A review of marine protected areas in Argentina and their overlap with current cetacean distribution

A Report prepared for OceanCare, May 2022

ocean care

Fundación Cethus

A review of marine protected areas in Argentina and their overlap with current cetacean distribution

A Report prepared for OceanCare, May 2022

ISBN 978-3-9525671-0-4

Hevia, M.[1], Iñíguez Bessega, M.A.[1,2], Reyes Reyes, M.V.[1], Zuazquita, E.P.[1]

Design/Layout: Roman Richter, cover photo: Fundación Cethus

OceanCare
Gerbestrasse 6
P.O.Box 372
CH-8820 Wädenswil
Switzerland
T. + 41 (0) 44 780 66 88
F. + 41 (0) 44 780 68 08
OceanCare
MarineConservationPolicy
oceancare.international
www.oceancare.org

Fundación Cethus
FundacionCethus
fundacion_cethus
E. info@cethus.org
www.cethus.org

To receive further information about OceanCare's work and this report, please contact:
Fabienne McLellan, Managing Director, fmclellan@oceancare.org
Nicolas Entrup, Director International Relations, nentrup@oceancare.org

[1] Fundación Cethus, Cap. Justo Bermúdez 2634 (B1636EMX), Olivos, Buenos Aires, Argentina
[2] Whale and Dolphin Conservation (WDC) NA, Plymouth, MA 02360, United States

[*] Authors listed alphabetically. All authors contributed equally to the manuscript.
Corresponding author: miguel.iniguez@cethus.org

ABSTRACT

Protected Areas (PAs) are effective tools to preserve biodiversity and may help to address the global decline in biological diversity. Cetaceans play important roles in marine ecosystems usually as top predators, but also as prey in some cases. Additionally, healthy whale and dolphin populations are essential for a fully functioning ocean. This report reviews 66 coastal and marine protected areas (CMPAs) in Argentina, their overlap with the current distribution of 12 cetacean species, including beaked whales, and the main threats facing them. Presence of at least one species was found in all CMPAs, with most of them having three or more species. There is a need to better understand the impact that threats have on cetacean populations in the Argentine Sea and adjacent areas. There is a lack of basic information (e.g. population estimates) for several species and efforts should be made to rectify this situation by monitoring populations, including before and after a potentially risky activity is authorised or completed.

None of the CMPAs include migratory corridors, which are essential for the survival of migratory species. Therefore, there is a need to assess areas of importance for these species to evaluate the establishment of new marine protected areas (MPAs) or to adopt mitigation measures if potentially harmful activities have been authorised or are taking place. While the common bottlenose dolphin is the most threatened species in Argentina, the franciscana is also threatened and both species are in desperate need of specific conservation measures. Dolphins of both species inhabit the Río Negro Estuary where their populations are considered Evolutionarily Significant Units (ESUs). The creation of an MPA here and in the surrounding waters, with proper implementation, would be of great benefit for the conservation of these species and is highly recommended. Most PAs in Argentina were not created for the protection of cetacean populations but some have later included them. It is important that PAs with cetaceans within their limits incorporate them into their Management Plans or, if it has already been created and established and there is strong scientific basis of its relevance for a given species, there might be a need to expand the limits of the CMPAs to provide maximum protection. Most CMPAs lack a Management Plan and it is recommended that the process to provide them with their own Management Plans be initiated. It might be necessary to grant improved funding to each CMPA to ensure their proper functioning. This review can contribute to processes initiated in Argentina to expand or strengthen the CMPAs, as well as to the South Atlantic International Union for the Conservation of Nature Important Marine Mammals Areas (IUCN IMMAs) process which will start in 2023. It will also contribute to the Action Plan for the Protection and Conservation of South Atlantic Whales under the auspices of CMS. In the case of cetaceans, it is important to gather more information on all species to provide solid support for the creation of new CMPAs or to expand the boundaries of existing ones.

INTRODUCTION

The United Nations stated in the First Global Integrated Marine Assessment that:

"The impacts of humanity on the ocean are parts of our inheritance and future. They have helped to shape our present and will shape not only the future of the ocean and its biodiversity as an integral physical and biological system, but also the ability of the ocean to provide the services that we use now, that we will increasingly need to use in the future and that are vital to each of us and to human well-being overall.

Managing our uses of the ocean is therefore vital. The successful management of any activity, however, requires an adequate understanding of the activity and of the context in which it takes place"
(United Nations, 2016).

Cetaceans play important roles in marine ecosystems, usually as top predators, but also as prey in some cases. These species not only affect entire food webs but are also affected by the dynamics of the physical and biological environment (Bowen, 1997). There is a growing amount of scientific evidence that shows that

cetaceans may increase marine primary productivity by moving nutrients through the water column and during their latitudinal movements, which contributes to fertilizing the ocean. The large biomass of baleen whales also represents a large reservoir of carbon, and, when they die, whale carcasses provide a unique habitat for deep sea species, contributing to increased biodiversity (James *et al.*, 2017). In 2016, the International Whaling Commission (IWC) recognised the potential importance of whales as 'ecosystem engineers' by adopting Resolution 2016-3 "Resolution on Cetaceans and Their Contribution to Ecosystem Functioning".

The Argentine shelf and its shelf-break constitute one of the richest biological areas of the world's oceans (Lutz *et al.*, 2010). Commercially important species of fish and molluscs (Cousseau and Perrota, 2000), as well as seabirds and marine mammals (Campagna *et al.*, 1998) are important in this region. Out of the nearly 90 species of cetaceans, about 37 have been reported, at least occasionally, in Argentinian waters (Bastida and Rodríguez, 2003; SAyDS-SAREM, 2019). This high number of species highlights the importance of creating and/ or adequately maintaining protected areas in the Argentine Sea.

Following the definition of protected area (PA) provided by the International Union for Conservation of Nature (IUCN): "a clearly defined geographical space, recognized, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008), Hoyt (2018) states that a marine protected area (MPA) "is simply a PA in the marine realm which extends from the intertidal zone to the deep ocean" and explains that "'MPA' is a common generic term (…) referred to by dozens of other names including marine reserves, marine parks, special areas of conservation (SACs), marine wildlife refuges, and national marine sanctuaries" (the latter term only used in this context in the US). Protected areas are effective tools to preserve biodiversity and may help to address the globally measured loss in biological diversity (Secretariat of CBD, 2014).

In 2010, at its tenth meeting of the Parties, the Convention on Biodiversity (CBD) adopted the Aichi Biodiversity Target 11, for the 2011-2020 period, which called for the conservation of "at least 17% of terrestrial and inland water areas and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape" (CBD, 2010).

Argentina has a total of 500 protected areas (PAs) that represent an area of 36,947,536 ha (13.3% of the national territory). These areas include those administered by the National Parks Administration, provinces and marine protected areas. Out of the 500 PAs, 31 are coastal marine protected areas, 3 MPAs and 34 marine protected territories (SIFAP, 2020). For this report, the Bahía Samborombón PAs have been merged and considered as one PA and the Humedal Caleta Olivia PA has not been included as it is purely terrestrial and has no coastal marine area.

The aim of this work is to review the current state of coastal and marine protected areas within the Argentine Sea, their overlap with cetacean distribution and anthropogenic activities, and propose future directions to increase the effectiveness of such areas in cetacean conservation.

METHODOLOGY

Study area

The study area (figure 1) comprises coastal and shelf waters within 200 nm from the continental Argentinian shore, Tierra del Fuego and Islas Malvinas (Falkland Islands). The international border between Argentina and Uruguay is considered the northern limit of the study area.

Figure 1. Study area

Coastal Marine Protected Areas and Cetacean Natural Monuments in Argentina

The information on Coastal and Marine Protected Areas in Argentina was obtained from the Sistema Federal de Áreas Protegidas (SIFAP)(Federal System of Protected Areas- https://www.argentina.gob.ar/ambiente/areas-protegidas/sifap), which was updated in September 2020, UNEP-WCMC and IUCN (2021) and AMP Argentina (https://beta.ampargentina.org). For each identified PA the IUCN category was included (https://www.iucn.org/theme/protected-areas/about/protected-area-categories), a total of seven IUCN categories are used: Ia (strict nature reserve), Ib (wilderness area), II (National Park), III (natural monument or feature), IV (habitat/ species management areas), V (protected landscapes/ seascape) and VI (protected area with sustainable use of natural resource).

Data on Natural Monuments in Argentina were extracted from national and provincial legislation.

Anthropogenic activities

The anthropogenic activities considered in this work as *primarily important* (but not the only ones that have been described) for cetacean ecology in the study area were hydrocarbon-related activities, vessel traffic, whale-watching tourism activities, and fisheries:

- Hydrocarbon-related activities: marine and coastal areas were mapped where there are concessions for hydrocarbons exploitation, exploration permissions, and marine seismic surveys under Public Contest (Res. 65/2018 of Secretary of Energy, Ministry of Economy). The information was obtained from www.argentina.gob.ar/economia/energia/hidrocarburos and from https://rockhopperexploration.co.uk (figures 3- 15: orange shapes within maps showing presence of species in the study area).

- Vessel traffic: information on vessel traffic was consulted in sources such as www.marinetraffic.com and Prefectura Naval Argentina (Argentine Coastguard). The analysis was carried out on the annual traffic corresponding to 2019, which was the most recent available information at the moment of writing this report.

- Whale-watching tourism activities: boat-based activities were mapped from current legislation of Río Negro province (Law N°4066; Res.272/SADYS/2013-Annex III), and Chubut province (Law N°5714; Dec.167/08; Disp. 04/10; Management Plan of Península Valdés, Península Valdés Protected Natural Area Administration); for sites that do not have specific regulations for the activity, such as Santa Cruz province, maps were generated according to the current operation of tour companies. Although they have a less direct impact on cetaceans, land-based whale-watching sites were also indicated if they have been promoted to tourists.

- Interaction between fisheries and cetaceans: the information on fisheries in Argentine waters was obtained from the most recently published report under the project “Fortalecimiento de la Gestión y Protección de la Biodiversidad Costero Marina en Áreas Ecológicas clave y la Aplicación del Enfoque Ecosistémico de la Pesca (EEP)” GCP/ARG/025/GFF (Strengthening of the Management and Protection of Marine Coastal Biodiversity in key Ecological Areas and the Implementation of the Ecosystemic Approach to Fisheries) and from the “Plan de Acción Nacional para reducir la interacción de mamíferos marinos con pesquerías en la República Argentina” (National Action Plan to reduce interactions between marine mammals and fisheries in the Republic of Argentina), Consejo Federal Pesquero (CFP, Federal Fisheries Council, 2016).

Species distribution and conservation status

In order to assess cetacean species distribution in waters over the Argentinian Continental Shelf, visual, strandings and acoustic records were searched for in published peer-reviewed papers as well as in the

grey literature (unpublished reports, conference articles, papers submitted to meetings of international agreements or conventions as well as the Ocean Biodiversity Information System (OBIS) global open-access database, and Fundación Cethus' database of shore-based, ship and aerial surveys data). The complete list of sources is given in Annex I.

To depict current species distribution, a cut-off point at the year 2000 was established, hence information prior to that year was not included into the analysis and distribution data plotted in each map correspond to records collected from 2000 to early 2021. This lower cut-off point was set in order to exclude historical information and present the most up to date situation possible regarding the presence of cetaceans in Argentina's coastal and marine protected areas (CMPAs) and the potential threats whales, dolphins and porpoises may face. However, when there was an information gap for a given species for the period of interest so that mapping was not possible, data reported a few years before 2000 was included, especially given that some papers published information with blocks of years that sometimes included a few years before 2000. Additionally, the distribution range of each species in the study area was obtained from the "Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina"- Red List of Argentinian Mammals- (SAyDS-SAREM, 2019) and the IUCN's Red List of Threatened Species.

A sample of species of cetaceans that can be found within the study area was selected. The criteria were that this sample was representative of the bigger collective in terms of taxonomy, conservation status, distribution and scientific knowledge. The list of species included in this report is as follow: humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), southern right whale (*Eubalaena australis*), sperm whale (*Physeter macrocephalus*), orca (*Orcinus orca*), common dolphin (*Delphinus delphis*), common bottlenose dolphin (*Tursiops truncatus*), Commerson's dolphin (*Cephalorhynchus commersonii*), Peale's dolphin (*Lagenorhynchus australis*), dusky dolphin (*Lagenorhynchus obscurus*), franciscana (*Pontoporia blainvillei*), Burmeister's porpoise (*Phocoena spinipinnis*), and the species of the family Ziphidae: Arnoux's beaked whale (*Berardius arnuxii*), southern bottlenose whale (*Hyperoodon planifrons*), Andrew's beaked whale (*Mesoplodon bowdoini*), Gray's beaked whale (*Mesoplodon grayi*), Hector's beaked whale (*Mesoplodon hectori*), strap-toothed beaked whale (*Mesoplodon layardii*), Shepherd's beaked whale (*Tasmacetus shepherdi*), and Cuvier's beaked whale (*Ziphius cavirostris*). All species of beaked whales found in the study area were considered together as "beaked whales" or "ziphiids" for analysis since information about them is scarce, they are rarely seen at sea and, when they are, they are usually difficult to identify at species level.

T. t. truncatus and *T. t. gephyreus* are the two subspecies of *T. truncatus* recognised in the region but they are not always identified to subspecies level at sea. Whenever possible, separate information on each is presented, otherwise reference to *T. truncatus* is made.

While a recommendation to move *L. australis* and *L. obscurus* into the genus *Sagmatias* has been made (Vollmer *et al.*, 2019), *Lagenorhynchus* is retained here for both species reflecting use in the taxonomy lists consulted. Taxonomy and English common names used in this report follow those of the International Whaling Commission (IWC) and The Society for Marine Mammalogy (Committee on Taxonomy, 2021), while the Spanish common names follow those used by the SAyDS-SAREM (2019).

Conservation status of the species under study was obtained from the SAyDS-SAREM (2019) and the IUCN Red List of Threatened Species. Additionally, the websites of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS) were consulted to determine whether these species were included in their Appendices (table 1).

Table 1. Summary of CITES and CMS Appendices (modified from www.cites.org and www.cms.int)

Appendix	*CITES*
I	Lists species that are the most endangered among CITES-listed animals and plants. They are threatened with extinction. Their international trade is prohibited by CITES.
II	Lists all species that although not necessarily now threatened with extinction may become so unless trade is subject to strict regulation in order to avoid utilization incompatible with their survival. It also includes species not affected by trade but which must be subject to regulation in order to allow an effective control of trade in species that need protection.
III	Lists species included at the request of a Party that already regulates trade in the species and that need global cooperation to control their trade.
Appendix	***CMS***
I	Lists endangered species to be placed under strict protection by the Parties.
II	Lists species with unfavorable status that require international agreements for their conservation and management and those which would benefit significantly from international cooperation.

Additionally, the 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea (Forum for the Conservation of the Patagonian Sea, 2019) was also consulted for regional conservation status.

Maps

Maps were generated using software QGis version 3.10.5. Species' distribution maps were based on sightings coordinates and maps were digitized and transformed into a shape file to represent the presence of the species throughout the study area. Whale-watching activities were digitised in points and polygons according to type. Coastal and marine protected areas of Argentina, as well as areas of hydrocarbon-related activities, were transformed into polygon shape files. All these layers were used for crossover analysis on GIS-based maps.

RESULTS AND DISCUSSION

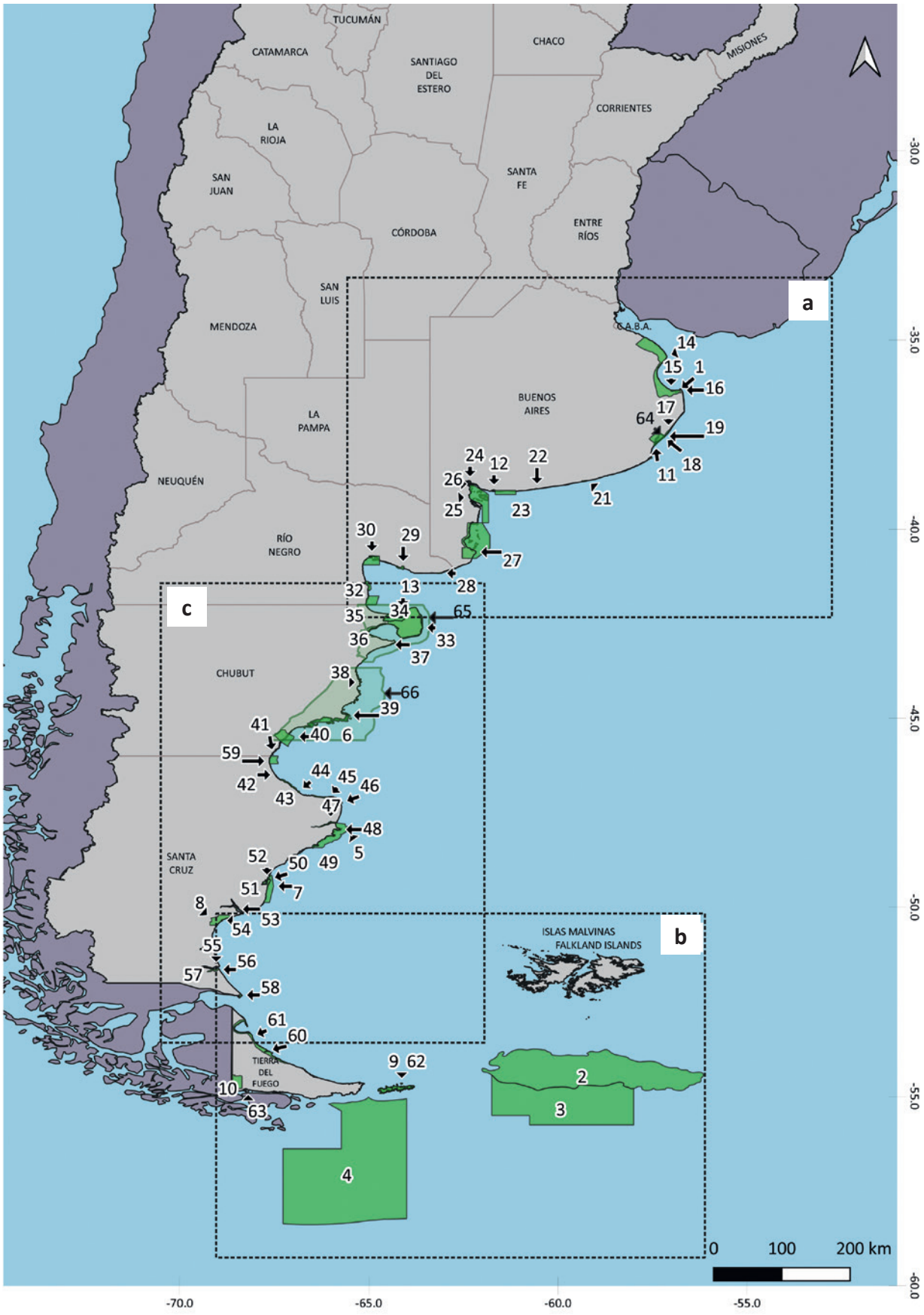
Current situation on coastal and marine protected areas in Argentina

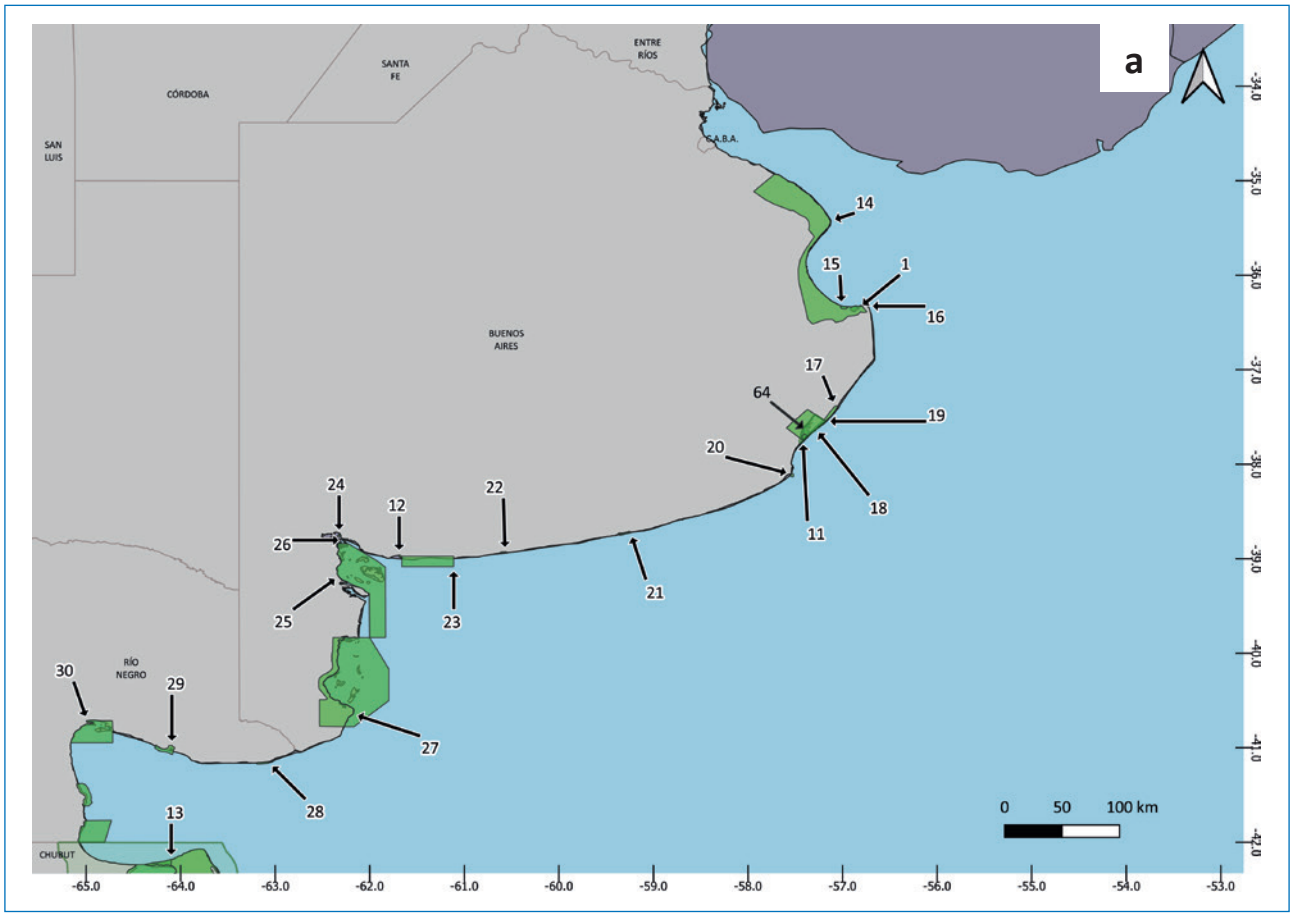
In 2003, the SIFAP (Sistema Federal de Áreas Protegidas/Federal System of Protected Areas) was established following an agreement among the Administración de Parques Nacionales (APN-National Parks Administration), the Ministerio de Ambiente y Desarrollo Sostenible (Environment and Sustainable Development Ministry) and the Consejo Federal de Medio Ambiente (CoFEMA-Environment Federal Council).

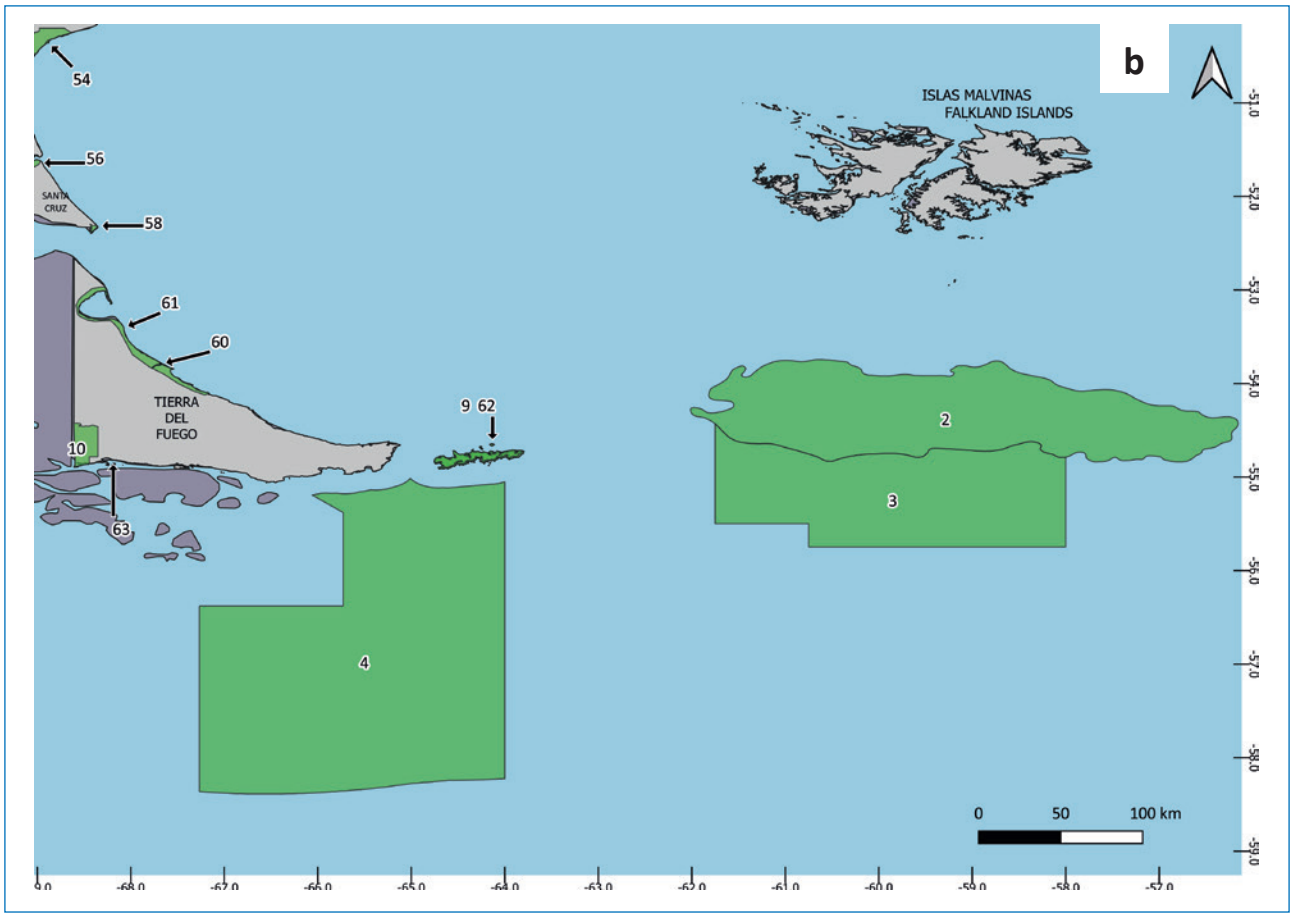
Current coastal and marine protected areas in Argentina administered by the Federal government, the National Parks Administration and the provinces are summarized in table 2 (see Annex II) and figure 2.

