

Assessing cetacean conservation trends and related issues

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Abstract

This paper provides background to the issue of species and populations of cetaceans believed to be at risk of extinction, including a table that summarises the statuses of the ninety species and 73 other distinct taxonomic units and subpopulations according to the IUCN, and highlights some of the issues arising.

Note is taken of the recent statement by over 300 scientists from across the world highlighting the plight of cetaceans and calling for better, swifter and more precautionary action.

The role of the IWC in monitoring the statuses of cetaceans and addressing threats is discussed along with some suggestions for capacity building.

The authors are continuing to work to better understand the challenges presented by cetacean conservation and would be pleased to report back further in due course if so requested.

Introduction

At the meeting of the Planning Group for the Conservation Committee in 2018, and under the agenda item ‘Species and Populations of Urgent Concern’¹, one of us (MS) was requested to consider and report back on the issue of how to improve the response from the IWC to situations where cetacean populations were in decline, especially concerning small or very threatened populations.

This paper is a response to this request and intended to aid the discussions of the Conservation Committee on this issue. It is divided into three parts:

- i. reviewing the issue, a preliminary assessment of the statuses of cetaceans;
- ii. diagnosing key issues; and
- iii. suggestions for future actions.

Reviewing the issue

Three responses to the original request made at the planning group are considered here:

¹ It was agreed at the Planning Group meeting in 2020 to add ‘and Populations’ to this agenda item.

- a review of the IUCN Red Listⁱ² of Threatened Species for cetaceans, including adding all the current and, where available, previous listings into a single table for comparison (see Annex 1);
- further, in part, to discussions at the IWC Scientific Committee in May 2020, a consultation involving many concerned scientists from around the world led to a ‘statement of concern’ signed by a large number of experts (at the time of writing the list included over 300 individuals). The statement text is included here as Annex 2; and
- an ongoing piece of research which has surveyed expert opinion around the world in order to explore and better understand the issue of cetacean conservation and the problems that this presents.

Red List of Threatened Species

As Annex 1 shows, of the ninety known species of cetaceans, more than half have statuses of concern: critically endangered, endangered, vulnerable, near threatened, and also including those that are ‘data deficient’ (see also Table 1).

Table 1. Risk of extinction to cetacean species by family. Categories: DD = Data Deficient, LC = Least Concern, NT = Near Threatened, VU = Vulnerable, EN = Endangered, CR = Critically Endangered

	DD	LC	NT	VU	EN	CR	
Balaenidae	0	2	0	0	1	1	
Balaenopteridae	1	3	1	1	2	0	
Delphinidae	3	23	5	3	3	1	
Eschrichtiidae	0	1	0	0	0	0	
Iniidae	0	0	0	0	1	0	
Kogiidae	0	2	0	0	0	0	
Lipotidae	0	0	0	0	0	1	
Monodontidae	0	2	0	0	0	0	
Neobalaenidae	0	1	0	0	0	0	
Phocoenidae	0	3	1	1	1	1	
Physeteridae	0	0	0	1	0	0	
Platanistidae	0	0	0	0	1	0	
Pontoporiidae	0	0	0	1	0	0	
Ziphiidae	20	2	0	0	0	0	
TOTALS	24	39	7	7	9	4	90

This analysis can be extended to look at currently recognised subspecies and subpopulations (Table 2). This includes populations that are not full species or subspecies e.g. the Arabian Sea population of humpback whales (*Megaptera novaeangliae*) and regional assessments e.g. Europe.

² <https://www.iucnredlist.org>

Table 2. Risk of extinction to cetacean subpopulations and subspecies. Categories: NA = Not Applicable, RE = Regionally Extinct, LR/CD = Lower risk / conservation dependent (1996 assessment), DD = Data Deficient, LC = Least Concern, NT = Near Threatened, VU = Vulnerable, EN = Endangered, CR = Critically Endangered

	NA	RE	LR/CD	DD	LC	NT	VU	EN	CR	
Balaenidae	1	0	1	0	0	0	0	2	3	
Balaenopteridae	0	0	0	0	2	1	1	4	2	
Delphinidae	4	0	0	8	2	0	6	2	11	
Eschrichtiidae	0	1	0	0	0	0	0	1	0	
Iniidae	0	0	0	0	0	0	0	0	0	
Kogiidae	2	0	0	0	0	0	0	0	0	
Lipotidae	0	0	0	0	0	0	0	0	0	
Monodontidae	2	0	0	0	0	0	0	0	1	
Neobalaenidae	0	0	0	0	0	0	0	0	0	
Phocoenidae	0	0	0	0	0	0	1	1	2	
Physeteridae	0	0	0	0	0	0	1	1	0	
Platanistidae	0	0	0	0	0	0	0	2	0	
Pontoporiidae	0	0	0	0	0	0	1	0	0	
Ziphiidae	0	0	0	6	0	0	1	0	0	
TOTALS	9	1	1	14	4	1	11	13	19	73

Again, the great majority of these taxonomic units have statuses of concern.

