

Main Hawaiian Island Insular False Killer Whale

COMMON NAME: Insular False Killer Whale (IFKW)

HAWAIIAN NAME: False Killer Whale

SCIENTIFIC NAME: *Pseudorca crassidens*

LEGAL STATUS: Endangered (Federal and State) Main Hawaiian Islands (MHI) IFKW Distinct Population Segment (DPS). Protected under the MMPA. Endangered (IUCN Red List).

APPEARANCE: False killer whales are large members of the dolphin family. Females reach lengths of 15 feet, while males are almost 20 feet. In adulthood, false killer whales can weigh approximately 1,500 pounds. They have a small conical head without a beak. Their dorsal fin is tall, and their flippers (pectoral fins) have a distinctive hump or bulge in the middle of the front edge. False killer whales have dark coloration except for some lighter patches near the throat and middle chest. Their body shape is more slender than other large delphinids.

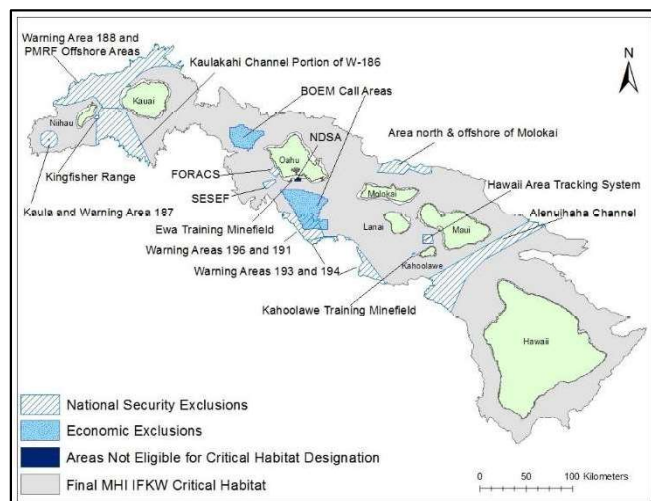


BEHAVIOR: They form strong social bonds, usually found in groups of 10-20; they are known to "strand" in large groups. They are also found with other cetaceans, most notably bottlenose dolphins.

NATIVE RANGE: False killer whales are found worldwide mainly in tropical and warm-temperate waters. The MHI IFKWs are an island-associated population of false killer whales that relies entirely on the productive submerged habitats of the MHI to support all of their life-history stages.

POPULATION TRENDS: Reeves et al. (2009) suggested that the MHI insular stock of false killer whales may have declined during the last two decades, based on sightings data collected near Hawai'i using various methods between 1989 and 2007. The minimum population estimate for the MHI insular stock of false killer whales is the number of distinctive individuals identified during 2011 to 2014 photo-identification studies, or 92 false killer whales (Baird et al., 2015). Aerial sighting rates during these surveys showed a statistically significant decline that could not be attributed to any weather or methodological changes. Recent data have shown a declining trend for IFKWs.

HABITAT: IFKWs are generally found in deeper waters just offshore, moving primarily throughout and among the shelf and slope habitat on both the windward and leeward sides of all the MHI. Waters surrounding the MHI from 45 meters (m) to 3,200 m in depth have been identified as meeting the parameters defined in the ESA for critical



Area of designated critical habitat for the MHI insular false killer whale.

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habitat and is designated as MHI IFKW critical habitat. These areas offer a wide range of depths for IFKWs to travel, forage, and move freely around and between the islands. This designation does not include most bays, harbors, or coastal in-water structures, and has 10 excluded areas due to economic and national security impacts (NOAA, 2022).

DIET: MHI IFKWs feed on a variety of large pelagic fish as well as squid (cephalopods). Within waters surrounding the MHI, habitat conditions should support the successful growth, recruitment, and nutritional quality of prey to support the individual growth, reproduction, and development of MHI IFKWs.

REPRODUCTION: False killer whales' breeding season lasts several months. Gestation periods range from 14 to 16 months and lactation occurs for one and a half to two years. False killer whales have low reproduction rates with calving intervals of approximately seven years. Maturity occurs at around 12 years of age and maximum longevity is 63 years.



ECOLOGICAL THREATS: Reasons for the decline of the MHI IFKW DPS include:

- Marine debris entanglement or ingestion.
- Contaminants and toxins introduced through prey consumption can put individual health or reproduction at risk.
- Incidental take in commercial longline and recreational non-longline fisheries.
- Biomagnification of some pollutants can adversely affect health in these top marine predators, causing immune suppression, decreased reproduction, or other impairments.
- Water pollution and changes in water temperatures may also increase pathogens, naturally occurring toxins, or parasites in surrounding waters.
- Inherently slow reproductive rates and an aging population.
- Low genetic diversity.
- Waters with in-water noise below levels that impact false killer whales' ability to detect, interpret, and utilize acoustic cues that support important life history functions.
- Exposure to infectious or harmful agents (such as bacteria, viruses, toxins, or parasites) either through their prey or directly through ingestion of contaminated waters.

