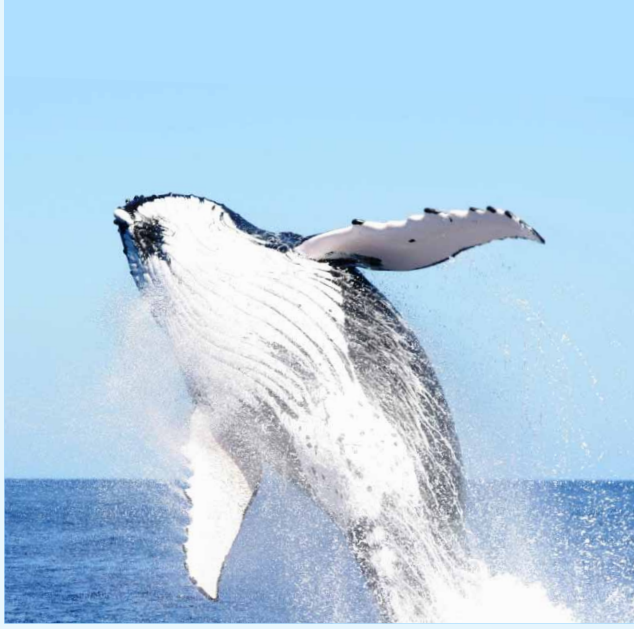
Ocean Voices
Lessons from the Whales for the CBD
Humpback Whales in Oceania

Humpback mother and calf in Tonga 2009. Photo: Doug Allan.

The humpback whales (*Megaptera novaeangliae*) of Oceania, and their story from whaling to whale watching, illustrates the changes in society's values and a shared responsibility for their recovery. Importantly, lessons from Oceania's humpback whales illustrate the commitment and investments needed to ensure trends of biodiversity loss are reversed in line with CBD goals; and the appropriate time scales for this to take place for such long-lived species.

The sixth Conference of the Parties to the Convention on Biological Diversity adopted the Strategic Plan for the Convention in Decision VI/26. The Decision says "*Parties commit themselves to a more effective and coherent implementation of the three objectives of the Convention, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.*"

Whales and dolphins hold a special cultural significance throughout Oceania but their stocks have been depleted largely due to over-exploitation. Many large whales are seasonal visitors, migrating from Antarctic feeding grounds each summer to over-winter and breed in the waters of Pacific Island Countries and Territories (PICTs). In the 20th Century, at least 200,000 humpback whales were killed in the Southern Hemisphere. Many of these were Pacific island-born humpback whales killed on their feeding grounds in the Southern Ocean, in particular over a four-year period between 1958 and 1962.



Although they did not generally profit from the exploitation of the whale stocks in the 19th and 20th Centuries, whale-watching now provides a significant economic benefit for many Pacific countries. Greater knowledge of the economic value of whales, combined with strong cultural ties, is motivating efforts to ensure their conservation in many Pacific islands. The Secretariat of the Pacific Regional Environment Programme (SPREP) puts forward this paper as an example of stakeholder collaboration and commitment aimed at the conservation and protection of humpback whales in the Pacific Islands region.

The highly migratory behaviour of humpback whales requires active partnerships between governments, inter-governmental organisations, non-government organisations, communities and tourism and fisheries sectors to achieve effective conservation. In 2000, Parties to the CBD committed to the reversal of the global trend of biodiversity loss. Pacific island governments have responded to this call by taking a range of national and regionally collaborative actions to protect their remaining cetacean populations.

Status and Trends of Humpback Whales in Oceania

Every year, humpback whales return to over-winter in the same Pacific island groups, where they are often found close to shore. Here they can be studied far more easily than on their feeding grounds in the remote and often hostile Southern Ocean. Each whale can be individually identified by the pattern of markings on the underside of its tail fluke and by its genetic make-up. Other large whale species generally remain further offshore than humpbacks and are therefore not as easily studied.

For over a decade, research on humpback whales has been conducted by members of the South Pacific Whale Research Consortium, who have provided advice to SPREP and Pacific Island governments. This research on known breeding grounds across the Pacific Islands region indicates that in 2005, at best, the population of humpback whales in the Pacific islands region numbered only 3,500. Even this optimistic estimate represents a decline of over 70% from estimated former levels. Humpback whales in Areas IV and V of the Antarctic (which could include whales over-wintering in the Pacific Islands) are still listed as potential targets for Japan's whaling programme, JARPA II.