It should be noted that the statuses of some taxa are in the process of being reviewed and may change and that some have not been reviewed for some time (see Figure 1). Indeed, over 80 species, subspecies or subpopulations have not been assessed in the last 10 years. Therefore, the current situation may be different from what is reported.

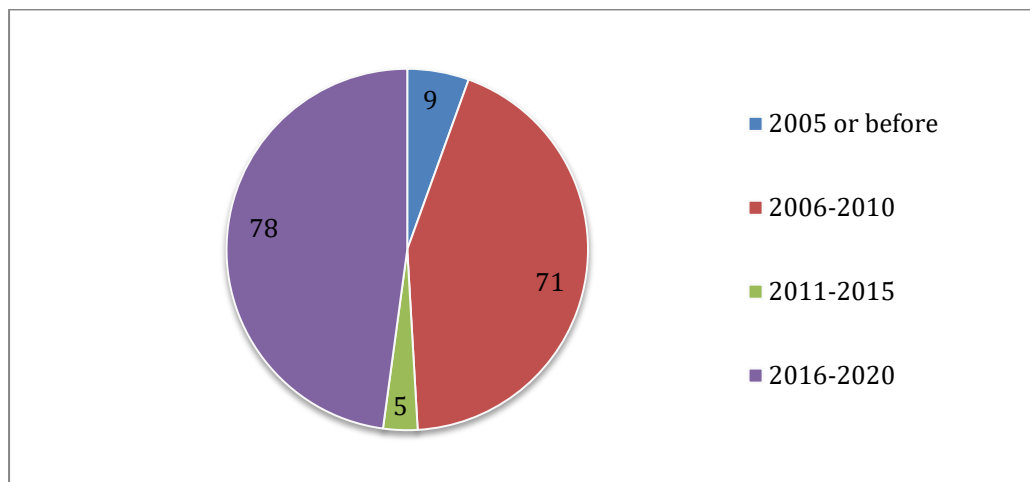


Figure 1: Year of last IUCN Red List assessment (Total number of species, subspecies and subpopulations assessed: 163)

The overall picture allows some general points to be made:

- The statuses of many species, subspecies and populations are of concern;
- A large number of species, subspecies and populations are believed to be declining. Leaving aside the large numbers of unknowns, 39 species, subspecies and subpopulations are marked as declining and only ten as increasing (See Table 3 and Annex 1). Of the ten increasing taxa all but one are great whales and this would seem to show how the removal of hunting pressure in particular is allowing a recovery. The one small cetacean marked as increasing is the Eastern Spinner Dolphin, *Stenella longirostris* spp. *orientalis* and the key reason for its recovery is, again, a change in the factors causing removals in its range, in this case reduced bycatch in the Eastern Tropical Pacific³.
- A large number of populations have an unknown status – both in terms of being ‘data deficient’ and where it is not clear what the current population trajectory is. This itself is of concern.

Table 3: Population trends of species, subspecies and subpopulations

	Species	Subspecies	Subpopulations	Totals
Increasing	5	2	3	10
Stable	1	0	3	4
Decreasing	15	6	18	39
Unknown	69	3	35	107
Unspecified	0	1	2	3
				Total: 163

Whilst the IUCN Red List of Threatened Species assessments provide the one internationally recognized and endorsed process, it is not the only relevant assessment process for the status of cetacean populations that might be considered when trying to gain an overview of the statuses of the world’s cetaceans. For example, there are two orca or killer whale (*Orcinus orca*) populations not listed by the IUCN but which have special listings under US Federal Law. Both the Southern Resident killer whales and the AT1 Transient population are considered depleted under the Marine Mammal Protection Act (MMPA) and the Southern Residents are also regarded as endangered under the Endangered Species Act (ESA).⁴ The main Hawaiian Islands insular false killer whale (*Pseudorca crassidens*) is also listed as endangered under the ESA and as depleted in the MMPA⁵. They may not be listed by the IUCN because they have appropriate national listings, noting that the Southern residents range includes Canada, where they are also listed⁶.

³ It should be noted that the last assessment for this subspecies was in 2008 and a new assessment is desirable.

⁴ See <https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/southern-resident-killer-whale-orcinus-orca>

⁵ <https://www.fisheries.noaa.gov/species/false-killer-whale>

⁶ <https://species-registry.canada.ca/index-en.html#/species/699-5>

The scientists' statement of concern

At the time of submitting this paper, over 300 scientists from across the world had signed onto the statement raising their 'gravest concerns about the extinction risk to many species and populations of cetaceans'. The statement highlights that more than half of the known species of cetacean have a 'concerning conservation status' and that 32 subspecies and other distinct cetacean populations are presently either Endangered or Critically Endangered. The scientists called for action from the range states and for "all nations to both work with and strengthen the relevant international bodies that seek to address threats to cetaceans, including, but not limited to, the International Whaling Commission and the Convention for the Conservation of Migratory Species of Wild Animals, both of which are generating important conservation initiatives at this time".

The full text of the Statement is provided here as Annex 2. The latest sign-on list can be found at this [LINK](#).⁷

Research Project

A research project at the University of Bristol, UK, into the key issues underlying cetacean conservation has been ongoing over the last few months. It is hoped that this will be published in the near future. In the interim, we note the following:

- 121 experts actively engaged in cetacean conservation have taken part in an online survey;
- Some 80 of these are members of the Cetacean Specialist Group of the IUCN; and
- Early results indicate that there is good recognition of the IWC around the world.

