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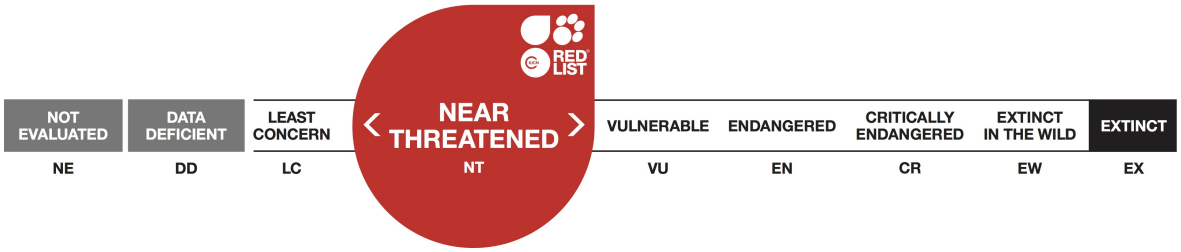
Scope: Global
Language: English

Pseudorca crassidens, False Killer Whale

Assessment by: Baird, R.W.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Cetartiodactyla	Delphinidae

Taxon Name: *Pseudorca crassidens* (Owen, 1846)

Synonym(s):

- *Phocaena crassidens* Owen, 1846

Regional Assessments:

- Europe

Common Name(s):

- English: False Killer Whale
- French: Faux-orque
- Spanish: Orca Falsa

Taxonomic Source(s):

Committee on Taxonomy. 2017. List of marine mammal species and subspecies. Available at: www.marinemammalscience.org. (Accessed: 31 August 2018).

Taxonomic Notes:

No subspecies of False Killer Whale (*Pseudorca crassidens*) are currently recognized. However, there is evidence of geographic variability in skull morphology and life history (Kitchener *et al*. 1990, Ferreira *et al*. 2014). Based on genetics there is substantial population structure, both between and within-ocean basins, and even within a single archipelago (Martien *et al*. 2014). This species has been intensively studied only in Hawaii (Baird 2016) and more recently in New Zealand (Zaeschmar 2014). In Hawaii, three sub-populations have been identified based on a combination of genetic studies (Martien *et al*. 2014), satellite tagging (Baird *et al*. 2010, 2012, 2014, Bradford *et al*. 2014a), and analyses of photo-identification data (Baird *et al*. 2008, Baird 2016). These include two partially overlapping insular populations, one around the main Hawaiian Islands, and one in the Northwestern Hawaiian Islands, as well as a partially overlapping pelagic population that ranges throughout and beyond the U.S. Exclusive Economic Zone (EEZ) around the Hawaiian Archipelago. In New Zealand, based on high resighting rates of photo-identified individuals and a relatively small number of individuals documented, it is likely that this represents a distinct subpopulation (Zaeschmar 2014). While the number of subpopulations world-wide is unknown, this is due primarily to incomplete sampling in most of the range. Based on the evidence from Hawaii, subpopulation structure likely exists throughout their range.

Assessment Information

Red List Category & Criteria: Near Threatened ver 3.1

Year Published: 2018

Date Assessed: July 23, 2018

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Justification:

False Killer Whales are widely distributed in tropical, subtropical, and warm temperate waters of the Atlantic, Pacific, and Indian Oceans, but they are not common anywhere. They occur at highest densities in tropical areas, but even there are generally among the less common delphinids. The sum of existing abundance estimates is 59,157 animals, although the two largest estimates (accounting for approximately 94% of the total number) are more than 25 years old. No abundance estimates are available for a substantial part of the range of the species, and therefore total abundance is likely much higher than 60,000. Because of these whales' low density, abundance estimates are imprecise, and thus there is no ability to assess trends in most areas.

False Killer Whales feed on fish species that are targeted by major high-value fisheries, including tunas and billfishes, and they regularly engage in depredation on both catch and bait in hook-and-line fisheries. This makes them both more vulnerable to bycatch in hook-and-line fisheries and to reductions in available prey than most species of cetaceans with similar distributions, as these other species tend to feed on small mesopelagic fish and squid or on deep-water prey such as squid.

