



**Report of the Annual Meeting of the  
South Pacific Whale Research Consortium**

1-4 February 2011  
Apia, Samoa

*Address for correspondence:*

The Secretariat  
South Pacific Whale Research Consortium  
P.O. Box 3069  
Avarua, Rarotonga  
Cook Islands

**ABSTRACT**

Members of the South Pacific Whale Research Consortium met at the South Pacific Regional Environment Programme (SPREP) headquarters in Apia, Samoa from 1-4 February 2011 to discuss (i) the results of fieldwork and analysis conducted during 2010 and, (ii) conservation initiatives in the region. As with previous surveys and research dating back to the austral winter of 1999, surveys of humpback whales were conducted to collect genetic samples, individual identification photographs and song recordings with a broad regional coverage: New Caledonia, Cook Islands, French Polynesia, Samoa, American Samoa, New Zealand, Hervey Bay, Norfolk Island, and Niue. A ongoing comparison of quality-controlled fluke photo-ID catalogues from the years 1999-2004 revealed only limited interchange between eastern Australia and Oceania (and only to New Caledonia, the closest breeding grounds of Oceania) and further evidence of interchange among breeding grounds of Oceania. The major focus of this work was to develop an estimate of abundance for the synoptic period, and after careful consideration, the POPAN 'super-population' estimate (3,520 whales  $CV = 0.1$ ) was the best overall estimate as it includes resident animals and those that may be migrating past to unsurveyed regions. Ongoing comparison of microsatellite genotypes from samples collected throughout the South Pacific continues to provide evidence of interchange among breeding grounds and between breeding grounds and migratory corridors of the South Pacific. A preliminary comparison was also done between the SPWRC's catalogue of DNA profiles (Oceania and Antarctica) to those held by the Australian Antarctic Division (WA, Eden, Tasmania and Antarctica Area V). The Conservation working group continued to make excellent progress in addressing key conservation issues in the region. A major achievement in 2010 included the development of a draft Oceania Humpback Whale Recovery Plan that will be presented to SPREP later in the year. Members once again expressed their opposition to Japan's continued lethal research programme in the Antarctic and their concern that the ongoing or planned hunt of fin and humpback whales could negatively impact small, recovering populations that are the subject of long-term non-lethal research by the Consortium.

## **PARTICIPANTS**

*Executive Committee:* Scott Baker (University of Auckland, NZ & Oregon State University, USA), Mike Donoghue (Conservation International, Samoa), Michael Poole (Marine Mammal Research Programme, French Polynesia & National Oceanic Society, USA), David Paton (Blue Planet Marine & Southern Cross University, Australia), Nan Hauser (Cook Islands Whale Research, Rarotonga & Center for Cetacean Research & Conservation)

*Executive officers:* Rochelle Constantine (University of Auckland, NZ), Mike Noad, (University of Queensland, Australia), Debbie Steel (University of Auckland, NZ & Oregon State University, USA), Sue Taei (Pew Pacific Node Coordinator, IFAW & Conservation International, Samoa)

*Members:* Juney Ward (Division of Environment & Conservation, Ministry of Natural Resources & Environment, Samoa), Anton Van Helden (Te Papa), Lui Bell (SPREP), Nadine Bott (DOC, NZ), Dan Burns (SCU, Australia), Olive Andrews (Whales Alive, Australia), Ellen Garland (University of Queensland, Australia).

*Invited participants:* Kosi Latu (SPREP, Samoa), Lyndon Brooks (SCU, Australia), Titimanu Simi (Division of Environment & Conservation, Ministry of Natural Resources & Environment, Samoa), Mareva Poole (Marine Mammal Research Programme, French Polynesia), Anjanette Baker, Stuart Chape (Programme Manager - Island Ecosystems, SPREP), James Atherton (Conservation International, Samoa), Schannel van Dijken (Conservation International, Samoa), Pouvave Fainuulelei ( Department of Economic Development and Environment, Tokelau), Robbie Marsland (IFAW, UK), Paul Anderson (SPREP, Samoa), Greg Shirley (UN, Samoa)

*Apologies:* Phil Clapham, Claire Garrigue, Simon Childerhouse, Marc Oremus, Renee Albertson, Jooke Robbins, David Mattila

## **INTRODUCTION**

The eleventh annual meeting of the South Pacific Whale Research Consortium (SPWRC) was held at SPREP in Apia, Samoa from 1<sup>st</sup> to 4<sup>th</sup> February 2011. Lui Bell welcomed all participants to the meeting and asked Kosi Latu to provide the official welcome on behalf of SPREP. The meeting was opened with a prayer by Pouvave Fainuulelei, Director of the Department of Economic Development and Environment in Tokelau. A List of participants and apologies is available in Appendix 1.

### SPREP opening and welcome

Kosi Latu welcomed all participants to SPREP and Apia, Samoa. He noted that the Consortium started simply as a group of scientists but has grown into a strong advocate in the region particular. He recognised that the Consortium was heavily involved in the planning and development the SPREP Whale and Dolphin Action Plan (WDAP). The quality of work and contribution of the SPWRC was acknowledged. The SPREP marine species programs on cetaceans, dugongs, marine turtles and sharks were discussed. The importance of cooperation through MoU's to facilitate work within the South Pacific region was emphasised including between CMS and SPREP and the SPWRC and SPREP. The continued commitment to this MoU was re-affirmed. The Oceania Humpback Whale Recovery Plan is included as part of this collaboration between SPREP and SPWRC. He recalled how important it is to bear in mind that the Pacific is made up of many small island groups that have limited capacity and are highly vulnerable to global impacts. To aid these nations, the importance of information, resources, and sharing of skills with the islands is critical. Research is important but supporting local researchers and projects at the community level was also essential such as the cetacean strandings network. SPREP reaffirmed its commitment to the Whale and Dolphin Action Plan and the need to strengthen links with SPWRC and others.

### SPWRC welcome

Mike Donoghue started by thanking SPREP for hosting the 11<sup>th</sup> annual meeting and for their continued collaboration. IFAW and PEW were also thanked for their ongoing support, both practical and financial. Olive Andrews, Sue Taei and Lui Bell were thanked as the local organisers of the meeting.

Mike reflected with satisfaction over the last decade of accomplishments in SPWRC. The SPWRC originally came together to share data on humpback whales in the region. When SPWRC was formed the following year, it aimed to provide high quality scientific data to supporting the Pacific region through non-lethal research. We wanted to investigate the abundance and trends of humpbacks in the region which has been achieved over the last decade. Some of the successes the Consortium has been involved with include whale sanctuary's that span several million square kilometres, a MoU for cetaceans in the region, and specifically that no humpbacks have been taken in Antarctic by Japan's 'scientific' whaling programme due to pressure from South Pacific governments. The Consortium has assisted with two SPREP WDAP, many Pacific Island Governments, have helped develop a sustainable whale watching industry in the region, have advised the Solomon Islands on the dolphin trade, and provided reliable, robust and high quality advice.

Mike expressed, on behalf of the Consortium, his thanks to core partners IFAW, SPREP, and also to other supporters the Australian Government, PEW and WDCS. Scott Baker added that PEW has recently provided a new grant for small cetacean research in the Pacific. The awareness of governments in the region to anthropogenic threats has increased and the halt and decline of these threats are starting to be talked about. Humpbacks are still only slowly recovery in the Pacific. The success story for the region is whale watching which is also an excellent mechanism for developing support for conservation.

Olive Andrews presented the draft Agenda which was **agreed** (Appendix 2). Debbie Steel, Ellen Garland and Olive Andrews agreed to act as Rapporteurs (and did a wonderful job).

