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UNH Pathologist Finds Mill River Dolphin Had Parasitic Brain Infection

Friday, February 19, 2021

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DURHAM, N.H.—Results of a necropsy performed on a dolphin that died in the Mill River in Gloucester, Mass., indicate the animal had a parasitic infection and hemorrhage in its brain, according to a pathologist with the NH Veterinary Diagnostic Lab at the University of New Hampshire. While there is no risk to humans from this parasite, the event underscores warnings that the public never should interact with animals in the wild that could potentially be carrying parasites and diseases that can be transmitted to humans.

“Surveillance of marine mammals—both live and dead—is important, as these animals are sentinels of the health of the marine ecosystem that we share with them,” said senior veterinary pathologist Inga



A COMMON DOLPHIN SIMILAR TO THESE DOLPHINS THAT DIED IN THE MILL RIVER IN GLOUCESTER, MASS., HAD A PARASITIC INFECTION AND HEMORRHAGE IN ITS BRAIN. CREDIT: NOAA.

Sidor. “We know diseases can jump species and potentially move from wildlife into domestic animal or human populations, so it’s useful to keep tabs on what’s circulating nearby.”

The dolphin was submitted to the lab Jan. 16, 2021, by Seacoast Science Center Marine Mammal Rescue, the NOAA-designated and approved responder to stranded marine mammals in the New Hampshire and northern Massachusetts seacoast region. The dolphin, which died the day before, was an adult male common dolphin, 330 lbs., and almost 8 feet long.

According to Sidor, there was no evidence of major traumatic injuries, and the animal appeared in fair condition, nutritionally. Its stomach and intestines were largely empty, suggesting it had not been well and was not eating. The necropsy revealed a small area of discoloration in the cerebellum, a part of the brain responsible for movement and coordination.

On microscopic exam, eggs of a parasitic fluke worm were associated with the hemorrhage and inflammation at that site. This non-zoonotic parasite, *Nasitrema* sp., is a relatively common infection of dolphins, porpoises, and whales worldwide and is often seen in this region. Migration of the adult worm and the presence of eggs results in local inflammation, which can disrupt echolocation and orientation, leading to stranding.

“As this case has shown, the public is intensely curious about these animals, and even if we are unable to save an individual animal, knowing why it died can create an educational moment,” she said. “When possible and safe, it’s a great opportunity for our students to get close to otherwise untouchable animals and learn more about how they’ve evolved to survive in the marine environment, how they’re the same or different from other more familiar animals, and how their populations might be affected by human presence in the oceans.”

The NH Veterinary Diagnostic Lab, which is part of the NH Agricultural Experiment Station, works with marine mammal rescue groups from Maine to Cape Cod. The lab helps to monitor marine mammal populations for outbreaks of infectious disease.

“When we first saw this dolphin, so far out of its normal habitat, we were concerned it was ill or injured,” said Mendy Garron, Marine Mammal Response program coordinator for NOAA’s Greater Atlantic Region. “Unlike coastal bottlenose dolphins, common dolphins rarely come into shallow water. They are highly social animals usually found offshore and able to travel great distances. It’s very unusual for one to be alone and so close to shore, although these social animals will leave their groups if they are sick or injured and may seek out a quiet, calm area.”

Shortly after NOAA began observing the dolphin, officials saw behaviors that indicated the animal was compromised. It stranded on the mud flat and entered what is known as death throes—when the body shuts down prior to death.

“In these situations, we try to balance what we can do for the animal with how much stress we will cause. Common dolphins are extremely sensitive to human intervention and often panic when we try to net or capture them, which can cause them further injury. Based on their experience, trained responders knew that moving this dolphin into deeper water would cause it additional stress since it was seeking shallow water. Unfortunately, this is what happened when caring, but untrained, observers dragged this dolphin into deeper water where the dolphin could not keep its head and blowhole above water,” she said.

“Watching a beautiful wild animal die is sad and painful for all of us, especially the stranding responders who have trained and devoted their careers to helping these animals,” said Colleen Coogan, leader of the Marine Mammal/Sea Turtle Team Lead.

The NH Veterinary Diagnostic Lab serves the state of New Hampshire by providing accessible, timely, and accurate diagnostic services for the New Hampshire Department of Agriculture, Markets, & Food (<https://www.agriculture.nh.gov/>), New Hampshire Department of Health and Human Services (<https://www.dhhs.nh.gov/>), New Hampshire Fish and Game Department (<https://www.wildlife.state.nh.us/>), state and local law enforcement agencies, veterinarians, farmers, and other relevant state, regional, and federal agencies.

Founded in 1887, the NH Agricultural Experiment Station (<https://colsa.unh.edu/nhaes/>) at the UNH College of Life Sciences and Agriculture (<https://colsa.unh.edu/>) is UNH’s first research center and an elemental component of New Hampshire’s land-grant university heritage and mission.

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PHOTOS AVAILABLE FOR DOWNLOAD

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A common dolphin similar to these dolphins that died in the Mill River in Gloucester, Mass., had a parasitic infection and hemorrhage in its brain. Credit: NOAA.

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