Support for the Establishment of Effectively Managed Platform Sites as Foundations for Resilient Networks of Functionally-Connected Marine Protected Areas

Kimbe Bay, West New Britain Province, Papua New Guinea

FY04 Annual Report

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of Award No. LAG-A-00-99-00045-00. The contents are the responsibility of The Nature Conservancy and do not necessarily reflect the views of USAID or the United States Government.

TABLE OF ACTIVITY STATUS

Activity Number	Activity Title	Status	Page number
Support for the Establishment of Effectively Managed Platform Sites as Foundations for Resilient Networks of Functionally-Connected Marine Protected Areas **Kimbe Bay, West New Britain Province, Papua New Guinea**			
Objective 1	**Increase understanding of the importance of marine ecosystems and ensure long term support for their conservation by local communities in Kimbe Bay.**		
1.1	Develop a communications strategy for building community awareness and promoting marine conservation approaches	Mixed performance	5
1.2	Engaging communities to build awareness and initiate conservation strategies	Mixed performance	6
1.3	Schools education program	On-track	6
Objective 2	**Develop long term strategies for marine conservation in Kimbe Bay with the full participation of major stakeholders**		
2.1	Complete Conservation Area Plan for Stettin Bay		7
2.1.1	*Complete Conservation Area Plan*	Revised; mixed performance	7
2.1.2	*CAP training/mentoring for Kimbe Bay Conservation Planner*	On track	7
2.2	Assessment and monitoring of the impact of land use practices on marine conservation in Kimbe Bay	On-track	8
2.3	GIS and data management training	Completed	8
Objective 3	**Design and implement a functionally-connected network of LMMAs and MPAs in Kimbe Bay.**		
3.1	Standardization of LMMA establishment process and approaches	Delayed	9
3.2	Local level government legislation to support LMMA creation and management	On track	9
3.3	Consultations and preparations for MPA design process	Completed	9
3.4	Initial workshop to identify MPA	Completed	10

	network objectives and design criteria		
3.5	Second design workshop – policy and legislation	Completed	11
Objective 4	**Regularly monitor the effectiveness of the Kimbe Bay MPA network in meeting its objectives, use monitoring results to improve management, and disseminate lessons learned.**		
4.1	Long term scientific monitoring	Mixed performance	11
Objective 5	**Identify and implement sustainable financing options for the Kimbe Bay MPA network**		
5.1	Coarse screening of financial options	Delayed	12
5.2	Detailed cost analysis by strategy and management action	Delayed	12
5.3	Develop Long-term Financial Plan	Delayed	12
Objective 6	**Design and begin implementation of a Bismarck Sea MPA network.**		
6.1	Ecoregional planning		13
6.1.1	*Conduct goal setting and viability screening on the marine conservation targets identified for the Bismarck Sea*	Revised; mixed performance	13
6.1.2	*Using partner expertise (Australian and Melanesian), run software assisted decision support tools to assemble conservation portfolio for Bismarck Sea*	Cancelled	13
6.2	Reef fish spawning aggregation awareness and management at Tigak and Manus	Mixed performance	14
6.3	Develop key partnerships in Kavieng/Tigak Islands and identify capacity building needs		15
6.3.1	*Develop key partnerships*	On track	15
6.3.2	*Develop capacity building plans with local partners in Kavieng area*	Delayed	15
6.4	Open TNC field office in Kavieng	Completed	15

Support for the Establishment of Effectively Managed Platform Sites as Foundations for Resilient Networks of Functionally-Connected Marine Protected Areas

Kimbe Bay, West New Britain Province, Papua New Guinea

Project Background

Kimbe Bay is located in New Britain, a large island in eastern Papua New Guinea (PNG). It is part of the Bismarck Sea, one of the ecoregions that make up the Coral Triangle – the center of global tropical marine biodiversity. Analyses conducted by TNC and its partners have identified the key threats to the marine and freshwater ecosystems of Kimbe Bay as:

- incompatible land use practices in adjacent watersheds;
- subsistence over-harvesting of marine resources, especially in mangroves and in shore reef systems;
- commercial harvesting of marine resources, primarily invertebrates such as sea cucumber; and
- frequent coral bleaching, especially on in shore reef systems

Conservation actions at Kimbe Bay have been supported by the GCP since in 1999. These efforts have focused on strengthening the organizational and technical capacity of Mahonia na Dari (MND), a local partner; increasing community awareness and participation in conservation planning and actions; developing the scientific and analytical basis for long term management planning in Kimbe Bay and conservation at the ecoregional scale; and piloting the establishment of locally-managed marine areas (LMMAs) as a key strategy aligned with local custom and tenure arrangements. These activities were concentrated in Stettin Bay, the western part of Kimbe Bay, although there had been some outreach beyond this area – especially through Mahonia na Dari's education programs – to other island provinces in PNG.

