

Mid-Term Report to Keidanren April – October 2003

Leveraging lessons learned from Komodo National Park to create a resilient network of marine protected areas at priority sites in the Flores and Banda Seas Eco-Region



Submitted by:

The Nature Conservancy Indonesia Program
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1. INTRODUCTION

The Nature Conservancy Indonesia Program – Southeast Asia Center for Marine Protected Areas (TNC-SEACMPA) has been receiving financial support from Keidanren and Sekisui for her flagship project, Komodo National Park, from Keidanren in the period April 1997 – April 2000. This support has been essential to preserve the coral reefs of this UNESCO World Heritage Site and Man & Biosphere Reserve for future generations. TNC-SEACMPA has also been receiving support from Keidanren and Sekisui to realize a Center that supports the conservation of coastal and marine habitats, including coral reefs, throughout Indonesia, building on experiences from Komodo National Park. The Center, formerly known as the Coastal and Marine Conservation Center has been renamed to the TNC Southeast Asia Center for Marine Protected Areas (SEACMPA) on July 1 2002. This new name explains clearly what this Center stands for: the support of Marine Protected Areas throughout Southeast Asia. The Center is situated in the town of Sanur, on the Island of Bali.

TNC-SEACMPA feels honored that Keidanren and Sekisui are now helping to leverage lessons learned from Komodo National Park to create a resilient network of marine protected areas at priority sites in the Flores and Banda Seas Eco-Region. This support has already lead to the establishment of two new MPA development sites, in Wakatobi National Park in Southeast Sulawesi and in the Raja Ampat Islands in Papua. At both sites TNC-SEACMPA is working very closely with partners to align additional funding and resources towards joint project objectives. TNC-SEACMPA has also received 5 years of funding commitment from the USAID Global Conservation Program II (GCPII) which serves as matching funding to all the activities described in this progress report.

2. PROGRESS ON TASKS IN WAKATOBI NATIONAL PARK

In late 2002, The Nature Conservancy Indonesia Program – South East Asia Center for Marine Protected Areas (TNC-SEACMPA) and WWF Marine Program Indonesia initiated a collaborative program for Wakatobi National Park (Figure 1.) tyo assist the Wakatobi National Park authority in improving their management plan, zoning work and implementation of park management. For this purpose, TNC-SEACMPA and WWF have developed and started to implement a joint work-plan. The institutional agreements covering this joint work-plan can be found in a Cooperative Agreement between WWF Indonesia Marine Program and TNC-SEACMPA. This partnership is dedicated to strengthen marine conservation programs in close cooperation with the Wakatobi National Park Authorities, Ministry of Forestry - Directorate of Forest Protection and Nature Conservation (PHKA), Ministry of Marine and Fishery (DKP), Buton District Government (PemDa), local communities and Non Governmental Organizations (NGOs), the private sector and other partners.

The joined work plan comprised various tasks. The following report provides an overview of the progress to date for all the tasks implemented since April 2003. The information on field activities is derived from reports provided by TNC Wakatobi field representative, Mirza Pedju, and WWF Wakatobi field representative, Veda Santiaji. The coordination team for implementation of this joined project included Rili Djohani (TNC-SEACMPA), Jos Pet (TNC-SEACMPA), Ketut Sarjana Putra (WWF Indonesia), and Lida Pet-Soede (WWF Indonesia). Additional WWF and TNC staff that have provided their support to the project sofar include: Marthen Leuna (WWF), Erdi Lazuardi (WWF), Peter Mous (TNC), Muhammad Barmawi (TNC), and Rizal Pramana (TNC). A summary of the Rapid Ecological Assessment (REA) whereby several scientists contributed their expertise is provided. Full reports of all sub-programs under this joint project are available upon request.