Conclusions

As noted above, the analysis here is based on consideration of the IUCN Red List alone and there are other cetacean populations that are also at risk which have been identified through other assessments. A better understanding of the threats and other factors driving this extinction would be helpful. This could extend to consideration of how cetaceans are viewed by the public and policy makers; for example is the opportunity to experience them in the wild merely viewed as some kind of recreational 'luxury' or are they understood as key components of marine ecosystems, as suggested by the experts' statement.

It might be helpful if the IWC, perhaps via its Conservation Committee, engages with a process of regularly monitoring cetacean statuses working with the IUCN but also including other national assessments. Such a fusion of national and IUCN processes could allow the IWC and its member nations, and potentially others, to better focus

⁷ Link to Statement online with latest sign-on list:
<https://www.mammalresearchinstitute.science/news/2020/9/1/the-real-and-imminent-extinction-risk-to-whales-dolphins-and-porpoises>

their activities. On this simplest level this could mean updating a version of the table provided here as Annex 1.

Statuses could also be reanalyzed from a regional perspective to try to identify hotspots of concern where appropriate interventions might help several taxa.

Any analysis of common threat factors will certainly highlight interactions with fishing gear as a major problem for many populations, making it a top issue to be addressed.

A remarkable amount of work from many people goes into the IUCN assessments presented here in only the briefest summary. It is important to recognise that what this does is help to establish which taxa are in trouble and, equally significantly, points at what the factors are that have led or are leading to declines. What the assessments alone cannot do, however, is provide a plan of action to address these issues. A human health analogy might be that we have a diagnosis but no identified cure, and no treatment plan or medicines. This then raises the question about where these key missing components might come from.

Some countries generate their own action plans, for example as required under the US Marine Mammal Protection Act. There is also one regional body (the European Union) that requires conservation problems for cetaceans to be addressed as cetaceans are highly protected under EU law. However, nothing in EU law currently seems to prescribe how the problems should be addressed.

On an international scale, the International Whaling Commission is starting to help fill the 'treatment plan' and 'medicine' gap and act as an authority in developing response plans and identifying mitigations. This role in providing key advice on what might be appropriate response mechanisms can be seen in several work streams. One important example of this is the Bycatch Mitigation Initiative (BMI), which is building capacity and raising awareness on approaches to bycatch management and another the Small Cetaceans Task Team, which is very specifically designed to try to bring swift assistance in situations where cetacean populations are in trouble. Then, of course, there are the Conservation Management Plans (CMPs) for particular species. There is scope to further build on synergies between these and other IWC programmes, for example so that IWC capacity building initiatives (i.e. bycatch, strandings and entanglement) can provide direct support to CMPs and Task Teams where appropriate.

It is undoubtedly significant that the scientists' statement of concern identified the IWC as one of the key international bodies that nations need to rally around to help address the global cetacean conservation crisis. To do this properly, it is our view that more resources will be needed and that the IWC needs to have dedicated teams of people working on mitigations if it is to be effective. This would include continued support and funding for the BMI, which should be encouraged to expand its important work.

The Commission needs to be ambitious and also tap into external funding sources to more fully develop its potential. The Secretariat has made progress on this, but a dedicated fundraiser might help accelerate these efforts.

Increased advocacy will also be vital, including to support efforts within countries so there is greater coherence between government departments working on conservation and other (for example fisheries) objectives.

The challenge to the IWC and its member nations is how to adequately maximize its outputs and impacts at this critical time.

Annex 1.

IUCN Red List categories for cetacean species, subspecies and subpopulations, including date of assessment and population trend as well as the details of the previous assessment where applicable.

Risk of extinction category: CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, DD = Data Deficient, RE = Regionally Extinct, LR/CD = Lower risk / conservation dependent (1996 assessment), NA = Not Applicable, NE = Not Evaluated. Population Trend: I = Increasing, D = Decreasing, S = Stable, ? = Unknown, U = Unspecified

Common name	Scientific name	Region	Previous assessment date and category		Date of Assessment	Current Category	Population Trend
Balaenidae							
Bowhead whale	<i>Balaena mysticetus</i>	Global	2012	LC	2018	LC	I
		Europe	-	-	2007	NA	?
		Bering-Chukchi-Beaufort Seas subpopulation	-	-	1996	LR/CD	U
		East Greenland-Svalbard-Barents Sea subpopulation	2012	CR	2018	EN	?
		Okhotsk Sea subpopulation	2012	EN	2018	EN	D
North Atlantic right whale	<i>Eubalaena glacialis</i>	Global	2018	EN	2020	CR	D
		Europe	-	-	2007	CR	?
North Pacific right whale	<i>Eubalaena japonica</i>	Global	2008	EN	2017	EN	?
		Northeast Pacific subpopulation	2008	CR	2017	CR	?
Southern right whale	<i>Eubalaena australis</i>	Global	2013	LC	2017	LC	?
		Chile-Peru subpopulation	2013	CR	2017	CR	?
Balaenopteridae							
Blue whale	<i>Balaenoptera musculus</i>	Global	2008	EN	2018	EN	I
		Europe	-	-	2007	EN	?

