ROSA
Responsible Offshore Science Alliance

ROSA Advisory Council

June 14, 2024

Leading Regional Research on Offshore Wind & Fisheries

Inception:

Formed in early 2019 as a 501(c)3 through partnership between RODA and OSW developers

Mission:

The Responsible Offshore Science Alliance (ROSA) is a nonprofit organization that **advances research, monitoring, and methods on the effects of offshore wind energy development on fisheries across US federal and state waters**. We serve as an objective resource for all sectors and facilitate the coordination of regional scientific research to collaboratively and efficiently deepen understanding.

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Agenda

1:00pm Welcome, Introductions, Agenda Review

1:10pm ROSA Updates

1:45pm Partner Updates

2:30pm Break

2:35pm Monitoring solutions going forward

3:25pm Recreational fishing data updates

3:55pm Action Items, Next Steps, and Other Business

4:00pm Adjourn

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ROSA Updates

New ROSA Board Members

Bob Beal

Brian Hooker

Greg Lampman

Julia Livermore

Kevin Wark

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ROSA AC Executive Committee

- Executive Committee is a subset (10) of the full Advisory Council (58)
- Provides guidance on
  - Advisory Council priorities/topic areas
  - AC Agenda setting
  - General administrative questions
- Meets quarterly (preceding AC meetings)

ROSA AC Executive Committee

Current Executive Committee includes representatives from:

- **Commercial Fishing**
  - Peter Hughes
  - Eric Reid
- **Recreational Fishing**
  - Mike Waine
  - Willy Goldsmith
- **OSW Development**
  - Jennifer Daniels
  - Ruth Perry
- **Regional Organizations**
  - Andy Lipsky
  - Bob Beal
- **State representative**
  - Julia Livermore
  - 1 needed

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Executive Committee Call for Nominations

- Accepting nominations for mid-Atlantic state representative from the Advisory Council
- Submit your nomination via email to info@rosascience.org
- **Nominations are due by COB June 21st**
- List of nominees will be shared with the Board of Directors for selection

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Fish FORWRD Demonstration

Offshore Wind & Fisheries Funder Coordination

First Meeting: May 28

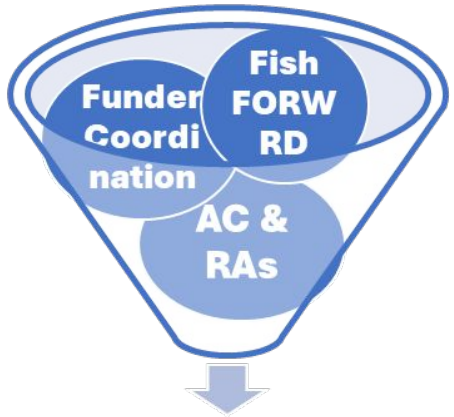
Objective

Gather funding entities (federal, state, & non-profit) on the East Coast to coordinate research & monitoring funds for fisheries & OSW.

This will be achieved through maintaining an updated FishFORWRD Database and communicating funded and planned research through this meeting and future meetings.

Regional RFP Workplan

ROSA RFP Development Process



RFP Development Plan → Research Topic Areas → Draft & Publish RFP → Review Concept Papers & Full Applications → Select Final Projects & Negotiate → Project Start & Management

almost done
deadline in july

NEXT STEP

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ROSA RFP Development Process

Upon contract agreement with Equinor, RFP Process to begins this summer.

- **Step 2: Research Scoping Process** to inform future RFPs' Topic Areas
  - **Recruiting interested Advisory Council members**
  - **SAVE THE DATE: Thursday Sep. 5th, 1-3pm**
  - What to expect
    - ROSA Regional RFP Background & Purpose
    - Receive presentation of current projects and gaps analysis of FishFORWRD
    - Provide feedback on these research gaps in terms of importance, urgency, and achievability

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Research Categories

Species Distribution/Composition
Habitat Fragmentation/Modification
Socioeconomic Impact
Cumulative Impacts
Sound/Vibration Impacts
EMF
Fisheries Access & Gear Modification
Fisheries Engagement & Capacity Building
Survey Adaptation
Data Management
Resource Monitoring

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Acoustic Telemetry Committee Update

Acoustic Telemetry Committee - Terms of Reference

secoora.org

1) Update the [Offshore Wind Project Monitoring Framework and Guidelines] regarding acoustic telemetry

2) Contribute to updates on research efforts for [Fish FORWRD]

3) Develop guidance on experimental design standards: Sample size, receiver deployment and distribution, data security and consistency, assessment of regional impacts

4) Coordinating regional research and discussion among practitioners.

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Acoustic Telemetry Committee - May Meeting Summary

- Met 3 May 2024 via Zoom - 6 attendees
- Continued working on revising Monitoring Guidance
- Led to discuss on disruption of acoustic arrays
  - Interactions with fishing gears is common
  - Interactions also with other acoustic researchers
    - Expensive and disruptive
  - Discussion of how and where to share receiver locations
- Data sharing a continuing topic - some progress being made
- Several AT groups meeting - value in all of them
- ACT Network Meeting Offshore Wind Workshop, June 3-6
  - Agreed to meet to discuss steps forward after the Workshop

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ACT* Network Meeting Notes (Monday)

profish-technology.be

- Objective was to focus on minimum data standards, data accessibility and data products for integration to Federal surveys
- Draft guidance document: ROSA requested to be a co-author
- Broad range of topics covered: research questions, design, data collection and analysis, receiver coverage, challenges, data governance…
- Feedback that ROSA AT committee should continue to work

*Atlantic Cooperative Telemetry

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Welcome ROSA's Summer Interns!

Delaney McBride

Nusrat Noor

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Partner Updates

BOEM update - Environmental Studies Fishery Projects

- BOEM ESP develops, funds and manages research to inform policy decisions regarding development, averages $30 million per year
- A Studies Development Plan is created each year from submitted study ideas and Strategic Science Questions are developed
- For 2025-2026, key questions include: cumulative effects, acute and chronic effects of sound, exposure to hydrocarbons or other chemicals, habitat and landscape alteration, future ocean conditions and dynamics, social sciences, emerging technology, long term monitoring

50 YEARS ESP ENVIRONMENTAL STUDIES PROGRAM

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BOEM update - 2024 Proposed Fishery Projects

- Baseline Tourism and Recreation Along the Gulf of Maine
- Gulf of Maine Socioeconomic Impacts of OCS Wind Development on Fishing
- Gulf of Maine Fish and Invertebrate Benthic Habitat Baseline Data Collection
- Improving Methods and Identifying Best Practices for Defining and Delineating Low-Relief Hardbottom Essential Fish Habitat in Wind Energy Areas – Case Study in Carolina Long Bay
- Ocean Environmental Monitoring and Sound Propagation Study at Mid-Atlantic Shelfbreak Offshore Wind Area
- Collecting Fisher's Ecological Knowledge (FEK) for Use in Gulf of Maine Offshore Wind

50 YEARS ESP ENVIRONMENTAL STUDIES PROGRAM

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BOEM update - Current Fishy Projects

- Development of a Strategy to Evaluate NMFS NEFSC Fishery Resource Surveys Affected by Offshore Wind Development
- Understanding Potential Economic Impacts to Commercial Fishing from Offshore Wind Energy Development
- Behavioral Effects of Sound Sources from Offshore Renewable Energy Construction on the Black Sea Bass and Longfin Inshore Squid: A Field Study
- Understanding of Atlantic Sturgeon Migratory Patterns – Integrating Telemetry and Genetics

50 YEARS ESP ENVIRONMENTAL STUDIES PROGRAM

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BOEM update - Current Fishy Projects

- Real-time Opportunity for Development Environmental Observations (RODEO)
- A database and acoustic reference catalog of marine fish sounds—Atlantic pilot
- Fish Auditory Thresholds - Part 1
- Movement Patterns of Soniferous Fish in Southern New England

50 YEARS ESP ENVIRONMENTAL STUDIES PROGRAM

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BOEM update - Current Fish-Adjacent Projects