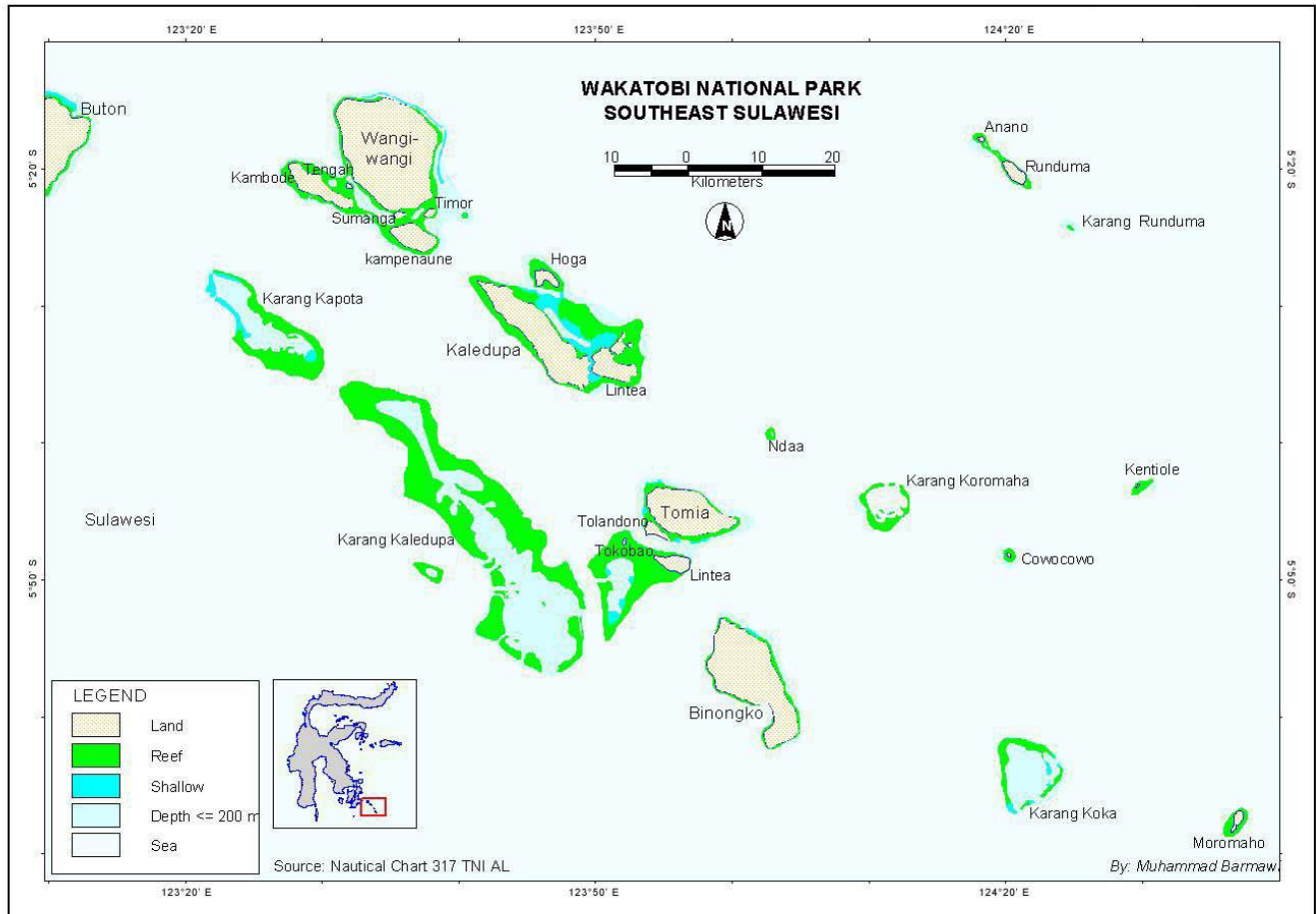


Figure 1. Wakatobi National Park, South East Sulawesi Indonesia

Activity I: Supporting on-site management and resource protection in Wakatobi National Park while simultaneously starting more detailed participatory site conservation planning for the area.

Task Ia. Site and Stakeholder Assessment Studies

The site and stakeholder assessment consisted of 6 main components (desk studies and fieldwork):

1. *Assessment of Biodiversity Status and General Condition*
2. *Socio-Economic and Cultural Conditions*
3. *Threat Assessment*
4. *Assessment of Current Conservation Status, Park Management, Zoning System and Regulations*
5. *Stakeholder Assessment and Partner Identification*
6. *Options for Co-Management*

Julien Fudge of Wallacea Development Institute / Operation Wallacea (OpWal, based in Wakatobi) prepared a desk study report during a 6 weeks contract with the project. The report was completed in its first draft on February 17, 2003¹. It contains background information that was available mostly from

¹ Full version available upon request.

OpWal. The report was used as important background document to the scientific expedition to Wakatobi in May 3-16 of 2003. World experts conducted extensive assessments of coral and fish biodiversity a.o. and included Dr. Emre Turak, Dr. Bert Hoeksema, Dr. Willem Renema, Dr. Mark Erdmann and others. An executive summary of the Wakatobi Rapid Ecological Assessment is presented in Chapter 4, and full report will be available at the end of October 2003. A summary of trip findings is provided below²:

*“Despite bad weather, I think we managed a pretty good geographic spread and certainly good habitat sampling. Many of the dives did produce sharks, Napoleon wrasse and especially lots of coral trout - but you really had to get below 25m to see them most of the time. On many dives, it was only Mark and I that came up having observed these groups - because we always bounced to 40-50m and stared into the distance to check. *L. bohar*, *L. gibbus* and *Lethrinus olivaceous* are still in large numbers, though again quite deep. The coral cover in many areas was damaged on the reef crest from a lot of bombing, but was often quite nice deeper down. Bombing in particular is still a very common activity. A large complex in Karang Kaledupa atoll filled with live groupers was being unloaded into a HongKong boat. Rangers said it was impossible to do anything about this, we saw a kedo-kedo fleet from Makassar just emptying karang Kaledupa of young coral trout - amazing how quickly they can catch these animals.*”

Overall, the impression was that the reefs in Wakatobi are extremely extensive, still in relatively good shape (especially considering all the pressures obviously mounting on them - with bombing still being rampant), and certainly ready to bounce back quite quickly if they could only be provided good protection (there still are plenty of large fish around - though they are mostly quite deep). At the same time, there were some ill omens for management - the negative attitude of the Wangi population was a bit alarming, and clearly they do whatever they please. The last big issue that I saw was the problem of the zonation scheme. Right now there are a lot of ad hoc initiatives underway (Lorenz's no-take zone, OpWal's community zones, etc). While these may seem like neat things to the individuals involved, there will be some serious issues of social jealousy once all the villages in the park receive socialization on the park and begin to realize that they are all part of one management unit - yet some are being paid not to fish while others are being asked to accept no-take zones with no direct compensation. One thing we've learned from Bunaken (which has 22 villages and 30,000 villagers in the park) is that you have to treat all the villages in the park similarly - or else you are asking for serious problems. This is going to be a big issue to deal with in the future...”

