

Australian Marine Mammal Centre
Final Report
(subclause 9 and Schedule Item 5 of the Funding Agreement)

- **Project No.** – IPF/19
- **Title** - Increasing knowledge on cetacean diversity, building in-country research capacity, and working towards a national cetacean management plan in Papua New Guinea
- **Chief Investigator** – Mr. Vagi Rei and Dr. Cara Miller
- **Organisations** – VR: Papua New Guinea Department of Environment and Conservation, CM: Whale and Dolphin Conservation Society International, and the University of the South Pacific
- **Activity Period** – 9/2010 – 4/2011

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1. Activity Summary

A clear summary of approximately 500 words outlining the work undertaken and any significant findings (for publication on the Department's web site)

With support from the Australian government important steps in cetacean research and conservation have been initiated in waters proximal to Mbuke Island, Manus Province, Papua New Guinea (PNG) by the PNG Department of Environment and Conservation (DEC) and the Whale and Dolphin Conservation Society International (WDCS). At the end of last year DEC and WDCS partnered together to undertake whale and dolphin research in the previously unsurveyed waters of Manus Province, embarked on a hands-on and proactive training program for local researchers and staff, and begun formulating a plan for effective and strategic cetacean management that is intended to be both nationally and regionally relevant.

Research activities undertaken during the surveys included line-transect, photo-identification, acoustic, behavioural and environmental methods and observations. In total, approximately 1,200 km² of previously unsurveyed waters were covered during the surveys. More than 20 visual sightings of groups or individuals, more than 20 acoustic recordings and more than 250 individual cetaceans were recorded during the course of the surveys. Species seen or acoustically recorded included spinner dolphins, sperm whale, short-finned pilot whales, and melon-headed whales. A majority of the records were associated with spinner dolphin pods. The in-country research group consisted of a variety of participants including staff from the PNG DEC, recent biology graduates from the University of PNG, as well as researchers, students and conservation staff from Manus Province and Mbuke Island. Emphasis during both pre-survey briefings and during the research surveys focussed on

increasing the proficiency of all team members to undertake each of the different duties and skills required for the research survey plan and project. This focus was framed within an over-riding emphasis from PNG DEC and WDCS to deliver a project that incorporated strong survey design, consistent data collection, and accurate species identification. Such factors were intended to not only ensure the scientific value of this work yet also to enhance the ability for the project to be a useful baseline for long-term monitoring and assessment of the marine environment in Mbuke.

Education and awareness efforts associated with this work incorporated a variety of approaches and audiences (from local villagers to government directors) to ensure a broad cross-section of national engagement regarding cetacean conservation in PNG. These efforts build on previous work that was also funded by the Australian government, and it represents an active implementation of important Pacific regional cetacean frameworks that PNG is committed to including the Convention of Migratory Species Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region, and the Secretariat of the Pacific Regional Environment Programme's regional whale and dolphin action plan.

2. The Outcomes/Objectives

List of the Project Objectives

- (1) Undertake the first line-transect and acoustic field surveys on cetacean diversity within the waters of Manus, Papua New Guinea.
- (2) Increase the research field skills of in-country staff and researchers using practical training during boat-based field surveys.
- (3) Build awareness and profile of cetacean conservation in PNG
- (4) Drafting of the framework, essential components, action plan, and necessary steps forward to establish a national cetacean management plan for PNG.
- (5) Implement regional whale and dolphin action plans (SPREP and CMS)

The degree to which the Activity has achieved each of the objectives

- (1) Line-transect surveys took place from November 20th – 28th 2010 in the waters of Manus Province. Acoustic recordings were taken at each sighting and also listening stations were set up every 2 hours. Transects were run from the south side of Manus Island down to the latitude of Mbuke. Coverage of approximately 1,200 km² previously unsurveyed waters was achieved. Species seen or acoustically recorded included spinner dolphins, sperm whale, short-finned pilot whales, and melon-headed whales.
- (2) Concentrated research training and capacity building experiences for a small research team, including: 1 PNG DEC staff member (leader of the marine ecosystems division), 2 recent biology graduates from the University of PNG, a locally placed WWF staff member working on numerous conservation projects in Mbuke area, a Grade 10 student from Lorengau (Manus Island) with previous experience with the DEC, head of the Environment Committee of Mbuke Island, and 4 villagers (recent high school graduates) from Mbuke selected due to interest and aptitude for

conservation research.

