

Entangled in Hawaiian waters: first documentation of a Blainville’s beaked whale (*Mesoplodon densirostris*) and an endangered false killer whale (*Pseudorca crassidens*) with life-threatening entanglements in marine debris

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Entanglement in marine debris is a risk for cetaceans worldwide, with 97% of cases caused by derelict fishing gear. Most reports of entangled cetaceans are of coastal dolphins or baleen whales, and documentation and reporting vary by region.

Around the main Hawaiian Islands (MHI), the degree of entanglement risk is difficult to assess as strong currents, remote rugged coastlines, and the presence of scavengers make the discovery and examination of stranded cetaceans unlikely.

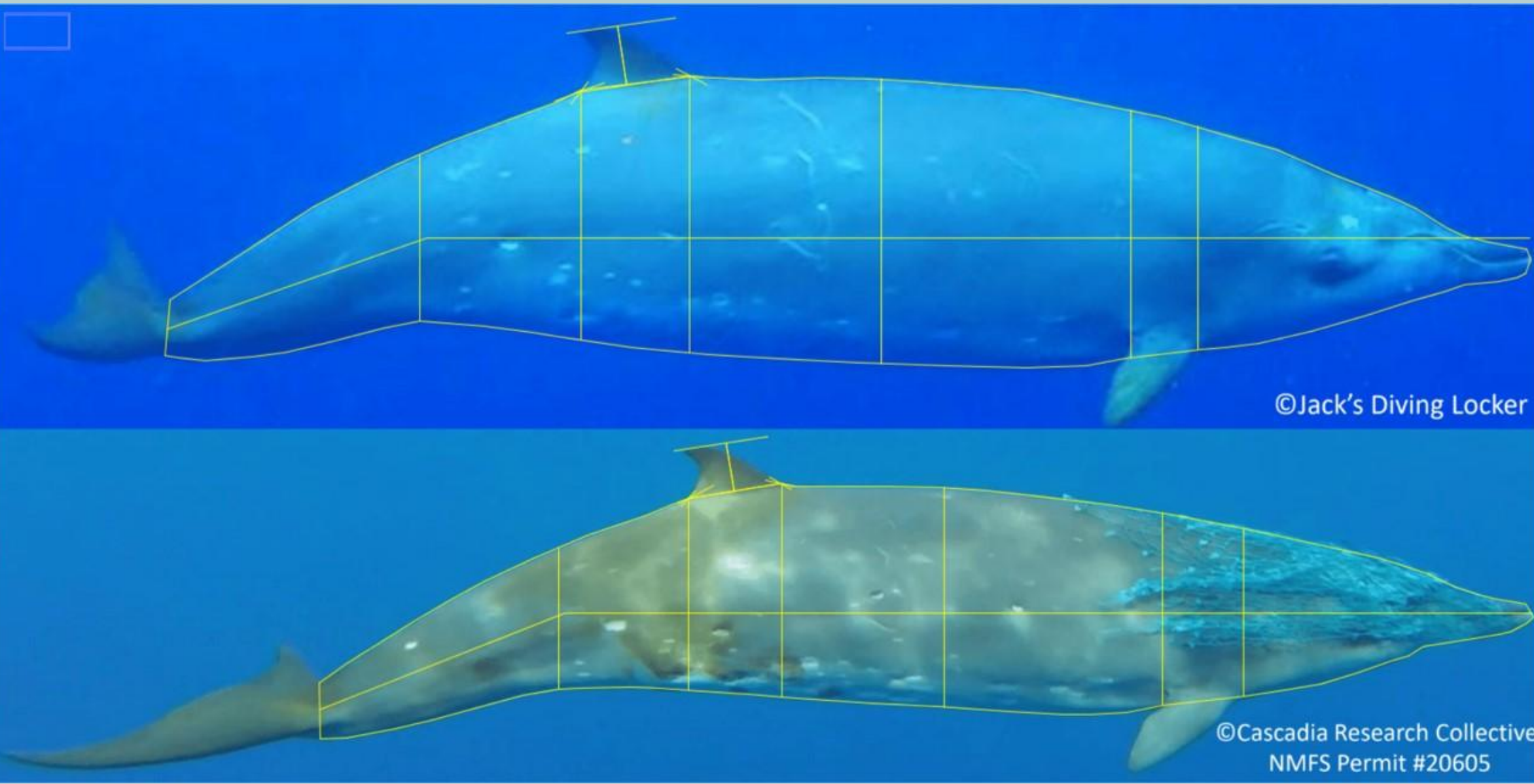
Worldwide encounters with Blainville’s beaked whales and false killer whales are rare and neither species occurs in nearshore waters.

- Analyses of photo-identification and movement data have demonstrated the existence of both a small, island-associated and an offshore population of Blainville’s beaked whales in Hawai’i.
- The primary threat to Blainville’s beaked whales is thought to be anthropogenic sound.



Fishery-related marine debris from international waters poses a new and previously unrecognized threat to two-island-associated populations of odontocetes found in Hawai’i.

What we did
We used a combination of photographs, drone footage, underwater video, and morphometric measurements (Balletti, 2014) to assess the severity of entanglements and the types and sources of the marine debris.



- Handheld and pole-mounted GoPro images were obtained during encounters with a juvenile Blainville’s beaked whale (catalog ID HIMd306) on 11 March 2021 (pre-entanglement) and 5 May 2021.
- Images from 5 May 2021 revealed that HIMd306 had a knotted 4-inch mesh high-density polyethylene (HDPE) fiber netting wrapped around the front third of the body, including a wrap around the rostrum, preventing the whale from feeding.

A morphometric comparison revealed weight-loss and poor body condition with evidence of starvation (mid-body average girth decrease was 6.4%). This individual has not been subsequently sighted and is thought to have died.

The HDPE netting originated in international waters -- this product is not commonly used by fisheries in Hawaiian waters (Corniuik et al. 2023).

- Based on genetics, association patterns, and movements from tagging, there are three recognized populations of false killer whales in Hawaiian waters.
- The MHI insular stock is endangered and declining and is thought to number only about 140 individuals. False killer whales in Hawaiian waters face many recognized threats, with the most substantial thought to be hooking or entanglement in fisheries, effects of environmental contaminants, competition with fisheries, and intentional harm associated with fisheries conflicts.



False killer whale ID HIPc0373 from the endangered main Hawaiian Islands population was first encountered in December 2009. This individual is an adult male from Cluster 4 and has been encountered 23 times over 16 years.



HIPc0373 was encountered 22 October 2025 with a loop of 3-strand polyblend rope wrapped tightly around the body (possibly weighted), cutting through the leading edge of the partially-severed dorsal fin. The loop may have been part of a dock line. We were not able to approach closely enough to attempt disentanglement, and this individual has not been seen since.

Marine debris entanglement had not previously been considered a threat for this endangered population.

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Field work during which these individuals were encountered was funded by a grant from the Pacific Islands Fisheries Science Center and a contract from the State of Hawai’i Division of Aquatic Resources. Our ability to track whales and dolphins in Hawai’i is based in part on citizen science photos. For this effort Jack’s Diving Locker provided integral photographic data. We thank Delaney Trowbridge for photos during our October 2025 encounter. Research undertaken under NMFS Permits 20605 and 26595.

References
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Corniuik, R.N., Shaw, K.R., McWirtter, A., Lynch, W.W., Royer, S.-J., and Lynch, J.M. 2023. Polymer identification of floating derelict fishing gear from O ‘ahu, Hawai ‘i. Marine Pollution Bulletin 196:115570.

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