Project field staff also collected information on characteristics of the local economy and relevant socio-cultural and anthropological conditions during their various and ongoing engagements with local communities in the area. The Community Conservation Investment Forum (CCIF, co-funded separately by WWF and TNC) has started to identify the stakeholders and potential partner³. Their report was made available early April and will be further updated with information from the field team based upon their further encounters with various local stakeholders. This will form an important basis for the assessment of options for co-management development in Wakatobi National Park.

Task Ib. Planning and Design of Park Management and Partnerships

Based upon positive collaboration with the Wakatobi National Park authority and following results from stakeholder meetings held during Fiscal Year 2003, WWF and TNC decided to continue supporting the park management for FY04 and together with park authorities they have drafted a follow-up work-plan¹ that details FY04 activities in support of the long term objective with components aiming to initiating the process to establish a multi-stakeholder collaborative management body and mechanism for the ultimate

² Shortened version by Lida PET-SOEDE WWF – Indonesia Marine Program.

³ Report available at website www.cciforum.org

goal to enhance management capacity and effectiveness for long term results. This work-plan has been presented to and discussed with stakeholders, and, as a living document representing our adaptive management approach, will receive further input from local government and through further stakeholder meetings. TNC and WWF have committed to similar investments in field activities. The key priorities identified for FY04 are to initiate a process for revision of the WNP management plan and zoning system and to further assess the status of the Park's resources and resource use for input in the revised management plan. At the same time, priority attention will also be given to reducing destructive fishing practices in the Park.

Project components for FY04 include:

1. Outreach and constituency building for effective MPA management,
2. Developing Conservation Strategies,
3. Management capacity building,
4. Monitoring,
5. Policy and legal support,
6. Development of a sustainable finance plan, and
7. Improved surveillance and enforcement.

The main objectives for the Wakatobi Project in FY04 have been identified as:

- Stakeholders agree on objectives of WNP,
- Stakeholders understand the need to fulfill certain criteria to meet objectives,
- Overview of status of ecosystem resources and resource use patterns,
- Improved enforcement strategy and surveillance routine, and
- Support and understanding of stakeholders for enforcement against destructive fishing.

Indicators of success for FY04 have been defined as:

- Signed agreement with Park Authorities and multi-stakeholder constituency on the objectives and design criteria for Wakatobi National Park,
- Draft status report with indications on resource status, resource use patterns and ecological and socio-economic management needs, and
- Surveillance and enforcement procedures standardized, socialized with stakeholders and designed to cover the entire park area on a routine basis.

Building upon the experience of several workshops in relation to Wakatobi National Park, it is imperative to provide the Wakatobi National Park's key stakeholders and decision makers with solid background on Marine Protected Areas (MPAs) as a tool of biodiversity conservation and protection of local livelihood. This is crucial as the key stakeholders would have to understand the objectives of the Park and the criteria needed to fulfill those objectives. Therefore, TNC-SEACMPA has prepared MPA and reef fishery training programs for selected key stakeholders (i.e. Park Authorities, Buton Government officials, Local Parliament members, and local NGOs and Universities).

Task 1c. Policy, Legal Support, Outreach and Constituency Building for MPA development

Policy and Legal Support

WWF and SEACMPA coordination teams have started to work together with COREMAP, NRM and CRMP on the development of strong constituencies at National Policy levels. Steps are taken to bring together the ministries of PHKA and DKP to establish an MPA taskforce to improve design for a network

of Indonesian MPAs based on ecologically relevant selection criteria. Locally at the district level, an effort was initiated on the identification of partners for the development of District Laws (PERDA) in support of MPA management in Wakatobi National Park. This will be continued during FY04. Furthermore, TNC facilitated a field visit to Komodo National Park at Manggarai District in Flores which was conducted in late July to early August. The trip participants comprised Wakatobi Head of Park, Head of tourism service, Second Assistant to the Bupati of Buton, and Representative of Regional Planning and Development Agency (BAPEDA). The trip to Komodo National Park allowed the visitors to learn about the partnerships and experience of Manggarai district government and Park authority, and the role of the local government to issue a district law that delegate all resource use rights to the Park as to avoid overlapping jurisdiction within the Park boundary.

Outreach Awareness and Constituency Building

The project team had identified some initial targets for outreach and awareness programs in close cooperation with the Head of Wakatobi National Park and other partners and key stakeholders. Commencing during earth day and forestry day weekend during the last week of April (Chapter 5; figure 5.3), a number of activities were conducted to engage mostly young community members in conservation related activities and create a feeling of responsibility and pride over the wealth of marine and reef resources of Wakatobi Island. In collaboration with a large team of park rangers and Yasinta, a local NGO, a beach clean up was organized and planting of mangrove juveniles took place (Chapter 5; Figure 5.4). Some competitive activities in sport and arts were organized as well. Furthermore, a Reef Check event was also conducted involving local university, several NGOs and Wakatobi park rangers.

