



Learning from the Experts Webinar Series

Protected Species Observers for Offshore Wind



Sarah Fortuna

Project Manager, Environmental
Monitoring Division
A.I.S., Inc.

July 15, 2026

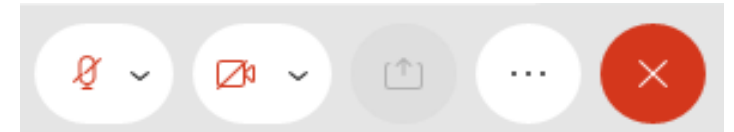
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Participation for Members of the Public:

- > Members of the public will be muted upon entry.
- > Questions and comments may be submitted through the Slido Q&A feature at any time during the webinar.
- > If technical problems arise, please contact Sal.Graven@nyserda.ny.gov



You'll see  when your microphone is muted

Learning from the Experts

This webinar series is hosted by NYSERDA's offshore wind team and features experts in offshore wind technologies, development practices, and related research.

DISCLAIMER:

The views and opinions expressed in this presentation are those of the presenter and do not represent the views or opinions of NYSERDA or New York State.



NYSERDA



Learning from the Experts: Protected Species Observers



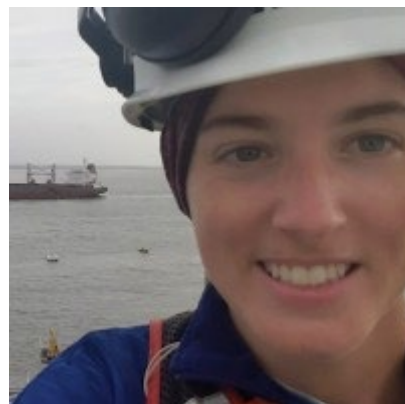
Accuracy, Integrity, Service

Sarah Fortuna, PMP
A.I.S., Inc. Project Manager

Who Am I?



UNIVERSITY of
NORTH CAROLINA
WILMINGTON



Who Are We?

- A mission driven company with 3 core tenants:
Accuracy, Integrity and *Service*

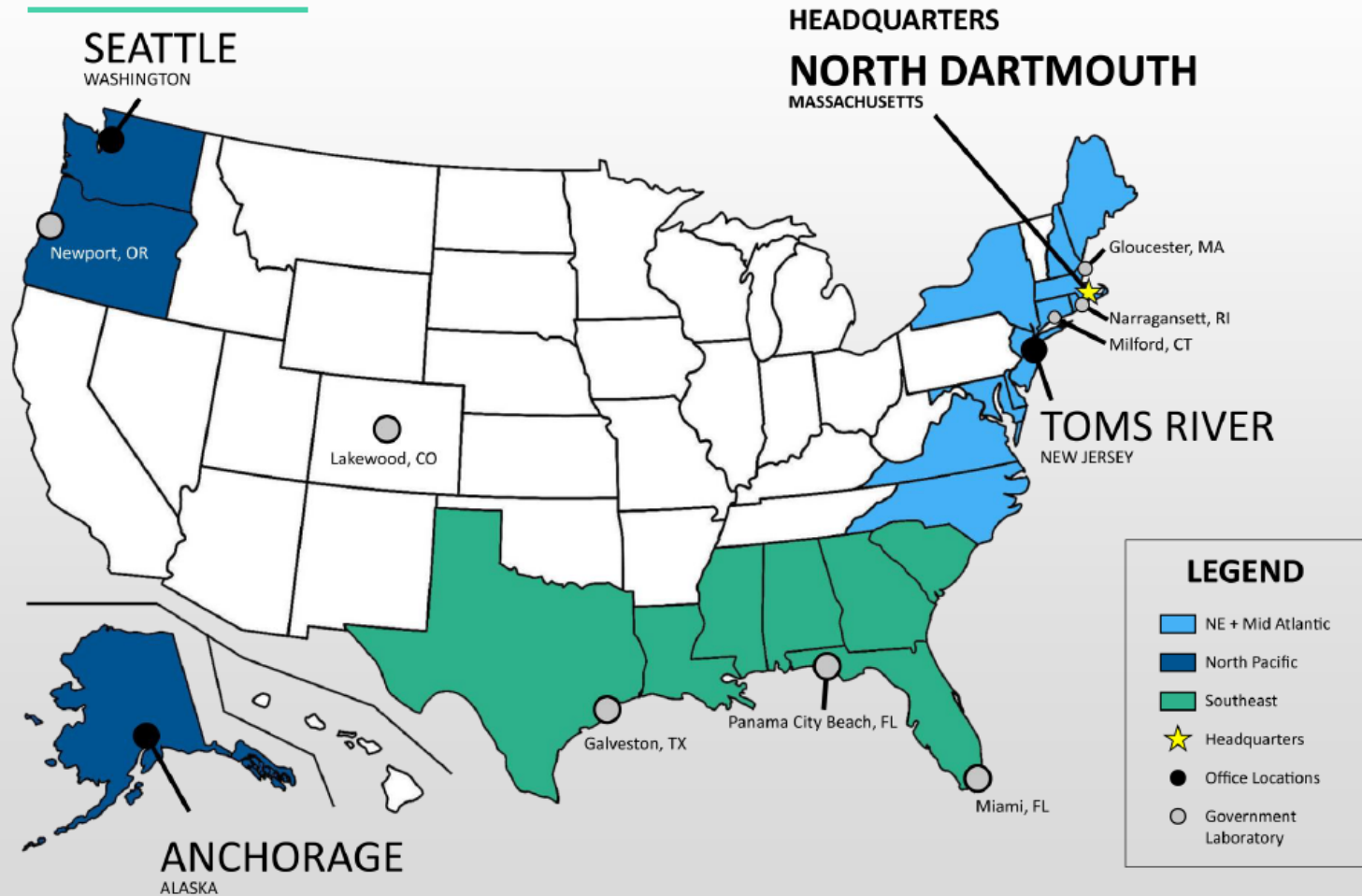
Environmental Monitoring Division

- Long term experience monitoring protected species to ensure regulatory compliance during nearshore and offshore marine projects

