



# PHILIPPINES

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## Introduction

There are five species of sea turtles that occur in the Philippines, namely green hawksbill, olive ridley, loggerhead and leatherback. Several locations for sea turtles nesting are shown in Table 6 (Cruz, 2004). The green turtles are widely found throughout the country, with high nesting aggregations in the Turtle Islands and the San Miguel Group of Islands, both in Tawi-Tawi (Cruz, 1999). The decline in the green turtles population is attributed to massive egg harvests that have been in progress for the past 43 years. The hawksbills are also widely distributed in the Philippines. Unlike the green turtles, there is no information on the aggregation of hawksbill throughout the archipelago. Lagunoy Gulf in the Bicol region has been identified as a development habitat of hawksbill turtles. The population of hawksbill is severely decimated as a result of excessive exploitation of eggs and the high demand for the shell (De Veyra, 1994).

In the early 1900's, Taylor reported that olive ridley turtles were quite common in Manila Bay. Recently, olive ridley turtles are found to nest moderately in the provinces of Zambales and Bataan and occasionally in Batangas and Palawan. The said nesting areas are all facing South China Sea (De Veyra, 1994). Loggerheads are very few in the Philippines. There were two documented tagged loggerhead turtles from Japan. These were caught in Pilas Island, Basilan in 1992 and RapuRapu, Albay in 1994 (De Veyra 1994). Loggerheads with Philippine tags were from Honda Bay in Palawan, Bais in Negros Oriental and Cortes in Bohol. There is no documented nesting in the Philippines. Visayas, or the central part of the Philippines, and the Bicol region specifically Catanduanes, Daet and Albay Gulf are the feeding areas of leatherback turtles. There is no documented nesting in the Philippines.