A total of 66 coastal and marine protected areas have been identified as associated with the presence of cetaceans through sightings or strandings. The first PA was established in the 1960s and the period when most PAs were created was during the 1990s when 13 PAs were established. However, the three MPAs were only established in the last decade.

The category of Natural Monument was established by Law 22,351/1980 and, in its description, it could be considered equivalent to category III and IV of IUCN. Only four species of cetaceans are classified as Natural Monuments in Argentina: southern right whale, Commerson's dolphin, Peale's dolphin and franciscana. Table 3 summarises species of cetaceans classified as Natural Monuments in Argentina and the corresponding legislation that classified them, either at national or provincial level (see table 3 in Annex II).


TUCUMÁN
CATAMARCA
SANTIAGO DEL ESTERO
CHACO
MISIONES
CORRIENTES
LA RIOJA
SAN JUAN
SANTA FE
CÓRDOBA
ENTRE RÍOS
SAN LUIS
MENDOZA
C.A.B.A.
BUENOS AIRES
LA PAMPA
NEUQUÉN
RÍO NEGRO
CHUBUT
SANTA CRUZ
TIERRA DEL FUEGO
ISLAS MALVINAS
FALKLAND ISLANDS
a
b
c
0 100 200 km
-30.0
-35.0
-40.0
-45.0
-50.0
-55.0
-60.0
-70.0
-65.0
-60.0
-55.0


a
CÓRDOBA
SANTA FE
ENTRE RÍOS
SAN LUIS
C.A.B.A.
BUENOS AIRES
RÍO NEGRO
CHUBUT
14
15
1
16
17
64
19
20
18
11
24
12
22
26
25
23
21
30
29
27
28
13
0 50 100 km
-65.0 -64.0 -63.0 -62.0 -61.0 -60.0 -59.0 -58.0 -57.0 -56.0 -55.0 -54.0 -53.0
-34.0 -35.0 -36.0 -37.0 -38.0 -39.0 -40.0 -41.0 -42.0


b
ISLAS MALVINAS
FALKLAND ISLANDS
54
56
SANTA CRUZ
58
61
60
TIERRA DEL FUEGO
9 62
10
63
2
3
4
0 50 100 km
-51.0 -52.0 -53.0 -54.0 -55.0 -56.0 -57.0 -58.0 -59.0

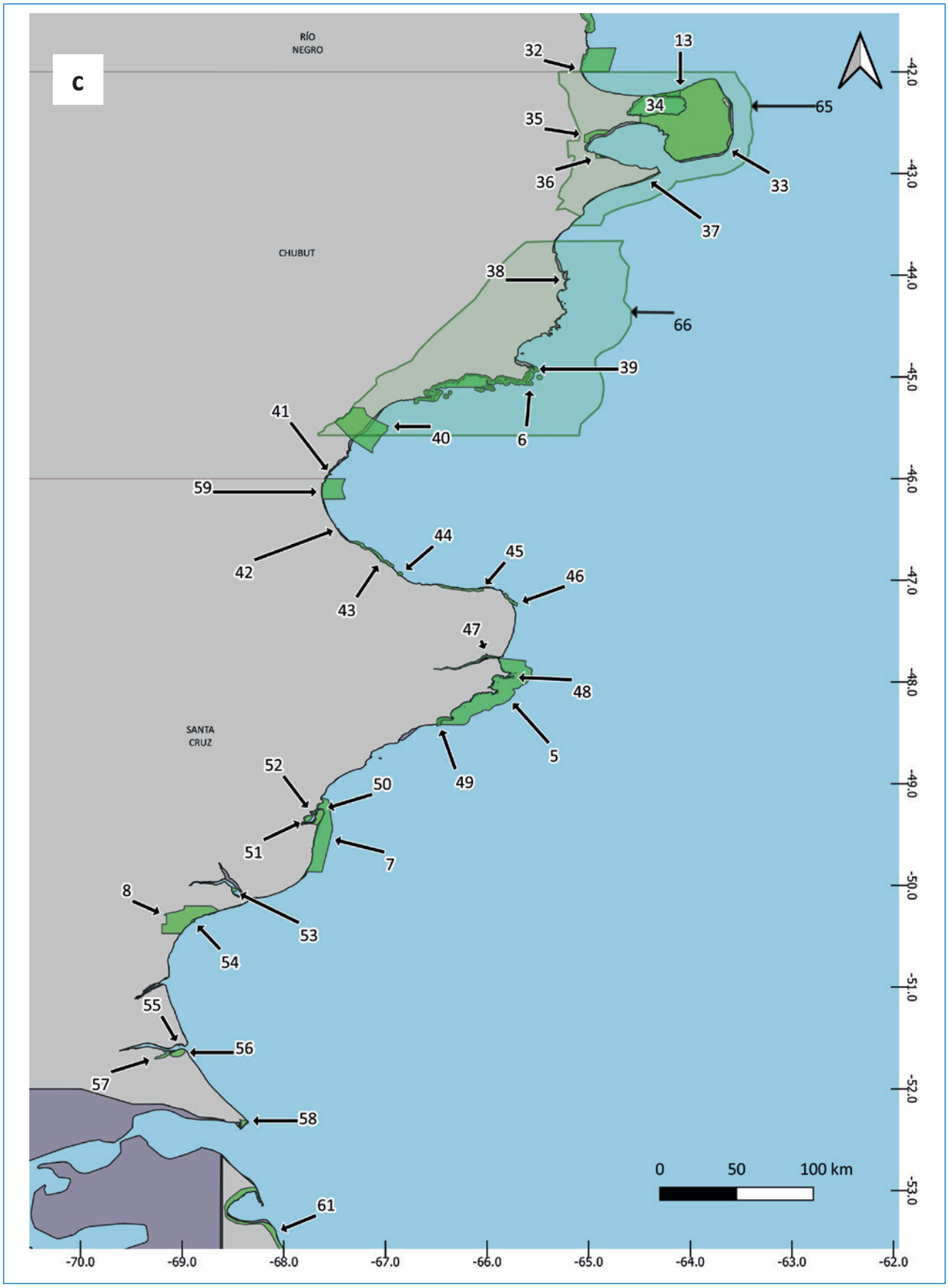


Figure 2. Coastal and marine protected areas of Argentina. a. Protected areas in Buenos Aires and Río Negro provinces. b. Protected areas in Tierra del Fuego province and Namuncurá-Banco Burdwood I and II and Yaganes MPAs. c. Protected areas in Chubut and Santa Cruz provinces. Numbers correspond to protected areas as in Table 2 (see Annex II). Dark green: coastal and marine protected areas. Light green: coastal and marine biosphere reserves.

Anthropogenic activities

Seismic surveys in the Argentine Sea are increasing at an alarming rate. In November 2018, the Government of Argentina opened the "International Public Tender Offshore No. 1" for exploration in national waters (12-200 nm) of the Argentine continental shelf with the objective of increasing hydrocarbon production. The exploration permits cover around 200,000 square kilometres, representing a total of 38 blocks and concern the Austral Marina, Malvinas Oeste and Argentina Norte basins. There have also been rounds of intense oil exploration activities, including seismic surveys and drilling, in Islas Malvinas (Falkland Islands) since 2010. These areas are shown in figures 3 to 15 as orange shapes within the maps showing species presence within the study area, along with other areas that are already at the production and extraction stage. Marine seismic surveys for oil and gas introduce high levels of impulsive sounds generated by the use of airguns. Argentina also has important fisheries given its large continental shelf and extensive coast, with easily accessible, important fishing resources. These activities along with intense marine traffic represent major threats for the species of cetaceans distributed throughout the waters of the study area. In addition to ship noise, some fisheries are responsible for cetacean bycatch, and cetaceans are also susceptible to ship strikes, especially in areas of high-density marine traffic.

© Nicolás Valese | Fundación Cethus

Species distribution and conservation status

Table 4 (see Annex II) displays the conservation status of the species analysed according to the 2019 Argentinian Red List (SAyDS-SAREM) and IUCN. While the scale of the first specifically refers to the species within the Argentine Sea and the latter to the global level, both classify 12 of these species into the same categories, with seven of the remaining eight species classified into different categories involving DD in either of the Lists consulted. SAyDS-SAREM (2019) includes nine species as Data Deficient (DD)-eight of which are the beaked whales included in this report-, seven as Least Concern (LC), three as Vulnerable (VU) and one as Endangered (EN). It also includes the common bottlenose dolphin subpopulations and categorises the Lahille's bottlenose dolphin (*T. t. gephyreus*) as EN and the common bottlenose dolphin (*T. t. truncatus*) as DD. IUCN globally categorized four of these species as DD, 12 as LC, one as Near Threatened (NT), two as VU and one as EN. Additionally, it includes *T. t. gephyreus* as VU (which includes not only Argentina but also Brazil and Uruguay). CITES includes six of these species in its Appendix I and the remaining 14 in Appendix II, while CMS lists three in Appendix I, five in Appendix II and three in both Appendices I and II.

The coastal and marine protected areas in Argentina where each cetacean species was recorded are shown in table 4 (see Annex II).

HUMPBACK WHALE (*MEGAPTERA NOVAEANGLIAE*)

© Nicolás Valese | Fundación Cethus

The humpback whale is a cosmopolitan species that, as with all large whales in the Southern Hemisphere, suffered a reduction of its populations as a result of commercial whaling during the first half of the 20th century (Allison, 2006; Findlay, 2001). Nowadays there is evidence that shows that the West South Atlantic humpback whale population is growing (Zerbini *et al.*, 2011). It is distributed throughout the study area (Dellabianca and Gribaudo, 2019), although sightings of humpback whales were scarce throughout the Argentine Sea and relatively more frequent in the Beagle Channel (figure 3). These findings do not necessarily mean that the species is rare. It was thought that whales recorded in the study area belonged to the IWC "Breeding Stock A" which undertakes long migrations from Antarctic and subantarctic waters, where they feed, to Brazilian waters (mostly to the Abrolhos Bank) where they mate and have their calves, and that they were passing through the Argentine Sea on their migration (IWC, 1998; 2005). However, telemetry and whaling data seem to contradict this, at least for whales breeding in waters on the Abrolhos Bank and feeding near Islas Georgias del Sur (South Georgia Islands) and Islas Sandwich del Sur (South Sandwich Islands), as they fail to show any whales within the Argentine Sea (Horton *et al.*, 2020). Sightings and strandings have increased recently with some individuals detected swimming in the study area and several stranded whales found in all coastal provinces (figure 3), which are considered to be whales that occasionally enter the Argentine Continental Shelf (CFP, 2016). No genetic assessment has been done yet to determine whether they belong to "Breeding Stock A" or not, hence there is a need to undertake genetic assessment and to better understand migratory routes of whales seen from shore and found stranded along the Atlantic coast of Argentina and of those recorded in the Beagle Channel. The species is considered rare in Islas Malvinas (Falkland Islands), with only one stranding in 1984 (Otley, 2012).

Records of humpback whales, either sightings or carcasses on shore, have been reported in the southwestern portion of the Argentine Sea partially overlapping with areas where oil and gas exploration and/or production has been permitted (figure 3). Other threats that have been described for humpback whales are bycatch and ship strikes (Dellabianca and Gribaudo, 2019). The species has been increasingly found in the Beagle Channel in recent years where it is opportunistically encountered during touristic boat trips in the austral summer and fall. Additionally, it might be opportunistically seen from shore at provincial Natural Reserves Caleta Olivia and Costa Norte, as well as at Punta Marqués Protected Area (Dellabianca and Gribaudo, 2019).

This species has been recorded in the protected areas mentioned in table 4 (see Annex II).
The species was classified as EN by IUCN in the 1980s, then VU in the 1990s and, as of 2008, is included in the LC category. The humpback whale in Argentina was considered VU from 1997 to 2019 when it was included locally into the LC category by SAyDS-SAREM. It is listed in Appendix I of CMS and CITES (table 4-see Annex II).

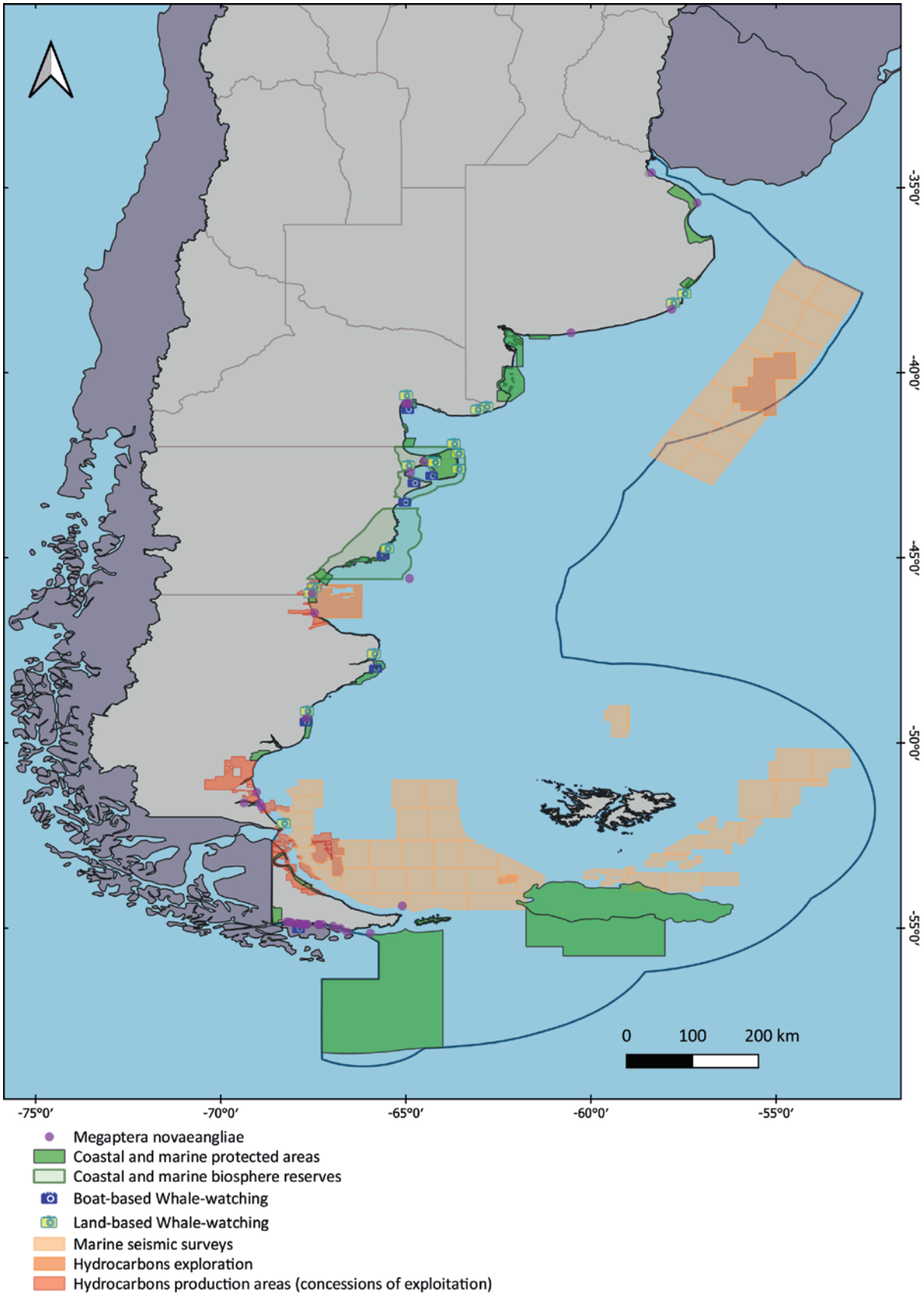


Figure 3: Presence of humpback whales in the study area (2000-2020).

SEI WHALE (*BALAENOPTERA BOREALIS*)

© Marta Hevia | Fundación Cethus

According to historic records from whaling activities, sei whales may have occurred regularly off the Argentinian coast in the past (Hart, 2002; Schwarz, 1934). Over the last two decades there have been some reports of sightings and strandings of this species along the Patagonian coast of Argentina (Iñíguez *et al.*, 2010b). A few stranded animals have been found in the northern part of the study area in Buenos Aires province. Even though according to the literature this species seems to prefer offshore waters, sei whales are increasingly sighted in coastal waters of the Beagle Channel, Tierra del Fuego province, and Bahía Camarones and Parque Interjurisdiccional Marino Costero Patagonia Austral (PIMCPA), Chubut province, during the austral summer and winter (figure 4). Calves have been seen in these areas and, recently, feeding animals have been recorded in Bahía Camarones and PIMCPA. The species is also found around Islas Malvinas (Falkland Islands) which have been reported as a feeding ground for sei whales (Weir *et al.*, 2020; Iñíguez *et al.*, 2010b; White *et al.*, 2002). The numbers of sei whales recorded in that area increase in November and remain high until April (Weir *et al.*, 2020; White *et al.*, 2002).

Like most balaenopterids, sei whales are found in all oceans and migrate long distances north-south from high latitude summer feeding grounds to lower latitude winter areas. However, unlike most other balaenopterids, sei whales tend to be restricted to more temperate waters (Rice, 1998). Historic and current information on the distribution and abundance of sei whales in the Southwest Atlantic is scarce. The use of Brazilian waters as a winter calving ground from May to October has been confirmed (Weir *et al.*, 2020; Wedekin *et al.*, 2018; Heissler *et al.*, 2016) and evidence of migration between Brazil and Islas Malvinas (Falkland Islands) has recently been reported (Weir *et al.*, 2020). Records in Argentina may correspond to animals migrating from and towards their feeding grounds in subantarctic waters (Iñíguez *et al.*, 2010b). However, the fact that in recent years sei whales have been seen regularly at the mouth of the Beagle Channel, Bahía Camarones and PIMCPA suggests that these areas could have an ecological relevance for the species.

The species has been recorded near areas of seismic survey and hydrocarbons exploration (figure 4). Other potential threats suggested for sei whales include ship strikes, but currently they are not considered a major concern (Hevia *et al.* 2019a).

The species occurs in the protected areas in Argentina listed in table 4 (see Annex II) and is included both locally and globally in the EN category by SAyDS-SAREM as well as IUCN and in Appendices I and II of CMS and Appendix I of CITES (table 4-see Annex II).

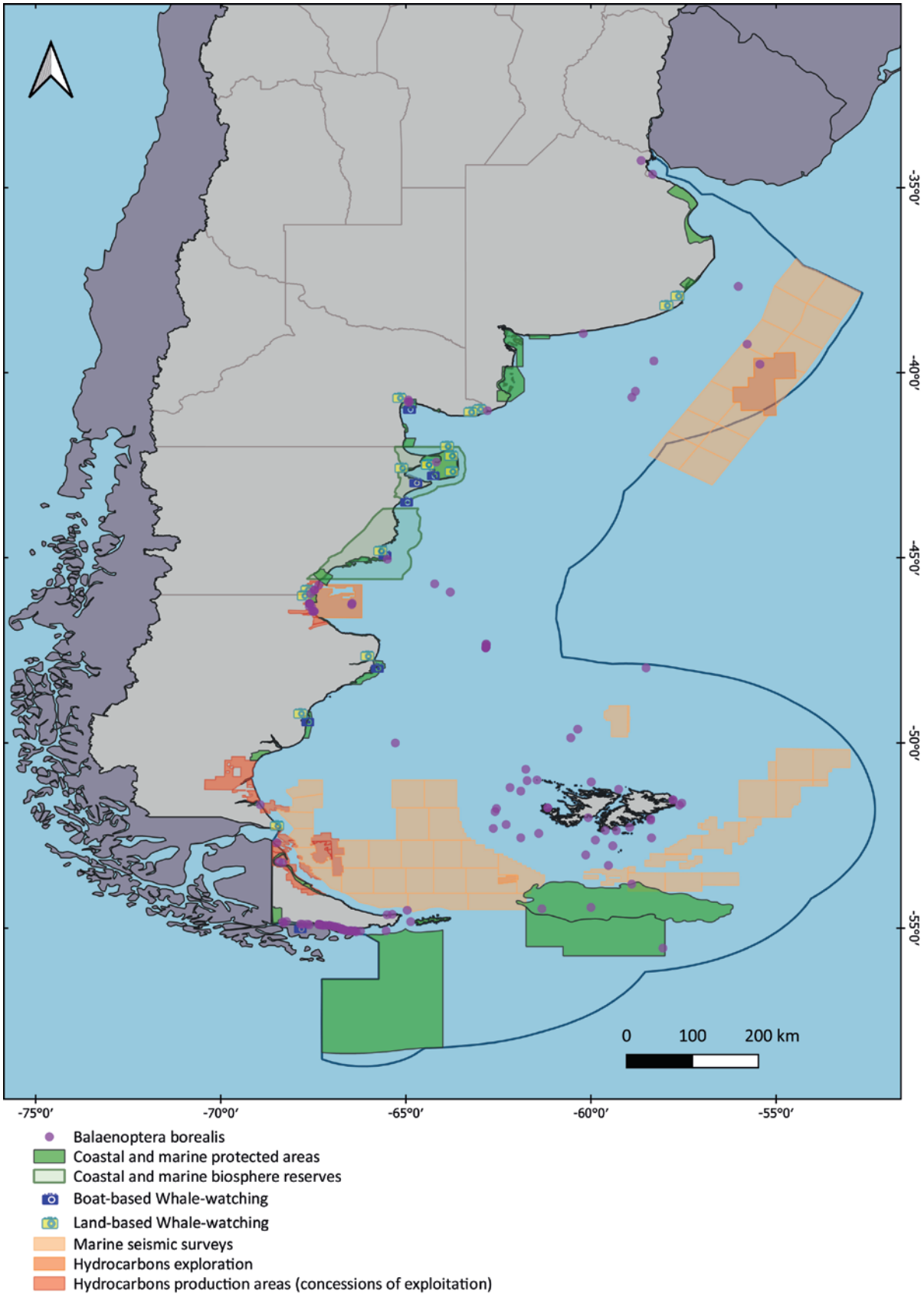


Figure 4: Presence of sei whales in the study area (2000-2020).

SOUTHERN RIGHT WHALE (*EUBALAENA AUSTRALIS*)

Southern right whale (SRW) is one of the whale species to have been most affected by commercial whaling and was driven close to extinction during the nineteenth and twentieth centuries (IWC, 2011). The most recent estimates of population growth rate suggest that this species is recovering at 6-7% per year on both sides of the Atlantic Ocean and in Australia (IWC, 2013; Cooke *et al.*, 2013; Crespo *et al.*, 2011).

© Miguel Iñiguez | Fundación Cethus

Península Valdés (PV), Argentina, is an important nursery ground for SRWs in the western South Atlantic Ocean. Every year they can be observed in relatively large aggregations in the winter-spring season. Their abundance in this region was estimated at 4,245 (95% CI=3,765-4,725) individuals in 2010 (IWC, 2013). Although their abundance is increasing, the rate of increase is slowing down. Differences in rates of increase of group types and changes in habitat use are thought to be the consequence of a density-dependence process (Crespo *et al.*, 2019).

Their presence during the austral winter in their breeding ground is well known but their migration routes and feeding grounds are still being studied. There are three grounds that appear to contribute most to the diets of Península Valdés SRWs which correspond to areas previously documented in the logbooks of whaling ships: the Patagonian Shelf, Islas Georgias del Sur (South Georgia Islands), and the waters of the Polar Front (Valenzuela *et al.*, 2018). Satellite tagging surveys on whales from PV and Golfo San Matías showed that, apparently, there is not only one pattern of movement when the whales leave this area (Zerbini *et al.*, 2018, 2016).

Southern right whales can be sighted along almost the entire Argentine coast (figure 5). The main whale-watching (WW) activity occurs in Península Valdés and surrounding areas between April and December, with land-based WW promoted from Puerto Madryn, El Doradillo and PV. Boat-based WW takes place only in a restricted area in Puerto Pirámides (PV). The recent increase of sightings along the coast has incentivised WW activities in other areas such as Bahía San Antonio, in Golfo San Matías, where the boat-based activity is also regulated (Arias *et al.*, 2018), and, additionally, land-based WW occurs in Cabo Vírgenes (Santa Cruz province) and Buenos Aires coast (Mandiola *et al.*, 2019; Zuazquita *et al.*, 2018). In Argentina, there were 22 confirmed

and 3 probable vessel collision cases between 1970 and 2000 (Van Waerebeek *et al.*, 2007; Rowntree *et al.*, 2001). In order to mitigate these kind of events in PV, the Prefectura Naval Argentina promulgated the Order MADR-RIA N°122/12 which establishes a navigation corridor in Golfo Nuevo area during the calving season (from 1st June to 30th November). Cases of entanglement have been recorded in Golfo Nuevo and Golfo San Matías. Outside this zone, many of the SRW records on the Argentine continental shelf and Buenos Aires zone coincide with areas of high shipping traffic.

© Miguel Iñiguez | Fundación Cethus

Overlaps were found between records of this species and northern and southern seismic survey areas. They have also been reported in areas where exploration and exploitation of hydrocarbons takes place (figure 5).

The species occurs in the protected areas in Argentina listed in table 4 (see Annex II).
In 1984, the SRW was declared a "National Natural Monument" by Law 23,094 which was followed in 2003 by Santa Cruz province and in 2006 by Río Negro province declaring the species a "Provincial Natural Monument" by Law 2,643 and Law 4,066, respectively.

The southern right whale is included both locally and globally in the LC category by SAyDS-SAREM as well as IUCN and in Appendix I of CMS and CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

© Miguel Iñiguez | Fundación Cethus

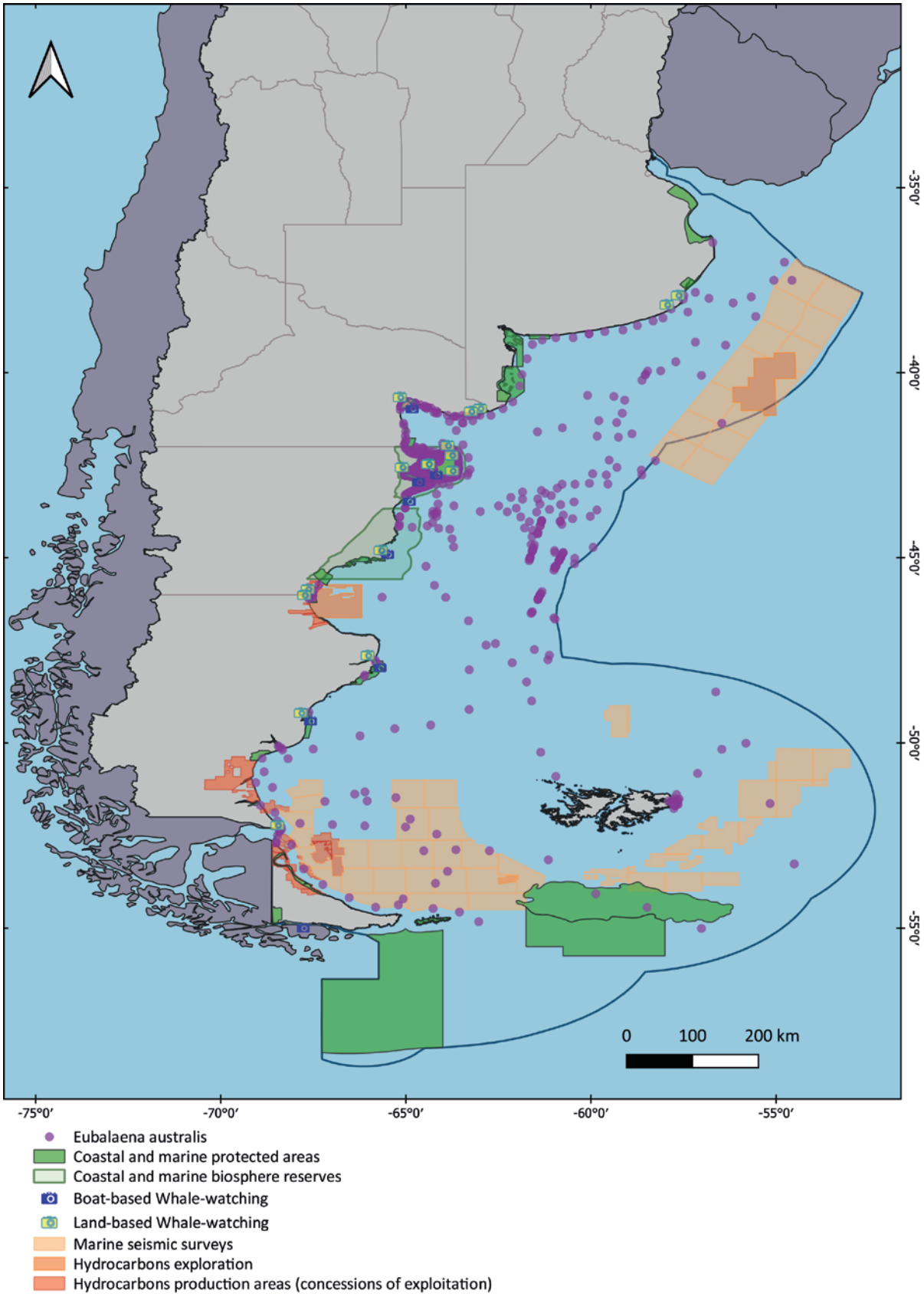


Figure 5: Presence of southern right whales in the study area (2000-2020).

