ROSA
Responsible Offshore Science Alliance

# ROSA Advisory Council Meeting

March 29, 2024

# Agenda


**1:00pm Welcome, Introductions, Agenda Review**

**1:10pm ROSA Updates –** *ROSA Staff*

**1:30pm Partner Updates**

**1:45pm Northeast Trawl Advisory Panel –** *Mike Pol, ROSA*

**2:20pm Preview of Results of Monitoring Focus Groups -** *Reneé Reilly, ROSA*

**2:45pm Construction and Post-Construction Monitoring** – *Crista Bank, Vineyard Wind 1*

**3:05pm Fish FORWRD update -** *Mike Pol, ROSA*

**3:25pm Action Items, Next Steps, and Other Business**

**3:30pm Adjourn**

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# ROSA UPDATES

# New Staff

RESEARCH PROJECT MANAGER

Tricia Perez

COMMUNICATIONS ASSOCIATE

Mindy Hamlin

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# New Board Members

# Acoustic Telemetry Fish and Fisheries Committee

secoora.org

Goals:

1. Update acoustic telemetry guidance in the Offshore Wind Project Monitoring Framework and Guidelines: Table 1 (Advantages/disadvantages of sampling gears), Section 2.6 Data Sharing and Access and elsewhere as needed
2. Work on identified issues from Table 1: Definition of metrics, data sharing, potential for site conflicts, tradeoffs for equipment expense and sample size
3. Contribute to updates on research efforts for Fish FORWRD
4. Work on other issues

Met on March 25th, made progress on Table 1. Planning on monthly meetings

QR CODE for Offshore Monitoring Framework and Guidelines

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# Regional Research Program & Coordination

## OSW & Fisheries Funder Coordination Meeting

- Federal, state, nonprofit competitive solicitations
- Developer Funded Projects

## RFP Development Plan – due July

- Equinor Empire Wind 1 project selected in NY4 Solicitation requiring $5,000/MW for fisheries and offshore wind research
- Research Areas Selection Process
  - FishFORWRD
  - Advisory Council
  - RFI?
- RFP & Project Management Process

## Engagement for Research Topic Areas

- expect to engage advisory council this summer

## RFP Release

# Outline of RFP Development Plan (to date)

**Introduction**

**ROSA RFP Development Process**

- Steering Committee
- Coordination
- Select the Research Topic Areas
  - FishFORWRD
- RFP Development Process
  - Format, Eligibility, Submission, Etc.
- Review Process
  - Concept Papers, Full Applications, Selection Criteria
- Communicate and Promote RFP
- Consider Technology Needs for RFP
- Project Administration and Management of Awarded Projects
  - Process for Data Management from projects
  - Reporting
- Legal Review
- Utility Moving Forward

**Equinor Specifics**

- Timeline
- Steering committee
- Coordination with RWSC
- RFP
  - Objective
- Funding Distribution

**References**

**Appendices**

- Members of Coordination Group
- RFP Template
- Budget Template
- COI Template
- Others?

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# 5-year Roadmap: Strategic Goals & Objectives

- Administer Regional OSW Fisheries Research and Monitoring
- Facilitate Assessment of Regional & Cumulative Impacts
- Build Coordination through Engagement

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# Looking Ahead: Executing our Strategic Plan

## Regional Fisheries Research Programs

- Funds created through PPAs

## Regional Funder Coordination

## Alignment of Fisheries Monitoring

- Development of Regional Monitoring Plan(s) for Fish & Fisheries
- Tools requiring larger-scale coordination, e.g., acoustic telemetry
- Build upon existing plans, create synergies & efficiencies

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# Looking Ahead: Executing our Strategic Plan

## Data Standardization & Management

- Method-specific standards, e.g. Acoustic Telemetry

## Updating Monitoring Guidance

## NOAA Survey Mitigation Strategy

- Developer/NMFS Survey Mitigation Plan Coordination (Recent Condition)

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# NYSERDA UPDATE

# State of the Science Workshop on Offshore Wind Energy, Wildlife, and Fisheries

**Outcome – build on existing knowledge, collaborations, engage stakeholders, and to help develop a research agenda of key studies that could be conducted in the next 3-5 years**

**Theme:**

- 2018: Understanding the current state of the science on wildlife and offshore wind energy development.
- 2020: Assessing the state of the knowledge of offshore wind development's cumulative effects on wildlife and ecosystems.
- 2022: Building on existing knowledge and emerging collaborations.
- 2024: Taking an Ecosystem Approach: Integrating Offshore Wind, Wildlife, and Fisheries

https://www.nyetwg.com/2024-workshop

July 16 – 19, 2024 at Stony Brook University

# Request for Proposals and Next Steps

February 2024: NYSERDA issued **Request for Proposals (RFP) 5554 Regional Fund Administrator for an Offshore Wind Fisheries Mitigation Fund** on behalf of multi-stakeholder effort

**Proposals due March 26, 2024 by 3:00 p.m. ET**

See RFP 5554 details here: https://www.nyserda.ny.gov/Funding-Opportunities/Closed-Funding-Opportunities/2024

Early Spring 2024: **Identify and Convene** Design Oversight Committee

Late Spring 2024: **Select and contract** for design and development phase

Early Summer 2024: **Commence** Regional Fund design and development phase

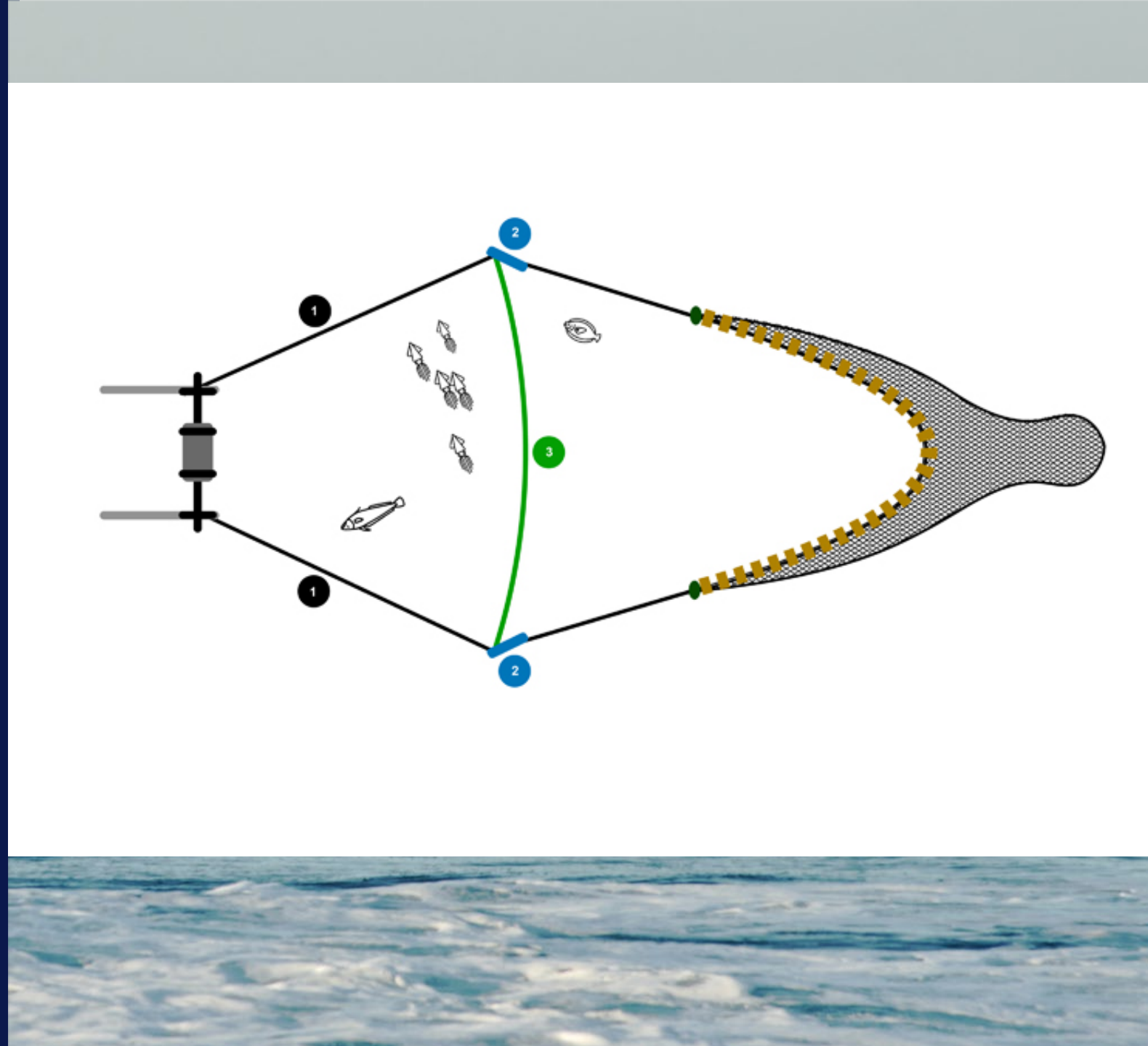
For more information on the Regional Fund Administrator and BOEM efforts, visit:

- https://offshorewindpower.org/fisheries-mitigation-project
- https://www.boem.gov/renewable-energy/request-information-reducing-or-avoiding-impacts-offshore-wind-energy-fisheries

# NEW JERSEY UPDATE

# OTHER PARTNER UPDATES

# Northeast Trawl Advisory Panel – Restrictor Rope



# NTAP 2022 Restrictor Rope Experiment Findings

ROSA Advisory Council

3/29/2024


Contact: Andrew (Andy) Jones
Northeast Fisheries Science Center's Cooperative Research Branch
andrew.jones@noaa.gov

# Many efforts coordinating and performing field work

- Captain, crew from F/V Darana R
    - Captain James Ruhle
- VIMS staff
- RI DEM staff
- ROSA staff
- NEFSC staff
- NTAP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VIMS | William & Mary
Virginia Institute of Marine Science

NOAA FISHERIES
Northeast Fisheries Science Center

DEM
Rhode Island

# Northeast Trawl Advisory Panel (NTAP)

New England Fishery Management Council

- A joint council advisory panel with expert stakeholders
- Identify concerns about regional research survey performance and data, to identify methods to address or mitigate these concerns, and to promote mutual understanding and acceptance of the results of this work among their peers and in the broader community
- History of experiments related to gear efficiency
- Recent interest in impacts of wind developments on NEFSC BTS

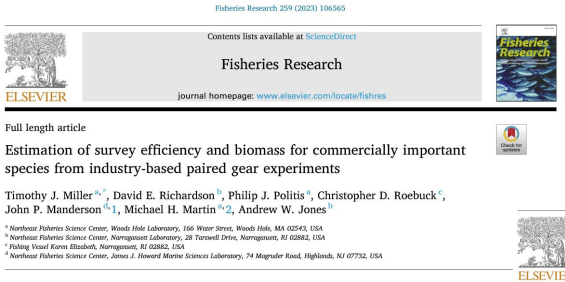

## Northeast Trawl Advisory Panel (NTAP)

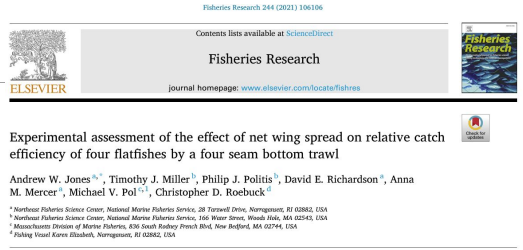
The **Northeast Trawl Advisory Panel (NTAP)** is a joint advisory panel of the Mid-Atlantic and New England Fishery Management Councils. It is composed of Council members, fishing industry, academic, and government and non-government fisheries experts who provide advice and direction on the conduct of trawl research.