- Zooplankton Ecology of the Gulf of Maine
- Atlantic Deepwater Ecosystem Observatory Network (ADEON) – An Integrated System for Long-Term Monitoring of Ecological and Human Factors on the OCS
- Data Synthesis and Advanced Predictive Modeling of Deep Coral and Hardbottom Habitats in the Southeast Atlantic: Guiding Efficient Discovery and Protection of Sensitive Benthic Areas
- Deepwater Atlantic Habitats II: Continued Atlantic Research and Exploration in Deepwater Ecosystems with Focus on Coral, Canyon, and Seep Communities

50 YEARS ESP ENVIRONMENTAL STUDIES PROGRAM

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ROSA Council Meeting: Northeast Fisheries Science Center Updates

Andy Lipsky, Madison Hall, Libby Jewett, Lisa Methratta, Chris Orphanides, and Angela Silva (NEFSC Offshore Wind Ecology Branch); Doug Christel (GARFO)

June 14, 2024

NOAA Fisheries NE Fisheries Science Center Updates

Implementation of NOAA Fisheries & BOEM Survey Mitigation Strategy

1. **Peer Review of NOAA Fisheries NEFSC Survey Mitigation Plans**

   Joint SSC Panel Review of Draft Survey Mitigation Plans
   May 22-24, 2024 Narragansett Lab, Rhode Island
   https://www.fisheries.noaa.gov/event/peer-review-draft-nefsc-fisheries-survey-mitigation-plans

   ASRG Panel Review of Protected Species Plans- May 29-30th
   19 Draft Survey Mitigation Plans under review

1. **NMFS/BOEM engagement with wind developers on Construction & Operation Plans Survey Mitigation Requirement**

2. **Survey Mitigation Pilot efforts**, including hook and line, Trap/Video and eDNA survey methods. (Anna Mercer, Lisa Methratta, Madison Hall, SEFSC, and Yuan Liu)

Photo credits: NOAA

NOAA FISHERIES

NOAA Fisheries NE Fisheries Science Center Updates

Implementation of NOAA Fisheries & BOEM Survey Mitigation Strategy (continued)

4. Development of Fisheries & Protected Species Monitoring Standards

Fisheries Resources, Habitat, & Protected Species Monitoring
Developing standardized methods for conducting project-level monitoring to evaluate effects of OWD on NOAA trust resource species and the ecosystem.

Socioeconomic Monitoring: Standards to monitor changes in the socio-economic system at the individual project and regional level, including behavioral, economic and social cultural systems.

NOAA FISHERIES

NOAA Fisheries NE Fisheries Science Center Updates

***Some* Offshore Wind Fisheries & protected species research**

- Initiating multi-year observational and modeling study of the wind/marine wake effects of turbines in the Nantucket Shoals area. (Chris Orphanides)
- Uncrewed acoustic survey of biomass in S.NE wind areas (Mike Jech)
- Conducting a pilot vulnerability assessment of fisheries species, protected species and fishing communities in the Northeast US Shelf Ecosystem. (Lisa Methratta)
- Identification of anthropogenic noise types in wind energy areas collected through PAM network. (Sofie Van Parijs)
- Initiating a multi-year laboratory study of the impact of wind energy development and operation on fish behavior. (Andrij Horodysky)
- Fisheries and Floating Offshore Wind Integrated Ecosystem Assessment for the Gulf of Maine (Abby Tyrell)

NOAA FISHERIES

NOAA Fisheries NE Fisheries Science Center Updates

<u>*Some recent NOAA Fisheries Northeast Region publications*</u>

Offshore wind energy development and highly migratory species: ecological, fishery and management implications (Hendon et al. 2024)

Perspectives on using PSO data to fill knowledge gaps about marine species distributions an habitat use (Ganley et al. 2024)

Ecological indicators to monitor offshore wind interactions with fisheries resources (Methratta, 2024)

Acoustic presence and demographics of sperm whales (Physeter macrocephalus) off southern New England and near a US offshore wind energy area (Westell et al., 2024)

Fisheries independent surveys in a new era of offshore wind energy development (Lipsky et al. 2024)

NOAA FISHERIES

Definitions for fisheries monitoring standards/survey mitigation/research

1. **Data collection to address impacts to scientific surveys (survey mitigation)**
   Data collected to generate data equivalent to data generated by long-term scientific surveys to support fisheries and protected species management needs

2. **Project-scale Monitoring of Fisheries Resources**
   Data collected to understand changes in fisheries species and fish habitats at the project scale associated with the impact producing factors of offshore wind

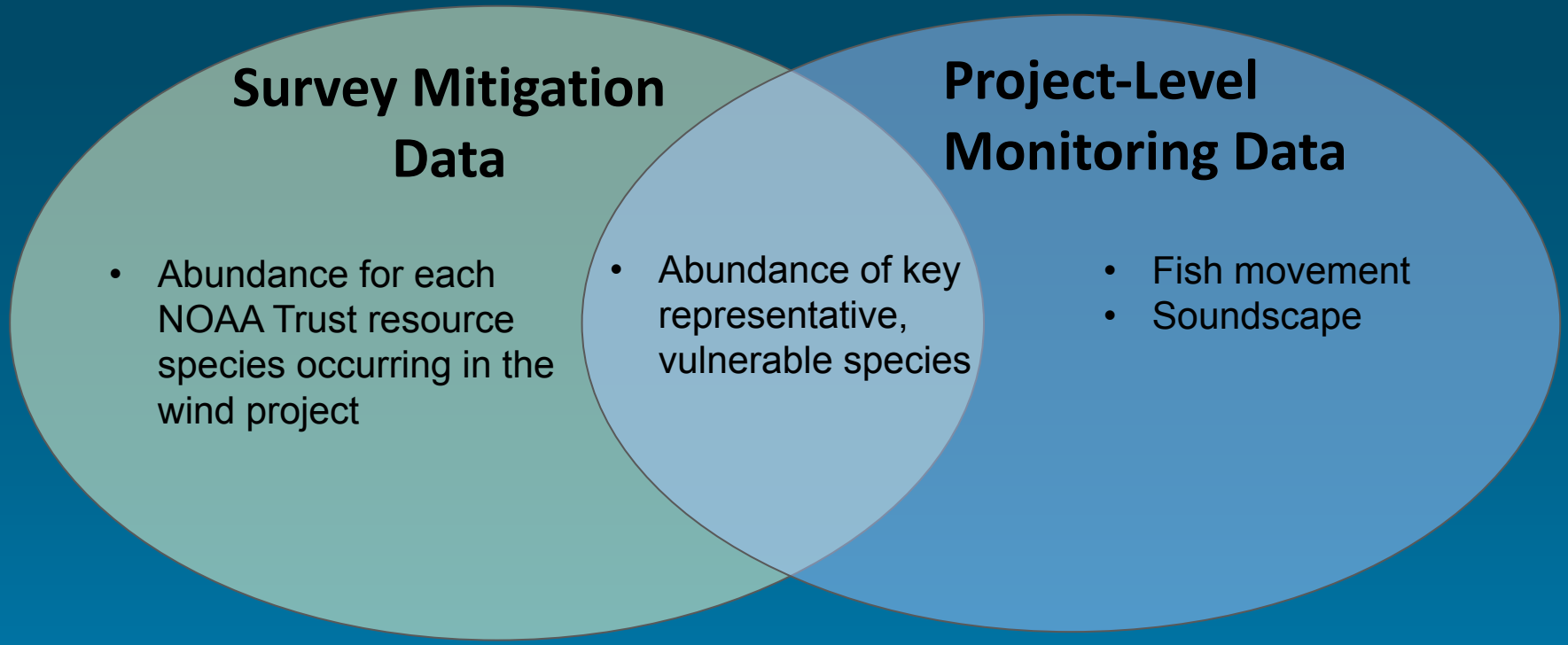
3. **Monitoring regional-scale changes in Fish Populations/Stocks**
   Data collected (1 &2) to understand population level change in fisheries species atregional scales. Model-based integration of data collected within and outside of wind energy areas.

4. **Project-scale & Regional Scale monitoring of Socio-Economic System**
   Data collected to understand impacts to the socio-economic system at project & regional scales

5. **Targeted Biological and Socio-economic Research**
   Experiments to study the effect of specific impact-producing factors on specific biological/socio-economic receptors

NOAA FISHERIES

Examples of Data Type Overlap and Distinctions



Regional Understanding of Offshore Wind Development Fisheries Species, Protected Species, Habitat, and Socio-Economics

Slide courtesy Lisa Methratta

NOAA FISHERIES

Regional Fund Administrator

OSW Fisheries Monitoring Plans: Solutions going forward

Coordination Sessions: Purpose & Intent

GOALS:

1. Offer a forum for each sector to collaborate
2. Gather information & document outstanding concerns/questions
3. Identify potential solutions

Provide a neutral space for discussions, in part to:

- Characterize challenges and solutions, and

- Understand through what role ROSA will best serve the community.

