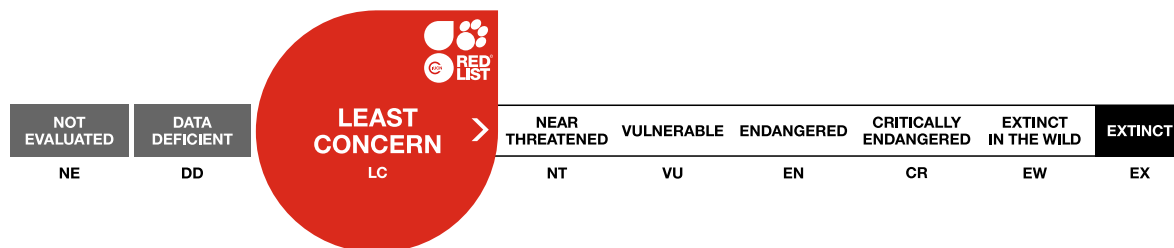


## *Indopacetus pacificus*, Indo-pacific Beaked Whale

Assessment by: Pitman, R.L. & Brownell Jr., R.L.



View on [www.iucnredlist.org](http://www.iucnredlist.org)

**Citation:** Pitman, R.L. & Brownell Jr., R.L. 2020. *Indopacetus pacificus*. The IUCN Red List of Threatened Species 2020: e.T40635A50380449. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T40635A50380449.en>

**Copyright:** © 2020 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder provided the source is fully acknowledged.

Reproduction of this publication for resale, reposting or other commercial purposes is prohibited without prior written permission from the copyright holder. For further details see [Terms of Use](#).

The IUCN Red List of Threatened Species™ is produced and managed by the [IUCN Global Species Programme](#), the [IUCN Species Survival Commission \(SSC\)](#) and [The IUCN Red List Partnership](#). The IUCN Red List Partners are: [Arizona State University](#); [BirdLife International](#); [Botanic Gardens Conservation International](#); [Conservation International](#); [NatureServe](#); [Royal Botanic Gardens, Kew](#); [Sapienza University of Rome](#); [Texas A&M University](#); and [Zoological Society of London](#).

If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with [feedback](#) so that we can correct or extend the information provided.

## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Cetartiodactyla	Ziphiidae

**Scientific Name:** *Indopacetus pacificus* (Longman, 1926)

### Synonym(s):

- *Mesoplodon pacificus* Longman, 1926
- *Mesoplodon pacificus* Longman, 1926
- *Mesoplodon pacificus* (Longman, 1926)

### Common Name(s):

- English: Indo-pacific Beaked Whale, Indo-Pacific Beaked Whale, Longman's Beaked Whale, Longman's Beaked Whale, Tropical Bottlenose Whale, Tropical Bottlenose Whale
- French: Baleine A Bec De Longman, Baleine A Bec De Longman
- Spanish; Castilian: Zifio De Longman, Zifio De Longman
- Japanese: Taiheiyu akaboumodoki

### Taxonomic Source(s):

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

### Taxonomic Notes:

This species was originally included in the genus *Mesoplodon* (Longman 1926), but based on morphological features, Moore (1968) created the monotypic genus *Indopacetus*. There has been debate about the validity of this genus (e.g., Mead 1989, Rice 1998), and, although Dalebout *et al.* (2003) were unable to validate *Indopacetus* based on available genetic evidence, they recommended retention of the genus based on morphological features. Prior to descriptions of its field characteristics, sightings in tropical waters of what are now known to be this species were sometimes mistakenly attributed to the genus *Hyperoodon* (Pitman *et al.* 1999, Dalebout *et al.* 2003).

## Assessment Information

**Red List Category & Criteria:** Least Concern [ver 3.1](#)

**Year Published:** 2020

**Date Assessed:** August 23, 2020

### Justification:

There is no information on global abundance or trends in abundance for this species. The species was classified as Data Deficient (DD) on the IUCN Red List in 2008. Clarifying language in the Guidelines (Version 14, 2019) states that: "If the data are so uncertain that both CR and LC are plausible categories, the taxon can be listed as DD." Although the information is sparse, this species appears to occur in a variety of locations and across a substantial swath of ocean in the Southern Hemisphere and the western North Pacific. Therefore, it is not rare (see Supplement for definitions), therefore the category

of CR cannot be plausibly applied and the species does not belong in the DD category. This species is not rare and it appears to be fairly common in at least some parts of its large range (see Supplement for definitions), which spans parts of both the Pacific and Indian Oceans. Longman's Beaked Whales are vulnerable to low-level threats in a substantial portion of their range. However, well-documented threats (especially anthropogenic noise) are not significant in much of the range. In addition, the large range allows the potential to contain demographically independent populations that could buffer overall risk to the species. Plausible categories are NT or LC. Least Concern is the more appropriate category since the species is fairly common in parts of its large range and subpopulations (demographically independent populations) may exist (see Supplement).