## Sea Turtles Conservation and Enhancement

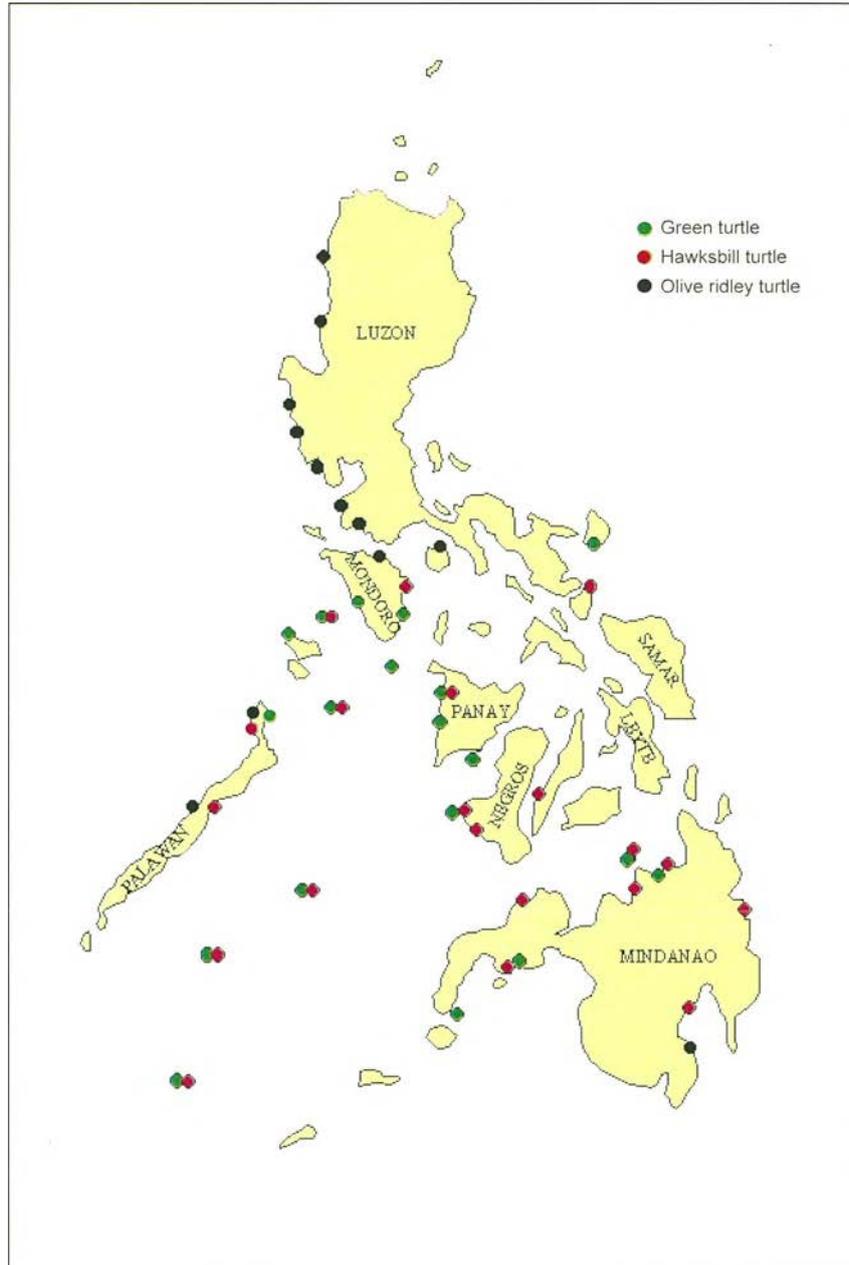
### Legislations and Regulations

The specific law that addresses the protection and conservation of sea turtles in the Philippines is the Republic Act No. 9147 or the "Wildlife Resources Conservation and Protection Act," that was approved by Congress on July 30, 2001. The Act is generally a law that provides for the conservation and protection of wildlife resources and their habitats, particularly threatened and endangered species. RA 9147 also gives respect to traditional practices among the indigenous people. However, since this Act states that any wildlife species categorized as threatened or endangered cannot be exploited, it is illegal to exploit sea turtles in all of its life stages, including its eggs (Cruz, 2004).

The Turtle Islands in the province of Tawi-Tawi and part of the Turtle Islands Heritage Protected Area (TIHPA) are one of the most important sea turtle rookeries in the Southeast Asia region and a major nesting area for green turtles in the world. For a long time, turtle egg collection has been practiced and

**Table 6.** List of Confirmed Nesting Areas in the Philippines

Area	Species
Santa Maria, Ilocos Sur	Olive ridley
Morong, Bataan	Olive ridley, hawksbill & green
San Antonio, Zambales	Olive ridley
Nasugbu, Batangas	Olive ridley
Lian, Batangas	Olive ridley
San Juan, Batangas	Green
Pamilacan Is., Cuyo, Palawan	Green & hawksbill
Halog Island, Palawan	Green
Tanobon Island, Palawan	Green
Panata Cay, Palawan	Green
Kota Islands, Palawan	Green
Brgy. Simpokan, Puerto Princesa City, Palawan	Olive ridley
Arricefi Island, Honda Bay, Palawan	Hawksbill
El Nido, Palawan	Olive ridley, hawksbill & green
Apo Island, Sablayan, Occidental Mindoro	Green
Roxas, Oriental Mindoro	Green
Basud, Quidlog, Prieto Diaz, Sorsogon	Hawksbill
Brgy. Talisoy, Virac, Catanduanes	Green
Panagatan and Malaqui Is., Antique	Green
Malalison Island and Brgy. Lipata, Culasi, Antique	Hawksbill
Brgy. Bulata, Cauayan, Negros Occidental	Green
Brgy. Nauhang, Sipalay, Negros Occidental	Green
Sitio Kibela, Brgy. Cantaan, Guisiliban, Camiguin	Green
Sito Guisi, Brgy. Dolores, Nueva Valencia, Guimaras	Green
Punta Dumalag, Davao City	Hawksbill
Malita, Davao City	Olive ridley
Purok 7, Inobulan, Salay, Misamis Oriental	Green
Soldevilla's Beach Resort, Brgy. Salay River Side-1, Salay, Misamis Oriental	Hawksbill
Taboc, Bobontugan, Jasaan, Misamis Oriental	Hawksbill
Minsalag, Bonifacio, Magsaysay, Misamis Oriental	Hawksbill
Hinatuan, Surigao del Sur	Hawksbill
Panikian Island, Pitogo, Zamboanga del Sur	Green
San Miguel Islands, Mapun, Tawi-Tawi	Green
Turtle Islands, Tawi-Tawi	Green & hawksbill



