

Threatened Species Nomination Form

for amending the list of threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

for the 2013–2014 Assessment Period

(Assessment periods run from 1 October to 30 September)

The purpose of this form is to provide a nomination to the Threatened Species Scientific Committee for assessment of a non EPBC Act listed species for inclusion on the list of threatened species or to nominate a species for reassessment for consideration for listing in another category of threat.

For a non-EPBC Act listed species to be eligible for listing as a threatened species it must be assessed as meeting at least one of the five [criteria for listing](#). For a species already listed as threatened under the EPBC Act to be eligible for listing in a higher or lower category of threat it must be assessed as meeting at least one of the five criteria for a particular indicative threshold. For example, for a species listed as endangered to be found eligible for listing as critically endangered, it must meet the critically endangered [indicative thresholds](#) for at least one of the listing criteria.

If there is insufficient information to enable details to be provided because of a lack of scientific data or analysis please include any information that is available or provide a statement next to the relevant question identifying that the data or analysis is not available. Please provide references in your nomination to support information provided.

If you are nominating a species for delisting (removal from the list) please complete the nomination form to [delist a species](#).

Eligibility for Listing

1. [NAME OF NOMINATED SPECIES \(OR SUBSPECIES\)](#)

Scientific name: *Sousa chinensis*
Common name(s): Indo-Pacific Humpback Dolphin

2. [NOMINATED CATEGORY](#)

Note: if unsure about which category the species should be nominated for, refer to the indicative threshold criteria at Attachment B.

Vulnerable

3. [CRITERIA UNDER WHICH THE SPECIES IS ELIGIBLE FOR LISTING](#)

Please mark the boxes that apply by clicking them with your mouse.

<input checked="" type="checkbox"/> Criterion 1	<input checked="" type="checkbox"/> A1 (specify at least one of the following) <input checked="" type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c) <input type="checkbox"/> d) <input type="checkbox"/> e); AND/OR <input type="checkbox"/> A2 (specify at least one of the following) <input type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c) <input type="checkbox"/> d) <input type="checkbox"/> e); AND/OR <input type="checkbox"/> A3 (specify at least one of the following) <input type="checkbox"/> b) <input type="checkbox"/> c) <input type="checkbox"/> d) <input type="checkbox"/> e); AND/OR <input type="checkbox"/> A4 (specify at least one of the following) <input type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c) <input type="checkbox"/> d) <input type="checkbox"/> e)
<input type="checkbox"/> Criterion 2	<input type="checkbox"/> A1 (specify at least two of the following) <input type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c); AND/OR <input type="checkbox"/> A2 (specify at least two of the following) <input type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c)
<input checked="" type="checkbox"/> Criterion 3	<input checked="" type="checkbox"/> A1; AND/OR <input type="checkbox"/> A2 (specify at least two of the following) <input type="checkbox"/> a) <input type="checkbox"/> b) <input type="checkbox"/> c)
<input checked="" type="checkbox"/> Criterion 4	
<input type="checkbox"/> Criterion 5	
For conservation dependent nominations only:	<input type="checkbox"/> Criterion 1 <input type="checkbox"/> Criterion 2

4. [CURRENT LISTING CATEGORY](#)

What category is the species currently listed in under the EPBC Act? (If you are nominating the species for delisting, please complete the [nomination form for delisting](#)).

Not Listed Extinct Extinct in the wild Critically Endangered
 Endangered Vulnerable Conservation dependent

5. 2013–2014 CONSERVATION THEME:

There is no conservation theme for the 2013–2014 Assessment Period

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6. CONSERVATION STATUS

What is the species' current conservation status under State/Territory Government legislation? Does the species have specific protection under other legislation or intergovernmental arrangements?

Listed as non-threatened, migratory.

However, there is no basis whatsoever for the EPBC Act to list this species as 'non-threatened' as there is no peer reviewed data to support this assertion.

IUCN redlist deems it as NT - near threatened.