SPERM WHALE (*PHYSETER MACROCEPHALUS*)

© Miguel Iñiguez | Fundación Cethus

In Argentina there have been records of sperm whales associated with fisheries in the northern part of the study area near the Brazil-Malvinas Confluence, and also in Tierra del Fuego and Islas Malvinas (Falkland Islands), at the 200 m isobath. Additionally, strandings of mainly solitary mature males have occurred all along the coast of Argentina (figure 6). The sperm whale is a cosmopolitan species, with females and juveniles normally found in warm waters, while young males move to higher latitudes in summer, and old males migrate to the cold waters of Antarctica (Whitehead, 2003).

Interactions between sperm whales and longline fisheries have frequently been reported in Argentinian waters, and mitigation measures have been taken to reduce the impacts of such interactions (Mandiola *et al.*, 2019). The species has also been recorded close to vessels conducting marine seismic surveys (Mandiola *et al.*, 2015) and in areas of hydrocarbons exploration and production (figure 6).

Strandings of individual sperm whales have been recorded in several coastal protected areas, and over the last year the presence of the species has been reported near the Namuncurá-Banco Burdwood I and II and Yaganes MPAs (table 4-see Annex II). There is no knowledge on abundance estimates or population trends for this species in the Argentine Sea. The species is listed both locally and globally in the VU category by SAyDS-SAREM as well as IUCN and in Appendices I and II of CMS and Appendix I of CITES (table 4-see Annex II).

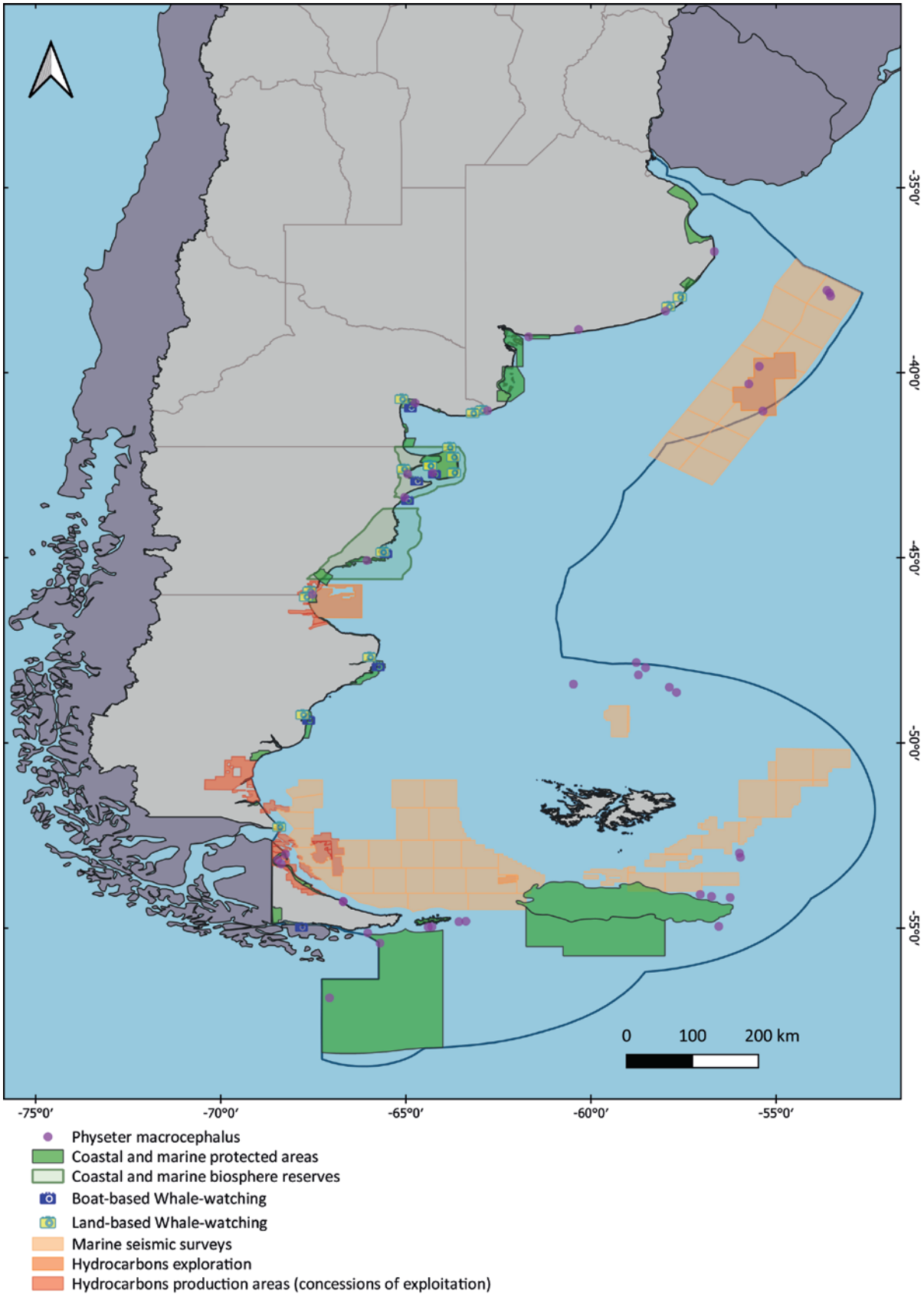


Figure 6: Presence of sperm whales in the study area (2000-2020).

ORCA (*ORCINUS ORCA*)

© Miguel Iñiguez | Fundación Cethus

Orca can be found throughout the study area where it is considered a resident species (figure 7, Coscarella *et al.*, 2019a). Sightings of the species are believed to have increased over the last two decades (Crespo and García, 2016). Some animals migrate over the shelf-break from Antarctica where the species is abundant (Durban and Pitman, 2012). Based on stable isotope analysis, three groups have been distinguished: resident animals in Patagonian waters, migrating animals from the south of Brazil, and migrating animals from Antarctica (Loizaga *et al.*, 2018). There are no abundance estimates for the species in the Argentine Sea, but it is considered a moderately frequent species. Sightings are common from February to April in Punta Norte, Península Valdés, where they feed on southern sea lion (*Otaria flavescens*) pups (Iñíguez, 2001). The same individuals can be seen from October to November in other areas of PV feeding on southern elephant seal (*Mirounga leonina*) pups and dusky dolphins, and also in Golfo San Matías (Coscarella *et al.*, 2015). Between 1972 and 2000, 117 orca – southern right whale encounters were observed in the PV area and 12 of them involved attacks (Sironi *et al.*, 2008).

Recently two unusual mass stranding events of orca were registered in Buenos Aires province: in August 2018 between Nueva Atlantis and Punta Mogotes which involved five individuals (Infobae, 27th August 2018) and, in September 2019, in Mar Chiquita, involving seven individuals (Diario Clarín, 16th September 2019). In both years there were vessels conducting seismic surveys in the area, although the causes of these strandings remain unconfirmed. The overlap between sightings of orcas and seismic surveys in the southern area is shown in figure 7.

Orcas have been recorded in the protected areas included in table 4 (see Annex II). The species is locally considered as LC by SAyDS-SAREM and globally as DD by IUCN. It is included in Appendix II of CITES and CMS. The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

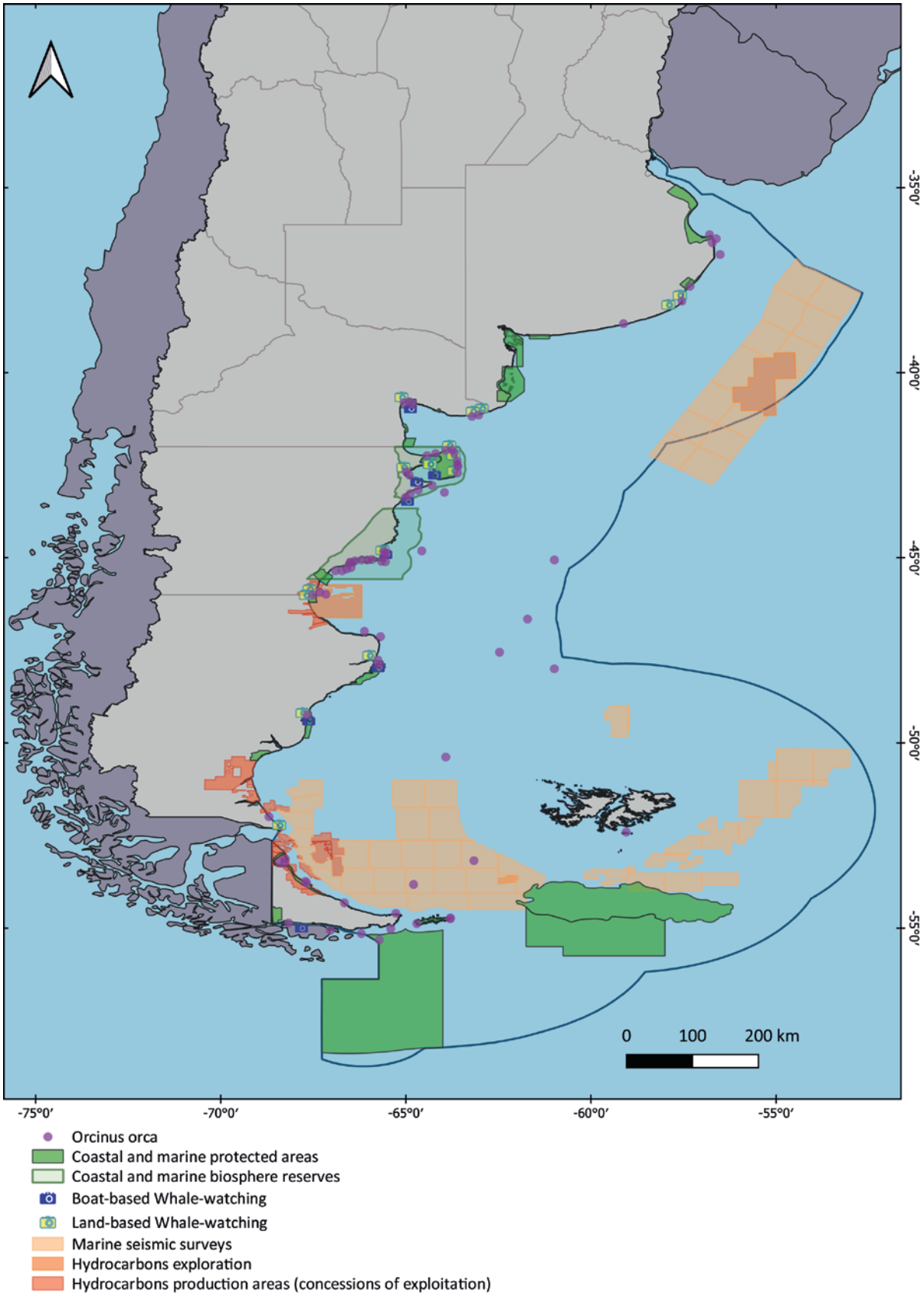


Figure 7: Presence of orcas in the study area (2000-2020).

COMMON DOLPHIN (*DELPHINUS DELPHIS*)

© Marta Hevia | Fundación Cethus

The common dolphin is a cosmopolitan species found in tropical and cold waters of the Atlantic and Pacific Oceans (Hammond *et al.*, 2008). In Argentina these dolphins are distributed along the coast of Buenos Aires, Río Negro and Chubut provinces and in waters far from shore (figure 8, Romero *et al.*, 2019). It is an abundant species throughout the year along the shelf waters off Buenos Aires province and in Golfo San Matías in Río Negro. A record of a skeleton found on a beach in the southeast of Tierra del Fuego in 2002 is considered a vagrant (figure 8; Goodall *et al.*, 2008). It is commonly seen in large groups and is frequently registered in mixed groups with dusky dolphins.

Interactions with fisheries is considered the main threat for this species in Argentina with the highest bycatch numbers registered in midwater trawling fisheries in Buenos Aires province (Romero *et al.*, 2019; Forum for the Conservation of the Patagonian Sea, 2019; CFP, 2016;). Bycatch has also been reported in pelagic trawling nets in Patagonian waters (CFP, 2016). Analysis of stable isotopes found that offshore common dolphins' diet is composed mainly of juvenile Argentine hake (*Merluccius hubbsi*). This raises concerns off Buenos Aires province since stocks of this prey item in the area were reduced due to fisheries pressure there and only a few age classes remained as of the 1986-2005 period, leading to a potential risk of disappearance of larger groups (Loizaga de Castro *et al.*, 2016). This could have, as yet unknown, consequences for the common dolphins feeding on them.

High values of organic pollutants have been found in common dolphins making contamination of waters near the coast and over the shelf a potential threat (Romero *et al.*,2019).

These dolphins are opportunistically sighted during whale-watching trips in Bahía San Antonio (Romero *et al.*, 2019).

The species is found in the protected areas shown in table 4 (see Annex II) and it is included both locally and globally in the LC category by SAyDS-SAREM as well as IUCN and in Appendix II of CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

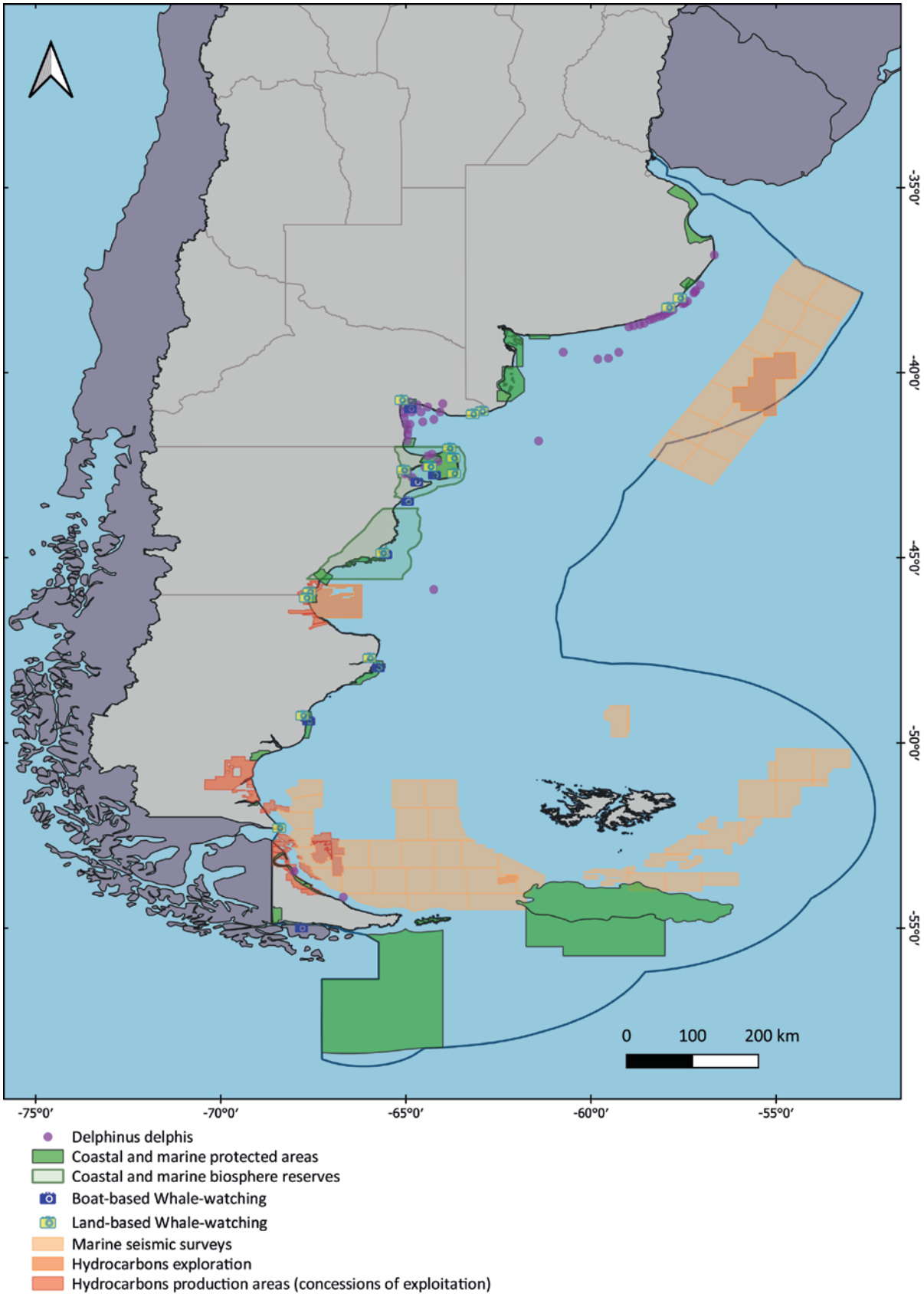


Figure 8: Presence of common dolphins in the study area (2000-2020).

COMMON BOTTLENOSE DOLPHIN (*TURSIOPS TRUNCATUS*)

This species is widely distributed globally (Wells *et al.*, 2019). The national distribution range encompasses all the study area, from northern Buenos Aires province to Tierra del Fuego, with the southernmost records occurring between 53°S and near 55°S (Vermeulen *et al.*, 2019; Goodall *et al.*, 2011; figure 9).

© Miguel Iñiguez | Fundación Cethus

Two subspecies are recognised in the southwest Atlantic Ocean: Lahille's bottlenose dolphin, *Tursiops truncatus gephyreus* and common bottlenose dolphin, *Tursiops truncatus truncatus*. The former is endemic to the coastal waters of southern Brazil, Uruguay and Argentina, with the population from Argentina constituting an Evolutionary Significant Unit (Vermeulen *et al.*, 2017; Fruet *et al.*, 2014).

T. t. truncatus is associated with oceanic dolphins on the continental platform of southern Brazil (Fruet *et al.*, 2017). Two morphotypes are described for coastal bottlenose dolphins in Argentina: "T" and "F" (Vermeulen and Cammareri, 2009a) which interact with each other and live in sympatry (Vermeulen *et al.*, 2017). The Scientific Committee of the IWC has encouraged gathering more genetic and morphological data on common bottlenose dolphins from the southwest Atlantic in order to clarify the taxonomic level of Lahille's bottlenose dolphin (i.e. whether species or subspecies) and to better understand coastal vs. offshore forms (IWC, 2018).

The situation of the species is extremely fragile in Argentina, and it is currently one of the cetacean species of major conservation concern in the country. Its distribution was once considered to be continuous and sightings were frequently recorded, particularly along the coasts of Buenos Aires, Río Negro and in Chubut provinces; the situation was different in Santa Cruz and Tierra del Fuego provinces where records were scarce (Vermeulen *et al.*, 2017). Sightings of dolphins have been decreasing in recent years and, even though nationwide abundance has not been assessed yet, based on local abundance estimations it is considered that there are less than 300 individuals for all areas in Argentina; a clear explanation for this very low value is yet to be found (Vermeulen *et al.*, 2017). Estimated figures are worryingly low for Chubut province (n=34, 95% CI 22-51), Bahía San Antonio, Río Negro province (n=83, 95% CI 45.8-151.8) and in Bahía Blanca and San Blas, southern Buenos Aires province (less than 50 individuals), while in northern Buenos Aires province the species seems to have disappeared (Vermeulen *et al.*, 2018; Vermeulen and Bräger 2015; Coscarella *et al.*,

2012). In Islas Malvinas (Falkland Islands) the species is considered rare, with very few records up to the mid-1990s (Otley, 2012).

Boat and land-based whale-watching of *T. t. gephyreus* takes place in Bahía San Antonio (Vermeulen *et al.*, 2019) and land-based WW in El Cóndor, Río Negro province (Failla *et al.*, 2014; figure 9).

© Miguel Iñiguez | Fundación Cethus

Ship traffic might pose a risk to common bottlenose dolphins, particularly in Bahía San Antonio where the increase in traffic of WW, fishing and cargo ships is considered a threat due to chemical and acoustic pollution (Vermeulen *et al.*, 2019). These authors also consider overfishing, destruction of habitat due to fisheries, and inorganic trace element pollution to be threats.

Bycatch does not seem to be a major threat for common bottlenose dolphins in the study area (CFP, 2016), however there were some records of individuals incidentally caught in pelagic nets for anchovies (CFP, 2016) and gillnets in the mouth of the Río Negro (M. Failla, pers. comm).

The species has been reported in protected areas listed in table 4 (see Annex II). The common bottlenose dolphin is included locally in the VU category by SAyDS-SAREM and globally in the LC category by IUCN and in Appendix II of CITES (table 4-see Annex II). *T. t. gephyreus* is classified as EN by SAyDS-SAREM and VU by IUCN while *T. t. truncatus* is considered DD by the Argentinian Red List. The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included *T. truncatus* under the VU category (Forum for the Conservation of the Patagonian Sea, 2019).

© Miguel Iñiguez | Fundación Cethus

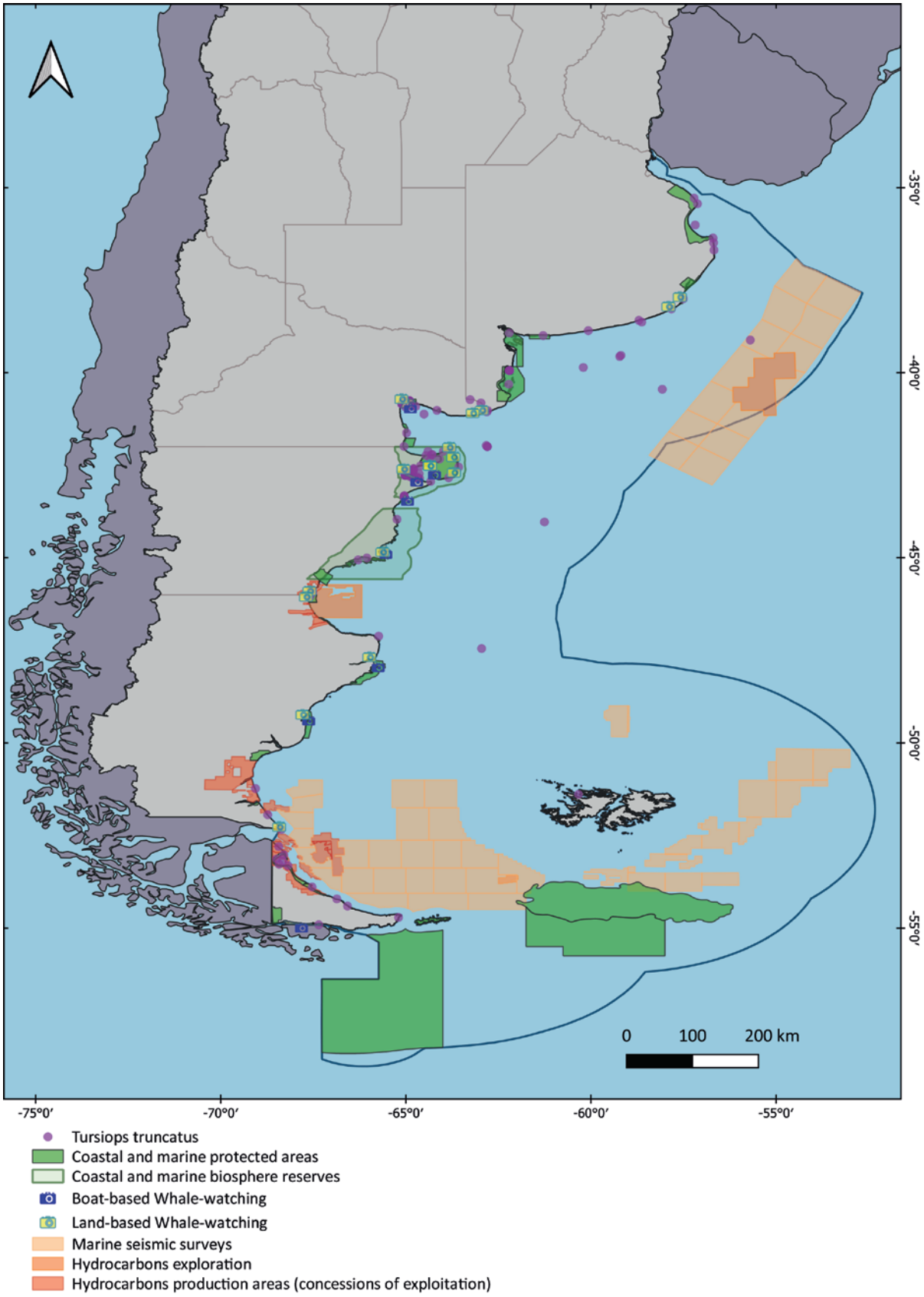


Figure 9: Presence of common bottlenose dolphins in the study area (2000-2020).

COMMERSON'S DOLPHIN (*CEPHALORHYNCHUS COMMERSONII*)

© Miguel Iñiguez | Fundación Cethus

Commerson's dolphin is frequently found in many coastal areas in Patagonia. The main concentrations occur in Rawson, Bahía Camarones, Comodoro Rivadavia (Chubut province), Puerto Deseado, Bahía San Julián, Puerto Santa Cruz, Río Gallegos (Santa Cruz province) and Tierra del Fuego (figure 10). The species is also found in the Strait of Magellan and around Islas Malvinas (Falkland Islands) (figure 10).

