

Feresa attenuata (Gray, 1874)

English: Pygmy killer whale

German: Zwerggrindwal

Spanish: Orca pigmea

French: Orque pygmée

Family Delphinidae

1. Description

Pygmy killer whales have a robust body that narrows towards the dorsal fin, hence the name "*attenuata*" (Latin) meaning "thinning". The head is round and blunt and lacks a beak typical of many dolphin species. The moderately long flippers are rounded at the tips with convex leading and concave trailing edges. Pygmy killer whales are mostly grey to black, with a subtle dark cape on the side, below the high, falcate dorsal fin. There is a paler grey area on each flank and an irregularly white patch on the ventral side between the flippers, around the genitals and occasionally the tail stock. The lips are also edged with white. Body size ranges from 2.1 to 2.6m (Donahue and Perryman, 2009). Maximum known weight is 225 kg (Jefferson et al. 2008).

2. Distribution

<http://www.iucnredlist.org/details/8551/0/rangemap>

Distribution of Feresa attenuata (Taylor et al. 2008; © IUCN). The species prefers tropical and subtropical offshore waters around the world between 40°N and 35°S.

This is a tropical and subtropical species that inhabits oceanic waters around the globe, generally not ranging north of 40°N or south of 35°S (Jefferson et al. 1993; Taylor et al. 2008). It ranges north to the Gulf of Mexico, east coast of Florida, Senegal, Arabian Sea, Sri Lanka, Honshu, Hawaii, and Gulf of Tehuantepec, and south to Buenos Aires, Cape Province, Queensland, and Peru (Rice, 1998).

The distribution of *F. attenuata* is poorly known from sparse but widely distributed records worldwide. It is seen relatively frequently in the eastern tropical Pacific, Hawaii, and Japan, though it is not particularly abundant anywhere. Because it tends to avoid boats it may be more common than the records suggest (Carwardine, 1995).

It is notable that most of the records outside the tropics are associated with strong, warm western boundary currents which effectively extend tropical conditions into higher latitudes (Ross and Leatherwood, 1994 and ref. therein). Williams et al. (2002) e.g. observed two groups in the north-eastern Atlantic in the Bay of Biscay at 45°16'N, 30°56'W and at 45°26'N, 40°26'W, respectively. In both cases the cetaceans were in close proximity to newly born or first-year calves.

Records of whales on the cool west coasts of southern Africa and Peru are exceptions, though these could well have originated in far warmer waters comparatively close by (Ross and Leatherwood, 1994 and ref. therein).

3. Population size

There is very little information on population size, and the species appears to be uncommon. The population size of the western north Atlantic stock is unknown. The population size for the Northern Gulf of Mexico stock is 408 (Reviewed in Waring et al. 2007). Wade and Gerrodette (1993) estimated that there were about 38,900 (CV=31%) in the eastern tropical Pacific. There are estimated to be 956 pygmy killer whales (CV=83%) in the Hawaiian portion of the US EEZ (Barlow 2006).

4. Biology and Behaviour

Habitat: Occurs in deep, warm waters, rarely close to shore (except near oceanic islands). Mainly tropical, but occasionally strays into warm temperate regions (Carwardine, 1995).

Behaviour: *F. attenuata* may be difficult to approach and is known to avoid boats, though there are reports of bow- and wake-riding (Carwardine, 1995). Castro (2004) e.g. observed pygmy killer whales off Machalilla National Park, Ecuador, "The school of dolphins was travelling at a speed of around 30 km/h. During the whole length of the observation, while the animals were travelling, they conducted running leaps and hard splash with their whole bodies outside of the water. On some occasions, their heads were outside of the water and they were bowriding in the waves produced by the boat".

Schooling: Groups generally contain 50 or fewer individuals, although herds of up to several hundred have been seen (Jefferson et al. 1993; Ross and Leatherwood, 1994). Pods often swim abreast in perfectly co-ordinated "chorus lines" and, when alarmed, bunch together to rush away. Growling sounds may be heard above the surface. Herds often strand (Carwardine, 1995), e.g. at Hawaii (Mazzuca et al. 1999) or in Brazil (Zerbini and de Oliveira 1997). A record mass stranding of pygmy killer whales in the British Virgin Islands was documented by Mignucci-Giannoni et al. (2000), who associating the stranding process with the meteorological and oceanographic disturbance of hurricane Marilyn, which devastated the Virgin Islands a day prior to the stranding.

Food: Pygmy killer whales eat mostly fish and squid, although they occasionally attack other dolphins, at least when those dolphins are involved in tuna fishery interactions in the eastern tropical Pacific (Jefferson et al., 1993; Carwardine, 1995). Santos and Haimovici (1998) found mainly squids of the families Onychoteuthidae and especially Ommastrephidae in the stomach contents of *F. attenuata*. Pygmy killer whales use similar echolocation clicks as similar sized, whistling delphinids, suggesting comparable diets. Recorded clicks are directional, short (25 μ s) transients with estimated source levels between 197 and 223 dB re. 1 μ Pa (pp). Spectra of clicks recorded close to or on the acoustic axis were bimodal with peak frequencies between 45 and 117 kHz, and with centroid frequencies between 70 and 85 kHz (Madsen et al., 2004).