In late October 2003, a communication plan and strategy will be designed by park authority staff, TNC and WWF that will incorporate targeted messages and ways to reach target groups with the objective to inform various stakeholders on the importance of MPA management for sustained fisheries and biodiversity and also to allow strengthening of constituency building as solid basis for establishing a collaborative management mechanism and –body. A draft monitoring program to evaluation alteration of perceptions by stakeholders is available from work by TNC in Komodo and this will be evaluated for application in Wakatobi as well.

Task Id. Surveillance, Enforcement and Monitoring of Resource Use

The Park acknowledged its limitations on infrastructure provision for enforcement and surveillance in Wakatobi. Hence, TNC, in collaboration with WWF, has assisted the improvement of logistics related to Park's enforcement and surveillance (i.e. improvement of engines spareparts for the Parks patrol's speed boat) and boosted the Wakatobi patrol team with the multi purpose Floating Ranger Station (FRS) Salmon (Chapter 5;figure 5.2), a wooden live-aboard, and a twin-engined 85-horse powered speed boat. However, on the first four months of the program (i.e. April – August 2003) the Park and TNC – WWF collaboration team agreed to focuss on awareness activities pertaining to enforcement. A series of public consultation and outreach and awareness related to enforcement and surveillance activities were initiated. Furthermore, *Yayasan Bajo Matila*, a local Bajau ethnic NGO based in Sampela village – Kaledupa island, has assisted TNC-WWF-and Wakatobi National Park by facilitating outreach + awareness campaigns in Bajau villages. Some of the inputs gathered from various stakeholders were as follows:

1. Many stakeholders believe that there is a lack of enforcement, or even absence of enforcement, within the Wakatobi Marine National Park.
2. Although some participation of communities members are anticipated for enforcement activities, its model and approach is still need to be clarified. (Apparently there are communities' arranged/sponsored surveillance activities in their respective home reefs and/or coastal areas. E.g. Sampela village and around Runduma island. These models will be assessed, and if appropriate may be used to compliment the design and implementation of surveillance and enforcement for Wakatobi.)

3. The type of vessels used, the period and locations where particular vessel being deployed is also an important factor to ensure the success of enforcement objectives. For instance while the use of fast speed boat engines in the outer reefs area (i.e. Karang Kaledupa, Karang Kapota, and other outer reefs area) are useful, the use of outboard engines vessel surrounding home reefs area are not suitable since the loud sound of its engines will give an ample opportunities for targeted offenders to stay clear from the location.

As part of the park authorities duty, patrols were conducted against destructive fishing practices. The way of engagement of patrol team with local communities was targetted more to inform and discuss with them the current nation-wide laws against destructive fishing rather than organizing large special operations for pursuit of illegal destructive fishing actors. However, when observed or when reports of these activities are confirmed, the enforcement team engaged in correct enforcement activities and up to October 2003 five successful arrests were made by the enforcement team.

There were two enforcement capacity building trainings conducted in the past six months. The first was resource utilization monitoring training, which was held in early June. This training was facilitated by Abu Bakar of TNC – Komodo Field Office. The training enhanced the skills of the Park rangers to gather basic fishery and exploitation data, which is useful for Park management to describe the utilization pattern of Wakatobi marine resources as an input and/or update for the Park’s management plan. The second training was conducted by an external consultant, which was contracted by WWF, in collaboration with TNC. The training focused on developing rangers skills on standard enforcement procedures such as; understanding rules of engagement; human rights principles, and community engagement. The Park authority will be assisted by TNC and WWF collaboration team to develop and/or improve standard operating procedure for enforcement and surveillance for Wakatobi.

Task Ie. Capacity Strengthening and Training for MPA Management

U variety of training and capacity building activities were carried out for Wakatobi National Park staff and/or other Park stakeholders (such as local NGOs, Regional Fishery Service officials, and local University students/clubs) since April 2003:

- Open Water Dive Training Course for Park Rangers by Wallacea Development Institute – Operation Wallacea,
- Training of 10 Park Rangers in Reef Check Methodology for Conservation Awareness and Outreach Program occurred during the Earth day event activities,
- Training for Park Management and Fisheries Stakeholders on Marine Protected Areas as Tools in Reef Fisheries Management by TNC SEACMPA and Komodo Field Office Staff was provided in May and September 2003 in Bali (Chapter 5; figure 5.1) and will be followed up by similar training in the Wakatobi area in January 2004. The first two trainings were given to eight participants from Wakatobi National Park (i.e. four rangers, one fishery district fishery official, and three local NGO members). In early January, two more trainings will be held in Wakatobi and it is intended for the officials from the Park, district government, local parliament, local NGOs and universities,
- Training on Monitoring of Reef Fish Spawning Aggregations by TNC SEACMPA, and/or Komodo National Park Staff is postponed to FY04 and is scheduled for February 2003,
- Training Course on Monitoring of Coral Reefs by TNC SEACMPA, Komodo Field Office and Komodo National Park Staff was provided in May 2003, and
- Basic training on Marine Operation will be given by TNC and/or external consultant in November 2003 and/or March 2004. The training encompasses outboard engine maintenance, basic navigation techniques, handling of speedboat in proper manner, and first aid and oxygen training. A selection of proper/potential mooring sites will also be explored during this training.

