

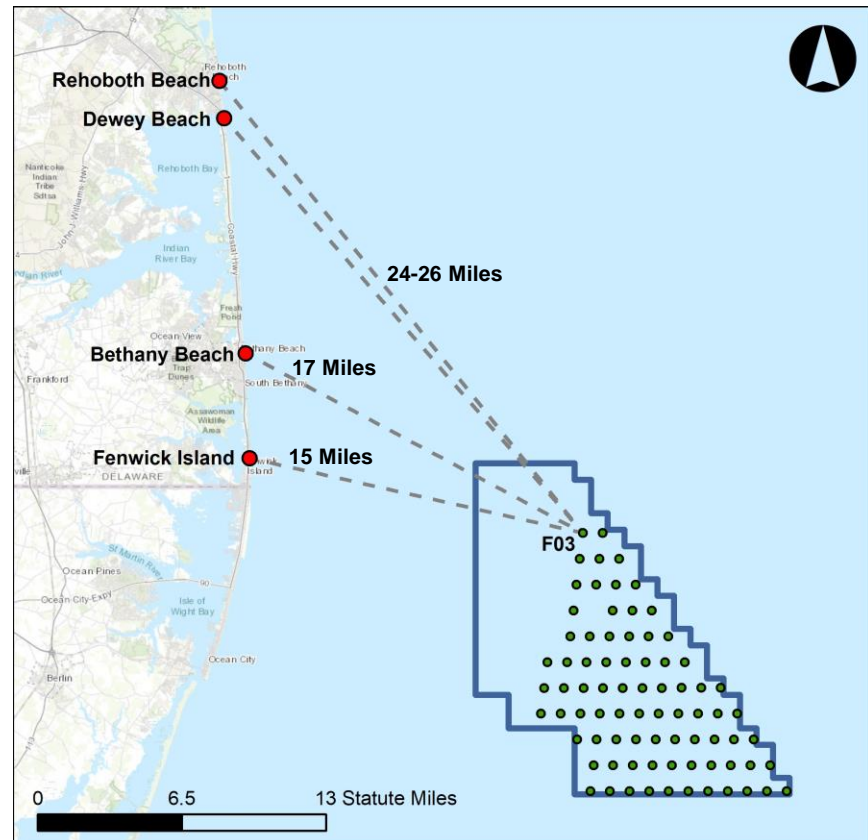


Whales and Offshore Wind
April 12, 2023

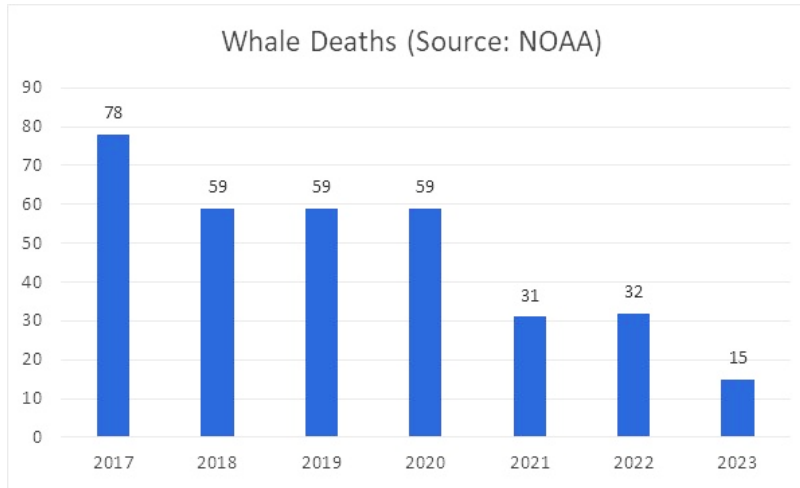
US Wind Projects



- **Combined ~ 1,100 MWs of clean energy will power more than 340,000 area homes**
- Energy delivered with 76 turbines and 3 offshore substations, roughly 1 mile apart
- Closest turbine is 15 miles from Fenwick Island, 17 from Bethany, 24 from Dewey & 26 from Rehoboth
- Lease area has ~700 MW of capacity remaining, and US Wind will compete for future awards
- Surveys are part of understanding the area so we can build / operate safely



Whale Strandings Are Not Related to Offshore Wind



- NOAA
- BOEM
- Marine Mammal Commission
- Greenpeace
- NRDC
- The Surfrider Foundation