5. Migration

No migrations are known (Carwardine, 1995). Incidental catches by Sri Lankan fishermen have been reported in all months except September, November and December, indicating that pygmy killer whales are present almost throughout the year in this region. Similarly, whalers of St Vincent, Lesser Antilles, indicated that they might encounter pygmy killer whales at any time of the year, implying residency (Ross and Leatherwood, 1994). Jefferson et al. (2008) confirmed this for Hawaiian waters, where pygmy killer whales show high fidelity to specific islands, with strong and stable association patterns.

6. Threats

Direct catch: A few individuals are known to be taken in drives and in driftnets in various regions, most notably Japan and Sri Lanka (Jefferson et al. 1993). Reports on the small-cetacean fisheries of St Vincent and Lamelera suggest that pygmy killer whales form a very small proportion of the catch and that catches probably have little impact on the populations in those areas. In Sri Lanka, there has been additional mortality of this and other species due to harpooning of dolphins for use as bait on long-lines for sharks, billfish, and other oceanic fishes (Ross and Leatherwood, 1994 and refs. therein).

Incidental catch: Although they comprise less than 2% of all cetaceans in monitored by-catches in gillnet fisheries in Trincomalee, Sri Lanka and in villages on the south-west coast of Sri Lanka, this may amount to 300-900 of the 15,000-45,000 dolphins estimated to die each year in such fisheries (Ross and Leatherwood, 1994, and refs. therein). The numbers of animals killed incidentally in net fisheries, such as those in Sri Lanka, may be much higher than is so far documented because monitoring of these widespread activities is incomplete. In the long term, such takes may have a significant impact on stocks resident in areas where pygmy killer whales (and other small cetaceans) and extensive gillnetting operations overlap (Ross and Leatherwood, 1994). Small incidental catches are known in fisheries in other areas (Jefferson et al. 1993), e.g. the Philippines (Dolar et al. 1999) or Indonesia (Rudolph and Smeenk, 2009).

Pollution: There have been reports on the presence of hydrocarbon residues, including DDT, Dieldrin and PCBs in various tissues of three pygmy killer whales from the Gulf and Atlantic coasts of Florida (Ross and Leatherwood, 1994 and refs. therein).

Noise pollution: In early 2004 and in 2005, several unusual stranding events occurred in Taiwan during a period of large-scale naval exercises. Gross examination of the partial remains of a pygmy killer whale revealed internal injuries to structures associated with or related to acoustics or diving, suggestive that nearby naval exercises may have contributed to or caused the death of at least one cetacean in this region and that species other than beaked whales may also be susceptible to such activities. With an increasing number of military exercises in this region, more attention to the impacts of such activities on cetaceans is needed (Wang and Yang, 2006).

7. Remarks

Range states (Taylor et al. 2008):

Algeria; Anguilla; Antigua and Barbuda; Aruba; Australia; Bahamas; Bangladesh; Barbados; Belize; Benin; Brazil; Brunei Darussalam; Cambodia; Cameroon; Cayman Islands; China;

Cocos (Keeling) Islands; Colombia; Comoros; Congo; Congo, The Democratic Republic of the; Cook Islands; Costa Rica; Cuba; Côte d'Ivoire; Djibouti; Dominica; Dominican Republic; Ecuador; El Salvador; Equatorial Guinea; Fiji; France; French Guiana; French Polynesia; Gabon; Gambia; Ghana; Grenada; Guam; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; India; Indonesia; Iran, Islamic Republic of; Italy; Jamaica; Japan; Kenya; Kiribati; Korea, Republic of; Liberia; Madagascar; Malaysia (Peninsular Malaysia, Sabah, Sarawak); Maldives; Marshall Islands; Mauritania; Mayotte; Mexico; Micronesia, Federated States of; Morocco; Mozambique; Myanmar; Nauru; Netherlands Antilles (Bonaire, Curaçao, Netherlands Leeward Is.); New Caledonia; Nicaragua; Nigeria; Niue; Northern Mariana Islands; Oman; Pakistan; Palau; Panama; Papua New Guinea; Peru; Philippines; Pitcairn; Portugal; Puerto Rico; Saint Kitts and Nevis; Saint Vincent and the Grenadines; Samoa; Senegal; Sierra Leone; Singapore; Solomon Islands; Somalia; South Africa; Spain; Sri Lanka; Suriname; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Togo; Tokelau; Tonga; Trinidad and Tobago; United States; Venezuela; Viet Nam; Virgin Islands, British; Virgin Islands, U.S.; Wallis and Futuna; Western Sahara; Yemen

Feresa attenuata is considered as “Data Deficient” by the IUCN (Taylor et al. 2008). The species is not listed by CMS. The species is listed on Appendix II of CITES.

There is very little knowledge about this species, its abundance, migratory behaviour or by-catch rates in offshore fisheries. For South American populations, see recommendations in Hucke-Gaete (2000) (see Appendix 1). General recommendations on Southeast Asian stocks can be found in Perrin et al. (1996) (see Appendix 2).

8. Sources

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