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OSW Developer Session Discussion Questions

1. What tools and resources did you use to develop your lease's OSW Fisheries Monitoring Plans?

2. Are/did your project team use the ROSA OSW Project Monitoring Framework & Guidelines in your plan development? If so, what sections were most useful? If not, why not?

3. From an organizational perspective, what are the greatest benefits and obstacles to a regional fisheries monitoring approach?

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OSW Developer Session Themes

ROSA OSW Fisheries Monitoring Plan Guidelines

- Many organizations used the guidelines, but to varying extents
- Add more detail/checklists where possible
- Increase specificity around how to develop a plan

Challenges

- Design & implementation
- Permitting of survey methods
- Varying lengths of pre-construction sampling recommendations/requirements
- Separation of climate change from OSW effects

Solutions

- Increased communications (early & often), especially with NOAA
- Coordination through regional science entities – share lessons learned & coordinate practitioners

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Regulatory Entities Session Discussion Questions

1. From an agency/organizational perspective, what are the primary scientific questions OSW Fisheries Monitoring Plans should be designed to address?
2. Are monitoring plans helping you answer questions? Which questions?
3. Given the existing OSW landscape (developer approaches, construction timelines, etc.), what recommendations for pre-construction timelines can you offer, particularly for new leases?
4. Are there advantages to prioritizing certain sampling methods/survey strategies in OSW Fisheries Monitoring Plans?
5. If a Regional OSW Fisheries Monitoring Plan were developed, what questions could/should be asked vs. those addressed through project-specific monitoring plans? What are the greatest benefits and obstacles to a regional fisheries monitoring approach?

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Regulatory Entities Session Themes

ROSA OSW Fisheries Monitoring Plan Guidelines

- Make more specific (what are commonalities, data fields, etc.)

Challenges

- Varying lengths of pre-construction sampling recommendations/requirements
- Separation of climate change from OSW effects
- Logistic contsraints, e.g., control area selection

Solutions

- Increased communications (early & often), especially with NOAA
- Cross-project coordination through ROSA – build consensus around

Science & Research Community Discussion Questions

1. What key challenges have you faced in developing, implementing, and/or evolving your organization's OSW Fisheries Monitoring Plan?
2. Which tools/methods do you think could or should be organized and executed regionally?
3. What data repositories are you currently using? What data streams still need a broadly agreed-upon repository? What role can & should ROSA play in data management?
4. In what ways can future monitoring be optimized? What opportunities exist for regional efficiencies? What tools/methods can be coordinated regionally?
5. What strategies or opportunities for calibration between surveys are feasible? What OSW Fisheries Monitoring Plan surveys can be coordinated with existing fisheries-independent surveys to support calibration?

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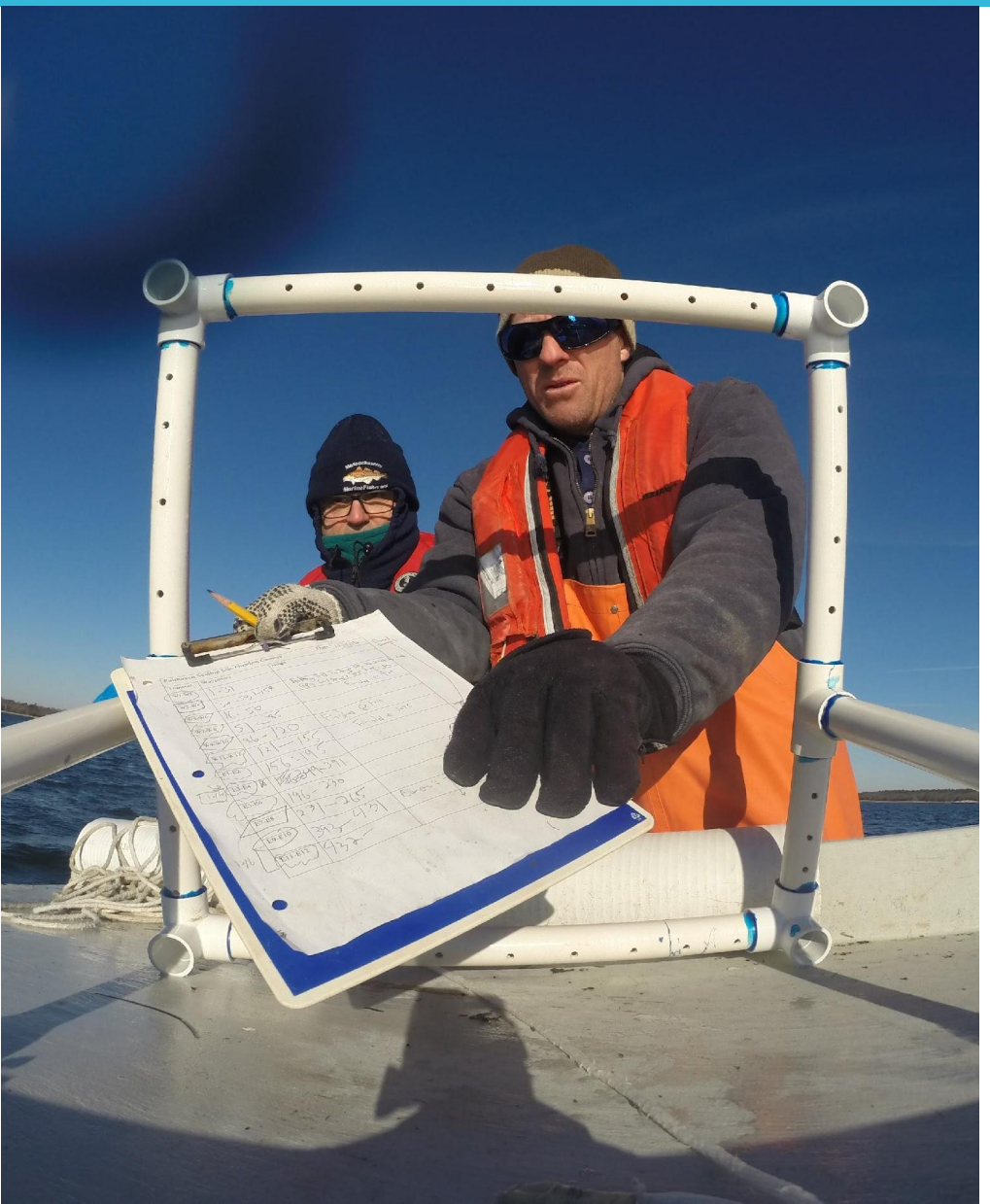
Science & Research Community Session Themes



Challenges

- Shifting goal posts
- Lack of communication on timelines is challenging & stressful for field work
- Permitting for survey methods
- Separation of climate change from OSW effects

Solutions

- Measure relevant covariates (oceanographic/pelagic environment) to look at driving conditions
- Increase communications (early & often), especially with NOAA
- Coordination through regional science entities – share lessons learned & coordinate practitioners

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Fishing Industry Session Discussion Questions

1. What should the fishing industry's role in OSW Fisheries Monitoring plans be?
2. Vessel use for survey work
   - Experimental or conceptual design
   - Study fleet (collect data while fishing)
   - Provide input on questions/concerns that studies should be designed to address
3. Do the current OSW fisheries monitoring plans address the fishing industries' key questions/concerns or are they still outstanding?
4. What are potential mechanisms for addressing questions (e.g., are there data gaps)?
5. If a Regional OSW Fisheries Monitoring Plan were developed, what questions could/should be asked vs. project-specific monitoring plans?
6. How can ROSA facilitate collaboration between the fishing industry and OSW developers as new monitoring plans are developed/existing plans evolve?
7. What are the best mechanisms for sharing results from OSW Fisheries Monitoring Plans? What sources of information are most trusted within your industry? How can ROSA foster trust across sectors? What communications can be provided, streamlined, or eliminated?