The primary threats to False Killer Whales are incidental mortality ("bycatch") in fisheries and, in some areas, directed hunting or culling. Generation length has been estimated at 25 years. Because of their life history, even low levels of bycatch or directed takes could result in population declines. Numbers taken in directed hunts in Japan have likely been great enough to reduce nearshore populations, and False Killer Whales are at least occasionally targeted in direct hunts in a few other parts of their range (Indonesia and West Indies). Bycatch is greatest in longline and other hook-and-line fisheries, but some mortality also occurs in gillnet and seine fisheries. In Hawaii, one area where they have been studied extensively, there is strong evidence of multiple subpopulations, and these have been recognized under U.S. law as separate stocks. Bycatch of the Hawaii pelagic stock in the U.S. longline fishery has been at a level thought to be high enough to limit population growth for most years since bycatch rates and abundance estimates have been available. This is a transboundary stock and foreign fleets account for the majority of longline effort in surrounding international waters, thus total bycatch levels are likely much higher than indicated by the U.S. observer program. Bycatch is known to occur in other areas but limited or no observer coverage in most fisheries and lack of abundance estimates precludes quantitative assessment of bycatch levels in relation to abundance. The only stock that has been quantitatively assessed (the main Hawaiian Islands insular stock) was estimated to have had a >50% decline in abundance in less than two generations (Oleson *et al*. 2010), with fishery interactions (primarily hooking and entanglement) thought to be the most important threat.

False Killer Whales were listed as Data Deficient on the IUCN Red List in 2008, and the species remains data-poor for most of its range. The Red List Guidelines (Version 13, 2017) note that a taxon that comes close to qualifying for the Vulnerable (VU) category based on the Vulnerable thresholds qualifies for the Near Threatened (NT) category. This consideration combined with biological susceptibility and threat strengthens the case for a NT listing. A 30% or greater decline in three generations based on category A2(d) – a population reduction observed, estimated, inferred, or suspected, based on actual or potential levels of exploitation – qualifies a taxon for the Vulnerable category. The False Killer Whale comes close to meeting the criteria for VU for the following reasons: 1) there has been an estimated population decline of >50% in two generations in the one population that has been quantitatively assessed, with the primary cause thought to be fishery interactions; 2) bycatch is a widespread threat at levels suspected to be large enough to result in population reduction throughout much of the taxon's range,

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and levels of fishing effort are unlikely to decline substantially in the near future; 3) levels of directed take in some areas are likely high enough to have reduced local populations; and 4) biological susceptibility to population-level effects of bycatch exists given the life history of these whales, the overlap of their diet with the target species of high-value commercial fisheries, and their tendency to engage in depredation on catch and bait in hook-and-line fisheries. Given the above, False Killer Whales are therefore assessed as NT. Although the rangewide decline could be large enough for the species to qualify for VU, collecting the data necessary to quantify the extent of decline for a globally distributed, pelagic species is very difficult. Risk levels could be better assessed at the subpopulation level and efforts should be made toward that end.

Previously Published Red List Assessments

2008 – Data Deficient (DD)
http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T18596A8495147.en

1996 – Lower Risk/least concern (LR/lc)

1994 – Insufficiently Known (K)

Geographic Range

Range Description:

False Killer Whales are found in tropical to warm temperate zones, generally in relatively deep, offshore waters in all three major oceans. Densities are much higher in tropical regions and movements into higher latitudes may be associated with warmer currents, or they could be seasonal (Zaeschmar 2014). False Killer Whales do not generally range into latitudes higher than 50° in either hemisphere. They are found in many semi-enclosed seas and bays, including the Sea of Japan, Bohai/Yellow Sea, Timor Sea, Arafura Sea, Red Sea, and Persian Gulf, but they are observed only occasionally in the Mediterranean Sea (Notarbartolo di Sciara *et al.* 2017, Baldwin *et al* 1999, Leatherwood *et al*. 1989). There are a few records for the Baltic Sea, which are considered extralimital (Aguayo 1978).