In 2002, The Nature Conservancy and local partners used TNC's participatory conservation area planning methodology to begin to develop a comprehensive management plan for Kimbe Bay and, in the process, to evaluate and improve existing strategies for conservation. This confirmed that the original emphasis on community-based conservation was appropriate. It was also determined that conservation work in Kimbe Bay needs to be more systematic if marine biodiversity is to be protected at the appropriate scale. This coincided with the development by the Conservancy and others of a global framework for tropical marine conservation that emphasizes the development of functionally-connected networks of marine protected areas that are resilient in the face of global change. As a result, the Conservancy's GCP II proposal described a revised set of objectives and activities that focus on implementing a network of MPAs – including LMMAs – in the entire Kimbe Bay, and catalyzing the creation of a broader MPA network within the Bismarck Sea. These revised objectives were used as the basis for this year's Implementation Plan.

Our review of performance during the past year confirmed the five-year program outcome that we intend our work, with GCP support, at Kimbe Bay will accomplish, namely:

- ***By 2008, at least 20 percent of the marine areas that are identified as a high priority for conservation in Kimbe Bay are effectively protected from local threats and designed to be resilient in the face of global change, and an additional 30 percent of these areas are in the process of being protected.***

In our GCP II proposal, we also identified a second goal for 2008 – the design of a large-scale, resilient network of MPAs in the Bismarck Sea, with a local MPA network at Kimbe Bay as a platform site. Based on experience this year, both in developing a multiple use network of MPAs for the greater Kimbe Bay and in large-scale planning at the Bismarck and Solomon Seas scale (see Activity 6.1 below), we will be re-examining this goal in FY05 to determine whether it is still feasible.

Overall Assessment of Progress and Management Issues

Several successes were achieved in the Kimbe Bay program this past year. A strong and capable team of people was hired and forms the core people implementing the activities at Kimbe Bay. Model legislation to support LMMA creation and management is expected to be passed by the Talasea Local Level Government (LLG) into law in the first quarter of FY05 and two other Kimbe Bay LLGs are currently considering similar legislation. Biophysical and socioeconomic principles for designing a network of MPAs in Kimbe Bay were identified during an initial workshop. The second design workshop conducted with key communities and stakeholders produced broad support for establishment of a multi-use resource management MPA and identification of legal and policy issues that must be addressed to design and implement a successful MPA network. The partnership between TNC and NBPOL has also progressed this past year with a jointly funded study of land-use practices in the Kimbe Bay area. TNC identified 28 new spawning aggregation sites in Kavieng/Tigak Islands and 37 in Manus. The staffs of our newly established field offices in Kavieng and Manus have already assisted 3 communities close 6 of these spawning aggregation sites.

The Kimbe Program has also had to face a number of challenges during the year. TNC's partner in Kimbe Bay, Mahonia na Dari, has sustained another significant setback. The Mahonia Director resigned his position in the first half of the fiscal year. Mahonia staff morale and performance suffered to the point that the Mahonia Executive Board found it necessary to let many of the staff members go. This has adversely impacted the Kimbe program and TNC's performance. Mahonia-led activities such as formulating approaches for community based monitoring were postponed. Also, the TNC Community Conservation Officer dedicated significant portions of his time to assisting Mahonia contend with these management issues, and therefore took time and focus away from other TNC planned activities. A new Director took up his position at Mahonia in August, and will be devoting attention to rebuilding staff and getting the organization on a sound footing. We will continue to work closely with Mahonia, but have resolved to be more directly involved in the development of a community based monitoring program and outreach to new communities, especially in the eastern Bay region.

Results of the seventh annual monitoring study of the Kilu Tamare LMMA continue to show declines of reef fish due to coral decline in both marine reserves and areas of permitted fishing.