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Fishing Industry Session Themes - Challenges

- Inappropriate timing of sampling & gear selection in fishery monitoring plans
- Risk of protected species takes
- Movement of fish populations during the lifetime of the project due to climate change
- Insufficient time for sampling to occur pre-construction to obtain a baseline
- Lack of leverage for fishing industry representatives in negotiations with developers
- Loss of data for stock assessments due to development
- Insufficient requirements for assessing impacts to fishing

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Fishing Industry Session Themes - ROSA Guidelines

- Promote & advocate for an important role for fishing industry representatives: Conception, Design, Vetting, Implementation
- Work with fishing industry representatives and others to identify means and opportunities for calibration of different sampling methodologies.
- Create opportunities for fishing industry representatives to apply QA/QC in the implementation of fisheries monitoring plans
- Find solutions to support longer baseline sampling periods

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Fishing Industry Session Themes - ROSA Guidelines

- Encourage development of impact measurements using insufficient data
- Help develop means for disentangling the effects of climate change from the effects of offshore wind development
- Seek understanding of the role that standardized methodology could play in contributing to stock assessment

Outcomes for ROSA

ROSA OSW Fisheries Monitoring Plan Guidelines

- Complete TBD sections
- Add more detail while remaining flexible
- Increase communication

Community Engagement

- Work beyond FLO to engage fishing industry, early & often
- Foster collaboration across many groups & institutions essential, especially NOAA

Challenges & Opportunities

- Design & implementation
- Permitting of survey methods
- Length of pre-construction sampling
- Separation of climate change from OSW effects

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Breakout Groups

- Four Cross-sector Breakout Groups
- 25 minutes for discussions
- Challenges listed in chat

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Cross-sector Breakout Groups

Challenges for Discussion

- Design & implementation (specificity vs. flexibility of guidance)
- Permitting of survey methods/risk of protected species takes
- Varying lengths of pre-construction sampling recommendations/requirements
- Logistic constraints, e.g., control area selection, insufficient time for baselines
- Separation of climate effects from OSW effects
- Lack of leverage for fishing industry, e.g., advocating for greater requirements for assessing impacts to fishing

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Listening Sessions: Next Steps

Final Session: All Sectors

State of the Science: Tuesday, July 16 @ 3:15pm ET

ROSA staff are distilling session outcomes sessions into a report that will be used to update the Offshore Wind (OSW) Project Monitoring Framework & Guidelines

Draft report to be reviewed by ROSA Research Advisors

ROSA

Recreational Fishing Data Updates

Advancing our understanding of recreational fishing behavior due to offshore wind energy development

Jennifer McCann, Abbey Greene, Sue Kennedy
National Sea Grant Offshore Wind Liaison
URI CRC | Director of Extension, RI Sea Grant

https://www.thefisherman.com/article/the-block-island-wind-and-fish-farm/#close-modal

Immediate Focus: Understand where and how the recreational anglers are fishing in areas where OWE is taking place (on/offshore).

Major data needs: **Geospatial data (most important);** Effort (catch no catch); Economics (information about motivations); Fold in temporal (e.g. summer) recreational fishing data into the larger data resources; Impacts, in terms of mitigation payments.

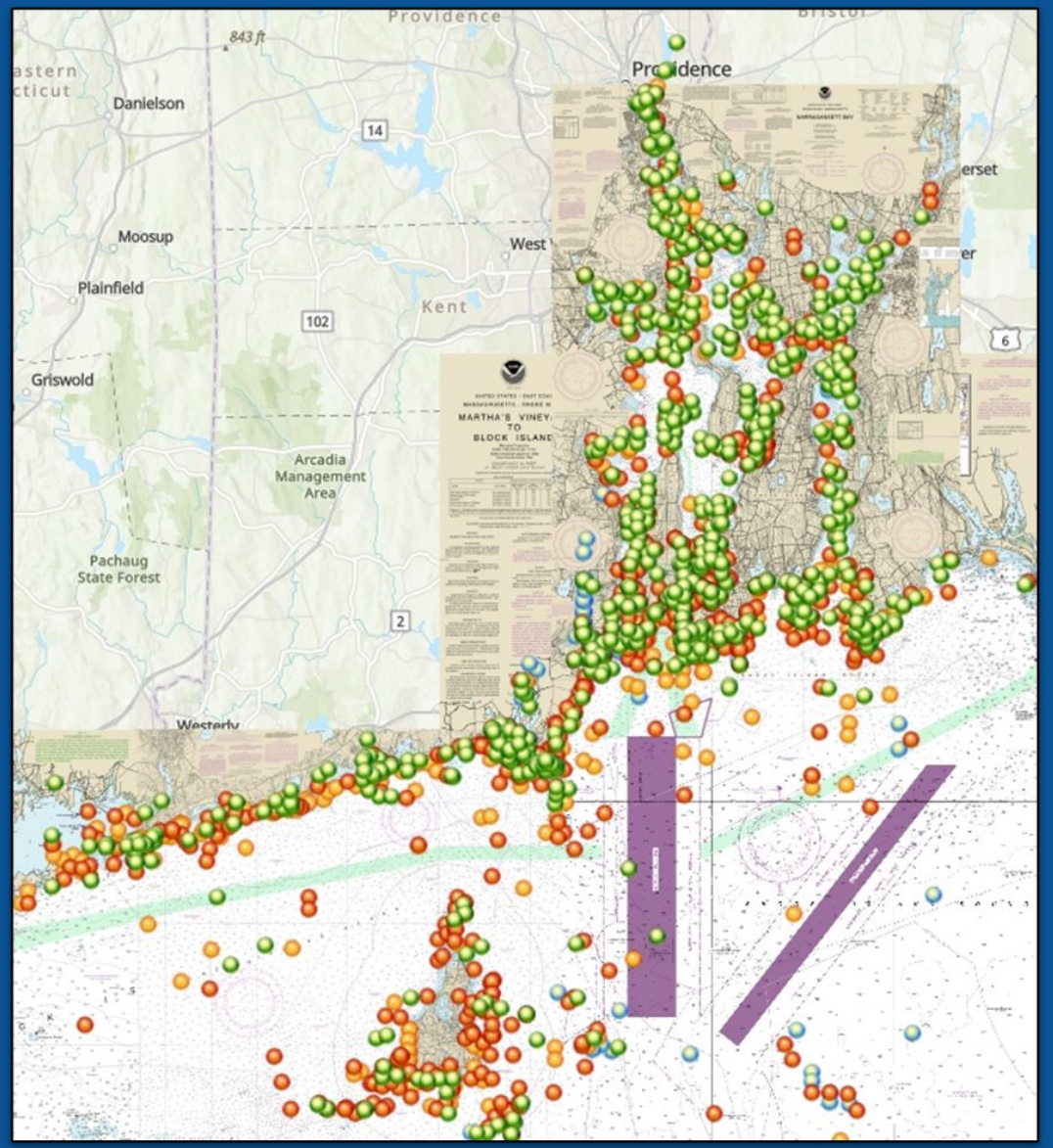
AnglerCatch

Better Data. Better Fishing.

How:

- Using a combination of both traditional and technical tools that apply uniform standards and a collaborative process that is trusted and transparent and protects the privacy of the fishing community, data should be collected.