Country Occurrence:

Native: American Samoa; Anguilla; Antigua and Barbuda; Argentina; Aruba; Australia; Bahamas; Bangladesh; Barbados; Belize; Benin; Bermuda; Bonaire, Sint Eustatius and Saba (Saba, Sint Eustatius); Brazil; British Indian Ocean Territory; Brunei Darussalam; Cabo Verde; Cambodia; Cameroon; Canada; Cayman Islands; Chile; China; Cocos (Keeling) Islands; Colombia; Congo; Congo, The Democratic Republic of the; Cook Islands; Costa Rica; Côte d'Ivoire; Croatia; Cuba; Curaçao; Denmark; Djibouti; Dominica; Dominican Republic; Ecuador; Egypt; El Salvador; Equatorial Guinea; Eritrea; Fiji; France; French Guiana; French Polynesia; Gabon; Gambia; Germany; Ghana; Gibraltar; Greece; Grenada; Guadeloupe; Guam; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hong Kong; India; Indonesia; Iran, Islamic Republic of; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kenya; Kiribati; Korea, Republic of; Kuwait; Liberia; Madagascar; Malaysia; Maldives; Malta; Marshall Islands; Martinique; Mauritania; Mayotte; Mexico; Micronesia, Federated States of ; Morocco; Mozambique; Myanmar; Namibia; Netherlands; New Caledonia; New Zealand; Nicaragua; Nigeria; Niue; Northern Mariana Islands; Norway; Oman; Pakistan; Palau; Panama; Papua New Guinea; Peru; Philippines; Pitcairn; Portugal; Puerto Rico; Qatar; Saint Helena, Ascension and Tristan da Cunha; Saint Kitts and Nevis; Saint Lucia; Saint Martin (French part); Saint Pierre and Miquelon; Saint Vincent and the Grenadines; Samoa; Sao Tome and Principe; Saudi Arabia; Senegal; Seychelles; Sierra Leone; Singapore; Sint Maarten (Dutch part); Solomon Islands; Somalia; South Africa; Spain; Sri Lanka; Sudan; Suriname; Syrian Arab Republic; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Togo; Tokelau; Tonga; Trinidad and Tobago;

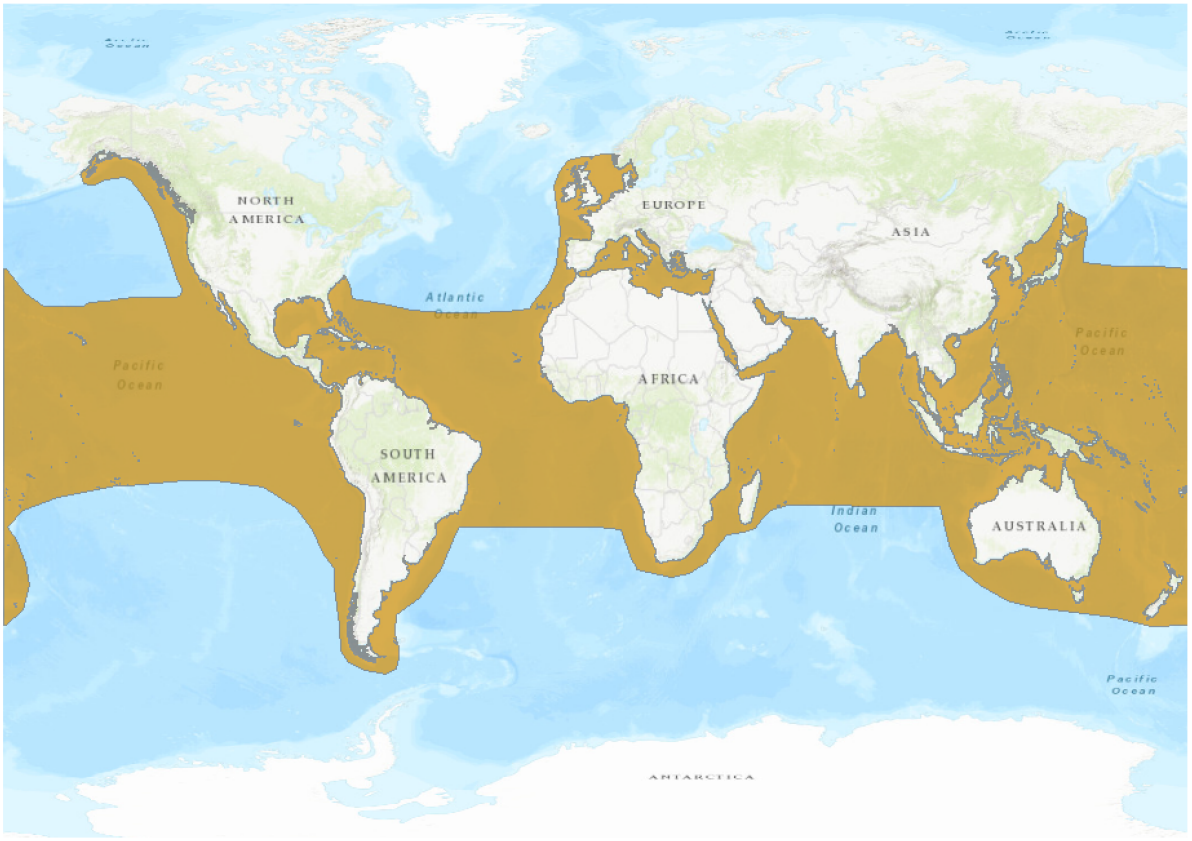
Turkmenistan; Turks and Caicos Islands; United Arab Emirates; United Kingdom; United States; Uruguay; Vanuatu; Venezuela, Bolivarian Republic of; Viet Nam; Virgin Islands, British; Virgin Islands, U.S.; Wallis and Futuna; Western Sahara; Yemen