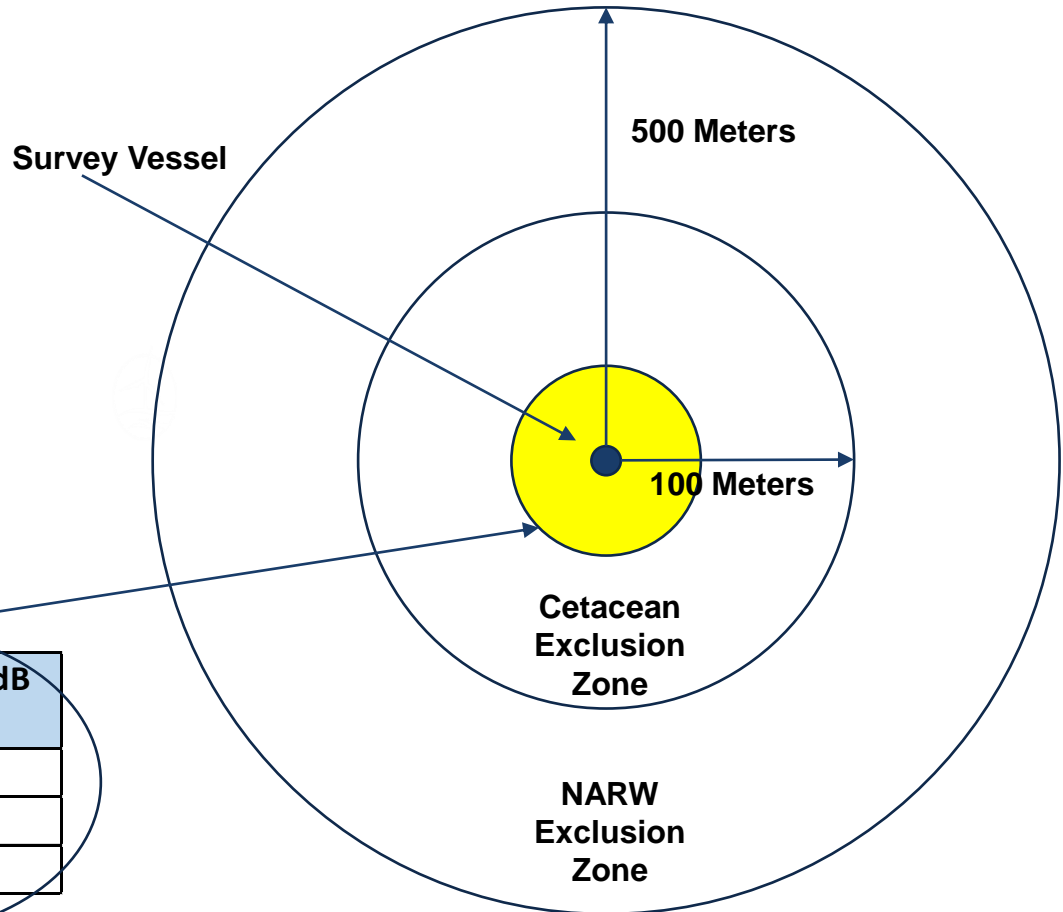
“No connection between whale strandings and offshore wind development activities”

- Typical causes are ship strikes and gear entanglements
- 2023 stranding necropsies that have come back point to ship strikes
- Offshore wind surveys DO NOT use seismic air guns

Survey Sound



- Sounds within LFC hearing range above 160 dB can cause behavioral change
- Most OSW survey equipment uses frequencies outside LFC hearing range
- PSO's ensure whales remain beyond exclusion zones
- Seismic air guns are much louder and dissipate slowly (1,000 m – 10,000 m)



HRG System	Distance to 160 dB Threshold (m)
Shallow Penetration SBP	0.5
Medium Penetration SBP	22.7
	32.2

Additional Survey Precautions Taken



- All surveys included NOAA-certified Protected Species Observers
- If marine mammal sighted within its Exclusion Zone, survey equipment shut down
- To avoid ship strikes, all US Wind survey vessels:
 - Traveled at or below 10 knots at all times
 - Maintained a separation distance of:
 - 500 meters or more from any NARW sighted
 - 100 meters or more from other cetaceans
 - 50 meters or more from any small cetaceans, pinnipeds or sea turtles



Construction Risk Mitigation



- Monopile installation only from May - November
- All construction vessels accompanied by NOAA-certified PSO
 - Establish a Clearance Zone; monitor it for 60 minutes and ensure that it is clear of all marine mammals for at least 30 minutes before beginning
 - Begin pile driving with a 30-minute soft start
 - Pile driving is stopped if any marine mammal is sighted within its defined “Shut Down Zone” until the PSO confirms that it is again outside the Shut Down Zone
 - Pile driving is stopped if conditions prevent effective monitoring
- Only one monopile foundation can be installed per day (expected 2-hour duration), and only during daylight hours
- Sound attenuation devices will be used to reduce noise by 10 – 20 dB