Reference: Reeves, R.R., Dalebout, M.L., Jefferson, T.A., Karczmarski, L., Laidre, K., O'Corry-Crowe, G., Rojas-Bracho, L., Secchi, E.R., Slooten, E., Smith, B.D., Wang, J.Y. & Zhou, K. 2008. *Sousa chinensis*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org>. Downloaded on 20 March 2013

Species Information

7. TAXONOMY

Provide any relevant detail on the species' taxonomy (e.g. naming authority, year and reference; synonyms; Family and Order) and whether or not it is conventionally accepted.

IUCN redlist - NT (near threatened)

Assessors: Reeves, R.R., Dalebout, M.L., Jefferson, T.A., Karczmarski, L., Laidre, K., O'Corry-Crowe, G., Rojas-Bracho, L., Secchi, E.R., Slooten, E., Smith, B.D., Wang, J.Y. & Zhou, K.

Year published: 2008

Kingdom: ANIMALIA, Phylum: CHORDATA, Class: MAMMALIA, Order: CETARTIODACTYLA, Family: DELPHINIDAE

8. DESCRIPTION

Provide a description of the species, including size and/or weight, social structure and dispersion (e.g. solitary/clumped/flocks), and give a brief description of its ecological role (e.g. is it a 'keystone' or 'foundation' species, or does it play a role in ecological processes such as seed dispersal or pollination).

Note: Information on the species' geographic distribution should be included at Q.21–25, not here.

The Indo-Pacific Humpback Dolphin population is medium-sized and robust. It can grow up to 2.8 m in length. The dorsal fin is short, slightly recurved and triangular in shape. The colouration is uniformly grey with flanks shading to off-white and spotting towards ventral surface.

Information on the population structure of humpback dolphins in Australian waters is limited but research show indications of discrete local populations (Parra, 2004).

9. BIOLOGY

Provide information on the species' biology, including its life cycle, generation length, reproductive and feeding characteristics and behaviours.

Note: Information on the species' geographic distribution should be included at Q.21–25, and not here.

Example headings are provided below

Generation Length (defined as (Longevity + Age at sexual maturity) ÷ 2)

25 years (IUCN, 2013)

Movement

Considered migratory, only some animals show 'resident' tendencies. (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

However, DSEWPaC has no basis to assert that humpback dolphins are migratory. On the contrary, Bedjer et al (2012) and Parra (2006) indicate that humpback dolphins have very small home ranges and are consequently highly vulnerable to coastal development.

Reproduction

Gestation lasts between 10 and 12 months (Cockcroft, 1989).

Feeding

Indo-Pacific humpback dolphins appear to be opportunistic feeders, consuming a wide variety of nearshore, estuarine, and reef fishes. They also eat cephalopods in some areas, but crustaceans are rare in their diet (Jefferson and Karczmarski 2001, Ross 2002). In Moreton Bay, humpback dolphins has been associated with feeding alongside shrimp trawlers (Parra 2004).

Detailed information about humpback dolphins is only known for a few select populations in Queensland (Parra et al 2006, 2011).

10. [HABITAT](#)

Describe the species' habitats and what role they play in the species' life cycle. Include whether or not the species is associated with, or if it relies on, a listed threatened ecological community or listed threatened species?

Note: Information on the species' geographic distribution should be included at Q.21–25, and not here.

The species can be found in less than 10 m deep water and up to 6 km offshore, however shallow coastal waters is the preferred habitat. Humpback dolphins occur in tropical to warm temperate coastal waters, including open coasts and bays, coastal lagoons, rocky and/or coral reefs, mangrove swamps and estuarine areas (Ross et al. 1994, Jefferson and Karczmarski 2001, Ross 2002).

Transfer Information (for up-listing or down-listing of species)

Note: If the nomination is to transfer a species between categories please complete questions 15, 16 and 17. If the nomination is for a new listing please proceed to question 18. If the nomination is to delist the species, please use the [delisting form](#).