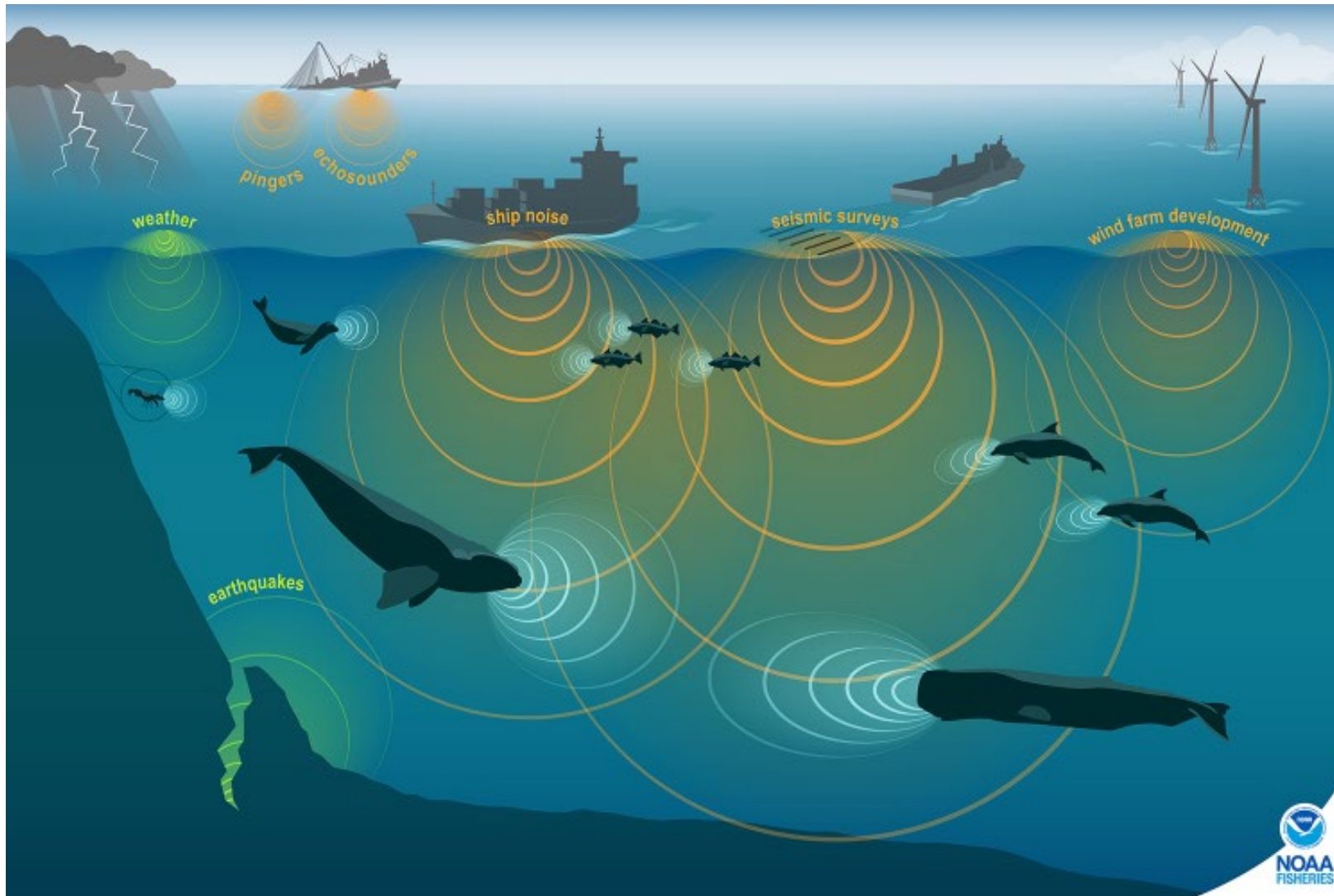


Where Are We?

Locations

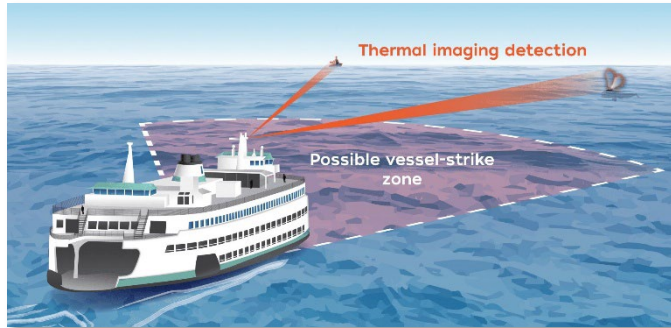


Marine Mammals & Sound



- Communication
- Navigation
- Detection of predator & prey
- Mating
- Maintaining group cohesion
- Environmental information on their surroundings

Sound Pollution Impacts Marine Life



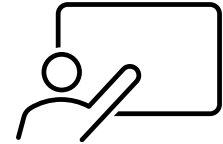
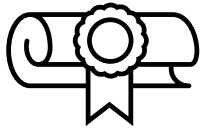
1. **PHYSICAL** → hearing damage/loss, strandings, gas bubbles, increase stress
2. **PERCEPTUAL** → masking, ambient sound increases
3. **BEHAVIOUR** → vocalizations (mating calls), altered dive patterns, avoidance, breathing patterns
4. **INDIRECT** → impacts on prey (availability, hunting)

What is a Protected Species Observer?

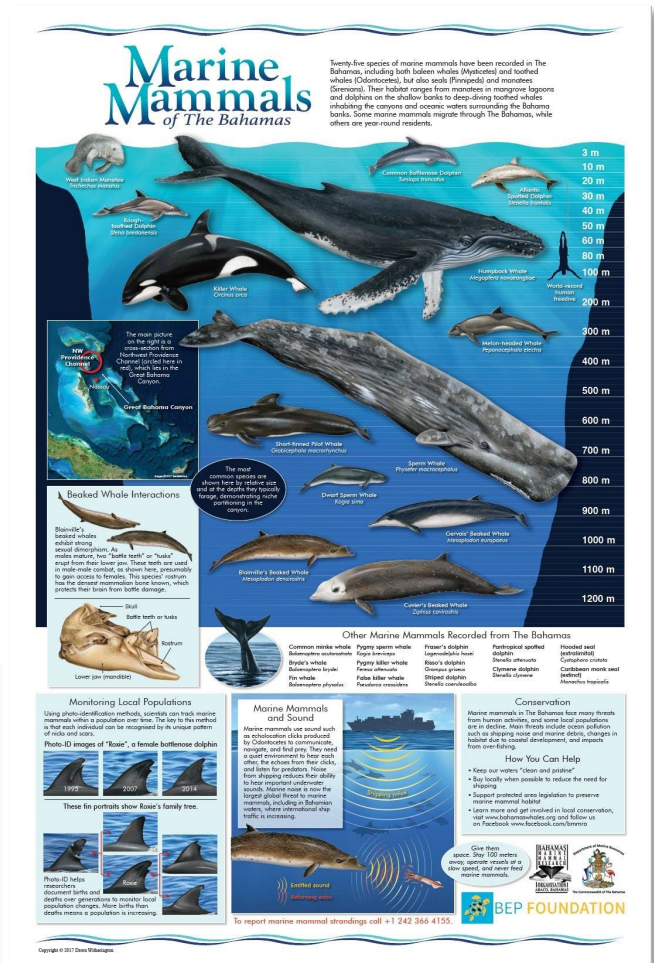


PSO Qualifications

- Bachelor's degree with a major in one of the natural sciences
 - Alternative experience accepted on case-by-case basis
- PSO Training Certificate
- Safety Training Certificate
- Fit for Sea-Duty Medical Clearance



-
- A person with long brown hair, wearing a grey beanie with white stripes and a red life vest over a dark green jacket, is standing on the white railing of a boat. They are holding black binoculars to their eyes, looking out over a vast blue ocean under a clear blue sky. A portion of a red and white buoy is visible in the bottom right corner.



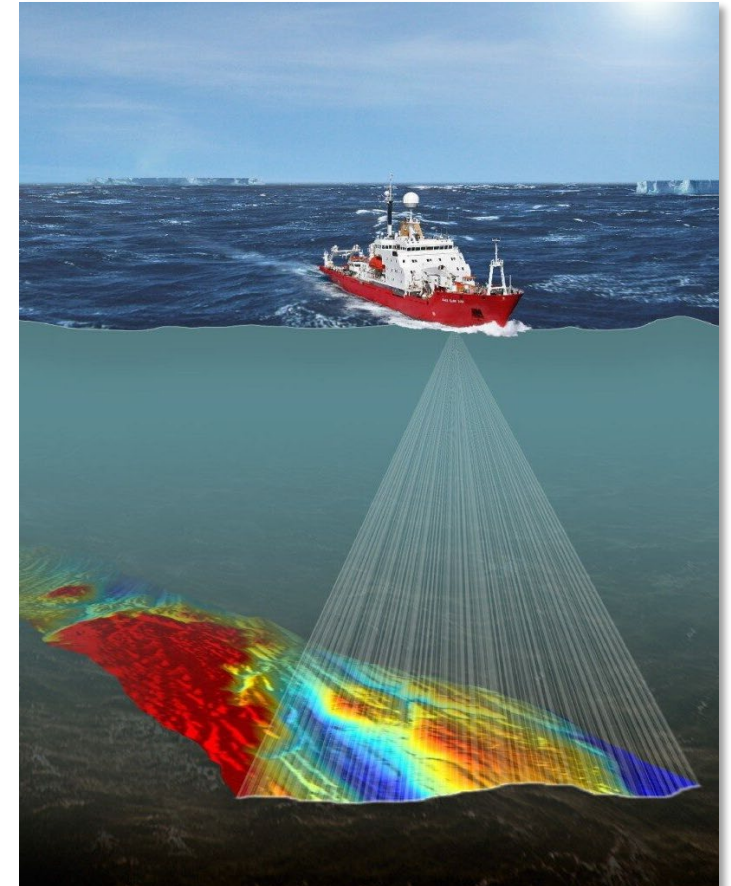
Why are PSO's Required?