This species is the subject of boat-based dolphin watching in Rawson, Puerto Deseado and Bahía San Julián. In May 2019, the Municipality of Puerto San Julián adopted Ordinance No 3,394 which declared that the watching of Commerson's dolphins is of Municipal interest and also promoted land-based watching in the city.

Vessel noise has been considered a potential threat for the species in Puerto Deseado and Bahía San Julián (Reyes Reyes *et al.*, 2018). Bycatch is also a threat for the species, though its actual impact is unknown (CFP, 2016). However, the Commerson's dolphin is perhaps the cetacean species most impacted by fisheries in the coastal waters of southern South America south of 41ºS, mainly by gillnets (Iñíguez *et al.*, 2003). Non-responsible whale-watching is considered a potential threat as well as organic and inorganic trace elements, and noise pollution (Coscarella *et al.*, 2019).

The distribution of Commerson's dolphins overlaps with several coastal protected areas in Santa Cruz and Chubut as listed in table 4 (see Annex II).

In 2001, the species was declared a "Natural Monument" in Santa Cruz (Provincial Law 2,582).

The species is included both locally and globally in the LC category by SAyDS-SAREM as well as IUCN and in Appendix II of CMS and CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

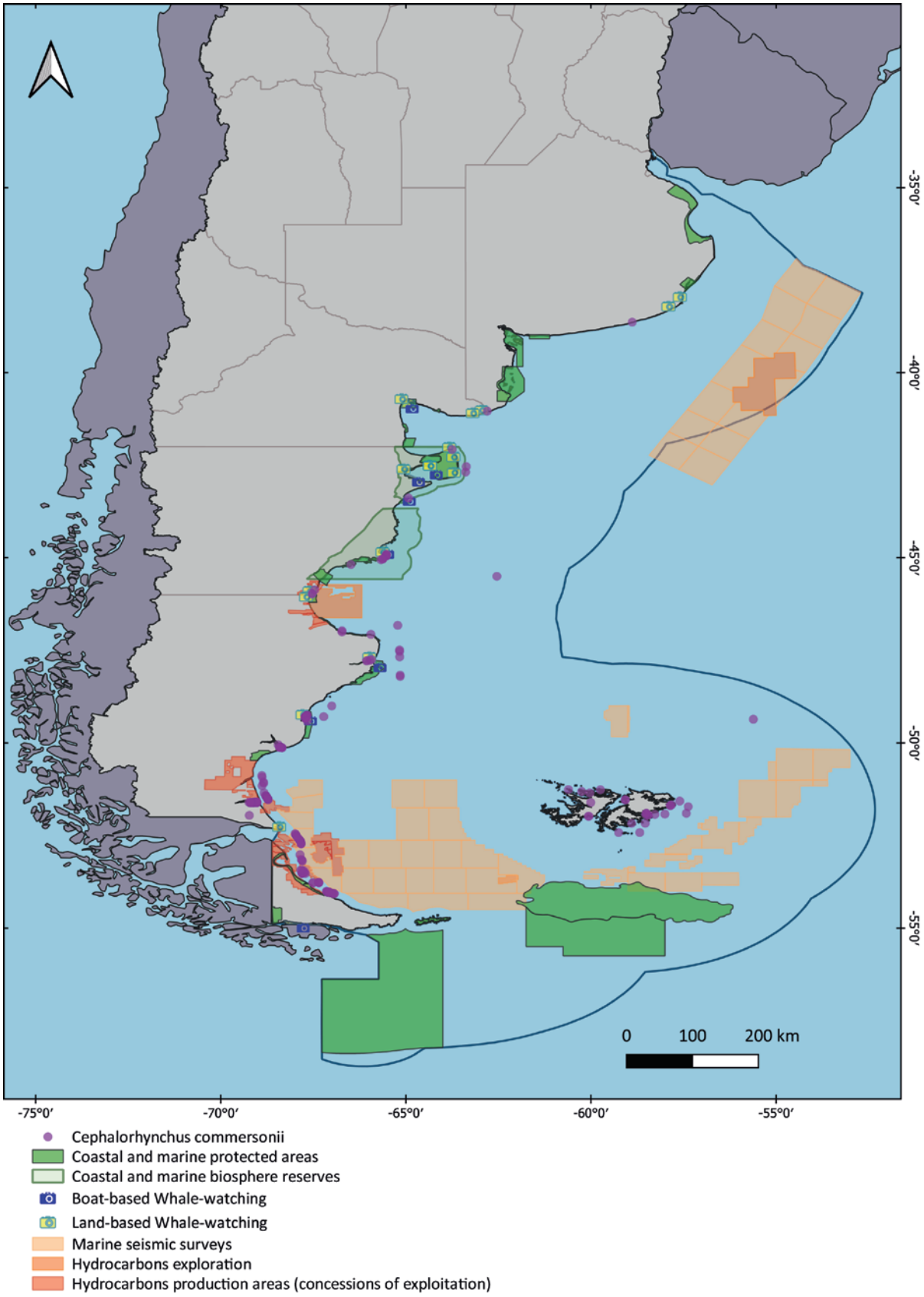


Figure 10: Presence of Commerson's dolphins in the study area (2000-2020).

PEALE'S DOLPHIN (*LAGENORHYNCHUS AUSTRALIS*)

© Miguel Iñiguez | Fundación Cethus

Peale's dolphin is an endemic species that is only found in Argentina and Chile and whose distribution range encompasses from 38°S to 59°S in the east and up to 33°S in the west (Heinrich and Dellabianca, 2019; Hevia *et al.*, 2019b). It has been widely reported in waters of the Argentine continental shelf from slightly north of 40° to 56°S (figure 11), with records increasing towards the southern region both in coastal locations as well as in the open sea. It is the species most frequently recorded in ship-based surveys in Islas Malvinas (Falkland Islands) where its presence is considered "regular" (Baines and Weir 2020; Dellabianca *et al.*, 2016; Otley 2012; White *et al.*, 2002). When close to shore these dolphins are found along open coasts and, in the south, in channels and fjords. They often associate with areas of kelp beds of the genus *Macrocystis* (Goodall *et al.*, 1997).

Peale's dolphin suffered from interactions with fisheries in the past, particularly with trawl nets and coastal gillnets, but these are considered sporadic interactions. It was used as bait for southern king crab (*Lithodes santolla*) in the channels of southern Tierra del Fuego, but this practice no longer takes place in Argentina (CFP, 2016). Overfishing and an increase in seismic surveys are considered the main threats (Hevia *et al.*, 2019b). Records of Peale's dolphin in some areas overlap or are close to seismic surveys and areas of hydrocarbons exploration and production (figure 11).

In Chubut and Santa Cruz provinces the species is included as an attraction in boat-based WW trips in Bahía Camarones, Parque Marino Isla Pingüino; and land-based dolphin-watching in Playa La Mina, near Puerto San Julián, and Cabo Vírgenes (figure 11).

Peale's dolphins have been recorded in the protected areas listed in table 4 (see Annex II).

In 2009, the species was declared a "Natural Monument" in Santa Cruz (Provincial Law 3,038).

The species is included both locally and globally in the LC category by SAyDS-SAREM as well as IUCN and in Appendix II of CMS and CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

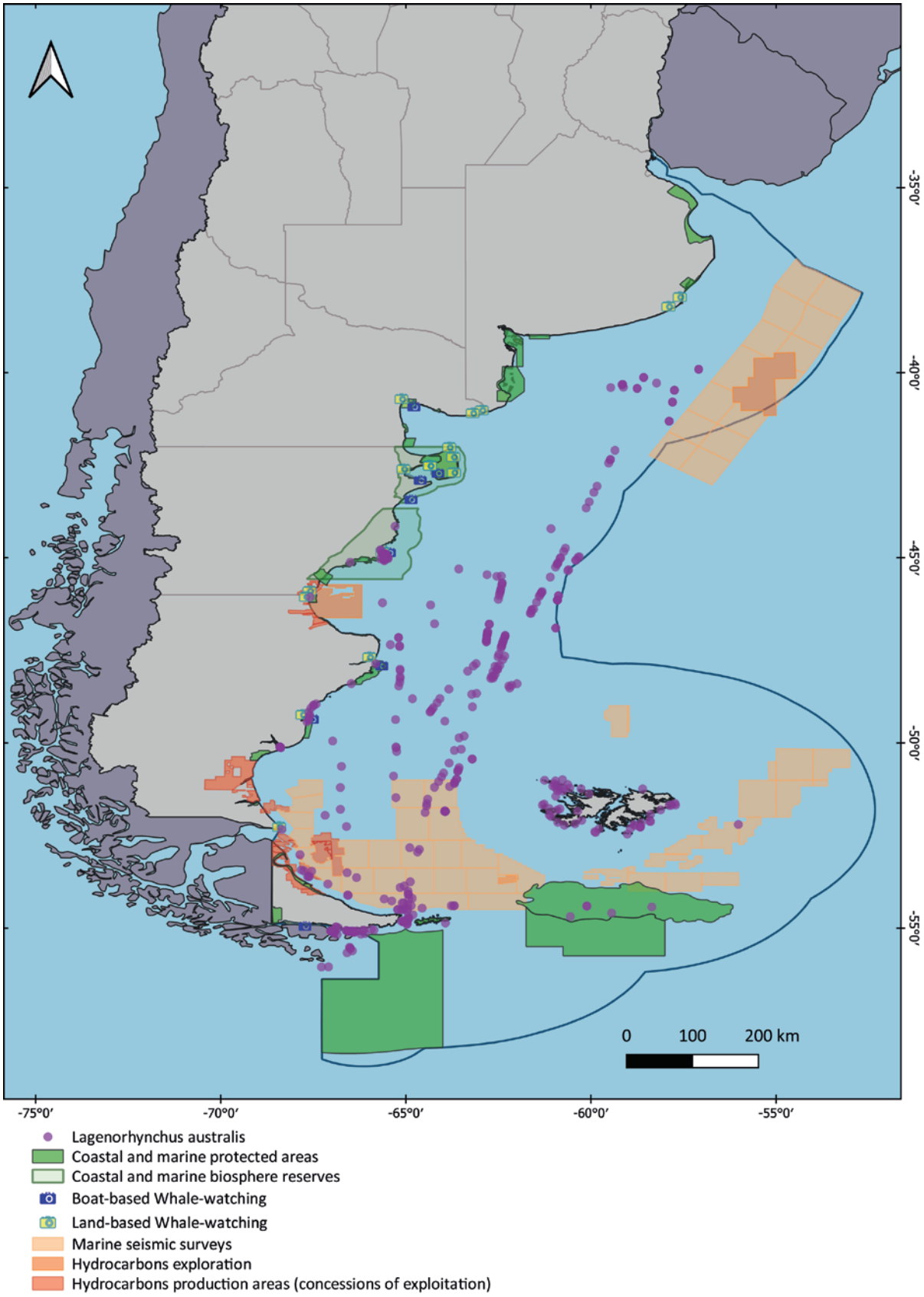


Figure 11: Presence of Peale's dolphins in the study area (2000-2020).

DUSKY DOLPHIN (*LAGENORHYNCHUS OBSCURUS*)

© Miguel Iñiguez | Fundación Cethus

The dusky dolphin is considered a frequent species in the study area where it occurs along the coast from Buenos Aires to Tierra del Fuego. Occurrence of the species in the Beagle Channel has increased since 2000 and, since 2009, dusky dolphins are normally seen during the austral summer and autumn, suggesting the existence of a resident population (Dellabianca *et al.*, 2018). One dead stranded animal was recently found in Islas Malvinas (Falkland Islands) (figure 12; Weir and Black, 2018). Mixed groups of dusky and common dolphins are frequently seen in Golfo San Matías in Río Negro province and in Península Valdés and occasionally they can be seen in mixed groups with Peale's dolphins in shelf waters.

The species is the subject of boat-based WW activities in Bahía San Antonio, Golfo San Matías and Golfo Nuevo (figure 12), where short-term impacts such as changes in feeding behaviour in the presence of tourist boats have been measured (Dans *et al.*, 2012).

Bycatch in trawl-net and seine-net fisheries is the main threat for the species (Dans *et al.*, 2003; Mandiola and Rodríguez, 2017). There are also records of the species overlapping with marine seismic surveys and hydrocarbon exploration and production areas (figure 12).

Dusky dolphins have been recorded in the protected areas listed in table 4 (see Annex II).
The species is included both locally and globally in the LC category by SAyDS-SAREM as well as IUCN and in Appendix II of CMS and CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the LC category (Forum for the Conservation of the Patagonian Sea, 2019).

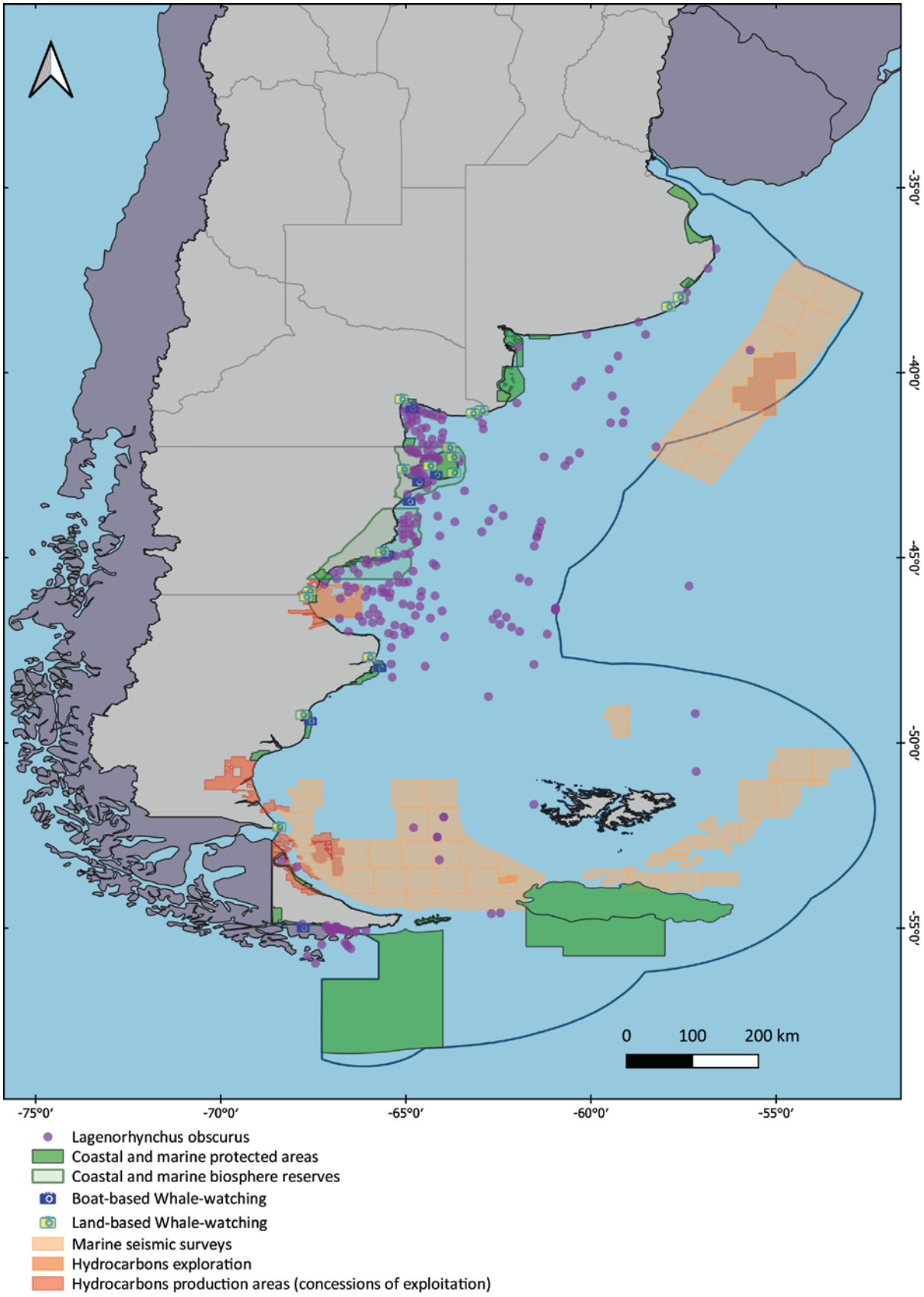


Figure 12: Presence of dusky dolphins in the study area (2000-2020).

FRANCISCANA (*PONTOPORIA BLAINVILLEI*)

© Leo Russo Lacerna & Mauricio Failla | Fundación Cethus

The franciscana dolphin is a small odontocete inhabiting coastal waters of the Southwestern Atlantic Ocean from Itaúnas (18°25'S), Espírito Santo State, Brazil, to Golfo San Matías (41°10'S), Chubut province, Argentina (Denuncio *et al.* 2019; Crespo, 2018; Siciliano *et al.* 2002; Crespo *et al.* 1998). The species' distribution range has been divided into five 'Franciscana Management Areas' (FMAs Ia, Ib, II, III and IV) (IWC, 2016; Cunha *et al.*, 2014; Secchi *et al.*, 2003), with FMA Ia, Ib and II located in Brazil, FMA III shared between Brazil and Uruguay and FMA IV located in Argentina. There are studies by Méndez *et al.* (2010, 2008) and Gariboldi *et al.* (2016, 2015) that found 5 genetically distinct populations in FMA IV: FMA IVa (Samborombón West / Samborombón South), FMA IVb (Cabo San Antonio /Buenos Aires East), FMA IVc (Necochea /Claromecó / Buenos Aires Southwest), FMA IVd (Monte Hermoso), and FMA IVe (Río Negro). However, the population structure of the franciscana is still under discussion by the IWC (2020, 2021).

In Argentina, incidental mortality in the artisanal demersal fisheries has been a major conservation concern for franciscanas (Negri *et al.*, 2012; Cappozzo *et al.*, 2007; Bordino and Albareda, 2004; Corcuera *et al.*, 1994; Crespo *et al.*, 1994). Annual mortality in small artisanal gillnet fisheries in coastal Buenos Aires was estimated at about 500-800 individuals (Negri *et al.*, 2012; Cappozzo *et al.*, 2007; Bordino and Albareda, 2004). The species is also exposed to other threats of potential concern throughout its range, such as coastal development, marine debris, chemical and noise pollution, diseases and vessel traffic (e.g. Di Beneditto and Ramos, 2014; Denuncio *et al.*, 2011).

Land-based dolphin-watching of franciscana is promoted in El Cóndor, Río Negro province (figure 13; Failla *et al.*, 2014).

The species is found in the protected areas listed in table 4 (see Annex II).

In 2018, the species was declared a "Natural Monument" in Buenos Aires province (Provincial Law 14,992).

The franciscana has been considered the most threatened small cetacean in South America (Secchi, 2010) and is listed as VU in the IUCN Red List of threatened species as well by SAyDS-SAREM, and in Appendices I and II of CMS and II of CITES (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the EN category (Forum for the Conservation of the Patagonian Sea, 2019).

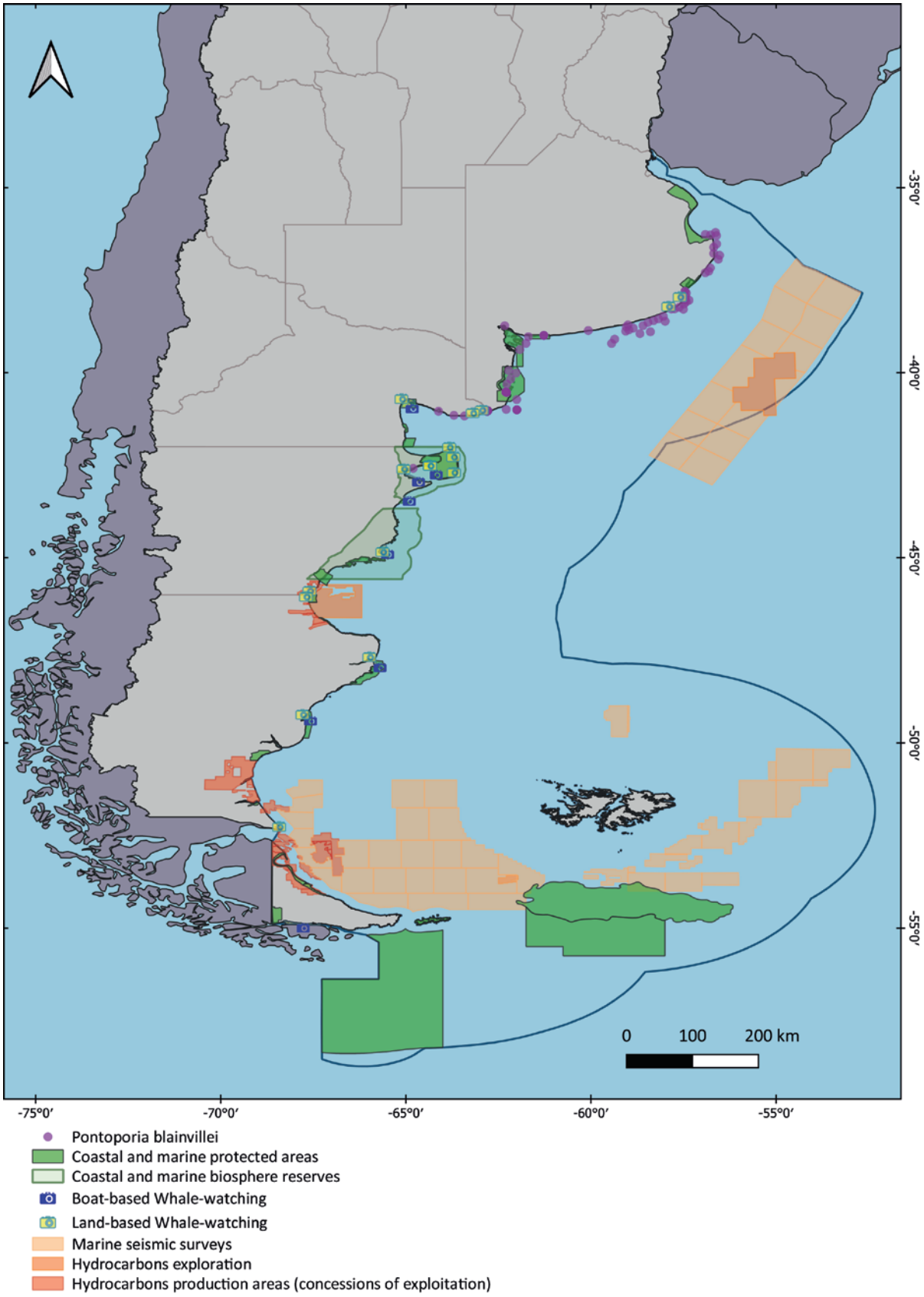


Figure 13: Presence of franciscanas in the study area (2000-2020).

BURMEISTER'S PORPOISE (*PHOCOENA SPINIPINNIS*)

© Marta Hevia | Fundación Cethus

Burmeister's porpoises are distributed from Tierra del Fuego northwards to Peru (~5°S) in the Pacific and to southern Brazil (~29°S) in the Atlantic, although it remains unclear whether or not that distribution is continuous (Félix *et al.*, 2018). There are records all along the coast of Argentina (figure 14), but it is considered a non-frequent species in the country (Dellabianca *et al.*, 2019). However, there is a resident population in the Beagle Channel, Tierra del Fuego, where animals are seen year-round (Dellabianca *et al.*, 2019). The first record of the species in Islas Malvinas (Falkland Islands) was obtained in 2019 from a stranding of a freshly dead adult male (Weir and Rutherford, 2019).

Throughout its range, the species has been poorly studied due to the cryptic behaviour of individuals which make them difficult to see, especially in poor weather conditions. The main threat the species faces is bycatch in artisanal and coastal nets in Buenos Aires, Santa Cruz and Tierra del Fuego provinces (CFP, 2016). Intense marine traffic in Ushuaia is also a potential risk that should be monitored alongside other potential threats to the species such as prey reduction and pollution (Dellabianca *et al.*, 2019).

The species is present in the protected areas listed in table 4 (see Annex II).

Globally, the species is listed as NT by IUCN and included in Appendix II of CMS and CITES. Locally it is included in the DD category by SAyDS-SAREM (table 4-see Annex II). The 2016 IUCN Regional Red List Workshop for Species of the Patagonian Sea included this species under the DD category (Forum for the Conservation of the Patagonian Sea, 2019).

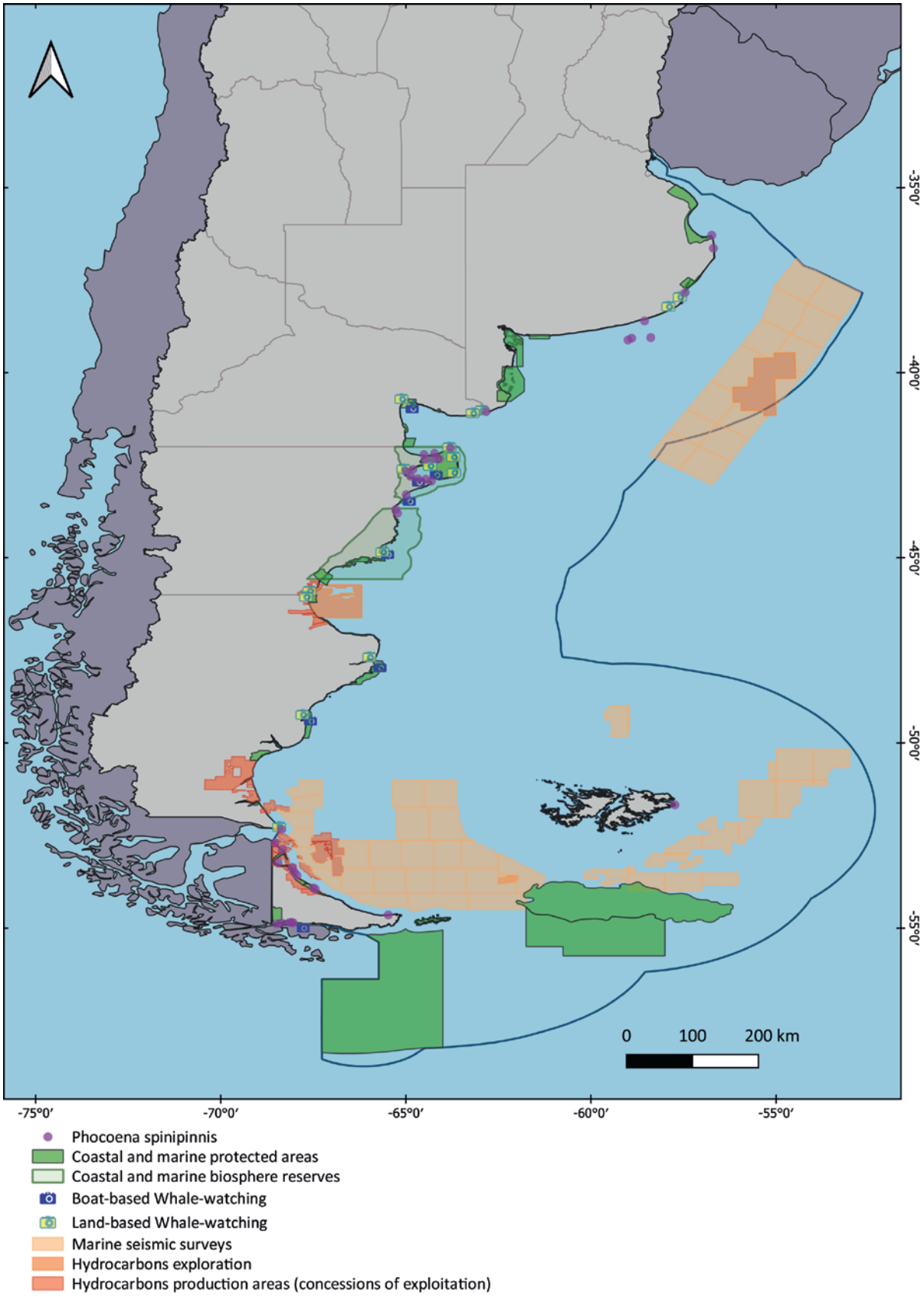


Figure 14: Presence of Burmeister's porpoises in the study area (2000-2020).