The NTAP was established to bring commercial fishing, fisheries science, and fishery management professionals in the northeastern US together to identify concerns about regional research survey performance and data, to identify methods to address or mitigate these concerns, and to promote mutual understanding and acceptance of the results of this work among their peers and in the broader community.

- Charter for Northeast U.S. Trawl Advisory Panel, revised 7/28/21
- NTAP Member Roster, updated 1/23/2024
- NTAP Operational Manual and Orientation Document, created 7/6/23

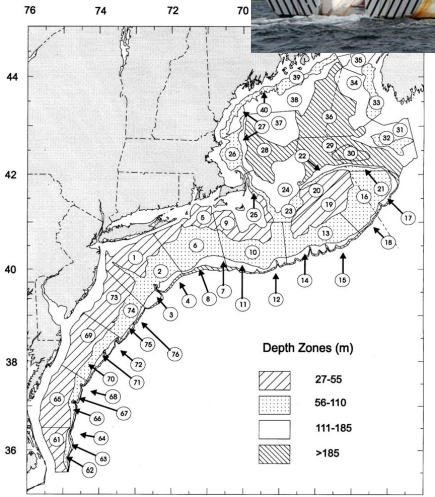
https://www.mafmc.org/ntap



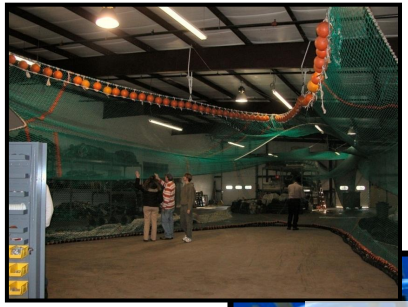
# Fishery-independent information are vital

- Fishery-independent (FI) info very helpful for understanding resource dynamics
- The development of offshore wind poses a challenge to FI info through the exclusion of large survey vessels
- Use of multiple smaller vessels could be a solution to this challenge
    - Many monitoring efforts  being developed to understand wind development impacts
- However differences across vessels is always a concern when analysing data
- Any gear that could help standardize across vessels could be very useful



# Restrictor rope!?

- Restrictor ropes have been a piece of equipment that have been of interest to industry in the northeast for some time
- Simple connection between warps or doors that limit the maximum spread of the gear
- Initial impetus was desire to standardize NEFSC bottom trawl survey
- But also interest in way to standardize across wind impact monitoring

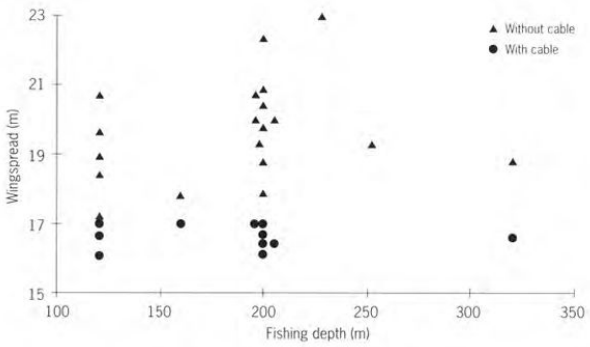


# Motivation for current work

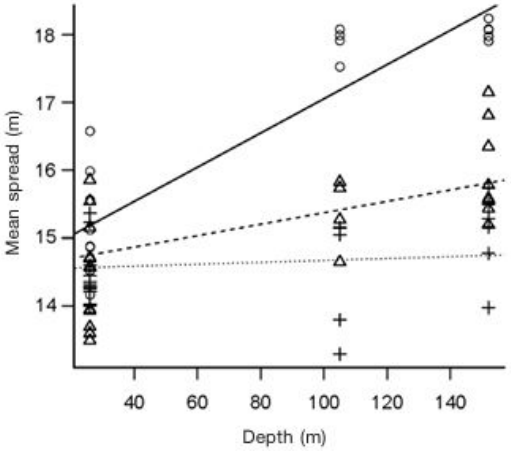
- Evidence in literature for improved trawl geometry with restrictor ropes
- Less information on potential impacts on catch
- Some suggestions that it can impact catches of semi-pelagic species[1]
- Has not been recently explored in the northeast US

[1] Rose and Nunnallee (1998), Weinberg and Kotwicki (2015)

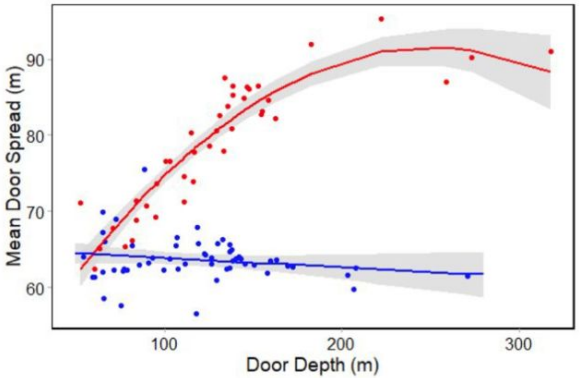
Fréchet 2000

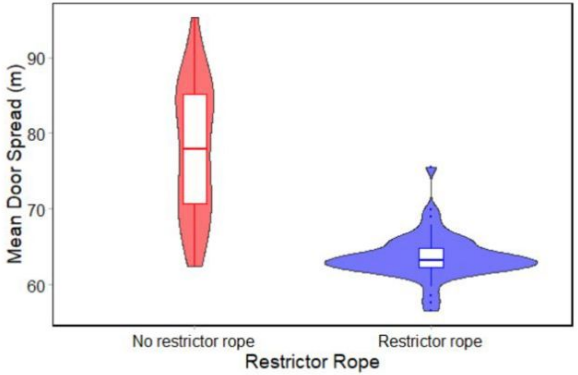



Weinberg and Kotwicki 2015




ICES 2022 (IBTSWG) Norwegian Q3 IBTS



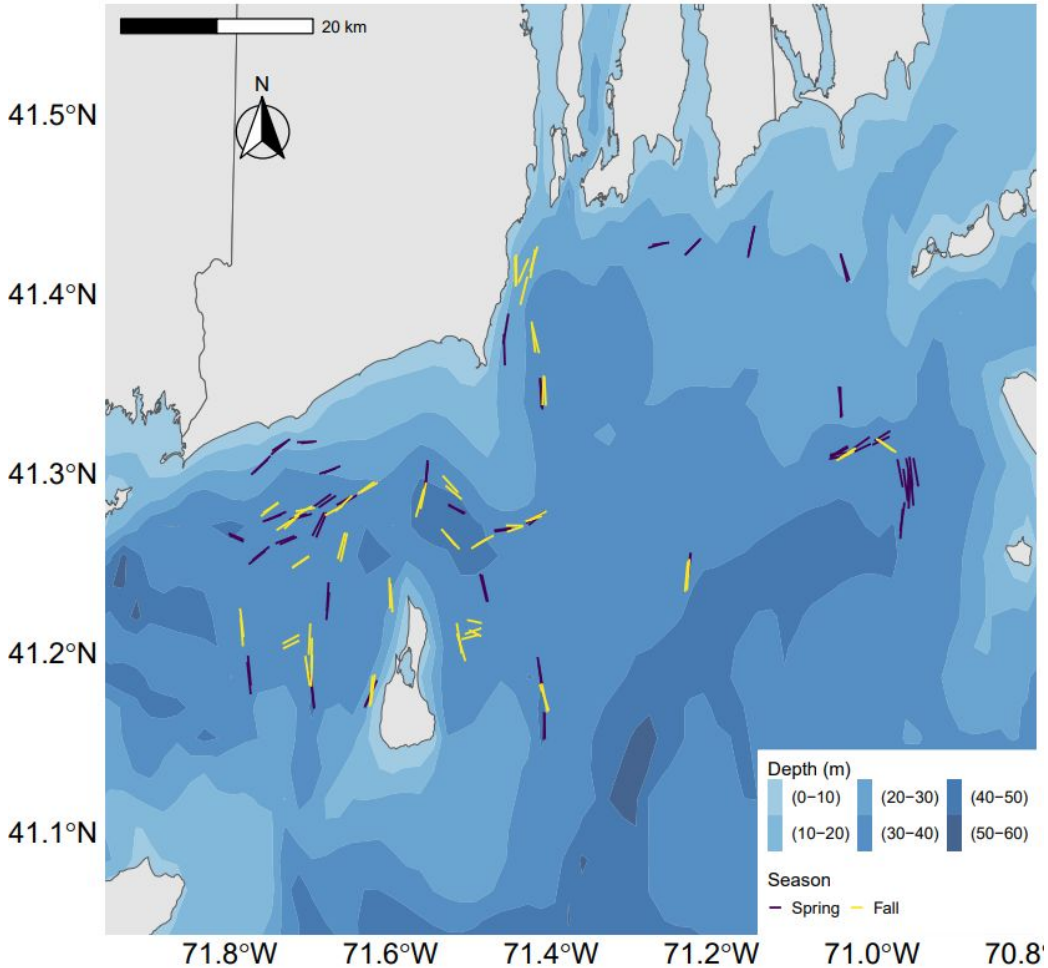



# 2022 NTAP Experiment

- Experimental work on F/V Darana R to explore restrictor catches
- Essentially an ABBA experiment with the addition of a RR to the 400x12cm, three-bridle four-seam survey trawl
  - Standard NE survey net
  - One tow with one without
  - Reverse the order for next pair
- Here the connection was between the doors on  treatment tows

