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Hawaii News

New study examines dolphins' respiratory well-being

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At Kahala Resort - Dolphin Lagoon. Dr. Andreas Fahlman, a specialist on the workings of dolphin lungs, measuring their lung capacity in and out of the water. Julie Rocho-Levine, left, manager of marine animals, Dolphin Quest, has trained Liko, to beach himself for the experiments. With her is Allie Etter, dolphin trainer.

The Dolphin Quest Oahu team at Kahala Hotel and Resort is working with a marine biologist to study the respiratory health of marine mammals.

Andreas Fahlman, research director at the Oceanographic Foundation, is conducting breathing tests — both in and out of water — on six dolphins that reside in the resort's

26,000-square-foot lagoon.

Fahlman, a Hawaii Pacific University alumnus, said the respiratory research, which has been underway for three years, aims to develop a noninvasive method for pinpointing the characteristics of a healthy cetacean lung.

“We want to be able to look at who are the healthy ones, who are the ones that are the best candidates for release, who are the ones we should potentially euthanize because they may have severe lung disease. These are some of the things we can track over time,” Fahlman said Tuesday at the resort, where testing got underway last week and will continue until early June.

For the in-water test, Fahlman places a pneumotachometer, also called a flow meter, over the dolphin’s blowhole. Measurements track a dolphin’s normal breathing as well as strong exhalation — when a huff of air pushes through the blowhole.

For the land test, Julie Rocho-Levine, Dolphin Quest’s manager of marine animals, instructs the dolphin to jump onto a deck in the center of the lagoon to simulate beaching in the wild.

She instructs the dolphin to breath normally and then to complete multiple huff exhalations as staff members keep the deck wet so the dolphin stays cool while out of the water.

The team then compares the water- and land-based breathing function, and the dolphin scores a reward of squid and herring.

“We’re trying to see what the relationship is between how they breathe in the water and on land,” Fahlman said. “With this information, hopefully, we can help them if an animal is stranded on the beach.”

Rocho-Levine said the research could help establish new methods for accurately assessing lung health in whales, porpoises and dolphins stranded on beaches as well as those living under professional care.

“To this day we don’t have a noninvasive way to assess lung health, and so we’re collecting these important base lines. Eventually, this information will be used to develop those tools to help the marine mammal specialists and marine mammal veterinarians know if the animal has a healthy respiratory system or if that’s what’s compromising them,” Rocho-Levine said.

“A tool like this will really help any animal living under professional care and any animal that ends up on our beaches.”

In the ongoing debate over whether dolphins and other marine mammals should be free from a life of captivity, Rocho-Levine pointed out that Dolphin Quest Oahu's Atlantic bottlenose dolphins tend to live longer than dolphins in the wild.

Dolphin Quest says the animals are voluntary participants in all activities, from dolphin-keiki swims to Fahlman's breathing tests and other research.

"All of our training is based on positive reinforcement, always saying 'good job,' and we customize our training for each individual animal," Rocho-Levine said. "If at any point they didn't want to be part of any session, they can simply swim away" to another area in the resort's lagoon.