Coral decline in Kimbe Bay has been attributed to past coral bleaching events, seismic activities and sedimentation.

Progress on identifying and beginning to put in place sustainable financing mechanisms to support a network of MPAs in the wider Kimbe Bay has also been postponed, in large part due to delays in identifying specific conservation strategies – and their costs.

Objective 1: Increase understanding of the importance of marine ecosystems and ensure long term support for their conservation by local communities in Kimbe Bay.

Activity 1.1: *Develop a communications strategy for building community awareness and promoting marine conservation approaches*

Results Anticipated in FY04:

- *Assessment of the effectiveness of current awareness and schools programs*
- *Baseline understanding of knowledge, attitudes, and practices of coastal communities*
- *A communications strategy for effectively engaging communities in marine conservation activities in Kimbe Bay.*

TNC contracted a community specialist as part of its Kimbe Bay team. He has participated in the RARE Center for Tropical Conservation Community Education program, which has a training component at Kent University in the United Kingdom and an applied component at Kimbe Bay. Based on his participation in this program, we are currently executing a strategy to engage schools and communities in Bialla and Ulamona in eastern Kimbe Bay – i.e., the areas beyond Stettin Bay in western Kimbe where our activities have largely focused to date – following the methodology developed under the RARE Pride Campaign. The methodology used is called "Promoting Protection through Pride". This approach focuses on the selection of a highly visible species of wildlife – in this case the dugong – around which to organize awareness and education messages. During the year, the following activities were completed: (1) background information on the project site was collected; (2) a first stakeholder meeting was held; (3) a structured survey was conducted based on 462 returned questionnaires (from a total of 500 distributed) to identify the baseline of knowledge, attitudes and practices of the coastal communities with regard to marine resources and conservation; (4) a specific project plan was drafted that included a revised concept model, objectives and activities, monitoring plan and timeline; and (5) implementation of the campaign was initiated to engage communities and schools in marine conservation activities in eastern Kimbe Bay.

Preliminary indications are that the RARE campaign strategy is proving to be effective in creating awareness and promoting conservation, as reflected by the number of people and stakeholders attending and participating in meetings and workshops, high numbers of communities expressing their desire to conserve their resources, eagerness of Hoskins and Bialla Local Level Governments (LLGs) wanting to adopt the Talasea LLG's Marine Environment Management Law and the level of awareness and enthusiasm it has created among different stakeholder groups. Based on results and experiences gained from the campaign, a suitable communication strategy and plan for Kimbe Bay will be finalized in FY05.

Activity 1.2: *Engaging communities to build awareness and initiate conservation strategies*

Results Anticipated in FY04:

- *Community Entry Plan developed and implemented.*
- *Production of various awareness materials*
- *Initial engagement of 10 communities within Kimbe Bay.*

The activities planned were revised to conform to the RARE Pride Campaign approach discussed under Activity 1.1 above. The production of the campaign's awareness materials took place in August 2004, and included posters, bumper stickers, button badges, a CD using songs based on the environment with lyrics coming from schools and the communities, billboards, a fact sheet on dugongs, comic books, sermon sheets, and a small pamphlet on the current Talasea marine legislation (see Activity 3.2 below). To date, a total of 25 communities have been engaged in the campaign; however, this number will increase with more engagement in Bialla.

Activity 1.3*: Schools education program*

Results Anticipated in FY04:

- *At least 20 additional graduate high school students have an advanced knowledge of their marine environment and the conservation issues facing the future use of marine resources in Kimbe Bay and PNG.*

Mahonia na Dari's schools marine environment education program continued throughout FY04. A total of 16 students and 2 staff members from Hoskins Secondary High school participated in and completed a 13-day intensive marine science and education module taught by MND's Education Specialist in the first half of the year. The current group of 20 students and 2 teachers from Kimbe Secondary High School began the program in July 2004. It is expected by the end of September, a total of 40 twelfth grade teachers and students will have acquired advanced knowledge of their marine environment and conservation issues.

This program was also extended and tested at Utu High School in New Ireland Province during this year with funding support from Community Development Scheme (CDS), an Australian Government funded agency. A total of 20 students and 3 teachers participated and completed the program. Pending funding availability, further expansion of this program for Papitalai High School in Manus province is planned for FY05.