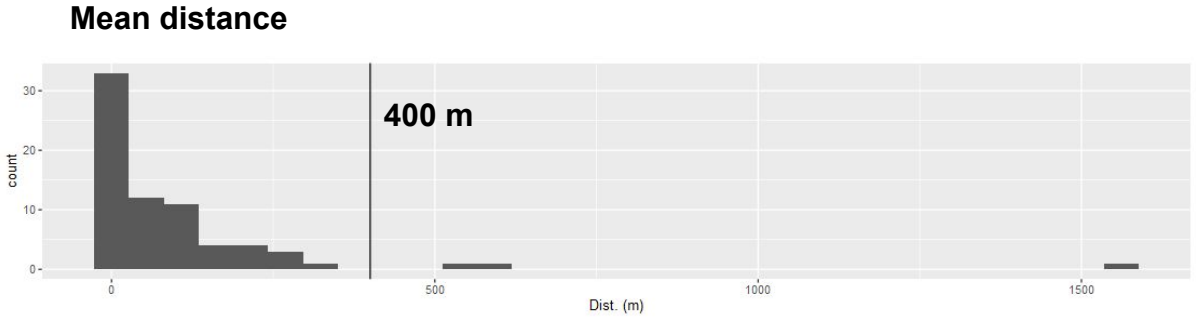

# 2022 NTAP Experiment

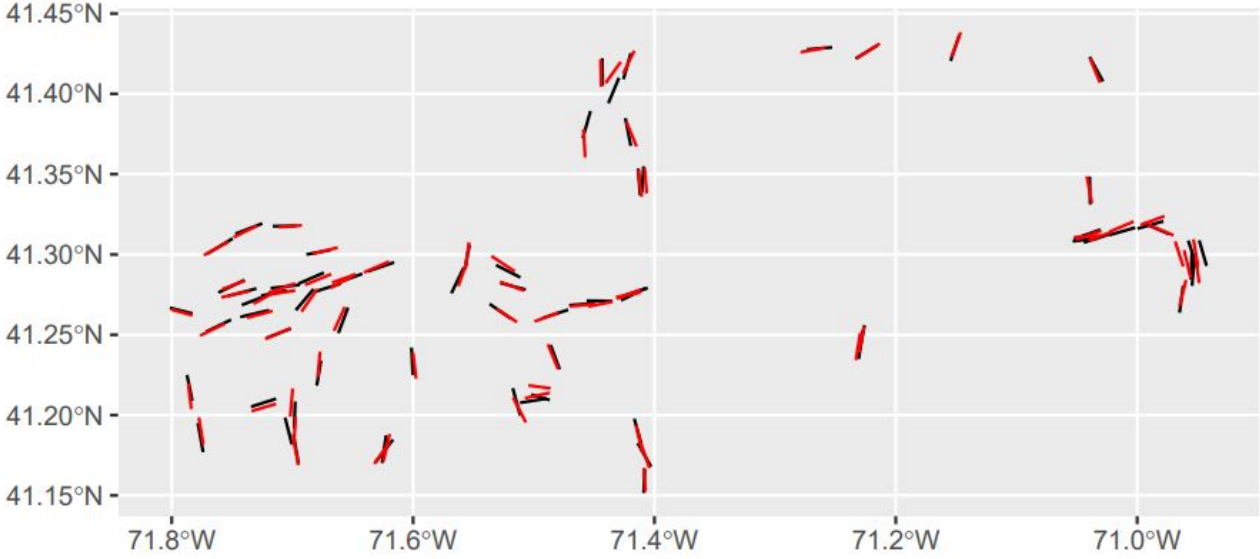
- In 2022, two seasons (spring and fall)
- ~140 tows or ~70 comparisons
- Different than previous NTAP experiments in that it is paired tows rather than using a twin trawl
- Some concerns about this method at outset



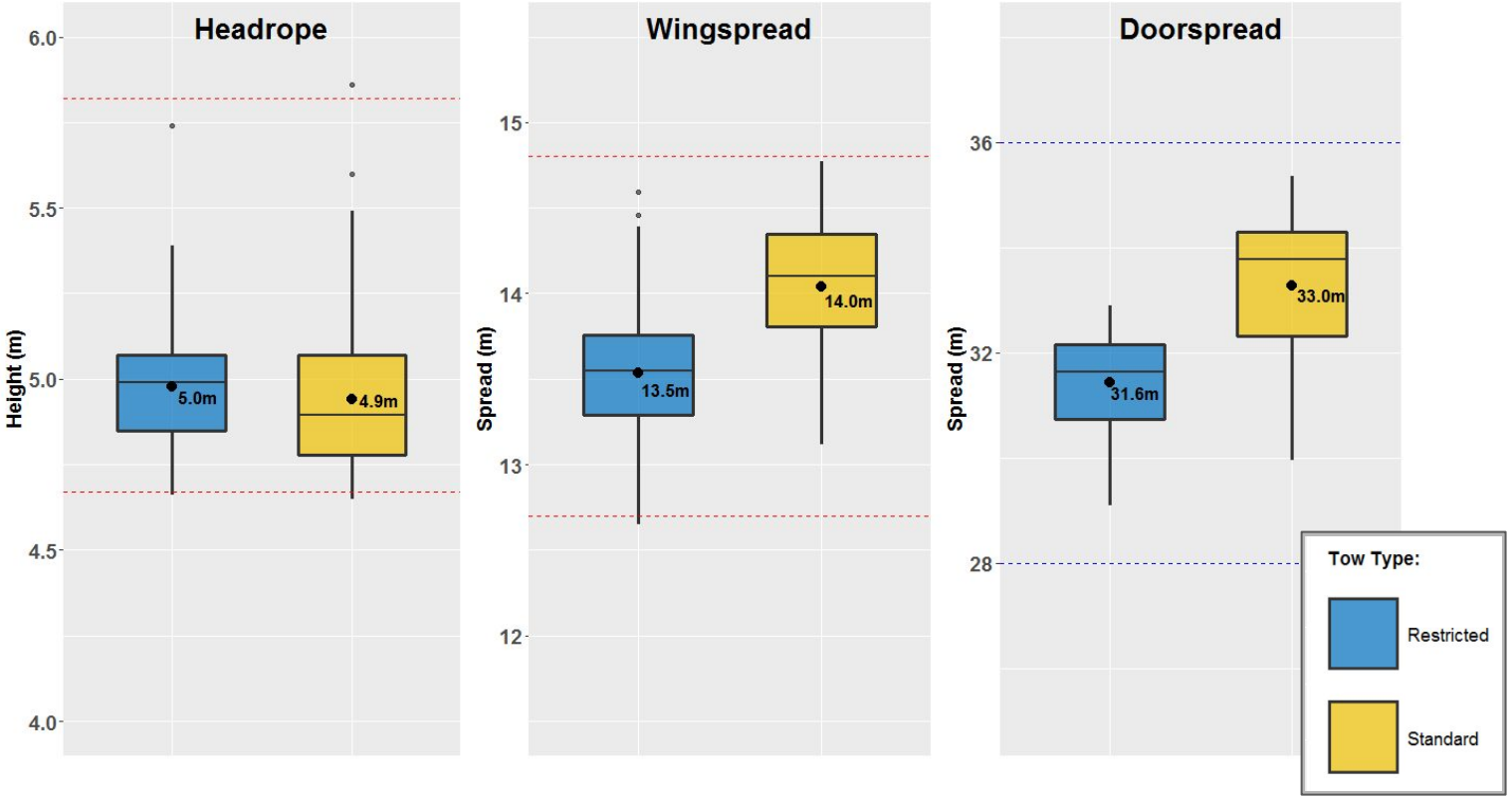
# Paired tow spacing

- Excellent job by F/V Darana R!
- Only three tows (2%) where mean distance is > 400 m
- Some tows appear to cross at various points (~40)
- Tow tracks could be slightly different than what was recorded (some GPS wobble)



# Gear metrics



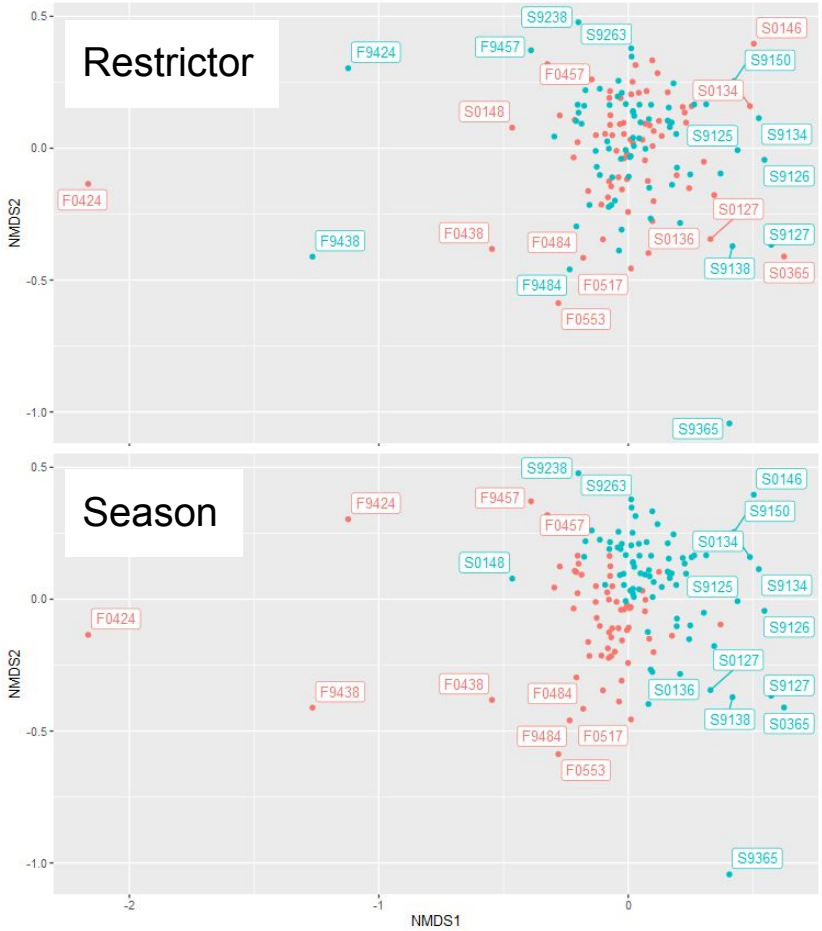
# Gear metric interpretation

- Limited differences in performance because depth range of experiment was shallow and only one vessel used
- There is a subtle treatment effect on net performance
- Suggests restrictor is engaged