- PSO's are required when permitted activities could have a potential impact on protected species.
- Projects generally have PSO monitoring and mitigation requirements set forth by:
 - the Bureau of Ocean Energy Management (**BOEM**)
 - the National Marine Fisheries Service (**NMFS**)
 - the United States Army Corps of Engineers (**USACE**)
 - the United States Fish and Wildlife Service (**USFWS**)



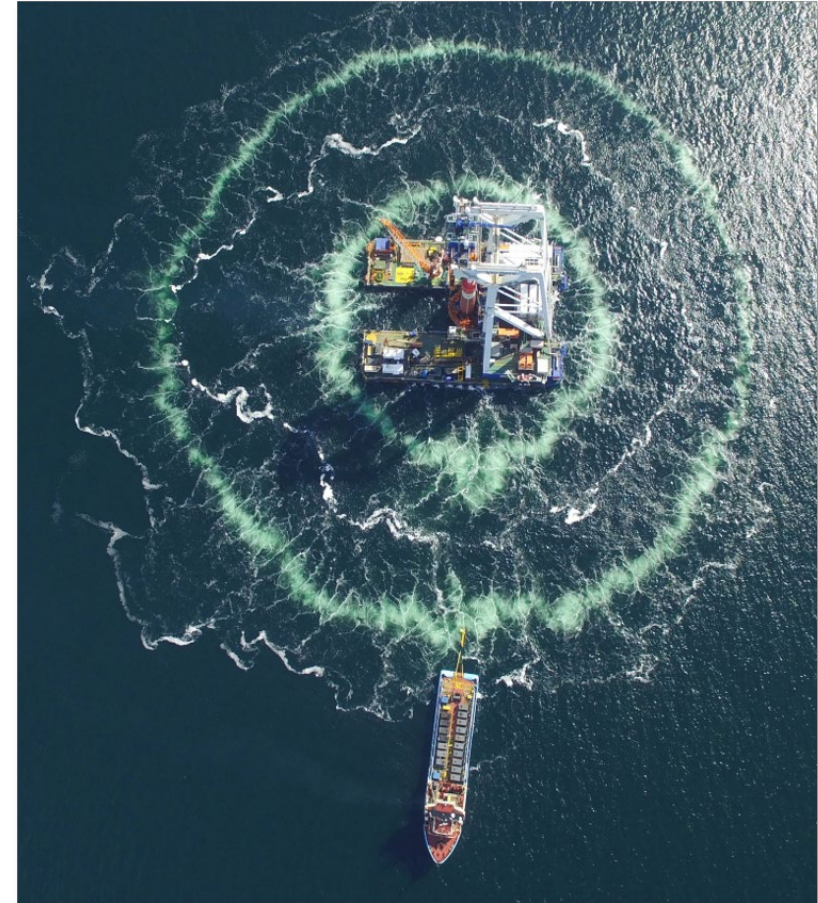
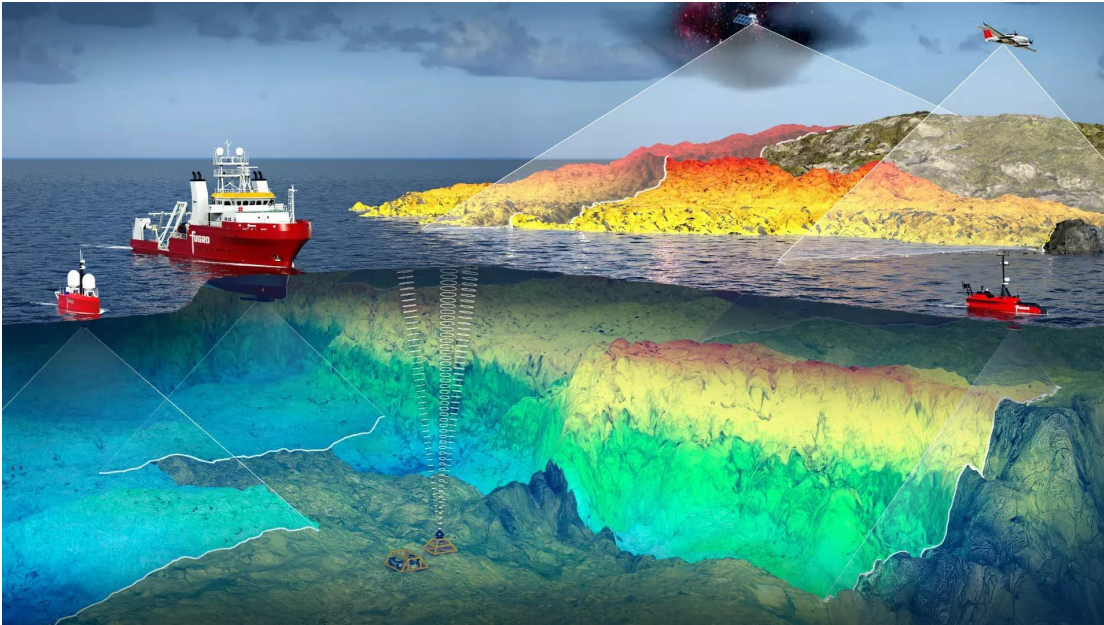
When are PSO's Needed?

- **Geophysical Surveys**
- Seismic Surveys
- **Pile Driving**
- Dredging
- Cable Lay & Burial
- Blasting
- Rig Deconstruction
- Jetty Restoration
- High Speed Racing



OSW and PSOs

- Geophysical Surveys
- Pile Driving



Federal Implementation of the MMPA

- System of exemptions via Incidental Take Authorization (ITAs, ex. LOAs or IHAs) issued by NMFS
- Defines **TAKE** as “to harass, hunt, capture, collect or kill, or to attempt to harass, hunt, capture, collect or kill any marine mammal.”
- Defines **HARASSMENT** as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal (Level A) or disturb a marine mammal by causing disruption of behavioral patterns (Level B)”

Noise → Incidental Takes

Noise can result in two levels of incidental takes by harassment:

Level A Harassment

- Potential to injure a marine mammal or protected species or stock in the wild (exposure to 180 dB)

Level B Harassment

- Potential to disturb a marine mammal or protected species or stock in the wild by causing a disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure them (exposure to 160 dB)

Empire Wind Letter of Authorization

Table 1 – Maximum Annual and 5-year Total Take Authorized For the Empire Wind Project Incidental to All Specified Activities

Common Name	Scientific Name	Stock	Maximum Annual Take		5-year Total Take	
			Level A Harassment	Level B Harassment	Level A Harassment	Level B Harassment
Order Artiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Balaenidae						
North Atlantic right whale*	<i>Eubalaena glacialis</i>	Western Atlantic	0	13	0	29
Family Balaenopteridae (rorquals)						
Fin whale*	<i>Balaenoptera physalus</i>	Western North Atlantic	4	136	6	201
Humpback whale	<i>Megaptera novaeangliae</i>	Gulf of Maine	0	63	0	97
Minke whale	<i>Balaenoptera acutorostrata</i>	Canadian Eastern Coastal	4	83	6	167
Sei whale*	<i>Balaenoptera borealis</i>	Nova Scotia	0	4	0	9
Family Physeteridae						
Sperm whale*	<i>Physeter macrocephalus</i>	North Atlantic	0	3	0	6
Family Delphinidae						
Atlantic spotted dolphin	<i>Stenella frontalis</i>	Western North Atlantic	0	90	0	315

Protected Species Watch

- Scanning the sea surface
- Recording:
 - environmental data
 - operational data