Apart from the high school program, MND also visited 37 primary and elementary schools in Hoskins, Bialla and Ulamona, with a combined student population of approximately 8,000. MND used video shows, puppet shows and direct talks to disseminate information on the marine environment and marine conservation issues.

In addition, excursions for 19 sixth graders and 49 biology students from Kimbe International school were conducted in FY04.

Objective 2: Develop long term strategies for marine conservation in Kimbe Bay with the full participation of major stakeholders

Activity 2.1: *Complete Conservation Area Plan (CAP) for Stettin Bay*

Rather than continue our earlier focus on the Stettin Bay area, TNC decided to expand our conservation area planning to the entire Kimbe Bay, incorporating previous planning conducted in Stettin Bay. This, together with our desire to coordinate the timing of our planning with peers in other programs in the Conservancy in order to maximize the sharing of experience across sites in peer review ("Efroymson") workshops, delayed the completion of the CAP this year. By the end of September, the Kimbe Bay conservation plan is approximately half way through the process, and will be completed during FY05.

Activity 2.1.1: Complete Conservation Area Plan

Results Anticipated in FY04:

- *Final Conservation Area Plan completed for Stettin Bay area of Kimbe Bay*

The CAP process involves conservation target identification, an assessment of the viability of these targets, stress and threat identification, situation analysis, stakeholder engagement training, and stress abatement strategy development. During the year, the Kimbe Bay planning team participated in two peer review ("Efroymson") workshops to get feedback from colleagues within TNC working on plans at a similar stage in the process. Status to date:

- Conservation target identification – 8 conservation targets have been identified: inshore reef systems, offshore reefs and offshore islands, mangroves, sea-grass beds, mangroves and estuaries, rare and threatened species, and vulnerable invertebrate species.
- Conservation targets viability assessments – Completed.
- Stress and threats analysis – Completed.
- Situational analysis – Underway.
- Stakeholder analysis – Underway.

At this stage, we are working through the process of identifying people, factors and institutions that contribute or have influence on the existence or elimination of stresses. Next steps will focus on developing the strategies for addressing those stresses and establishing the mechanism by which progress can be measured.

Activity 2.1.2: CAP training/mentoring for Kimbe Bay Conservation Planner

Results Anticipated in FY04:

- *Enhanced skills and abilities in conservation planning at Kimbe Bay site*

The Kimbe Bay Conservation Planner, as well as the Conservation Officer and Project manager, attended two Efroymson workshops on CAP. In addition, in July, the Conservation Planner met with his internal mentor and received intensive training at TNC's offices in Hawaii, where additional training on the mechanics of the CAP tools such as the Excel spreadsheet workbook was undertaken. The Kimbe Bay Conservation Planner has benefited greatly through the

enhancement of his skills and knowledge pertaining to the application and understanding of CAP tools used by TNC.

Activity 2.2: *Assessment and monitoring of the impact of land use practices on marine conservation in Kimbe Bay*

Results Anticipated in FY04:

- *Initial study of impact of land-use practices on marine biodiversity in Kimbe Bay*
- *Partnership between TNC and NBPOL*
- *Identification of additional studies and/or monitoring programs on this issue*

The partnership between TNC and New Britain Palm Oil Limited (NBPOL) has progressed very well during the year. A Letter of Agreement between TNC and NBPOL was signed, and both parties agreed to jointly fund (at 50% each) an initial study on land-use practices in the Kimbe Bay area. It was agreed that two consultants would be engaged, a land use specialist and a marine ecologist to lead the field study and make the result of the study independent from NBPOL and TNC. The field study was conducted in November and December 2004. A draft report of the study has been completed. The field study indicates that land based activities that encourage soil runoff/sedimentation, such as forest logging activities, early oil palm growth and subsistence use of the land impact the reef systems particularly around Stettin Bay. The specific contribution of land based activities to sedimentation/soil loss needs to be isolated so that the impact on the marine systems can be minimized. The report recommended conducting a monitoring study on land-use practices and its impact on the marine environment. The report also identified oil palm land-use practices that minimize and contain soil loss into the river systems. New Britain Palm Oil has already taken steps to voluntarily implement some of the recommendations of the report, such as creation of buffer zones around rivers and streams.