### Previously Published Red List Assessments

2008 – Data Deficient (DD)

<https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T40635A10345818.en>

1996 – Data Deficient (DD)

1996 – Data Deficient (DD)

1994 – Insufficiently Known (K)

## Geographic Range

### Range Description:

The distribution is not fully known, but these whales apparently range throughout the tropical Indo-Pacific region (i.e., eastern Pacific to western Indian Ocean; Dalebout *et al.* 2003, Anderson *et al.* 2006, Jefferson *et al.* 2015) and in the southern Bay of Bengal (Afsal *et al.* 2009). They were rarely seen in the eastern tropical Pacific during systematic large-scale surveys (Hamilton *et al.* 2009), and may be more common in the western Pacific (Pitman *et al.* 1999). They also appear to be relatively common in the western Indian Ocean, especially around the Maldives (Anderson *et al.* 2006). Stranded specimens are known from tropical and warm-temperate waters of Australia, Somalia, South Africa, the Maldives, Kenya, India, Myanmar, New Caledonia, the Philippines, China, Taiwan, Japan and Hawaii.

### Country Occurrence:

**Native, Extant (resident):** Australia; China; Comoros; Indonesia; Japan; Kenya; Madagascar; Malaysia; Maldives; Mayotte; Mexico; Myanmar; New Caledonia; Philippines; Somalia; South Africa; Sri Lanka; Taiwan, Province of China; United States (Hawaiian Is.)

**Native, Presence Uncertain:** India; Mozambique; Pakistan; Tanzania, United Republic of; Thailand; Viet Nam

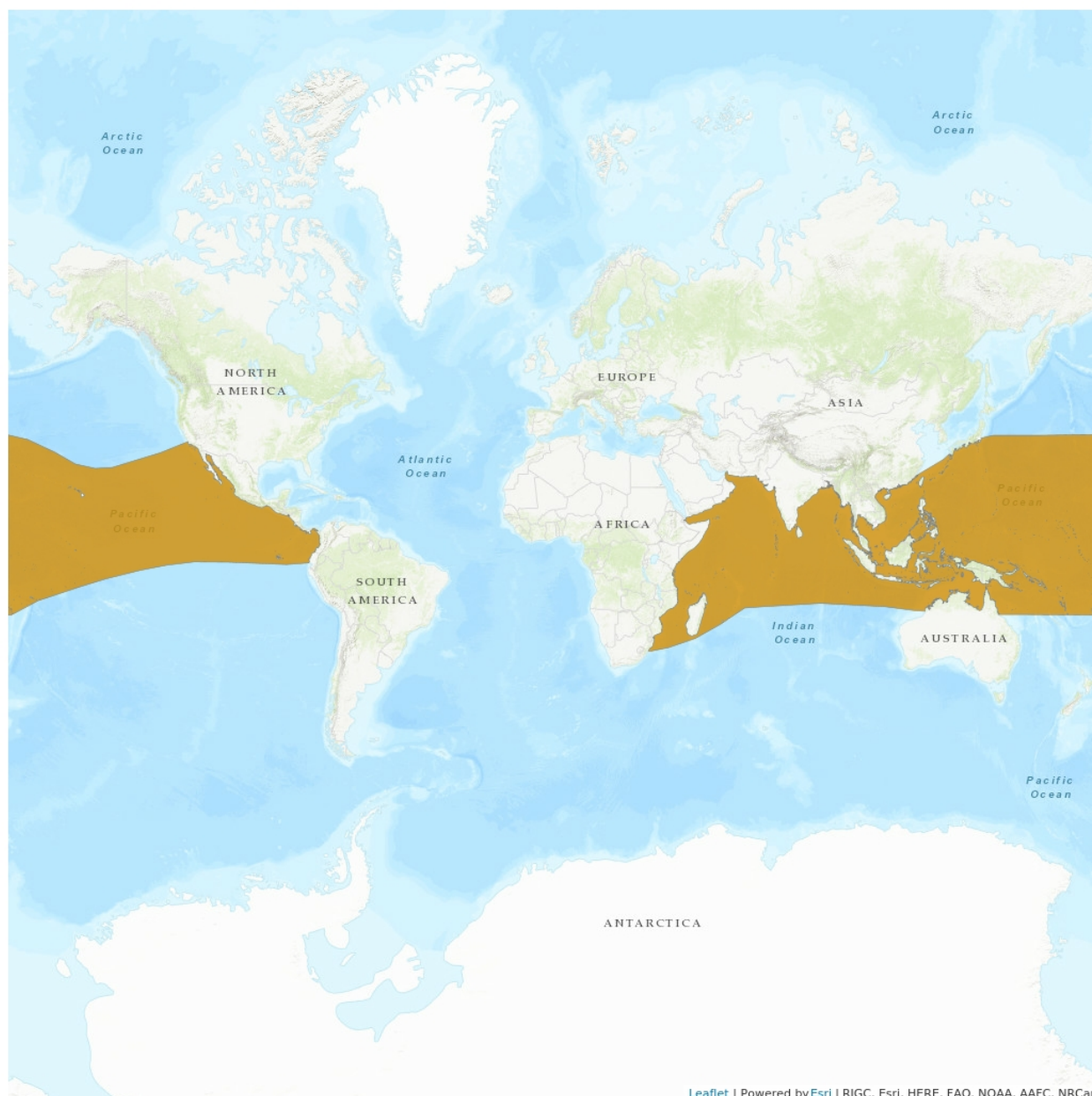
### FAO Marine Fishing Areas:

**Native:** Indian Ocean - eastern

**Native:** Indian Ocean - western

**Native:** Pacific - western central

# Distribution Map

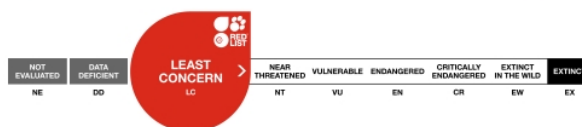


## Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN (International Union for Conservation of Nature) 2012



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



## Population

There is no information on trends in the global abundance of this species. This is apparently a common to an uncommon species although very little survey work has been conducted in low-latitude, open-ocean areas where it mainly occurs. The only estimates of abundance are: 4,571 individuals (CV= 0.65) around Hawaii (Bradford *et al.* 2013) and 291 (CV=100%) in the eastern Pacific (Ferguson and Barlow 2001).

**Current Population Trend:** Unknown

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

Little is known about the biology of this species. Live sightings come from scattered locations, mainly in deep, oceanic waters in the tropical and subtropical Indo-Pacific, in areas with surface water temperatures of 21-31°C. Dive times of up to 33 min have been recorded (Anderson *et al.* 2006). School sizes tend to be large and may vary regionally: reported mean school sizes range from 7.2 (western Indian Ocean) to 29.2 (western Pacific), with individual groups ranging from 1-100 individuals (Pitman *et al.* 1999, Anderson *et al.* 2006). Stomach contents of single animals stranded in Japan (Yatabe *et al.* 2010) and the Philippines (Yamada *et al.* 2012) contained beaks of various mid-water squids.

**Systems:** Marine

## Threats (see Appendix for additional information)

Little specific information is available on threats to Longman's Beaked Whales. Although there has never been a directed fishery for them, pervasive gillnet and longline fisheries throughout their range raise concern that at least some bycatch occurs, as is true for other beaked whales (e.g., Nishimura and Nishiwaki 1964, Julian and Beeson 1998, Waring *et al.* 2009). In Sri Lanka, for example, there is evidence of occasional incidental or directed takes of animals identified as Southern Bottlenose Whales (*Hyperoodon planifrons*, Dayaratne and Joseph 1993), which in retrospect were most likely Longman's Beaked Whales (Anderson *et al.* 2006, Afsal *et al.* 2009). Even low levels of human-caused mortality might be unsustainable for populations of this naturally uncommon species.