**Figure 14.** Distribution of Sea Turtle Nesting Beaches in the Philippines

traded by the residents of Turtle Islands. The National Government, in agreement with the Local Government of Turtle Islands, allowed and regulated turtle egg collection pursuant to Department of Environment and Natural Resources (DENR) Administrative Order (AO) No. 33, series of 1982 (Cruz, 2004).

After the passage of RA 9147, the Local Government of Turtle Islands appealed to the President of the Republic of the Philippines for a five-year transitory period before the full enforcement of the Law in the area. The appeal was granted this year with instructions from the President to the Local Government, the Autonomous Region of Muslim Mindanao and the DENR to collaborate and coordinate among themselves and with other stakeholders in the area to implement a Five-Year Phase in-Phase out Scheme (Cruz, 2004).

There are other related laws supporting the conservation and protection of sea turtles in the country, namely:

- Republic Act No. 8550 or the “Fisheries Code of 1998,” was approved by Congress on 19 February 1998. This law mandates the local government to manage, protect and conserve the resources in the municipal waters for the benefit of municipal fishers. This law prohibits, among others, blast fishing, the use of obnoxious substances and trawl fishing within the municipal waters.
- Republic Act No. 7586 or the “National Integrated Protected Areas System (NIPAS) Act,” was approved by Congress on 1 June 1992. This law provides for the establishment and management of a National Integrated Protected Areas System.

In 1998 and 1999, two guidelines came out, the Joint DENR-Department of Tourism Memorandum Circular No. 98-02 and the DENR AO No. 99-31. The Joint Memorandum Circular is a guideline for eco-tourism development in the Philippines. DENR AO No. 99-31 is a guideline for Ecological Destination (eco-tourism) development for the Turtle Islands, Tawi-Tawi. There are also provincial and municipal ordinances promulgated by the Local Governments to draw attention to the need to protect sea turtles in their jurisdiction. However, the existing laws prevail over these ordinances. In addition, importation and exportation of sea turtles and their by-products are illegal since the Philippines has been a party of CITES since 1981 (Cruz, 2004).

### Hatcheries

At present, the Pawikan Conservation Project (PCP), the Protected Areas and Wildlife Bureau (PAWB), under the Department of Environment and Natural Resources (DENR) both assist, monitor and/or manage twelve hatcheries. These are in the Turtle Islands in the Province of Tawi-Tawi, Morong in the Province of Bataan, Hinatuan in the Province of Surigao del Sur, San Juan in the Province of Batangas, Pamelikan Island and Miniloc Island both in the Province of Palawan. Five hatcheries are in the Turtle Islands, three are in Morong, and one each in Hinatuan, San Juan, Pamelikan Island and Miniloc Island (Cruz, 2004).

All the hatcheries in Turtle Islands are managed by the PCP while hatcheries in Morong, Bataan are managed by the *Bantay Pawikan* (sea turtle guard), a people’s joint organization with the local government. The Unlad Chapter of the Philippine Rural Reconstruction Movement (PRRM), a non-governmental organization (NGO), was one of the groups that led to the establishment of the hatcheries in Morong. In Hinatuan, the local government, in collaboration with the Centre for Empowerment



**Plate 67.** Hatchery in Morong, Bataan



**Plate 68.** Hatchery in the Turtle Islands, Tawi-Tawi

and Resource Development (an NGO) and the DENR regional office, are managing the hatchery. Only the local government and the DENR regional office handle the hatchery in San Juan, Batangas. Pamelikan Island is managed by a private institution (Cruz, 2004).

The establishment of hatcheries in the Turtle Islands started in 1984 allowing residents to collect 60% of the total eggs produced in all islands except Baguan Island. Only 30% of the total eggs produced in the collection islands are transferred to hatcheries. From 1986-2002, there were 1,946,720 eggs transplanted in the Turtle Islands of which 941,036 hatchlings were released as shown in Table 7 (Cruz, 2004).