(3) Numerous initiatives were undertaken to raise the profile of cetacean conservation in PNG. During our survey period the following activities were achieved: (i) Evening information and awareness session (conducted in pidgin by research team members), (ii) ½ day of surveys with 12 school children from Mbuke Island onboard to raise awareness and community engagement, (iii) In-depth interviews with 20 village fishermen gathered information about previous cetacean sightings interactions and legends (conducted in pidgin by research team members), and (iv) Informal discussions with peoples of Mbuke and Lorengau throughout the surveys.

In December 2010 Vagi Rei delivered a workshop in Port Moresby to summarize the research findings of the project and to discuss synergies that would allow project work and objectives to be continued and aligned with important national government priorities such as the Millennium Development Goals, Environmentally Sustainable Economic Growth, and the Coral Triangle Initiative. In February 2011 an update of work was also given by Vagi Rei to a community workshop in Manus Province. In this same month DEC staff attending a Coral Triangle Initiative meeting in the Philippines presented preliminary findings from the November 2010 surveys and noted the benefit of continuing cetacean work in PNG as part of the active implementation of the Coral Triangle Initiative. In addition, survey overviews have been provided in numerous settings including via the web (www.wdcs.org), at regional meetings (South Pacific Whale Research Consortium, February 2011) as well as to relevant agencies and organizations (Secretariat of the Pacific Regional Environment Program, the Convention of Migratory Species, and the University of the South Pacific).

(4) Drafting of framework and next steps

After discussions and consultation with pertinent stakeholders it has been agreed that the most appropriate way forward for a national management and conservation plan for cetaceans in PNG is to ‘nationalize’ and expand the regional whale and dolphin action plans (CMS and SPREP), and to fully incorporate and synergize it within pertinent national work – with specific reference to the national implementation of the Coral Triangle Initiative, and the Environmentally Sustainable Economic Growth framework of the PNG national government. It has been noted as important that all future cetacean work is structured to support this integrated approach. Furthermore, the undertaking of a full legal review of the issues and tasks contained within the regional whale and dolphin action plan and how they cooperate with all related national, regional and international commitments and priorities of PNG was also identified as a key task by government departments. In addition, it has been noted of significant importance that all future work is inclusive of government engagement, contains capacity building elements, and looks to expand baseline scientific data.

Some next steps have already been taken including two funding proposals including: (i) Submission of an application entitled “Low-cost habitat mapping as a tool to assist regional management of whale and dolphin populations in the Pacific Islands Region” to the US Embassy in Suva on March 1st 2011. This proposal identifies PNG as one of the countries in which mapping work would take place, and (ii) Preparation of a research submission for consideration within the Threatened species theme area of the Coral Triangle Initiative framework that proposes Mbuke as a demonstration site for

implementation of regional cetacean plans. This submission proposes to engage the research team established during the November 2010 surveys to repeat the line-transect and acoustic surveys already undertaken yet also to expand this work to cover different times of the year and with wider spatial and temporal effort. In addition, wider education and awareness activities would be incorporated within these plans.

(5) Regional whale and dolphin action plan was addressed by this project as evidenced by the relevance of the work to the following tasks: 1.8, 2.6, 2.12, 2.21, 3.1, 3.4, 4.1, 4.2, 4.4, 4.6, 4.7, 5.1, 5.2, 5.3, 5.7, 6.6, 6.10, 6.11, 7.3, 8.2, 8.8, and 8.9.

In addition, the implementation of these surveys, capacity building efforts and policy initiatives of this project addressed numerous national priorities for PNG including those contained within the National Biodiversity Strategy and Action Plan and the objectives of the Coral Triangle Initiative.

3. Appropriateness

The appropriateness of the approaches used in the development and implementation of the Activity

The project team incorporated several measures and planning strategies to ensure that the activities undertaken as part of the Indo-Pacific Cetacean Research Conservation Fund were appropriate in approach, including the following:

- Strong leadership from the central government department charged with implementing marine species conservation and management (PNG DEC). This leadership ensured that activities were in-line with national objectives and priorities and furthermore that they might be well-synchronized with future related activities.
- DEC proactively engaged with and sought appropriate permissions from the local Mbuke community to conduct research and conservation activities.
- Selection of the survey team again relied on the experience and judgement of DEC. Variables considered included training of researchers potentially suitable for future research and policy positions, experience in the research area, and position of management suitable for long-term engagement in Mbuke.
- During the field research period local resources and support were sought to ensure (i) direct benefit was going back to the local community, (ii) close engagement of community members, and (iii) inclusion of local boat drivers and resource people who had excellent experience and background knowledge for the marine area in which activities were being conducted.
- Scientifically sound survey design constituted the framework of the onboard research activities. The overall aim was to provide relatively even coverage over the designated study area with some additional effort in areas reported to have higher cetacean sightings. This approach has established an easily repeatable research design for future surveys that will be able to monitor trends in distribution, abundance and diversity. To further assist repeatability transects were laid in a north-south direction and basic randomization of survey transects (in the east-west direction) was done on a daily basis. This decision was also reasonable in a design sense as variability was also thought

to vary from Manus Island directly south to Mbuke.