FAO Marine Fishing Areas:

Native: Atlantic - western central, Atlantic - northwest, Atlantic - southwest, Atlantic - northeast, Atlantic - southeast, Atlantic - eastern central, Indian Ocean - eastern, Indian Ocean - western, Mediterranean and Black Sea - , Pacific - western central, Pacific - southeast, Pacific - eastern central, Pacific - northeast, Pacific - southwest, Pacific - northwest

Distribution Map

Pseudorca crassidens



0 7,200

Kilometer

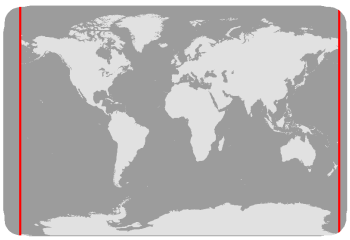
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Range

Extant (resident)

Compiled by:

IUCN (International Union for Conservation of Nature)



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

Density of False Killer Whales is highest in low latitudes; in the eastern North Pacific, for example, density drops by an order of magnitude north of approximately 15°N (Ferguson and Barlow 2003). Abundance estimates are available for a number of areas, and in general False Killer Whales are among the least abundant delphinids even in their highest density areas (Wade and Gerrodette 1993, Ballance and Pitman 1998). In the eastern tropical Pacific, in an area of 19.1 million km², False Killer Whale abundance was estimated as 38,900 (coefficient of variation (CV) 0.64) based on line-transect surveys from 1986-1991 (Wade and Gerrodette 1993). In the western North Pacific, in an area of 2.9 million km², abundance was estimated as 16,668 (CV 0.26) based on line-transect surveys from 1983-1991 (Miyashita 1993). Kasuya (2017) subdivided this estimate based on region, and noted for coastal Japan (30°-42°N and west of 145°E) the abundance was estimated as 2,029 (95% confidence interval (CI) 907-4,541). In the Gulf of Mexico, there are three False Killer Whale abundance estimates based on line-transect surveys: 381 (CV 0.62) for 1991-1994, 1,038 (CV 0.71) for 1996-2001, and 777 (CV 0.56) for 2003-2004 (Waring *et al.* 2013). For U.S. waters of the western North Atlantic, abundance was estimated as 442 (CV 1.06) based on a survey in 2011 (Waring *et al*. 2015). In the western Indian Ocean, the False Killer Whale ranked 11th out of 13 species of delphinids in relative abundance (Ballance and Pitman 1998), based on a line-transect survey in 1995. Abundance off New Zealand was estimated as 111 individuals based on mark-recapture analyses of photo-identification data collected during 2005-2012 (Zaeschmar 2014).