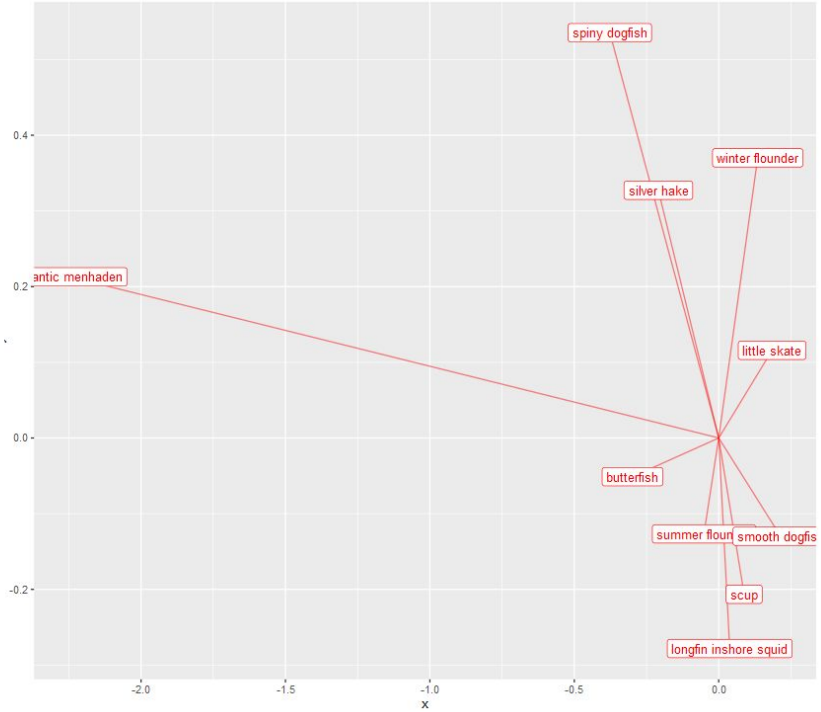
# Comparing catches in paired tows

1. Investigating species prevalences
2. Explore aggregate catches
    a. Do weights differ in control and treatment?
3. Explore catch at length
    a. Do the proportion at each length in the catch differ between control and treatment?

# Plotting catches in two dimensions




- No clear effect of restrictor
- Some effect of season
- Differences between seasons relate to spiny dogfish and fluke

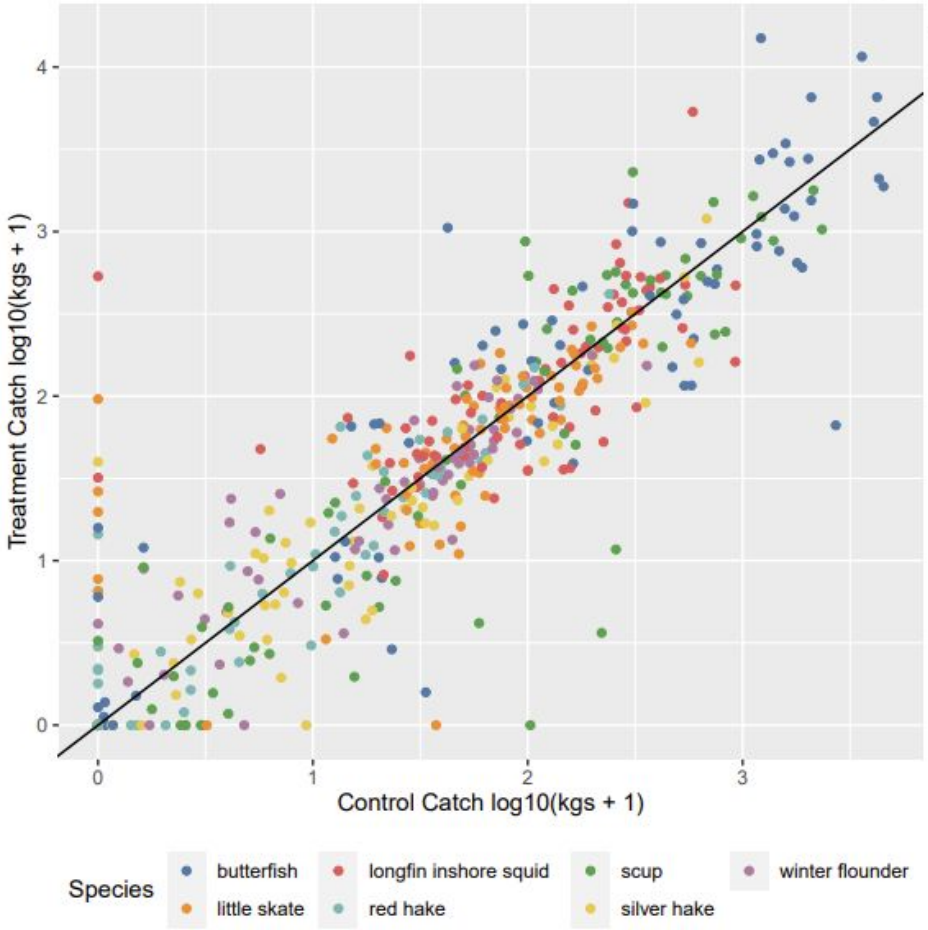


# Species focus for analysis

- Focus of this work was on roundfish, most likely to be impacted
- **Scup**, **butterfish**, and **silver hake** the roundfish most commonly encountered in the experiment
- Interest in **longfin squid** as well mobile and thought to have good vision
- Others less commonly caught, might be difficult to draw conclusions about
- Settled on seven species which were most commonly encountered
    - Butterfish,little skate, longfin squid, red hake, scup, silver hake, and winter flounder

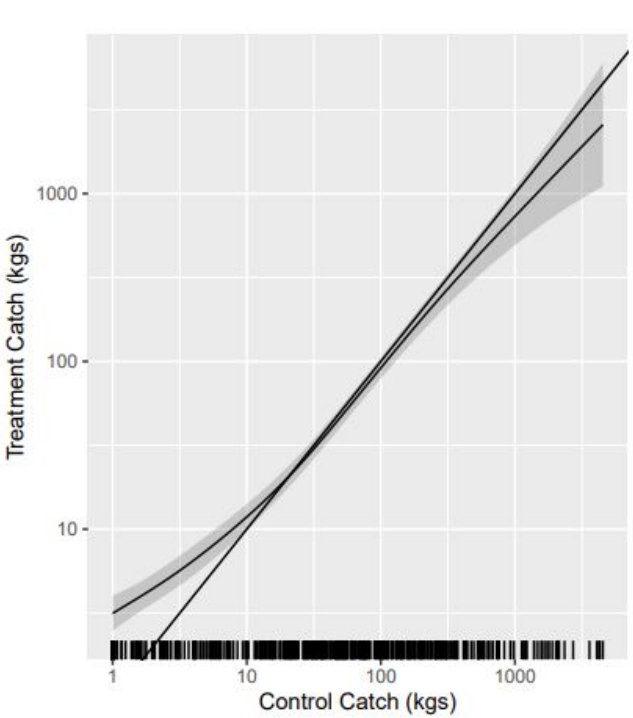
# Aggregate catch

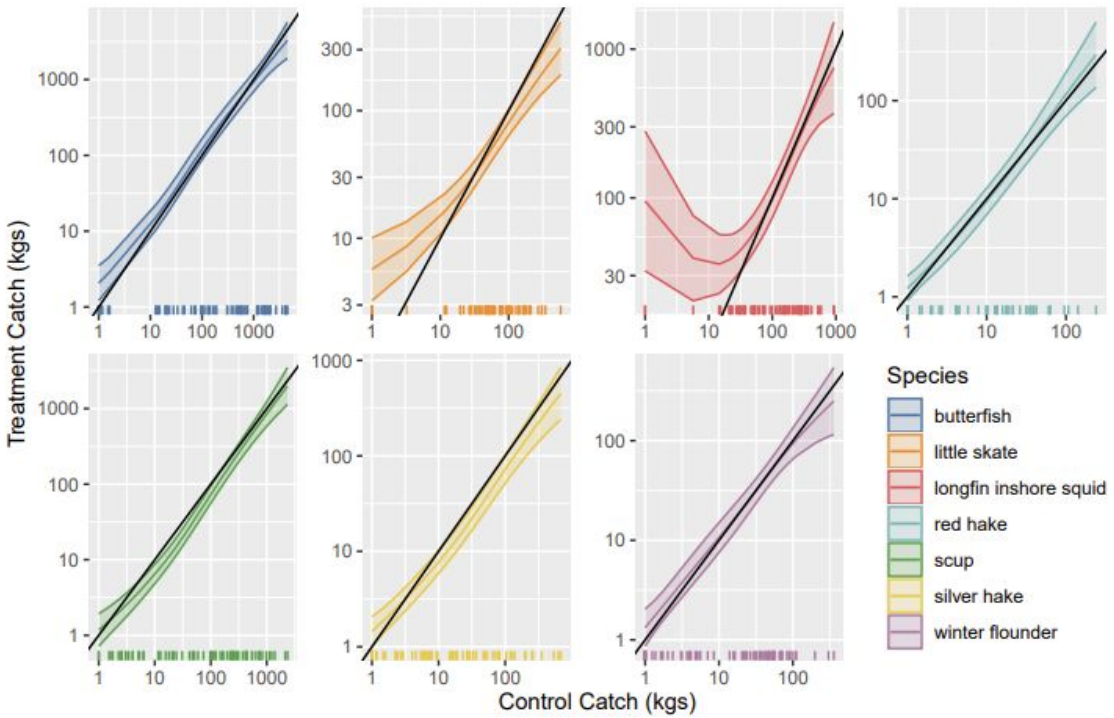
- Standardized for area swept
- Log10 + 1 transformed
- Compared to 1:1
- Expect to fall on 1:1 if similar in control and treatment
- For the most part they do