Antarctic blue whale	<i>Balaenoptera musculus ssp. in termedia</i>	Global	2008	CR	2018	CR	I
Antarctic minke whale	<i>Balaenoptera bonaerensis</i>	Global	2008	DD	2018	NT	?
Bryde's whale	<i>Balaenoptera edeni</i>	Global	2008	DD	2017	LC	?
		Gulf of Mexico subpopulation	-	-	2017	CR	D
Common minke whale	<i>Balaenoptera acutorostrata</i>	Global	2008	LC	2018	LC	?
		Europe	-	-	2007	LC	?
Fin whale	<i>Balaenoptera physalus</i>	Global	2013	EN	2018	VU	I
		Europe	-	-	2007	NT	?
		Mediterranean	-	-	2011	VU	D
Humpback whale	<i>Megaptera novaeangliae</i>	Global	2008	LC	2018	LC	I
		Europe	-	-	2007	LC	I
		Oceania subpopulation	-	-	2008	EN	I
		Arabian Sea subpopulation	-	-	2008	EN	?
Omura's whale	<i>Balaenoptera omurai</i>	Global	2008	DD	2017	DD	?
Sei whale	<i>Balaenoptera borealis</i>	Global	2008	EN	2018	EN	I
		Europe	-	-	2007	EN	?
Delphinidae							
Atlantic humpback dolphin	<i>Sousa teuszii</i>	Global	2012	VU	2017	CR	D
Atlantic spotted dolphin	<i>Stenella frontalis</i>	Global	2012	DD	2018	LC	?
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>	Global	2008	LC	2019	LC	?
		Europe	-	-	2007	LC	S

Australian humpback dolphin	<i>Sousa sahalensis</i>	Global	-	-	2015	VU	D
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	Global	2008	NT	2017	VU	D
Chilean dolphin	<i>Cephalorhynchus eutropia</i>	Global	2013	NT	2017	NT	D
Clymene dolphin	<i>Stenella clymene</i>	Global	2012	DD	2018	LC	?
Commerson's dolphin	<i>Cephalorhynchus commersonii</i>	Global	2013	DD	2017	LC	?
Common bottlenose dolphin	<i>Tursiops truncatus</i>	Global	2012	LC	2018	LC	?
		Europe	-	-	2007	DD	D
		Mediterranean	-	-	2009	VU	D
		Fiordland subpopulation, New Zealand	-	-	2010	CR	D
Black Sea bottlenose dolphin	<i>Tursiops truncatus ssp. ponticus</i>	Global	-	-	2008	EN	?
Lahille's bottlenose dolphin	<i>Tursiops truncatus ssp. gephyreus</i>	Global	-	-	2019	VU	D
Dusky dolphin	<i>Lagenorhynchus obscurus</i>	Global	2008	DD	2018	LC	?
Peruvian dusky dolphin	<i>Lagenorhynchus obscurus ssp. posidonia</i>	Global	-	-	2019	VU	?
False killer whale	<i>Pseudorca crassidens</i>	Global	2008	DD	2018	NT	?
		Europe	-	-	2007	NA	?
Fraser's dolphin		Global	2012	LC	2018	LC	?

	<i>Lagenodelphis hosei</i>	Europe	-	-	2007	NA	?
Guiana dolphin	<i>Sotalia guianensis</i>	Global	2012	DD	2017	NT	?
Hector's dolphin	<i>Cephalorhynchus hectori</i>	Global	2000	EN	2008	EN	D
North Island Hector's dolphin	<i>Cephalorhynchus hectori ssp. maui</i>	Global	2000	CR	2008	CR	D
Heaviside's dolphin	<i>Cephalorhynchus heavisidii</i>	Global	2013	DD	2017	NT	?
Hourglass dolphin	<i>Lagenorhynchus cruciger</i>	Global	2008	LC	2018	LC	?
Indian Ocean humpback dolphin	<i>Sousa plumbea</i>	Global	-	-	2015	EN	D
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus</i>	Global	2012	DD	2019	NT	?
Indo-Pacific humpback dolphin	<i>Sousa chinensis</i>	Global	-	-	2015	VU	D
Taiwanese humpback dolphin	<i>Sousa chinensis spp. taiwanensis</i>	Global	2008	CR	2017	CR	D
Irrawaddy dolphin	<i>Orcaella brevirostris</i>	Global	2008	VU	2017	EN	D
		Ayeyarwady River, Myanmar subpopulation	-	-	2004	CR	D
		Iloilo-Guimaras, Philippines subpopulation	-	-	2018	CR	D
		Mahakam river, Indonesia subpopulation	2000	CR	2008	CR	?