BEAKED WHALES

The beaked whales are deep water species, they are rarely seen at sea and, when they are, they are usually difficult to identify to species level.

Most records of ziphiids within the study area were obtained south of 46°S with most of them concerning stranded individuals (figure 15).

Arnoux's beaked whale (*Berardius arnuxii*) has a circumpolar distribution in the Southern Hemisphere. In the Atlantic it can be found from 24°S to the ice edge in the Antarctic (Brownell, 2020; Iñíguez *et al.*, 2019d). Its presence has been confirmed in Buenos Aires, Chubut, Santa Cruz and Tierra del Fuego provinces, although records in the 21st century have been scarce with at least one individual stranded in northern Buenos Aires province and another in Santa Cruz province (figure 15; Iñíguez *et al.*, 2019a; Zuazquita *et al.*, 2016). The species is considered rare for Islas Malvinas (Falkland Islands) and there have been no records reported since 2000 (Otley *et al.*, 2012).

The **southern bottlenose whale** (*Hyperoodon planifrons*) has a circumpolar distribution in the Southern Hemisphere from near 30°S to Antarctic waters, mostly in deep oceanic waters (Lowry and Brownell, 2020; Hevia and García, 2019). Since 2000 it has been recorded in Santa Cruz and Tierra del Fuego provinces as well as in Islas Malvinas (Falkland Islands) (figure 15; Iñíguez *et al.*, 2019a; Otley *et al.*, 2012; White *et al.*, 2002). It is one of the most frequently sighted ziphiid species in Antarctic waters (MacLeod *et al.*, 2006; van Waerebeek *et al.*, 2004).

© Rodrigo Genoves | Ecopelagos-FURG

Andrew's beaked whale (*Mesoplodon bowdoini*) is considered to have a circumpolar distribution but data are scarce and based only on strandings, meaning that more data need to be gathered before a proper statement of distribution can be made (Pitman and Brownell, 2020; Paso Viola and García, 2019a). For the study period, only two strandings have been reported, one in Bahía San Sebastián, Tierra del Fuego (Goodall *et al.*, 2008) and one in Islas Malvinas (Falkland Islands) (figure 15; Otley *et al.*, 2012).

Gray's beaked whale (*Mesoplodon grayi*) has circumpolar distribution in the Southern Hemisphere in deep oceanic waters with records from 30°S to 45°S in the north to the Polar Front, with some sightings up to 65°S (Pitman and Taylor, 2020; Rodriguez *et al.*, 2019). Stranding records have been obtained from the Islas Malvinas (Falkland Islands) (figure 15; Otley *et al.*, 2012). Goodall *et al.* (2008b) reported that this species was

the second most numerous in the collection of beaked whales at the Acatushún Museum (Museo Acatushún de Aves y Mamíferos Marinos Australes, AMMA), but that they had had no new records since 1994.

Hector's beaked whale (*Mesoplodon hectori*) has an, as yet, unconfirmed distribution in cool-temperate waters of the Southern Hemisphere with most records corresponding to strandings (Pitman and Brownell, 2020; Paso Viola and García, 2019b). Strandings have been reported in Buenos Aires province (two individuals stranded alive and then died, a male in Mar del Plata and a female near Puerto Quequén, in August and September 2002, respectively) and in Islas Malvinas (Falkland Islands) (figure 15; Cappozzo *et al.*, 2005; Otley *et al.*, 2012). Plastic materials were found in a stranded individual in Claromecó, Buenos Aires province (Denuncio *et al.*, 2017).

The **strap-toothed beaked whale** (*Mesoplodon layardii*) is distributed in deep waters of the Southern Hemisphere between 35° to 63°S beyond the continental platforms (Pitman and Brownell, 2020; Iñíguez *et al.*, 2019b). Since 2000 they have been reported in Buenos Aires, Santa Cruz, Tierra del Fuego and Islas Malvinas (Falkland Islands) (figure 15; Aves Argentinas, 2021; Iñíguez *et al.*, 2019a; Otley, 2012; Otley *et al.*, 2012; Goodall *et al.*, 2008).

Shepherd's beaked whale (*Tasmacetus shepherdi*) distribution is inferred to be circumpolar in cold temperate waters in the Southern Hemisphere (Iñíguez *et al.*, 2019c; Braulik, 2018). Reports include strandings in Santa Cruz and Tierra del Fuego provinces (figure 15; Iñíguez *et al.*, 2019a; Goodall *et al.*, 2008; Grandi *et al.*, 2005). A specimen stranded in Tierra del Fuego presented longline hooks in its stomachs and intestines (Goodall *et al.*, 2008).

Cuvier's beaked whale (*Ziphius cavirostris*) is a cosmopolitan species, distributed in deep offshore waters of both hemispheres (Baird *et al.*, 2020; Cáceres-Saez *et al.*, 2019). It has been recorded in Buenos Aires, Río Negro, Chubut, Santa Cruz provinces and Islas Malvinas (Falkland Islands) (figure 15; Cáceres-Saez *et al.*, 2019; Iñíguez *et al.*, 2019a; Vilches *et al.*, 2018; Otley *et al.*, 2012; Bachara and Norman, 2013). Heavy metals have been found in stranded specimens in Argentina (Vilches *et al.*, 2018).

Population trends are unknown for all species of beaked whales in the Argentine Sea.
Over the last two decades and particularly since 2010, there has been an increase in the number of strandings along the Santa Cruz coast (Iñíguez *et al.*, 2019a).

Beaked whales are vulnerable to seismic exploration and mid-frequency sonar (1kHz- 10kHz) (Barlow and Gisiner, 2006). A few stranded animals might have presented signs of possible acute decompression syndrome, but as necropsies could not be conducted, the cause of death could not be determined (Iñíguez *et al.*, 2019a).

Other potential threats reported for these species are prey depletion due to fisheries in subantarctic waters (Lowry and Brownell, 2020), the effects of climate change (Learmonth *et al.*, 2006), plastic pollution (Denuncio *et al.*, 2017) and inorganic trace element pollution (Vilches *et al.*, 2018).

The general cryptic behaviour and oceanic distribution of beaked whales prevent them from being the target of the WW industry but opportunistic sightings may occur during cruises (Iñíguez *et al.*, 2019d).

Stranded individuals have been found in the protected areas listed in table 4 (see Annex II).

All species of beaked whale that occur in Argentina are locally included in the DD category by SAyDS-SAREM. Globally, three are classified as DD and five as LC by IUCN. CMS includes Cuvier's beaked whale in its Appendix I while CITES lists Arnoux's beaked whale and the southern bottlenose whale in Appendix I and the remaining species in Appendix II (table 4-see Annex II).

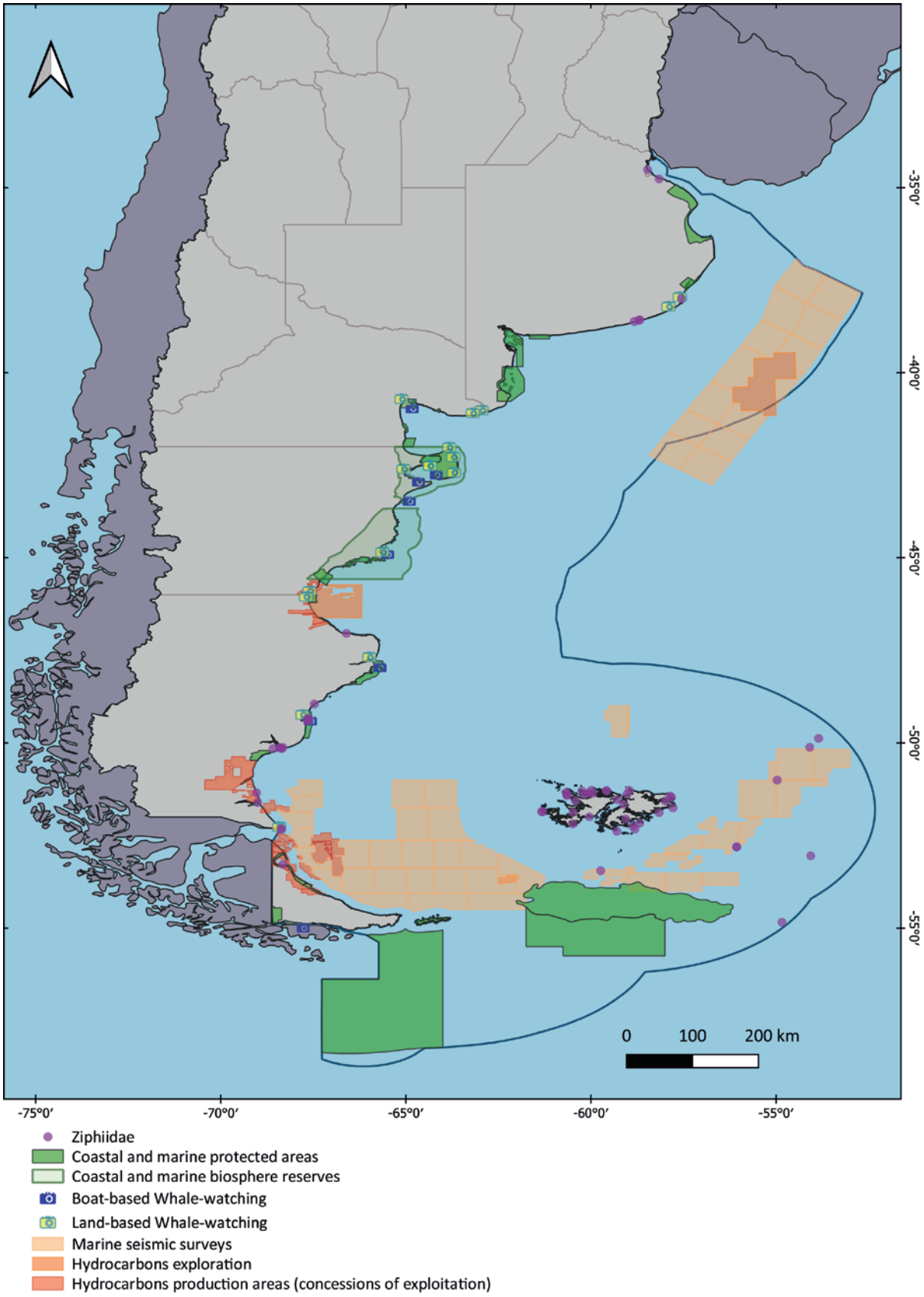


Figure 15: Presence of beaked whales in the study area (2000-2020).

General remarks

The distribution data plotted on each map correspond to records collected from 2000 to early 2021. This cut-off point was set in order to exclude historical information and present as up to date information as possible regarding the presence of cetaceans in Argentina's coastal and marine protected areas (CMPAs) and the potential threats which whales, dolphins and porpoises may face. The objective of this report was not to estimate abundance nor to obtain novel distribution maps but, rather, to collate information from available and, in some cases, unpublished sources to compare this information to existing coastal and marine protected areas in Argentina, and potential threats cetaceans may face by plotting the data on maps that facilitate visualization and help us reach conclusions. The data used to write this report reflect information from, mostly, studies undertaken in coastal zones and some from ship or aerial surveys undertaken by trained dedicated observers and none of which cover the entire study area. In the case of southern right whales, data was also extracted from telemetry studies (Zerbini *et al.* 2018, 2016) that allow free swimming tagged whales to be followed for a certain period.

Stranding records have been mapped as a proxy for species occurrence, although they should be interpreted cautiously in terms of representing species presence. Hence, the distribution maps may be biased due to all of these considerations. For example areas on the maps, particularly in the open ocean, where no data has been collected does not necessarily mean that a given species is not present in that area. Instead, it may mean that the area has not been surveyed yet. Survey effort was not always easily available, so it was not possible to assess the level of bias on presence data. The distribution information obtained from the maps presented in this report should be interpreted as a minimum. Additionally, especially for those species where information is lacking, the known distribution range was considered to help to understand and interpret the maps. Notwithstanding the shortcomings discussed above, information gleaned from the data presented here is still relevant as it allows a number of conclusions to be reached.

Distribution of all the analysed species since 2000 overlap to some extent with coastal and marine protected areas in the Argentine Sea.

It is of great concern that a large area of the Argentine Sea is already exposed to marine seismic surveys or to plans to start surveys in the near future. In particular, the proximity of some survey areas and the Namuncurá-Banco Burdwood I and II marine protected areas may mean that habitat in the protected areas is threatened.

Marine seismic surveys for oil and gas prospecting substantially contribute to the elevation of noise above ambient levels around the world. Seismic surveys use high-energy sources of sound or vibration to create seismic waves in the earth's crust beneath the sea. The most common energy sources used are called "airgun arrays" which inject high pressure air into the water to produce high intensity impulsive sounds at intervals of 10-15s, over periods of days, weeks or months, with broadband source levels of 220-255dB re 1 Pa (Richardson *et al.*, 1995). The dominant spectral content of airgun pulses is in the low frequency range up to 200 Hz, which overlaps with the sounds produced by baleen whales. In addition, significant wasted energy is produced at the high frequency range up to 20 kHz (Madsen *et al.*, 2006; Goold and Fish, 1998) which overlaps with communication and echolocation sounds of most odontocetes. Characteristics of the sound pulses depend on array design, including airgun size, number, spacing, and air pressure (Barger and Hamblen, 1980; Kramer *et al.*,1968) and are often detectable in the water tens or even hundreds of kilometres from the source (Green and Richardson, 1988), having even been recorded at 4,000 km from the survey vessel (Nieukirk *et al.*, 2012). These activities in Argentina proceed without robust environmental impact assessments and effective mitigation plans to minimize impacts on marine life. Ocean noise is recognized as a major threat to marine ecosystems by several international bodies such as the United Nations Convention on the Law of the Sea (UNCLOS), the Convention on Biological Diversity (CBD), the Convention on Migratory Species (CMS), the International Union for Conservation of Nature (IUCN), the International

Maritime Organization (IMO), and the International Whaling Commission (IWC). At the 19th Meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (18- 22 June 2018, New York, USA; https://undocs.org/A/73/124, 20pp.) the main topic discussed was "Anthropogenic Underwater Noise" and it was recognised that seismic surveys for hydrocarbons are the main, but not the only, cause of negative effects of anthropogenic sound on marine ecosystems and it was strongly recommended that appropriate planning and mitigation measures be taken. Namuncurá-Banco Burdwood I and II jointly comprise two unified marine protected areas established by National Laws 26,875 and 27,490 in 2013 and 2018, respectively. The elaboration process of a management plan for this unified area started in 2019 and is currently under development. This plan will set out guidelines for the activities carried out within this area and adjacent waters for a period of five years. The main activities are scientific research, commercial fisheries, vessel traffic, and oil and gas explorations. There is an urgent need to establish a mitigation zone around the MPA to reduce the impacts of airgun noise within the area.

Hydrocarbon exploration within Golfo San Jorge also poses a risk to the marine life that inhabit the coastal protected areas of Cabo Blanco, Monte Loayza, Barco Hundido, Humedal Caleta Olivia, Punta del Marqués and Patagonia Azul. The protected areas of Cabo Vírgenes in the south of Santa Cruz province, and Costa Atlántica de Tierra del Fuego and Isla de los Estados in Tierra del Fuego are similarly threatened. These activities should be monitored, and mitigation measures applied to reduce any potential impact on marine life if the effectiveness of the adjacent protected areas is to be guaranteed.

Legislation and coastal and marine protected areas

In Argentina, cetaceans are protected by national and provincial laws, such as Law 25,577/02, Law 25,052/98, Resolution 351/95 and Provincial Ordinance 9,702/94, among others, that prohibit their capture, persecution and harassment. For a total of 37 cetacean species identified in Argentinian waters (SAyDS-SAREM, 2019), only four are Natural Monuments, representing less than 15% of the total.

Of the 66 CMPAs, six are exclusively under the jurisdiction of the National Parks Administration (APN), 46 are provincial, four are municipal and 10 are mixed, i.e. two jurisdictions, non-governmental organisations or the private sector are involved. Of the 46 provincial CMPAs, 16 correspond to the Province of Santa Cruz, 13 to Buenos Aires, nine to Chubut, five to Río Negro and three to Tierra del Fuego.

Except for UNESCO-MAB Biosphere Reserves, which are not classified within the IUCN management categories, out of 63 CMPAs listed in table 2, 65.1% allow sustainable extraction of natural resources (categories IV, V and VI) and 20.6% are not determined or reported yet under IUCN categories. It follows that the No Takes categories (Ia, Ib, II and III) are really very few (15.8%). Monte León is classified under two IUCN categories (II and VI). It is also striking that out of the 63 coastal marine protected areas analysed, less than half, only 22 (34.9%), have management plans in place and two are in the process of developing plans (Namuncurá- Banco Burdwood II and Makenke). All of the management plans have been in place since 2001 and 16 were established between 2010 and 2020, showing clear progress in this regard.

The establishment of the SIFAP in 2003 has been a positive step, strengthening all management carried out on issues related to protected areas.

At least one cetacean species (or taxonomic group in the case of beaked whales) has been found in all of the CMPAs analysed, with Valdés (UNESCO-MAB Biosphere Reserve) being the most diverse with 11, followed by Patagonia Azul (UNESCO-MAB Biosphere Reserve) and Península Valdés (Tourist Nature Reserve /Ramsar Site) with 10 cetacean species according to records presented in this report (table 2-see Annex II).

The four most threatened species reported within the study area are sei whale (EN), sperm whale (VU), common bottlenose dolphin (VU, with Lahille's bottlenose dolphin included into the EN category), and

franciscana (VU) (table 4-see Annex II). All of these have been recorded in several protected areas most of which are, of course, coastal (tables 3 and 4-see Annex II) and do not necessarily protect these species in open water. In Golfo San Jorge the sei whale occurs within the Patagonia Azul UNESCO-MAB Biosphere Reserve in the northern area of the gulf, but it also occurs in the central area, where hydrocarbons exploration and production areas are in place, both at sea and on land, respectively. Even when PAs exist there, they are small and purely coastal. This is also the case at the southern tip of the continent and in Tierra del Fuego. In the open sea, there are three MPAs located in the southern region, close to seismic exploration zones, but the central and northern region lacks MPAs, even when there is a large area being used for seismic surveys and hydrocarbons exploration (figure 4). A similar situation is found for the sperm whale, but with more records near the 200 nm (figure 6). The case of the common bottlenose dolphin is not much different, with the main gap on PAs located in the southeast of Buenos Aires province and, particularly, at the Río Negro Estuary and nearby waters (figure 9; see below for more detail). The franciscana is present in several PAs but it would also benefit from new PAs in the southeast of Buenos Aires province and in the Río Negro Estuary and surroundings waters (figure 13; see below for more detail).

GAPS AND FUTURE DIRECTIONS

It is necessary to understand the impact that bycatch and other threats have on cetacean populations of the Argentine Sea and adjacent areas. Currently, there is a lack of basic information (e.g. population estimates) for several species, even the best-known ones. To make progress on these issues, long-term studies and monitoring are required to determine, for example, the population size of the cetacean species involved and their population trends. Ideally, the aim should be to assess the population status of a species before starting a potentially threatening activity as well as at the end of the activity. Additionally, ecosystem management guidelines should be generated which take into account the behaviour of the system in which a certain population is found.

The common bottlenose dolphin is the most threatened cetacean species in Argentina, with fewer than 300 individuals remaining, though the figure could be even lower as the estimate has been achieved by adding abundance estimates from different localities and some individuals might be shared among them. Furthermore, the species has not been recorded in northern Buenos Aires province since the 1990s, an area where it used to be frequent. It needs urgent protection measures, particularly taking into account that this population is considered to be an Evolutionarily Significant Unit, and that threats to the species need to be better understood. The situation of the franciscana is not much better, with the population inhabiting the coastal waters of Río Negro being considered the southernmost population of the species and a distinct population within Franciscana Management Area IV. Both species are found in the Río Negro Estuary, franciscanas year-round (Failla *et al.*, 2012) with common bottlenose dolphins mainly seen in the autumn (Failla *et al.*, 2016), and both desperately need the implementation of conservation measures. Threats to these species need to be assessed and biological and population parameters better understood. No protected area (neither coastal nor marine) exists here (figures 2, 9 and 13) and the creation of a CMPA, with its management plan and proper implementation, would be of great benefit for these species and it is strongly recommended that this protection measure be taken. This has been identified as a priority action by the IWC Conservation Management Plan (IWC CMP) for Franciscana (IWC/66/CC11). Additionally, both species would benefit from higher protection in the southeast of Buenos Aires province.

Furthermore, considering the critical situation of *Tursiops truncatus gephyreus*, it is recommended that it be included in Appendices I and II of CMS at its next CoP on 2023.

Regarding National or Provincial Natural Monuments it is clear that only the southern right whale is protected at the national level and in only in two (Río Negro and Santa Cruz) of the five coastal marine provinces of Argentina. It is striking that the province of Chubut, where the largest nursery ground for SRW in

the Southwest Atlantic is located, has not yet declared the species a Provincial Natural Monument. We also believe that the two small cetaceans (the franciscana and the Lahille's bottlenose dolphin) should be declared National Natural Monuments and Provincial Natural Monuments in the provinces that cover their range of distribution. At present, out of these two, only the franciscana is a Natural Monument of the province of Buenos Aires. This should not be interpreted as these cetaceans being the only ones deserving this kind of recognition rather that knowledge about other species in Argentine waters needs to be better understood for them to be considered as candidates to receive this type of protection.

Normally, PAs include breeding/ nursery/ calving and feeding grounds but, in many cases, migratory corridors, which are essential for the survival of some species, are not taken into account. In this sense, it should be noted that there are no PAs that include these migratory corridors and, therefore, it is important to evaluate areas of importance for migratory species to study the feasibility of the establishment of MPAs or, at least, to ensure that mitigation measures are adopted when an activity that could harm these species (e.g. seismic exploration, fishing, marine traffic) is carried out.

There is also a remarkable lack of information for some commonly recorded species (or subspecies) such as orca, dusky dolphin, Peale's dolphin, Commerson's dolphin, Lahille's bottlenose dolphin (in some areas), and others.

Most of the revised CMPAs were not created in order to protect marine mammal populations, although some of them have subsequently included them, as is the case of Península Valdés and Bahía San Blas. It is, therefore, important that other PAs that include populations of cetaceans within their limits should consider them and incorporate them into their Management Plans. Also, if a CMPA has already been created and established and there is a strong scientific basis that shows its importance for a given species, it is necessary to evaluate the need to expand the limits of the PA to provide maximum protection to the species.

This report highlights the lack of Management Plans in most of the CMPAs and that it is essential for the proper establishment of these CMPAs to have a Management Plan. It is therefore recommended that a process be initiated to provide all of these PAs with their own Management Plans. The lack of Management Plans could be associated with the lack of or only limited funding granted to each protected area. Adequate funding is of the utmost importance for their correct functioning.

Finally, it is necessary to highlight that this review can contribute to the different processes initiated in the country to expand or strengthen CMPAs. It will also contribute to the following:

i. the South Atlantic IUCN IMMAs process, which will start in 2023;
ii. the Action Plan for the Protection and Conservation of South Atlantic Whales under the auspices of CMS (Resolution 12.17);
iii. the IWC CMP on the Southwest Atlantic population of Southern right whales and for the franciscana; as well as
iv. the IWC Task Team on Lahille's bottlenose dolphins.

In the specific case of cetaceans, we believe that it is important to continue increasing and interpreting information regarding all species recorded in Argentine waters. This will provide solid support for the creation of new CMPAs or to expand the boundaries of existing ones.

RECOMMENDATIONS

The data presented here can contribute to activities or processes carried out or to be carried out in different areas such as the United Nations Convention on the Law of the Sea biodiversity beyond national jurisdiction (UNCLOS BBNJ), CITES, CMS, IWC, and the IUCN IMMAs.

In order to mitigate the impact caused by anthropic activities on the different species of cetaceans identified in the Argentine Sea, it is advisable to generate an open and sincere dialogue between the different stakeholders, including governmental representatives, academia, industry sectors, other users or civil society organisations.

It is also important for MPAs to carry out a periodic review process. This could help those protected areas identified as important for some species, in particular those that are threatened such as the franciscana or the bottlenose dolphin, to redefine their areas, extend the protection of the species involved, elaborate or update their management plans, and add to their management plans the species that are identified within their boundaries.

Argentina currently has only three MPAs, Yaganes and Namuncurá/ Banco Burdwood I and II. We consider that it is crucial that the country extends its protected areas based on solid scientific information and, in this way, come closer to the targets agreed in the CBD in order to achieve the goals set for 2030. New areas could incorporate not only breeding or feeding grounds, but also important migratory corridors for species, such as for the southern right whale or the sei whale, to mention just two species.

ACKNOWLEDGEMENTS

Special thanks to Fundación Cethus' colleagues who contributed to the collection of the data used in this report for species distribution assessment: Andrés Albalat, Jimena Belgrano, Mauricio Failla, Cecilia Gasparrou, Alexander Marino, Mariana Melcón, Vanesa Tossenberger, Nicolás Tossenberger and Nicolás Valese. This project was funded by OceanCare, www.oceancare.org.

REFERENCES

(2019). *Tursiops gephyreus*. *In:* SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar.*

Allison, C. (2006). Documentation of the creation of the Southern Hemisphere humpback catch series, February 2006, Cambridge, UK. Paper SC/A06/HW47 presented to the IWC Workshop on Comprehensive Assessment of Southern Hemisphere Humpback Whales, Hobart, Tasmania,3-7 April 2006 (unpublished). 9pp.

Áreas Costeras y Marinas Protegidas de la Argentina. Compilado por WCS Argentina y colaboradores (*https://beta.ampargentina.org).* Downloaded on 16 July 2021.

Arias, M., Coscarella, M. A., Romero, A., Svendsen, G.M., Ocampo Reinaldo, M., Curcio, N., Crespo, E.A. and González, R. (2018). Impact of whale-watching on Southern Right Whale (*Eubalaena australis*) in Patagonia: assessing the effects from its beginnings in the context of population growth. *Tourism Management Perspectives* 27 p 1–9

Baines, M. and Weir, C.R. (2020). Predicting suitable coastal habitat for sei whales, southern right whales and dolphins around the Falkland Islands. *PLoS ONE* 15(12), e0244068. https://doi. org/10.1371/journal. pone.0244068

Baird, R.W., Brownell Jr., R.L. and Taylor, B.L. (2020). *Ziphius cavirostris*. The IUCN Red List of Threatened Species 2020: e.T23211A50379111. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T23211A50379111.en. Downloaded on 16 February 2021.