Monopile Installation Parameters

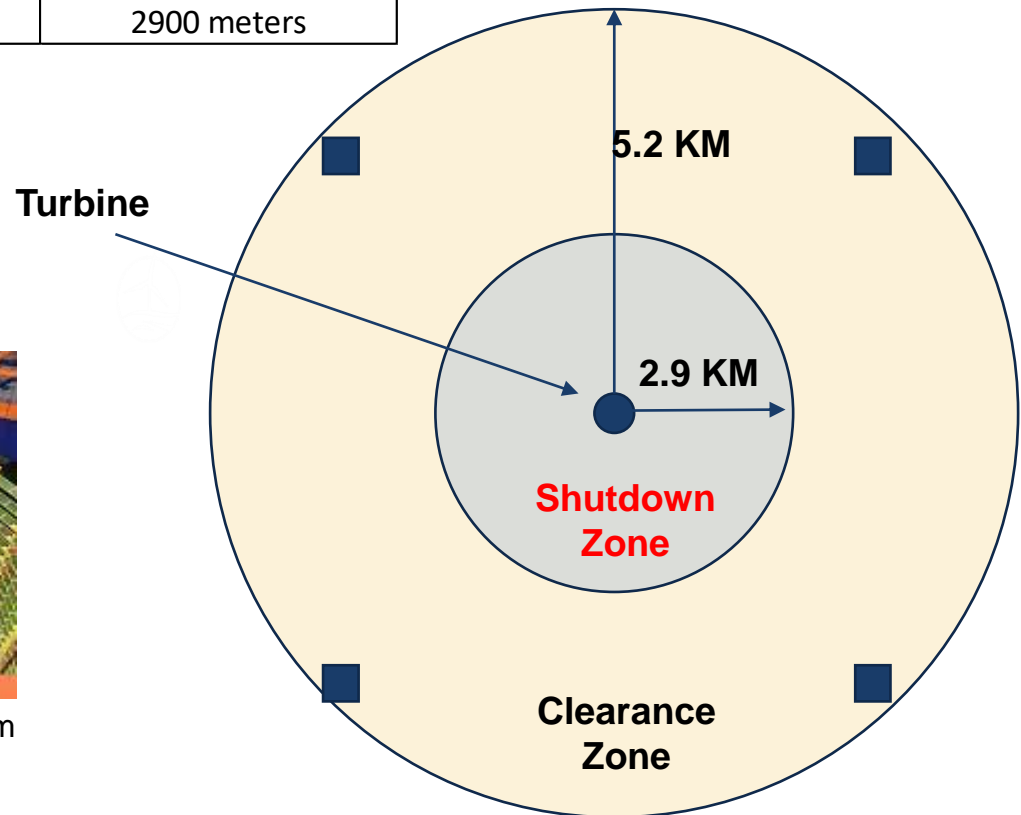


Marine Mammal Hearing Group	Clearance Zone	Shut Down Zone
Large Baleen Whales	5250 meters	2900 meters

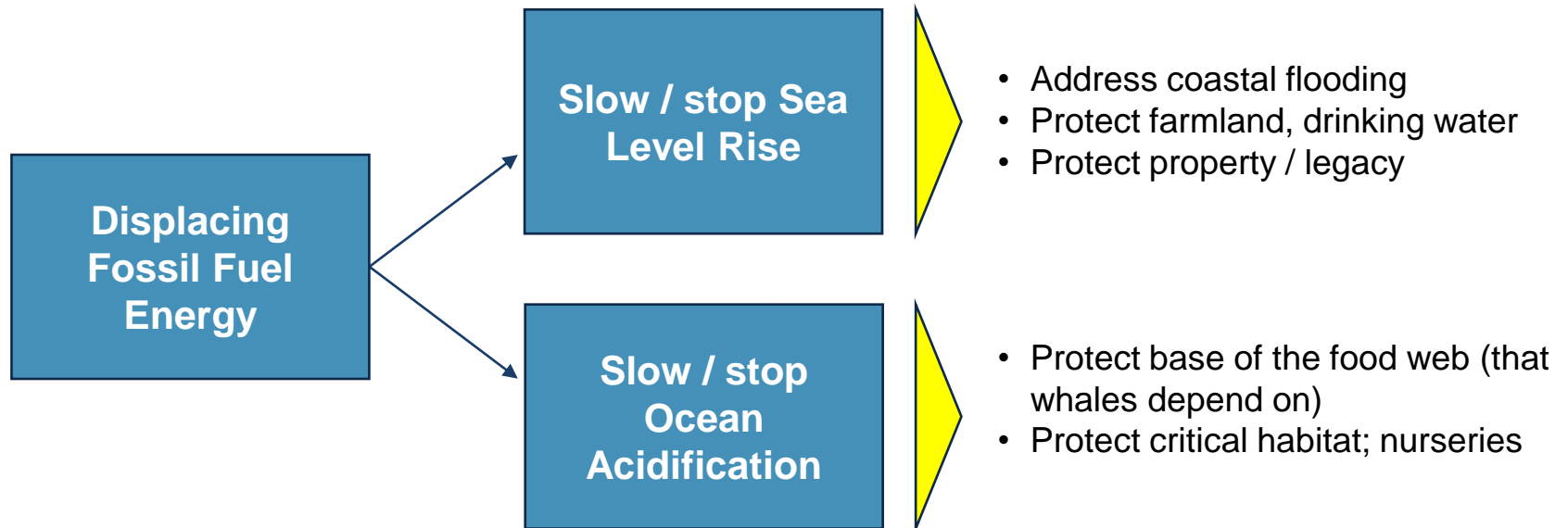
- Passive Acoustic Monitoring Device



Deployment of near-field sound resonator: AdBm “coffee cups” filled with air around monopile



Offshore Wind Beneficial Impacts



US Wind is taking additional steps to safeguard whales – funding a data collection whale buoy, partnering with UMCES on research, and sharing opportunistic observations from our aerial surveys



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