#### SPREP Whale and Dolphin Action Plan (WDAP)

Lui Bell discussed the WDAP implementation and other activities in the region. This covered programmes, links to national programmes, partnerships, and challenges. The mandate and 'new' vision of SPREP was shared, *'the Pacific environment - sustaining our livelihoods and natural heritage in harmony with our cultures'*. SPREP operates two programs, Pacific futures and Island ecosystems. The current Regional Marine species programme for 2008-2012 (which includes dugongs, turtles, whales and dolphins, and sharks) which was developed by members and partners has been endorsed by the SPREP council. The WDAP goal to conserve whales and dolphins and their habitat for the people and the nine themes were discussed:

1. Collaboration at a national, regional and international scale,
2. Threat reduction,
3. Ecosystem and habitat protection (including management and designation of national whale and dolphins sanctuaries),
4. Capacity building,
5. Education and awareness,
6. Cultural significance and value,
7. Legislation and policy,
8. Research and monitoring (strandings network, baseline surveys, toxicology research),
9. Whale and dolphin based tourism.

Partnerships in the region include with the New Zealand government (e.g. regional marine species programme with SPREP), the Government of China (e.g. marine species programme), DSEWPAC (part of the Australian government), and CMS, SPWRC, IFAW, Operation cetacea, WWF, NOAA and USP.

A large number of challenges in the region were outlined including a lack of funding for a vast ocean area. The review meeting of WDAP 2008-2012 (which expires next year) was proposed for early 2012, possibly in

conjunction with the SPWRC meeting. It was also noted that a regional review of all Marine action plans is to be undertaken.

Mike Donoghue acknowledged all the hard work done by SPREP and especially by Lui Bell. Strandings and national training were discussed including some of the challenges including CITES paperwork, genetic samples and the long time to process permits for sample collection. It was suggested that SPREP should act as a central repository for samples in the South Pacific.

### REGIONAL UPDATES SPWRC FOR 2011

A summary of regional research is included in Appendix 3.

#### *New Caledonia (Claire Garrigue, Aline Schaffar) presented by Rochelle Constantine*

The 2010 surveys extended over 9 weeks (12th of July - 12th of September) for a total of 296 hours of observation at sea over 43 days and 209 hours of observation from a land based station over 38 days. Boat-based surveys were conducted in the Southern lagoon for 84% of the time using a small motorboat and on the seamounts of Antigonion and Banc de La Torche for the rest aboard a 10m motor catamaran. A total of 147 groups of whales totalling 200 individuals were encountered. Fluke photographs were collected of 140 individuals and another 114 individuals were distinguished by dorsal fin only. During the whole 2010 season 199 biopsy samples of humpback whales were collected using a Paxarms system, crossbow or sloughed skin collection. Of 121 hydrophone deployments, 64% detected whale song. Eleven song sessions were recorded. Other species were encountered including spinner dolphin, Indo Pacific bottlenose dolphin, common bottlenose dolphin, minke whale, false killer whale, pilot whale and some biopsy samples of these species were collected. In 2010, a total of 140 groups of humpback whales were sighted from the land based station and positions determined using a theodolite. 55 groups were located less than 5 miles away from the land-based station, which can be used to accurately map distribution and estimate the sighting rate. Of these 55 groups, composition consisted of 5 mother-calf pairs, 21 singletons, 18 pairs, 5 pods of three adult whales or more, and 6 groups of unknown composition. The sighting rate was on average of 1.5 groups of whales per day. Whale watching activities were not monitored this season.

#### *Cook Islands (Nan Hauser)*

The 2010 humpback season (June 15th to November 8<sup>th</sup>) was once again affected by intense wind and weather. By using the lee of the island, we were able to work effectively during some of the season. 68 days were spent on the water for a total of 287 hours effort. In addition, land based sightings were also conducted. Overall, there were 267 humpback sightings from the water and 82 from land, totalling 349 sightings. This is the largest number of whales that anyone can remember passing through the waters of Rarotonga. Much competitive behaviour was observed throughout the season. The total amount of individual humpback whales has yet to be determined for this season. Whales were photo identified but not been matched against the existing Cook Islands or Oceania fluke catalogue. The first whale song was heard on July 26<sup>th</sup> and the last on October 6<sup>th</sup>. Twenty recordings of whale song were made over 11 days and singing was heard by dive companies on 6 other days, totalling 17 days of song heard. Many excellent songs were recorded. Sixty two skin samples and 14 sperm samples (from 3 individual males) were collected. Skin samples were also collected for analysis of microbiology for a project with Woods Hole Oceanographic Institution. *Mesoplodon densirostris* were seen on two occasions (April 14<sup>th</sup> and 17<sup>th</sup>). Both sightings were directly next to FADS (fish aggregating devices). Very sadly, a young humpback calf became entangled in a long line set 12 miles to the west of Rarotonga. The mother became very aggressive with the fishing boat. Despite efforts to free the whale, it was unsuccessful and the calf was lost. The Cook Islands Whale Education Centre renovations have begun and should be complete by Mid April. A gift shop/café and a small theatre have been included with exhibits focusing on whales, dolphins, sharks, turtles, fish, shore animals, shipwrecks and history of the whales in the Cook Islands. A Marine Reserve has been proposed for the EEZ of the Southern Group of the Cook Islands, which include Rarotonga, Aitutaki, Mangaia, Atiu, Mauke, Mitiaro, Palmerston, Takutea and Manuae. We spent 6 very productive weeks working with Munwha Broadcasting

Corporation (South Korea) filming “Tears of the Antarctic” a television documentary that will include the humpback whales of the Cook Islands. *Frontiers Abroad* University groups have visited Rarotonga twice this year to attend courses on Marine Mammals taught by Nan Hauser.

*Moorea, French Polynesia (Michael Poole)*

The 2010 season at Moorea was characterized by consistently high winds and rough seas that made data collection difficult. The late arrival and late departure of the whales was similar to the 2007 and 2008 seasons. Reduced effort was also due to Michael’s absence in September to conduct research in eastern French Polynesia. There was a high percentage of humpback whale calves this season. The first whale was observed on 27 July; the last whales, a duo of adults, were observed on 08 December. A total of 121 whales, of which 21 (17%) were calves, was encountered on 51 (69%) of the 74 survey days. Humpback whales were observed with pilot whales, rough-toothed dolphins, and spinner dolphins. A total of 29 sloughed skin samples were collected from the whales. 1.5 hrs of quality song were recorded. On 21 October, a lone adult sperm whale was observed resting only 150m off the barrier reef at Moorea’s north west corner; ten days later on 01 November this same individual was observed 400m off the reef on Moorea’s north shore. Comparison of dorsal fin and fluke photographs confirm that this is the same sperm whale Michael observed resting on Moorea’s north west corner on 09 January 2009.

*Cook Strait, New Zealand (Nadine Bott)*

The 2010 season in Cook Strait was conducted over a period of 29 days from the 12 June - 10 July. This was the seventh year of this research programme. A total of 231 hours land based spotting was undertaken and 16.4 boat hours. Twenty six humpback whale pods were observed, consisting of 39 individual humpback whales. Seventeen photo identification and 24 biopsy samples were collected. We also observed a live newborn humpback whale calf, complete with foetal folds, during the survey which is the first sighting of its kind in New Zealand waters during the northern migration. The photo IDs collected from the Cook Strait whale survey have been incorporated into the New Zealand Humpback Whale Catalogue. There were 80 anecdotal sightings of humpbacks reported around NZ in 2010, and one new photo ID was obtained. No new resights within the NZ catalogue have been observed. The catalogue now stands at 102 photo IDs. Other cetacean species observed during the Cook Strait whale survey include several pods of killer whales, sperm whale, a minke whale mother and calf, bottlenose dolphins and dusky dolphins. A LEARNZ Wandering Whales virtual field trip for primary school students was undertaken on the Cook Strait whale survey in 2010. About 4000 students were enrolled in the education program, which involved live audio conferences, online videos, 'ask an expert', information and photos on whales, and education exercises. This was the most popular LEARNZ program in 2010. Further information can be found on: [www.learnz.org.nz](http://www.learnz.org.nz).