Barger, J.E. and Hamblen, W.R. (1980). The air gun impulsive underwater transducer. *J. Acoust. Soc. Am.* 68(4), 1038–1045.

Barlow, J. and Gisiner, R. (2006). Mitigating, monitoring and assessing the effects of anthropogenic sound on beaked whales. *Journal of Cetacean Research and Management* 7:263–270.

Bastida, R. and Rodríguez, D. (2003). Mamíferos Marinos de Patagonia y Antártida. Vazquez Mancini Editores. Buenos Aires, Argentina. 208p. ISBN: 978-987-9132-20-3.

Bordino, P. and Albareda, D. (2004). Incidental mortality of Franciscana dolphin *Pontoporia blainvillei* in coastal gillnet fisheries in northern Buenos Aires, Argentina. Paper SC/56/SM11 presented at the 56th International Whaling Commission Scientific Committee meeting.

Bowen, W.D. (1997). Role of marine mammals in aquatic ecosystems. *Marine Ecology Progress Series* 158, 267–274.

Braulik, G. (2018). *Tasmacetus shepherdi*. The IUCN Red List of Threatened Species 2018: e.T21500A50377701. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T21500A50377701.en. Downloaded on 16 February 2021.

Brownell Jr., R.L. (2020). *Berardius arnuxii*. The IUCN Red List of Threatened Species 2020: e.T2762A50351220. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T2762A50351220.en. Downloaded on 16 February 2021.

Cáceres-Saez, I., Hevia, M. and García, N.A. (2019). *Ziphius cavirostris*. *In:* SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Versión digital: *http://cma.sarem.org.ar*.

Campagna, C., Quintana, F., Le Boeuf, B.J., Blackwell, S.B. and Crocker, D.E. (1998). Diving behavior and foraging ecology of female southern elephant seals from Patagonia, *Aquat. Mamm*., 24, 1–11.

Cappozzo, H.L., Negri, M.F., Perez, F.H., Albareda, D., Monzón, F. and Corcuera, J.F. (2007). Incidental mortality of franciscana dolphin (*Pontoporia blainvillei*) en Argentina. *LAJAM* 6(2), 127–137.

CBD (Convention on Biological Diversity). (2010). Decision adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting. Decision X/2. Strategic plan for biodiversity 2011–2020.

CFP (Consejo Federal Pesquero) (2016). Plan de Acción Nacional para reducir la interacción de mamíferos marinos con pesquerías en la República Argentina 2015, 1ª ed., Consejo Federal Pesquero. Buenos Aires. 168pp.

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendices https://cites.org/eng/app/appendices.php Consulted on 09 February 2021.

CMS (Convention on the Conservation of Migratory Species of Wild Animals) Appendices https://www.cms.int/sites/default/files/basic_page_documents/appendices_cop13_e.pdf Consulted on 09 February 2021.

CMS Resolution 12.17. Action Plan for the Protection and Conservation of South Atlantic Whales. https://www.cms.int/sites/default/files/document/cms_cop12_res.12.17_annex_whales_south_atlantic_e.pdf

Committee on Taxonomy. 2021. List of marine mammal species and subspecies. Society for Marine Mammalogy, www.marinemammalscience.org Consulted on 09 February 2021.

Cooke, J., Rowntree, V. and Sironi, M. (2015). Southwest Atlantic Southern right whales: interim updated population assessment from photo-id collected at Península Valdés, Argentina. Paper SC/66a/BRG/23 presented at the 66th International Whaling Commission Scientific Committee meeting. 10pp.

Corcuera, J. (1994). Incidental mortality of franciscanas in Argentine waters: the threat of small fishing camps. *In:* Perrin, W.F., Donovan, G.P. and Barlow, J. (Ed.). Gillnets and cetaceans. *Rep. Int. Whal. Comm., Spec. issue*. 15, 291–294.

Coscarella, M.A., Bellazzi, G., Gaffet, L., Berzano, M. and Degrati, M. (2015). Technique used by killer whales (*Orcinus orca*) when hunting for dolphins in Patagonia, Argentina. *Aquatic Mammals* 41, 192–197.

Coscarella, M.A., Cáceres-Saez, I., Loizaga de Castro, R. and García, N.A. (2019a). *Orcinus orca*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Coscarella M., Dans S.L., Degrati, M., Garaffo, G. and Crespo, E.A. (2012). Bottlenose dolphins at the southern extreme of the south–western Atlantic: local population decline? *Journal of the Marine Biological Association of the United Kingdom* 92:1843–1849.

Cousseau M.B. and Perrota R.G. (2000). Peces marinos de Argentina. Biología, distribución y pesca. *Publicaciones Especiales INIDEP*, Mar del Plata. 167 pp.

Crespo, E.A. (2018). Franciscana Dolphin, *Pontoporia blainvillei*. pp. 388 – 392. *In*: Encyclopedia of Marine Mammals, Third edition. Würsig, B., Thewissen, J.G.M. and Kovacs, M. (eds). i-xxxi+1159pp.

Crespo, E.A., Corcuera, J.F. and López Cazorla, A. (1994). Interactions between marine mammals and fisheries in some coastal fishing areas of Argentina. *In*: Perrin, W.F., Donovan, G.P. and Barlow, J. (Ed.). Gillnets and cetaceans. *Rep. Int. Whal. Comm. Spec. issue*. 15, 269–281.

Crespo, E.A. and García, N.A. (2016). Síntesis del estado actual de los mamíferos marinos del Mar Argentino: tasas de incremento y factores denso–dependientes. XI Congress of the Sociedad Latinoamericana de Especialistas en Mamíferos Acuáticos (SOLAMAC)- RT17. Abstracts Book. Valparaíso, Chile. 28 November – 1 December.

Crespo, E.A., Harris, G. and González, R. (1998). Group size and distributional range of the franciscana, *Pontoporia blainvillei*. *Marine Mammal Science* 14(4), 845–49.

Crespo, E.A., Pedraza, S.N., Dans, S.L., Coscarella, M., Svendsen, G. and Degrati, M. (2011). Number of southern right whales, *Eubalaena australis*, and population trend in the neighbourhood of Península Valdés during the period 1999-2011 by means of aerial and boat surveys. Paper SC/S11/RW3 presented at the Scientific Committee Workshop on the Assessment of Southern Right Whales. 15pp.

Crespo, E.A., Pedraza, S.N., Dans, S.L., Svendsen, G.M., Degrati, M. and Coscarella, M.A. (2019). The southwestern Atlantic southern right whale, *Eubalaena australis*, population is growing but at a decelerated rate. *Marine Mammal Science*, 35(1), 93–107.

Cunha, H.A., Medeiros, B.V., Barbosa, L., Cremer, M., Marigo, J., Lailson Brito Jr, J., Azevedo, A. and Sole-Cava, A.M. (2014). Population Structure of the Endangered Franciscana Dolphin (*Pontoporia blainvillei*): Reassessing Management Units. *PLoS ONE* 9(1): e85633.

Dans, S.L., Degrati, M., Pedraza, S.N. and Crespo, E.A. (2012). Tour boats effects on dolphins behavior: a sensitivity analysis applied to Markov chains. *Conservation Biology* 26, 708–716.

Dans, S.L., Koen Alonso, M., Pedraza, S.N. and Crespo, E.A. (2003). Incidental catch of dolphins in trawling fisheries off Patagonia, Argentina: can populations persist? *Ecological Applications* 13, 754–762.

Dellabianca, N.A. and Gribaudo, C.A. (2019). *Megaptera novaeangliae*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Dellabianca, N.A., Pierce, G.J., Raya Rey, A., Scioscia, G., Miller, D.L., Torres, M.A., Paso Viola, M.N., Goodall, R.N.P. and Schiavini, A.C.M. (2016). Spatial models of abundance and habitat preferences of Commerson's and Peale's Dolphin in southern Patagonian waters. *PLoS ONE* 11(10), e0163441. doi:10.1371/journal.pone.0163441.

Dellabianca, N.A., Torres, M. and Raya Rey, A. (2018). Occurrence of dusky dolphin *Lagenorhynchus obscurus* in Tierra del Fuego Archipelago over five decades. *Polar Biology* 41(10). DOI: 10.1007/s00300-018-2315-4.

Denuncio, P., Bastida, R., Dassis, M., Giardino, G., Gerpe, M. and Rodríguez, D. (2011). Plastic ingestion in Franciscana dolphins, *Pontoporia blainvillei* (Gervais and d'Orbigny, 1844), from Argentina. *Mar. Pollut.Bull*. 62(8), 1836–41.

Denuncio, P., Mandiola, M.A., Bagnato, R., De León, M.C., Gana, J.C.M., Dassis, M., Giardino, G. and Rodriguez, D.H. (2017). Ingestión de plásticos en el Zifio de Héctor (*Mesoplodon hectori*) varado en la costa de la Provincia de Buenos Aires: ¿Es la causa de muerte? XII Encuentro de Biólogos En Red. Abstracts Book (#EPC14).

Denuncio, P. E., Paso Viola, N., Cáceres-Saez, I., Cappozzo, H.L., Rodríguez, D. and Mandiola, A. (2019). *Pontoporia blainvillei*. *In:* SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Di Beneditto, A. and Ramos, R. (2014). Marine debris ingestion by coastal dolphins: What drives differences between sympatric species? *Mar. Pollut. Bull*. 83(1), 298–301.

Diario Clarín. 16th September 2019. https://www.clarin.com/sociedad/salvataje-orcas-mar-chiquita-mayor-varamiento-ultimos-70-anos-provincia_0_yAmhRO8.html

Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86pp.

Durban, J.W. and Pitman, R.L. (2012). Antarctic killer whales make rapid, round-trip movements to subtropical waters: evidence for physiological maintenance migrations? *Biology Letters* 8, 274–277.

Failla, M., Gasparrou, C., Melcón, M., Reyes, V., Seijas, V. and Iñíguez Bessega**,** M. (2014). Potencialidad del avistaje costero responsable de delfines en el Estuario del Río Negro, Patagonia, Argentina. *In*: Turismo y recursos naturales: los recursos naturales como base del desarrollo turístico local, importancia de la conservación y la gestión para la sustentabilidad. Navarro, V. and Ferrari, S. (compilers).(pp. 242–255) 1ra ed.- Río Gallegos, 9 – 11, October 2013. Universidad Nacional de la Patagonia Austral. E-Book.

Failla, M., Seijas, V.A., Espósito, R. and Iñíguez, M.A. (2012). Franciscana dolphins, *Pontoporia blainvillei*, of the Río Negro Estuary, Patagonia, Argentina. *Marine Biodiversity Records* 5, e102 doi:10.1017/S1755267212000875

Failla, M., Seijas, V.A. and Vermeulen, E. (2016). Occurrence of bottlenose dolphins (*Tursiops truncatus*) in the Río Negro Estuary, Argentina, and their mid-distance movements along the northeastern Patagonian coast. *Latin American Journal of Aquatic Mammals* 11(1-2): 170–177. http://dx.doi.org/10.5597/lajam00226

Félix, F., Alfaro, J., Reyes, J., Mangel, J., Dellabianca, N., Heinrich, S. and Crespo, E. (2018). *Phocoena spinipinnis*. The IUCN Red List of Threatened Species 2018: e.T17029A50370481. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T17029A50370481.en. Downloaded on 07 January 2021.

Findlay, K.P. (2001). A review of humpback whale catches by modern whaling operations in the Southern Hemisphere. *Mem. Queensl. Mus*. 47(2), 411–20.

Forum for the Conservation of the Patagonian Sea. (2019). Report of the IUCN Regional Red List First Workshop for Species of the Patagonian Sea- 2016: Marine Mammals. V. Falabella and C. Campagna (Eds). https://marpatagonico.org/en/publica/report-of-the-iucn-regional-red-list-first-workshop-for-species-of-the-patagonian-sea-marine-mammals/

Fruet, P.F., Secchi, E.R., Daura-Jorge, F.G., Vermeulen, E., Flores, P.A.C., Simões-Lopes, P.C., Genoves, R.C., Laporta, P., Di Tullio, J.C., Freitas, T.R.O., Dalla Rosa, L., Valiati, V.H., Beheregaray, L.B. and Möller, L.M. (2014). Remarkably low genetic diversity and strong population structure in common bottlenose dolphins (*Tursiops truncatus*) from coastal waters of the Southwestern Atlantic Ocean. *Conserv Gen* 15, 879–895.

Fruet, P.F., Secchi, E.R., Di Tullio, J.C., Simões-Lopes P.C., Daura-Jorge, F., Costa, A.P., Vermeulen, E., Flores, P.A.C., Genoves, R.C., Laporta, P., Beheregaray, L.B. and Möller L. (2017). Genetic divergence between two phenotypically distinct bottlenose dolphin ecotypes suggests separate evolutionary trajectories. *Ecology and Evolution* 7, 9131–9143.

Gariboldi, M.C., Túnez, J.I., Dejean, C.B., Failla, M., Vitullo, A.D., Negri, M.F. and Cappozzo, H.L. (2015). Population genetics of Franciscana Dolphins (*Pontoporia blainvillei*): Introducing a new population from the southern edge of their distribution. *PLoS One* 10, e0132854.

Gariboldi, M.C., Túnez, J.I., Failla, M., Hevia, M., Panebianco, M.V., Paso Viola, M.N., Vitullo, A.D. and Cappozzo, H.L. (2016). Patterns of population structure at microsatellite and mitochondrial DNA markers in the franciscana dolphin (*Pontoporia blainvillei*). *Ecology and Evolution* 6, 8764–8776.

Goodall, R.N.P., de Haro, C., Fraga, F., Iñíguez, M.A. and Norris, K.S. (1997). Sightings and Behaviour of Peale's Dolphins, *Lagenorhynchus australis*, with notes on Dusky dolphins, *L. obscurus*, off Southernmost South America. *Rep.int. Whal. Commn*. 47, 757–775.

Goodall, R.N.P., Dellabianca, N., Boy, C.C., Benegas, L.G., Pimper, L.E. and Riccialdelli, L. (2008b). Review of small cetaceans stranded or incidentally captured on the coasts of Tierra del Fuego, Argentina, over 33 years. Paper SC/60/SM21 presented to the International Whaling Commission Scientific Committee.

Goold, J.C. and Fish, P.J. (1998). Broadband Spectra of Seismic Survey Air-Gun Emissions, with Reference to Dolphin Auditory Thresholds. *J. Acoust. Soc. Am.* 103(4), 2177–2184.

Governments of Argentina, Brazil and Uruguay. (2016). A Conservation Management Plan for Franciscana (*Pontoporia blainvillei)*. IWC/66/CC11. Paper presented at the 66 Meeting of the International Whaling Commission. Portoroz, Eslovenia. 22p.

Grandi, M.F., Buren, A.D., Crespo, E.A., García, N.A., Svendsen, G.M. and Dans, S.L. (2005). Record of a specimen of Shepherd's beaked whale (*Tasmacetus shepherdi*) from the coast of Santa Cruz, Argentina, with notes on age determination. *LAJAM* 4, 97–100.

Greene, C.R., Jr. and Richardson, W.J. (1988). Characteristics of marine seismic survey sounds in the Beaufort Sea. *J. Acoust. Soc. Am*. 83(6), 2246–2254.

Hammond, P.S., Bearzi, G., Bjørge, A., Forney, K., Karczmarski, L., Kasuya, T., Perrin, W.F., Scott, M.D., Wang, J.Y., Wells, R.S. and Wilson, B. (2008). *Delphinus delphis*. The IUCN Red List of Threatened Species 2008: e.T6336A12649851. https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T6336A12649851.en. Downloaded on 07 January 2021.

Hart, I.B. (2002). Pesca. The history of Compañía Argentina de Pesca Sociedad Anónima of Buenos Aires. An account of the pioneer modern whaling company in the Antarctic. 2nd edition Salcombe, Devon, UK: Aidan Ellis, 229 pp.

Heinrich, S. and Dellabianca, N. (2019). *Lagenorhynchus australis*. The IUCN Red List of Threatened Species 2019: e.T11143A50361589. https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T11143A50361589.en. Downloaded on 06 January 2021

Heissler, V.L., Amaral, K.B., Serpa, N., Frainer, G., Siciliano, S., Secchi, E.R. and Moreno, I.B. (2016). Sei whales, *Balaenoptera borealis*, in the South-Western Atlantic Ocean: the discovery of a calving ground in Brazilian waters. Paper presented at the 66th Meeting of the International Whaling Commission Scientific Committee.

Hevia, M., Dellabianca, N.A., Reyes, L.M., Loizaga de Castro, R., Gribaudo, C.A. and García, Néstor A. (2019b). *Lagenorhynchus australis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: h*ttp://cma.sarem.org.ar*.

Hevia, M. and García, Néstor A. (2019). *Hyperoodon planifrons*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Hevia, M., Gribaudo, C.A., Dellabianca, N.A. and Mandiola, Agustina (2019a). *Balaenoptera borealis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Horton, T.W., Zerbini, A.N., Andriolo, A., Danilewicz, D. and Sucunza, F. (2020). Multi-Decadal Humpback Whale Migratory Route Fidelity Despite Oceanographic and Geomagnetic Change. *Front. Mar. Sci.* 7, 414. doi: 10.3389/fmars.2020.00414

Hoyt, E. (2018). Marine protected areas. *En*: Würsig B., Thewissen J.G.M, Kovacs K.M. (ed.), Encyclopedia of Marine Mammals. Third Edition. pp. 569-580. Academic Press, London. i-xxxi+1159pp.

Infobae. 27th August 2018 (https://www.infobae.com/sociedad/2018/08/27/desconcierto-entre-los-expertos-por-la-cantidad-de-orcas-encalladas-en-la-costa-atlantica/)

International Whaling Commission. (1998). Report of the Scientific Committee. *Rep. int. Whal. Commn* 48, 53-118.

International Whaling Commission. (2005). Report of the Scientific Committee. Annex H. Report of the sub-committee on other Southern Hemisphere whale stocks. J. Cetacean Res manage. (Suppl.) 7, 235–44.

International Whaling Commission. (2016). Report of the Scientific Committee. Annex M. 355-356pp. Bled, Slovenia, 7 – 19 June 2016. 47p.

International Whaling Commission. (2018). Report of the 67b Scientific Committee. Bled, Slovenia, 24 April – 6 May 2018. 101p.

International Whaling Commission. (2020). Report of the 68B Scientific Committee. Virtual meeting, 11 –24 May 2020. 132p.

International Whaling Commission. (2021). Report of the 68C Scientific Committee. Virtual meeting. 27 April – 14 May 2021. 202p.

International Whaling Commission. (2011). Report of the Southern right whale die-off workshop, *J. Cetacean Res. Manage. (Suppl.)* 12:365-398.

International Whaling Commission. (2013). Report of the IWC Workshop on the Assessment of Southern Right Whales. *J. Cetacean Res. Manage. (Suppl.)* 14:437–62.

International Whaling Commission (IWC). Taxonomy: classification of Cetacea (whales, dolphins and porpoises). https://iwc.int/cetacea (consulted on 09 February 2021).

Iñíguez, M. (2001). Seasonal distribution of killer whales (*Orcinus orca*) in Northern Patagonia, Argentina. *Aquatic Mammals* 27, 154–161.

Iñíguez, M.A., Hevia, M., Gasparrou, C., Tomsin, A.L. and Secchi, E.R. (2003). Preliminary estimate of incidental mortality of Commerson's dolphins (*Cephalorhynchus commersonii*) in an artisanal setnet fishery in La Angelina beach and Ría Gallegos, Santa Cruz, Argentina. *LAJAM 2(2),* 87-94.

Iñíguez, M., Masello, J.F., Arcucci, D., Krohling, F. and Belgrano, J. (2010b). On the occurrence of sei whales, *Balaenoptera borealis*, in the south-western Atlantic. *Mar. Biodivers. Rec.* 3, e68 doi:10.1017/S1755267210000576.

Iñíguez Bessega, MA., Hevia, M., Cipriano, F., Belgrano, J., Failla, M., Gasparrou, C., Reyes Reyes, M.V., Tossenberger, V.P. and Fernandez, A.J. (2019a). Stranding of beaked whales along the Santa Cruz province, Southern Patagonia, Argentina (1998-2019). Paper SC/68a/E/12 presented to the International Whaling Commission Scientific Committee.

Iñíguez Bessega, M.A., Hevia, M. and García, N.A. (2019b). *Mesoplodon layardii*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Iñíguez Bessega, M.A., Hevia, M. and García, N.A. (2019c). *Tasmacetus shepherdi*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital versión digital: *http://cma.sarem.org.ar*.

Iñíguez Bessega, M.A., Hevia, M. and García, N.A. (2019d). *Berardius arnuxii*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital versión digital: *http://cma.sarem.org.ar*.

IUCN 2020. The IUCN Red List of Threatened Species. Version 2020-3. https://www.iucnredlist.org. Downloaded on 09 February 2021.

James, V.C, Ritter, F., Reyes, V., Iñíguez, M. Asmutis-Silvia, R., Simmonds, M. and Fuchs, A. (2017). Whales as Ecosystem Engineers: A Bibliography Drawing the Big(ger) Picture. Paper SC/67a/EM13 submitted to the 67a International Whaling Commission Scientific Committee meeting.

Kramer, F.S., Peterson, R.A. and Walter, W.C (eds.) (1968). Seismic energy sources/1968 handbook, (Bendix-United Geophysical Corp. 57pp.).

Loizaga, R., Vales, D.G., García, N.A. and Crespo, E.A. (2018). Isotopic evidence of structuring killer whale groups along the Southwestern South Atlantic Ocean. IsoEcol, Abstracts Book.

Loizaga de Castro, R., Saporiti, F., Vales, D.G., García, N.A., Cardona, L. and Crespo. E.A. (2016). What are you eating? A stable isotope insight into the trophic ecology of short–beaked common dolphins in the southwestern Atlantic Ocean. *Mammalian Biology* 81:571–578.

Lowry, L. and Brownell Jr., R.L. (2020). *Hyperoodon planifrons*. The IUCN Red List of Threatened Species 2020: e.T10708A50357964. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T10708A50357964.en. Downloaded on 16 February 2021.

Lutz, V. A., Segura, V., Dogliotti, A. I., Gagliardini, D. A., Bianchi, A. A. and Balestrini, C. F. (2010). Primary production in the Argentine Sea during spring estimated by field and satellite models. *Journal of Plankton Research* 32(2), 181–195. http://dx.doi.org/10.1093/ plankt/fbp117

Madsen, P.T., Johnson, M., Miller, P.J.O., Aguilar Soto, N., Lynch, J. and Tyack, P. (2006). Quantitative measures of air-gun pulses recorded on sperm whales (*Physeter macrocephalus*) using acoustic tags during controlled exposure experiments. *J. Acoust. Soc. Am*. 120 (4) 2366–2379.

Mandiola, M.A., Blanco, G. and Rodríguez, D. (2017). Evaluación de interacciones con Mamíferos Marinos en la pesquería de anchoíta certificada bajo estándares del Marine Stewardship Council. Vinculación Tecnológica de la Universidad Nacional de Mar del Plata al medio socio–productivo. Vol. IV. UNMdP, Mar del Plata.

Mandiola, M. A., Giardino, G., Bastida, J., Morón, S., Rodríguez, D. H. and Bastida, R. (2019). Half a century of sightings data of southern right whales in Mar del Plata (Buenos Aires, Argentina). *Journal of the Marine Biological Association of the United Kingdom 100*(1), 165–171.

Mandiola, M.A., Giardino, G.V., Bastida, J., Rodríguez, D.H. and Bastida, R.O. (2015). Summer records of marine mammal on the Brazil–Malvinas Confluence on Argentine sea shelf break during a seismic survey. *Mastozoología Neotropical* 22:397–402.

Mandiola, A., Gribaudo, C.A., Cáceres-Saez, I. and García, N.A. (2019). *Physeter macrocephalus*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Macleod, C.D., Perrin, W.F., Pitman, R., Barlow, J., Ballance, L., D'Amico, A., Gerrodette, T., Joyce, G., Mullin, K.D., Palka, D.L. and Waring, G.T. (2006). Known and inferred distributions of beaked whale species (Cetacea: Ziphiidae). *J. Cetacean Res. Manage.* 7(3):271–286

Méndez, M., Rosenbaum, H. C. and Bordino, P. (2008). Conservation genetics of the franciscana dolphin in Northern Argentina: Population structure, by-catch impacts, and management implications. *Conservation Genetics* 9, 419–435.

Méndez, M., Rosenbaum, H. C., Subramaniam, A., Yackulic, C. and Bordino, P. (2010). Isolation by environmental distance in mobile marine species: Molecular ecology of franciscana dolphins at their southern range. *Molecular Ecology* 19, 2212–2228.

Negri, M.F., Denuncio, P., Panebianco, M.V. and Cappozzo, H.L. (2012). Bycatch of franciscana dolphins, *Pontoporia blainvillei* and the dynamics of artisanal fisheries in the species Southernmost area of distribution. *Brazilian Journal of Oceanography* 60(2), 149-158.

Nieukirk, S.L., Mellinger, D.K., Moore, S.E., Klinck, K., Dziak, R.P. and Goslin, J. (2012). Sounds from airguns and fin whales recorded in the mid-Atlantic Ocean, 1999–2009. *J. Acoust. Soc. Am.* 131(2), 1102–1112.

Otley, H. (2012). The composition of the cetacean community in the Falkland (Malvinas) Islands, southwest Atlantic Ocean. *Revista de Biología Marina y Oceanografía* 47(3), 537–551.

Paso Viola, N. and García, N.A. (2019a). *Mesoplodon bowdoini*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Paso Viola, N. and García, N.A. (2019b). *Mesoplodon hectori*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Pitman, R.L. and Brownell Jr., R.L. (2020). *Mesoplodon bowdoini*. The IUCN Red List of Threatened Species 2020: e.T13242A50363892. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T13242A50363892.en. Downloaded on 16 February 2021.

Pitman, R.L. and Brownell Jr., R.L. (2020). *Mesoplodon hectori*. The IUCN Red List of Threatened Species 2020: e.T13248A50366525. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T13248A50366525.en. Downloaded on 16 February 2021.

Pitman, R.L. and Brownell Jr., R.L. (2020). *Mesoplodon layardii.* The IUCN Red List of Threatened Species 2020: e.T13249A50366790. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T13249A50366790.en. Downloaded on 16 February 2021.

Pitman, R.L. and Taylor, B.L. (2020). *Mesoplodon grayi*. The IUCN Red List of Threatened Species 2020: e.T13247A50366236. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T13247A50366236.en. Downloaded on 16 February 2021.

Reeves, R., Pitman, R.L. and Ford, J.K.B. (2017). *Orcinus orca*. The IUCN Red List of Threatened Species 2017: e.T15421A50368125. https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T15421A50368125.en. Downloaded on 07 January 2021.

Reyes Reyes, M.V. (2018). “Comportamiento acústico de la tonina overa *Cephalorhynchus commersonii* (Lacépède, 1804) y los posibles efectos de contaminación acústica sobre la especie en la provincia de Santa Cruz, Argentina”. PhD Thesis, Universidad de Buenos Aires. Facultad de Ciencias Exactas y Naturales.