**Table 7.** Number of Nests, Eggs Incubated and Hatchlings Released from Turtle Islands: 1986-2002

Year	No. of Nests	No. of Eggs Incubated	No. of Hatchlings Released
1986	1,194	81,929	66,999
1987	1,944	127,874	37,748
1988	1,303	95,442	20,855
1989	1,053	74,084	28,465
1990	2,299	165,849	69,385
1991	4,821	368,690	177,630
1992	2,854	192,254	108,601
1993	3,746	244,200	138,852
1994	1,314	85,428	36,601
1995	648	41,121	37,961
1996	846	59,398	32,911
1997	1,545	95,502	47,970
1998	1,972	125,959	57,564
1999	908	57,837	17,124
2000	662	42,067	17,386
2001	778	52,563	28,862
2002	585	36,523	16,122
<b>Total</b>	<b>28,472</b>	<b>1,946,720</b>	<b>941,036</b>

Before 1998, all turtle eggs were collected and traded by some coastal residents of Morong, Bataan. With the combined conservation efforts of the PCP-PAWB and PRRM, these coastal residents were trained to become protectors of sea turtles, leading to the formation of a people's organization called *Bantay Pawikan*. The task of *Bantay Pawikan* is to monitor sea turtles and transfer their eggs to the hatcheries during the nesting season of olive ridley. The first hatchery constructed in Morong, Bataan was in Barangay Nagbalayong. Later on, two additional hatcheries were constructed in Sitios Fuerte and Matico. Proper management and dedication of the members of the *Bantay Pawikan* resulted in good hatchery results in Sitios Nagbalayong, Fuerte and Matico. The results of the emergence success for the nesting season of September 2001 to March 2002 in the three hatcheries were: 89.65% (Nagbalayong), 91.57% (Fuerte), and 97.29% (Matico) (Cruz, 2004).

### Protected Areas/Sea Turtle Sanctuaries

A total of nine islands/areas were declared as sea turtles sanctuaries in 1982 and 1984 through DENR Administrative Orders. Out of these nine islands/areas, only two islands/areas were



**Plate 69.** Public Awareness Campaign on the Conservation of Sea Turtles in the Philippines

sustained, enlarged in coverage and declared as protected areas pursuant to RA 7586 or the NIPAS Act. These islands/areas were the Bacuit Bay of the Municipality of El Nido under the province of Palawan and Baguan Island, one of the islands of Turtle Islands under the province of Tawi-Tawi. The two said areas expanded in its area of coverage and the conservation and protection activities are not only for sea turtles but also for other equally important marine and coastal species and their habitats (Cruz, 2004).

There are about thirty areas with coastal areas throughout the Philippines that were declared as protected areas under the NIPAS Act. A total of 1.5 million hectares comprises all the declared protected areas with marine areas and are categorized as: Landscape/Seascape, Natural Park, Marine Reserve, Managed Resource Reserve or Wildlife Sanctuary. In every NIPAS-protected area, a corresponding Protected Area Management Board (PAMB) is established and acts as the policy-making body. The Chairperson of the PAMB is the DENR Regional Executive Director and its members comprise the officials of the Local Government, Peoples Organization, NGOs and other stakeholders in the protected area (Cruz, 2004).

A management plan is crafted for every NIPAS-protected area. The management plan must undergo a series of consultations with the stakeholders before being finalized. Included in the plan is the zoning of areas i.e., strict protection zone, recreational zone, multi-use zone and buffer zone. The use of zones will help manage and regulate activities of the tourists and residents in the area to avoid activities that may be detrimental to a particular marine or terrestrial species. The main objective of the plan is the sustainable use of marine and terrestrial resources within the protected area. In sanctuaries declared under provincial or municipal ordinances, the Local Governments are the lead agencies and the DENR advises and assists the Local Governments in sea turtle conservation activities. However, even if an area is not declared as a NIPAS-protected area nor declared as a sanctuary through ordinances, existing laws like the RA 9147 and RA 8550 are enough to protect and conserve sea turtles in the country if properly implemented by concerned agencies and institutions (Cruz, 2004).