- The data we collect must respond to the priority management/regulator question



Summary notes from May 16th event: https://docs.google.com/document/d/1F9IiN0so1QLhVLcwx-QSbAR0rppPpnq5/edit

Where are we now:

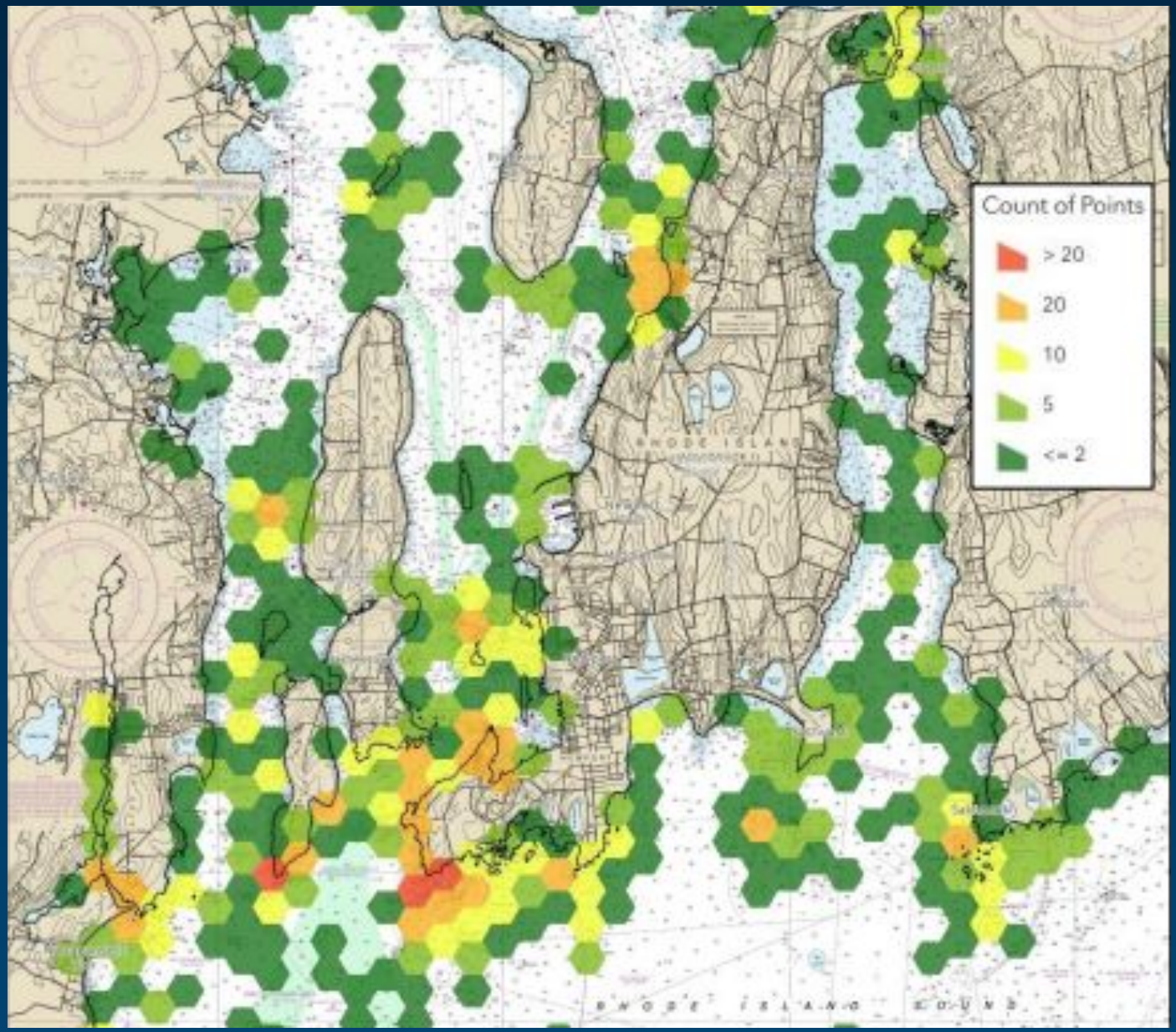
Geographic Scope: Offshore waters from Massachusetts to New Jersey.

Use: 1) Avoid priority recreational fishing hot spots during OWE siting process; 2) Determine appropriate mitigation measures that benefit this important community; 3) Contribute to the monitoring of long-term recreational fishing behavior change.

Benefits: Implement a standardized process at a regional scale that will result in a baseline data set for the recreational fishing community.

This process will be collaborative.

Rhode Island Recreational Fishing Tool



https://storymaps.arcgis.com/stories/e296d57f7478431f8be2755545583dae

Timeframe (suggested - <u>depends on funding availability</u>): *July 2024 – June 2026*: Scope project (Summer 2024); Develop tool (Fall 2024); Collect data (Winter – Fall 2025/26); Present results (Fall 2025, Summer 2026); Products developed at the end of year 1 and year 2 and upon request (e.g. when a state needs data to make permitting and management decisions).

Final products: Trusted (e.g., government and resource users support results) information that is provided in a form that can influence federal/state OWE siting, mitigation (including compensation, community benefits) discussions, encourage co-use of offshore waters. The tools being built will have the flexibility to expand data collection to other sectors (e.g. for hire). Team should be able to use this tool to collect additional social/economic data in the future.

Block Island Times, 2023

Partners: (with committed funding/resources): Rhode Island (CRMC), with interest from others.

Thank You!

Sea Grant
Rhode Island

Jennifer McCann
National Sea Grant Offshore Wind Energy Liaison
jmccann@uri.edu

http://www.seagrantenergy.org/about

https://www.submariner-network.eu/multi-frame-publication-page


Monitoring the Socioeconomic Impacts of Offshore Wind Development on Recreational Fisheries Economy

Dr. Pankaj Lal

Founding Director, Clean Energy and Sustainability Analytics Center
Professor, Earth & Environmental Studies
lalp@montclair.edu

Responsible Offshore Science Alliance Advisory Council Meeting
June 14 , 2024

Clean Energy and Sustainability Analytics Center
MONTCLAIR STATE UNIVERSITY

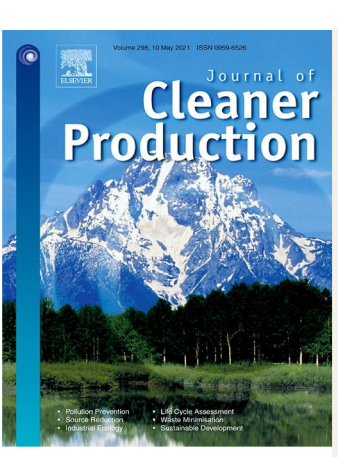
https://www.montclair.edu/cesac

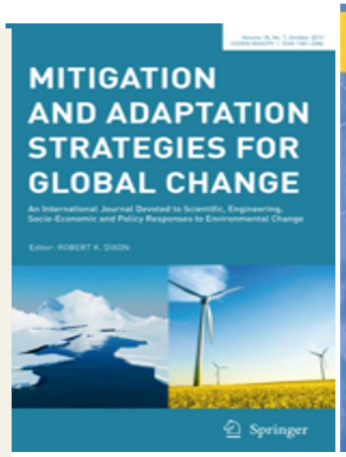
Clean Energy and Sustainability Analytics Center

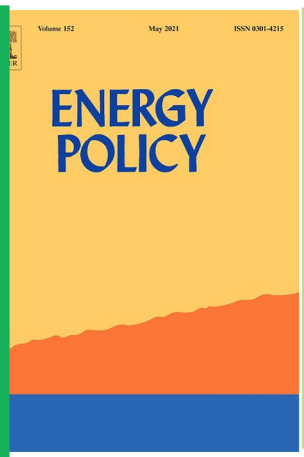
MONTCLAIR STATE UNIVERSITY

Overview

- Why this study?
- Objective and Study Area
- Saltwater Registry & Qualtrics Surveys

