Baby whale genetic testing may help save species, study says

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In this March 28, 2018, file photo, a North Atlantic right whale feeds on the surface of Cape Cod Bay off the coast of Plymouth, Mass. Authors of a new scientific study published in January 2022 say greater reliance on genetic testing of baby whales and their mothers may help save the rare species from extinction. Credit: AP Photo/Michael Dwyer, File

Greater reliance on genetic testing of baby whales and their mothers can provide more accurate information about a rare species and increase the chances of saving them from extinction, according to the authors of a new scientific study.

The scientists, led by researchers at the New England Aquarium in Boston, studied critically endangered North Atlantic right whales, of which there are fewer than 340 in the world. Their numbers have dropped precipitously in recent years because of high mortality and poor reproduction.

The study's authors analyzed decades of data about the whales and found they had more success tracking the animals' survival, growth rates and life histories when they had access to genetic samples. They published their findings in the journal *Mammalian Biology* on Jan. 20.

The scientists focused on 13 right whale calves that were identified via genetics. They said they were able to determine the age of 12 of the whales and match 11 with their mothers—and even found that four believed to be dead were actually still alive.

Right whales have long been tracked using photographs. The photographic archive is still critical, but it's even more useful in tandem with genetic data, said Philip Hamilton, senior scientist at the aquarium's Anderson Cabot Center for Ocean Life and the lead author on the study.

"The more accurate the information, the better our conservation measures can be targeted," Hamilton said. "Better to understand them, and thus better to save them."

Right whales were once abundant off the East Coast, but were decimated during the commercial whaling era. The whales are now vulnerable to ship strikes and entanglement in fishing gear, and are the subject of new

fishing restrictions to try to save them.

Recently, scientists have also focused on the role of climate change in putting the whales in danger. The whales are aided by protected areas off the coast, but climate change has caused them to leave those areas in search of food, and that puts them at risk, scientists have said.

Science still has a lot to learn about the whales, and more reliance on genetic data can help fill the gaps, said Regina Asmutis-Silvia, a biologist and executive director of Whale and Dolphin Conservation North America. Asmutis-Silvia, who wasn't involved in the study, said relying solely on photos or acoustic detections provides a snapshot and not a full picture of the whale's status.

"Can you imagine someone making assumptions about your health, diet, friends, and hobbies by seeing you for a couple of minutes each year? The genetics library adds another layer of complexity to help further understand this very endangered and complex species," she said.

The researchers learned that it's possible for mother right whales to be seen without their calves in feeding grounds for short periods. Previously, calves would have been assumed dead if their mothers were always alone on feeding grounds during the birth year, the study stated.

Biopsy samples used in the study were sent to Saint Mary's University in Halifax, Nova Scotia, for genetic analyses. Timothy Frasier, a biology professor at the university who was involved in the work, said integrating the genetic samples with field research yields data that is "much larger than just the sum of the parts" and is "leading to a much richer understanding of this species than either approach could provide on its own."

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