11. [REASON FOR THE NOMINATION FOR CATEGORY CHANGE](#)

Please mark the boxes that apply by clicking them with your mouse.

What is the reason for the nomination:

Genuine change of status New Knowledge Mistake Other

Taxonomic change – 'split' newly described 'lumped' no longer valid

12. [INITIAL LISTING](#)

Describe the reasons for the species' initial listing and if available the criteria under which it was formerly considered eligible

13. CHANGES IN SITUATION

With regard to the listing criteria, how have circumstances changed since the species was listed that now makes it eligible for listing in another category?

Increased human activity in the species habitat including human activities, large scale fishing, coastal developments, industry developments, oil & gas and mining developments etc.

Upscaling for port infrastructure between Port Hedland and Broome, increased shipping, loss of habitat through large scale dredging.

It is hypothesised that this species is under increasing pressure in its habitat in South East Asia. Northern Australia could be one of the last strongholds for these animals. Yet the Northern Australian habitat is under threat from rapidly increasing coastal developments.

Population Size

14. [NUMBERS](#)

- What is the total number of mature individuals? How was this figure derived?
- Identify important populations necessary for the species' long-term survival and recovery.

There is no known data.

15. POPULATION TREND

- What is the population trend (**PAST to CURRENT**) for the entire species? Is the population trended increasing or decreasing, or is the population static? If possible, include a percentage change in population size over a 10 year or 3 generation period, whichever is the longer (for example, "*this species has shown an 80% decline over 23 years, which is equal to 3 generations*"). Please ensure you provide relevant data sources.
- Is this trend likely to continue, or are there any data which indicate that there may be **FUTURE** changes in population size? Provide relevant data sources.
- Does the species undergo extreme fluctuations in the number of mature individuals?

The IUCN deems the population trend as "decreasing" (IUCN, 2013).

16. **PROBABILITY OF EXTINCTION IN THE WILD**

Has the probability of the species' extinction in the wild over a particular timeframe been quantified? If so, identify and explain the quantitative measures or models used to generate this probability.

This is unknown. However, the precautionary principle holds that we cannot wait until we have irrefutable proof that a species is likely to become extinct before we act.

Geographic Distribution

17. GLOBAL DISTRIBUTION

Describe the species' known or estimated current and past global distribution (include a map if available). Does the species exist within a threatened ecological community listed under the EPBC Act?

Humpback dolphins are found in shallow, coastal waters from the east and west coasts of northern Australia and from southern China in the east, throughout the Indo-Malay Archipelago, and westward around the coastal rim of the Bay of Bengal to at least the Orissa coast of eastern India (IUCN). They regularly occur in some enclosed seas, such as the Gulf of Thailand. Their distribution appears to be limited to waters of the continental shelf, and the only places where they range far offshore are those where the water remains shallow (<100 m) (IUCN, 2013).

18. EXTENT OF OCCURRENCE within Australia

NOTE: The distribution of the species within Australia is assessed in two ways, the **EXTENT OF OCCURRENCE** and the **AREA OF OCCUPANCY**. The two concepts are closely related, and often confused. Therefore, before you answer this question, please see the definitions and explanatory material in [Attachment A](#).

- What is the **CURRENT** extent of occurrence (in km²)? Explain how it was calculated and provide relevant data sources.
- Has the extent of occurrence changed over time (**PAST to CURRENT**)? If so, provide evidence.
- Is the extent of occurrence expected to decline in **FUTURE**? If so, provide evidence.
- Does the species' extent of occurrence undergo extreme fluctuations? If so, provide evidence.

The DSEWPac describes the humpback dolphin as occurring across Australia's entire northwest coast. (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

However, there is no information to support DSEWPac's assertion and there are no peer reviewed articles on the distribution, occurrence and population of humpback dolphins. Allen et al (2012) describes humpback dolphins as far south as 25' in Western Australia.

Information on the occurrence and occupancy of humpback dolphins is urgently required.