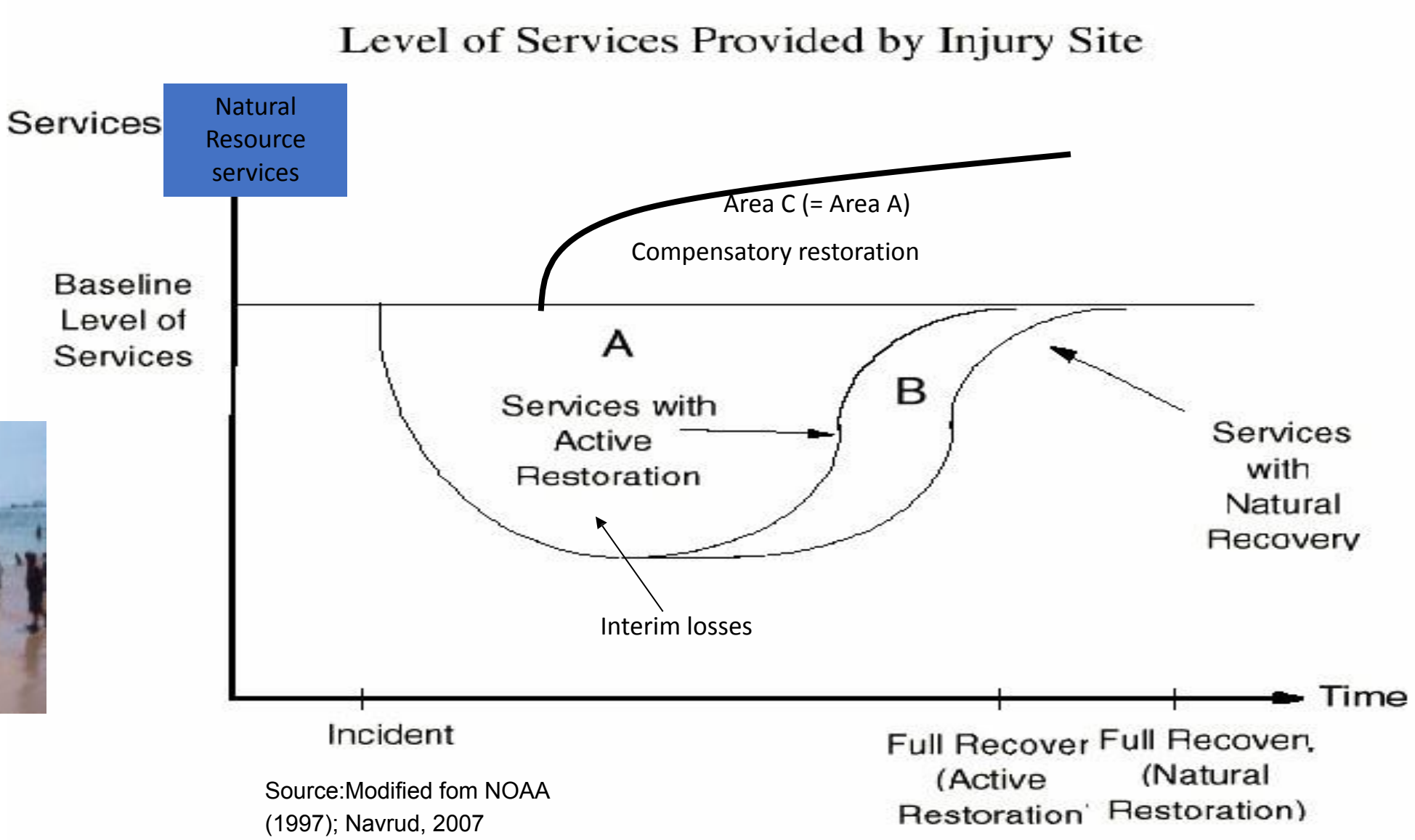






Approach- Rooted in Science & Policy!

Restoration-focused Natural Resource Damage Assessments



Source:Modified fom NOAA (1997); Navrud, 2007

Acceptability!

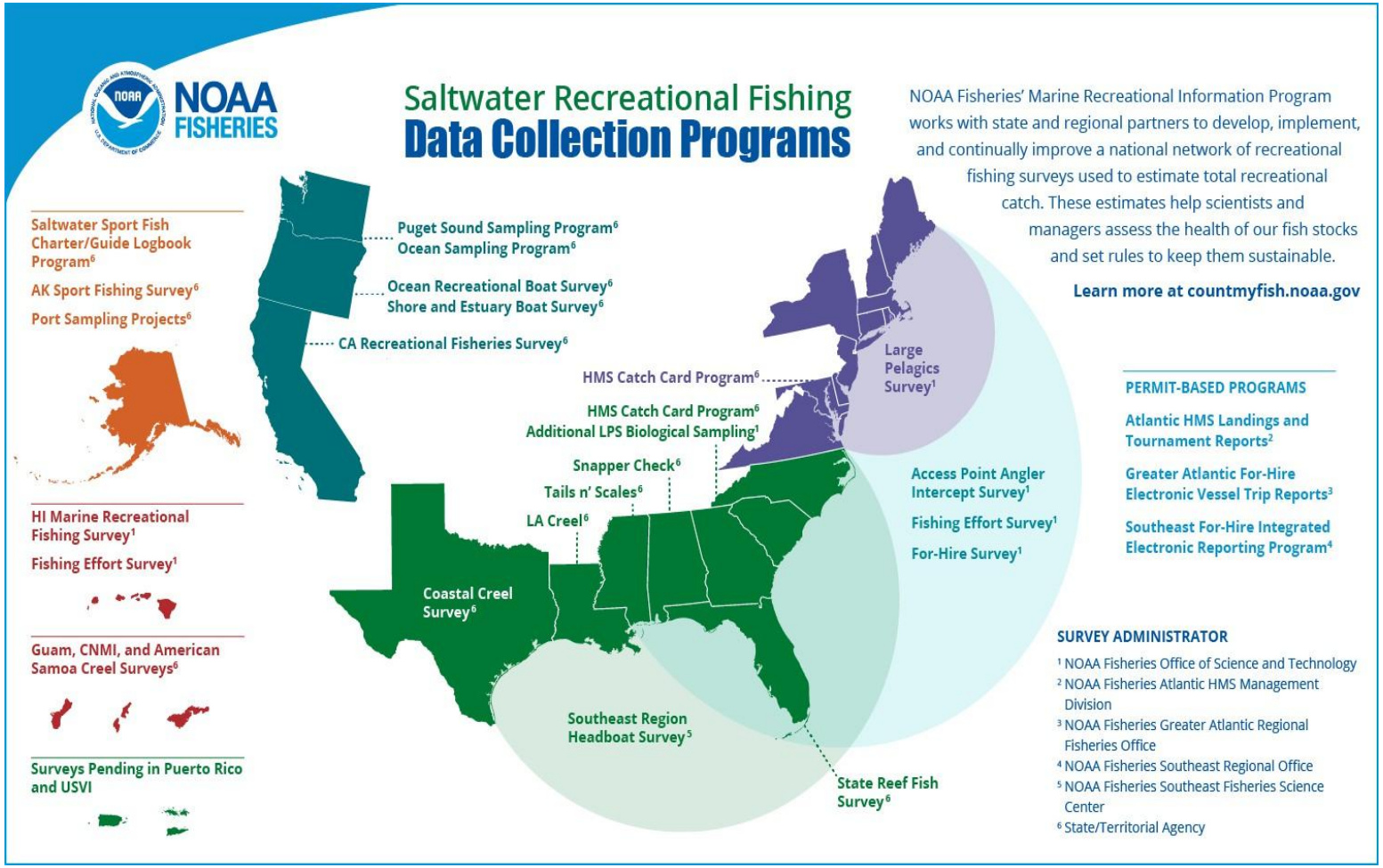
- Accepted by U.S. Courts
- Widely used in marketing, benefit-cost studies & tort litigation
- NOAA Blue Ribbon Panel, chaired by two Nobel laureates, critically evaluated the validity. The Panel provided an extensive set of guidelines for survey construction, administration, and analysis.
- Federal Government
  - ► Office of Management and Budget Guidance on the Use of Stated Preference Methods (Circular A-4)
  - ► Office of Information and Regulatory Affairs primer to assist agencies in developing regulatory impact analyses (RIAs)- Executive Order 13563, Executive Order 12866, OMB Circular A-4.
  - ► CFR on NRDA-Title 43 subtitle-A/part-11

Purpose of the Study

Complements Marine Recreational Information Program Efforts!

Recreational fisheries-based baseline data is necessary, as the existing efforts are not specific to the waters of interest or to OWFs.

Estimate and track over the years the nature and size of OWFs' potential effects on recreational fishing by understanding the impact of OWF on recreational saltwater behaviors, and expenditures in NJ.



Objective & Study Area

Objective

To develop a recreational fisheries and tourism baseline for OWF development and monitor its change over the years, including the nature and size of OWFs' potential effects on recreational fishing.