*Te Papa, New Zealand (Anton Van Helden)*

A new species was recorded for New Zealand, a Pygmy killer whale (*Feresa attenuate*). This highlights the value of ongoing data collection from strandings. The feedback from the touring of Whales Tohora has been positive everywhere the exhibition visited. This exhibition has transformed the way institutions consider exhibitions given the very high visitation and penetration rate from those visiting museums that go to exhibitions. The exhibition is currently in Ontario Science Centre, Toronto and will open on the 21<sup>st</sup> May in the Field Museum, Chicago. There is also the potential for development of a small scale ‘container’ show with possible support from Kiwi Bank. Barbara Todd is developing two books partially aligned to ‘Whales Tohora’ through Te Papa Press. Anton gave a short report on the Canary Islands beaked whale trip with Natacha Agrilar de Solo and Mark Johnson. It was note that many members of the SPWRC supported the development of ‘Whales Tohora’ and have been asked for contributions to whale book.

*Norfolk (Adrian Oosterman) presented by Dave Paton*

The eighth consecutive Norfolk Island Whale Survey (NIWS) was conducted from Tuesday 21 September 2010 to Thursday 28 October 2010. The 2010 NIWS was conducted over 38 days. A considerable amount of time was lost in 2010 due to inclement weather during the season (i.e. 10 days or 26%). During the 2010



NIWS, 118 hours were expended on-effort. Largely as a result of the prevailing poor weather conditions vessel-based observations were limited to a total of four hours on a single day only. Humpback whales observed migrating southward past Norfolk Island during the 2010 NIWS numbered 39 groups with a total of 47 whales. Data obtained during the 2010 survey based on whales observed per on-effort hour, indicate an increase in numbers compared to previous years. The majority of humpback whales were documented from 9-22 October inclusive, accounting for 32 individuals or 82% of the total number observed. On average, 4.2 hours were spent on-effort which is representative of the large number of hours lost as a result of poor weather conditions. On average, 0.4 whales (all species) per hour were observed. Photographic evidence was obtained of a false killer whale and also of striped dolphin. Observers believe that that some humpback observations are likely to be resights of animals observed on previous days.

#### *Niue (Olive Andrews)*

This survey was undertaken in collaboration between Oma Tafua, Whales Alive and Niue Fisheries. Volunteer vessels were provided through Oceans Watch and a total of 157 hours were spent on the water. An inshore opportunistic sightings survey and 130 miles of a line transect survey were undertaken. Forty four humpback whales were encountered on the water with 18 individual fluke-IDs and 3 sloughed skin samples collected. Only 2 mother/calf pairs were seen. Twenty one humpback recordings and one sperm whale recording were taken. New species records for Niue included 1 sperm whale and 2 sei whales. There were also public presentations, school visits, and TV interviews weekly.

#### *East Australian relative abundance estimate 2010 (Mike Noad)*

An eight week land-based survey of humpback whales was conducted from Pt Lookout, North Stradbroke Is, Australia, during June and July 2010. This survey followed the timing and mostly the methodology of previous east Australian surveys using visual observations and theodolite tracking of passing whales during the northward migration. Observations were made every day from 0700 to 1700 daily, weather permitting. In a departure from previous surveys, the observation site was changed from Norm's Seat to the ridge above Frenchman's Beach to gain better elevation and angle of view. Double surveys were conducted at both sites for three weeks in the middle of the survey period to calibrate the old and new sites. Two thousand, four hundred and fifty eight whales were seen from the Frenchman's site during 418h of observations including five calves. There was no significant difference in sighting rates from the two observation sites (paired T-test). Days with at least 5h but less than 10h of observations were normalised to 10h. The average rate at which whales passed over the peak four weeks of the migration (26 June – 23 July) was 84.7 whales per 10h. When placed in the context of previous surveys, this yields a 26 year average population growth rate of 10.8% per annum (95% CI 10.4-11.3%). This demonstrates that the strong recovery of the east Australian population of humpback whales is continuing. The four week average rate, however, is not as high as predicted by previous surveys and may indicate that the high rate of growth observed over the last 26 years is beginning to slow.

#### *Hervey Bay, East Australia (Trish and Wally Franklin)*

The sampling effort in Hervey Bay during 2010 extended over 7 weeks (28th August -15th October), for a total of 336 hours effort over 42 working days. Three hundred and sixteen pods were sampled and 788 humpback whales were observed and photographed. The Hervey Bay Catalogue for the period 1992-2008 has been fully reconciled for intra-season and inter-season re-sights, quality scored and contains 2075 individuals. The photo-ID analysis and reconciliation of the 2009 photography will be completed by January 2011. It is expected to yield a further 250 flukes, bringing the 1992-2009 Hervey Bay Catalogue to an estimated 2825 quality scored individuals. No sloughed skin samples were collected in Hervey Bay during 2010. Twenty-seven hydrophone drops were made, each of 15 minutes duration and distributed across the season. Singing and/or social sounds were recorded on all drops.

#### *Samoa (Juney Ward, Titimanu Simi)*

Vessel based surveys were conducted in Samoa over 12 days in September and October 2010. Eight days of survey were based on the Southern coasts of Upolu Island (20 Sep – 1 Oct) and four days on the Northwestern coasts of Savaii island (25 – 29 Oct). A total of 89hrs were spent searching for cetaceans (average: 7hrs 38mins per day) and 17hrs were spent photographing and sampling cetaceans. The total distance covered was 869km which generally consisted of covering nearshore areas during the early mornings in search of spinner dolphins and humpback whales and moving further offshore (e.g. <7km) in late afternoon in search of other species. A total of 31 sightings of cetaceans were encountered including humpback whales, spinner dolphins, rough-toothed dolphins and Blainville's beaked whale. The Blainville's beaked whale is the first record for Samoa. A pod of unidentified delphinids and a single unidentified whale were also encountered. Overall, 20 humpback whales were observed, 12 of which were photographed and catalogued. A total of 25 unique flukes have been collected and catalogued over the surveyed years. Tissue samples were also collected from humpback whales and spinner dolphins. Humpback whales were seen more on the southern coast of Upolu (e.g. 2.13 whales per day) than Savaii (0.75 whales per day), however there was only 4 days spent in Savaii which could account for the lower encounter rate. Furthermore, it must be noted that throughout the survey, the poor weather conditions (e.g. high swells, strong winds) and the low lying boat platform that was used will also have contributed to the low number of sightings and successful sampling attempts. Pod compositions were made up of singletons, mother-calf pairs and mother-calf-escort. Spinner dolphins were seen on the majority of days on both islands although we observed larger pods in Savaii. There has been an increase in the numbers of reported strandings from the public this year and a total of 5 stranding events were documented. These included a single Cuvier's beaked whale reported from Savaii which is the first confirmation of this whale for Samoa. A single black dolphin was also reported from Savaii which could not be identified because the villagers released the dolphin back alive before we were unable to identify the species. A mass stranding of 3 Cuvier's beaked whale was also reported. Only 1 of the beaked whales was released alive. A rough-toothed dolphin was found dead with a fishing line and hook still attached to its mouth and lastly a single sperm whale which was highly decomposed was also reported. Tissue samples were collected from the Cuvier's beaked whale and sperm whale stranding. Mike Donoghue acknowledged the huge effort from both Juney Ward and Titimanu Simi in getting these surveys running and Mike Noad noted these reports represent an increase in sightings since the survey in 2001.

