



**NOAA
FISHERIES**

**Southern
Resident
Killer Whale
DTAG Research**



Nighttime research on endangered killer whales may help protect them from noise



Researchers from NOAA Fisheries are studying the nighttime behavior of endangered Southern Resident killer whales to better understand their overall behavior including how much time they spend foraging and their use of sound, and to inform steps that might better protect the whales from vessel noise.

Underwater ship noise can disrupt the whales' use of echolocation to detect, track and capture prey. That could limit their foraging opportunities and force them to expend extra energy to locate prey. Shipping traffic through the Salish Sea, the heart of the whales' range, has increased in recent years, and is projected to increase further.

Understanding nighttime behavior of the endangered whales, including whether they forage at night, and how they use sound, helps scientists gauge their foraging rates and overall energy balance, and evaluate a complete 24-hour activity budget. It could also help inform efforts to reduce impacts on the whales. If they forage less at night, for example, that might be a time when large cargo ships could transit the area with less disturbance to the whales.

Fisheries and Oceans Canada is largely funding the research, with NOAA Fisheries' Northwest Fisheries Science Center providing staff time and scientific expertise.



DTAGs

The study will use digital acoustic recording tags (DTAGs) attached to the whales with suction cups. Woods Hole Oceanographic Institution developed DTAGs specifically to monitor the behavior of marine mammals, and their response to sound, throughout the dive cycle. Working under thoroughly reviewed research permits, scientists will apply the tags to the whales with long poles. The tags include hydrophones that record sound and different movement sensors used to track pitch, roll, heading, jerk, and depth. In previous tagging efforts during daytime hours, researchers typically saw the whales return to normal diving behavior within minutes after the tags were applied. The tags usually remain on the whales for about one or two days until they are programmed to release or fall off on their own.

Southern Resident killer whales

Southern Resident killer whales were listed under the Endangered Species Act in 2005, and are also protected in Canada. NOAA Fisheries is carrying out an action plan of priority steps to address the three main threats to the whales: vessel traffic and noise, availability of prey, and chemical pollution and contaminants. The latest research informs those efforts.



For further information and questions:

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Killer whale DTAG research at NWFSC

<https://www.nwfsc.noaa.gov/research/divisions/cb/ecosystem/marinemammal/dtags.cfm>

Southern Resident killer whales

http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/killer_whale/

Woods Hole Oceanographic Institution DTAG

<http://www.whoi.edu/page.do?pid=39337>

Port of Vancouver Enhancing Cetacean Habitat and Observation (ECHO) Program

<https://www.portvancouver.com/echo>

