Noisy debate about storm-protection research off New Jersey

June 2 2015, byWayne Parry

A plan to help the world's coastal regions protect themselves against killer weather like Superstorm Sandy is pitting a group of scientists against an array of environmentalists and politicians, who fear that it could harm dolphins, turtles and other marine life.

The plan involves blasting the ocean floor off New Jersey with sound waves to study sediment dating back 60 million years to study how the shoreline has advanced and retreated in response to rising sea levels.

The research project by Rutgers University, the University of Texas and the National Science Foundation is getting underway this week after an aborted attempt to do it last summer, when equipment problems scrapped it after a few days.

The findings could be used to help make decisions on where to elevate houses, build protective barriers, relocate critical infrastructure or retreat from certain spots. The New Jersey coastline, devastated by Superstorm Sandy in 2012, is fairly typical of many coastal areas, and the research results could easily be applied elsewhere, said Rutgers professor Greg Mountain, the project leader.

"Sea level rise in the next 150 years could displace tens of millions of people," Mountain said. "The consequences are dire. Homes will be destroyed, roads will be washed out, our public drinking water supplies will be affected. Our effort is to better understand global sea rise and try to understand what the future holds."

But environmentalists say this type of research has a history of harming marine life, which can become disoriented or stressed from the noise. They cite the 2008 mass stranding of 100 melon-headed whales in Madagascar the day after similar, but not identical, acoustic testing was done in the area. An independent scientific panel cited the testing as the most likely reason for the strandings.

In a letter in August to the Bureau of Ocean Energy Management, Michael Stocker, director of the Ocean Conservation Research group, said there is ample evidence of seismic air guns harming marine animals and fish by disrupting migratory patterns, interfering with their communication, displacing them, interfering with their feeding and even causing them to strand themselves.

The most vociferous opponent to the New Jersey testing has been the Clean Ocean Action environmental group, which says the benefits of the research are outweighed by the potential damage it can cause.

"When it comes to harming the environment, science doesn't get a pass," said Cindy Zipf, the group's executive director.

Last summer, New Jersey officials tried in federal court to block the project but lost. Gov. Chris Christie last week promised renewed opposition, saying that while he can't guarantee a win, "I can guarantee you a fight."

The study involves striking the ocean floor with sound waves from four air guns towed 15 feet beneath the water behind a research vessel on the surface. Microphones towed behind the ship listen for the echoes to return from sediment layers below the ocean floor. Computers on the ship arrange these echoes to make acoustic images, something Mountain likens to a medical resonance imaging test that doctors use.

It should show how the coastlines have shifted over millions of years. Mountain said the New Jersey coastline was once 40 miles inland, about where the New Jersey Turnpike runs through the western part of the state. It also has extended as far east as the edge of the Continental shelf, about 80 miles further out to sea than it is now.

The 243-square-mile study area is 18 miles offshore, about halfway between New York and Atlantic City.

Opponents liken the noise to the constant roar of a jet engine, but proponents say sound travels much differently underwater. The guns will likely start firing compressed air on Wednesday, Mountain said.

"Imagine having an underwater fireworks display going off around you 24/7 for 30 days," said Jeff Tittel, director of the New Jersey Sierra Club. "This is what it would be like for marine mammals, especially dolphins. This testing not only harasses the animals but cause severe damage and can even lead to mass strandings and possibly death."

Federal wildlife regulators have approved the project to impact as many as 18,000 animals between now and the end of August. Mountain said the research team includes five independent observers on board who will watch for any marine animals near the vessel; they have the authority to shut down all work until the animals have left the area. Last year, in the 43 hours the project was in operation, 13 turtles were encountered.

"It doesn't mean we are injuring them, and it certainly doesn't mean we kill them," he said. "Clean Ocean Action and others are yelling 'fire,' that we are going to be killing protected species and scattering fish when there is no basis for any of that."