3. FUTURE SCHEDULE FOR WAKATOBI NATIONAL PARK

Tasks	Timeline	Anticipated Outputs
<i>Ia. Site and Stakeholder Assessment Studies</i>		
Final draft of Wakatobi REA is completed	End of October or November 2003	Final report of Wakatobi REA is completed and
<i>Ib. Planning and Design of Park Management and Partnerships</i>		
a. Close coordination with Buton Regional District Government, Ministry of Forestry Directorate General for Forest Protection and Nature Conservation (PHKA)	On going	Prioritized agenda of policy/legal issues developed
b. Participation in Discussions on MPA Policy Development at National and District Levels	On going	National Indonesian task force to develop MPA strategy created by the Ministry of Fisheries and Marine Affairs on which TNC is represented
<i>Ic. Policy, Legal Support, Outreach and Constituency Building for MPA development</i>		
a. Communication Training	October 27 – 31 st	Communications strategy and messages designed
b. Implementation of Outreach program	January – March 2004	Initial awareness activities conducted in at least three communities within WNP
c. Formation of stakeholder forum endorsed by District government, followed by stakeholder forum/ working group meetings.	January – May 2004	A group of local forums or collaborative bodies that includes representation from all islands and/or other relevant stakeholders formed to provide input into management planning. Signed agreement between Park Authorities and multi-stakeholder constituency on the objectives and design criteria for Wakatobi National Park
<i>Id. Surveillance, Enforcement and Monitoring of Resource Use</i>		
a. Development of enforcement SOP	October – December 2003	Standard operating procedures for WNP's enforcement program developed

b. Development of Enforcement Plan	End of December 2003	Patrol team deployed and adequately equipped Significant reduction in destructive fishing practices and unregulated fishing
<i>Ie. Capacity Strengthening and Training for MPA Management</i>		
a. MPA training for executive and NGOs	Mid January 2004	Key stakeholders are equipped with the basic MPA principles which is crucial for them to understand the objectives of an MPA and criteria needed to achieve those stated objectives
b. SPAGS ToT training	February 2004 (tentative)	Key field monitoring officer understand the latest methodology on SPAGS and able to transfer the knowledge to Wakatobi MPA officers
c. Communication Training	October 27 – 31	Outreach team able to design strategy and messages for its awareness and outreach program
d. Marine Operation training	November 2003 and/or March 2004 (tentative)	Field staff understand and gain the basic skills of marine related operation pertaining to maintenance, navigation, first aid and emergency, etc.

4. SUMMARY WAKATOBI RAPID ECOLOGICAL ASSESSMENT MAY 2003

A Rapid Ecological assessment (REA) was conducted in Wakatobi National Park to provide input to a revision of management and zonation plans that are currently existing. The REA team consisted of renowned expert scientists in the field of marine biology and ecology and the team aimed at covering the geographic range captured within Wakatobi National Park boundaries to map some of the diversity in corals, other reef invertebrates such as stomatopods and in fish and to provide a general update on the status of the marine resources. Fisheries activities were also observed. Reefs in the Wakatobi Marine Park were surveyed at 33 stations covering most of the park area with the exception of far southeastern and northeastern atolls. For comparison two of the stations were surveyed near Pasarwajo on the east coast of Buton Island. All stations but one shallow location were surveyed at two depth ranges.

Coral diversity and health

In total 396 species of hermatypic scleractinian corals belonging to 68 genera and 15 families were recorded with an average per station diversity of 124 species. In addition 10 species of non-scleractinian or ahermatypic hard coral species and 28 soft coral genera were recorded. Despite relative low diversity of habitat type visited, coral species diversity was relatively high, an indication of Wakatobi's position near the very center of high coral biodiversity. Five coral community types were identified, two deep, two shallow and one lagoonal. These community types were pretty widely distributed in the Wakatobi area

with no clear geographic pattern discernable. Coral damage was wide spread, in one form or another seen at most sites, though nearly always at relatively low level. Three major impact types were fish bombing, crown-of-thorns and bleaching. Poison fishing was practiced in the area, though no evidence of its impact was recorded. Reefs were in relatively good health, perhaps most likely due to the large extent of them and lack of major disturbances in the last decades. Large reef areas retain a higher capacity for replenishment and recovery. Eastern atolls were in best condition, Northwest Tomia had the highest species diversity and Karang Kaledupa lagoon had most interesting coral communities and rare species.

Fish diversity

There was a total of 590 fish species from 52 families recorded. Small and cryptic fish families like the Blennidae and Gobiidae were under sampled and more appropriate surveying of these families would increase the total significantly. Extrapolation using the CFDI (see the methods section for an explanation) regression equation indicates that approximately 942 species are likely to be found throughout the Wakatobi region. From a broad perspective the species composition of the Wakatobi archipelago fish fauna is a subset of the regional species pool, although a very diverse one. Its CFDI rating of 284 puts the Wakatobi region in the same biodiversity category as Milne Bay in PNG and Komodo in Indonesia. These areas are recognized as having some of the most beautiful coral reefs in the world. The most species-rich families recorded were the wrasses (Labridae), damselfishes (Pomacentridae), groupers (Serranidae), butterflyfishes (Chaetodontidae), surgeonfishes (Acanthuridae), parrotfishes (Scaridae), cardinalfishes (Apogonidae), snappers (Lutjanidae), squirrelfishes (Holocentridae), and angelfishes (Pomacanthidae). These 10 families together accounted for approximately 70% of the total reported demersal fish fauna.