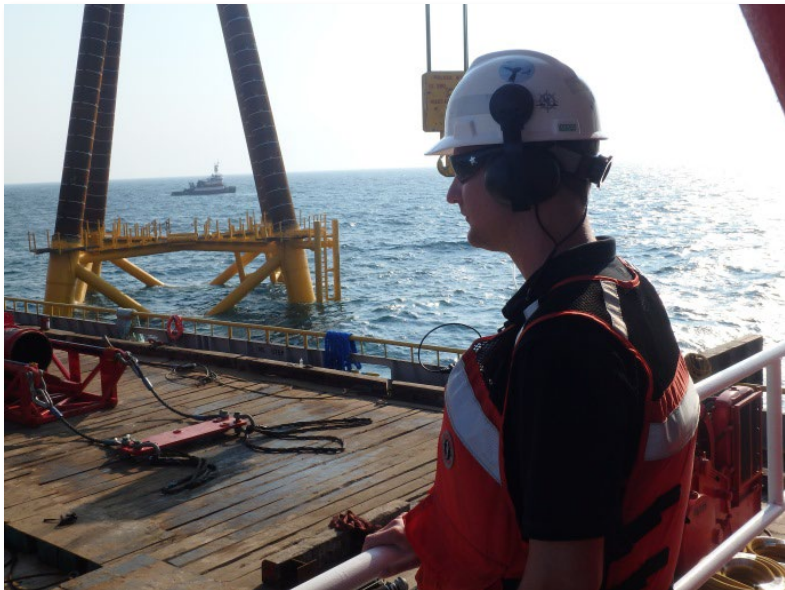
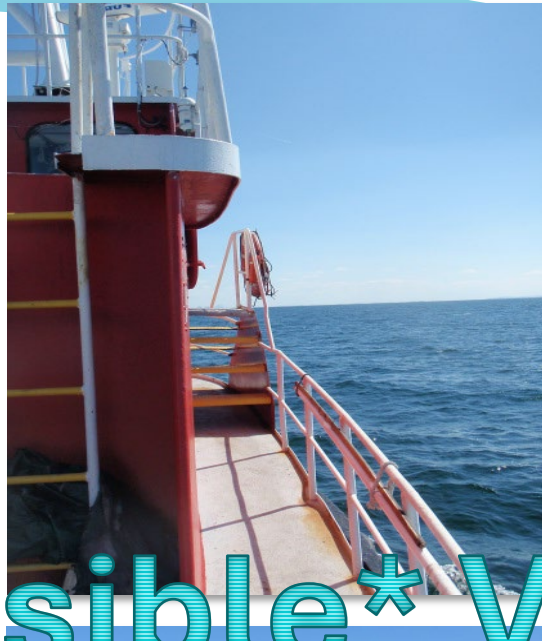
NE OSW PSO Schedule:

- 4 hrs. max, w/ 2-hr break
- 12 hr. max/day

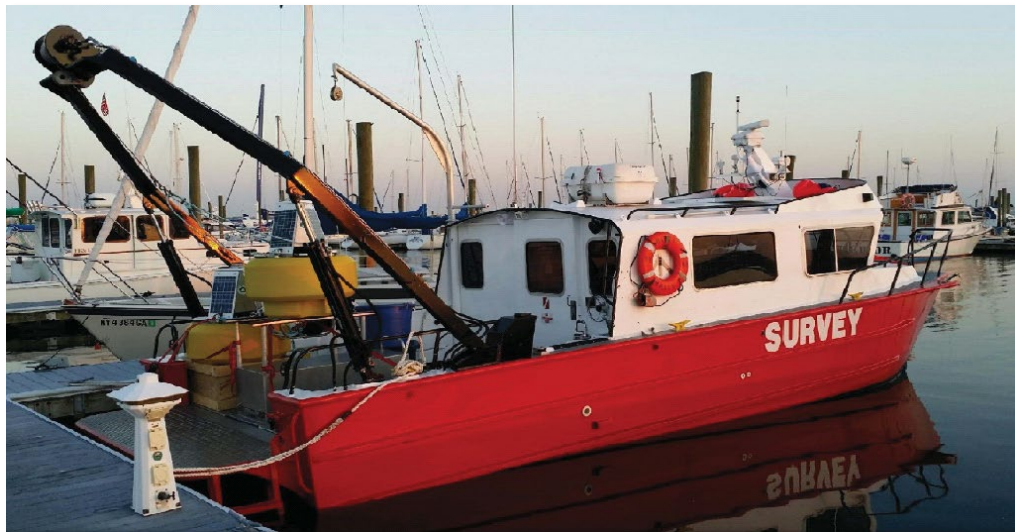
SRW Pile Driving Plan (OCS-DC Jacket Foundation)

Day/Night Period	Start Time	End Time	Lead PSO	Lead PSO	PSO	PSO	PSO	PSO	PAM (ashore)	PAM (ashore)
Day (based on example civil sunrise of 04:34 local time)	04:00	05:00	Visual		Visual	Visual			PAM	
	05:00	06:00	Visual		Visual	Visual			PAM	
	06:00	07:00	Visual		Visual	Visual			PAM	
	07:00	08:00	Visual		Visual	Visual			PAM	
	08:00	09:00		Visual			Visual	Visual		PAM
	09:00	10:00		Visual			Visual	Visual		PAM
	10:00	11:00		Visual			Visual	Visual		PAM
	11:00	12:00		Visual			Visual	Visual		PAM
	12:00	13:00	Visual		Visual	Visual			PAM	
	13:00	14:00	Visual		Visual	Visual			PAM	
	14:00	15:00	Visual		Visual	Visual			PAM	
	15:00	16:00	Visual		Visual	Visual			PAM	
	16:00	17:00		Visual			Visual	Visual		PAM
	17:00	18:00		Visual			Visual	Visual		PAM
	18:00	19:00	Visual		Visual	Visual			PAM	
	19:00	20:00	Visual		Visual	Visual			PAM	
Night (based on example civil sunset of 20:54 local time)	20:00	21:00		Visual			Visual	Visual		PAM
	21:00	22:00		Visual			Visual	Visual		PAM
	22:00	23:00		Visual			Visual	Visual		PAM
	23:00	00:00		Visual			Visual	Visual		PAM
	00:00	01:00								
	01:00	02:00								
	02:00	03:00								
	03:00	04:00								

Highest Possible* Vantage Point



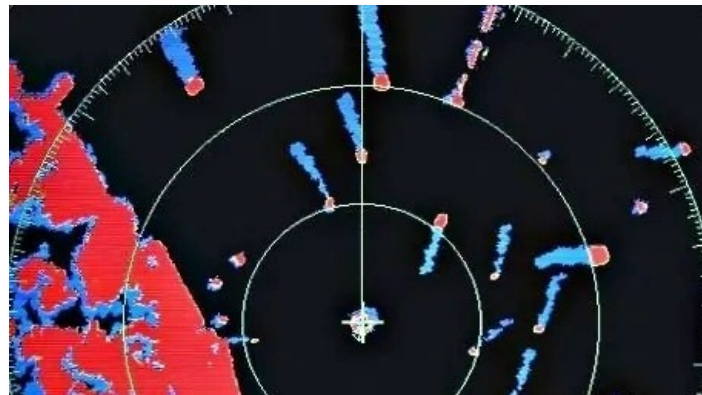
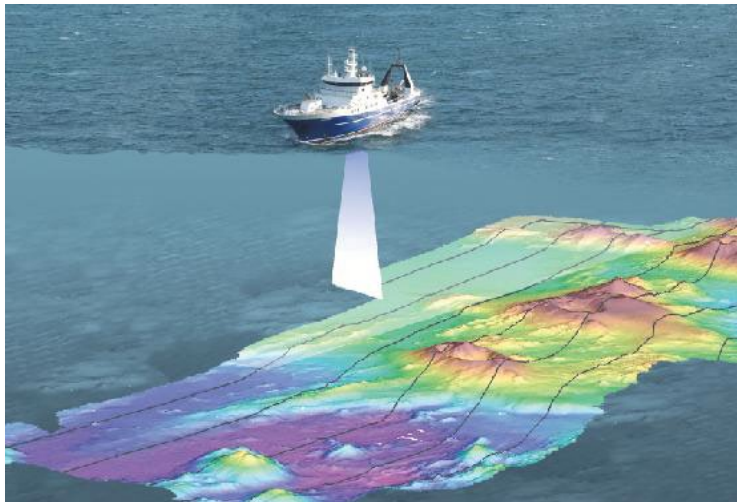
PSO Monitoring Vessels