Activity 2.3: *GIS and data management training*

Results Anticipated in FY04:

- *Increased skills of one TNC Melanesia staff member in GIS and data management for use in planning and monitoring conservation threats and activities in Kimbe Bay and beyond.*
- *Dedicated GIS staff based at Kimbe.*
- *Local GIS and information needs processed locally at Kimbe.*

A staff member of TNC's Melanesia Program received three months of training starting in May 2004 at the Smithsonian Institute. The training focused on GIS techniques, data analysis and manipulation, satellite imagery, mapping and database development. In addition, the staff member has been working closely with TNC's GIS specialist based in Brisbane and TNC's Washington State staff member who was on a GIS fellowship with our Adelbert Conservation Program in PNG. Additional training was provided by SOPAC (South Pacific Applied Geoscience Commission) on GIS in August 2004.

To ensure that the skills of the staff member are fully utilized by the Kimbe Bay project and Melanesia Program, a new post was created titled GIS and Information Manager. This post will

allocate at least 50% of the time to GIS needs for Kimbe Bay and the rest of the time for other projects in Melanesia.

Objective 3: Design and implement a functionally-connected network of LMMAs and MPAs in Kimbe Bay.

Activity 3.1: *Standardization of LMMA establishment process and approaches*

Results Anticipated in FY04:

- *Preliminary draft of LMMA establishment document.*

This activity was not completed during the year due to lack of staff, and the need for TNC's Community Conservation Officer to devote more time than anticipated to addressing continuing management problems with Mahonia na Dari. Work will be carried out in FY05 to complete a documented procedure for the establishment and management of LMMAs.

Activity 3.2: *Local level government legislation to support LMMA creation and management*

Results Anticipated in FY04:

- *Briefing document for West New Britain Provincial Government and Talesea Local Level Government (LLG).*
- *Endorsement of legislation from key government agencies*
- *Talesea Local Level Government Conservation Legislation passed and enforced*
- *Two new LMMAs established at Kimbe Bay.*

TNC received overwhelming support from key Government agencies for the legislation throughout both the development and final stages of the draft bill. Final consultation with all the key stakeholders was conducted in July 2004. The draft bill for the Talasea Marine Environment Management Law was submitted to Talasea LLG for debate and enactment into law, together with the briefing document in mid July 2004. It is expected to be passed into law the first quarter of FY05. Two other LLGs within the Kimbe Bay region (Bialla and Hoskins) have also shown interest and have requested TNC assist them with similar legislation. Currently they are studying the Talasea draft – with a view to adopting the legislation with minor amendments.

No new LMMAs were established in FY04. It is anticipated that once the legislation is enacted, more communities will approach TNC to request assistance in establishing more LMMAs in their areas.

Activity 3.3: *Consultations and preparations for MPA design process*

Results Anticipated in FY04:

- *Communities and other stakeholders prepared to engage in setting objectives of MPA network*
- *Existing documentation relevant to setting MPA network objectives and design assembled and analyzed*
- *Legal and policy issues and opportunities identified*

Throughout the year, a number of consultations were carried out with local communities and other key stakeholders (e.g., private businesses, local government, national government agencies) in the Kimbe Bay area to get a better understanding of their needs and interests. Information gathered from these consultations was a key input to the workshops carried out in Activities 3.4 and 3.5.

In addition, a legal consultant was contracted to carry out a review of existing laws and policies concerning environmental protection, fisheries and other marine resources, and marine tenure in order to identify opportunities and potential obstacles to implementing our conservation strategies in Kimbe Bay. Kimbe Bay covers a large area, which includes areas under three local level Government jurisdictions. Therefore, the draft Marine Environment Management law is likely to be inadequate for purposes of creating an MPA network. In particular, the issue of sometimes conflicting jurisdictions between traditional owners, provinces, and national government authorities was highlighted as needing resolution. The implications of these various options for long-term sustainability of the MPA network were highlighted. A draft of the review and the options presented was the foundation for the local stakeholder workshop and national government consultations discussed under Activity 3.5. The review was finalized based on further input received from these workshops. In view of these and other considerations, the review strongly recommended that Kimbe Bay MPA be established under the *Conservation Areas Act*, which provides the best possible options – but also cautioned that much work needs to be done to fulfill the requirements of the Act.