In recent years, there has been increasing evidence that loud underwater sounds, such as active sonar and seismic operations, can be harmful to beaked whales (Cox *et al.* 2006). In particular, the use of active sonar from military vessels has been implicated in numerous atypical mass strandings of beaked whales, including several *Mesoplodon* species (Balcomb and Claridge 2001, Wang and Yang 2006, D'Amico *et al.* 2009, Filadelfo *et al.* 2009). The exact cause for the strandings is unknown, but stranded individuals sometimes suffer from chronic and acute tissue damage due to *in vivo* formation of gas bubbles, possibly resulting from decompression sickness (Frantzis 1998, Jepson *et al.* 2003, Fernández *et al.* 2005). Two Longman's Beaked Whales (possibly a mother and calf) stranded alive in Taiwan coincident with naval training exercises in the area; at least one of these individuals had lesions consistent with gas embolism (Yang *et al.* 2008). Ingestion of plastic in the ocean by marine organisms is a widespread and increasing problem, and possibly a significant cause of mortality among cetaceans, especially beaked whales (Simmonds 2012, Fossi *et al.* 2018). The specific threats include macroplastic items that can physically block the digestive tract and lead to death (Secchi and Zarzur 1999), and microplastics (<5 mm; Baulch and Perry 2014, Lusher *et al.* 2015) that can leach toxic chemicals (Baini *et al.* 2017). Two Longman's beaked whales examined had plastic in their stomachs (Yamada *et al.* 2012).

and another may have died from ingesting plastic bags (Kaladharan *et al.* 2014). Organochlorine residues have been identified in various species of mesoplodonts (Miyazaki *et al.* 1987, Kajiwara *et al.* 2006, Bachman *et al.* 2014, Anezaki *et al.* 2016), including this species (Bachman *et al.* 2014), but the potential health hazard is of unknown significance. All beaked whales normally live far offshore; mortality from ship strikes would be difficult to document, but some possible cases have been reported (Dalebout *et al.* 2004, Waring *et al.* 2009). Morbilliviruses became recognized as pathogens in marine mammals in the late 1980s (Van Bressem *et al.* 2014). Infection was first confirmed in Longman's Beaked Whale in 2010 from a stranding in Hawaii (West *et al.* 2013), and this disease syndrome may have contributed to a mass stranding in New Caledonia (Garrigue *et al.* 2016). The prevalence and potential impact of morbillivirus on this species is not currently known.

Predicted effects of global climate change on the marine environment may affect Longman's Beaked Whales although the nature and severity of impacts are unclear (Learmonth *et al.* 2006).

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

The species is listed in Appendix II of CITES. Research is needed to determine the impacts of potential threatening processes on this species.

