



WWF

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WWF – SUPPORT FOR SCIENCE

WWF FUNDED CETACEAN RESEARCH AT THE 60TH MEETING OF THE INTERNATIONAL WHALING COMMISSION

It is notoriously difficult to study cetaceans – whales, dolphins and porpoises – in the wild, due to their marine habitats and often complex lifecycles and behavioural patterns. However, strong scientific research is essential in order to allow for effective and appropriate conservation and management of cetacean populations.

There is a wealth of excellent scientific research being conducted on cetaceans around the globe. Here we present abstracts of recent research conducted with WWF funding, in collaboration with our associate office Fundación Vida Silvestre Argentina (FSVA), on some of the most critical threats to cetacean populations; bycatch, ship strikes and climate change. Understanding the impact, scale, and dynamics of these threats is critical if they are to be reduced to the lowest possible levels. This year's IWC meeting is in South America for the first time in almost a quarter of a century. As such, these papers focus on threats to cetaceans in Latin America and the Southern Ocean.

We also present here the abstract of a recent review of the scientific literature on the issue of interactions between whales and fisheries. The dangerous notion that whales need to be culled in order to increase fish stocks available for human consumption has gained some political ground in recent years, but is not supported by scientific evidence, and in fact, more and more science is indicating that the majority of whale species do not have a negative impact on fisheries resources utilised by humans.

For full versions of any of these papers, please contact Wendy Elliott Wellriott@wwfint.org

Satellite tracking of Franciscana Dolphins *Pontoporia blainvillei* in Argentina: preliminary information on ranging, diving and social patterns.

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ABSTRACT

The Franciscana dolphin is one of the most threatened small cetaceans in the Southwestern Atlantic. It is estimated that about 650 dolphins are by-caught in gillnets each year, representing over 2% of the estimated abundance for the coastline of Argentina. Currently, all Franciscanas in Argentina are considered to belong to a single stock. However, knowledge about movement patterns has been scarce; such data are critical for evaluating impacts and establishing effective protection measures. With the objective of providing information about their ranging patterns and building upon the results of tagging with VHF transmitters during 2005, small satellitelinked transmitters (Wildlife Computers SPOT or Splash tags) were attached to the dorsal fins of Franciscana dolphins captured and released in Bahia Samborombon in March 2006 (n=4) and in Bahia San Blas in March 2007 and 2008 (n=4 each year). These two Argentine bays are protected areas separated by about 700 km. Individuals were tracked via CLS/Argos for up to 261 days in Bahia Samborombon (two females and two males) and up to 189 days in Bahia San Blas (three females and one male in 2007, 2 females and 2 males in 2008). Home ranges from 2006 and 2007 were calculated using Kernel methods. Contrary to previously accepted descriptions of a single stock moving along the entire coast of Argentina, all tagged individuals exhibited localized movements, with an average home range of 150 km² in Bahia Samborombon (53% of locations within the protected area), and 345 km² in Bahia San Blas (100% of locations within the protected area). In addition to providing location information, three of the satellite-linked transmitters deployed in March 2008 in Bahia San Blas were equipped with time-depth recorders (Wildlife Computers Splash tags). Even though the dive data are still very preliminary as this is ongoing research, the consistency of patterns across the three dolphins over the initial period appears striking. Typically, the dolphins are swimming at a depth of less than 15m, and a typical dive lasts less than 1.5min. The dolphins have been recorded to dive to 30 to 35m, which would approximate the deepest points in the range they have used to date. Each dolphin has demonstrated an ability to make occasional dives lasting in excess of 4-5min. In 2008, all 4 dolphins were programmed with the same duty cycle in order to be able to examine social patterns. Findings over the first 77 days of tracking indicate strong associations initially for each pair caught together, with the recent separation of one pair. Findings from tracking and recent genetic studies suggest that the current designation of a single population ranging over the entire Argentine coastline is incorrect. The suggestion of small ranges in bay areas of heavy artisanal fishing pressure increases the urgency with which more effective protective measures need to be implemented for the species, and may allow different approaches from those applied to widely-ranging populations.

IWC Scientific Committee Meeting, Santiago, Chile, June 2008 SC60/BC4

Whales and the city: A southern right whale ship strike scenario in Peninsula Valdes?