The only region where abundance estimates have been apportioned by stock is within the U.S. EEZ around the Hawaiian Archipelago. The abundance estimate for the main Hawaiian Islands insular stock based on mark-recapture analyses of photo-identified animals was 167 individuals (standard error 23) in 2015 (Bradford *et al*. 2018). This is the only population where trend information is available, and several lines of evidence suggest that abundance in the 1980s was much higher, likely in the 400-700 range (Reeves *et al*. 2009, Oleson *et al*. 2010), which would indicate a substantial long-term decline. More recent trend (i.e., 2000s through 2015) is unknown due to the variability associated with recent abundance estimates (Bradford *et al*. 2018). Abundance of the insular stock in the Northwestern Hawaiian Islands, in an area of 0.4 million km², was estimated as 552 individuals (CV 1.09) based on a line-transect survey in 2010 (Bradford *et al*. 2014b). The abundance of the pelagic stock within the entire U.S. EEZ around the Hawaiian Archipelago (an area of 2.3 million km²) was estimated as 1,540 individuals (CV 0.66) based on a 2010 line-transect survey although vessel attraction was not accounted for and this therefore may have led to overestimation of abundance (Bradford *et al*. 2014b). Although no abundance estimate was given, Anderson (2014) noted that the numbers of False Killer Whales around the Maldives had decreased over a 20-year period and that it may have been due to interactions with longline fisheries in the area.

The generation length for False Killer Whales was estimated at 25 years by Oleson *et al*. (2010), thus three generations is 75 years. The only subpopulation with sufficient evidence to assess trends over more than one generation is the main Hawaiian Island insular population, where there is evidence of a greater than 50% decline in less than two generations (Oleson *et al*. 2010).

Current Population Trend: Unknown

Habitat and Ecology **(see Appendix for additional information)**

While False Killer Whales occur in tropical, sub-tropical, and at least occasionally in warm temperate waters worldwide (Stacey *et al*. 1994, Odell and McClune 1999), their density is highest in the tropics (Ferguson and Barlow 2003). They are generally found in relatively deep, offshore waters, but individuals do approach close to shore around oceanic islands (e.g., Hawaii). Individuals from the main Hawaiian Islands resident subpopulation use both shallow (<100 m) and deep (to 4,700 m) waters around the Hawaiian archipelago (Baird 2016). Some animals may move into shallow and higher latitude waters seasonally (e.g., off New Zealand; Zaeschmar 2014) or periodically (including some semi-enclosed seas such as the Red Sea and the Mediterranean). Individuals have been documented spending extended periods of time (two to three months) in shallow water areas of the Timor and Arafura seas (Palmer *et al*. 2009, 2017). Individuals and groups have been reported to enter rivers on the Chinese mainland (Zhou *et al*. 1995), but it was not clear whether these occurrences might have represented pre-stranding behaviour.

False Killer Whales eat primarily relatively large fish and cephalopods (Alonso *et al*. 1999). They have been known to attack and consume small dolphins that have been injured or disoriented when released from tuna purse seine nets, but this behavior may be more akin to learning to take advantage of opportunistic food sources than to a predilection to feed on other species of marine mammals (Baird 2018). They eat some large species of fish, such as Mahimahi (also called Dorado or Dolphinfish), Yellowfin Tuna, Skipjack Tuna, Albacore Tuna, Opah, Wahoo, pomphrets, Broadbill Swordfish and Sailfish (Oleson *et al.* 2010). In Hawaiian waters observational studies suggest that large pelagic game fish (Mahimahi, tunas, billfishes) form the majority of their diet (Baird *et al*. 2008, Baird 2016). Depredation data on longline-caught fish suggest a preference for billfishes, Wahoo and tunas over Mahimahi, pomfrets, Walu, sharks or lancetfishes (Oleson *et al.* 2010).