The important NIPAS-protected areas for sea turtles are the following:

- El Nido Managed Resource Protected Area in the province of Palawan with an area of 89, 134 hectares was declared through Presidential Proclamation No. 32 on 8 October 1998.
- The whole municipality of Turtle Islands in the province of Tawi-Tawi was declared as the Turtle Islands Wildlife Sanctuary (TIWS) through Presidential Proclamation No. 171 on 26



**Plate 70.** Community Participation in Releasing of Hatchlings as Part of Sea Turtle Conservation and Enhancement in the Philippines.

August 1999. Area is 242,967 hectares. TIWS is part of the Philippine-Malaysia Turtle Islands Heritage Protected Area (TIHPA).

- Tubbataha Reef National Marine Park in the province of Palawan was declared as a World Heritage Site on 11 December 1993 and as a protected area (initial component) through Presidential Proclamation No. 306 on 11 August 1988. Area is 33,200 hectares.
- The whole province of Batanes was declared as Batanes Protected Landscape/Seascape through Presidential Proclamation No. 335 on 28 February 1994 and pursuant to Republic Act No. 8991 approved by Congress on 5 January 2001. Area is 213,578 hectares.
- Northern Sierra Madre Natural Park in Palanan, Divilacan, Moconacon, Iligan, San Pablo, Cabagan, San Mariano, Dinapigue and Tumauni in the province of Isabela with an area of 359,486 hectares declared through Presidential Proclamation No. 978 on 10 March 1997 and pursuant to Republic Act No. 9125 approved by Congress on 22 April 2001.
- Apo Reef Natural Park in Sablayan in the province of Occidental, Mindoro with an area of 15,792 hectares declared through Presidential Proclamation No. 868 on 6 September 1996.
- Pujada Bay Protected Landscape/Seascape in Mati in the province of Davao Oriental with an area of 21,200 hectares declared through Presidential Proclamation No. 431 on 31 July 1994.
- Sarangani Bay Protected Seascape in Maitum, Kiamba, Maasim in the province of Saranggani with an area of 215,950 hectares declared through Presidential Proclamation No. 756 on 5 March 1996.
- Siargao Protected Landscape/Seascape in the province of Surigao del Norte with an area of 278,914 hectares declared through Presidential Proclamation No. 902 on 10 October 1996.

Other important nesting habitats not declared as NIPAS-protected areas but which have an agreement with the DENR or have provincial or municipal ordinances on sea turtle conservation activities are the following:

1. Morong, Bataan - Olive ridley turtle rookery.
2. San Juan, Batangas - Hawksbill turtle rookery.
3. Hinatuan, Surigao del Sur - Hawksbill turtle rookery.
4. Panikian Island, Zamboanga del Sur - Green turtle rookery.
5. Punta Dumalag, Davao City - Hawksbill turtle rookery.

## Education/Public Awareness

The Pawikan (sea turtles) Conservation Project (PCP) of the Protected Areas and Wildlife Bureau (PAWB), Department of Environment and Natural Resources (DENR) is the lead group in the conservation of sea turtles in the Philippines. One of the major tasks of the PCP-PAWB is to increase awareness and participation of the people in the conservation of sea turtles and other related marine resources. Since 1983, the project has been utilizing, one way or the other, all possible and effective means of communication to promote sea turtles conservation.

### Documentary film

Two documentary films, lasting for 15 to 20 minutes and produced by the PCP-PAWB, focused on sea turtles biology, causes of decline of sea turtles populations in the Philippines, brief history of the project and the activities being undertaken by the project. Besides being often shown in schools and colleges, copies of the films were also distributed to the regional offices of the DENR and some resorts. The last documentary film produced by the PCP-PAWB in 1998 contains a Filipino version to cater to the larger group of people living in the countryside. At present, as a cost-cutting measure, the PCP-PAWB collaborates with local television programs that produce documentary films on wildlife conservation and ecotourism focusing on a particular area in the country (Cruz, 2004).