19. AREA OF OCCUPANCY

NOTE: The distribution of the species within Australia is assessed in two ways, the **EXTENT OF OCCURRENCE** and the **AREA OF OCCUPANCY**. The two concepts are closely related, and often confused. Therefore, before you answer this question, please see the definitions and explanatory material in [Attachment A](#).

- What is the **CURRENT** area of occupancy (in km²)? Explain how it was calculated and provide relevant data sources.
- Has the area of occupancy changed over time (**PAST to CURRENT**)? If so, provide evidence.
- Is the area of occupancy expected to decline in **FUTURE**? If so, provide evidence.
- Does the species' area of occupancy undergo extreme fluctuations? If so, provide evidence.

Key habitat areas include the east coast of QLD, western sections of Moreton Bay and the lower reaches of Brisbane river. Areas of occupancy can be found all along the coastline (Parra, 2004).

Humpback dolphins have been described off the Kimberley and Pilbara coast (Allen et al 2012). However, further work on the distribution of humpback dolphins is urgently required.

20. PRECARIOUSNESS

- Is the species' geographic distribution severely fragmented, or known to exist at a limited number of locations?
- Is the area, extent and/or quality of the species' habitat in continuing decline (observed / inferred / projected)?
- Is the number of locations or subpopulations in continuing decline (observed / inferred / projected)?
- Are there extreme fluctuations in the number of locations or subpopulations of this species?

Please ensure that you provide evidence and appropriate references.

The geographic distribution is fragmented (IUCN, 2013).

21. **PROTECTED AREAS**

Is the species protected within the reserve system (e.g. national parks, Indigenous Protected Areas, or other conservation estates, private land covenants, etc.)? If so, which populations? Which reserves are actively managed for this species? Give details.

Reeves et al (2008) says "Considering the apparently fragmented distribution, the inference of declines in most areas, conservation actions currently are either meager or non-existent in most of the range), and that there couldwell be fewer than 10 000 mature individuals, the chinensis-type geographic form wouldqualify as Vulnerable..."

Threats

22. KNOWN THREATS

Identify any **KNOWN** threats to the species, and state clearly whether these are past, current or future threats.

NB – CLIMATE CHANGE AS A THREAT. If climate change is an **important** threat to the nominated species it is important that you provide **referenced** information on **exactly how** climate change might significantly increase the nominated species' vulnerability to extinction. For guidance refer to the Guidelines for assessing climate change as a threat to native species ([Attachment B; Part B2](#)).

Habitat degradation and/or loss represent the largest threat to the species (IUCN). The species habitat is under threat from coastline development and the dolphins are vulnerable to human activities (Parra, 2004).

Fishing and shark-nets along coast lines have caused several deaths (IUCN).

The species is under increasing pressure from oil and gas developments on the West Australian and Queensland coastlines.

23. POTENTIAL THREATS

Identify any **POTENTIAL** threats to the species.

Further human development and population growth in areas occupied by the species.

24. THREAT ABATEMENT

Give an overview of recovery and threat abatement/mitigation actions that are underway and/or proposed.

Surveys and Monitoring

25. **DISTINCTIVENESS**

Give details of the distinctiveness of the species.

Is this species taxonomically distinct? Taxonomic distinctiveness is a measure of how unique a species is relative to other species.

How distinct is this species in its appearance from other species? How likely is it to be misidentified?

Currently, the Indo-Pacific Humpback Dolphins are gathered under one species but increased research suggests that there may be several different species under the same name. Some scientists differentiate between the *S. plumbea* and the *S. chinensis*; *chinensis* being the species found in Australian waters. However, "the reader should remain aware that the Australian *chinensis*-type is apparently not closely related to other *chinensis*-type dolphins" (IUCN). "This species exhibits a characteristic surfacing behaviour. Initially the beak rises steeply from the water before the forehead appears. The back is arched before it dives" (http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25)

26. DETECTABILITY

Provide information on how easy the species is to detect and the ease of which it has been/can be surveyed.