Systems: Marine

Use and Trade

False Killer Whales are taken in hand-harpoon and drive hunts as well as small-type whaling (with a cannon mounted on a vessel below a certain size limit) in Japan (Kishiro and Kasuya 1993, Kasuya 2017). They are also hunted at least opportunistically in Indonesia (Barnes 1991) and the West Indies (Caldwell and Caldwell 1975). Quotas remain for takes of False Killer Whale in drive fisheries and hand-harpoon fisheries in Japan (Kasuya 2017). Although there is no legal hunting of False Killer Whales in the Republic of Korea, meat from False Killer Whales has been represented in markets at significantly higher rates than expected based on reports of bycaught animals (Baker *et al*. 2006). Based on their analysis, Baker *et al*. (2006) suggested that the False Killer Whales must be killed at a rate 10-times greater than the reported bycatch.

Some of the animals caught in the drive hunt or bycaught in Japan have been kept alive and sold to oceanaria (Kasuya *et al*. 1984) and a few were live-captured in California and Hawaii as recently as the 1970s (Reeves and Leatherwood 1984).

Threats (see Appendix for additional information)

False Killer Whales are long-lived, slow to reproduce, upper-trophic level predators, and as such are subject to effects of a number of different anthropogenic stressors. The overlap of their diet with species targeted by fisheries, in particular high-value species such as tunas and billfishes, results in a

number of types of interactions that can reduce local populations, although the sparseness of observer coverage in most hook-and-line and other fisheries within the range of False Killer Whales limits the information available. In addition, the False Killer Whale is one of several species known to mass strand (Caldwell *et al.* 1970, Alonso *et al.* 1999, Liebig *et al.* 2007), with the largest known mass stranding of 835 individuals in Argentina in 1946 (Caillet-Bois 1948). Such mass strandings have the potential to affect local populations.

False Killer Whales are hooked in longline fisheries as they engage in depredation on both the catch and bait (Hernandez-Milian *et al*. 2008, Thode *et al*. 2016). The U.S. Hawaii-based deep-set longline fishery has had approximately 20% observer coverage since 2001, and has provided detailed information on bycatch rates. In this fishery, False Killer Whales are the most frequently recorded species of cetacean hooked as bycatch (Forney and Kobayashi 2005, Bradford and Forney 2014). The first abundance estimates became available for the Hawaii pelagic stock in 2003 (Barlow 2006, Bradford *et al*. 2014b), and documented mortality and serious injury inside the U.S. EEZ surrounding the Hawaiian Archipelago exceeded the potential biological removal (PBR) level for 10 of the 12 years from 2003-2015 (Carretta *et al*. 2013, 2017). Rates of hooking or entanglement are approximately 1.5 individuals for every 10 million hooks set. This is a transboundary population and non-U.S. fisheries outside the U.S. EEZ surrounding the Hawaiian Archipelago represent the majority of longline effort, thus bycatch rates for the entire Hawaii pelagic stock are likely much higher than estimated. Non-lethal but potentially significant injuries (such as those that compromise health and ability to reproduce) may also occur if animals are hooked (Baird and Gorgone 2005, Baird *et al*. 2014, Alves *et al*. 2018). The rate of non-lethal line-related injuries is significantly higher in the main Hawaiian Islands insular stock than in the Hawaii pelagic stock (Baird *et al*. 2014). The main Hawaiian Islands insular stock has only limited overlap with the longline fishery, but there are no observers in the nearshore fisheries, and thus no bycatch estimates are available. Longline fisheries occur throughout the central and western tropical Pacific, and similar interactions with False Killer Whales occur in other regions (e.g., Indian Ocean, Kiszka *et al*. 2010, Anderson 2014; American Samoa, Bradford and Forney 2014; Mediterranean, Bearzi 2002; western North Atlantic, Waring *et al*. 2015). Observers on Spanish longline vessels documented two bycaught False Killer Whales off the Azores in 2006 in approximately 810,000 observed hooks (Hernandez-Milian *et al*. 2008), a rate more than 15 times higher than in the Hawaii-based longline fishery. The incidental catch rate (including animals hooked but released alive) was estimated from 1992-2005 from observers in the Spanish longline fleet at 1.464, 1.685, and 0.797 individuals per million hooks for the Atlantic, Indian, and Pacific Oceans, respectively (Ramos-Cartelle and Mejuto 2008.) Observer programs to monitor bycatch in fisheries in most parts of the world are limited (if they exist at all), but given what is known regarding both the abundance of False Killer Whales and their predilection to take fish off lines, there is certainly potential for bycatch to result in population declines. Based on observer reports, False Killer Whales were the most frequently reported species of cetacean killed in the tropical western and central Pacific purse seine fishery in 2009, with an estimated mortality of 281 (SPC-OFP 2010). Interactions with this fishery were observed within the EEZs of Papua New Guinea, Kiribati, the Federated States of Micronesia, and Nauru, and in international waters. Mortality of False Killer Whales has been documented in Chinese purse seine fisheries in the western Pacific (Dai *et al*. 2017). By contrast, the only mortality documented in the eastern tropical Pacific purse seine fishery since 2001 was in 2010 (IATTC 2011).