		Malampaya Sound, Philippines subpopulation	-	-	2004	CR	D
		Mekong River subpopulation	-	-	2004	CR	D
		Songkhla Lake, Thailand subpopulation	-	-	2004	CR	D
Killer whale	<i>Orcinus orca</i>	Global	2013	DD	2017	DD	?
		Europe	-	-	2007	DD	?
		Strait of Gibraltar subpopulation	-	-	2019	CR	S
Long-beaked common dolphin	<i>Delphinus capensis</i>	Global	1996	LR/LC	2008	DD	?
Long-finned pilot whale	<i>Globicephala melas</i>	Global	2008	DD	2018	LC	?
		Europe	-	-	2007	DD	?
		Mediterranean	-	-	2010	DD	?
Melon-headed whale	<i>Peponocephala electra</i>	Global	2008	LC	2019	LC	?
		Europe	-	-	2007	NA	?
Northern right whale dolphin	<i>Lissodelphis borealis</i>	Global	2012	LC	2018	LC	?
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Global	2012	LC	2018	LC	?
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Global	2012	LC	2018	LC	?
Peale's dolphin	<i>Lagenorhynchus australis</i>	Global	2008	DD	2018	LC	?
Pygmy killer whale	<i>Feresa attenuata</i>	Global	2008	DD	2017	LC	?
Risso's dolphin		Global	2012	LC	2018	LC	?

	<i>Grampus griseus</i>	Europe	-	-	2007	DD	?
		Mediterranean	-	-	2010	DD	?
Rough-toothed dolphin	<i>Steno bredanensis</i>	Global	2012	LC	2018	LC	?
		Europe	-	-	2007	NA	?
Short-beaked common dolphin	<i>Delphinus delphis</i>	Global	1996	LR/LC	2008	LC	?
		Europe	-	-	2007	DD	?
		Mediterranean	-	-	2003	EN	D
		Gulf of Corinth subpopulation			2019	CR	?
Black Sea short-beaked common dolphin	<i>Delphinus delphis ssp. ponticus</i>	Global	-	-	2008	VU	U
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Global	2011	DD	2018	LC	?
Southern right whale dolphin	<i>Lissodelphis peronii</i>	Global	2012	DD	2018	LC	?
Spinner dolphin	<i>Stenella longirostris</i>	Global	2012	DD	2018	LC	?
Eastern spinner dolphin	<i>Stenella longirostris ssp. orientalis</i>	Global	-	-	2008	VU	I
Striped dolphin	<i>Stenella coeruleoalba</i>	Global	2008	LC	2018	LC	?
		Europe	-	-	2007	DD	?
		Mediterranean	-	-	2010	VU	?

Tucuxi	<i>Sotalia fluviatilis</i>	Global	-	-	2010	DD	?
White-beaked dolphin	<i>Lagenorhynchus albirostris</i>	Global	2012	LC	2018	LC	?
		Europe	-	-	2007	LC	S
Eschrichtiidae							
Gray whale	<i>Eschrichtius robustus</i>	Global	2008	LC	2017	LC	S
		Europe	-	-	2007	RE	U
		Western North Pacific subpopulation	2008	CR	2018	EN	I
Iniidae							
Amazon river dolphin	<i>Inia geoffrensis</i>	Global	2011	DD	2018	EN	D
Kogiidae							
Dwarf sperm whale	<i>Kogia sima</i>	Global	2012	DD	2020	LC	?
		Europe	-	-	2007	NA	?
Pygmy sperm whale	<i>Kogia breviceps</i>	Global	2012	DD	2019	LC	?
		Europe	-	-	2007	NA	?
Lipotidae							
Baiji	<i>Lipotes vexillifer</i>	Global	2008	CR	2017	CR	D
Monodontidae							
Beluga	<i>Delphinapterus leucas</i>	Global	2012	NT	2017	LC	?
		Europe	-	-	2007	NA	?
		Cook Inlet, United States	2012	CR	2018	CR	D
Narwhal	<i>Monodon monoceros</i>	Global	2012	NT	2017	LC	?
		Europe	-	-	2007	NA	?
Neobalaenidae							
Pygmy right whale	<i>Caperea marginata</i>	Global	2008	DD	2018	LC	?

Phocoenidae							
Burmeister's porpoise	<i>Phocoena spinipinnis</i>	Global	2012	DD	2018	NT	?
Dall's porpoise	<i>Phocoenoides dalli</i>	Global	2012	LC	2017	LC	?
Harbour porpoise	<i>Phocoena phocoena</i>	Global	2008	LC	2020	LC	?
		Europe	-	-	2007	VU	D
		Baltic Sea subpopulation	1996	VU	2008	CR	D
Black Sea harbour porpoise	<i>Phocoena phocoena ssp. relicta</i>	Global	1996	VU	2008	EN	D
Indo-Pacific finless porpoise	<i>Neophocaena phocaenoides</i>	Global	2012	VU	2017	VU	D
Narrow-ridged finless porpoise	<i>Neophocaena asiaeorientalis</i>	Global	2012	VU	2017	EN	D
Yangtze finless porpoise	<i>Neophocaena asiaeorientalis</i> ssp. <i>asiaeorientalis</i>	Global	1996	EN	2012	CR	D
Spectacled porpoise	<i>Phocoena dioptrica</i>	Global	2008	DD	2018	LC	?
Vaquita	<i>Phocoena sinus</i>	Global	2008	CR	2017	CR	D
Physeteridae							
Sperm whale		Global	2008	VU	2019	VU	?