Activity 3.4: *Initial workshop to identify MPA network objectives and design criteria*

Results Anticipated in FY04:

- *A map of important habitat types in the bay*
- *An understanding of the gaps in information required*
- *Suggested scientific design criteria for a network of MPAs*

A scientific workshop was held in Townsville, Australia, in February 2004 to provide scientific advice for designing and implementing a network of MPAs in Kimbe Bay. The following experts participated:

- TNC staff from Papua New Guinea, Palau, Australia, and Indonesia;
- Conservation partners, including Mahonia na Dari and the Packard Foundation;
- Marine scientists with expertise in biological and physical sciences, particularly those who have worked in Kimbe Bay or have experience in similar ecosystems elsewhere; and
- Socioeconomic scientists, TNC staff who are members of local communities, and representatives of local industries and government agencies who could provide important socioeconomic information.

The workshop focused on existing information on the biological, physical, and socioeconomic characteristics of the Bay, and lessons learned from other locations (including the Great Barrier Reef and Palau) which have or are designing and implementing MPA networks. This information was used to define proposed objectives, conservation targets, and geographic extent of the network. Design principles based on biophysical and socioeconomic factors were

identified that would maximize the biological objectives of the network, while minimizing cost and maximizing benefits to local communities and industries. As a result of the workshop and subsequent analysis, an initial map of important habitat types and conservation targets identified in the Kimbe Bay Conservation Area Plan was prepared (a copy is available upon request). This map will be refined as additional data is available. The workshop also identified high priority information gaps and research priorities that need to be addressed over the next 1-2 years to inform the design of the MPA network.

Activity 3.5: *Second design workshop – policy and legislation*

Results Anticipated in FY04:

- *Support from important political stakeholders and partners for the design criteria for an MPA network*
- *Identification of legal and/or policy changes needed to design and implement an MPA network*

The second design workshop was conducted in Kimbe in July 2004. The workshop included representatives of government agencies, private businesses, local communities and resource owners. This was followed by a meeting in Port Moresby with national government agencies. The principal results of these consultations included:

- Indication of broad support for the establishment of a multi-use resource management MPA;
- Identification of legal and policy issues that need to be addressed, including input on the policy study discussed in Activity 3.3;
- Greater awareness by TNC's Kimbe Bay team of the activities and plans of other stakeholders for Kimbe Bay; and
- Confirmation that our broad approach is compatible and complementary with Government development policies and strategies.

Objective 4: ***Regularly monitor the effectiveness of the Kimbe Bay MPA network in meeting its objectives, use monitoring results to improve management, and disseminate lessons learned.***

Activity 4.1: *Long term scientific monitoring*

Results Anticipated in FY04:

- *Improved approaches for involving communities in monitoring activities*
- *Continued analyses from scientific monitoring of LMMAs that can be used for improved management.*

A team of researchers from James Cook University (JCU), led by Dr. Geoff Jones, conducted the annual monitoring of the Kilu Tamare LMMA in March 2004. This marks the seventh year the monitoring has been conducted. Results ending in 2003 indicated that there are probably 2-3 species which have benefited from protection, but over 50% of reef fish species have declined because of the coral decline. A devastating reduction in coral caused a ~15% decline in fish species richness and a decline in the abundance of ~75% of species, both in marine reserves and

on fished reefs. Coral decline in Kimbe Bay has been attributed to past coral bleaching events, seismic activities and sedimentation. The magnitude of decline was explained by a reliance on live coral as a recruitment habitat.

Results of this long term monitoring program at Kimbe Bay were presented at the International Coral Reef Symposium in Japan in June 2004, and a draft paper has been prepared for publication in the journal *Nature*.

With respect to the planned activities related to community based monitoring, Mahonia na Dari was expected to take a lead role, but this did not happen this year due to continuing management problems.

Objective 5: Identify and implement sustainable financing options for the Kimbe Bay MPA network.

Activity 5.1: *Coarse screening of financial options*

Results Anticipated in FY04:

- *Estimates of conservation costs and potential revenue*
- *Potential conservation finance mechanisms identified*

An initial orientation on sustainable financing approaches and tools was provided by TNC's Conservation Finance and Policy advisors for the new members of TNC's Kimbe Bay team. However, most tasks planned under this activity have been delayed until early next year when a first planning meeting with local stakeholders will be undertaken in Kimbe.

Activity 5.2*:* *Detailed cost analysis by strategy and management action*

Results Anticipated in FY04:

- *Estimates of conservation costs by strategy*
- *Potential conservation finance mechanisms identified*

The conservation planning strategies have not yet been identified, so the tasks under this activity have been delayed to next year.