*American Samoa (Jooke Robbins, David Mattila) presented by Juney Ward*

Humpback whale research continued at American Samoa (AS) in 2010 through a collaborative effort by the Hawaiian Islands Humpback Whale National Marine Sanctuary, the Provincetown Center for Coastal Studies, the American Samoa Department of Marine and Wildlife Resources and the Fagatele Bay National Marine Sanctuary. Coastal surveys were performed from 5 October through 21 October. A total of 64 humpback whale groups were encountered during 13 days at sea. Spinner, rough-toothed and bottlenose dolphins were also encountered. In total, 69 unique individuals were identified by dorsal fin and flukes of 38 individuals were expected to pass SPLASH quality screening. Excluding calves, 12 individuals were seen on more than one day during the season (e.g. max interval = 13 days, mean interval = 7.3 days). Two individuals were matched to American Samoa in previous years (2003 and 2008) and J. Ward re-sighted two others in 2010 at Western Samoa. Three sightings of two American Samoan whales (one male, one female) have been made among Antarctic Humpback Whale Catalog holdings from the Antarctic Peninsula (AP), including one documented round-trip movement of no less than 18,840-km (AP-AS-AP). Project data have contributed to the first U.S. Marine Mammal Stock Assessment for humpback whales at American Samoa and helped to clarify the differentiation and status of Hawaiian insular false killer whales.

*Papua New Guinea (Cara Miller) presented by Lui Bell*

A two week trip to Manus, Papua New Guinea for research training and a cetacean survey was undertaken, funded by the Australian Government. Eight days of line-transect surveys were undertaken on the south side of Manus Island covering approximately 1,200 km<sup>2</sup>. This included photo-ID, acoustics and video recording. Species seen include spinner dolphins, sperm whales, short-finned pilot whales and melon-headed whales. Numerous other species were likely to be present in the region based on in-depth interviews with village

fisherman. Concentrated research training and capacity building including the research team was undertaken. Information sessions, community engagement and awareness including school children were also undertaken.

## **SPWRC CONSERVATION PROGRAM UPDATE 2010**

### *Palau (Olive Andrews)*

Meetings were held in July 2010 with Government departments, Ministers, parliamentarians, and many other stakeholders to promote the potential for a National Marine Mammal Sanctuary. An opportunistic cetacean sightings survey was conducted from marine tourism platforms that included 30 hours on the water spread over 5 days with 3 sightings including spinner dolphins, dugong and bottlenose dolphins. Anecdotal sightings surveys and interviewing were conducted for mapping species occurrence and seasonality with 30 fisherman, tourism operators, government officers, NGO's and other stakeholders. This suggests 12 species are present in the region including sperm whales, pilot whales, melon headed whales, spinner dolphins and Bryde's whales. A public presentation was held and an interview on national media played multiple times. In October 2010, Minister Harry Fritz on behalf of Palau's President and with the support of National Congress and senior Martiach, declared Palau Marine Mammal Sanctuary (630,000km<sup>2</sup>). A report on the feasibility of whale and dolphin watching in Palau was produced.

### *Tonga (Olive Andrews)*

At the 2010 SPREP meeting Tonga signed the CMS MoU for cetacean protection in the Pacific Islands. Whale watching regulations still have not been legislated following a 15 year process, although progress has been made through national workshops. An issues and options paper was written to provide information to HRH Pilolevu, Royal Patron of Whales, and the Government of Tonga that could be used for the development of a national whale sanctuary.

## **PARTNER UPDATES**

### *IFAW (Robbie Marsland)*

It was noted that there are problems at IFAW due to budgetary issues. He reaffirmed IFAW's commitment to funding the Consortium and the importance of continued support in the region. He outlined the position of IFAW about Japanese whaling, Icelandic whaling, and IWC. The Oceania region was supported by IFAW through supporting their support of quality science/research, sustainable and responsible whale watching, advocacy in Australia, New Zealand and the Pacific Islands. He also noted that a new regional director was being recruited. He suggested that people who would like to be contacted by the new regional director get in contact with him at [rmarsland@ifaw.org](mailto:rmarsland@ifaw.org).

### *PEW Environment Group (Sue Tai)*

Warm greetings were conveyed from PEW, and it was also noted that the relationship with the SPWRC was a very happy one. The focuses of PEW's partnerships were (i) helping to find elegant exits from the IWC for Pacific countries and (ii) an end to antagonistic interactions within the IWC. PEW supports a lot of within country work and Sue Tai thanked PEW sincerely for their incredible support. It was noted the priorities were to finish the OHWRP later this year and also the Tonga and Palau sanctuary work.

## **NEW INITIATIVES UPDATES**

### *Eastern French Polynesia (Michael Poole)*

Like at Moorea, consistently high winds, rough seas, and strong rain made data collection problematic in eastern French Polynesia. During take-off from the airport at Tureia Atoll on 06 September, a humpback whale cow/calf pair was observed less than 100m from the reef. Dedicated boat surveys were conducted at 8 islands: the Gambier Islands (considered as a single unit; 06-14 Sept); Temoe (09 Sept); Fakarava (15-18, 22-23 Sept); Kauehi (18-20 Sept); Raraka (19-20 Sept); Toau (21-22 Sept); Hao (26 Sept-03 Oct); and Amanu (29 Sept). Surveys at the Gambier Islands and Temoe Atoll were conducted in 6m and 8m motorboats. At the Gambier Islands, song was recorded, and biopsies were obtained from both the female and calf of a cow-calf



pair as well as from a singer (who was also photo-IDed). At Temoe, we obtained a biopsy from a humpback female of a cow/calf pair; two blows of probable humpbacks were also observed. Moving on to the UNESCO Biosphere of Fakarava, we conducted boat surveys at Fakarava, Kauehi, Raraka, and Toau. Surveys at Fakarava were conducted in a 6m motorboat and a 16m Moorings 4600 catamaran. Spinner dolphins and bottlenose dolphins were observed; blows of a probable humpback cow/calf pair were also observed. Surveys at Kauehi, Raraka, and Toau were conducted in the 16m catamaran. At Kauehi we observed bottlenose dolphins and pilot whales. Photo-IDs were made and biopsies from obtained from 2 bottlenose dolphins and two pilot whales. Humpback whale song and probable sperm whale codas were recorded. At Raraka, we obtained photo-IDs and biopsies from two adult humpbacks and recorded song. At Toau, we obtained photo-IDs of three species: spinner dolphins (plus 2 biopsies), bottlenose dolphins (plus 3 biopsies), and a humpback whale (1 biopsy). We also recorded humpback whale song as well as probable sperm whale codas. At Hao and Amanu, surveys were conducted in a 6m motorboat. At Hao, we obtained biopsies and photo-IDs from three humpback whales and recorded good quality song. At Amanu, we saw no cetaceans but heard very faint humpback song.