# Aggregate catch

- Model results show 1:1 for all seven species



# Aggregate catch

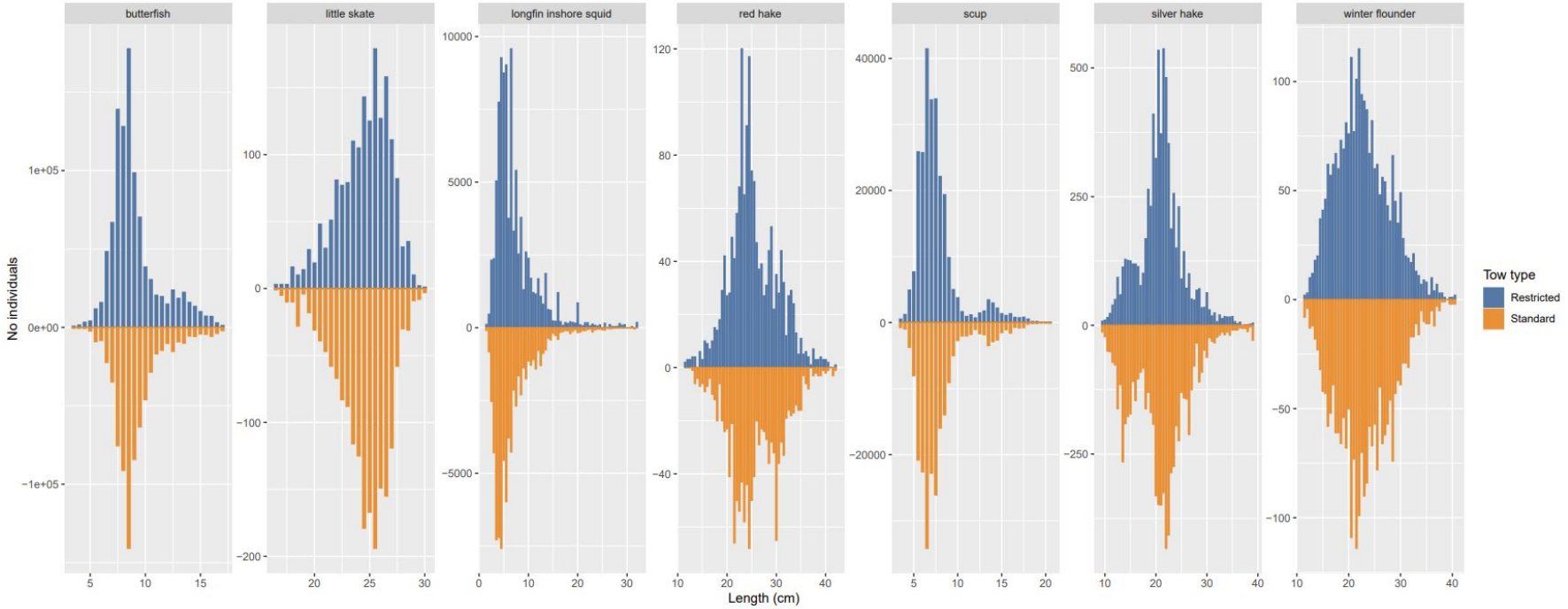
- Close to 1:1 when regressing catches without and catches with the restrictor rope
- No sig. effects in the model
- Many different model formulations result in similar results
- Suggests no detectable effect of the restrictor rope

# Moving on to individual lengths

1. Explored individual lengths for the same seven species
2. Also fit statistical models to individual length data to test for statistical effects of the restrictor rope

# Individual lengths

- Similar patterns in catch-at-length



# Comparing catch in paired tows

1. Similar to Holst and Revill (2009)
2. Trimmed to lengths that were caught at >10 stations for each species
3. Fit GAM models
4. Included a set of variables in each model
    a. Depth, order, season, solar zenith angle, and length
5. Preliminary exploration of patterns


Fisheries Research 95 (2009) 254–259

Contents lists available at ScienceDirect

Fisheries Research

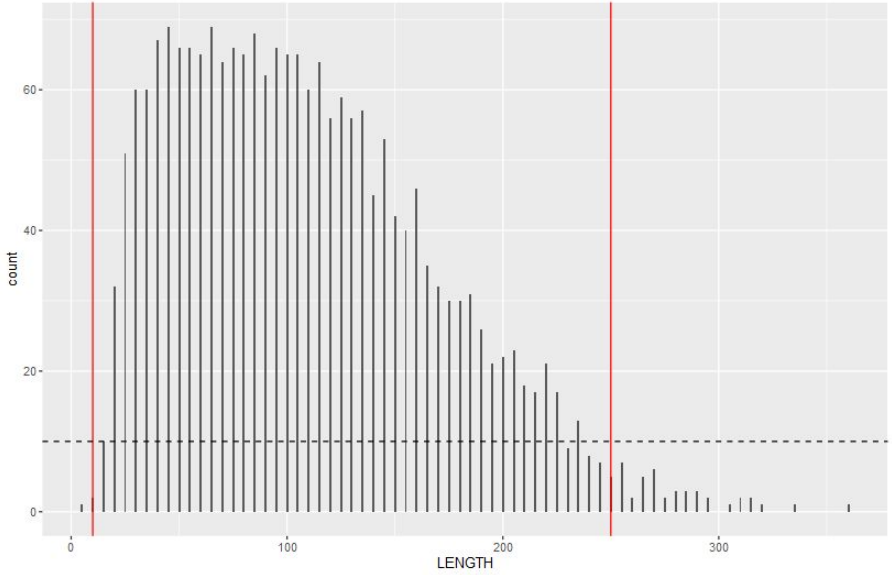
journal homepage: www.elsevier.com/locate/fishres

A simple statistical method for catch comparison studies

René Holst [a,1], Andrew Revill [b,*,1]

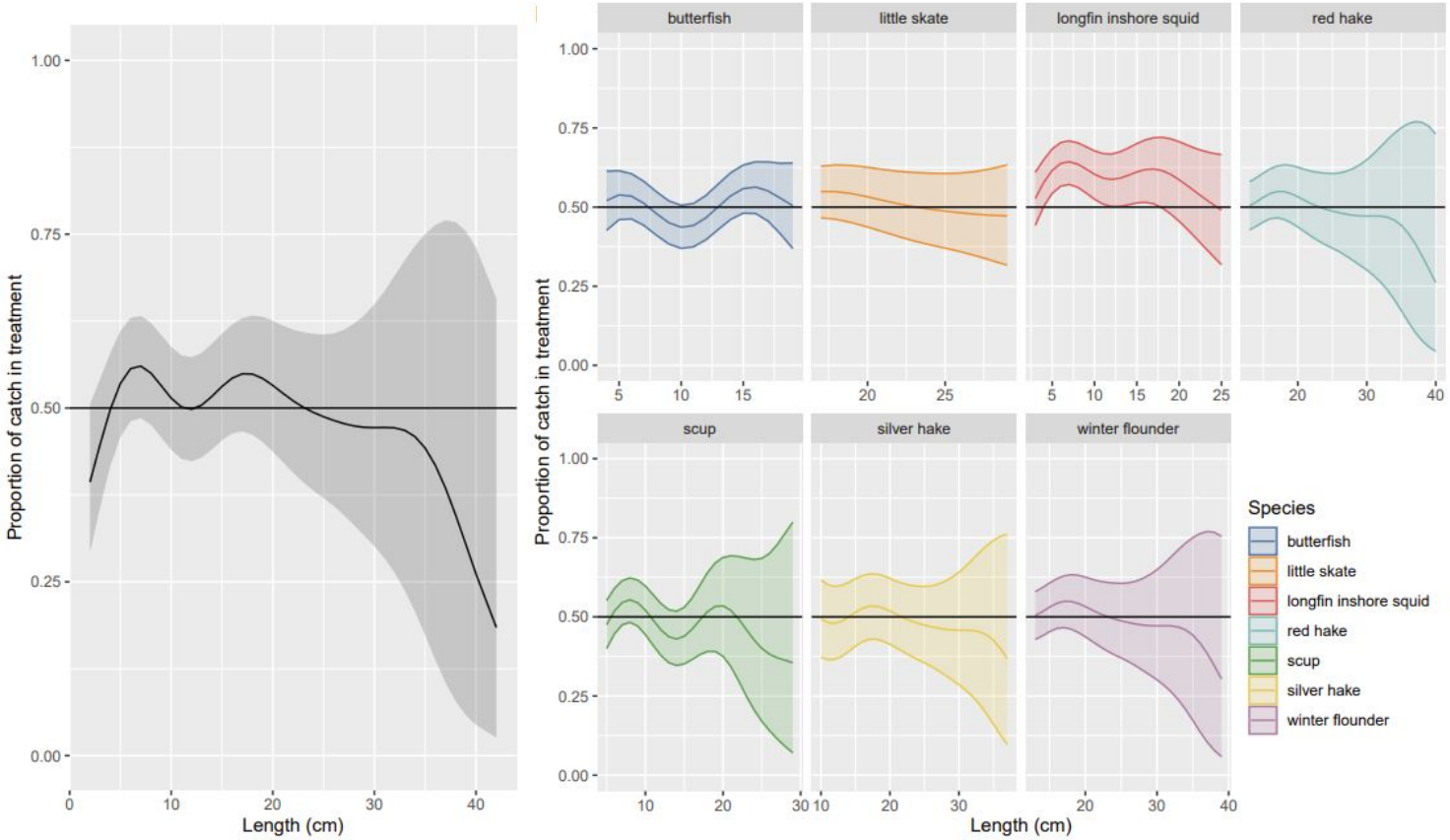
[a] National Institute of Aquatic Resources, Technical University of Denmark (DTU-Aqua), Box 101, DK-9850 Hirtshals, Denmark
[b] Centre for Environment Fisheries & Aquaculture Science (CEFAS), Pakefield Road, Lowestoft, NR33 0HT, UK

Lengths used for modeling



# Model outputs

- Limited impact on the catch-at-length for seven species



# Individual lengths

- Limited differences from the 0.5 mark for most species at most lengths )
    - Control and treatment catches have similar size distributions
- Some questions about the values for longfin squid
- The average trend across species suggests limited differences

# Conclusions

- We observed limited impacts of the restrictor rope on catches
- Worth considering the positive impacts of the restrictor on standardizing gear performance when surveys in wind energy areas are being developed
- This could potentially help improve consistency across wind developments and help researchers identify cumulative effects
- One caveat is that we do not have enough data to definitively say that there is no effect of the restrictor rope for all species, but we have some confidence based on the diversity of species sampled through this research


# Next steps

- Finalizing manuscript for peer review
- Potentially interested in developing guidance for adoption but might need information beyond this study
    - Decision matrix?