## **Credits**

**Assessor(s):** Pitman, R.L. & Brownell Jr., R.L.

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

**Facilitator(s) and Compiler(s):** Braulik, G.

**Authority/Authorities:** IUCN SSC Cetacean Specialist Group (dolphins, porpoises and whales)

## Bibliography

- Afsal, V.V., Manojkumar, P. P., Yousuf, K. S. S. M., Anoop, B. and Vivekanandan, E. 2009. The first sighting of Longman's beaked whale, *Indopacetus pacificus*, in the southern Bay of Bengal. *Marine Biodiversity Records* 2(e133): doi:10.1017/S1755267209990510.
- Anderson, R. C., Clark, R., Madsen, P. T., Johnson, C., Kiszka, J. and Breysse, O. 2006. Observations of Longman's beaked whale (*Indopacetus pacificus*) in the Western Indian Ocean. *Aquatic Mammals* 32(2): 223-231.
- Anezaki, K., Matsuda, A., and Matsuishi, T. 2016. Concentration and congener pattern of polychlorinated biphenyls in blubber and liver of Hubbs' beaked whale (*Mesoplodon carlhubbsi*), using a sulfoxide and an Ag-ION solid phase extraction cartridge as a simplified cleanup technique for biological samples. *Marine Pollution Bulletin* 113: 282-286.
- Bachman, M.J., Keller, J.M., West, K.L. & Jensen, B.A. 2014. Persistent organic pollutant concentrations in blubber of 16 species of cetaceans stranded in the Pacific Islands from 1997 through 2011. *Science of the Total Environment* 488: 115-123.
- Baini, M., Matellini, T., Cincinelli, A., Carnpani, T., Minutoli, R., Panti, C., Finoia, M.G., and Fossi, M.C. 2017. First detection of seven phthalate esters (PAEs) as plastic tracers in superficial neustonic/planktonic samples and cetacean blubber. *Analytical Methods* 9: 1512-1520.
- Balcomb, K. C. and Claridge, D. E. 2001. A mass stranding of cetaceans caused by naval sonar in the Bahamas. *Bahamas Journal of Science* 8(2): 2-12.
- Baulch, S. and Perry, C. 2014. Evaluating the impacts of marine debris on cetaceans. *Marine Pollution Bulletin* 80: 210-221.
- Bradford, A.L., Forney, K. A., Oleson, E. M. and Barlow, J. 2013. Line-transect abundance estimates of cetaceans in the Hawaiian EEZ. PIFSC Working Paper WP-13-004.
- Cox, T. M., Ragen, T. J., Read, A. J., Vos, E., Baird, R. W., Balcomb, K., Barlow, J., Caldwell, J., Cranford, T., Crum, L., D'Amico, A., D'Spain, A., Fernández, J., Finneran, J., Gentry, R., Gerth, W., Gulland, F., Hildebrand, J., Houser, D., Hullar, T., Jepson, P. D., Ketten, D., Macleod, C. D., Miller, P., Moore, S., Mountain, D., Palka, D., Ponganis, P., Rommel, S., Rowles, T., Taylor, B., Tyack, P., Wartzok, D., Gisiner, R., Mead, J. and Benner, L. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *Journal of Cetacean Research and Management* 7(3): 177-187.
- Dalebout, M. L., Ross, G. J. B., Baker, C. S., Anderson, R. C., Best, P. B., Cockcroft, V. G., Hinsz, H. L., Peddemors, V. M. and Pitman, R. L. 2003. Appearance, distribution and genetic distinctiveness of Longman's beaked whale, *Indopacetus pacificus*. *Marine Mammal Science* 19(3): 421-461.
- Dalebout, M. L., Russell, C. G., Little, M. J. and Ensor, P. 2004. Observations of live Gray's beaked whales (*Mesoplodon grayi*) in Mahurangi Harbour, North Island, New Zealand, with a summary of at-sea sightings. *Journal of the Royal Society of New Zealand* 34: 347-356.
- D'Amico, A., Gisiner, R. C., Ketten, D. R., Hammock, J. A., Johnson, C., Tyack, P. L. and Mead, J. 2009. Beaked whale strandings and naval exercises. *Aquatic Mammals* 35(4): 452-472.
- Dayaratne, P. and Joseph, L. 1993. A study on dolphin catches in Sri Lanka. Bay of Bengal Programme, Madras, India.
- Ferguson, M. C. and Barlow, J. 2001. Spatial distribution and density of cetaceans in the eastern Pacific Ocean based on summer/fall research vessel surveys in 1986-96. *Southwest Fisheries Science Center Administrative Report* LJ-01-04: 61 pp.

Fernández, A., Edwards, J. F., Rodriguez, F., Espinosa, A., De Los Monteros, Herraiez, P., Castro, P., Jaber, J. R., Martin, V. and Arebelo, M. 2005. "Gas and fat embolic syndrome" involving a mass stranding of beaked whales (family Ziphiidae) exposed to anthropogenic sonar signals. *Veterinary Pathology* 42: 446-457.

Filadelfo, R., Mintz, J., Michlovich E., D'Amico, A., Tyack, P.L., Ketten, D.R. 2009. Correlating Military Sonar Use with Beaked Whale Mass Strandings: What Do the Historical Data Show? *Aquatic Mammals* 35(4): 435-444.

Fossi, M. C., Baini, M., Panti, C., and Baulch, S. 2018. Impacts of marine litter on cetaceans: a focus on plastic pollution. . In: M. C. Fossi and C. Panti (eds), *Marine Mammal Ecotoxicology: Impacts of Multiple Stressors on Population Health*, pp. 147-184. Academic Press, London.

Frantzis, A. 1998. Does acoustic testing strand whales? *Nature* 392(5): 29.

Garrigue, C., Oremus, M., Dodémont, R., Bustamante, P. Kwiatek, O., Libeau, G., Lockyer, C., Vivier, J. C., and Dalebout, M. L. 2016. A mass stranding of seven Longman's beaked whales (*Indopacetus pacificus*) in New Caledonia, South Pacific. *Marine Mammal Science* 32: 884-910.