### Radio Plug

The country, being archipelagic with inadequate or lacking communication facilities, makes the radio the most effective media tool that can be accessed. Thus, a 15-second radio plug that gave emphasis on the ban to collect or kill the endangered sea turtles was produced and translated into five common Filipino dialects. This was aired free of charge in the different regions of the country (Cruz, 2000).

### Posters

The PCP-PAWB has so far produced five poster designs for distribution nationwide. One of the designs depicts a sea turtle and dugong imposed on a collage of dinosaurs, with a caption saying, "Are we to let our children inherit only stories?" (Cruz, 2000).

### Primers/Brochures/Bookmarks

Print materials containing a brief description of the biology and ecology of sea turtles, as well as the pertinent laws concerning their conservation have also been produced for distribution. Mimeographed versions in both English and Pilipino are distributed during habitat surveys and IEC, and more specialized primers are given during seminars, lectures and training-workshops. The PCP-PAWB also distributes these print materials to individuals who request for them (Cruz, 2000).

### Billboards

Billboard signs have been erected in strategic locations, such as piers and gates of a complex that houses more than 100 native souvenir shops and in areas adjacent to nesting sites. In spite of the ban, local businessmen are still engaged in the trade of sea turtles by-products. In fact, surveillance and confiscation conducted by the PCP-PAWB and the enforcement arm of the DENR in Metro Manila has yielded not less than US\$ 8,000.00 worth of by-products in 1996 and 1997 alone. DENR personnel deployed at the international airport have confiscated a number of stuffed turtles and guitars made of



**Plate 71.** A Fisherman Receives a Certificate of Appreciation, T-shirt and Baseball Cap as a Token of Appreciation for Reporting Live Sea Turtle to the DENR.

turtle carapaces from departing foreign tourists (Cruz, 2000). However, from 1999 to the present, there was a significant decrease in the number of confiscated sea turtle's by-products.

### T-shirts/Baseball Caps

The project has conceptualized t-shirts with different turtle designs, and a baseball cap with an embroidery patch designed with a turtle and dugong. Along with a Certificate of Appreciation, either of these products is given to individuals, especially fishermen, who have reported turtles with metal tags or surrendered the turtles to the DENR for tagging and/or for release. In 1994, a manufacturer of popular t-shirts with conservation designs forged an agreement with the PAWB to donate 10% of the sales of its sea turtle-designed t-shirts to the PCP-PAWB. This undertaking significantly helped in promoting sea turtles' conservation awareness in the people, especially since the t-shirts are widely distributed in major cities in the country. In addition, many of the PCP-PAWB's activities were financially supported through the donation (Cruz, 2000).

### Postcards and Stamp Canceller

Pre-paid postcards depicting the five species of turtles found in the Philippine's waters are distributed to the DENR Regional Offices, concerned individuals, non-government organizations, local governments and community schools. Through the data gathered from the postcards and Field Action Officers' reports, the PCP-PAWB has plotted the distribution of turtles in the entire country (Cruz, 2000).

In 1989, in commemoration of the 10<sup>th</sup> year of the project, a stamp canceller with marine turtle design was produced in collaboration with the Philippine Postal Corporation; the activity lasted a year (Cruz, 2000).

### Training-Workshop for DENR Personnel

The Project has been fully utilizing the assistance of the DENR's 15 regional offices and branches, 69 Provincial Environment and Natural Resources Offices (PENRO) and 159 Community



**Plate 72.** Hands-on Training Including Hatchery Management as Part of the Orientation-Training Workshop Conducted by the PCP-PAWB-DENR