# Questions?

## References:


- Fréchet, A., 2000. Multiple otter-trawl calibration for the sentinel surveys in the northern Gulf of St. Lawrence. ACTES DE COLLOQUES-IFREMER, pp.37-45.
- ICES. 2022. Workshop on the Further Development of the New IBTS Gear (WKFDNG). ICES Scientific Reports. 4:18. 46 pp. http://doi.org/10.17895/ices.pub.10094
- Rose, C.S. and Nunnallee, E.P., 1998. A study of changes in groundfish trawl catching efficiency due to differences in operating width, and measures to reduce width variation. Fisheries Research, 36(2-3), pp.139-147.
- Weinberg, K.L. and Kotwicki, S., 2015. Reducing variability in bottom contact and net width of a survey trawl by restraining door movement and applying a constant ratio of warp length to depth. Fishery Bulletin, 113(2).

# Input from Capt. Bobby Ruhle

# Input from Rutgers researchers

Capt. J. Ruhle

Restrictor rope with attachment hook

The restrictor rope was used on the two seasonal surveys done last year in Ocean Wind 1 (summer and fall 2023) on the FV Darana R. It performed well.

They plan to use it in any other future trawl surveys for wind farm monitoring.

They encourage its use elsewhere as a great means to encourage standardization across surveys.

PIs: Doug Zemeckis, Jason Morson

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# Offshore Wind Fisheries Monitoring Plan Development, Implementation, & Evolution Sessions

# 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

ROSA seeks to provide a neutral space for these discussions, in part to:

- Characterize challenges and solutions, and to
- Understand through what role the organization will best serve the community.

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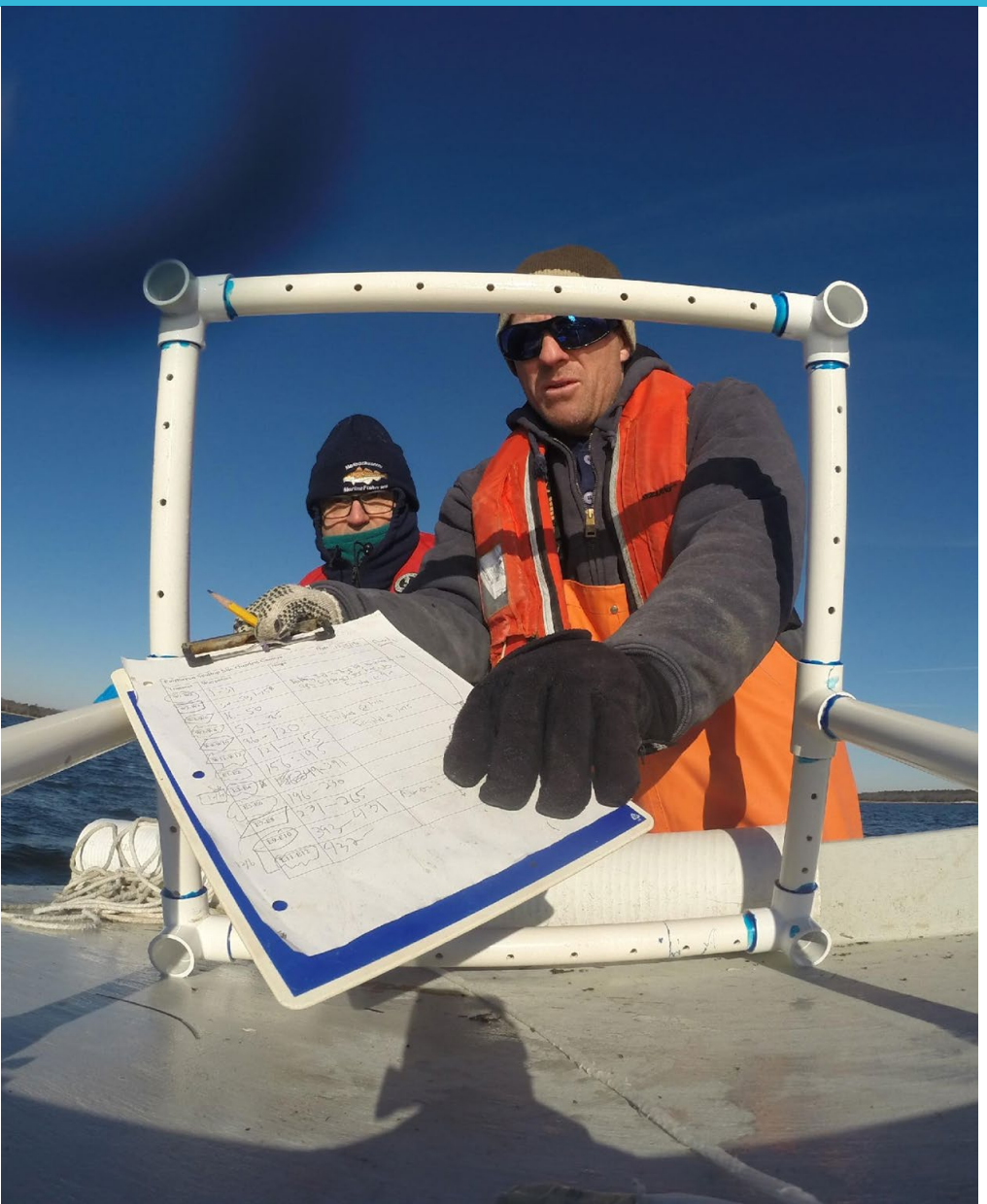
# Themes from sector-specific sessions



## 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 with NOAA

## Challenges

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

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# Coordination Sessions: Next Steps

**Final Session**: All Sectors

*State of the Science: July 16-19, 2024*

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

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# Construction & Post-Construction Monitoring: Looking Ahead

Crista Bank, Vineyard Offshore

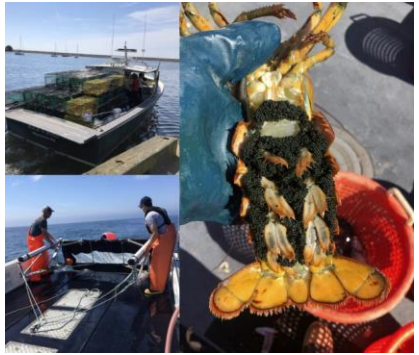
VINEYARD WIND

# ROSA Advisory Council Meeting

## Vineyard Wind 1 Lessons Learned

**Crista Bank, Fisheries Manager**
**Vineyard Wind / Vineyard Offshore**
March 29, 2024

# Fisheries Monitoring



**<u>SMAST – Before-After-Control-Impact (BACI)</u>**
**<u>3 Years pre-, 1 year during, 3 years post</u>**

**Ventless Trap Survey / Plankton Tows – ASMFC protocols**
**May – October ( Sample 2x month)**

- Lobster with tagging component
- Jonah Crab
- Black Sea Bass -
- Lobster larvae ID and counts, ichthyoplankton

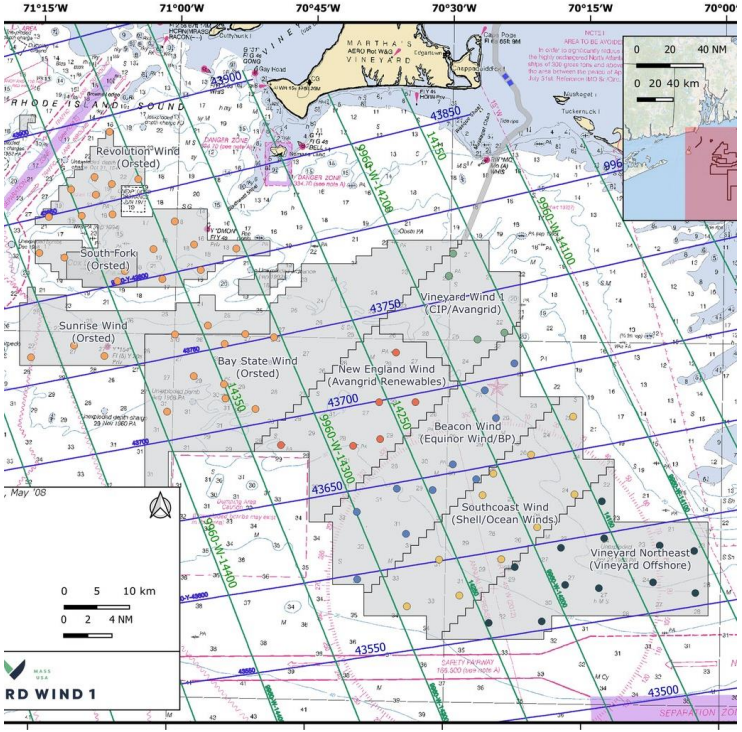
**Drop Camera – 2x year, spring/fall**

- Comparison, distribution, and abundance of benthic megafauna
- Identify and compare substrate types

**Trawl Survey – 4x year - NEAMAP protocols**

- Species abundance and distribution
- Aggregate catch weight for each species
- Individual lengths, weights
- CTD cast & bottom water temperature

# Fisheries Monitoring




## New England Aquarium – Highly Migratory Species Presence / Absence

**Historical data mining for presence of HMS in MA/RI Wind Energy Area**

**Survey pelagic recreational community for fishing activity in MA/RI Wind Energy Area**

**Regional Design for Acoustic Receivers and Tagging**
**5 year plan 2021- 2025**

- 4 receivers Vineyard Wind 1
- 12 receivers Vineyard Northeast

## Additional Science Initiatives

- Whelk Research Fleet – Commercial Fisheries Research Foundation, RI
- False Albacore Acoustic Tagging – American Saltwater Guides Association