PSO Monitoring Vessels



Minimum Data Collection



Protected Species Detection Information



Monitoring and Mitigation Zone Planning

Clearance Zone, Minimum Visibility Zone, Shutdown Zone

- Defined by NOAA/BOEM in regulatory paperwork (IHA, LOA, etc.)
- Vary per species & per sound source
- Can differ based on type of monitoring (visual/acoustic)

Clearance Zone

- Area that must be cleared of protected species before sound production can be initiated

Minimum Visibility Zone

- Area that must be consistently be visible throughout all operations to ensure PSO monitoring is effective

Shutdown Zone

- Area that must remain cleared of protected species throughout sound production

SRW Letter of Authorization

Table 2 - Minimum Visibility, Clearance, and Shutdown Zones During Impact Pile Driving for Monopiles and Pin Piles

Zone	Species	Monopile (sequential, 2 or 3 piles per day, km) ¹		Concurrent (all foundation types, km) ²		OCS-DC only (km) ³	
		Summer	Winter	Summer	Winter	Summer	Winter
Minimum Visibility Zone (km) ⁴	All marine mammals	2.7	3.0	3.5	4.0	3.7	4.1
Visual and Acoustic Clearance Zone (km) ⁵	North Atlantic right whale	Any distance visual detection by foundation installation PSOs, any acoustic detection within PAM monitoring zone (10 km)					
	Other large whales	4.0	4.3	5.3	6.3	5.6	6.5
	Delphinids	0.2	0.2	0.2	0.2	0.2	0.2
	Harbor Porpoise	0.2	0.2	0.7	0.6	0.9	0.6
	Pinnipeds	0.1	0.1	1.7	1.8	1.8	1.8
Visual and Acoustic Shutdown Zone (km) ⁵	North Atlantic right whale	Any distance visual detection by foundation installation PSOs, any acoustic detection within PAM monitoring zone (10 km)					
	Other large whales	4.0	4.3	5.3	6.3	5.6	6.5
	Delphinids	0.2	0.2	0.2	0.2	0.2	0.2
	Harbor Porpoise	0.2	0.2	0.7	0.6	0.9	0.6
	Pinnipeds	0.1	0.1	1.7	1.8	1.8	1.8

Empire Wind Letter of Authorization

Table 9 – Distances To The Level B Harassment Threshold and Mitigation Zones During HRG Surveys

Marine Mammals	High-resolution Geophysical (HRG) Site Characterization and Assessment Surveys		
	Level B Harassment Zone (SPL RMS) (m)	Clearance Zone (m)	Shutdown Zone (m)
	Sub-bottom Profilers		
	CHIRPs		
North Atlantic right whale - visual detection	50.05	500	500
Other ESA-listed marine mammals (fin, sei, sperm whales)		500	100
All other marine mammals species ^a		100	100

Other Mitigations

Pre Watch Clearance

- Required monitoring period before the initiation of sound producing activities
- To start work no animals may be observed within the clearance zone at this time

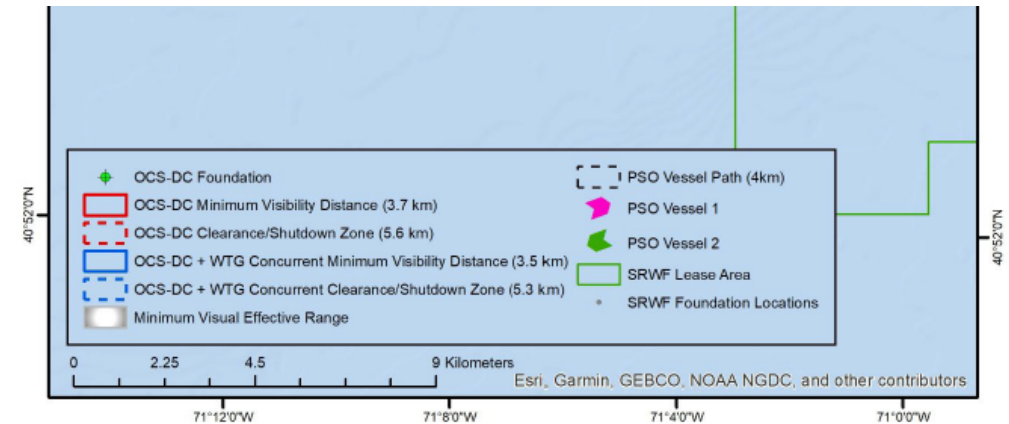
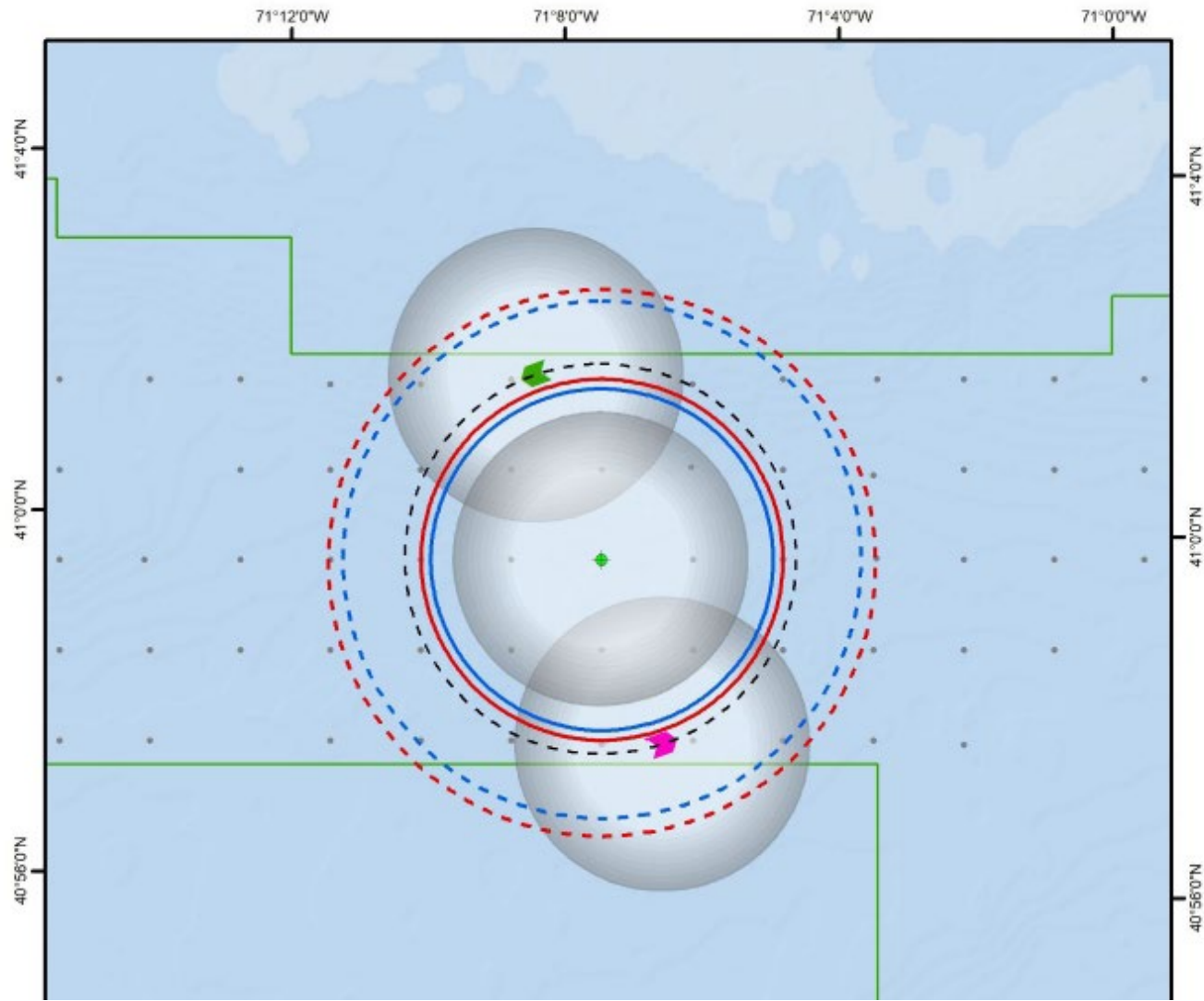
Ramp-Up/Soft-Start