	<i>Physeter macrocephalus</i>	Europe	-	-	2007	VU	?
		Mediterranean	-	-	2006	EN	D
Plantanistidae							
South Asian river dolphin	<i>Platanista gangetica</i>	Global	2012	EN	2017	EN	?
Ganges river dolphin	<i>Platanista gangetica ssp. gangetica</i>	Global	1996	EN	2004	EN	D
Indus river dolphin	<i>Platanista gangetica ssp. minor</i>	Global	1996	EN	2004	EN	?
Pontoporiidae							
Franciscana	<i>Pontoporia blainvillei</i>	Global	2012	VU	2017	VU	D
		Rio Grande do Sul/Uruguay subpopulation	-	-	2003	VU	D
Ziphiidae							
Andrew's beaked whale	<i>Mesoplodon bowdoini</i>	Global	1996	DD	2008	DD	?
Arnoux's beaked whale	<i>Berardius arnuxii</i>	Global	1996	LR/C D	2008	DD	?
Baird's beaked whale	<i>Berardius bairdii</i>	Global	1996	LR/C D	2008	DD	?
Blainville's beaked whale	<i>Mesoplodon densirostris</i>	Global	1996	DD	2008	DD	?
		Europe	-	-	2007	DD	?
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	Global	1996	DD	2008	LC	?
		Europe	-	-	2007	DD	?

		Mediterranean	2012	DD	2018	VU	D
Deraniyagala's beaked whale	<i>Mesoplodon hotaula</i>	Global	-	-	2018	DD	?
Gervais' beaked whale	<i>Mesoplodon europaeus</i>	Global	1996	DD	2008	DD	?
		Europe	-	-	2007	DD	?
Ginkgo-toothed beaked whale	<i>Mesoplodon ginkgodens</i>	Global	1996	DD	2008	DD	?
Gray's beaked whale	<i>Mesoplodon grayi</i>	Global	1996	DD	2008	DD	?
Hector's beaked whale	<i>Mesoplodon hectori</i>	Global	1996	DD	2008	DD	?
Hubbs' beaked whale	<i>Mesoplodon carlhubbsi</i>	Global	1996	DD	2008	DD	?
Indo-pacific beaked whale	<i>Indopacetus pacificus</i>	Global	1996	DD	2008	DD	?
Northern bottlenose whale	<i>Hyperoodon ampullatus</i>	Global	1996	LR/C D	2008	DD	?
		Europe	-	-	2007	DD	?
Perrin's beaked whale	<i>Mesoplodon perrini</i>	Global	2003	NE	2008	DD	?
Pygmy beaked whale	<i>Mesoplodon peruvianus</i>	Global	1996	DD	2008	DD	?
Shepherd's beaked whale	<i>Tasmacetus shepherdii</i>	Global	2008	DD	2018	DD	?
Southern bottlenose whale	<i>Hyperoodon planifrons</i>	Global	1996	LR/C D	2008	LC	?
Sowerby's beaked whale	<i>Mesoplodon bidens</i>	Global	1996	DD	2008	DD	?
		Europe	-	-	2007	DD	?

Spade-toothed whale	<i>Mesoplodon traversii</i>	Global	2003	NE	2008	DD	?
Stejneger's beaked whale	<i>Mesoplodon stejnegeri</i>	Global	1996	DD	2008	DD	?
Strap-toothed whale	<i>Mesoplodon layardii</i>	Global	1996	DD	2008	DD	?
True's beaked whale	<i>Mesoplodon mirus</i>	Global	1996	DD	2008	DD	?
		Europe	-	-	2007	DD	?

Annex 2. Statement of Concern – as 3/9/2020

THE REAL AND IMMINENT EXTINCTION RISK TO WHALES,
DOLPHINS AND PORPOISES:
AN OPEN LETTER FROM [OVER 250] CETACEAN SCIENTISTS
[3/9/2020]

Statement of concern

We, the undersigned scientists, raise here our gravest concerns about the extinction risk to many species and populations of cetaceans (whales, dolphins and porpoises). Each one of us is a cetacean specialist and each one of us believes this issue is now critical. The lack of concrete action to address threats adversely affecting cetaceans in our increasingly busy, polluted, over-exploited and human-dominated seas and major river systems, means that many, one after another, will likely be declared extinct within our lifetimes.

Even the large whales are not safe. The recent listing of the North Atlantic right whale, *Eubalaena glacialis*, by the International Union for Conservation of Nature (IUCN) as Critically Endangered reveals the serious failure of its relatively wealthy range countries to address a critical decline. Moreover, the factors driving this ongoing decline are well known, and, we believe, could be addressed. Only a few hundred North Atlantic right whale adults remain and, unless appropriate action comes soon, we will undoubtedly lose this entire species.

Similarly, the Critically Endangered vaquita, *Phocoena sinus*, of the Gulf of California, Mexico, sits poised on the knife-edge of extinction, with an estimated population size that may be as low as only ten individuals.