#### *Behavioural Response of Australian Humpback whales to Seismic Surveys (Mike Noad)*

The Behavioural Response of Australian Humpback whales to Seismic Surveys (BRAHSS) study began in eastern Australia in 2010. The main objectives of this study are to determine the nature and significance of behavioural reactions of humpback whales to the use of airguns, acoustic devices used by the oil and gas exploration industry. The study will also attempt to determine the aspects of the interaction (e.g. source level, received level, range to and movement of the source vessel, social grouping of the whales) which most influence behaviour. In addition, the study will test 'ramp-up' of airguns to determine whether sequentially starting airguns and building up slowly to full power is effective as a mitigation measure for protecting whales against high acoustic levels. A range of airguns will be used over the four year study with work to be conducted at Peregrine Beach in eastern Australia (2010 and 2011) and off Exmouth on the west coast of Australia (2012 and 2013). In 2010 we used a small (20 cubic inch) airgun at Peregrine Beach to conduct 27 trials. During each trial, one to three (usually two) focal groups were identified at the northern end of the study site and were focally tracked by five land-based theodolite tracking stations. We attempted to deploy Dtags, electronic tags collecting acoustic, dive and motion data, on one or both groups. The acoustic environment was monitored by an array of five hydrophone buoys which could also track vocalising whales, as well as four deployed autonomous recorders. After a minimum of one hour of 'Before' observations, the source vessel deployed the airgun and commenced its transect ('During' period) either eastwards, across the general direction of the migratory stream, or northwards, into the migratory stream. The airgun was active during half the trials ('active trials') but not during the others ('control trials'). After one hour of 'exposure' the airgun was retrieved and the focal whales continued to be followed again for a minimum of one hour ('After' observations). A total of 56 focal follows were successfully completed including 11 with attached Dtags and 22 focal-followed by a small boat in addition to being followed from land. Data analyses are ongoing. This study is a collaboration between the Universities of Queensland, Newcastle and Sydney, Curtin University, the Australian Marine Mammal Centre and the Defence Science and Technology Organisation. It is funded by the Joint Industry Program of E&P Sound and Marine Life (managed by the International Organisation of Oil and Gas Producers) and the US Bureau of Ocean Energy Management, Regulation and Enforcement.

#### *Chesterfield Reef (Marc Oremus and Claire Garrigue) presented by Debbie Steel*

In August 2010 a research trip organised by CRISP and SPREP was conducted to assess the biodiversity of the Chesterfield Reef. This was a 6 day multidisciplinary trip looking at sharks, reef fishes, the benthos, corals, seabirds and marine mammals. Due to logistical difficulties there was limited time spent searching for marine mammals. One humpback and two groups of Indo-Pacific bottlenose dolphins were sighted. This is the first confirmed sighting of Indo-Pacific bottlenose dolphins in this region.

#### *Solomon Islands (Marc Oremus) presented by Scott Baker*

Marc Oremus provided a written report on progress with surveys of dolphins in the Solomon Island in 2009 and 2010, conducted under an official MOU with the Solomon Island government, with support of the Ministry of Fisheries and Ministry of Environment. The objectives of the surveys address two management issues of considerable urgency: (i) the population impact of live capture of *Tursiops aduncus* and (ii) the species identity of dolphins killed in traditional drive hunt. Details of the last two years surveys are included as Appendix 4. In brief, two set of small-vessel surveys have been completed from 06/11/2009 to 01/12/2009 and from 05/11/2010 to 28/11/2010. In November 2009, 39 groups of cetaceans were encountered representing at least seven species. In November 2010, a total of 45 groups of marine mammals were encountered during the surveys, encompassing seven different species. In addition to cetaceans, some dugong (*Dugong dugon*) were also observed. The project proposal includes plans for a third year of surveys (intended for November 2011) but funding to support Marc's involvement is currently unavailable. There are also requirements for funds to support analysis and write-up.

#### *A Pattern of Dolphins: aPOD (Scott Baker)*

Scott Baker reported on a proposal for extending the Consortium's interest in small cetaceans throughout Oceania through a coordinated effort, referred to as 'A Pattern of Dolphins', or aPOD. A brief rationale for the aPOD is provided: The islands of Oceania, extending from Melanesia in the west to far Polynesia in the east represent the world's most extensive habitat for insular populations of dolphins. The limited information available from two species in this region, the spinner and bottlenose dolphins, suggests that each forms a metapopulation with relatively isolated local populations connected by long-term or episodic gene flow. To understand this 'pattern of dolphins', aPOD proposes a large-scale study of the 'seascape genetics' of these two species, and others where available, in strategic locations throughout Oceania. Working in collaboration with members of the South Pacific Whale Research Consortium, genetic samples will be collected in study locations chosen to represent spatial scales ranging from 10s to 1,000s of kilometers and to reflect contrasting histories of exploitation and protection, including existing and proposed Marine Protected Areas (MPAs). The seascape model will take into account information on habitat preference and abundance of dolphins available from independent aerial surveys planned for a large portion of the region. From this synthesis, it will be possible to assess the adequacy of existing MPAs for preserving local communities of dolphins and to inform the design of new MPAs intended to help protect top predators. Funding through a 3-year Pew Marine Conservation Fellowship will assist in coordinating the previous (or ongoing) collection and genetic analyses of samples by Consortium members and collaborators in regions of Oceania (including M. Poole, M. Oremus, R. Albertson, C. Olavarria, J. Ward, D. Paton), as well as new initiatives under discussion at this meeting. Consortium members provided the following priority regions that would rank highly under criteria for biogeography, logistics and strategic value under current conservation initiatives (e.g., PIPA, Kermadec Island Ocean Legacy):

- the Samoa Islands (Independent Samoa and American Samoa) (underway by J Ward and T Simi)
- The Tokelaus and the Phoenix Islands
- The Line Islands (logistic dependent)
- The Cook Islands (with support of N Hauser)
- The Solomon Islands (underway by M Oremus)
- French Polynesia (underway through M Poole)
- Kermadec Islands (in collaboration with Clinton Duffy, Dept. Of Conservation, and Tom Transki, Auckland Museum).

#### *Pacific Oceanscapes (Sue Taei, Mike Donoghue)*

Pacific Oceanscapes is designed for countries working together for Pacific Ocean management. There is a focus on large scale management, hopefully on the larger predators. Key issues dealt with include security of economic zones, impact of climate change and marine protected areas in Pacific basin. The idea came from Kiribati at the Pacific Forum and a framework was developed in Cairns in August 2009. Leaders adopted this

in August 2010 in partnership with SPREP and Conservation International (CI). It was endorsed by every leader at the meeting and SPREP endorsed this at the ministerial level. This project has strong and positive momentum and presents an excellent opportunity. Mike Donoghue congratulated Sue Taei and Lui Bell for their hard work on this initiative.

*‘Living whales in the Southern Ocean’ – workshop on non-lethal methods (Scott Baker)*

Scott reported on a SORP sponsored symposium and workshop on non-lethal methods planned for September 2011, to be hosted by the Government of Chile. A flier describing the workshop is attached as an Appendix 5. Interested members or other parties can contact Simon Childerhouse (simon.childerhouse@aad.gov.au) for further details.

*ICMMPA II (Mike Donoghue)*

ICMMPA I meeting was productive and planning for ICMMPA II is underway funded by the French Government. A call for speakers will be made soon and it was suggested that a combined, large presentation of the Consortium work would be a good idea.

## OTHER GENERAL ISSUES

*Lapsed membership in the Consortium*

There was discussion of the membership criteria for the SPWRC, and in particular members who were no longer actively involved. It was **agreed** that members who have not actively participated recently be send a letter regarding their status and the following text was drafted: *“Membership in the Consortium is open to individuals who are actively involved in research or science-based conservation efforts in the Oceania region, and who contribute data or analysis or make other substantial contributions to the aims of the Consortium, either at annual meetings or through regular communications with the Consortium and its Executive Committee. The Consortium periodically reviews its membership to ensure that all active members continue to meet these criteria. We notice that have had no communication from you regarding your work in the South Pacific for at least the past two years, and so consider that your membership has lapsed. If this is not correct, and you would like to provide updated information on your involvement in research or conservation in Oceania, we would be pleased to hear from you.”* [**ACTION:** Simon Childerhouse to write letter to missing members].