Research can now provide with reasonable confidence data on the population and trends for humpback whales in both eastern Australia and Oceania. The eastern Australian sub-population of humpback whales numbers between 7,000 and 8,000 animals with an estimated 10% increase per annum. By comparison, the Oceania population assessed across all Pacific island breeding areas, from New Caledonia to French Polynesia, shows a much lower trend in recovery rate (and in some areas, no discernible trend at all). It remains unclear why Oceania humpbacks are showing lower rates of recovery. Figure 1 shows a comparison of the trends for the two populations.

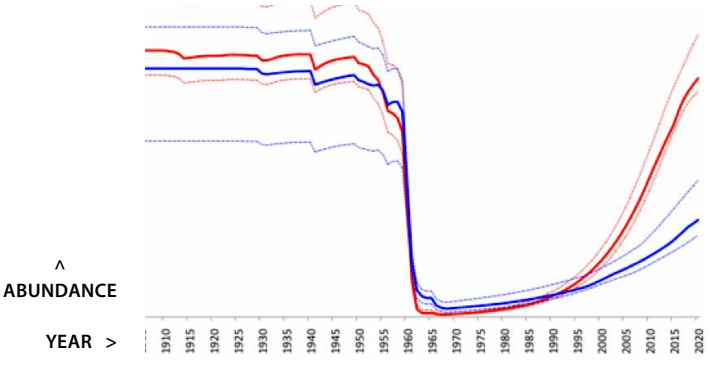
If CBD goals for biodiversity recovery are applied to these whales key questions can now be answered:

How many humpback whales prior to whaling?
- Eastern Australia: 22,000-25,700
- Oceania: 17,800-20,600

How fast are these populations growing?
- Eastern Australia: 10.4-10.5%/year
- Oceania: 5.1-6.4%/year

What is the current level of recovery?
- Eastern Australia: 44-46%
- Oceania: 21-30%

How long to 'ecological' recovery?
- 2061 (50 years)



Source: Jackson et al, 2009

At least another 50 years are needed for Oceania's humpback whales to recover enough to fill the ecological role they had prior to whaling, and biodiversity commitments need to recognize this. In cases like this, the dynamics of different populations of the same species need to be understood in order to foster recovery.

Collaborative Conservation Measures Taken by PICTs

PICTs have recognised that they need to take urgent and coordinated action in a number of ways for the conservation and management of humpback whales in the region. In addition to their support for the IWC's global moratorium on whaling (through the Forum Leaders' Meeting in 1998), the countries and territories of the Pacific Islands have taken a number of steps to collaborate in the conservation and recovery of depleted populations of humpback whales and other cetaceans.

(A) SANCTUARIES IN THE PACIFIC ISLANDS REGION

Since 2001, the following SPREP members have declared whale sanctuaries in their waters:

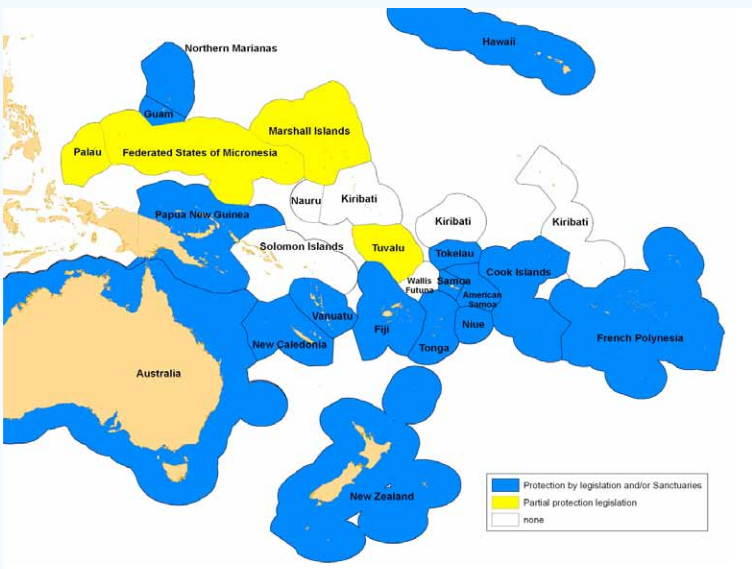
Australia, Cook Islands, Fiji, French Polynesia, New Caledonia, Niue, Papua New Guinea, Samoa, American Samoa, and Vanuatu.

In April 2010, Tokelau also announced its intention to declare a marine sanctuary within the Tokelau Exclusive Economic Zone (EEZ). The sanctuaries together total over 11 million square km of ocean.