- Gradual increase of sound to alert protected species that sound production is starting
- Can be delayed for a certain amount of time after last sighting

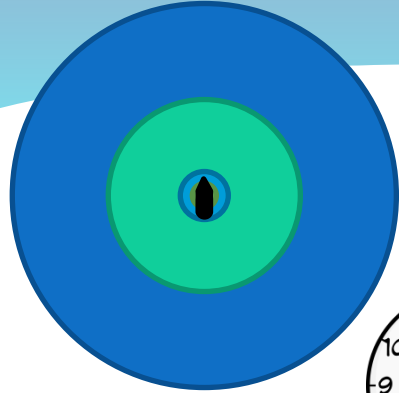
Post Watch Clearance

- Required monitoring period after the conclusion of sound producing activities

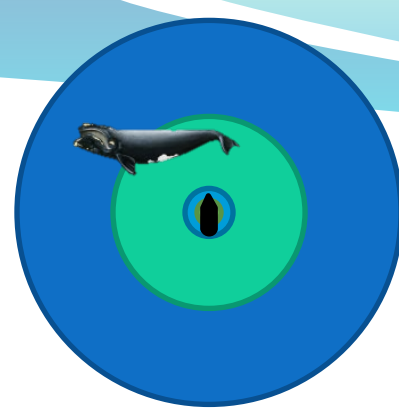
SRW Pile Driving Plan (OCS-DC Jacket Foundation)



start →



Pre-Start
Clearance



SIGHTING!



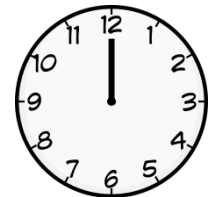
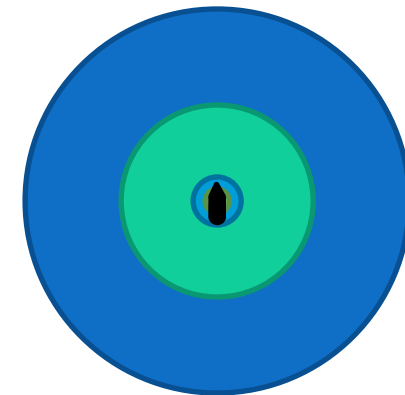
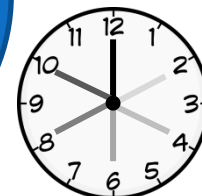
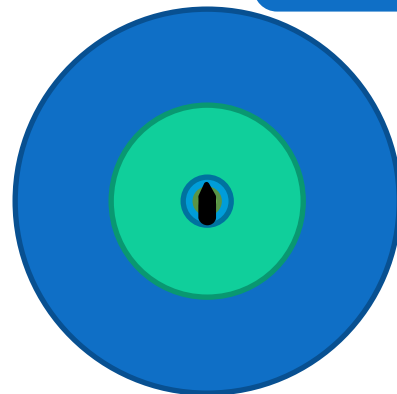
Pre-Start
Clearance
timer restarts



1 hour passes
with no
sightings

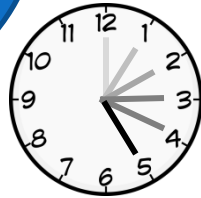


Sound
Producing
work may
begin

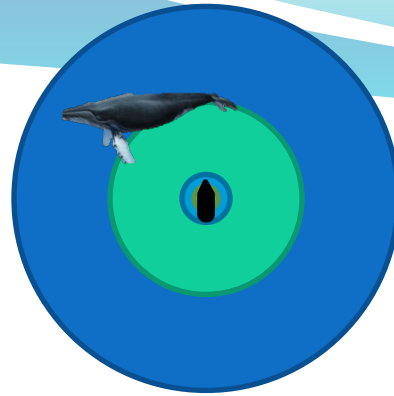


start →

Ongoing
Sound
Producing
Operations



SIGHTING!



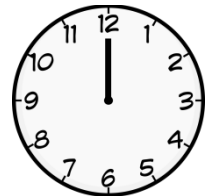
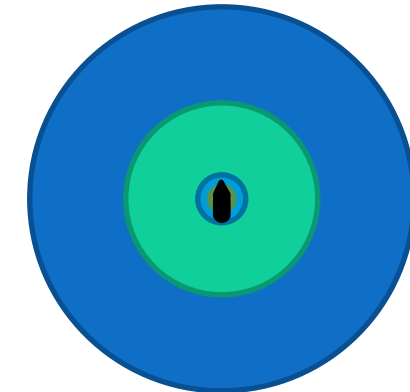
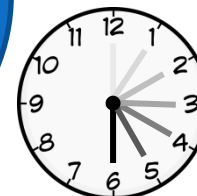
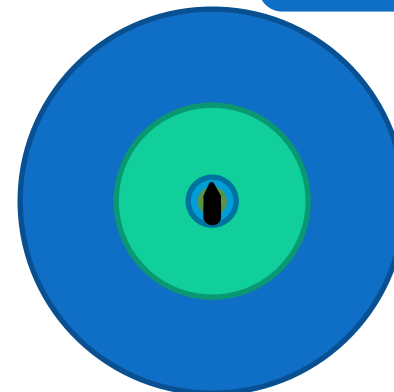
PSO Team
requests a
shutdown!



30 minutes
pass with no
sightings



Sound
Producing
work may
resume

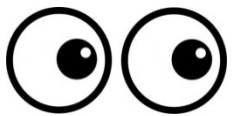
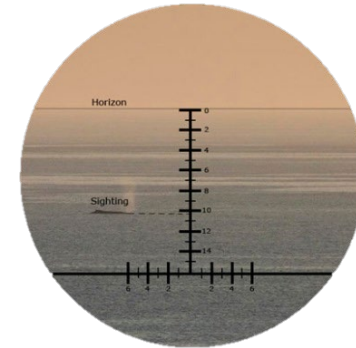


PSO Tools and Technology



- Eyes!
- Binoculars (w/ reticles)
- GPS
- Digital Camera
- Nightvision Monocular
- Thermal Imaging Monocular
- Passive Acoustic Monitoring System

- Digital Watch
- Clipboard/Notepad
- Pencils, sharpener
- Plum-bob
- Field guides



