

## Short Note

# Two Gray Whale (*Eschrichtius robustus*) Sightings off Hawai‘i Island: The First Records for the Central Tropical Pacific

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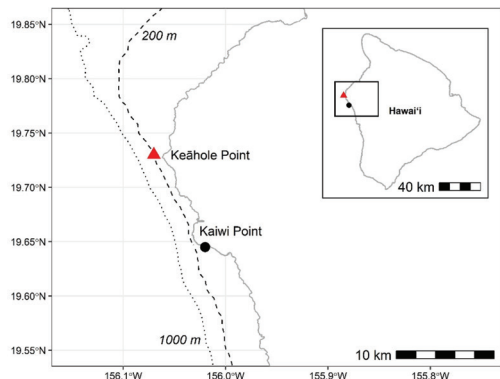
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Gray whales (*Eschrichtius robustus*) are primarily restricted to coastal waters during breeding, feeding, and migration. The eastern North Pacific population breeds in shallow lagoons along the west coast of Baja California, Mexico, and feeds in shallow coastal waters from northern California north along the coasts of Oregon, Washington, British Columbia, Alaska, and Russia (Heide-Jørgensen et al., 2012; Lagerquist et al., 2019; Urbán et al., 2021). Migrating gray whales in the eastern North Pacific appear to largely remain on the continental shelf to and from their feeding grounds to the north (Lagerquist et al., 2019; Urbán et al., 2021). In the western North Pacific, gray whales feed in shallow waters off Sakhalin Island and the Kamchatka Peninsula in Russia, and historically would winter off southern China (Weller et al., 2008; Wang et al., 2015). More recent evidence shows that at least some whales from the western Pacific migrate east past the Aleutians and may cross through the deep waters of the Gulf of Alaska to the coast of British Columbia and Washington state before heading south along the continental shelf to breeding grounds in Mexico (Weller et al., 2012; Mate et al., 2015).

In February 2022, a gray whale was sighted on two consecutive days off the west side of Hawai‘i Island, the first record of this species in Hawaiian waters and in the central tropical Pacific. On 1 February 2022, an individual gray whale was seen heading north in shallow water (< 100 m) just south of Kaiwi Point (19.645° N, 156.020° W) during a commercial dive trip. On 2 February 2022, presumably the same individual was also seen heading north in shallow water north of Keāhole Point (approximately 19.731° N, 156.063° W) during a commercial whale-watching trip. The two sighting locations were approximately 10 km apart (Figure 1). Video footage of the whale’s left side was taken with a Panasonic SIH

during the first sighting and of the whale’s right side with a cell phone during the second sighting. Based on size noted in the field and the amount of barnacle scarring visible, this individual is likely a juvenile (A. Perez, pers. comm., 28 February 2022). An examination of the video footage suggests the body condition of the individual may be compromised (James, 2022; A. L. Bradford, pers. comm., 12 April 2022), but the resolution of the video precluded a more precise determination (i.e., fair vs poor; Bradford et al., 2012). Comparisons of still photos taken from video (Figure 2) to the Cascadia Research Collective gray whale catalog from the eastern North Pacific (Calambokidis et al., 2019); the Laguna San Ignacio Ecosystem Science Project catalog from San Ignacio Lagoon on the west coast of the Baja California Peninsula, Mexico; and the Sakhalin Island gray whale catalog have all been undertaken with no matches (A. Perez, pers. comm.,



**Figure 1.** Map showing the locations of the two sightings, with the 200 and 1,000 m depth contours indicated. The inset shows the sighting area along the west side of the island.



**Figure 2.** Images taken from video of a gray whale (*Eschrichtius robustus*) documented north of Keāhole Point, Hawai'i, on 2 February 2022 (see James, 2022). The Blue Ocean Mariculture kanpachi (*Seriola rivoliana*) farm is visible in the background of the lower two images. (Photo credits: Jesse James)

28 February 2022; O. Sychenko, pers. comm., 10 April 2022; S. Martínez-Aguilar, pers. comm., 4 June 2022).

This individual would have had to cross over 3,000 km of deep, open-ocean waters from the nearest area where this species is known to seasonally occupy off the Aleutian Islands. Long distance and open-ocean movements of gray whales have been documented several times in recent years, including an individual seen off both Israel and Spain in 2010 (Scheinin et al., 2011), a different individual photographed and biopsy sampled off Namibia in 2013 (Elwen & Gridley, 2013; Hoelzel et al., 2021), and a third individual seen off the Atlantic coast of Morocco, as well as off Italy, France, and Spain, in 2021 (International Whaling Commission [IWC], 2021).

Prior to the two sightings in February 2022, seven species of baleen whales had been documented in Hawaiian waters, a few of which are rarely seen (Baird, 2016). While humpback whales (*Megaptera novaeangliae*) are abundant in near-shore Hawaiian waters in the winter, other baleen whale species primarily use pelagic waters (e.g., Bryde's whales [*Balaenoptera edeni*]) and are only infrequently seen (e.g., fin whales [*Balaenoptera physalus*] and sei whales [*Balaenoptera borealis*]). Blue whales (*Balaenoptera musculus*) have only been photographically documented twice in Hawaiian waters, and North Pacific right whales (*Eubalaena japonica*) and minke whales (*Balaenoptera acutorostrata*) on just a few occasions each (Herman et al., 1980; Salden & Mickelsen, 1999; Bradford et al., 2017; Cascadia Research Collective, unpub.), although blue and minke whales are regularly detected acoustically in Hawaiian waters (Thompson & Friedl, 1982; Stafford et al., 2001; Oswald et al., 2011; Norris et al., 2012). The February 2022 sightings suggest that there may be value in assessing existing acoustic archives from hydrophones in Hawaiian waters for the presence of gray whale calls (e.g., Guazzo et al., 2017).

Boat-based research efforts on cetaceans in Hawaiian waters began in the late 1960s (Norris & Dohl, 1980); and for the last 35 years, multiple research groups have worked with cetaceans off the main Hawaiian Islands each year. Despite this extensive effort, these first sightings of a gray whale in Hawai'i were made during commercial whale watching and dive trips, another demonstration of the value of community science to understanding whales and dolphins in Hawaiian waters.

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