Although significant progress has been made on conservation of cetaceans at a national level, gaps in protection measures exist. PICTs that have declared whale sanctuaries and/or developed a management plan for their national sanctuary are limited in their ability to implement them. This is not due to a lack of commitment or skill, but to insufficient capacity and funds. Consequently, these initiatives often lack the management framework and resources to maximise their conservation value.

(B) CETACEANS AND NATIONAL BIODIVERSITY STRATEGIC ACTION PLANS (NBSAPS)

Whales and dolphins are frequently mentioned in National Biodiversity Strategic Action Plans (NBSAPs) of Pacific island countries. While NBSAPs fulfil member country commitments under the CBD, for most countries, the plans are general and non-binding.



(C) CMS MEMORANDUM OF UNDERSTANDING FOR THE CONSERVATION OF CETACEANS AND THEIR HABITATS IN THE PACIFIC ISLANDS REGION

Most of the Pacific island states whose waters are overwintering grounds for humpback whales are not members of the IWC, which was essentially established to facilitate whaling. They have instead, looked to the Convention on Migratory Species (CMS) as the framework for an international conservation instrument for the protection of whales and dolphins in their waters. CMS addresses many of the other threats to whales and dolphins than hunting, and has proved to be an attractive vehicle for PICTs in cetacean conservation.

The CMS Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region, which took effect when it was opened for signature at the annual SPREP Meeting in September 2006, has now been signed by thirteen Pacific countries, one territory and seven collaborating organisations.

Signatories to the MoU have adopted an Action Plan that is based on the Pacific Whale and Dolphin Action Plan 2008-2012, developed and endorsed by all SPREP governments. The Action Plan is focused on mitigation of the numerous human-induced threats to cetaceans in the region.

(D) PACIFIC WHALE AND DOLPHIN ACTION PLAN

SPREP has coordinated the development and implementation of a series of plans for the conservation of marine mammals since the early 1990s and the SPREP Whale and Dolphin Action Plan 2008-2012 is the current iteration. The Plan, which is part of SPREP's Marine Species Programme, guides the activities of government agencies and NGOs in 21 countries and territories over an area of more than 30 million square kilometres and has been endorsed by all SPREP members.

(E) OCEANIA HUMPBACK WHALE RECOVERY PLAN

In 2009, in collaboration with the South Pacific Whale Research Consortium, SPREP proposed the development of an Oceania Humpback Whale Recovery Plan (OHWRP), to provide a framework for a coordinated effort to ensure recovery of this species within the Oceania region through appropriate science-based management. The OHWRP aims to contribute to implementation of eight of the nine key theme areas of the SPREP Whale and Dolphin Action Plan 2008 – 2012, and is also intended to enhance capacity building across the Pacific island region. Current and potential threats to humpback whales in the region have been outlined and prioritised. This proposal has been endorsed by SPREP member governments, and work is underway.

Marine Mammal Sanctuaries in national waters in the Pacific Islands

Pacific Island countries and territories have taken significant actions at regional level, e.g., by endorsing the SPREP Whale and Dolphin Action Plan; at international level, e.g., CMS Pacific Cetacean MOU; and in many cases at national level, e.g., establishing EEZ whale sanctuaries to conserve and manage cetaceans, including humpback whales. These measures have demonstrated some success but clearly need more resources for implementation over a realistic timeframe for recovery of these long-lived species.

Whale and Dolphin Watching and Economic Benefits for the Pacific Islands

Whale and dolphin-watching is a good example of the economic benefits that can be gained from conservation. In 2006, worldwide expenditure on whale and dolphin watching was estimated to be more than US$1,500 million. Despite the extreme depletion of humpback whale populations in the Pacific Islands, whale-watching is booming. A recent review of whale-watch tourism in the region describes a 45% annual growth in the number of whale-watchers between 1998 and 2005. It is estimated that in 2005 the total economic benefit from whale and dolphin watching tourism in the Pacific islands region exceeded US$21 million.

Whale-watchers come to the Pacific Islands region to enjoy both its cetaceans and its natural beauty. Of the 21 PICTs, 14 are engaged in some form of whale- or dolphin-watching, including the Cook Islands, French Polynesia, Guam, New Caledonia, Niue, Papua New Guinea, Samoa, the Solomon Islands, and Tonga. Seventy percent of inbound tourists say that humpback whales play a major role in selecting Tonga as their holiday destination.