It is now almost inevitable that these two species will follow the baiji or Chinese river dolphin, *Lipotes vexillifer*, down the road to extinction. The baiji was identified as 'Possibly Extinct' by the IUCN in 2017 and, regrettably, there is little hope for this species. We believe, in all three cases, that enough was known about the situation of the species concerned for these dramatic declines to have been avoided, but that the political will to take action has been lacking.

The bleak outlook for these three species shows how often too little is done too late. Of the 90 living species of cetaceans, more than half now have a concerning conservation status according to the IUCN, with 13 species listed as 'Critically Endangered' or 'Endangered', 7 as 'Vulnerable' and 7 as 'Near Threatened', whilst 24 species are 'Data Deficient'. These 'Data Deficient' species may also be imperilled. We simply do not know. This lack of clear information about so many species and populations is itself a major concern.

Additionally, there are 32 subspecies and other distinct cetacean populations which are presently either Endangered or Critically Endangered (please see the list below for further details), and with ongoing research we are recognizing more populations of cetaceans that are discrete and require conservation action. Regrettably, as the cases of the Lahille's bottlenose dolphin (*Tursiops truncatus gephyreus*) of the subtropical

western South Atlantic, the Gulf of Corinth common dolphin (*Delphinus delphis*) and the orcas (*Orcinus orca*) of the Strait of Gibraltar all illustrate, recognition of their distinctiveness may coincide with the realization that their population is already in danger of extinction.

Cetacean populations are adversely affected by many interacting factors, including chemical and noise pollution, loss of habitat and prey, climate change and ship-strikes. For many, foremost among these threats is incidental take in fishing operations.

Bearing these urgent matters in mind and with the knowledge that cetacean populations can be lost very quickly, we call on:

- countries with cetaceans in their waters to take precautionary action to ensure these species and populations are adequately protected from human activities, including implementing appropriate and fully resourced monitoring. We note that improved monitoring technologies now offer new opportunities to observe and address activities at sea; and
- all nations to both work with and strengthen the relevant international bodies that seek to address threats to cetaceans, including, but not limited to, the International Whaling Commission and the Convention for the Conservation of Migratory Species of Wild Animals, both of which are generating important conservation initiatives at this time. Foremost among other relevant international organisations are the regional fisheries bodies, which can address fishing-related threats to cetaceans, noting the urgent need to address such impacts on many populations.

Finally, we note that cetacean conservation, like much that relates to the marine environment, may be a concern that seems remote to many people. However, as the COVID-19 pandemic has shown, our connection to nature is a key component in our own wellbeing. Whales, dolphins and porpoises are seen and enjoyed all over the world, and are valued as sentient, intelligent, social and inspiring species; we should not deny future generations the opportunity to experience them. They are also sentinels of the health of our seas, oceans and, in some cases, major river systems and the role of cetaceans in maintaining productive aquatic ecosystems, which are key for our survival as well as theirs, is also becoming clearer.

Please bring this statement to the attention of the relevant policy makers in your country and help us to help the cetaceans.

Species and populations of cetaceans that are deemed at risk of extinction

The list shows only the species, subspecies and distinct populations labelled as ‘Critically Endangered’ (CR), ‘Endangered’ (EN) or ‘Vulnerable’ (VU) and displays the latest assessment by the IUCN (highlighted in red) and, where available, the previous assessment, with their dates.

‘Global population’ refers to the status of the whole species or subspecies.

The population trend is also noted: I = Increasing, D = Decreasing, S = Stable, ? = Unknown.

Balaenidae

- Bowhead whale, *Balaena mysticetus*
East Greenland-Svalbard-Barents Sea subpopulation 2012: CR, 2018: EN, ?
Okhotsk Sea subpopulation 2012: EN, 2018: EN, D
- North Atlantic right whale, *Eubalaena glacialis*, Global population, 2018: EN, 2020: CR, D
European population, 2007: CR, ?

- North Pacific right whale, *Eubalaena japonica*, Global population, 2008: EN, 2017: EN, ?
Northeast Pacific subpopulation, 2008: CR, 2017: CR, ?
- Southern right whale, *Eubalaena australis*
Chile-Peru subpopulation, 2013: CR, 2017: CR, ?

Balaenopteridae

- Blue whale, *Balaenoptera musculus*, Global population, 2008: EN, 2018: EN, I
European population 2007: EN, ?
- Antarctic blue whale, *Balaenoptera musculus* ssp. *intermedia*, Global population 2008: CR, 2018: CR, I
- Bryde's whale, *Balaenoptera edeni*
Gulf of Mexico subpopulation, 2017: CR, D
- Fin whale, *Balaenoptera physalus*, Global population, 2013: EN, 2018: VU, I
Mediterranean population 2011: VU, D
- Humpback whale, *Megaptera novaeangliae*
Oceania subpopulation, 2008: EN, I
Arabian Sea subpopulation 2008: EN, ?
- Sei whale, *Balaenoptera borealis*, Global population, 2008: EN, 2018: EN, I
European population, 2007: EN, ?