*Membership and affiliation of Consortium in Funding Proposals*

There was a discussion of the appropriate status of the SPWRC in projects and applications by members. It was agreed that the following should be made clear to members: *“Please be mindful that membership does not authorize a member to submit proposals or other requests for funding on the Consortium’s behalf. All projects that include the Consortium as a named collaborator or partner requires the endorsement of the Executive Committee. This requirement also applies to members of the Executive Committee.”* [**ACTION:** Simon Childerhouse to notify members of this issue].

*REMOA – aerial surveys of French Territorial waters (Vincent Ridoux)* presented by Scott Baker

A Skype conference call was held with Vincent Ridoux of University of La Rochelle, who is directing large-scale aerial surveys of marine megafauna (including cetaceans, sharks and turtles) in French Territorial waters of the world. The surveys are currently underway in French Polynesia (from January-April 2011) and are planned for New Caledonia and Wallis and Futuna (W&F) for November 2012 to February 2013. He repeated an offer to extend the aerial surveys to other island nations or territories and sought advice on priorities and recommendation for contacts with appropriate authorities. The Consortium members directed him to contact Lui Bell at SPREP and to Sue Taei at Conservation International for further advice. Consortium discussions offered the following recommendations for priorities, given the potential for alignment with the New Caledonia/W&F surveys

- Tokelau
- Vanuatu

- The Cook Islands (this was an intended priority for alignment with French Polynesia surveys but this opportunity may have passed)

Michael Poole and Claire Garrigue were requested to act as official SPWRC representatives and liaisons for this project. They agreed.

## HUMPBACK ANALYSIS UPDATES

### *Abundance estimate update (Rochelle Constantine)*

Rochelle Constantine summarised the Constantine *et al.* (2010) paper presented by Jen Jackson at the 2010 IWC meeting in Morocco which was well received by the scientific committee. A revised version of this manuscript will be submitted to Marine Ecology Progress Series within the next few weeks. It was decided that the POPAN 'super-population' estimate (3,520 whales CV = 0.1) was the best overall estimate as it includes resident animals and those that may be migrating past to un-surveyed regions. This number is likely to be positively biased as there was an assumption of zero mortality over the survey period (1999-2005). Among other estimates, the male-specific Pradel and POPAN estimates from 2003 were similar (doubled estimates of males; POPAN N = 2,361 CV = 0.11; Pradel N = 2,304) and 2003 was a reasonable estimate for the region surveyed (New Caledonia to French Polynesia). It was noted in discussion that the next population estimate needs to be comparable to this last effort and packaged into the humpback recovery plan that is under development.

### *SORP photo-ID matching (Rochelle Constantine)*

The preliminary results of the Antarctic Whale Expedition (AWE) and CeTA (France) photo-ID data were presented by Rochelle Constantine. There were 62 individual whales identified and these were matched to catalogues from east and west Australia, New Zealand, the Antarctic and various countries throughout the South Pacific. Several matches were reported and these will be presented in a manuscript for publication and submission to the IWC scientific committee in 2011. There was discussion on the value of matching these images to the entire SPWRC catalogue.

### *Genotype matching (Debbie Steel, Scott Baker, Mike Double and Nat Schmitt)*

Debbie Steel provided updated results of the genotyping samples collected from the South Pacific. This work continues to build on existing work by many people, Carlos Olavarria, Claire Garrigue and the RNHP funded genotyping work. A total of 38 samples collected from Tonga (n=5, 2009), New Zealand (n= 30, 2007-2010) and Niue (n=3, 2008) have been added to the dataset. She also provided results on preliminary comparisons between the 1475 individuals present in SPWRC Oceania/Antarctica genetic catalogue and the 393 individuals present in the Australian Antarctic Division genetic catalogue (West Australia, Tasmania, Eden and AWE Antarctica Area V). It was suggested that it would be advantageous if Megan's genotype data were available for future matching with Oceania. It was agreed that there is a need to develop a combined database of Oceania photo-ID and genotypes [**ACTION:** Rochelle Constantine and Debbie Steel to set up a subgroup to organise standardisation].

### *GIS and whales (Paul Anderson)*

Paul Anderson presented a proposal to use and present GIS maps that utilised SPWRC data. The need for information at a regional scale was raised and development of a coordinated database of pooled information was discussed. It was **agreed** that the initial focus should be to compile all known location (and other information) about cetaceans other than humpbacks within the SPWRC. The purpose was to improve information on (especially) small cetacean diversity for SPWRC as a first step and the linkages of this with the POD project was especially noted. Notwithstanding the agreed focus, all were welcome to send personal humpback data sets to Paul if they wanted. [**ACTION:** The process to start with members providing non-humpback data in excel format to nominated Consortium representative and then discuss what part of that data would be provided to SPREP for GIS work. Debbie nominated as central SPWRC contact and would develop excel template for members to use for submitting data]. The OBIS SeaMap initiative was also

discussed as there had been a suggestion to include SPWRC humpback datasets. [**ACTION:** it was **agreed** that it is up to individual projects/PIs to contact OBIS and contribute].

#### *Song analysis (Ellen Garland)*

The results of the quantitative song analysis using the Levenshtein distance for the western and central South Pacific region using the synoptic years of 1998 through 2008 was presented. The Levenshtein distance similarity index was used to examine the percentage of similarity between any two strings of theme sequences. This was done at the population level and showed distinct clusters of song types, the representative song type for each population/year clustered based on the display not on the year or population the song was from. From this quantitative assessment of dynamic song similarity within the region an acoustically derived population structure based on yearly similarity was presented. Preliminary matching of poor quality Antarctic song was presented and there was a discussion of future work that could be undertaken within the region.

#### *Flukematcher (Dan Burns, Eric Kneist)*

Dan Burns summarised the latest developments and test results of the computerised fluke matching software 'Fluke Matcher' (FM). The software was developed with the assistance of grants from the Australian Government in 2007/08 and 2008/09. Fluke Matcher was released publicly in August 2010 and is available for free download from the website: <http://www.scu.edu.au/research/whales/fluke-matcher/index.php/3>. Since its release, FM has been downloaded more than 600 times by researchers from more than 25 countries. Users enter images into a FM database and can then search for matching flukes in the database. The program ranks and displays all images from the most likely to the least likely match for the 'target fluke'. The system was tested using 1247 photographs of 754 whales, with each whale being represented by up to five images (a total of 657 matching pairs) and approximately one quarter of the images would not have passed SPLASH photo quality controls. Approximately 95% of searches resulted in the matching fluke being ranked in the top 60 images out 1246 alternatives (i.e. 5% of the database), 98.5% in the top 120 (10%), and 99.8% in the top 480 (40%). The most significant predictor of match rank in the searches was photo quality of the target fluke. The test also suggested that FM becomes increasingly efficient at finding matches as the number of images per whale increases. Tests of multiple users entering flukes into FM showed that training and experience in the use of the system and the use of common data entry protocols are important. FM training was provided for some members of the SPWRC in September and Rochelle Constantine is overseeing the data entry process for the consortium catalogues. Dan Burns advised that a grant application has been submitted to the Australian Marine Mammal Centre to use FM to reconcile fluke catalogues from around Australia for 2000-2010. This application includes catalogues from both the east coast (estimated 2,500 flukes) and the west coast (est. 1,000 flukes). The grant application also includes a proposal to upgrade the FM software to make it more efficient and user friendly. Tests are also underway to evaluate the efficiency of FM using flukes from the Northern Hemisphere provided by the SPLASH project.