There are concerns, however, over the potential adverse impacts of repeated exposure of humpback whales to boats, particularly in critical calving and resting areas. Recognising the value of whale-watching to several PICT economies, and the need for a precautionary approach, SPREP and key NGO partners have advocated for well-managed and sustainable whale-watching throughout the region. In 2008, at a workshop convened by SPREP and NGO partners, the Pacific Island Regional Guidelines for Whale and Dolphin Watching were developed for application throughout the Pacific Islands region. These guidelines provide a regional consistency in the management of whale watching to best practice international standards.

Whale and dolphin watching tourism is increasing in the region. Pacific Island states and communities are still paying the price for past unsustainable whaling, which limits the economic opportunities from this form of tourism.

The Legacy of Commercial Whaling

Although early whalers in sailing vessels were unable to catch faster-swimming baleen whales such as humpback whales, it is clear that the impact of these early whalers on slow-moving sperm and southern right whales was profound. Even now, nursery groups of female and juvenile sperm whales are rarely reported from Pacific breeding areas such as Kiribati, where hunting was particularly intense. However, by the early 20th century, the use of explosive harpoons and motorised catcher boats saw even the largest and fastest whale species being hunted. The development of factory ships resulted in whalers extending their range to newly-discovered Southern Ocean feeding grounds of the great whales. Carcasses could now be processed at sea without the need for land stations.

More than two million large whales were killed in the Southern Hemisphere between 1904 and 2005. This includes around 725,000 fin whales, 360,000 blue whales, 400,000 sperm whales and at least 200,000 humpback whales. The Southern Ocean feeding grounds for most of the Pacific Island great whales were established as a sanctuary by the International Whaling Commission (IWC) in 1946. However, when their protection was removed in 1954, whaling fleets took unsustainably large catches, many of them illegally, particularly of humpback whales during the years 1958-1962.

The introduction of whaling technology to Tonga in 1899 led to the development of a subsistence hunt for humpback whales, mainly the slower moving mothers and calves. International and local concern at the decline in humpback whales and the importance of Tonga as a breeding ground for this species led then King Taufa'ahau Tupou IV of Tonga to ban all whaling in Tongan waters in 1978. Today, all cetaceans in Tonga are fully protected under law.

In 1982, the IWC agreed by a three-quarters majority to implement a ban on commercial whaling. This moratorium remains in place and has been largely effective in halting the decline towards extinction of several southern hemisphere whale species, though numbers of whales seen in the Pacific Islands region today still remain low.

Pacific Island people and states were once the stewards of abundant and diverse whale populations. Unsustainable and illegal whaling, by non-Pacific island states means that whale populations, including Oceania's humpback whales, are a mere remnant of what they once were.

Current Threats to Whales in the Pacific Islands Region

Although the Pacific islands region is relatively remote and sparsely-populated, the highly migratory behaviour of whales and the global impacts of industrialisation have exposed cetaceans to a whole range of new human-induced threats. Pacific island countries have responded to these threats by developing strategies and tools to mitigate these impacts, including the SPREP Whale and Dolphin Action Plan 2008-2012, and the CMS MoU on Pacific Island Cetaceans.

WHALING

Oceania humpback whales are currently listed as a target for scientific whaling under Japan's JARPA II. The proposed hunting on feeding grounds for Oceania whales may selectively impact on Pacific island-born humpback whales, a population recognised as Endangered by IUCN (Red List 2009).

BY-CATCH AND ENTANGLEMENT

One of the most significant current causes of mortality for many cetaceans is by-catch from fisheries interactions. Although specific data are not available for the Pacific islands region, gill nets, made of very fine yet strong nylon twine, and tuna purse-seiners are known to be responsible for the unintentional deaths of various cetacean species worldwide. Interaction with fishing gear outside the Pacific Islands region is also a significant problem. Over the last few years, humpback whales have arrived in the waters of a number of Pacific Islands entangled in fishing nets, longline gear and cray-pot rope, which they may have carried for many months and over several thousand kilometres. Entanglement can result in blood poisoning or starvation. Plastic makes up 60 – 80% of all marine litter found both on beaches and in the ocean and also poses risks to cetaceans through entanglement and ingestion.

PERSISTENT ORGANIC POLLUTANTS

Very high levels of persistent organic pollutants (POPs) and heavy metals can be found in long-lived top predators such as whales and large pelagic fish. High levels of these substances may result in impaired reproduction, indirect mortality through immuno-suppression and direct mortality from poisoning. The effect of POPs pollution on Pacific island humpbacks is unknown.

NOISE

All cetaceans, but baleens, in particular, are vulnerable to anthropogenic noise in their environment. Different species are likely to be affected by different types of noise pollution. Some mass strandings of beaked whales have been linked to the use of mid-frequency sonar (2 – 10kHz) in military activities. Large scale exploration for hydrocarbons and other minerals occurs in several PICTs, notably Papua New Guinea, New Caledonia, and French Polynesia, but there are currently no data to assess the impacts of such activities.