Over 80% of the individual sites surveyed during the Wakatobi REA were ranked as either 2 or 3 on a 6 point scale ranging from Extraordinary at 1 to Very Poor at 6. This rating reflects a persistently high diversity level across all sites surveyed and places the region in the top 2 of 33 areas previously surveyed for similar information. The combination of high diversity at both the area and site level indicates that the reef fish assemblages are in relatively good health. Although evidence of over-fishing and destructive fishing practices was present throughout the Wakatobi area the effects were patchy and have not yet resulted in large-scale degradation of the fish and coral assemblages. If management objectives require prioritizing areas for protection a more detailed field assessment would be advisable. Nevertheless there is some evidence to suggest a particularly diverse patch at the NW end of the Wakatobi area. This area is contains the majority of the high fish diversity sites found on the REA. This area could potentially form a preliminary starting point from which to develop zoning plans.

Foraminifera

During the REA, 31 species of larger foraminifera were found. This is a high number compared to the diversity in other areas. The extensive reef flats in the area (in part covered by sea grass beds) were an important habitat. The inner lagoons also provided a unique habitat for a number of species. Compared to the Spermonde Archipelago, the reef slope assemblages were more spread over the depth gradient, i.e. a higher degree of habitat partitioning. High diversity, high habitat partitioning and high densities (combined with low densities of non-symbiont bearing foraminifera) indicate that conditions for reef growth are very good in the area.

Stomatopods

The Wakatobi National Marine Park is home to an impressive diversity of reef-associated stomatopods that clearly substantiates this MPA's importance from the standpoint of biodiversity conservation. While habitat diversity is not nearly as broad as that found in the Raja Ampat Archipelago, the area nonetheless supports an extensive reef system with high diversity. While planned genetic population studies using the specimens collected herein will help discern connectivity of Wakatobi's reefs with others in Eastern Indonesia, the presence of such a large number of species (and the relatively low percentage of restricted

range species) certainly supports the hypothesis that Wakatobi is genetically well-connected to other reefs in the region. These three factors – extensive reefs, high diversity, and apparent strong connectivity – all underscore the conservation value (and likely resilience) of Wakatobi’s reefs and strongly support the prioritization of Wakatobi National Marine Park for conservation and management.

Fisheries

The importance of the area for local small-scale fisheries is obvious from the number of fishers operating mostly small-scale fishing gears. A large variety of fishing gears is used catching a large variety of fish species. Fishing intensity varies between areas and has already resulted at some highly-fished locations in some low abundances of particular high value target species. About 52% of all fishing operations observed during the REA was hook and line. Also as many as 7 medium scale illegal operations were observed throughout the area, which is fairly high and indicates that there is at least the perception that there is still some fish left. Interviews at the live reef fish cages confirm that a significant number of approximately 1000-1500 groupers are exported out of the area through local trade chains. Additionally, observations of an outside fishing operation, shows additional capture of 200 live grouper by 30 trolling boats during 3 days. This adds even more to the number of fish taken from WNP reefs, and leaves no value to the local economy.

Commercial Target Fish Species

Generally, the data appear to indicate relatively higher numbers of target fish species at the locations with observed lower fishing. Also on the whole, the locations with good to medium habitat conditions displayed relative larger densities of target species than sites with either lower habitat quality or with large sand or sea-grass patches. It was found at most locations, that larger fish generally were only found deep. This vertical distribution pattern is a likely result of a combination of habitat reduction at shallow depths and reef crests from significant destructive fishing and of target species population disruption from high levels of hook and line trolling for live fish. The majority of sites had between 1-5 target species per survey minute and at and around all these sites the team observed either low or medium numbers of fishing activities. The habitat conditions at these sites were mostly moderate, yet included also a badly damaged location and sites with sea-grass dominance.

The sites that showed low target species densities were found either in or near harbor areas near large populations or in areas where medium to high fishing intensities were observed. The high value species include mostly the Napoleon wrasse and some of the Epinephelidae genus and most of the Plectropomidae genus. Within the 647 individuals of Serranidae observed, only 100 individuals classify as species wanted in the live reef food fish trade. Additionally, 29 Napoleon wrasseS were observed. Even when some of the observations may under represent the actual presence of these highly valued species with 100%, 125-250 individuals observed in 25 dives with total survey time of 1191 minutes or nearly 20 hrs does not appear very high. The combination of disappearing habitat from destructive fishing practices with the highly effective methods of fishing for these species that include hook and line trolling, traps and cyanide fishing forms the problem. Unless some regulations are in place to reduce the exploitation on these species, they may become near extinct

5. PICTURES OF ACTIVITIES FROM WAKATOBI



5.1 MPA Training at TNC SEA CMPA (September 2003). Participants performed a simulation of reef fishery management



5.2. Floating Ranger Station Salmon: a multi purpose live-aboard that was used for REA (May 3 – 16 2003) and will play an important role for enforcement support in the Park



5.3. Earth day and Forestry events April 22nd 2003 (From top left to bottom left): Tomia office keys were handed over to WWF Marine Program Director, Ketut S Putra and TNC Wakatobi representative, Mirza Pedju by Syihabudin, Head of Wakatobi National Park.