Night Vision Monocular

**Used in darkness to detect/confirm
presence of marine protected species**



Thermal Imaging Monocular

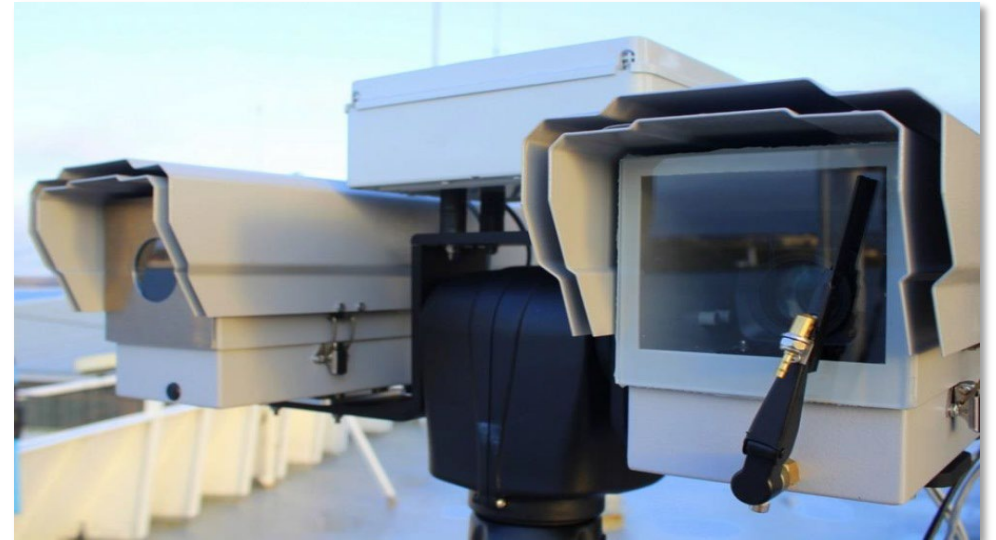
Used in darkness and *some* weather conditions (light fog & rain) to detect/confirm presence of marine protected species



Vessel Mounted Thermal Imaging Cameras

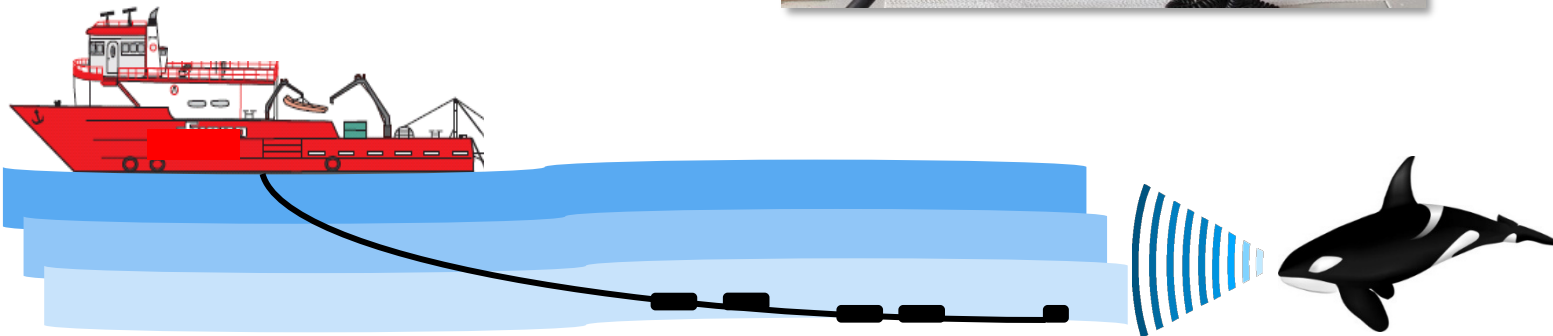
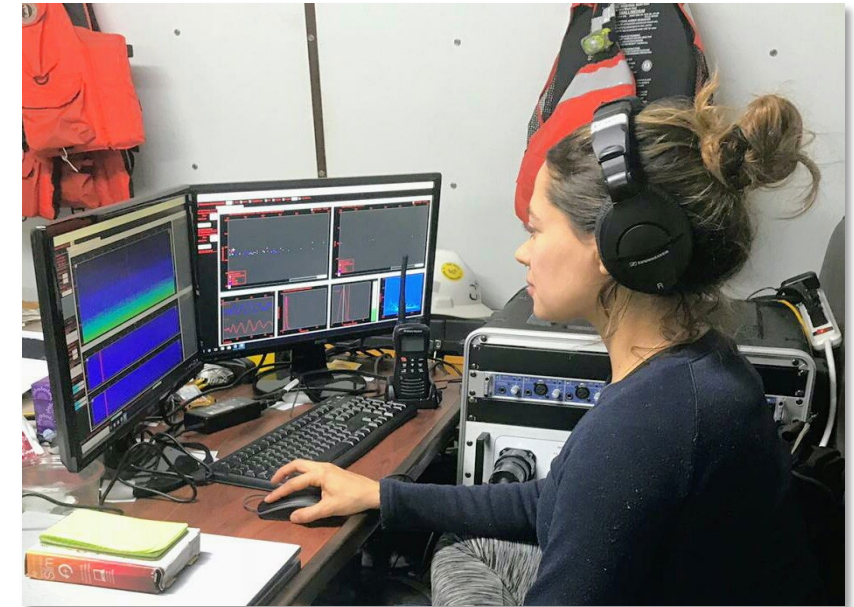
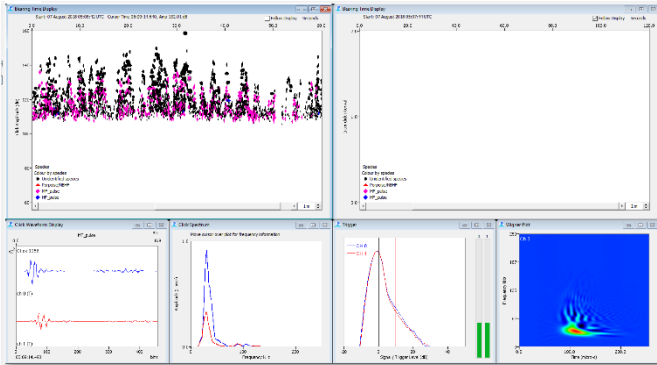


Used in darkness and *some* weather conditions (light fog & rain) to detect/confirm presence of marine protected species



Passive Acoustic Monitoring

A form of sound monitoring that involves one, or several, hydrophones deployed into the water column to collect noise data from the surrounding waters.



Communication on the Water

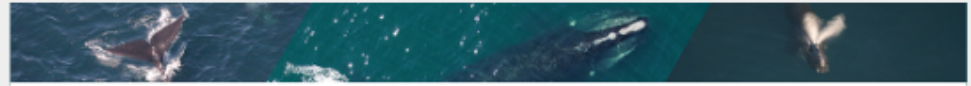
- Vessel captain
- Bridge officers
- Construction or survey supervisors
- Equipment operators
- Other PSO's and PAM operators
- Environmental coordinators or project managers
- Regulatory representatives



Protections for Right Whales: DMA

Dynamic Management Areas (DMA)

- Temporary protective zones
- Groups of **3+ NARW**
- Outside active protective zones
- Triggered via visual observation

NOAA FISHERIES **RIGHT WHALE SPEED ZONE ALERT**

January 20, 2026

Right Whale Slow Zone Extension: South of Nantucket, MA

Effective through February 2

On January 18, 2026, the Northeast Fisheries Science Center's aerial survey team redetected the presence of right whales south of Nantucket, MA. The right whale Slow Zone is in effect through February 2, 2026.

As a reminder, five additional Slow Zones are also currently in effect. Locations and effective dates are listed below.

Voluntary Right Whale "Slow Zone" Areas

Mariners are requested to avoid or transit at 10 knots or less inside the following Dynamic Management Areas and Slow Zones where endangered right whales have been detected. Vessel strikes are one of the primary causes of injury and death for right whales. Slower speeds are known to reduce the severity of impacts to whales when strikes occur and may provide boat and vessel operators an opportunity to avoid a collision. Visit our [website](#) for more information.