NOAA FISHERIES CONSERVATION STRATEGIES: On November 28, 2012, the National Marine Fisheries Service (NMFS) listed the MHI IFKW DPS as endangered. In October 2020, NMFS published a draft recovery plan for MHI IFKWs.

This plan reflects the updated threats analysis for the MHI IFKW available in the 2021 Recovery Status Review (NOAA Fisheries, 2021). Some proposed strategies are to: (1) Obtain more demographic information (abundance, injury trends, survival rates, range, habitat use, and social clusters); (2) Monitor commercial longline fisheries in the MHI; (3) Better characterize interactions between state fisheries and MHI IFKWs; (4) Develop state and trigger-dependent management actions; (5) Develop a Strategic Outreach Plan; and (6) Better characterize state fisheries.

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MCBH CONSERVATION MEASURES: There have been no official or anecdotal sightings of the IFKW within MCBH's 500 yd Naval Defensive Sea Area, otherwise known as the security buffer zone. The waters surrounding the Mōkapu peninsula outside of the security buffer zone contain habitat normally associated with foraging by the MHI IFKWs. Although there are no geographical areas owned or controlled by the Department of Defense (DoD) at MCBH that overlap with the areas of MHI IFKW critical habitat, MCBH does conduct programs and activities that would indirectly benefit the MHI IFKWs.

Conservation measures at MCBH that benefit the IFKW include:

- **Monitor for presence of MHI IFKWs to help direct management activities.**
- **Monitor recreational water activities.** Ensure recreational fishermen attend to their gear, do not discard fishing line or hooks into the water, take immediate action to free the MHI IFKWs minimizing injury, and avoid further interactions should an incident occur.
- **Hazardous waste, toxins, and contaminants control.** MCBH has a number of programs in place, i.e., Storm Water Management and Monitoring Program, and HAZMAT/HAZMIN programs, as well as recycling, maintaining oil water separators, and conducting water quality monitoring to prevent and contain environmental contaminants or hazardous material from entering coastal waters.
- **Removal of marine debris.** MCBH conducts efforts to remove marine debris that washes up on base beaches.
- **Feral animal control.** MCBH has an active feral and nuisance animal control program, which includes capturing and removing rats and cats that can potentially spread toxoplasmosis into the marine environment.
- **Interagency cooperation.** MCBH collaborates with NOAA Fisheries regarding data sharing on marine mammals, including IFKW sightings (none to date). If a sick, injured, stranded, entangled, or dead marine mammal appears in MCBH waters or on beaches, it is reported, protected, and, if necessary, transferred to appropriate authorities at NOAA Fisheries for rehabilitation and/or necropsy.
- **Education and outreach.** MCBH works with the Marine Corps Community Services marina to disperse educational material to prevent disposing of plastics, nets, or potential contaminants into the ocean and to prevent boat strikes of the MHI IFKWs.

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REFERENCES

- Baird, R.W., S.D. Mahaffy, and A.G. Gorgonne. 2015. Minimum population size of main Hawaiian Islands insular false killer whales based on photo-identification. Presented to the Pacific Scientific Review Group, March 10-12, 2015, Seattle, WA. PSRG-2015-08 3p.
- NOAA Fisheries Office of Protected Resources. 2013. False Killer Whale (*Pseudorca crassidens*).
- NOAA Fisheries Pacific Islands Regional Office. 2015. False Killer Whales (*Pseudorca crassidens*): Hawaiian Islands Stock Complex-Main Hawaiian Islands, and Hawaii Pelagic Stocks.
- NOAA Fisheries Pacific Islands Regional Office. 2016. Main Hawaiian Islands Insular False Killer Whale Recovery Planning Workshop Summary.
- NOAA Fisheries Pacific Islands Regional Office. 2021. Recovery Status Review for the Main Hawaiian Islands Insular False Killer Whale (*Pseudorca crassidens*) Distinct Population Segment. Available [online]:
- NOAA Fisheries Pacific Islands Regional Office. 2022. Main Hawaiian Islands Insular False Killer Whale Critical Habitat Map and GIS Data. Available [online]:
- Reeves, R.R., S. Leatherwood, and R.W. Baird. 2009. Evidence of a possible decline since 1989 in false killer whales (*Pseudorca crassidens*) around the main Hawaiian Islands. *Pacific Science* 63(2): 253-261.
- For more information: MCBH Integrated Natural Resources Management Plan. 2022. Sections 6, 7.1, and 7.4.

PHOTOS

1. False killer whale. Marie Hill. 2013
2. Proposed critical habitat for O'ahu. Provided by NOAA. 2017.
3. False killer whale mother and calf (*Pseudorca*) Robin Baird. 2008.