Incidental takes of small numbers of False Killer Whales in gill nets have been documented off northern Australia, Sri Lanka, India, Ghana, Brazil, Venezuela, Peru, Japan, Republic of Korea, and China (Perrin *et*

al. 2005, Reeves *et al.* 2014, Song 2018). Wang *et al*. (2013) noted that entanglement in large-mesh drift gillnets is likely responsible for most False Killer Whale fishery-related mortality off eastern Taiwan. Yang *et al*. (1999) reported on cetacean bycatch rates in Chinese coastal fisheries (trawl, gill, and stow nets), which may number in the hundreds per year for False Killer Whales alone.

False Killer Whales have been taken in drive and harpoon fisheries in a number of areas, either for meat or oil, or to reduce populations due to real or perceived fishery conflicts. At least in some areas, the numbers taken have likely reduced local populations. False Killer Whales are occasionally taken at Saint Vincent in the Caribbean for meat and cooking oil (Caldwell and Caldwell 1975). Considerable numbers of False Killer Whales have also been killed in a past drive fishery in the Penghu Islands of Taiwan (Zhou *et al*. 1995). Official catch records were not recorded until 1972, but from 1958 to 1960, 900 individuals were killed in drive fisheries off northern Kyushu (Kasuya 2017). From 1972 to 2008, 2,643 were reported killed in all fishery types (including bycatch) in Japan, with the highest number in one year of 637 in 1978 (Kasuya 2017). Abundance for coastal Japan was estimated at 2,029 (Kasuya 2017), so this one-year take would have represented approximately 31% of the coastal population as estimated from 1983 to 1991. Over 1,500 were killed in drive fisheries off northern Kyushu between 1972 and 1993, with peak mortality occurring from 1978 to 1983 when 1,358 were reportedly taken (Kasuya 2017). Smaller numbers (171) were killed in a drive fishery at Izu on the east coast of Honshu from 1978 to 1996 with 123 taken in 1978 (Kasuya 2017), and 79 were killed in a crossbow fishery in Okinawa between 1993 and 2011 (Kasuya 2017). False Killer Whales have also been killed in the drive fishery at Taiji on the west coast of Honshu, with 586 killed between 1982 and 2011 and up to 91 killed in a single year (Kasuya 2017). Quotas are in place in Japan for drive and crossbow fisheries although those quotas have only rarely been reached in recent years (Kasuya 2017). Some of the animals caught in the Japanese and Taiwanese drive fisheries have been kept alive and sold to oceanaria (Reeves *et al*. 2003). Deliberate shooting in response to depredation may also occur in a number of areas. Oleson *et al*. (2010) noted, for example, that in Hawaii fishermen have reported shooting at False Killer Whales or other dolphins in response to depredation. Anderson (2014) noted that False Killer Whales are likely being shot by tuna longline fishermen in the Indian Ocean.