Rice, D.W. (1998). Marine mammals of the world: systematics and distribution. Lawrence, KS: The Society for Marine Mammalogy. (special publication no. 4.) 231pp.

Richardson, J. (2012). Evaluating opportunistic sighting records of large whales around South Georgia Island: Changes in distribution, relative abundance, and species composition of sightings and the efficacy of reporting methods. Masters Degree thesis. Master of Environmental Management degree in the Nicholas School of the Environment of Duke University. 58pp.

Richardson, W J.,Greene, C.R., Malme, Jr., C.I. and Thomson, D.H. (1995). Marine mammals and noise. Academic Press, San Diego, CA. xvi+578pp.

Rodríguez, D., García, N.A. and Ricciardelli, L. (2019). *Mesoplodon grayi*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Rowntree, V.J, Payne, R.S. and Schell, D.M. (2001). Changing patterns of habitat use by southern right whales (*Eubalaena australis*) on the nursery ground at Península Valdés, Argentina, and in their long-range movements. *Journal of Cetacean Research and Management* (special issue) 2, 133–143.

Schwarz, J. (1934). La caza de ballenas y la obtención de su aceite. *Revista la Argentina Austral* 61, 8–14.

Secchi, E.R. (2010). Review on the threats and conservation status of franciscana, *Pontoporia blainvillei* (*Cetacea, Pontoporiidae*). pp.323-39. *In*: Ruiz-García, M. and Shostell, J. (eds). Biology, Evolution and Conservation of River Dolphins within South America and Asia. Nova Science, New York.

Secchi, E.R., Danilewicz, D. and Ott, P.H. (2003). Applying the phylogeographic concept to identify franciscana dolphin stocks: implications to meet management objectives. *Journal of Cetacean Research and Management* 5(1), 61–68.

Secretaría de Ambiente y Desarrollo Sustentable de la Nación y Sociedad Argentina para el Estudio de los Mamíferos (eds.) (2019). *Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina.* Digital version: *http://cma.sarem.org.ar*.

Secretariat of the Convention on Biological Diversity. (2014). Global Biodiversity Outlook 4. Montréal, 155 pages. https://www.cbd.int/gbo/gbo4/publication/gbo4-en-hr.pdf

Siciliano, S., Di Beneditto, A.P. and Ramos, R.M.A. (2002). A toninha, *Pontoporia blainvillei* (Gervais and d’Orbigny, 1844) (Mammalia, Cetacea, Pontoporiidae), nos estados do Rio de Janeiro e Espírito Santo, costa sudeste do Brasil: caracterizaçoes dos habitats e fatores de isolamento das populaçoes. *Boletim do Museu Nacional, Zoologica* 476, 1-15.

SIFAP- Sistema Federal de Áreas Protegidas (2020). Resumen de las Áreas Protegidas de Argentina. SIFAP-Ministerio de Ambiente y Desarrollo Sostenible.

Sironi, M., López, J.C., Bubas, R., Carribero, A., García, C., Harris, G., Intrieri, E., Iñíguez, M. and Payne, R. (2008). Predation by killer whales (*Orcinus orca*) on southern right whales (*Eubalaena australis*) off Patagonia, Argentina: effects on behavior and habitat choice. Paper SC/60/BRG presented at the International Whaling Commission Scientific Committee.

United Nations. (2016). The First Global Integrated Marine Assessment, World Ocean Assessment I. 1752pp.

Valenzuela, L., Rowntree, V.J., Sironi, M. and Seger, J (2018). Stable isotopes (δ15N, δ13C, δ34S) in skin reveal diverse food sources used by southern right whales *Eubalaena australis*. *Marine Ecology Progress Series* 603: 243–255.

Van Waerebeek, K., Baker, A.N., Félix, F., Gedamke, J., Iñiguez, M., Sanino, G.P., Secchi, E., Sutaria, D., van Helden, A. and Wang, Y. (2007). Vessel collisions with small cetaceans worldwide and with large whales in the Southern Hemisphere, an initial assessment. *LAJAM 6(1),* 43-69.

Van Waerebeek, K., Leaper, R., Baker, A.N., Papastavrou, V. and Thiele, D. (2004). Odontocetes of the Southern Ocean Sanctuary. Paper SC/56/SOS1 presented at the 56th International Whaling Commission Scientific Committee.

Vermeulen, E., Bastida, R., Berninsone, L.G., Bordino, P., Failla, M., Fruet, P., Harris, G., Iñíguez, M., Marchesi, M.C., Petracci, P., Reyes, L., Sironi, M. and Bräger, S. (2018). A review on the distribution, abundance, residency, survival and population structure of coastal bottlenose dolphins in Argentina. *LAJAM* 12(1-2): 02-16. https://doi.org/10.5597/lajam00233.

Vermeulen, E. and Bräger, S. (2015). Demographics of the Disappearing Bottlenose Dolphin in Argentina: A Common Species on Its Way Out? *PLoS ONE* 10(3), e0119182. doi:10.1371/journal.pone.0119182

Vermeulen, E., Fruet, P., Costa, A., Coscarella, M. and Laporta, P. (2019). *Tursiops truncatus ssp. gephyreus.* The IUCN Red List of Threatened Species 2019: e.T134822416A135190824. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T134822416A135190824.en. Downloaded on 10 February 2021.

Vilches, F., Caceres-Saez, I., Panebianco, V., Lucero, S., Gariboldi, C., Forlenza, C., Reyes Reyes, M.V., Tossenberger, V., González L., Gasparrou, C., Hevia, M., Peralta, D. and Cappozzo, L. (2018). A novel record of a stranding of a Cuvier's beaked whale, *Ziphius cavirostris* in the Río de la Plata, Argentina; with preliminary results on heavy metals. Poster presentation. XII Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC) – RT18. Lima. Perú. 5 – 8 November.

Vollmer, N.L., Ashe, E., Brownell Jr, R.L., Cipriano, F., Mead, J.G., Reeves, R.R., Soldevilla, M.S. and R. Williams, R. (2019). Taxonomic revision of the dolphin genus *Lagenorhynchus*. *Marine Mammal Science* 35, 957–1057.

Wedekin, L.W., Cremer, M.J. and Baracho-Neto, C.G. (2018). Big whales strike again: Post-whaling records of balaenopterid whales in the South Brazil Bight, South Western Atlantic. Paper presented at the XII Congress of the Sociedad Latinoamericana de Especialistas em Mamíferos Acuáticos (SOLAMAC) – RT 18. Lima, Perú. 5 – 8 November.

Weir, C.R. and Black, A. (2018). Records of the dusky dolphin (*Lagenorhynchus obscurus*) in the Falkland Islands, including associations with Peale's dolphin (*L. australis*). *Marine Biodiversity Records* 11, 1–18.

Weir C.R., Oms G., Baracho-Neto C.G., Wedekin L.L and, Daura-Jorge F.G. (2020). Migratory movement of a sei whale (*Balaenoptera borealis*) between Brazil and the Falkland Islands (Malvinas). *Mar Mam Sci.* 2020;1–8. https://doi.org/10.1111/mms.12687

Weir, C.R. and Rutherford, S. (2019). First record of Burmeister's porpoise (*Phocoena spinipinnis*) in the Falkland Islands (Malvinas). *Mar Biodivers Rec* 12, 19. https://doi.org/10.1186/s41200-019-0178-1

Wells, R.S., Natoli, A. and Braulik, G. (2019). *Tursiops truncatus* (errata version published in 2019). The IUCN Red List of Threatened Species 2019: e.T22563A156932432. https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T22563A156932432.en. Downloaded on 07 January 2021.

White, R.W., Gillon, K.W., Black, A.D. and Reid, J.B. (2002). The distribution of seabirds and marine mammals in Falkland Island waters. *Report of the Joint Nature Conservation Committee*.

Whitehead, H. (2003). Sperm Whales: Social Evolution in the Ocean. (University of Chicago Press, 2003).

Zerbini, A.N., Fernández Ajo, A. Andriolo, A., Clapham, P.J., Crespo, E., González, R., Harris, G., Mendez, M., Rosenbaum, H., Sironi, M., Sucunza F. and Uhart, M. (2018). Satellite tracking of Southern right whales (*Eubalaena australis*) from Golfo San Matías, Rio Negro Province, Argentina. Paper SC/67B/CMP/17 presented at the 67B International Whaling Commission Scientific Committee meeting.

Zerbini, A.N., Rosenbaum, H., Mendez, M., Sucunza, F., Andriolo, A., Harris, G., Clapham, P.J., Sironi, M., Uhart, M. and Ajo, A. (2016). Tracking southern right whales through the southwest Atlantic: an update on movements, migratory routes and feeding grounds. Paper SC/66b/BRG/26 presented at the International Whaling Commission Scientific Committee.

Zerbini, A.N., Secchi, E., Crespo, E., Danilewicz, D. and Reeves, R. (2017). *Pontoporia blainvillei* (errata version published in 2018). The IUCN Red List of Threatened Species 2017: e.T17978A123792204. https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T17978A50371075.en. Downloaded on 07 January 2021.

Zerbini, A.N., Ward, E.J., Kinas, P.G., Engel, M.H. and Andriolo, A. (2011). A Bayesian Assessment of the conservation status of humpback whales (*Megaptera novaeangliae*) in the western South Atlantic Ocean. *J Cetacean Res Manag (Spec Issue 3),* 131–144.

Zuazquita, E., Archuby, D.I. and Larrán, G. (2016). Varamiento de un Zifio de Arnoux, *Berardius arnuxii* (ZIPHIIDAE, Cetacea) en la costa de la provincia de Buenos Aires, Argentina. Poster presentation. XI Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC) – RT17. Valparaíso, Chile. 28 November – 1 December.

Zuazquita, E., Belgrano, J., Sarandon, R. and Zerbini, A. (2018). Seasonal Occurrence of Southern Right Whales (*Eubalaena australis)* in Miramar. (Buenos Aires Province, Argentina). Paper SC/67b/CMP21 presented at the International Whaling Commission Scientific Committee.

ANNEX I. REFERENCES USED FOR SPECIES DISTRIBUTION INFORMATION

Alfaro-Shiguieto, J., Crespo, E., Elwen, S., Lundquist, D. and Mangel, J. (2019). *Lagenorhynchus obscurus* (errata version published in 2020). The IUCN Red List of Threatened Species 2019: e.T11146A175604493. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T11146A175604493.en. Downloaded on 07 January 2021.

Arias, M., Coscarella, M.A., Romero, M.A., Sueyro, N., Svendsen, G.M., Crespo, E.A. and González, R.A.C. (2018). Southern right whale *Eubalaena australis* in Golfo San Matías (Patagonia, Argentina): Evidence of recolonisation. *PLoS ONE* 13(12), e0207524.https://doi.org/10.1371/journal.pone.0207524

Aves Argentinas. Facebook Post on 5th January 2021. Hallazgo en las playas de #Necochea. https://www.facebook.com/avesargentinasAOP/posts/10158318895757284

Bachara, W. and Norman, S.A. (2013). *Ziphius cavirostris* strandings: a short review. Paper SC/65a/SM01 presented at the 65a International Whaling Commission Scientific Committee meeting.

Belgrano, J., Iñíguez, M., Gibbons, J., García, C. and Olavarría, C. (2008). South-west Atlantic Right whales *Eubalaena australis* (Desmoulins, 1822) distribution nearby the Magellan Strait. *Anales Instituto Patagonia (Chile)*. 36(2), 69–74

Cáceres-Saez, I., Hevia, M. and García, N.A. (2019). *Ziphius cavirostris*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Cappozzo, H.L., Negri, M.F., Mahler, B., Lia, V.V., Martinez, P., Gianggiobe, A. and Saubidet, A. (2005). Biological data on two Hector's beaked whales, *Mesoplodon hectori*, stranded in Buenos Aires province, Argentina. *LAJAM* 4, 113–118.

CFP (Consejo Federal Pesquero) (2016). Plan de Acción Nacional para reducir la interacción de mamíferos marinos con pesquerías en la República Argentina 2015, 1ª ed., Consejo Federal Pesquero. Buenos Aires. 168pp.

Cooke, J.G. (2018). *Megaptera novaeangliae*. The IUCN Red List of Threatened Species 2018: e.T13006A50362794. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T13006A50362794.en. Downloaded on 06 January 2021.

Cooke, J.G. and Zerbini, A.N. (2018). *Eubalaena australis*. The IUCN Red List of Threatened Species 2018: e.T8153A50354147. https://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T8153A50354147.en. Downloaded on 06 January 2021.

Coscarella, M.A., Cáceres-Saez, I., Loizaga de Castro, R. and García, N.A. (2019a). *Orcinus orca*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Coscarella, M.A., Dellabianca, N.A., Cáceres-Saez, I., Hevia, M., Morgenthaler, A., Failla, M., Iñíguez Bessega, M.A. and Loizaga de Castro, R. (2019). *Cephalorhynchus commersonii*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Coscarella, M.A., Pedraza, S.N. and Crespo, E.A. (2010). Behavior and seasonal variation in the relative abundance of Commerson's dolphin *Cephalorhynchus commersonii* in northern Patagonia, Argentina. *The Journal of Ethology* 28:463–470.

Crespo, E., Olavarria, C., Dellabianca, N., Iñíguez, M., Ridoux, V. and Reeves, R. (2017). *Cephalorhynchus commersonii* (errata version published in 2018). The IUCN Red List of Threatened Species 2017: e.T4159A128963283. https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T4159A128963283.en. Downloaded on 07 January 2021.

D'Agostino, V.C., Mandiola, A., Bastida, R., Giardino, G., García, N.A., Romero, M.A., Coscarella, M.A. (2019). *Eubalaena australis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Degrati, M., Dellabianca, N.A., García, N.A., Loizaga de Castro, R., Mandiola, A., Romero, M.A. (2019). *Lagenorhynchus obscurus*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Degrati, M., Garcia, N.A., Grandi, M.F., Leonardi, M.S., Loizaga de Castro, R., Vales, D.G., Dans, S.L., Pedraza, S.N. and Crespo, E.A. (2011). New record of a stranded sperm whale *(Physeter macrocephalus*) and a review of strandings along the continental argentine coast. *Mastozoología Neotropical* 18, 307–313.

Dellabianca, N.A. and Gribaudo, C.A. (2019). *Megaptera novaeangliae*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Dellabianca, N.A., Mandiola, A. and Denuncio, P.E. (2019). *Phocoena spinipinnis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Dellabianca, N.A., Pierce, G.J., Raya Rey, A., Scioscia, G., Miller, D.L., Torres, M.A., Paso Viola, M.N., Goodall, R.N.P. and Schiavini, A.C.M. (2016). Spatial models of abundance and habitat preferences of Commerson's and Peale's Dolphin in southern Patagonian waters. *PLoS ONE* 11(10), e0163441. doi:10.1371/journal.pone.0163441.

Dellabianca, N.A., Torres, M. and Raya Rey, A. (2018). Occurrence of dusky dolphin *Lagenorhynchus obscurus* in Tierra del Fuego Archipelago over five decades. *Polar Biology* 41(10). DOI: 10.1007/s00300-018-2315-4.

Denuncio, P., Bastida, R., Danilewicz, D., Moron, S., Rodríguez Heredia, S. and Rodríguez, D. (2013). Calf chronology of the franciscana dolphin: birth, lactation and onset on feeding ecology in coastal waters of Argentina. *Aquatic Mammals* 39, 73–80.

Denuncio, P.E., Paso Viola, N., Cáceres-Saez, I., Cappozzo, H.L., Rodríguez, D. and Mandiola, A. (2019). *Pontoporia blainvillei*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Fathala, M.V., Calió, C. and Iñíguez, M. (2002). Observaciones preliminares sobre el delfín austral (*Lagenorhynchus australis*) al norte de Puerto San Julián, Provincia de Santa Cruz, Argentina. Poster. IV Congress of the Sociedad Lationamericana de Especialistas en Mamíferos Acuáticos (SOLAMAC) – RT10. Valdivia, Chile. 14 – 19 October.

Franchini F., Smout, S., Blight, C., Boehme, L., Munro, G., Costa, M. and Heinrich, S. (2020). Habitat Partitioning in Sympatric Delphinids Around the Falkland Islands: Predicting Distributions Based on a Limited Data Set. *Front. Mar. Sci*. 7, 277. doi: 10.3389/fmars.2020.00277

Garaffo, G.V., Dans, S.L., Pedraza, S.N., Degrati, M., Schiavini, A., González, R. and Crespo, E.A. (2011). Modeling habitat use for dusky dolphin and Commerson's dolphin in Patagonia. *Marine Ecology Progress Series* 421, 217–227. doi: 10.3354/meps08912

Goodall R.N.P., Benegas, L.G., Boy, C.C. and Pimper, L.E. (2008a). Baleen whales stranded on the coasts of the Strait of Magellan and Tierra del Fuego, 1974-75 to 2007-08. Paper SC/60/011 presented to the 60th International Whaling Commission Scientific Committee meeting.

Goodall, N.P., Boy, C. and Schiavini, A.C.M. (2007). Historical and modern records of cetaceans self-stranding to escape killer whale attacks. Paper SC/59/SM17 presented to the 59th International Whaling Commission Scientific Committee meeting.

Goodall, R.N.P., Dellabianca, N., Boy, C.C., Benegas, L.G., Pimper, L.E. and Riccialdelli, L. (2008b). Review of small cetaceans stranded or incidentally captured on the coasts of Tierra del Fuego, Argentina, over 33 years. Paper SC/60/SM21 presented to the 60th International Whaling Commission Scientific Committee meeting.

Goodall, R.N.P, Marchesi, M.C., Pimper, L.E., Dellabianca, N., Benegas, L.G., Torres, M.A. and Riccialdelli, L. (2011). Southernmost records of bottlenose dolphins, *Tursiops truncatus*. *Polar Biology*, 34, 1085–1090.

Grandi, M.F., Buren, A.D., Crespo, E.A., García, N.A., Svendsen, G.M. and Dans, S.L. (2005). Record of a specimen of Shepherd's beaked whale (*Tasmacetus shepherdi*) from the coast of Santa Cruz, Argentina, with notes on age determination. *LAJAM* 4, 97–100.

Gribaudo, C.A. and Gribaudo, F.A. (2017). Especies de Mysticetos en el Golfo San Jorge Patagonia Argentina. V Congreso Nacional de Conservación de la Biodiversidad, Libro de Resúmenes.

Heinrich, S. and Dellabianca, N. (2019). *Lagenorhynchus australis*. The IUCN Red List of Threatened Species 2019: e.T11143A50361589. https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T11143A50361589.en. Downloaded on 06 January 2021

Hevia, M., Arcucci, D., Belgrano, J., Cipriano, F., Failla, M., Gasparrou, C., Hodgins, N., Kröhling, F., Reyes Reyes, V., Tossenberger, V. and Iñíguez, M. (2011). Stranding of Six Beaked Whales in Santa Cruz Province, Southern Argentina (1998-2011). Paper SC/63/SM3 presented to the 63rd International Whaling Commission Scientific Committee meeting.

Hevia, M., Dellabianca, N.A., Reyes, L.M., Loizaga de Castro, R., Gribaudo, C.A., García, N.A. (2019b). *Lagenorhynchus australis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar.*

Hevia, M. and García, Néstor A. (2019). *Hyperoodon planifrons*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Hevia, M. and Gasparrou, C. (2004). Observaciones preliminares de toninas overas (*Cephalorhynchus commersonii*) en la Ría Gallegos, Santa Cruz, Argentina. Poster presentation. Abstracts Book. V Congress of the Sociedad Latinoamericana de Especialistas en Mamíferos Acuáticos (SOLAMAC) – RT11. p.133. Quito, Ecuador. 11 – 17 September.

Hevia, M., Gribaudo, C.A., Dellabianca, N.A. and Mandiola, Agustina (2019a). *Balaenoptera borealis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Hevia, M., Marino, A., Dellabianca, N.A., Dans, S., Svendsen, G. and Reyes Reyes, M.V. (2018). Occurrence of Peale's dolphin (*Lagenorhynchus australis*) in the Southwest Atlantic north of 41°S. Poster. XII Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC) – RT18. Lima, Perú. 5 – 8 November.

Hevia, M., Marino, A., Thayre, B. and Reyes Reyes, M.V. (2016). Distribución de Delfín austral, *Lagenorhynchus australis* (Peale, 1848), en aguas de la plataforma continental del sur del Océano Atlántico sudoccidental durante el verano 2016. Poster. XI Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC) – RT17. Valparaíso, Chile. 28 November – 1 December.

Hevia, M., Meyer, P., Cáceres-Saez, I. and Iñíguez, M.I. (2017). Informe varamiento ballena sei (*Balaenoptera borealis*) en Dock Sud, provincia de Buenos Aires. Reporte presented to Organismo Provincial para el Desarrollo Sostenible (OPDS). 26pp.

Iñíguez, M., Hevia, M., Cipriano, F., Sarradell, J., Doumecq Milieu, R. (2010a). Stranding of a Commerson's dolphin, *Cephalorhynchus commersonii*, in Buenos Aires Province, Argentina. *Marine Biodiversity Records* doi:10.1017/S1755267209991072; Vol. 3; e2; 2010.

Iñíguez, M., Masello, J.F., Arcucci, D., Krohling, F. and Belgrano, J. (2010b). On the occurrence of sei whales, *Balaenoptera borealis*, in the south-western Atlantic. *Mar. Biodivers. Rec.*, 3, e68 doi:10.1017/S1755267210000576.

Iñíguez, M.A. and Tossenberger, V.P. (2007). Commerson's dolphins (*Cephalorhynchus commersonii*) off Ría Deseado, Patagonia, Argentina. *Aquatic Mammals* 33(3), 276–285.

Iñíguez Bessega, MA., Hevia, M., Cipriano, F., Belgrano, J., Failla, M., Gasparrou, C., Reyes Reyes, M.V., Tossenberger, V.P. and Fernandez, A.J. (2019a). Stranding of beaked whales along the Santa Cruz province, Southern Patagonia, Argentina (1998–2019). Paper SC/68a/E/12 presented to the 68a International Whaling Commission Scientific Committee meeting.

Iñíguez Bessega, M.A., Hevia, M. and García, N.A. (2019b). *Mesoplodon layardii*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Iñíguez Bessega, M.A., Hevia, M., García, N.A. (2019c). *Tasmacetus shepherdi*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Iñíguez Bessega, M.A., Hevia, M., García, N.A. (2019d). *Berardius arnuxii*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

IUCN 2020. The IUCN Red List of Threatened Species. Version 2020-3. https://www.iucnredlist.org. Downloaded on 09 February 2021.

Leonardi, M.S., Grandi, M.F., García, N.A., Svendsen, G., Romero, M.A., González, R. and Crespo, E.A. (2011). A stranding of *Balaenoptera borealis* (Lesson 1828) from Patagonia, Argentina, with notes on parasite infestation and diet. Afr. *J. Mar. Sci*. 33(1), 177–179.

Mandiola, M. A., Giardino, G. V., Bastida, J., Rodríguez, D.H., Bastida, R.O. (2015). Marine Mammal Occurrence in Deep Waters of the Brazil-Malvinas Confluence off Argentina During Summer. *Mastozoología Neotropical* 22(2), pp. 397–402.

Mandiola, A., Gribaudo, C.A., Cáceres-Saez, I. and García, N.A. (2019). *Physeter macrocephalus*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Melcón, M.L., Reyes Reyes, M.V., Marino, A., Jones, J., Baumann-Pickering, Hildebrand, J.A. and Iñíguez, M.A. (2017). Visual and acoustic records of sperm whales during the Argentine SORP cruises from 2014–2017 through the Western Antarctic Peninsula. Paper SC/67a/SH12 presented to the 67a International Whaling Commission Scientific Committee meeting.

OBIS (2021) Ocean Biodiversity Information System. Intergovernmental Oceanographic Commission of UNESCO. www.obis.org.

Otley, H. (2012). The composition of the cetacean community in the Falkland (Malvinas) Islands, southwest Atlantic Ocean. *Revista de Biología Marina y Oceanografía* 47(3), 537–551.

Otley, H., Smith, J. and Dalebout, M.L. (2012). Beaked whale strandings on the Falkland Islands and South Georgia, South Atlantic Ocean, between 1866 and 2008. *Journal of the Marine Biological Association of the United Kingdom* 92, 1851–1864.

Paso Viola, N. and García, N.A. (2019a). *Mesoplodon bowdoini*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Paso Viola, N. and García, N.A. (2019b). *Mesoplodon hectori*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Pedraza, S.N. (2008). Ecología poblacional de la tonina overa *Cephalorhynchus commersonii* (Lacépède, 1804) en el litoral Patagónico. Ph.D. Thesis, University of Buenos Aires.

Pimper, L., Goodall, N., Gibbsons, J., Sobral, A., Lockyer, C. and Praderi, R. (2008). A review of strandings of sperm whales from the Strait of Magellan to Cape Horn. Santiago de Chile. Paper SC/60/O3 pŕesented to the 60th International Whaling Commission Scientific Committee meeting.

Pinedo, M.C., Barreto, A.S., Lammardo, M.P., Andrade, A.L.V. and Geracitano, L. (2002). Northernmost records of the spectacled porpoise, Layard's beaked whale, Commerson's dolphin, and Peale's dolphin in the southwestern Atlantic Ocean. *Aquat. Mamm.* 28(1),32–37.

Píriz Galletto. (2019). Ocurrencia de cetáceos en el Océano Atlántico Sudoccidental y el Océano Austral y su relación con variables ambientales. Tesina de grado Licenciado en Ciencias Biológicas, Profundización en Oceanografía. Facultad de Ciencias, Universidad de la República. Montevideo, Uruguay.

Reyes, L.M. (2006). Cetaceans of central Patagonia, Argentina. *Aquatic Mammals* 32, 20–30.

Reyes Reyes, M.V., Failla, M., Iñíguez Bessega, M. and Melcón, M. (2014). Description of echolocation clicks and whistles of Bottlenose dolphins *Tursiops truncatus* in Río Negro province. Poster presentation. X Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC)- RT16. Cartagena de Indias, Colombia. 1 – 5 December.

Reyes Reyes, M.V., Hevia, M., Marcondes, M., Marino, A., Trickey, J.S., Trujillo, F. and Iñíguez, M.A. (2016). Occurrence of sei whales (*Balaenoptera borealis*) in sub- Antarctic and Antarctic waters off the north Antarctic Peninsula. Paper SC/66b/SH15 presented to the 66b International Whaling Commission Scientific Committee meeting.

Reyes Reyes, M.V., Hevia, M., Marino, A. and Iñíguez Bessega, M.A. (2017). Presence of Southern right whales on the Patagonian shelf off Argentina during summer from opportunistic sightings. Paper SC/67a/CMP/08 presented to the 67a International Whaling Commission Scientific Committee meeting.

Reyes Reyes, M.V. and Iñíguez, M. (2013). Occurrence of cetaceans in the Scotia Sea during February– March 2013. Paper SC/65a /SH10 presented to the 65a International Whaling Commission Scientific Committee meeting.

Reyes Reyes, M.V., Marino, A., Dellabianca, N.A., Hevia, M., Torres, M., Raya Rey, A. and Melcón, M. (2018). Clicks of wild Burmeister's porpoises (*Phocoena spinipinnis*) in Tierra del Fuego, Argentina. *Marine Mammal Science*. DOI: 10.1111/mms.12489.