- Estimate and track over the years the nature and size of OWFs' potential effects on recreational fishing
- Estimating sector specific and regional level multipliers and regional impact

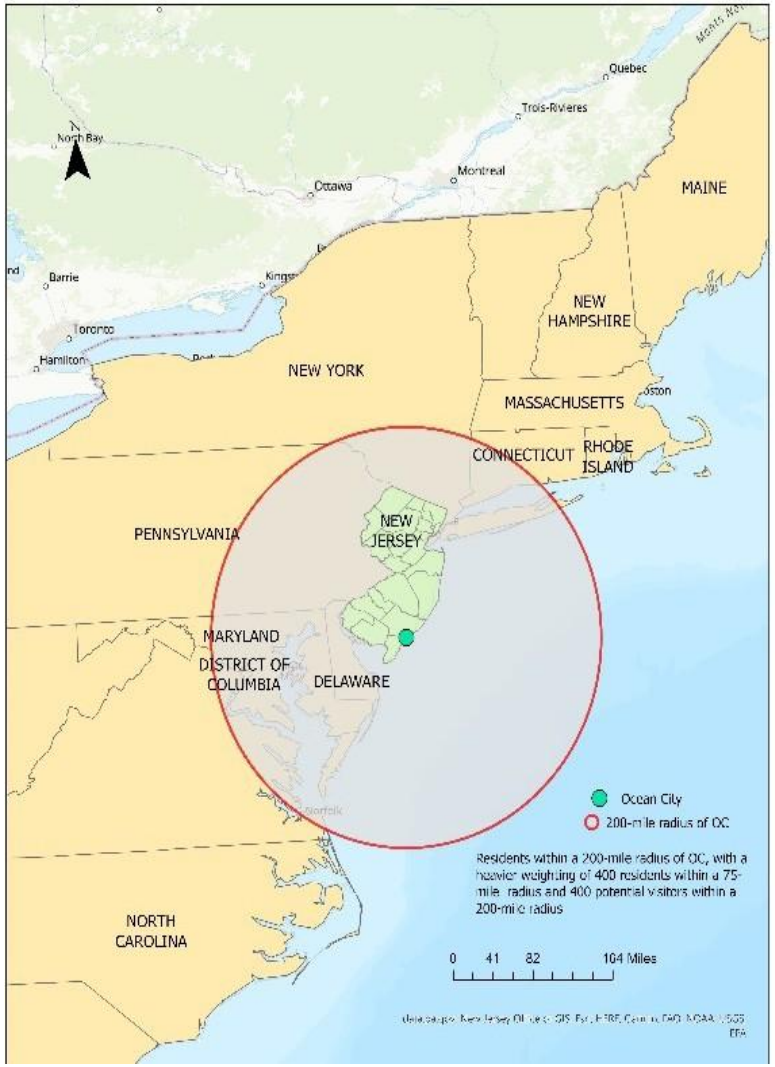
Study Area

Atlantic Shores offshore wind area (Ocean Wind I & II).

Research has flexibility and additional utility beyond the study area

Two surveys (twice each) :

1. Saltwater registry database survey
2. Qualtrics based survey

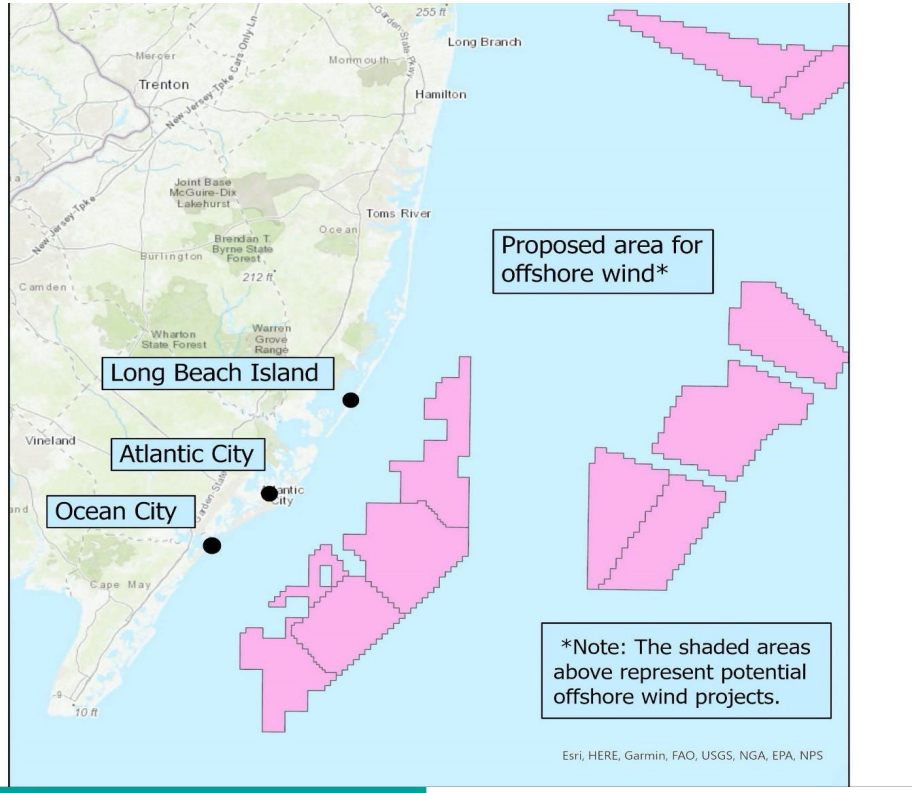


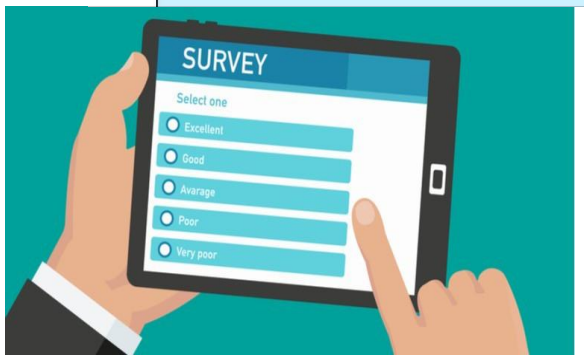
Saltwater registry survey

"Recreational Saltwater Angler Survey" was developed to incorporate specific details surrounding how OWF development may impact recreational saltwater angler's fishing experience, habits, and associated expenditures.

The survey targeted coastal areas in NJ, which are popular for saltwater fishing and within a reasonable proximity to the announced offshore wind projects under development.

Surveys targeting Long Beach Island, Atlantic City, and Ocean City.





Clean Energy and Sustainability Analytics Center

MONTCLAIR STATE UNIVERSITY

Saltwater registry survey

Spatial and temporal variability in catch, harvest, and effort

How does angling trend across space and time?

Angler details

How far into the ocean do anglers travel for fishing purposes?

Which anglers comprise a given species-specific fishery?

How do angler preferences vary across approved solicitation sites? Fisheries (recreational/commercial)? Landscapes (seasonal/private/public access)?

How do other forms of recreation impact fishing activities (e.g., displacement of anglers by water sports, recreational floaters, boaters, displacement of anglers; resident vs. non-resident)?

How do urban and rural fisheries compare on different metrics of value (e.g., money vs. participation vs. angler recruitment/reaction to the introduction of offshore wind farms in the waters)?

Who accounts for the most effort, catch, harvest? Are there areas with subsistence vs. sport fishing?

How do more frequent anglers differ in motivation from more casual anglers? What is the exact measure of variance?

Saltwater registry survey

Questions pertaining to introduction of offshore wind farms

Will the introduction of offshore wind farms in the waters drive ecological change and how does that affect angling?

Is the variability in catch, harvest, effort a function of the introduction of offshore wind farms in the waters; non-resident vs. resident anglers)?

How does the introduction of offshore wind farms in the waters/climate change and other stressors impact angler satisfaction over time? Where are the changes the most felt or impacting satisfaction the most?

Where are potential new areas of increased harvest after the introduction of offshore wind farms in the waters/under different climate conditions?

Do temporal trends in harvest vary across waters near/far from the offshore wind farms? Which aspects of a fishery attract anglers to travel long distances?

What type of fishery is most attractive to new or young anglers?

Saltwater registry survey

Species composition

Which species are targeted: where and by whom?

Do consumptive anglers shift harvest to compensate for species abundance changes?

Will anglers respond adaptively to shifting species assemblages as more offshore farms are introduced in the local waters?

Which species are more likely to be harvested vs. released? Is there spatial or temporal variation in these trends?

What are impacts of changing angler trends to fish management?

Expenditure

Amount of money recreational fishers spend per trip, the number of trips they make in a year, what they spend those monies on, the average per trip size of their party, impacted species, gears used, what other fishing and water sporting waters they visit, other recreational habits they participate in, what attitudes they hold etc.

