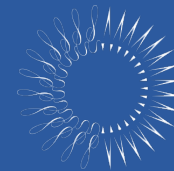


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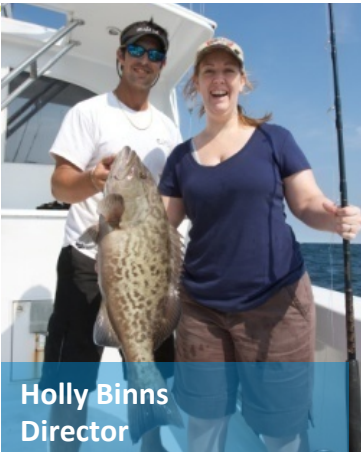
- Our Role: Work with Regional Fishery Management Councils and stakeholders to advocate for policies that promote sustainable fisheries, healthy ecosystems, and thriving coastal communities.
- Staff work with each of the 3 Councils in the Southeast
- Develop and advocate for sustainable policy solutions
- Support and catalyze scientific research that helps to inform management decisions



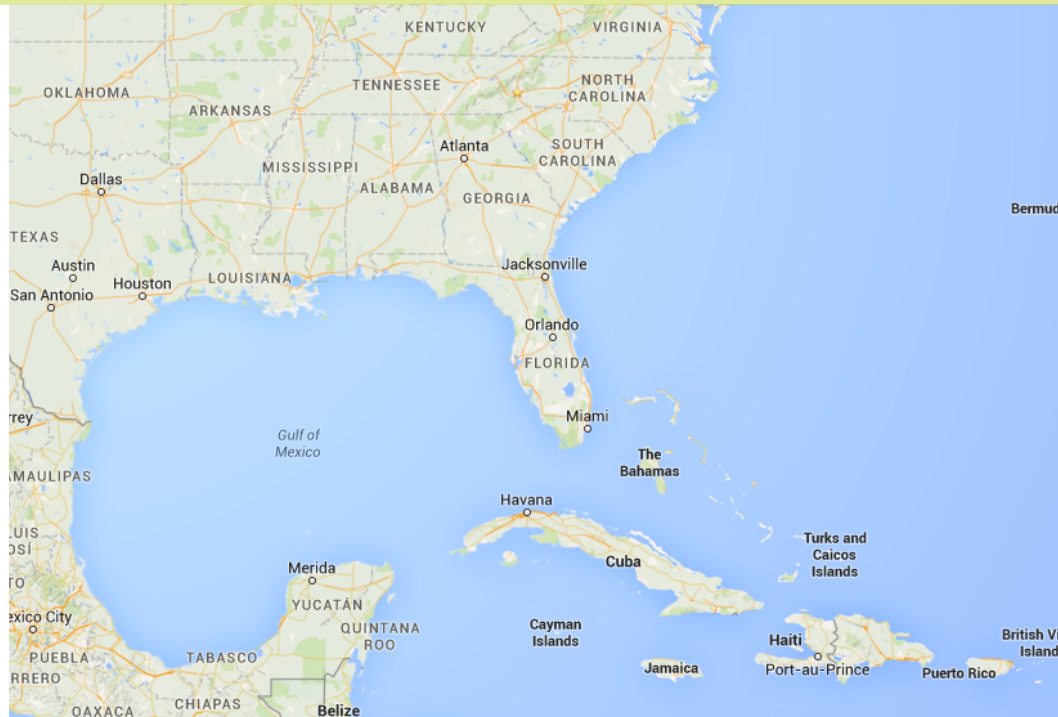
Southeast Oceans Team



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Holly Binns
Director



Tom Wheatley
Manager, Gulf and
Florida Forage Fish



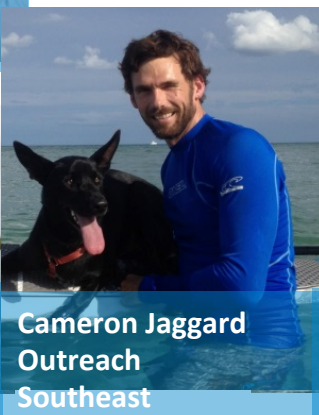
Chad Hanson
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Sharon McBreen
Outreach
Gulf of Mexico



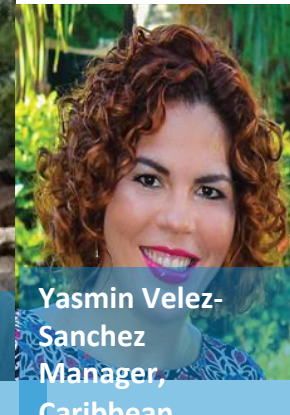
Cameron Jaggard
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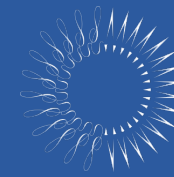
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Caribbean



Debbie Salamone
Communications,
Southeast

Big-Picture Fisheries Management

Adopting an ecosystem approach



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Create Fishery Ecosystem Plans

**Conserve Forage
Species**



**Protect Fish
Habitat**

Avoid Bycatch

Proceed with Caution

Policy Considerations

- Many parts of the ocean are changing – warming temperatures, ocean acidification, coral bleaching, coastal development
- Possible impacts: expanding ranges, shifting distributions, timing of larval occurrence, changes in spawning, productivity, stock structure
- Changes in distributions can impact stock boundaries, survey indices, allocations, fishery operations etc.
- New fisheries can start before regional councils have a chance to consider possible impacts
- Extent varies by region, but being observed by scientists, managers, and fishermen



Policy Solutions

- Make fisheries more resilient by protecting important habitats and making food webs more robust
- Manage for a higher level of uncertainty
- Careful scientific evaluation and management practices should be put in place before the initiation of new fisheries
- Pro-actively working with other Councils to manage species that span multiple jurisdictions
- Develop and track climate indicators
- Include climate variability in stock assessments



Partnering with Drs. Malin Pinsky and Jim Morley to examine:

- Long term trends in taxa distribution
- Impact of interannual climate variability on marine taxa
- Impact of winter severity on taxa distribution



<http://oceanadapt.rutgers.edu/>

Other Climate Studies



- Developing techniques to increase the abundance of heat-tolerant algae inside coral reefs (Pew fellow Andrew Baker)
- Changes in Atlantic puffin diets, nesting success, and survival in response to a warming event (Steve Kress)
- Developing statistical methods for forecasting climate-driven changes in life history characteristics (Pew fellow Steve Munch)

Opportunities to Collaborate



- We look forward to working with the Southeast fisheries community on climate issues.
- Some examples of our collaborations:
 - SAFMC Fishery Ecosystem Plan Revision
 - New chapter on Climate Variability and Fisheries
 - Pew is co-leading technical working group
 - Sponsored SAFMC ecosystem and citizen science reception
 - Citizen science workshop steering committee
 - Pew Marine Fellow Program

Questions?

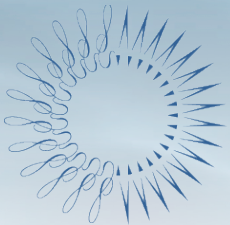


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