Activity 5.3: *Develop Long-term Financial Plan*

Results Anticipated in FY04:

- *Appropriate financial tools developed*
- *Staff and partners understand the financial planning process*
- *Draft long term financial plan for Kimbe Bay completed*

The tasks under this activity have been delayed to next year.

Objective 6: Design and begin implementation of a Bismarck Sea MPA network.

<u>Activity 6.1:</u> *Ecoregional planning*

Results Anticipated in FY04:

- *Functional seascapes, areas that capture all biodiversity conservation targets, and major biological processes identified as components of the marine component of the EPU.*
- *Conservation targets identified at ecoregional scale, available data for targets collected and analyzed, and principal threats to these targets assessed.*
- *Marine conservation plan (first iteration) that informs TNC and partners what marine biodiversity conservation success and a representative MPA network at this scale might look like.*
- *Biodiversity database with GIS support compiled and available to users.*
- *A portfolio of marine biodiversity areas in the Bismarck Sea area is assembled.*

<u>Activity 6.1.1:</u> Conduct goal setting and viability screening on the marine conservation targets identified for the Bismarck Sea

A cluster analysis on physical and environmental data collected as part of TNC's ecoregional assessment was completed. The data were presented at a planning meeting for the Bismarck Sea held in February 2004 in conjunction with the workshop to provide scientific input on design principles for the Kimbe Bay MPA network (see Activity 3.4 above). At that meeting, the general idea of the analysis was supported, but it was concluded that information at a finer scale is needed to support the establishment of a network of MPAs in the Bismarck Sea. At the February meeting, initial agreement was reached on the conservation goals for all conservation targets identified to date, and the principal threats to these targets were identified**.**

After becoming more familiar with the quality of existing data, it was determined that further analyses, including the planned viability (ecological condition) screening analysis, were not feasible at present, and that data were not adequate to accurately delineate functional seascapes for the Bismarck Sea. TNC will use the product of the process led by WWF to identify high priority marine areas for conservation in the Bismarck and Solomon Seas Ecoregion (BSSE) as the first iteration of our ecoregional assessment. The areas identified follow closely the results of the cluster analysis mentioned above. We are focusing additional data collection on areas identified as having significant biodiversity value in this analysis. Data will be continuously updated in preparation for a second iteration of the assessment when appropriate. Data will be collected in collaboration with the CI/CSIRO partnership to build a complete "Papua/BSSE" spatial database, as well as with the PNG Coastal Fisheries Management and Development Project and others.

<u>Activity 6.1.2:</u> Using partner expertise (Australian and Melanesian), run software assisted decision support tools to assemble conservation portfolio for Bismarck Sea

It was determined that the data are not adequate for this analysis. We plan to revisit this at a later date when the database has been further developed. The WWF BSSE report identifies areas of biodiversity significance, but initial identification of an MPA network/portfolio at the scale of

the Bismarck Sea is not yet possible given data limitations.

Activity 6.2: *Reef fish spawning aggregation awareness and management at Tigak and Manus*

Results Anticipated in FY04:

- *The reef fish spawning aggregation protection program activities are fully integrated into Bismarck Sea MPA network design process and the ADB Fisheries Management project.*
- *Reports documenting community and traditional knowledge of the Tigak Islands.*
- *At least two communities that are actively managing their spawning aggregations, including the establishment of locally managed marine areas that incorporate reef fish spawning sites.*
- *A cost-benefit analysis of the LRFFT versus alternative income generation options.*