Protections for Right Whales: Slow Zone

Slow Zones

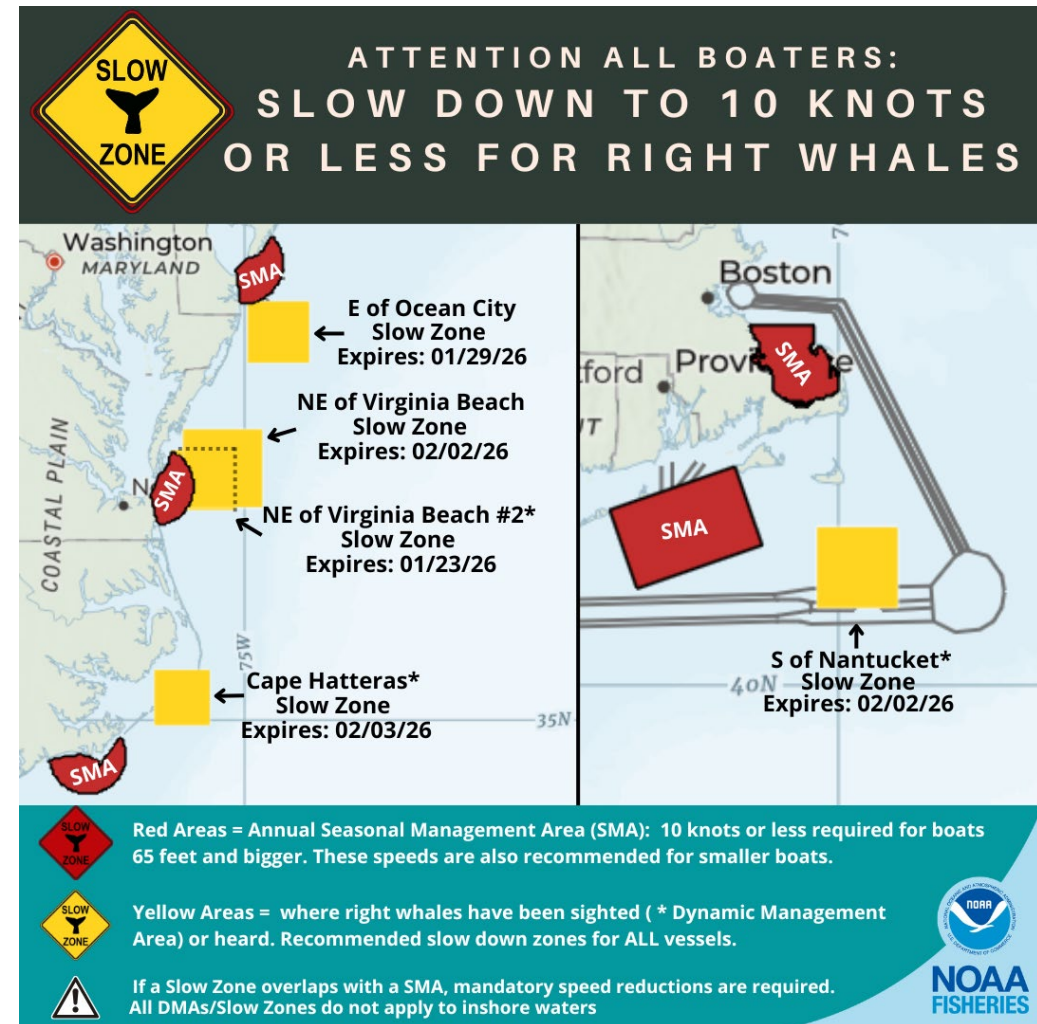
- Temporary protective zones
- Groups of 3+ NARW
- Outside active protective zones
- **Triggered acoustically**

Give Right Whales Room

North Atlantic right whales are on the move along the Atlantic coast of the U.S. If seen, remember that approaching a right whale closer than 500 yards is a violation of federal and state law.

Right Whales in Trouble

North Atlantic right whales are protected under the U.S. Endangered Species Act and the Marine Mammal Protection Act. Scientists estimate there are fewer than 350 individuals remaining, making them one of the rarest marine mammals in the world.



Dead, Injured, Entangled Protected Species

Required to be reported as soon as possible to the following entities:

- **NMFS** Stranding Hotline
- **NMFS** Regional Office local to the project

Can additionally be reported to:

- **USCG** on VHF Channel 16
- The **NOAA** Fisheries NERO Endangered Species Coordinator



PSO Reporting

Daily Vessel Report

- Prepared at end of workday, submitted to client
- High-level summary of operations, monitoring effort, detections, mitigation actions and potential exposures



Weekly Report

- All information from daily reports, submitted to federal agencies in the middle of the following week



Monthly Report

- All information from weekly reports, due to federal agencies the middle of the following month



Final Report

- Completed after operations are finished, covers all project activities and provides full picture of overall operations, monitoring effort, detections, mitigation actions and potential exposures



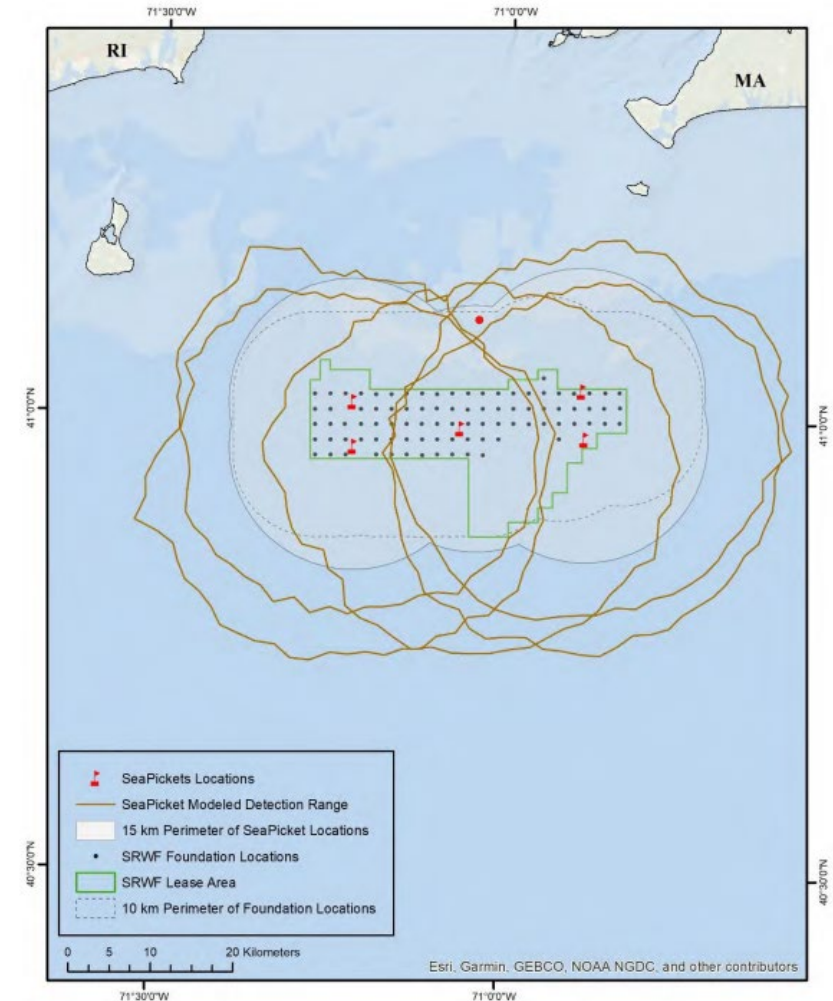
Accountability and Transparency

- Qualification Review and Approval - Agencies (NMFS/BOEM)
- Permit Compliance – Permit Holder
- Quality control – Observer Provider
- Regulatory Oversight – Agencies (NMFS/BOEM)
- Monitoring reports
- Environmental review documents



Advancing Technology

- AI Detections: PSO & PAM
- Cooled IR cameras
- Bottom mounted PAM systems
- **Remote Monitoring: PSO & PAM**





What is the End Goal?

Protect living marine resources and during offshore enterprise exploration.



Questions?





Coming Soon

Deep Dive mini-series: Offshore Construction

September-December 2026

Understanding the Bridge between Existing and New Energy Sources

September 2026

Visit wind.ny.gov to register

Check out over 65 past webinars, including:

- Logistics of Offshore Construction
- Logistics of Offshore Wind Operations and Maintenance
- How Offshore Wind Can Bolster Grid Reliability
- Port Infrastructure Financing for Offshore Wind
- Strategies for Repurposing End-of Life OSW Blades
- Oceanographic Research and Offshore Wind

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