5.4. Earth day and Forestry day events April 22nd 2003 .Mangrove planting activity at West Waitii village.

6. PROGRESS ON TASKS IN RAJA AMPAT

The 4 million hectares of land and seas at the northwestern tip of Papua known as Raja Ampat (Figure 6.1) harbors the world's highest coral reef biodiversity. A rapid ecological assessment conducted by Conservation International in 2001 describes Raja Ampat as an area of outstanding biological diversity with stunning marine and terrestrial habitats that are still relatively intact. The report further suggests that no other area of comparable size in the world harbors as many species of scleractinian corals.

Another Rapid Ecological Assessment conducted by The Nature Conservancy in 2002 confirmed this conclusion, adding even more previously undiscovered species to Raja Ampat's species list, including species that were new to science. Supported by KNCF, The Nature Conservancy's Southeast Asia Center for Marine Protected Areas has launched a marine conservation program to protect these unique coral reefs. This conservation program will engage local communities and local government agencies to effectively manage their natural resources.

Straddling the equator, the Raja Ampat area includes the four large islands of Waigeo, Batanta, Salawati and Misool (also known as Batanme) and hundreds of smaller islands scattered amongst these. Under the Indonesian decentralization policy, the Raja Ampat islands was made an independent regency (*kabupaten*) in early 2003. This regency comprises five districts (*kecamatan*, Salawati, Samate, Misool, South Waigeo and North Waigeo), with a combined population of approximately 50,000 residents occupying 89 villages.

The relatively low population density in combination with a tradition of community resource use rights should greatly facilitate the development of an integrated conservation/resource management program in the area. Furthermore, the new administration of the *kabupaten* Raja Ampat has expressed a great interest to work together with conservation and natural resource management agencies to collaboratively develop structures and mechanisms to protect Raja Ampat's natural resources.

Whereas the reef ecosystems are still in good condition, they are threatened by unsustainable fishing and by unsustainable forestry practices causing run-off that smothers coral reefs. Over-exploitation of sharks and valuable reef fish such as groupers has already lead to depressed population biomass, and fishing methods that destroy the habitat itself such as blast fishing and poison fishing are known to occur frequently. Whereas local communities are to some extent part of the problem, immigrant fishers from other areas in Indonesia appear to cause most damage. Therefore, enabling local communities and government agencies to manage their resources in a sustainable way, making sure that local communities are the ones who benefit from protected management, is of crucial importance for a successful conservation program.

The long-term objective of this conservation program is to develop an effectively managed, resilient network of mutually replenishing Marine Protected Areas that sustains resource use by local communities and that protects coral reef biodiversity. To achieve this, the Conservancy is working with local communities, government agencies and environmental non-profits to design this network and to identify the mechanisms how such a network could be managed most effectively. In the first year (2003 – 2004), activities focus on partnership-building and stakeholder consultations, leading to a coherent outreach approach that will ensure buy-in of local communities and governmental agencies in the developing conservation program. To support these activities, a field office with two staff was established in June 2003.

Activity II: On-site stakeholder consultation, outreach, and the formation of a conservation coalition, in the Rajah Ampat Islands, nominated for UNESCO World Heritage Site status.

Task IIa. On-Site stakeholder consultation in Rajah Ampat Islands

Involvement of local stakeholders in the development and implementation of a marine conservation program is of crucial importance for three reasons. Firstly, local communities have a lot of knowledge on the natural resources in the area, especially on the resources that they harvest. This knowledge is important input for the design of a network of Marine Protected Areas. Secondly, local communities and local government agencies understand the human context, and they would therefore be able to assess which proposed management interventions would work and which not. Finally, only by involving local stakeholders at an early stage, their acceptance and buy-in can be secured. For these three reasons, The Conservancy has implemented a number of formal and informal meetings.

The most important of these stakeholder consultations was a workshop held on August 16-18 in Saonek, south of Waigeo (Figures 6.2, 6.3, 6.4). This workshop was attended by ca. 70 government officials and community leaders, representatives from the central government, as well as representatives of Conservation International and WWF. Also, the World Bank's Coral Reef Rehabilitation and Management Project (COREMAP) was represented. Hosted by the local district government and the Agency for Conservation of Natural Resources, the workshop was facilitated by social-economic experts from the University of Papua, Manokwari. The main objectives of this workshop were to explain results of various ecological surveys that had been conducted so far, as well as to set a course towards development of a conservation program. Participants provided their ideas on what are the main threats to Raja Ampat's natural resources and also some preliminary ideas on priorities for conservation management priorities were formulated. A workshop report is available from TNC-SEACMA and a follow-up workshop is planned for December 2003 – this workshop will be spearheaded and funded by Conservation International.

Besides August 2003 workshop activities, the two staff based at Sorong conducted a number of smaller meetings with government agencies, environmental non-profits (including WWF, CI and local organizations), and local community leaders. The objectives of these meetings were to explore possible partners and to explain The Nature Conservancy's background and ideas on marine resource management. The most important governmental partners are the local government (PEMDA), Department of Fisheries and Marine Affairs (DKP) as well as the Agency for Conservation of Natural Resources of the Department of Forestry (BKSDA).