To determine average trip expenditures and be reported for each segment of the fishing population (rural/urban, instate/ out of state, mode of fishing such as for-hire, private boat, and shore, among others).

Recreational Fisher Expenditure…

Expenditure
Rods, poles, reels
Tackle and gear
Special saltwater fishing clothing
Books, magazines, newspapers, electronic subscriptions
Purchase of motorized boat and accessories
Purchase of non-motorized boat and accessories
Boat electronics and accessories
Boat and trailer maintenance and repairs
Boat mooring, storage, and haul out/ launch fees
TOTAL

Recreational Fisher Expenditure…

Expenditure
Accommodation
Restaurants, cafes, bars, other dining
Entertainment or entrance fees
Shopping or other souvenirs
Transportation
Personal vehicle costs
Water sports equipment
Boat launch or marina fees
Fuel or fishing vessel
Rods, poles, reels
Tackle and gear
Fishing licenses, stamps, or fees
Special saltwater fishing clothing
Books, magazines, newspapers, electronic subscriptions
Dues or contributions to clubs or organizations
Processing or taxidermy fees
Purchase of motorized boat and accessories
Purchase of non-motorized boat and accessories
Boat electronics and accessories
Boat and trailer maintenance and repairs
Boat mooring, storage, and haul out/ launch fees
Boat insurance
Boat and trailer license and registration
Purchase of second home for fishing
Repair and maintenance of second home
Insurance for second home
TOTAL

Willingness to pay per hour ($/hr) for various services related to offshore wind

Offshore wind tourism activity
A guided boat tour during construction (no other recreation)
A guided boat tour of a windfarm (no other recreation)
Access to offshore recreation near the turbines
An unguided tour close to the offshore wind turbines
An onshore information center with telescopic viewing site to the offshore wind turbines
An opportunity to go jet-skiing near offshore wind turbines
An opportunity to go snorkeling near offshore wind turbines
An opportunity to go paragliding near offshore wind turbines
An opportunity to go wake surfing near offshore wind turbines
An opportunity to go fishing near offshore wind turbines
An opportunity to scuba dive near the turbines
An opportunity to spear fish near the turbines
A guided educational tour on artificial reefs surrounding offshore wind turbines
An unguided educational tour on artificial reefs surrounding offshore wind turbines
An onshore informational center with educational materials related to artificial reefs surrounding onshore wind turbines

Qualtrics survey

Extra questions in Qualtrics survey apart from the saltwater survey :

Affiliated activities

- Type of other outdoor recreational activity preferred
- Borrow or own sports/fishing equipment
- Timing of preferred water activity relative to the fishing season

Opinions/perspectives

- Opinions about offshore wind energy production in terms of creating new jobs, producing clean energy, scenic beauty, electricity costs, energy security and independence, property values, local tourism and economy, marine environment
- Perspective on the effect of view shading; Motivations for fishing at their preferred site
- How choice of preferred site or number of trips to the site changes in response to the introduction of offshore wind farms nearby
- Likelihood of visiting a beach at least once to see an offshore wind farm or take a boat tour

Trip/spending/tourism decisions

- Breakdown of spending in terms of transportation, lodging, groceries, restaurants, bait, ice, parking, boat rental/chartering fees, etc., Number of people traveling together, Distance traveled to fishing site, Tendency and length of average overnight stays, Typical place of accommodation etc.

Comments/Inquiries

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Thank You!

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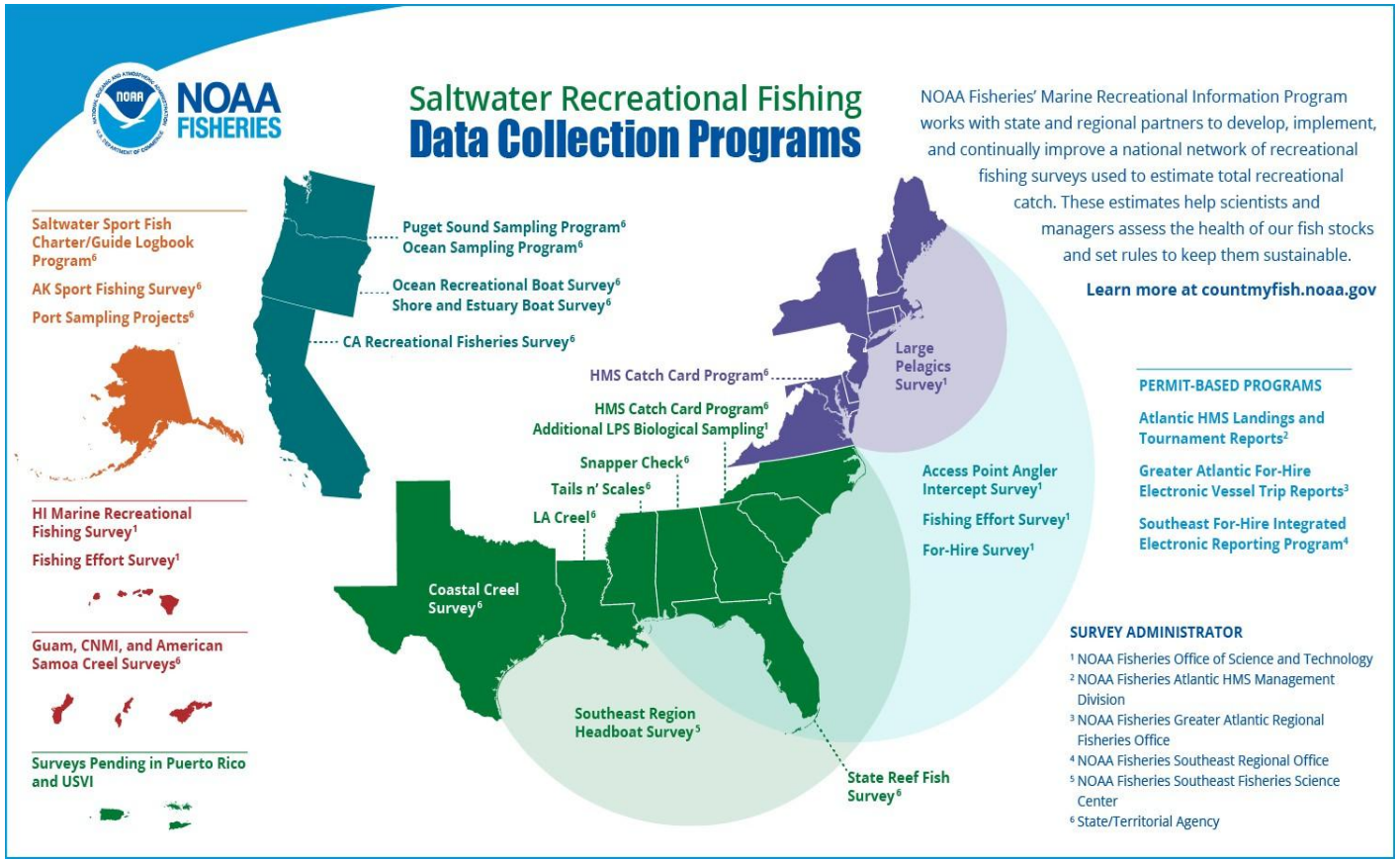
Complements Marine Recreational Information Program Efforts!



Large Pelagics Survey- recreational catch and effort for large pelagic or highly migratory species in the Greater Atlantic.

Access Point Angler Intercept Survey- anglers complete trip (mode, area fished, species, number, disposition, length, weight)

Fishing Effort Survey-
All residents mail survey

sampling based on proximity to coast and National Saltwater Registry.

Estimate private angler effort from shore and private boats.

For-Hire Survey-
Telephone For-Hire Survey
Sample of state and federally permitted for-hire vessel representatives.

Sample drawn from an online database of for-hire vessels, including both charter and headboats.

Estimate recreational catch and effort

Action Items, Next Steps, and Other Business

- ExComm Nominations (June 21st)

- Let's connect!
  - NYSERDA State of the Science Workshop:
    - *OSW Fisheries Monitoring Plan Development, Implementation, & Evolution Discussion* Session
    - *Surfclam Stock Enhancement: Who, What Where, and When next?* Side Meeting
  - ICES Annual Science Conference
  - AFS Annual Meeting

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