This Activity was mostly undertaken through the related USAID grant for Protecting Coral Reefs from Destructive Fishing Practices in the Pacific: Protecting and Managing Reef Fish Spawning Aggregations in the Pacific. TNC conducted a study to document local knowledge of spawning aggregations in Kavieng/Tigak Islands and in Manus. A total of 27 single and multi-species spawning aggregation sites were identified in Kavieng/Tigak Islands and 9 single and multi-species sites in Manus. In conjunction with the spawning aggregation local knowledge studies in Kavieng and Manus, awareness activities were undertaken to increase awareness of the vulnerability and importance of spawning aggregations and to encourage communities to better protect their spawning aggregations. After our initial awareness talks in January 2004, and several follow up meetings with the Manus communities of Pere, Locha and Peli and Tawi regarding managing their multi species transient spawning aggregation sites, these communities decided to impose identical fishing restrictions on three large multi-species spawning aggregation sites that occur within their customary fishing grounds. The awareness and closure of spawning aggregations has influenced an adjacent community (Mbunai), which has asked TNC to help it create a closed area/LMMA for one of its islands to allow commercial sedentary species and reef fish to recover to levels where they can harvest them sustainably. Another development in southern Manus, the Pere Ward Development Committee is in the process of implementing a five-year sustainable development plan for Pere. An Environmental Committee has recently been formed that will be addressing marine conservation issues. TNC, through our Community Conservation Coordinator, will be responsible for providing ongoing advice on the best management options for spawning aggregations in this area. In Kavieng, two aggregation sites have been chosen by TNC as locations to focus further conservation efforts, as the respective communities that claim ownership over the reefs on which they occur are interested in initiating conservation measures for these sites, and also appear to have some capacity to enforce these measures. Additional details concerning the local knowledge reports and protection of the sites, as well as other activity specifics, are included in the Protecting Coral Reefs from Destructive Fishing Practices in the Pacific: Protecting and Managing Reef Fish Spawning Aggregations in the Pacific FY04 annual progress report.

The cost-benefit analysis of the LRFFT versus alternative income generation options has been deferred for two reasons. Firstly, the operator with the trial license for the LRFT

operation in the Tigak Islands has shifted its operation to the Milne Bay area and is no longer fishing in the Tigaks. As such any data for a cost-benefit analysis would need to be re-constructed. Secondly, we are planning to integrate this study with those being undertaken by the ADB Inshore Fisheries Management and Development project. Therefore, this study has been deferred until FY05, and will need to be adjusted to take into consideration the changed circumstances. For example, the study may now also incorporate the "chilled" fish trade which has taken over form the LRFFT as the primary threat to spawning aggregations in the Kavieng area.

Activity 6.3: *Develop key partnerships in Kavieng/Tigak Islands and identify capacity building needs*

Activity 6.3.1: Develop key partnerships

Results Anticipated:

- *Key partners for future work in the Tigak Islands identified and relationships initiated*

We have a mutually beneficial relationship with Gillet Preston and Associates (GPA) and the National Fisheries Authority (NFA) in the Tigak Islands. We are working together to formulate awareness materials on destructive fishing practices, using videos, radios, booklets and other print media. TNC's experience with the recent production of Live Reef Food Fish awareness materials has been used effectively to agree with GPA/NFA on how to formulate the messages for destructive fishing practices awareness materials.

Ailan Awareness, Wildlife Conservation Society, GPA and NFA have agreed to collaborate in the Tigak Islands. Each organization brings its comparative strengths to the area. Ailan Awareness has strength in developing local community networks and delivery of local awareness, while WCS has a socio-economic and reef science program in the Tigak Islands.

Activity 6.3.2: Develop capacity building plans with local partners in Kavieng area.

Results Anticipated in FY04:

- *Organizational self assessments completed for three partner organizations in the Kavieng area*
- *Capacity building work plans developed for three partner organizations in the Kavieng area*

This activity was delayed until next year.

Activity 6.4: *Open TNC field office in Kavieng*

Results Anticipated:

- *Field office opened and staffed*
- *Tigak Islands activities coordinated, with field office providing logistical support.*
- *Local partners identified and engaged through awareness activities.*

TNC opened a field office in Kavieng/Tigak Islands in January 2004. It is staffed by a full time Community Conservation Coordinator, who is assisted by short term contractors from time to time. The office space has been made available free of charge by the ADB funded National Fisheries Authority Coastal Management Fisheries Project.

TNC also opened a field office in Manus in January 2004, which is also staffed by full time Community Conservation Coordinator with support from short term local contractors. The office has been made available to TNC by the Manus Provincial Government, with which we have signed an MOU.

To date, the staff in Kavieng/Tigak Islands and Manus are primarily responsible for implementing spawning aggregations awareness and monitoring of spawning aggregations sites, coordinating and supporting spawning aggregation characterization, and documenting of traditional knowledge on spawning aggregations. Support for the spawning aggregation work is provided by the Spawning Aggregation Specialist, Pacific Islands Countries Program Director and the Melanesia Program Director.