Task IIb. Participatory Site Conservation Planning in the Rajah Ampat Islands

Based on the results of the rapid ecological assessment held by The Nature Conservancy in November 2002, two potential areas were identified for implementation of a marine conservation program. These two sites are Kofiau and Misool. Participatory site conservation planning started with the August 16-18 workshop in Saonek (see above), and will be continued by conducting field visits to these areas throughout the 3rd quarter in this reporting period.

Task IIc. Development of an outreach and awareness program for the Rajah Ampat Islands

Building from its field experience in Komodo National Park and other sites, The Nature Conservancy is building an effective outreach and awareness program for the Raja Ampat islands. The core of this program is to make local people aware of unsustainable resource use practices and how Marine Protected Area management can help to abate these practices, thereby ensuring their livelihood for the future.

As part of this outreach and awareness program, The Nature Conservancy invited five representatives from Raja Ampat to a course on Marine Protected Area Management and Planning that was held in at the Southeast Asia Center for Marine Protected Areas on September 15 -19. This course was attended by a total of 22 conservation practitioners from Raja Ampat, Bali, Wakatobi, Komodo and Derawan Islands.

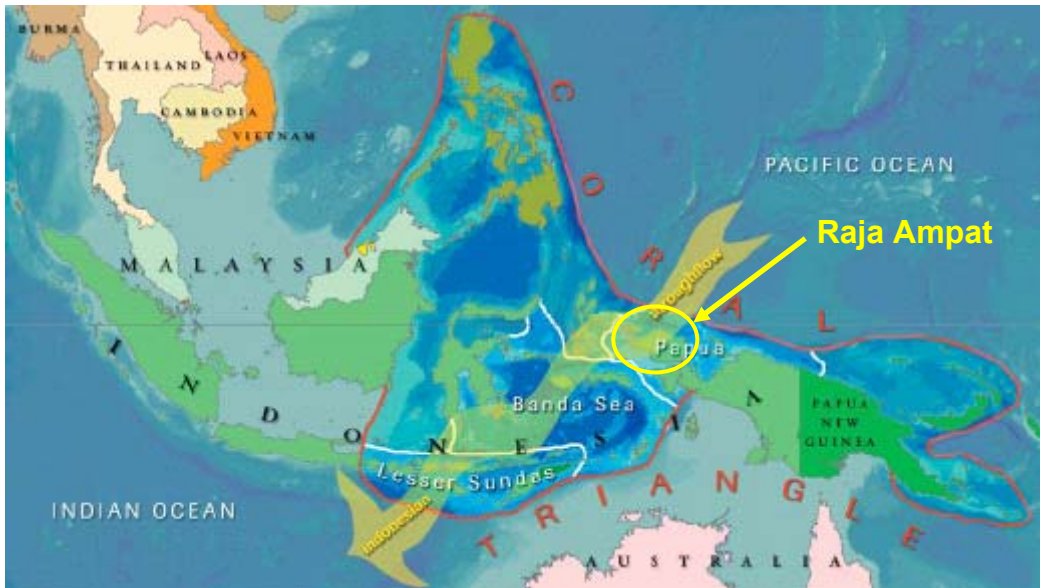


Figure 6.1. Map of Indonesia showing the area with earth's highest coral reef biodiversity, the Coral Triangle. The *Kabupaten* (District) Raja Ampat is situated at the entrance of the Indonesian Throughflow, a current that connects the Pacific Ocean with the Indian Ocean.



Figure 6.2. Break-out sessions during the workshop on marine conservation and sustainable resource use held at Saonek, Raja Ampat. Facilities in Raja Ampat are very basic, which is typical for newly established districts.



Figure 6.3. Group photo of participants of the workshop on marine conservation and sustainable resource use held at Saonek, Raja Ampat.



Figure 6.4. Group photo of participants (including participants from Raja Ampat) from of the course on Marine Protected Area Management and Planning, held in Bali.

7. FUTURE ACTIVITIES PLANNED FOR RAJA AMPAT (October 2003 – March 2004):

Task IIa. On-Site stakeholder consultation in Rajah Ampat Islands

- stakeholder workshop in Misool, together with Conservation International (mid-December)
- continued meetings with local communities and government agencies in preparation of the aforementioned workshop
- support for implementation of activities that were recommended in the aforementioned workshop.

Task IIb. Participatory Site Conservation Planning in the Rajah Ampat Islands

- field staff of The Conservancy's Raja Ampat team will visit all coastal villages in Misool and Kofiau, and selected villages in the rest of Raja Ampat to collect information on resource use patterns, perceived threats and opportunities for conservation management. These visits will also help to build trust and partnerships.
- field staff of The Conservancy's Raja Ampat team will visit all relevant government agencies in the 'mother' kabupaten Sorong and in Raja Ampat itself to collect information on present resource management plans, to build partnerships, and to explore opportunities for improved natural resource management.

Task IIc. Development of an outreach and awareness program for the Rajah Ampat Islands

- A Program Officer will be hired to support outreach and awareness activities
- A course on Marine Protected Area Management and Planning will be organized in Raja Ampat – this course will be essentially the same as the one implemented in Bali, but participatory activities will focus on Raja Ampat.
- Together with SEACMPA in Bali, the Raja Ampat team will design a suite of key messages and outreach methods that will form the core of the Outreach and Awareness Program.