### **OTHER PROJECTS**

#### *Palau (Olive Andrews)*

Olive Andrews outlined a proposal for a line transect survey to be undertaken in Palau using an Ocean watch vessel which will also include capacity building. The aim of the project was to identify species present and to identify important habitats outside the barrier reef. Considerable feedback was provided to enhance this project. Aerial surveys, finding and identifying cetaceans, possibly focusing on whale watching locations and linking into the POD project were all suggested. It was suggested that the project may be able to be linked into the French surveys.

#### *Kermadec Islands (Nichollette Brown, Rochelle Constantine)*

Rochelle Constantine presented the results of the 2010 Raoul Island (Kermadec Islands) humpback whale survey led by Nichollette Brown (Department of Conservation). They conducted a land-based survey from seven stations with good visibility of the waters around the island, from 8am – 12pm on 10 October 2010.



They sighted 153 whales (140 adults and 13 juveniles/calves) in the four hour survey. The chance of double-counting whales was unlikely as there was good communication between sites as they handed whales from one location to another. Two fluke photo-ID images were taken later in October and these will be matched to the Oceania catalogues. This high number of whales is consistent with the 2008 and 2009 surveys and the importance of further work incorporating photo-ID, genetics and acoustics were discussed. The possibility of future satellite tagging from the island was suggested and investigations will be made for support from NZ.

#### *Norfolk Island*

Advice from requested from the Consortium about potential improvements that could be made to the Norfolk survey project. After discussions, recommendations included:

1. The need to document true effort (including the number of observers, locations where observing from, time spent observing by each observer, experience of each observer).
2. To conduct the survey every second year and focus on the southern migration. The standardisation of the rotation of observers could be beneficial. It was noted the trend in numbers was the key piece of information from the survey. Mike Noad volunteered to liaise with Adrian Oosterman.
3. To restrict survey work to solely land-based observations as water based survey work was so challenging.

#### *Small cetaceans in Oceania (Scott Baker)*

Scott Baker discussed other projects including small cetaceans within the region. The link between POD and the Solomon island dolphin work was suggested. Samoa was noted as a good location (due to NOAA research) for this POD as well as French Polynesia. There was general consensus in the Consortium to focus on the two Samoa's in collaboration with Jooke Robbins/David Mattila and Juney Ward/Titimanu Simi. The Phoenix Islands (and Tokelau) were also recommended as a high priority and then the Line Islands but these are considered logistically difficult. The Cook Islands and Fiji were also suggested. A resident population of spinner dolphins in Niue were suggested as a good group to sample. The possible link to traditional knowledge of dolphins in the region was also discussed. External collaboration outside of the Consortium on this project was raised and was to be encouraged.

#### *Research priorities for Oceania Humpback Whale Recovery Plan (OHWRP)*

It was confirmed that the SPWRC are committed to support the development of the OHARP. The key research priorities for humpback whales in Oceania over the next 5 years are:

1. Abundance estimates and trends of recovery in core regions through synoptic surveys in 2013-14.
2. Continue monitoring in low abundance areas with historical estimates of density (e.g. Cook Strait, Norfolk, Fiji, Chesterfield reefs)
3. Identifying habitat of importance for breeding
4. Identifying direct threats (e.g. ship strike, entanglement, noise/explosions, directed take, physical modification of habitat)
5. Other poorly described areas: recolonisation and recovery (e.g. south Fiji, eastern FP, northern CI, chesterfields, Kermadec Islands, Pitcairn, seamounts)
6. Improve migratory corridor knowledge (e.g. Cook Islands, Cook Strait, Kermadec Islands)
7. Continue acoustic monitoring of cultural transmission of humpback song throughout the region
8. Improve understanding of breeding/feeding grounds connectivity
9. Improving understanding of breeding stock structure
10. Monitor whale watch and swim with impacts.
11. Determining life history parameters

A recovery criteria (e.g. something to measure progress against) for the OHWRP was agreed: '*Given the history of intense exploitation, and the apparent slow rate of recovery, as recognized in the current listing as 'Endangered A1 ad', we consider that than an increase in absolute abundance to 50% of the pre-exploitation abundance and/or a doubling of abundance within 10 years would be evidence of robust recovery*'. While the

criterion above was the key priority a secondary objective was also agreed of “understanding the impact of climate change”. **[ACTION:** Rochelle Constantine was nominated to expand the priorities (1-11), with additional assistance from Olive Andrews, Dave Paton, Mike Noad and Phil Clapham].

Questions were raised about whether the OHWRP should be submitted to the IWC. It was **recommended** that the plan first gain endorsement from SPREP as well as from countries involved in the region. If it were to be put forward to the IWC, it is possible that it would be put forward by a joint New Zealand and Australia submission but financial support would be needed to facilitate this.

#### *Satellite tagging discussion*

The Consortium reviewed previous discussions about satellite tagging as a general methodology. We agreed that the growing use of satellite tags and the success of these tags has continued to deliver valuable data without evidence of harm to the whales although we noted that data concerning short or medium term effects, whether physical or behavioural, are scant. Our concerns about the ethics of the methodology have been partly alleviated and we therefore would welcome collaboration in developing projects using satellite tags to document the movements of Oceania humpbacks particularly in relation to their migratory destinations on Antarctic feeding grounds. At the same time we would also encourage all satellite tag developers to continue to strive for less invasive tags that continue to be effective. The Consortium noted successful programs by members of the Consortium and colleagues including Nick Gales, Bruce Mate and Alex Zerbini. Members discussed areas of priority for tagging and decided it was premature to rank areas and these decisions should be made at the time. The link to education/outreach/public awareness using websites which track satellite tags was noted as was the potential financial benefit. Nan Hauser, Sue Taei and Dave Paton volunteered to further explore potentials for funding. **[Recommendation:** We consider satellite tagging as the only option for the Antarctic component of research for Oceania whales as part of the SORP Year of the Whale project. This is because it seems unlikely that a suitable vessel will commit to surveys in Antarctic Area VI].

#### *Timetable for finishing the OHWRP*

Sue Taei suggested that if the OHWRP went well, there was significant potential for funding by GEF. The project would need to be lead by SPREP, in partnership with SPWRC, and would require 1-to-1 finance by another party but could potentially represent \$1 million of funding over three years. However, there would need to be some strong country leadership in the proposal. It was **agreed** we that we attempt to apply for GEF funding **[Recommendation:** Sue Taei, Dave Paton, Nan Hauser and Lui Bell to look into this further].

Key steps were reviewed and the timeframe for the final draft was **agreed** (see below). Key steps so far include (i) review of the discussion paper by the Pacific Island recovery team and a technical support team, (ii) relevant discussions that occurred at last year’s SPWRC meeting, (iii) the need to add in the research priorities (to be undertaken by Rochelle Constantine and colleagues), and (iv) the money from PEW to employ a OHMWRP coordinator. These actions will ensure the OHWRP will be finalised in time to be submitted as a draft to the SPREP meeting. **[ACTION:** Draft for internal circulation by the end of February to be written by Olive Andrews. Lui Bell to update all individuals on the Pacific Island team as to the current status of the draft and what is required from them. Sue Taei, Olive Andrews and Lui Bell to work on plan over the next week].

Timeframe and actions to complete OHWRP draft:

1. Complete report/proposal (including what representatives want, research priorities) – core group to develop this by end of February,
2. In parallel, Lui Bell to update Islanders on process,
3. First week of March, draft to be sent to SPWRC Executive committee and Pacific island reps (with expected 10 work day turn around),

4. Individual meetings with Pacific reps (e.g. in person or on phone) for feedback/ walk through of the plan (mid March to end of March),
5. Collate feedback (early April)
6. Draft 2 sent out for comment (end April/start May),
7. Decision made if the draft document is ready to go forward (to be completed by end of May).
8. 'Final' draft sent to SPREP meeting by June.