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ABSTRACT

From 1974 to 2004, southern right whale population of Península Valdés has grown at an annual rate of approximately 7%. Coincidentally, in the same time period, the human population of the city of Puerto Madryn and vessel activity in the bay in front of the city (Bahía Nueva) had the same average annual growth rate of 7%. As a consequence, in Bahía Nueva whales and ships share a restricted space where social, economic and environmental interests come together. In this study the situation was examined through the use of physical attributes and the identification of a network of institutions and actors that constitute the social dimension. Geographic Information System (GIS) was used to integrate bathymetry, urban shoreline and coastal attributes, and vessel and whale use of the bay. Patterns of use of coastal waters were analyzed through whale and vessel sightings, tracks and paths at micro and meso scale level. A number of scenarios for the bay were generated, based on three main dimensions: vessel activity, abundance of whales in the bay, and the symbolic values of the whales. Paradoxically, against conservationist's efforts a trilemma emerges: In a scenario of whale population growth, ship strikes increase as well as the social conflicts related to the symbolic value of whales. These scenarios trigger a necessary debate about future plans of action that could affect southern right whale conservation, wildlife tourism and the regional economy.

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Assessing the Impacts of Future 2°C Global Warming on Southern Ocean Cetaceans

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ABSTRACT

Predicting the impact of global warming on polar marine ecosystems requires the combined efforts of climate modelers and marine ecologists. A subset of Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) climate model output for emission scenario 'Special Report on Emission Scenarios' (SRES) A1B (doubling of CO₂ from 360 and stabilizing at 720 after 2100) was used to identify the time period at which globally-averaged surface air temperature will have increased by 2°C above pre-industrial levels. Criteria used to identify a subset of the better IPCC AR4 climate-model outputs for emissions-scenario A1B are provided, and an *ensemble* of models is selected to examine impacts on cetaceans in the Southern Ocean. The potential impacts of the predicted change in Southern Ocean sea-ice extent, concentration and seasonality, water masses, ocean circulation and frontal positions on resident cetacean populations (i.e. Antarctic minke whales *Balaenoptera bonaerensis*) and migratory cetaceans are examined for the time of 2°C warming. Varying with specific Southern Ocean sector, Antarctic minke whales are expected to lose 5-30% of ice-associated habitat in the Antarctic by the year of 2°C warming (i.e., 2042 for the ensemble

average). Migratory cetaceans will travel farther (~3-5° latitude) to reach important Southern Ocean fronts where they forage. The potential impact of the southward displacement of Southern Ocean fronts and watermass boundaries (i.e. Polar Front and Southern Boundary of the ACC) is a reduction and compression of the frontal-associated habitat of Southern Ocean cetaceans around Antarctica. As these frontal features are seasonally important to migratory cetaceans (i.e., blue whale *Balaenoptera musculus*, humpback whale *Megaptera novaeangliae*, fin whale *Balaenoptera physalus*, and sperm whale *Physeter macrocephalus*), it suggests a compression and reduction of valuable foraging habitat. The loss of 5-30% of ice cover is expected to reduce the availability of krill *Euphausia superba* upon which resident and migratory cetaceans, and the Antarctic ecosystem, depends.

Are whales eating too many fish, revisited.

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ABSTRACT

Has “scientific research has shown that whales consume huge quantities of fish making the issue a matter of food security for coastal nations”, as stated in the St Kitts & Nevis Declaration of the International Whaling Commission? Building on other recent reviews, this paper assesses recent work presented by scientists in support of this view. Significant flaws are found in Murase *et al*'s (2007) recent publication on prey preference in two *Balaenoptera* species in the waters off Japan. The results of the research program on the influence of marine mammals on fisheries in the Barents Sea are compared with other Norwegian research on the same system. A model that includes fish and fisheries provides a good representation of what has happened in the system, and does so without including any information from marine mammal predation. Models based on the assumption that marine mammal predation is important in the system fail. This suggests that the influence of marine mammals on the fish-fisheries system in the Barents Sea is trivial. Where good data are available, there is no evidence to support the contention that marine mammal predation presents an ecological issue for fisheries. Suggestions that fisheries problems can be attributed to whales consuming huge quantities of fish distract attention from the root causes of these problems: fisheries mismanagement.