

New tool to aid in dolphin strandings

May 2 2014

(Phys.org) —The cause of dolphin strandings has long been a mystery but a new study shows that clues about survival rates after release may be found in the sea mammal's blood.

Published online ahead of print in *Marine Mammal Science*, the study analyzed blood work and body condition values from stranded common dolphins and compared them with [survival rates](#) after release. Responders in the field are now using the blood and health data to make better release decisions and predict survival outcomes.

"The establishment of these blood values provides a window into the overall health of the dolphin and, for responders onsite, collecting blood in the field is relatively easy to do," said Sarah Sharp, the paper's lead author and a third-year D.V.M. candidate at the Cummings School of Veterinary Medicine at Tufts University. "Now we have a way to predict which stranded dolphins have a better chance of survival after release and this can help triage care."

The paper's authors—including Dr. Joyce Knoll, an associate professor at the Cummings School and Sharp's mentor, and researchers from the International Fund for Animal Welfare (IFAW) and Woods Hole Oceanographic Institution—analyzed blood samples and body condition scores of 26 common dolphins that were stranded alive on the beaches of Cape Cod, Mass., between January 2010 and June 2012, and found significant hematological differences between survivors and non-survivors. Since 2010, IFAW has been operating a satellite tagging program to evaluate the post-release success of stranded dolphins, and

the authors used this data to assess survival rates.

Dolphins that didn't survive the stranding or a three week post-release period had anemia and lower levels of [red blood cells](#). Some potential causes of anemia in dolphins are chronic disease, poor nutrition, blood loss, pregnancy or liver disease. When compared to survivors, failed dolphins also had an increased concentration of acid in their blood, were dehydrated and had leaner body mass relative to their length. These health indicators and [blood](#) values, in addition to necropsy findings, suggest that the dolphins may have had pre-existing illnesses, stranding-induced conditions such as capture myopathy (a metabolic muscle disease resulting from the physical stress of being stranded on land), or both.

"Our team is already utilizing this new information in our stranding response protocols," said Katie Moore, IFAW's Animal Rescue Program Director. "This study is the culmination of more than a decade of hard work for our staff and volunteers. I have no doubt that it will help us to improve our responses and the care of individual animals."

Prior to starting her veterinary studies, Sharp was the stranding coordinator for IFAW's Marine Mammal Rescue and Research Program on Cape Cod. During her seven years in the field, she responded to approximately 50 mass stranding events, oversaw response to more than 1,200 individually stranded marine mammals, pioneered IFAW's cetacean satellite tagging program, and trained stranding responders both domestically and internationally. She has experienced the challenges of assessing stranded dolphins' overall health, especially with mass strandings when multiple animals need care.

Dolphin strandings occur with consistency on Cape Cod, which has one of the highest cetacean stranding rates in the world. Over the 10-year period ending in 2011, common [dolphins](#) represented approximately one-

third of the 1,300 cetaceans stranded in this area, making this research an invaluable tool in the rapid response and humane care of these mammals.

More information: Sharp, S. M., Knoll, J. S., Moore, M. J., Moore, K. M., Harry, C. T., Hoppe, J. M., Niemeyer, M. E., Robinson, I., Rose, K. S., Brian Sharp, W. and Rotstein, D. (2013), "Hematological, biochemical, and morphological parameters as prognostic indicators for stranded common dolphins (*Delphinus delphis*) from Cape Cod, Massachusetts, U.S.A." *Marine Mammal Science*. [DOI: 10.1111/mms.12093](https://doi.org/10.1111/mms.12093)

Provided by Tufts University

Citation: New tool to aid in dolphin strandings (2014, May 2) retrieved 3 May 2024 from <https://phys.org/news/2014-05-tool-aid-dolphin-strandings.html>

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