# Fisheries Monitoring

## PRECONSTRUCTION

**Reports publicly available on website**
Fisheries Science — Vineyard Wind

**Peer review process after first year of surveys included 3 fisheries scientists from outside institutions, and 8 fishermen**

**Ventless Trap Survey / Plankton Tows**
- Completed 2 years
- Endangered Species Act Consultation Review Delay

**Drop Camera**
- Completed 3 years

**Trawl Survey**
- Completed 11 seasons
- Endangered Species Act Consultation Review Delay

**Highly Migratory Species**
- Receivers deployed in 2022 (spring – fall)

# Fisheries Monitoring

## DURING CONSTRUCTION

**Coordinate lobster trap and acoustic receiver locations with construction team package mangers well in advance**

**Coordinate fisheries survey vessel activity with Marine Command Center**

**Register all crew and scientists with safety training certifications and USCG physicals into our computer system**

### Ventless Trap Survey / Plankton Tows

- Completed one year (May – October)

### Drop Camera

- Completed one year ( May, October)

### Trawl Survey

- Completed one year (Spring 2023 – Winter 2024)

### Highly Migratory Species

- Receivers deployed in 2023 (spring – fall)

# WHAT WE LEARNED

## DURING CONSTRUCTION

**Fisheries surveys can continue during construction**

**Fishing vessels can operate safety around towers and construction vessel activity**

**They did catch fish and lobsters**

**Results still being analyzed and will include timing of different construction activities during sampling events**

- **Scour protection deployment**
- **Pile driving**
- **Inter-array cable installation**

**Could have spread the survey effort out over 2 years**

**3 years post construction will start in 2025**

# WHAT WE LEARNED


## DURING CONSTRUCTION

**Fishing vessels can support construction activities**

**44 different fishing vessels have supported the project to date**

| Scope of Work | # of Vessels |
|---|---|
| Science | 15 |
| Safety Vessel | 26 |
| Scout Vessel | 3 |
| PSO Vessels* | 6 |
| Sub Contractors | 10 |

*Protected Species Observer

# HOW WE DID IT


**Organized and paid for Safety Training classes**

**Organized and paid for Captain Training Classes**

**Helped individual fishermen with USCG application process**

NORTHEAST MARITIME INSTITUTE

FATHOM RESOURCES
MARINE PROFESSIONALS FOR SCIENCE AND INDUSTRY

| Individuals | Trainings and Certifications |
|---|---|
| 116 | Safety Training Course |
| 64 | OUPV Captains Course |
| 37 | Master 100 Ton Upgrade |
| 16 | Merchant Mariner Credential Applications |

# HOW WE DID IT

| Quantity | Description |
|---|---|
| **19 of 23** Vessels inspected have/will work on the VW1 project | Each vessel working for the Vineyard Wind 1 project is required to undergo a vessel inspection to meet compliance requirements. |
| **18 of the 21** vessels that have received equipment upgrades have/will work on the VW1 project | Each of the local fishing vessels working on the project have received equipment upgrades to ensure they will meet compliance standards. |
| **44** individuals have received personal reimbursement through the FV Accelerator fund for these different entities | Personal reimbursements include TWIC cards, First Aid/CPR courses, USCG drug screenings, USCG health and wellness physicals and the USCG application fee to apply for a Merchant Mariner Credential. |

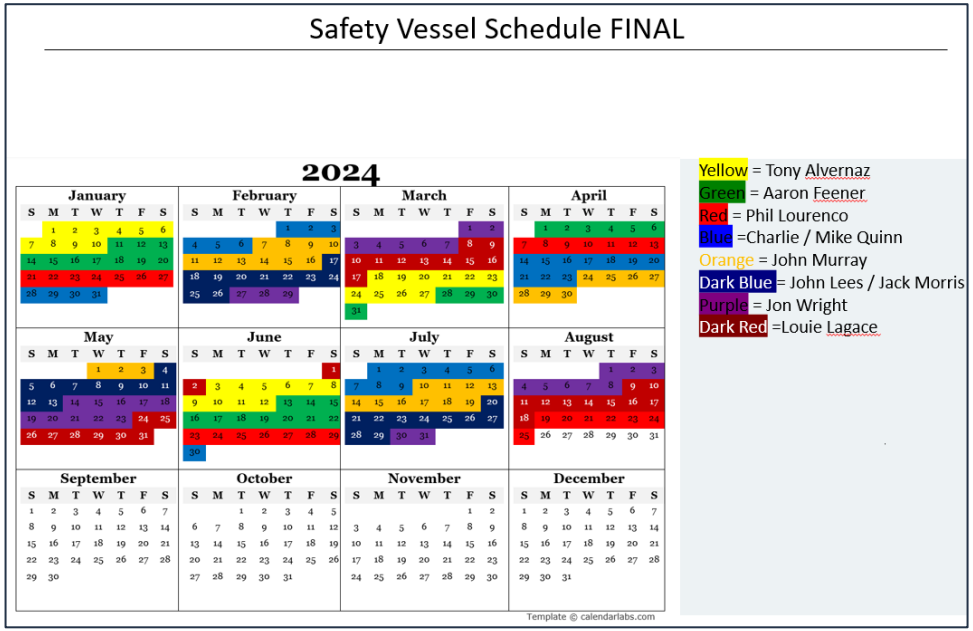
**Pre-Inspected Fishing Vessels before contracts**

**Paid for fishing vessel safety equipment upgrades**

**Paid for fishing vessel communication upgrades**

**Covered the cost of application process, etc.**

# HOW WE DID IT




**Vineyard Wind contracted directly with fishing vessel owners**

**Did not have fishing vessel owners bid against each other**

**Agreed to same day rate, fuel**

**Contract amounts are equal**

**Rotational schedule**

**Safety vessels has been on site 24/7 in the lease area since March 2023**

# WHAT STILL NEEDS TO BE DONE


**Alignment on fisheries survey methods and protocols**

- Protected Species Issues = permitting, ESA consultation
- (based on trawl survey results, current effort would provide sufficient power (0.80) to detect a moderate change (50%) for most important trawl species)

**Data sharing agreements**

- Public access
- Between developers for analysis

**Data sharing platform**

- Standardization of collection methods
- Data management

**Alignment on Health, Safety, and Environment Requirements (HSE)**

# Fish FORWRD webtool – V3

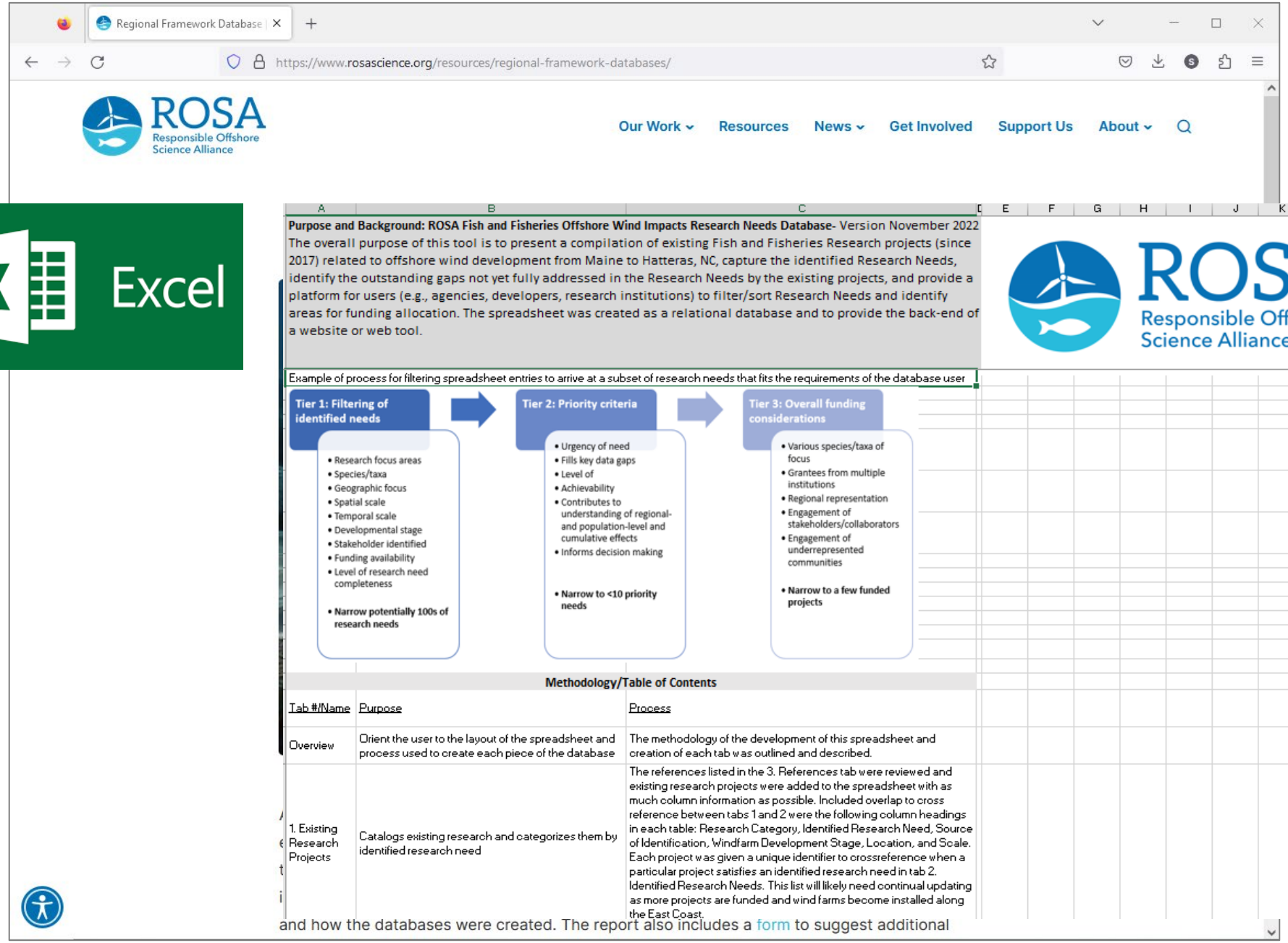
# Fish and Fisheries Offshore Wind Research Database (Fish FORWRD)