**[ACTION:** Olive Andrews to email everyone who attended SPWRC meeting 2010 Friday research group to see if anyone has table of research priorities that were projected. It was noted that it could possibly be with Claire or Simon].

The general meeting of the 2011 SPWRC finished at 9.46am and the Executive Committee met. Thanks were expressed to the wonderful hosting by SPREP and the excellent organisation by Olive Andrews, Sue Taei and Lui Bell. Special thanks for IFAW, Pew and SPREP for the excellent and sustained support of the SPWRC and their support of this meeting in particular.

#### REFERENCES

Constantine, R., South Pacific Whale Research Consortium, Baker, C.S., Garrigue, C., Steel, D., Jackson, J., Poole, M., Hauser, N., Clapham, P. and Donoghue, M. 2010. Abundance and interchange of humpback whales in Oceania based on fluke photo-identification and DNA profiling. Paper SC/62/SH18 presented to the Scientific Committee of the International Whaling Commission in Agadir, Morocco.

**APPENDIX 1** Field summaries for regional projects 2010

Location	Field season start date	Field season end date	# days on water	# Unique ID's	# new whales	# matched to previous years	# skin samples SS/B (Other)	Song collected	Other observations/summary
New Caledonia	12 <sup>th</sup> July	12 <sup>th</sup> Sept	43 days at sea 38 days land based	140	107	32	199 B	11	Also saw spinner, Indo Pacific bottlenose, common bottlenose dolphins, minke, false killer and pilot whales. Some biopsies were collected
Cook Islands	15 <sup>th</sup> June	8 <sup>th</sup> Nov	68 days	TBA	TBA	TBA	62 B and 14 sperm samples	20	<i>Mesoplodon densirostris</i> were also sighted. Young humpback calf was entangled in a long line and died. A marine reserve has been proposed for the southern Cook Island group.
French Polynesia	27 <sup>th</sup> July	8 <sup>th</sup> Dec	74 days	TBA	TBA	TBA	29 SS	1.5hrs	Lone male sperm whale also sighted
East French Polynesia	6 <sup>th</sup> Sept	3 <sup>rd</sup> Oct	27 days	TBA	TBA	TBA	10B	Yes	
Cook Strait, New Zealand	12 <sup>th</sup> June	10 <sup>th</sup> July	20 hours	17	17	0	24B		Newborn calf sighted. Also sighted killer whales, sperm whales, minke whale cow/calf, bottlenose dolphins and dusky dolphins
Norfolk Island	21 <sup>st</sup> Sept	29 <sup>th</sup> Oct	38 days	0	0	0	0	0	Also sighted false killer whales and striped dolphins.
Niue	3 <sup>rd</sup> Aug	7 <sup>th</sup> Sept	36 days (157 hours)	18	TBA	TBA	3 SS	21 Humpback 1 sperm whale	Also saw Sei whale and sperm whale
Samoa	20th Sep	29 <sup>th</sup> Oct	12 days	12	12	0	4	0	spinner, rough-toothed, blainville's beaked whale
American Samoa	5 <sup>th</sup> Oct	21 <sup>st</sup> Oct	13 days	38 (SPLASH criteria)	36	2	12	9 recordings	Spinner, rough-toothed and bottlenose dolphins were also encountered

Hervey Bay	26 <sup>th</sup> Aug	15 <sup>th</sup> Oct	42	317	232	85	0 SS	27 drops/ of 15 mins. Singing heard on 100% of drops	A total of 316 pods involving 788 whales were observed and photographed.
------------	----------------------	----------------------	----	-----	-----	----	------	---	--



**APPENDIX 2** Flyer for the SORP Living Whales Symposium

# Living whales in the Southern Ocean: Advances in methods for non-lethal cetacean research

## First announcement for a symposium and workshop

### Objectives

The focus of the symposium and accompanying workshop is to review the strengths and weaknesses of current and new methods for studying living whales in the Southern Ocean. Specifically, the objectives are to advance the synergies of non-lethal methods for investigations addressing three broad themes:

1. population dynamics, health status and life history parameters of recovering whales
2. ecological linkages, functional roles and relationships of whales in their ecosystem(s), and
3. the response of whales to climate change and anthropogenic impacts.

Presentations will focus on methodological, analytical or technological advances in non-lethal techniques, including those that are still under development. There will be a focus on presentations that integrate methods. The symposium and workshop are part of the work of the Southern Ocean Research Partnership.

### Key audience

The target audience for the workshop is scientists and managers interested in the application of new and developing non-lethal methods for understanding whales in the southern hemisphere and elsewhere. Given the multi-disciplinary nature of the symposium and workshop, it will have widespread appeal.

### Structure

A one day symposium will be followed by a two-day workshop.

#### Symposium

The symposium will have keynote speakers from a range of disciplines who will highlight advances in non-lethal research techniques. There will be presentations on specific research fields and also results from large scale multi-national programs (e.g. IDCR/SOWER, SPLASH, SCANS, TOPP).



In brief:

- Keynote address (45 mins) – a presentation by an eminent scientist of non-lethal research providing an historical context for the development of non-lethal research, with particular reference to southern hemisphere examples.
- Presentations of state of the art non-lethal research techniques (30 mins each) – summarising the latest developments and describing the applications to southern hemisphere whales.
- Selected case studies (45 mins each) – providing detailed description of methods and analyses.

Depending on interest, concurrent sessions may be run or possibly the symposium extended to 1.5 or 2 days to cover more material. We are considering publishing a volume based on presentations at the Symposium but this has yet to be decided.

#### *Workshop*

A two day workshop will follow the symposium and will focus on expert presentations with significant time for discussion of new and evolving techniques and their application to the themes of the workshop.

**Proposed location** - Valparaiso or La Serena, Chile.

**Proposed dates** - September 2011.

**Project Steering Group** - Scott Baker, Simon Childerhouse, Barbara Galletti, Ari Friedlander, Nick Gales and Bob Brownell.

**Funding** - The governments of Australia and the USA have already expressed interest in supporting the symposium. Additional funding is being sought to host a venue and fund some key note speakers. A small registration fee will apply with a reduced fee for students and researchers from developing nations.

**Program** - The following research areas will be used to guide the development of the symposium and workshop program:

- photo-identification - including catalogue curation, automated matching, applications (e.g. estimation of survival and reproductive rates and social structure)
- genetic markers - including species and subspecies ID, genetic differentiation and population assignment, genotyping for individual identification, capture-recapture and genomics
- eco-markers - including stable isotopes, lipid profile
- life history markers - including aging, pregnancy, health assessment and photogrammetry
- telemetry for habitat use and migration - including satellite, gps, short term archival tags and critter cam
- analytical techniques for animal movements
- acoustics - including species identification, density and direction, stationary and towed arrays
- distance surveys for abundance and habitat use - including vessel, aerial and shore-based
- lessons from large-scale studies (e.g. IDCR/SOWER, SPLASH, YONAH, TOPP)
- remote vehicles - including gliders, drifters, balloons/blimps and UAVs
- analyses of behaviour and social structure - including observation approaches and analytical methods
- population modelling, and
- ecological modelling.

#### **Contact information:**

Simon Childerhouse, Australian Marine Mammal Centre, Australian Antarctic Division, Channel Highway, Kingston, Tasmania 7050, AUSTRALIA.

**Email:** [simon.childerhouse@aad.gov.au](mailto:simon.childerhouse@aad.gov.au).

**Phone:** +61 439 317 605.

**Web:** [www.marinemammals.gov.au](http://www.marinemammals.gov.au)

MAR42.1110