VESSEL STRIKE

Large ships travelling faster than 14 knots pose the greatest threat to whales, although small boats are also known to cause threat. Large whales including humpback, minke and Bryde's whales have been involved in suspected fatal collisions in Tonga, Hawaii and New Zealand , while several large whales have reportedly been struck by high speed ferries in French Polynesia.

CLIMATE CHANGE

Global climate change has already resulted in a rise in oceanic water temperatures and a further rise is predicted. The effects are likely to be most severe at the poles, with predicted changes in oceanographic processes, such as upwelling events. Like the other large baleen whales, humpbacks feed almost exclusively on krill (Euphausia superba), a small crustacean found in the high latitudes of the Southern Ocean, which has a close relationship with Antarctic sea ice. There has been a 20% reduction in Antarctic sea ice since 1953, and as a result critical foraging habitats for species such as humpbacks, are likely to be reduced. This is compounded by the growing commercial fishery for krill (now being used in pharmaceuticals and as feedstock for fish farming), which may further reduce its availability for baleen whales.

Because of its role as a carbon sink, the relative acidity of oceanic waters increases with a rise in atmospheric carbon dioxide. Crustaceans such as krill may be especially vulnerable to such change, because it may affect their ability to form their body shells. This may change the structure and biodiversity of high-latitude ecosystems and have direct consequences for humpbacks and other Pacific Island whales dependent on the Southern Ocean as their feeding ground.

Increasingly the conservation management of cetaceans needs to address a larger number of threats beyond whaling. Research and monitoring investments are needed to understand and mitigate these threats where possible in order to foster the continued recovery of these species. Clearly, a combination of resumption in whaling and these additional threats will jeopardise species recovery.

The Outlook for Pacific Island Whale Populations

Populations of large whales over-wintering in the Pacific Islands region were over-exploited during the last two centuries by whaling fleets mostly operating on their summer feeding grounds in the Southern Ocean. For most species, there is insufficient information on their current status and trends to know whether CBD goals are being achieved. For humpback whales, however, it is now clear that the recovery is both patchy and slow – to such a degree that IUCN in 2008 reclassified the Oceania humpback population from Vulnerable to Endangered. Even these small and endangered populations, however, are demonstrating that conservation can provide sustainable economic benefits to coastal communities. But many PICTs are limited in such opportunities because of past unsustainable and illegal whaling that devastated their local whale populations.

At a time of increased international concern about the potential impacts of climate change and other human-induced stressors on whales, increased investment is warranted to secure the future of its humpback whales and other cetacean species for the enjoyment of future generations of Pacific Islanders.

The Way Forward...

The Pacific Islands region is vast, the economies are small, and the development and implementation of the regional action plans and associated mechanisms such as the CMS MoU would not be possible without the partnerships between governments and IGOs and the continued support of NGOs to complement and support national actions. Over the past decade, important and productive partnerships have been developed between national governments, SPREP, and various NGOs, including the International Fund for Animal Welfare (IFAW), Whales Alive, the South Pacific Whale Research Consortium (SPWRC), World Wide Fund for Nature (WWF), the Whale and Dolphin Conservation Society (WDCS), Conservation International (CI), and the Pew Environment Group.

In association with local communities in the Pacific Islands region, and with the support of donor countries, these partnerships have collaboratively developed and implemented a number of successful research programmes and management measures for the conservation of humpback whales and other cetacean species. In the future, funding from sources such as the Global Environment Facility (GEF) will be needed to deliver targeted capacity-building and resourcing to allow for the implementation of ambitious programmes for the conservation of whales and dolphins in the region. Since the CBD commitment in 2002 to reverse biodiversity loss, the measures put in place at national, regional and international level for whales in the Southern Ocean have, for the most part, fostered recovery.

However, whales and other oceanic species face an ever-increasing array of threats.

The story of Oceania's humpback whales illustrates important lessons for CBD parties in biodiversity conservation.

Most notably these include:

- The need for long term commitment and investment to foster recovery
- Investments and commitments at local, national, regional and international levels are fundamental to success
- Economic benefits from conservation of species like humpback whales can clearly accrue over time.

The CBD COP10 in Nagoya offers a chance to reflect on these lessons and build long-term commitment for the conservation of biodiversity, including cetaceans.

Photo: Doug Allan

This document summarises a more comprehensive report available directly from SPREP.

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