- Identifies research gaps on effects of OSW on fish and fisheries by bringing together regional research priorities and regional research projects
- Supports development of research priorities for ROSA's upcoming role as research funding organization
- Useful for finding research gaps for ROSA and other regional research funders

attentive energy

WSP

ROSA




QR CODE for Fish FORWRD spreadsheet

# ROSA Fish and Fisheries Offshore Wind Impacts Research Need

ROSA Responsible Offshore Science Alliance

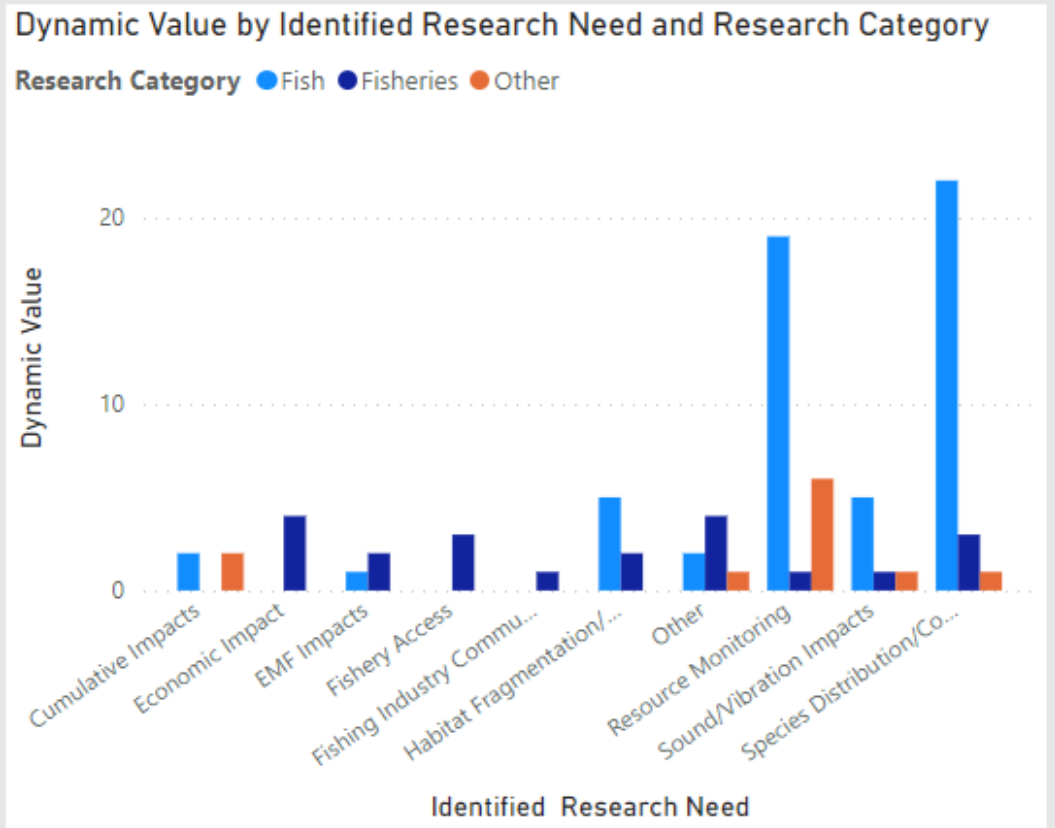
| 87 | 236 | 104 |
|---|---|---|
| Existing Project | Research Needs | Research Needs Addressed by Existing Project |

Number and Subject of Research Needs by Level of Completeness

Research Needs by Subject and Level of Completeness

Existing Research Projects by Subject and Location

| Identified Research Need | Adequately Addressed | Not Addressed | Partially Addressed | Total |
|---|---|---|---|---|
| **Changes in Light Level** | | **Not Addressed** | | **Not Ad** |
| **Community Engagement** | | **Not Addressed** | | **Not Ad** |
| **Cumulative Impacts** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Economic Impact** | | | **Partially Addressed** | **Partiall** |
| **EMF Impacts** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Fishery Access** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Fishing Industry Communication** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Habitat Fragmentation/Modification** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Heat Impacts** | | **Not Addressed** | | **Not Ad** |
| **Infrastructure Impacts** | | **Not Addressed** | | **Not Ad** |
| Economic Impact | | Not Addressed | | **Not Ad** |
| Null | | Not Addressed | | **Not Ad** |
| **Other** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Resource Monitoring** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Sound/Vibration Impacts** | **Adequately Addressed** | **Not Addressed** | **Partially Addressed** | **Adequa** |
| **Species Distribution/Composition** | | **Not Addressed** | **Partially Addressed** | **Not Ad** |
| **Total** | **Adequately Addressed** | **Not Addressed** | **Partially Addressed** | **Adequa** |




Pivot | Dynamic Pivot | Existing Projects | Research Needs | Supplemental Information

Welcome to the **Fish Forward Database**
Developed in Partnership by **ROSA** and **WSP**

**What you can do with this Dashboard**
With this dashboard, you can easily investigate current projects and identified research needs in the Rosa database, considering various factors such as location, needs type, and more..

**How to use this Dashboard**
This dashboard is comprised of a number of tabs each with their own purpose and functionality.
Each tab contain a number of features that either help you explore page content or visuals which provide information based on user input.
All tables and plots are interactive and can be manipulated via the mouse.

**Tab Quick Links**

Current Projects

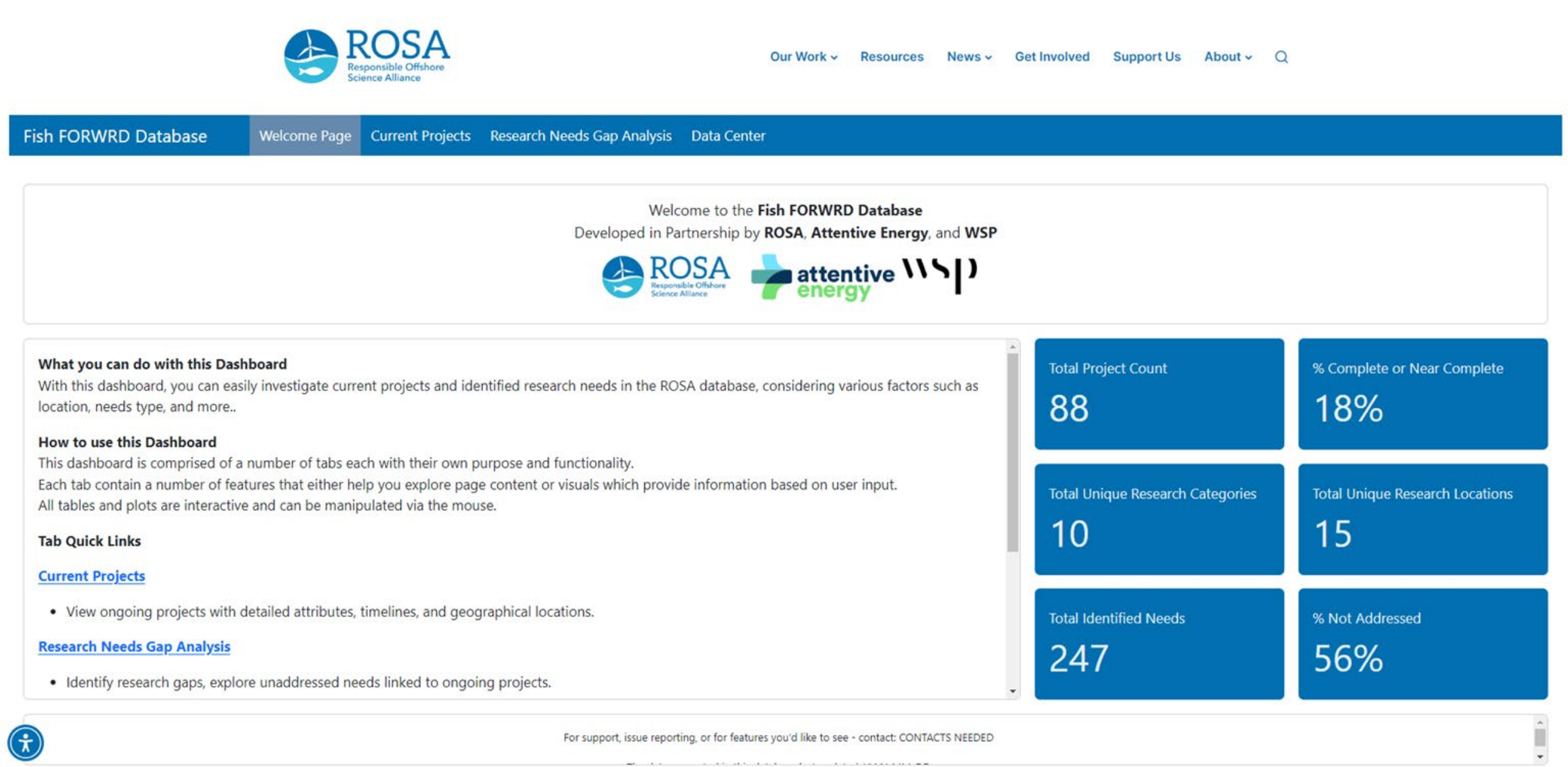
- View ongoing projects with detailed attributes, timelines, and geographical locations.

Research Needs Gap Analysis

- Identify research gaps, explore unaddressed needs linked to ongoing projects.

| | |
|---|---|
| Total Project Count<br>88 | % Complete<br>18% |
| Total Unique Research Categories<br>10 | Total Unique Research Locations<br>15 |
| Total Identified Needs<br>247 | % Not Addressed<br>56% |

For support, issue reporting, or for features you'd like to see - contact: CONTACTS NEEDED




[LINK to working mockup]

# Moving Fish FORWRD Forward

- Committed to making Fish FORWRD an integral part of our research funding to identify research gaps
- Encourage broader use of it by regional funders to avoid overlap and promote efficiency
- Update semi-annually, or perhaps more frequently
- Continuing to refine and to improve the webtool

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ROSA

# ACTION ITEMS & NEXT STEPS

- ***Get to Know ROSA*** webinar
  **(April 8 @ 3pm ET)**

- Abstract submittals open: *Offshore Wind, Fish, and Fisheries – Emerging Knowledge and Applications* Symposium, AFS Annual Meeting **(Deadline April 26th)**

- NYSERDA State of the Science: *Offshore Wind Fisheries Monitoring Plan Development, Implementation, & Evolution Discussion* Session **(Registration Deadline June 13th)**

ROSA