Hamilton, T.A., J.V. Redfern, J. Barlow, L.T. Balance, T. Gerrodette, R.S. Holt, K.A. Forney, and B.L. Taylor. 2009. Atlas of cetacean sightings for Southwest Fisheries Science Center Cetacean and Ecosystem Surveys: 1986 – 2005. U.S. Dep. of Commerce, NOAA Technical Memorandum, NOAA-TM-NMFSSWFSC-440. 70 p.

IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: 10 December 2020).

Jefferson, T.A., Webber, M.A. and Pitman, R.L. 2015. *Marine Mammals of the World: A Comprehensive Guide to Their Identification 2nd edition*. Elsevier, San Diego, CA.

Jepson, P. D., Arebelo, M., Deaville, R., Patterson, I. A. P., Castro, P., Baker, J. R., Degollada, E., Ross, H. M., Herraiez, P., Pocknell, A. M., Rodriguez, F., Howie, F. E., Espinosa, A., Reid, R. J., Jaber, J. R., Martin, V., Cunningham, A. A. and Fernandez, A. 2003. Gas-bubble lesions in stranded cetaceans. *Nature* 425: 575-576.

Julian, F. and Beeson, M. 1998. Estimates of marine mammal, turtle, and seabird mortality for two California gillnet fisheries: 1990-95. *Fishery Bulletin* 96: 271-284.

Kajiwara, N., Kamikawa, S., Ramu, K., Ueno, D., Yamada, T.K., Subramanian, A., Lam, P.K., Jefferson, T.A., Prudente, M., Chung, K-H. 2006. Geographical distribution of polybrominated diphenyl ethers (PBDEs) and organochlorines in small cetaceans from Asian waters. *Chemosphere* 64: 287-295.

Kaladharan, P., Asokan. P. K., Mohammed Koya, K. and Bhint, H. M. 2014. Plastic debris in the stomach of a Longman's Beaked Whale, *Indopacetus pacificus* (Longman, 1926) stranded off Sutrapada, Veraval, Saurashtra coast, India. *Journal of the Marine Biological Association of India* 56: doi:10.6024/jmbai.2014.56.2.01802-15.

Learmonth, J.A., Macleod, C.D., Santos, M.B., Pierce, G.J., Crick, H.Q.P. and Robinson, R.A. 2006. Potential effects of climate change on marine mammals. *Oceanography and Marine Biology: An Annual Review* 44: 431-464.

Longman, H. A. 1926. New records of Cetacea, with a list of Queensland species. *Memoirs of the Queensland Museum* 8: 266-278.

Lusher, A. L., Hernandez-Milian, G., O'Brien, J., Berrow, S., O'Connor, I. and Officer, R. 2015. Microplastic and macroplastic ingestion by a deep diving, oceanic cetacean: the True's beaked whale *Mesoplodon*



*mirus. Environmental Pollution* 199: 185-191.

Mead, J. G. 1989. Beaked whales of the genus *Mesoplodon*. In: S. H. Ridgway and R. Harrison (eds), *Handbook of marine mammals, Vol. 4: River dolphins and the larger toothed whales*, pp. 349-430. Academic Press.

Miyazaki, N., Nakamura, I., Tanabe, S. and Tatsukawa, R. 1987. A stranding of *Mesoplodon stejnegeri* in the Maizuru Bay, Sea of Japan. *Scientific Reports of the Whales Research Institute* 38: 91-105.

Moore JC. 1968. Relationships among the living genera of beaked whales. *Fieldiana Zoology* 53: 209–298.

Nishimura, S. and Nishiwaki, m. 1964. Records of the beaked whale *Mesoplodon* from the Japan Sea. *Publications of the Seto Marine Biological Laboratory* 1964-12-10.

Pitman, R. L., Palacios, D. M., Brennan, P. L. R., Brennan, B. J., Balcomb, K. C., and Miyashita, T. 1999. Sightings and possible identity of a bottlenose whale in the tropical Indopacific: *Indopacetus pacificus*? *Marine Mammal Science* 15: 531-549.

Rice, D.W. 1998. *Marine Mammals of the World: Systematics and Distribution*. Society for Marine Mammalogy, Special Publication Number 4, Lawrence, Kansas.