Environment and Natural Resources Offices (CENRO). These offices are in the forefront in implementing DENR's mandates at the grass roots level. In 1989, DENR Special Order No. 884 was promulgated, designated all Regional Technical Directors for Environment and Natural Resources as PCP Field Action Officers (FAO). One of the specific duties and responsibilities of the FAO is to assist the PCP-PAWB in conducting a Conservation Education Program in their respective regions. The Project conducted Orientation-Training Workshops for DENR field personnel to equip them with the necessary knowledge to conduct IEC and implement other PCP-PAWB activities. The topics of the training workshop include: Biology and Ecology of Sea Turtles, Tagging and Hatchery Procedures, Existing Sea Turtles Rules and Regulations, Concepts of Marine Wildlife Conservation and Management, and Identification and Functions and Commitment of the Participants for Marine Turtle Conservation. From 1989-1997, more than 300 DENR personnel were trained by the PCP. In 2002 the PCP-PAWB conducted an Orientation-Training Workshop in Region 13, the northeastern part of Mindanao covering four provinces, namely: Surigao del Norte, Surigao del Sur, Agusan del Norte and Agusan del Sur (Cruz, 2000).

### Seminars/lectures

As a cost-effective strategy, IEC is integrated with the habitat surveys conducted by the research unit of the PCP-PAWB. The method used is interpersonal-group approach consisting of a simple lecture with a slide presentation or a film show. In areas with no sources of electricity, flip charts are used as visual aids. About 50-300 people, mostly children and fishermen, attend each of these lectures. From 1992-1996, the PCP-PAWB conducted IEC in 253 local communities in 26 provinces. The PCP-PAWB also gives lectures in schools upon invitation (Cruz, 2000).

## Dalaw-Turo (Visit and Teach)

This is an outreach program of the DENR that employs a non-traditional education participatory communication design of teaching biodiversity and sustainable development. The most interesting feature of this program is the integration of lectures, drama and games as a technique in imparting conservation of natural resources among its audience. The sea turtles have become a part of this program. More than 46,829 students, 964 teachers, 3,422 communities and 576 DENR personnel from all regions have participated in the Dalaw-Turo from 1992-2000 (Cruz, 2000).

## Media Coverage

From 1991 onwards, media coverage was intensified, which have elicited considerable public support. The Department of Tourism sponsored a group of journalists from different newspaper and magazine publications to visit the Turtle Islands, some 1000 km south of Manila, the country's capital (Cruz, 2000). The Turtle Islands and Morong, Bataan were featured in two leading television programs and local tourism programs.

## Exhibits

Many non-governmental organizations (NGO) had collaborative undertakings with the PCP-PAWB. In 1994, 1997, and 2000 these NGOs coordinated with the project to set up month-long exhibits on sea turtles and other endangered species in popular shopping malls. Due to their strategic location, these projects elicited a number of patrons who contributed financial support to the project. The PCP-PAWB also encourages school organizations to collaborate with the Project in this undertaking (Cruz, 2004).

## Network

Cooperation and collaboration with other national and local government agencies and non-government organizations that include universities/schools, people's organizations and cause-oriented organizations are important ingredients in the success of any conservation endeavor. Since 1997, the PCP-PAWB has been constantly expanding its collaboration and tapping the resources of these organizations in terms of manpower in support of identification and establishment of protected areas or sanctuaries for sea turtles (Cruz, 2002).

## Tagging and Satellite Telemetry Tracking Activities

### Tagging Activities

Tagging activity is done in all regions of the Philippines through the Department of Environment and Natural Resources (DENR) regional offices. The Local Government Units and NGOs assist in this activity. The first tagging activity was done in the Turtle Islands, Tawi-Tawi in 1982. From 1982-1994, locally-made steel tags were used. From 1995-1997, inconel tags imported from the United State of America were used. From 1998 onwards, monel tags were used. The Marine Fishery Resources Development and Management Department (MFRDMD)-Southeast Asian Fisheries Development Center (SEAFDEC) provided the first batch of 1000 pieces of inconel tags (Cruz, 2004).

The total number of green turtle nesters tagged in the Turtle Islands and in Bancauan Island, Mapun Province of Tawi-Tawi from 1982-2002 were 10,532. The total number of sea turtle nesters tagged in Morong, Bataan from 1999-2002 was 60 turtles. Ninety-five percent (95%) of the nesters tagged were olive ridley turtles. The total number of sea turtles that were mostly green and hawksbill turtles of different life stages tagged in other areas/regions of the Philippines from 1985-2002 was 1,683 (Cruz, 2004).