Although there is considerable controversy regarding the absolute extent of declines, there is good evidence of large-scale reductions in many predatory fish populations (e.g., Baum *et al*. 2003, 2005, Sibert *et al*. 2006, Polacheck 2006), including Yellowfin and Bigeye Tuna in the western and central Pacific (Harley *et al*. 2009; Langley *et al*. 2009). In addition to overfishing, expansion in the extent of unproductive areas and other ecosystem changes (e.g., Polovina *et al*. 2008, Coll *et al*. 2008, Koslow *et al.* 2015) have the potential to influence fish populations at multiple trophic levels. The effects of such reductions of fish populations and subsequent ecosystem changes on populations of False Killer Whales worldwide are unknown but could have resulted in population declines.

Studies of persistent organic pollutants in the main Hawaiian Islands insular population have revealed that all adult males and a number of adult females sampled from the population have levels of PCBs that exceed thresholds thought to cause immunosuppression (Ylitalo *et al*. 2009, Foltz *et al*. 2014). Evidence from stranded individuals of several similar species indicates that they have swallowed discarded plastic items, which may eventually lead to death (e.g. Scott *et al*. 2001); False Killer Whales may also be at risk from this threat.

Conservation Actions **(see Appendix for additional information)**

The False Killer Whale is listed in Appendix II of the Convention on International Trade in Endangered Species (CITES), and under the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

The main Hawaiian Islands insular stock (subpopulation) was listed as endangered under the U.S. Endangered Species Act in 2012. A number of "biologically important areas" have been recognized for the main Hawaiian Islands insular stock (Baird *et al*. 2015). Critical habitat for this stock was designated in 2018 as part of a settlement from a lawsuit. Both the Hawaiian pelagic stock and the main Hawaiian Islands insular stock are subjects of a False Killer Whale Take Reduction Plan as required by the U.S. Marine Mammal Protection Act that went into effect in 2013, in an attempt to reduce bycatch in the Hawaii-based longline fisheries to a level below its calculated potential biological removal. The Take Reduction Plan includes both gear changes (mandating "weak" circle hooks with a maximum wire diameter of 4.5 mm and "strong" branchlines, with a minimum diameter of 2.0 mm) as well as handling guidelines to try to allow hooks to straighten, releasing animals from the gear. In addition, prior to the Take Reduction Plan the longline exclusion area around the main Hawaiian Islands would seasonally contract towards the islands for four months of the year, but the Take Reduction Plan removed that seasonal shift, thus reducing overlap between the longline fishery and the main Hawaiian Islands insular stock. Overall however, as of April 2018, serious injury and mortality rates in the Hawaii-based longline fishery (with the vast majority from the Hawaii pelagic stock of False Killer Whales) had not declined.

Credits

Assessor(s): Baird, R.W.

Reviewer(s): Reeves, R., Taylor, B.L. & Braulik, G.

Facilitators(s) and Compiler(s): Lowry, L.

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Disclaimer

External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.1. Marine Neritic - Pelagic	Resident	Suitable	Yes
10. Marine Oceanic -> 10.1. Marine Oceanic - Epipelagic (0-200m)	Resident	Suitable	Yes
10. Marine Oceanic -> 10.2. Marine Oceanic - Mesopelagic (200-1000m)	Resident	Suitable	Yes
10. Marine Oceanic -> 10.3. Marine Oceanic - Bathypelagic (1000-4000m)	Resident	Suitable	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	-	-	-
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.5. Persecution/control	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.2. Industrial & military effluents -> 9.2.3. Type Unknown/Unrecorded	Ongoing	-	-	-
9. Pollution -> 9.4. Garbage & solid waste	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Education
Included in international legislation: Yes

Conservation Actions in Place
Subject to any international management/trade controls: Yes

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.1. Species management -> 3.1.2. Trade management
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): Unknown
Extreme fluctuations in area of occupancy (AOO): No
Continuing decline in extent of occurrence (EOO): Unknown
Extreme fluctuations in extent of occurrence (EOO): No
Continuing decline in number of locations: Unknown
Extreme fluctuations in the number of locations: No
Upper elevation limit (m): 0
Lower depth limit (m): 1500

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Population
Continuing decline of mature individuals: Unknown
Population severely fragmented: No
Continuing decline in subpopulations: No
Extreme fluctuations in subpopulations: No
All individuals in one subpopulation: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Unknown
Generation Length (years): 25

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