Rodríguez, D., García, N.A. and Ricciardelli, L. (2019). *Mesoplodon grayi*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Romero, M.A., Bastida, R., Loizaga de Castro, R. and Svendsen, G. (2019). *Delphinus delphis*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Secretaría de Ambiente y Desarrollo Sustentable de la Nación y Sociedad Argentina para el Estudio de los Mamíferos (eds.) (2019). *Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina.* Digital version: *http://cma.sarem.org.ar*.

Svendsen, G.M., Romero, M.A, Williams, G.N., Williams, G.N., Gagliardini, D.A., Crespo, E.A., Dans, S.L. and González, R.A. (2015). Environmental niche overlap between common and dusky dolphins in North Patagonia, Argentina. *PLoS One* 10, 1–20. https://doi.org/10.1371/journal.pone.0126182.

Taylor, B.L., Baird, R., Barlow, J., Dawson, S.M., Ford, J., Mead, J.G., Notarbartolo di Sciara, G., Wade, P. and Pitman, R.L. (2019). *Physeter macrocephalus* (amended version of 2008 assessment). The IUCN Red List of Threatened Species 2019: e.T41755A160983555. https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T41755A160983555.en. Downloaded on 06 January 2021.

Tomsin, A.L., Hevia, M. and Garcilazo, A. (2002). Observaciones preliminares de Toninas overas (*Cephalorhynchus commersonii*) en la zona de Punta Quilla, Ría Santa Cruz, Provincia de Santa Cruz, Argentina. Poster. IV Congress of the Sociedad Lationamericana de Especialistas en Mamíferos Acuáticos (SOLAMAC) – RT10. Valdivia, Chile. 14 – 19 October.

Vermeulen, E., Bastida, R., Berninsone, L.G., Bordino, P., Failla, M., Fruet, P., Harris, G., Iñíguez, M., Marchesi, M.C., Petracci, P., Reyes, L., Sironi, M. and Bräger, S. (2017). A review on the distribution, abundance, residency, survival and population structure of coastal bottlenose dolphins in Argentina. LAJAM 12(1-2), 02–16. https://doi.org/10.5597/lajam00233

Vermeulen, E., Failla, M., Loizaga de Castro, R., Romero, M.A., Svendsen, G., Coscarella, M.A., Cáceres-Saez, I., Bastida, R. and Dassis, M. (2019). *Tursiops truncatus*. *In*: SAyDS–SAREM (eds.) Categorización 2019 de los mamíferos de Argentina según su riesgo de extinción. Lista Roja de los mamíferos de Argentina. Digital version: *http://cma.sarem.org.ar*.

Vilches, F., Caceres-Saez, I., Panebianco, V., Lucero, S., Gariboldi, C., Forlenza, C:, Reyes Reyes, M.V., Tossenberger, V., González L., Gasparrou, C., Hevia, M., Peralta, D. and Cappozzo, L. (2018). A novel record of a stranding of a Cuvier's beaked whale, *Ziphius cavirostris*, in the Río de la Plata, Argentina; with preliminary results on heavy metals. Poster presentation. XII Congress of the Sociedad Lationamericana de Especialistas en Mamíferos Acuáticos (SOLAMAC) – RT18. Lima, Perú. 5 – 8 November.

Weir, C.R. and Black, A. (2018). Records of the dusky dolphin (*Lagenorhynchus obscurus*) in the Falkland Islands, including associations with Peale's dolphin (*L. australis*). *Marine Biodiversity Records* 11, 1–18.

Weir, C.R. and Rutherford, S. (2019). First record of Burmeister's porpoise (*Phocoena spinipinnis*) in the Falkland Islands (Malvinas). *Mar Biodivers Rec* 12, 19. https://doi.org/10.1186/s41200-019-0178-1

Wells, R.S., Bordino, P. and Douglas. D.C. (2013). Patterns of social association in the franciscana, *Pontoporia blainvillei*. *Marine Mammal Science* 29(4), 520-528.

White, R.W., Gillon, K.W., Black, A.D. and Reid, J.B. (2002). The distribution of seabirds and marine mammals in Falkland Island waters. *Report of the Joint Nature Conservation Committee*.

Zerbini, A.N., Fernández Ajo, A. Andriolo, A., Clapham, P.J., Crespo, E., González, R., Harris, G., Mendez, M., Rosenbaum, H., Sironi, M., Sucunz,a F. and Uhart, M. (2018). Satellite tracking of Southern right whales (*Eubalaena australis*) from Golfo San Matías, Rio Negro Province, Argentina. Paper SC/67B/CMP/17 presented at the 67B International Whaling Commission Scientific Committee meeting.

Zerbini, A.N., Rosenbaum, H., Mendez, M., Sucunza, F., Andriolo, A., Harris, G., Clapham, P.J., Sironi, M., Uhart, M. and Ajo, A. (2016). Tracking southern right whales through the southwest Atlantic: an update on movements, migratory routes and feeding grounds. Paper SC/66b/BRG/26 presented at the 66b International Whaling Commission Scientific Committee meeting.

Zuazquita, E., Archuby, D.I. and Larrán, G. (2016). Varamiento de un Zifio de Arnoux, *Berardius arnuxii* (ZIPHIIDAE, Cetacea) en la costa de la provincia de Buenos Aires, Argentina. Poster presentation. XI Congress of the Sociedad Latinoamericana de especialistas en Mamíferos Acuáticos (SOLAMAC) – RT17. Valparaíso, Chile. 28 November - 1 December.

ANNEX II. TABLES

Table 2. Coastal and marine protected areas of Argentina (APN: National Parks Administration; n/d: Not Determined)

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
1	Campos del Tuyú	3,040	National Park / Ramsar Site	II	APN	2009	National Law	26499/09	Yes (2018)	southern right whale, orca, common bottlenose dolphin, franciscana, Burmeister's porpoise
2	Namuncurá- Banco Burdwood I	2,800,000	National Marine Park and National Marine Reserve	VI	APN	2013	National Law	26875/13	Yes (2016)	sei whale, southern right whale, sperm whale, Peale's dolphin
3	Namuncurá- Banco Burdwood II	24,697,370	Marine Protected Area	Ia	APN	2018	National Law	27490/18	In process	sei whale, Peale's dolphin
4	Yaganes	5,582,985	Marine Protected Area	II	APN	2018	National Law	27490/18	Not reported	humpback whale, sei whale, sperm whale, orca, Peale's dolphin
5	Isla Pingüino	159,526	Interjurisdictional Marine Park	n/d	APN and Santa Cruz province	2012	National Law	26818/12	Not reported	southern right whale, orca, Commerson's dolphin, Peale's dolphin, dusky dolphin
6	Patagonia Austral	104,812	Interjurisdictional Coastal Marine Park	n/d	APN and Chubut province	2009	National Law and Provincial Law	26446/09 5668	Yes (2018)	sei whale, southern right whale, sperm whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin, dusky dolphin
7	Makenke	72,663	Interjurisdictional Marine Park	n/d	APN, Santa Cruz province and Municipality of Puerto San Julián	2012	National Law	26817/12	In process	humpback whale, southern right whale, orca, Commerson's dolphin, Peale's dolphin, beaked whale
8	Monte León	62,169	National Park and National Reserve	II and VI	APN	2004	National Law	25945/04	Yes (2004)	Commerson's dolphin, beaked whale
9	Isla de los Estados y Archipiélago de Año Nuevo	52,736	Wilderness Nature Reserve	Ib	APN, Tierra del Fuego province, Ministry of Defense	2016	National Decree	929/16	Yes (2017)	sei whale, sperm whale, orca, Peale's dolphin, beaked whale
10	Tierra del Fuego	68,910	National Park	II	APN	1960	National Law	1554/60	Yes (2020)	sei whale, Burmeister's porpoise
11	Campo Mar Chiquita – Dragones de Malvinas	1,753	Nature Reserve	VI	National	2009	Agreement between the Argentine Navy and APN		Not reported	southern right whale, common dolphin, dusky dolphin, franciscana, Burmeister's porpoise
12	Baterías- Charles Darwin	1,000	Nature Reserve of Defence	Not Reported	National	2013	Agreement between Argentine Navy and APN	Not reported	Not reported	franciscana, sperm whale, southern right whale, common bottlenose dolphin
13	Punta Buenos Aires (included within the Península Valdés Protected Area)	7,500	Nature Reserve of Defence	Not reported	National	2008	Agreement between Argentine Navy and APN	Additional Protocol 01/08	Not reported	southern right whale, orca, common dolphin, common bottlenose dolphin, dusky dolphin, Burmeister's porpoise

MARINE COASTAL PROVINCIAL PROTECTED AREAS

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
14	Bahía de Samborombón	402,351	Integral Nature Reserve	IV	Buenos Aires province	1997	Provincial Law	12016/97	Yes (2017)	humpback whale, orca, common bottlenose dolphin, franciscana, Burmeister's porpoise
15	Rincón de Ajó	15,740	Integral Nature Reserve	IV	Buenos Aires province	1997	Provincial Law	12016/97	Yes (2017)	orca, franciscana
16	Punta Rasa	522	Protected Area with sustainable use	VI	Municipal	1991	Provision Decree	1023 380	Yes (2003)	southern right whale, orca, common bottlenose dolphin, franciscana, Burmeister's porpoise
17	Faro Querandí	5,575	Protected Landscape	V	Buenos Aires province	1987/ 1996	Municipal Ordinance; Provincial Law	1487 010420/87	Not reported	franciscana
18	Mar Chiquita	9,007	Multiple Use Nature Reserve	VI	Buenos Aires province	1989	Provincial Decree	1581/89	Not reported	southern right whale, common dolphin, dusky dolphin, franciscana, Burmeister's porpoise
19	Mar Chiquita	56,030	Wildlife Refuge	VI	Buenos Aires province	1998	Provincial Law	12270/98	Not reported	southern right whale, common dolphin, dusky dolphin, franciscana, Burmeister's porpoise
20	Restinga del Faro	706	Provincial Nature Reserve	IV	Buenos Aires province	2011	Provincial Decree	469/11	Not reported	humpback whale, southern right whale, orca, common dolphin, common bottlenose dolphin, dusky dolphin, franciscana, beaked whale
21	Arroyo Zabala	1,847	Multiple Use Nature Reserve	VI	Buenos Aires province	2001	Provincial Law	12743/01	Not reported	southern right whale, orca, common dolphin, common bottlenose dolphin, dusky dolphin, franciscana, beaked whale
22	Arroyo Los Gauchos	770	Multiple Use Nature Reserve	VI	Buenos Aires province	2011	Provincial Decree	469/11	Not reported	humpback whale, southern right whale, common bottlenose dolphin, dusky dolphin, sperm whale
23	Pehuén-Co Monte Hermoso	2,542	Nature Reserve	IV	Buenos Aires province	2005	Provincial Law	13394/05	Not reported	southern right whale, common bottlenose dolphin, sperm whale, franciscana
24	Reserva Costera de la Bahía Blanca	3,190	Municipal Nature Reserve	Not reported	Buenos Aires province & Municipality of Bahía Blanca	2011	Provision Decree	13892 469	Not reported	southern right whale, common bottlenose dolphin, dusky dolphin, sperm whale, franciscana
25	Bahía Blanca, Falsa y Verde	254,354	Multiple Use Nature Reserve	VI	Buenos Aires province	1998	Provincial Law	12101/98	Not reported	southern right whale, common bottlenose dolphin, dusky dolphin, sperm whale, franciscana

26	Islote de la Gaviota Cangrejera	81	Integral Nature Reserve	I	Buenos Aires province	2011	Provincial Decree	469/11	Not reported	common bottlenose dolphin, franciscana
27	Bahía San Blas	518,661	Wildlife Refuge and Multiple Use Nature Reserve	VI	Buenos Aires province	1987/ 2001	Provincial Law	12788/01	Yes (2008)	southern right whale, common bottlenose dolphin, dusky dolphin, franciscana

Río Negro province

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
28	Punta Bermeja	1,900	Protected Nature Area	Not reported	Río Negro province	1971	Provincial Decree	898/71	Yes (2009)	sei whale, southern right whale, orca, common bottlenose dolphin, Commerson's dolphin, dusky dolphin, sperm whale, franciscana, Burmeister's porpoise
29	Caleta de los Loros	9,084	Multiple Use Reserve	VI	Río Negro province	1984/ 2008	Provincial Law	3222/98	Yes (2019)	southern right whale, common dolphin, common bottlenose dolphin, dusky dolphin, franciscana
30	Bahía San Antonio	80,856	Protected Landscape	V	Río Negro province	1993/ 2008	Provincial Law	2670/93 and 2670/08	Yes (2013)	humpback whale, sei whale, southern right whale, orca, common dolphin, common bottlenose dolphin, dusky dolphin, sperm whale
31	Complejo Islote Lobos	18,684	Scientific Nature Reserve	VI	Río Negro province	1977	Provincial Decree	1402/77	Yes (2019)	southern right whale, common dolphin, common bottlenose dolphin, dusky dolphin
32	Puerto Lobos	62,121	Protected Landscape	V	Río Negro province	1998/ 2007	Provincial Law	3211/98	Not reported	southern right whale, common dolphin, common bottlenose dolphin, dusky dolphin

Chubut province

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
33	Península Valdés	840,000	Tourist Nature Reserve / Ramsar Site	VI	Chubut province	1983	Provincial Law	4722/01	Yes (2001 and 2015)	humpback whale, sei whale, southern right whale, orca, common dolphin, common bottlenose dolphin, Commerson's dolphin, dusky dolphin, sperm whale, Burmeister's porpoise
34	Golfo San José	136,000	Tourist Nature Reserve (also included under Península Valdés)	II	Chubut province	1974	Provincial Law	1238	Not reported	humpback whale, sei whale, southern right whale, orca, common dolphin, common bottlenose dolphin, dusky dolphin, Burmeister's porpoise

35	El Doradillo	11,000	Protected Landscape	Not reported	Municipality of Puerto Madryn	2001	Municipal Ordinance	4263	Yes (2003)	southern right whales
36	Punta Loma	1,707	Tourist Nature Reserve	IV	Chubut province	1967/ 2010	Provincial Laws	697/67 XI N° 1	Not reported	humpback whale, southern right whale, common dolphin, orca, common bottlenose dolphin, dusky dolphin, sperm whale, Burmeister's porpoise
37	Punta León	150	Tourist Nature Reserve	Not reported	Chubut province	1985/ 2010	Provincial Laws	2580/85 XXIII N° 14/2010	Not reported	southern right whale, orca, common bottlenose dolphin, dusky dolphin, Burmeister's porpoise
38	Punta Tombo	210	Tourist Nature Reserve	IV	Chubut province	1972	Provincial Law	1222/79	Not reported	southern right whale, common bottlenose dolphin, Peale's dolphin, dusky dolphin, Burmeister's porpoise
39	Cabo dos Bahías	160	Tourist Nature Reserve	IV	Chubut province	1973/ 1983/ 2010	Ministerial Resolution; Provincial Law	537/73 XXIII N° 12/ 2010	Not reported	southern right whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin, dusky dolphin
40	Rocas Coloradas	101,533	Protected Landscape	V	Chubut province	2020	Provincial Law	102/20	Not reported	dusky dolphin, Peale's dolphin, orca
41	Punta Marqués	50	Tourist and Scientific Research Nature Reserve	IV	Chubut province and Municipality of Rada Tilly	1985/ 2010	Municipal Ordinance; Provincial Laws	524/02 2580 XXIII N° 14/ 2010	Not reported	southern right whale, orca, common bottlenose dolphin, Peale's dolphin, dusky dolphin, sperm whale

Santa Cruz province

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
42	Caleta Olivia	200	Provincial Reserve	VI	Santa Cruz province	1992/ 2008	Provincial Law	3028	Not reported	sei whale, southern right whale, Peale's dolphin
43	Barco Hundido	10,370	Provincial Reserve	III	Santa Cruz province	2002	Provincial Law	2605	Not reported	sei whale, Peale's dolphin
44	Pingüinos	83,900	Provincial Reserve	Not reported	Santa Cruz province	2020	Provincial Law	3690	Not reported	Commerson's dolphin, dusky dolphin, beaked whales
45	Monte Loayza/ Cañadón del Duraznillo	17,400	Provincial Reserve	I	Santa Cruz province, Golfo San Jorge S.A., Fundación Hábitat y Desarrollo & Sinopec Argentina	2004/ 2008	Provincial Law	2737	Yes (2010)	orca, Commerson's dolphin, dusky dolphin, beaked whale
46	Cabo Blanco	7,370	Intangible Nature Reserve	IV	Santa Cruz province	1977	Provincial Decree	1561/77	Not reported	orca, common bottlenose dolphin, Commerson's dolphin
47	Ría Deseado	34,400	Intangible Nature Reserve	VI	Santa Cruz province	1977/ 2010	Provincial Decree; Provincial Law	1561/77 3128	Not reported	orca, Commerson's dolphin, Peale's dolphin
48	Isla Pingüinos	9,300	Provincial Reserve	VI	Santa Cruz province	1992	Provincial Law	2274/92	Not reported	southern right whale, orca, Commerson's dolphin, Peale's dolphin, dusky dolphin

49	Bahía Laura	165,700	Intangible Nature Reserve	IV	Santa Cruz province	1977	Provincial Decree	1561/77	Not reported	Commerson's dolphin, Peale's dolphin
50	Península San Julián	117,100	Provincial Reserve	VI	Santa Cruz province	1986	Provincial Law	1821/86	Not reported	humpback whale, orca, Commerson's dolphin, Peale's dolphin, beaked whale
51	Bahía San Julián	339,700	Limited Use Area Under Special Protection	V	Santa Cruz province	1990	Provision	015/90 016/90	Not reported	Commerson's dolphin, Peale's dolphin
52	Isla Cormorán y Banco Justicia	28,500	Limited Use Area Under Special Protection	VI	Santa Cruz province	1990	Provision	015/90 016/90	Not reported	Commerson's dolphin
53	Isla Leones	11,500	Limited Use Area Under Special Protection	VI	Santa Cruz province	1991	Resolution	720/91	Not reported	Commerson's dolphin, Peale's dolphin, beaked whale
54	Isla Monte León	400	Provincial Reserve	VI	Santa Cruz province	1986	Provincial Law	2445/86	Not reported	southern right whale, Commerson's dolphin
55	Isla Deseada	4,900	Scientific Use Area Under Special Protection	VI	Santa Cruz province	1990	Provision	7/90	Not reported	humpback whale, sei whale, southern right whale, Commerson's dolphin.
56	Aves Migratorias	26,900	Provincial Reserve	IV	Santa Cruz province	2001	Provincial Law	2583/01	Yes (2017)	humpback whale, sei whale, Commerson's dolphin, beaked whale
57	Río Gallegos	1,890	Urban Coastal Reserve	Not reported	Municipality of Río Gallegos	2004	Provision	5356	Yes (2011)	humpback whale, sei whale, southern right whale, Commerson's dolphin.
58	Cabo Vírgenes	12,300	Provincial Reserve	IV	Santa Cruz province	1986	Provincial Decree	1806/86	Yes (2001)	southern right whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin, beaked whale
59	Costa Norte de Santa Cruz	8,800,800	Provincial Reserve	Not reported	Santa Cruz province	2010	Provincial Law	3183	Not reported	humpback whale, sei whale, southern right whale, sperm whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin

Tierra del Fuego province

#	Name	Surface (ha)	Category	IUCN Category	Administered by	Designation date	Legal instrument	Number	Management Plan	Cetacean species recorded
60	Punta Popper	12	Urban Nature Reserve	Not reported	Municipality of Río Grande	2012	Provision	3042	Yes (2016)	Burmeister's porpoise, Commerson's dolphin, common bottlenose dolphin, orca, southern right whale
61	Costa Atlántica de Tierra del Fuego	28,600	Wetland of International Importance / Ramsar Site	IV	Tierra del Fuego province	1992	Provincial Decree; Provincial Law	2202/92 415/98	Yes (2011)	sei whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin, dusky dolphin, sperm whale, Burmeister's porpoise, beaked whale

62	Isla de los Estados y Archipiélago de Año	5,273,600	Wilderness Nature Reserve	VI	Tierra del Fuego province	1991	Provincial Constitution	—	Not reported	sei whale, southern right whale, orca, Peale's dolphin, sperm whale, beaked whale
63	Playa Larga	24	Nature and Cultural Reserve	V	Tierra del Fuego province	1997	Provincial Law	348/97	Not reported	humpback whale, orca, dusky dolphin, Burmeister's porpoise

UNESCO-MAB BIOSPHERE RESERVE

Buenos Aires province

#	Name	Surface (ha)	Administered by	Designation date	Management Plan	Cetacean species recorded
64	Parque Atlántico Mar Chiquita	26,488	Buenos Aires province	1990	Not reported	southern right whale, common dolphin, dusky dolphin, franciscana, Burmeister's porpoise

Chubut province

#	Name	Surface (ha)	Administered by	Designation date	Management Plan	Cetacean species recorded
65	Valdés	2,137,908	Chubut province	2014	Not reported	humpback whale, sei whale, southern right whale, sperm whale, orca, common dolphin, common bottlenose dolphin, Commerson's dolphin, dusky dolphin, franciscana, Burmeister's porpoise
66	Patagonia Azul	3,102,000	Chubut province	2015	Not reported	humpback whale, sei whale, southern right whale, sperm whale, orca, common bottlenose dolphin, Commerson's dolphin, Peale's dolphin, dusky dolphin, Burmeister's porpoise

Table 3: Cetacean national and provincial natural monuments of Argentina and corresponding legislation instrument

Species	Jurisdiction	Year	Law
Southern right whale	National	1984	23,094
	Río Negro province	2006	4,066
	Santa Cruz province	2003	2,643
Commerson's dolphins	Santa Cruz province	2001	2,582
Peale's dolphins	Santa Cruz province	2009	3,083
Franciscana	Buenos Aires province	2017	14,922

Table 4. Presence in protected areas of Argentina, conservation status and inclusion into categories of international bodies of the cetacean species analysed in this report. (DD: Data Deficient; LC: Least Concern; NT: Near Threatened; VU: Vulnerable; EN: Endangered)
* According to data obtained in this analysis and SAyDS-SAREM (2019)
** In some areas of Argentina, common name used by locals is either tonina or delfín nariz de botella

English Common name	Spanish Common name	Latin name	Presence in MPA *	SAyDS-SAREM	IUCN	CMS	CITES
humpback whale	ballena jorobada	*Megaptera novaeangliae*	4, 7, 14, 12, 227,30,33,34,36, 50, 56, 63,65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	LC	LC	Appendix I	Appendix I
sei whale	ballena sei	*Balaenoptera borealis*	2, 3, 4, 6, 9, 10, 28, 30, 33, 34, 42, 43, 56, 61, 629, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	EN	EN	Appendix I/II	Appendix I
southern right whale	ballena franca austral	*Eubalaena australis*	1, 2, 5, 6, 7, 9,18, 19, 20, 21, 22, 23, 25, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 41, 42, 48, 54, 58,62, 64, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	LC	LC	Appendix I	Appendix I
sperm whale	cachalote	*Physeter macrocephalus*	2, 4, 6, 9, 22, 23, 25, 28, 30,33, 36, 41, 61, 62, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	VU	VU	Appendix I/II	Appendix I
orca	orca	*Orcinus orca*	1, 4, 5, 6, 7, 9, 14,15, 20, 21, 28, 30, 33, 34, 36, 37, 39, 41, 45, 46, 47, 48, 50, 58,61, 62, 63, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	LC	DD	Appendix II	Appendix II
common dolphin	delfín común	*Delphinus delphis*	18, 19, 20, 21, 29, 30, 31, 32, 337, 34, 36, 64, 65 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	LC	LC		Appendix II
common bottlenose dolphin	delfín nariz de botella**	*Tursiops truncatus*	1, 6, 14, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 41, 46, 58,61, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	VU	LC		Appendix II
Lahille's bottlenose dolphin	delfín mular**	*Tursiops truncatus gephyreus*		EN	VU		
common bottlenose dolphin	delfín nariz de botella**	*Tursiops truncatus truncatus*		DD	--		
Commerson's dolphin	tonina overa	*Cephalorhynchus commersonii*	5, 6, 7, 8, 28, 33, 39, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 58, 61, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks but less likely to be found in Provincial Reserves in Río Negro and Buenos Aires).	LC	LC	Appendix II	Appendix II

English Common name	Spanish Common name	Latin name	Presence in MPA *	SAyDS-SAREM	IUCN	CMS	CITES
Peale's dolphin	delfín austral	*Lagenorhynchus australis*	2, 3, 4, 5, 6, 7, 9, 38, 39,41, 42, 43, 47,48, 49, 50, 51, 53, 58, 61, 62, 66	LC	LC	Appendix II	Appendix II
dusky dolphin	delfín oscuro	*Lagenorhynchus obscurus*	5, 6, 18, 19, 20, 21, 22, 25,27, 28, 29, 30,31, 32, 33, 34, 36, 37, 38, 39, 41, 45, 48,61, 63, 64, 65,66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	LC	LC	Appendix II	Appendix II
franciscana	franciscana	*Pontoporia blainvillei*	1, 14, 15,18, 19, 20, 21, 23, 25, 26, 27, 28, 29,64, 65	VU	VU	Appendix I/II	Appendix II
Burmeister's porpoise	marsopa espinosa	*Phocoena spinipinnis*	1, 10, 14, 18, 19, 282, 33, 34, 36,37, 38, 61, 63, 64, 65, 66 (in addition according to SAyDS-SAREM the species can be found in most coastal protected areas and national parks)	DD	NT	Appendix II	Appendix II
Arnoux's beaked whale	zifio de Arnoux	*Berardius arnuxii*	7, 8, 9, 20, 21, 45, 50,53, 56, 58,61, 62	DD	LC		Appendix I
southern bottlenose whale	zifio nariz de botella austral	*Hyperoodon planifrons*		DD	LC		Appendix I
Andrew's beaked whale	zifio de Andrew	*Mesoplodon bowdoini*		DD	DD		Appendix II
Gray's beaked whale	zifio de Gray	*Mesoplodon grayi*		DD	LC		Appendix II
Hector's beaked whale	zifio de Héctor	*Mesoplodon hectori*		DD	DD		Appendix II
strap-toothed beaked whale	zifio de Layard	*Mesoplodon layardii*		DD	LC		Appendix II
Shepherd's beaked whale	zifio de Shepherd	*Tasmacetus shepherdi*		DD	DD		Appendix II
Cuvier's beaked whale	zifio de Cuvier	*Ziphius cavirostris*		DD	LC	Appendix I	Appendix II

To receive further information about this report, or OceanCare's work, please contact:

Fabienne McLellan
Managing Director
fmclellan@oceancare.org

Nicolas Entrup
Director International Relations
nentrup@oceancare.org

OceanCare
Gerbestrasse 6
P.O.Box 372
CH-8820 Wädenswil
Switzerland
T. + 41 (0) 44 780 66 88
F. + 41 (0) 44 780 68 08
OceanCare
MarineConservationPolicy
oceancare.international
www.oceancare.org

Fundación Cethus
FundacionCethus
fundacion_cethus
E. info@cethus.org
www.cethus.org

ISBN 978-3-9525671-0-4