- If possible, provide information on when and how surveys should be conducted, for example:
 - Recommended methods
 - Season, time of day, weather conditions
 - Length, intensity and pattern of search effort
 - Limitations and whether or not the method is accepted by experts
 - Survey-effort guide
 - Methods for detecting the species.

"The tendency to live in small group sizes and the notoriously shy nature of this species leads to difficulty in detecting the species. Additionally, its regular occurrence in turbid waters near river mouths make detection difficult." (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

Recommended method: "Cetacean surveys are constrained by several important factors including weather (e.g. sea state and light conditions), area to be covered, aim of the survey (abundance estimate; ecological studies), the activities of the animals themselves (e.g. travelling, resting, surface or deep feeding), and the type of craft used for the survey.

Surveys for Indo-Pacific Humpback Dolphins have included land-based observations, boat-based transects, aerial surveys, acoustic surveys, and photo-identification population estimates." (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

"Early aerial survey methods have now largely been abandoned in favour of acoustic monitoring of *Sousa* sounds (Corkeron & Van Parijs 2002), and the relationship between number of sounds and number of animals in the area." (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

27. SURVEYS

Provide information on survey effort to date, and any ongoing/proposed monitoring programs.

"The distribution of Indo-Pacific Humpback Dolphins throughout their range has primarily been estimated from beach-cast animals. However, some systematic surveys have been conducted, concentrating on particular areas. In Morteon Bay, Queensland, fifty individuals have been photo-identified, and population estimation surveys were carried out in 1984–1986 and 1985–1987 (Corkeron et al. 1997). Likewise, preliminary population surveys have been carried out in Cleveland Bay, in the Central Section of the Great Barrier Reef, and around Princess Charlotte Bay in the northern section of the Great Barrier Reef (Parra et al. 2002; 2006).

Data from Dugong (*Dugong dugon*) aerial surveys along the Queensland coast have also provided minimum estimates of Indo-Pacific Humpback Dolphin numbers. However, these counts are uncorrected for submerged animals, possibly resulting in an underestimation of population numbers in this location.

This species is notorious for poor detectability, leading to earlier aerial surveys being abandoned in favour of acoustic monitoring of *Sousa* sounds (Corkeron & van Parijs 2002) and the relationship between number of sounds and number of animals in the area. Continuation of surveys should allow monitoring of relative abundance for much of the Queensland coast (Bannister et al. 1996)." (Department of Sustainability, Environment, Water, Population and Communities, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=50#summary, 2013-03-25).

28. REFERENCE LIST

Please list key references/documentation you have referred to in your nomination.

Cockcroft, V.G. (1989). Biology of Indopacific humpback dolphin (*Sousa plumbea*) off Natal, South Africa. Abstracts of the Biennial Conference on the Biology of Marine Mammals. 8:13.

Department of Sustainability, Environment, Water, Population and Communities (2013). *Sousa chinensis* in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed Mon, 25 Mar 2013.

Parra, G.J., P. Schick & P.J. Corkeron (2006). Spatial distribution and environmental correlates of Australian snubfin and

Indo-Pacific humpback dolphins. *Ecography*. 29:496-406.

Parra, G.J., P.J. Corkeron & H. Marsh (2002). The Indo-Pacific humpback dolphin, *Sousa chinensis* (Osbeck, 1765) in Australian waters: a summary of current knowledge and recommendations for their conservation. Unpublished Report to the Scientific Committee of the International Whaling Commission, SC/54/SM27.

Reeves, R.R., Dalebout, M.L., Jefferson, T.A., Karczmarski, L., Laidre, K., O'Corry-Crowe, G., Rojas-Bracho, L., Secchi, E.R., Slooten, E., Smith, B.D., Wang, J.Y. & Zhou, K. 2008. *Sousa chinensis*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org>. Downloaded on 25 March 2013.