Secchi, E. R. and Zarzur, S. 1999. Plastic debris ingested by a Blainville's beaked whale, *Mesoplodon densirostris*, washed ashore in Brazil. *Aquatic Mammals* 25(1): 21-24.

Simmonds, M. P. 2012. Review article: Cetaceans and marine debris: the great unknown. *Journal of Marine Biology* e684279: doi:10.1155/2012/684279.

Van Bresseem, M.-F., Duignan, P.J., Banyard, A., Barbieri, M., Colegrove, K.M., De Guise, S., Di Guardo, G., Dobson, A., Domingo, M., Fauquier, D., Fernandez, A., Goldstein, T., Grenfell, B., Groch, K.R., Gulland, F., Jensen, B.A., Jepson, P.D., Hall, A., Kuiken, T., Mazzariol, S., Morris, S.E., Nielsen, O., Raga, J.A., Rowles, T.K., Saliki, J., Sierra, E., Stephens, N., Stone, B., Tomo, I., Wang, J., Waltzek, T. and Wellehan, J.F.X. 2014. Cetacean morbillivirus: current knowledge and future directions. *Viruses* 6(12): 5145-5181.

Wang, J. Y. and Yang, S. C. 2006. Unusual cetacean stranding events of Taiwan in 2004 and 2005. *Journal of Cetacean Research and Management* 8: 283-292.

Waring, G.T., Josephson, E., Maze-Foley, K. and Rosel, P.E. 2009. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments--2009. NOAA Technical Memorandum NMFS-NE-213. 528p.

West, K.L., Sanchez, S., Rotstein, D., Robertson, K.M., Dennison, S., Levine, G., Davis, N., Schofield, D., Potter, C.W. and Jensen, B. 2013. A Longman's beaked whale (*Indopacetus pacificus*) strands in Maui, Hawaii, with first case of morbillivirus in the central Pacific. *Marine Mammal Science* 29: 767-776.

Yamada, T. 2003. On an unidentified beaked whale found stranded in Kagoshima. Available at: <http://svrsh1.kahaku.go.jp/senai/indexE.html>.

Yang, W.-C., Chou, L.-S., Jepson, P. D., Brownell Jr., R. L., Cowan, D., Chang, P.-H., Chiou, H.-I., Yao, C.-J., Yamada, T. K., Chiu, J.-T., Wang, P.-J. and Fernandez, A. 2008. Unusual cetacean mortality events in Taiwan, possibly linked to naval activities. *Veterinary Record* 162: 184-186.

## Citation

Pitman, R.L. & Brownell Jr., R.L. 2020. *Indopacetus pacificus*. *The IUCN Red List of Threatened Species* 2020: e.T40635A50380449. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T40635A50380449.en>

## Disclaimer

To make use of this information, please check the [Terms of Use](#).

## External Resources

For [Supplementary Material](#), and 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?
10. Marine Oceanic -> 10.1. Marine Oceanic - Epipelagic (0-200m)	-	Suitable	Yes
10. Marine Oceanic -> 10.2. Marine Oceanic - Mesopelagic (200-1000m)	-	Suitable	Yes
10. Marine Oceanic -> 10.3. Marine Oceanic - Bathypelagic (1000-4000m)	-	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 -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides	Ongoing	Unknown	Unknown	Unknown
9. Pollution -> 9.4. Garbage & solid waste	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.6. Excess energy -> 9.6.3. Noise pollution	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Future	Unknown	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		

## Conservation Actions in Place

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

Conservation Action in Place
In-place education
Included in international legislation: Yes
Subject to any international management / trade controls: Yes

## Research Needed

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

<b>Research Needed</b>
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends

## Additional Data Fields

<b>Population</b>
Population severely fragmented: No

## The IUCN Red List Partnership



The IUCN Red List of Threatened Species™ is produced and managed by the [IUCN Global Species Programme](#), the [IUCN Species Survival Commission \(SSC\)](#) and [The IUCN Red List Partnership](#).

The IUCN Red List Partners are: [Arizona State University](#); [BirdLife International](#); [Botanic Gardens Conservation International](#); [Conservation International](#); [NatureServe](#); [Royal Botanic Gardens, Kew](#); [Sapienza University of Rome](#); [Texas A&M University](#); and [Zoological Society of London](#).