4. Effectiveness

The degree to which the Activity has effectively met its stated objectives

As listed in Question 2 – the project was able to deliver positive outcomes against all five of the stated objectives. Specific comments against the effectiveness of these activities are given below:

- Given the time and resources available for the survey, a total of eleven north-south transects were completed between the southern side of Manus Island to the latitude of Mbuke Island. These transects covered the east-west area of interest as outlined by PNG DEC and as per permissions gained from the Mbuke community. Transects were designed to provide appropriate and representative coverage of the study area. Where anecdotal sightings were reported to be higher, additional transects were added (as time permitted) yet were still adherent in scale and regularity to the remainder of the survey plan. In total, approximately 1,200 km² of previously unsurveyed waters were covered during the surveys. More than 20 visual sightings of groups or individuals, more than 20 acoustic recordings and more than 250 individual cetaceans were recorded during the course of the surveys. Species seen or acoustically recorded included spinner dolphins, sperm whale, short-finned pilot whales, and melon-headed whales. A majority of the records were associated with spinner dolphin pods.
- All participants were active and involved in onboard research efforts. An initial briefing took place in Manus Island and a follow-up occurred in Mbuke prior to the first survey. Individual discussions and instruction continued with individual team members throughout the survey period. At the start of each day a team member (designated as ‘boss’) was charged with giving each team member a job as well as ensuring that team members were carrying out their duties as needed and with adequate assistance. The principal investigators were always available to all team members for additional technical assistance and oversight of the surveys yet actively allowed team members to undertake duties to allow hands-on learning and skill building. Tasks were rotated periodically within a survey day and between days to ensure that all team members gained experience with the different research tasks. A research manual was also developed specifically for the survey and distributed to team members as a reference guide (attached). Throughout the survey period the principal investigators were pleased to note an increase in skill development and expertise making them comfortable in the team’s ability to confidently undertake and correctly document the required research activities. Furthermore, the ability of research team members to instruct and guide other team members (new to certain research tasks) and to deliver information sessions both in the village and on the boat confirmed this skill development and competence.
- Efforts were made to engage a variety of stakeholders and audiences for discussion and presentation of cetacean conservation and the importance of this project. On a local level the Mbuke community was given daily updates of survey activities, evening talks were given regarding the project,

presentations were made both at the beginning and end of the surveys, interviews were conducted with village fisherman, a small group of school children were invited onboard for the last ½ day of surveys, and 4 of the project staff were selected from Mbuke Island itself. Informal discussions between villagers and the project staff was also a highlight. In nearby Manus, awareness was also raised as support crew and locals became aware of the research work being conducted. In February 2011, Vagi Rei gave an overview of the project and future plans to a community meeting. In addition, two team members were recruited from Manus. Their participation in other local conservation projects and experiences shared with class mates would again work towards promoting the profile of this work. On a national level, Vagi Rei gave a workshop on the research as well as led a consultation on how this work could be combined within related areas of national prioritization such as the Coral Triangle Initiative. In addition, Vagi provided complete briefings on the outcomes of this work to DEC staff and other governmental departments. On a regional basis the Manus surveys have been reported to the SPREP marine species officer, CMS Secretariat for the Pacific Cetacean MoU, the South Pacific Whale Research Consortium, and to staff and students within the School of Marine Science at the University of the South Pacific, Fiji. Finally, web stories have been delivered via the WDCS website.

- Tasks, priorities and integration for a functional and integrated national management plan for cetaceans have been identified. This progress has already established a way forward for synergy with other initiatives and programs, priority tasks, and direction for future funding proposals.
- This project has enabled the implementation and delivery of numerous tasks under the regional whale and dolphin action plans (see question 2 for specific tasks). Progress demonstrated through this project by PNG confirms their considerable commitment and progress on cetacean conservation and research priorities.