Eschrichtiidae

- Gray whale, *Eschrichtius robustus*
Western North Pacific subpopulation, 2008: CR, 2018: EN, I

Delphinidae

- Atlantic humpback dolphin, *Sousa teuszii*, Global population, 2012: VU, 2017: CR, D
- Australian humpback dolphin, *Sousa sahulensis*, Global population, 2015: VU, D
- Australian snubfin dolphin, *Orcaella heinsohni*, Global population, 2008: NT, 2017: VU, D
- Common bottlenose dolphin, *Tursiops truncatus*
Mediterranean population, 2009: VU, D
Fiordland subpopulation, New Zealand, 2010: CR, D
- Black Sea bottlenose dolphin, *Tursiops truncatus* ssp. *ponticus*, Global population, 2008: EN, ?
- Lahille's bottlenose dolphin, *Tursiops truncatus* ssp. *gephyreus*, Global population, 2019: VU, D
- Hector's dolphin, *Cephalorhynchus hectori*, Global population, 2000: EN, 2008: EN, D
- North Island Hector's dolphin, *Cephalorhynchus hectori* ssp. *maui*, Global population, 2000: CR, 2008: CR, D
- Indian Ocean humpback dolphin, *Sousa plumbea*, Global population, 2015: EN, D
- Indo-Pacific humpback dolphin, *Sousa chinensis*, Global population, 2015: VU, D
- Taiwanese humpback dolphin, *Sousa chinensis* spp. *taiwanensis*, Global population, 2008: CR, 2017: CR, D
- Irrawaddy dolphin, *Orcaella brevirostris*, Global population, 2008: VU, 2017: EN, D
Ayeyarwady River, Myanmar subpopulation, 2004: CR, D
Iloilo-Guimaras, Philippines subpopulation, 2018: CR, D
Mahakam river, Indonesia subpopulation, 2000: CR, 2008: CR, ?
Malampaya Sound, Philippines subpopulation, 2004: CR, D
Mekong River subpopulation, 2004: CR, D
Songkhla Lake, Thailand subpopulation, 2004: CR, D
- Peruvian dusky dolphin, *Lagenorhynchus obscurus* ssp. *posidonia*, Global population, 2019: VU, ?
- Killer whale, *Orcinus orca*
Straits of Gibraltar subpopulation, 2019: CR, S
- Short-beaked common dolphin, *Delphinus delphis*,
Mediterranean population, 2003: EN, D
Gulf of Corinth subpopulation, 2019: CR, ?

- Black Sea short-beaked common dolphin, *Delphinus delphis* ssp. *ponticus*, Global population, 2008: **VU**, Unspecified
- Eastern spinner dolphin, *Stenella longirostris* ssp. *orientalis*. Global population, 2008: **VU**, I
- Striped dolphin, *Stenella coeruleoalba*
Mediterranean population, 2010: **VU**, ?

Iniidae

- Amazon river dolphin, *Inia geoffrensis*, Global population, 2011: DD, 2018: **EN**, D

Lipotidae

- Baiji, *Lipotes vexillifer*, Global population, 2008: CR, 2017: **CR**, D

Monodontidae

- Beluga, *Delphinapterus leucas*
Cook Inlet, United States subpopulation, 2012: CR, 2018: **CR**, D

Phocoenidae

- Harbour porpoise, *Phocoena phocoena*
European population, 2007: **VU**, D
Baltic Sea subpopulation, 1996: **VU**, 2008: **CR**, D
- Black Sea harbour porpoise, *Phocoena phocoena* ssp. *relicta*, Global population, 1996: **VU**, 2008: **EN**, D
- Indo-Pacific finless porpoise, *Neophocaena phocaenoides*, Global population, 2012: **VU**, 2017: **VU**, D
- Narrow-ridged finless porpoise, *Neophocaena asiaeorientalis*, Global population, 2012: **VU**, 2017: **EN**, D
- Yangtze finless porpoise, *Neophocaena asiaeorientalis* ssp. *asiaeorientalis*, Global population, 1996: **EN**, 2012: **CR**, D
- Vaquita, *Phocoena sinus*, Global population, 2008: CR, 2017: **CR**, D

Physeteridae

- Sperm whale, *Physeter macrocephalus*, Global population, 2008: **VU**, 2019: **VU** ?
European population, 2007: **VU**, ?
Mediterranean population, 2006: **EN**, D

Platanistidae

- South Asian river dolphin, *Platanista gangetica*, Global population, 2012: **EN**, 2017: **EN**, ?
- Ganges river dolphin, *Platanista gangetica* ssp. *gangetica*, Global population, 1996: **EN**, 2004: **EN**, D
- Indus river dolphin, *Platanista gangetica* ssp. *minor*, Global population, 1996: **EN**, 2004: **EN**, ?

Pontoporiidae

- Franciscana, *Pontoporia blainvillei*, Global population, 2012: **VU**, 2017: **VU**, D
Rio Grande do Sul/Uruguay subpopulation, 2003: **VU**, D

Ziphiidae

- Cuvier's beaked whale, *Ziphius cavirostris*
Mediterranean population, 2012: DD, 2018: **VU**, D

This Statement is supported by the following people: [list available from the authors]