Plate 73. Tagging Activities in the Philippines

### Satellite Telemetry Tracking Activities

Satellite telemetry projects were conducted in the Turtle Islands Heritage Protected Area. In 1998, two green turtle nesters were tagged in Baguan Island, the Turtle Islands. In 1999, another two green turtle nesters were tagged, one from Baguan Island and one from Selingaan Island in Sabah Parks, Malaysia. Telonics ST 14 transmitters were used. In 2001, four green turtle nesters were tagged, two from Baguan Island and two from Selingaan, Sabah Parks. Telonics ST 18 transmitters, cheaper than

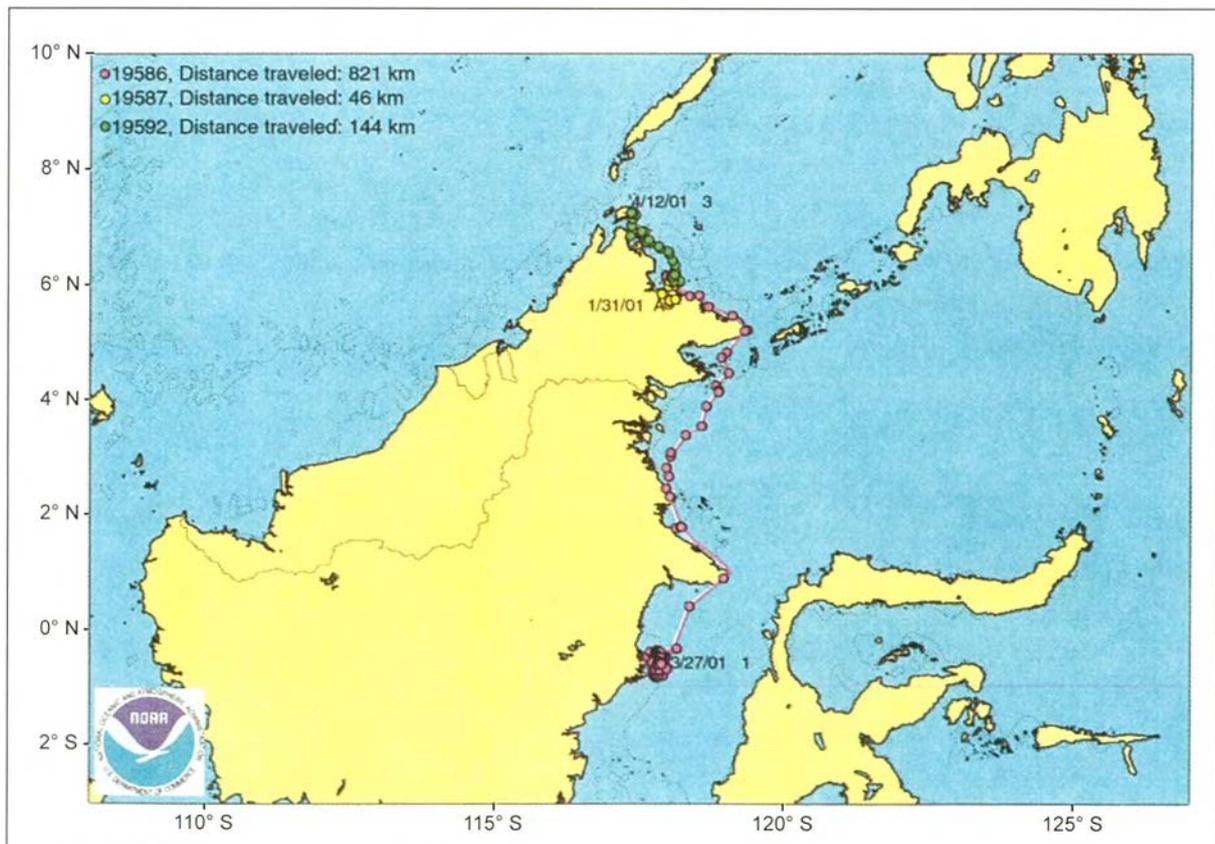
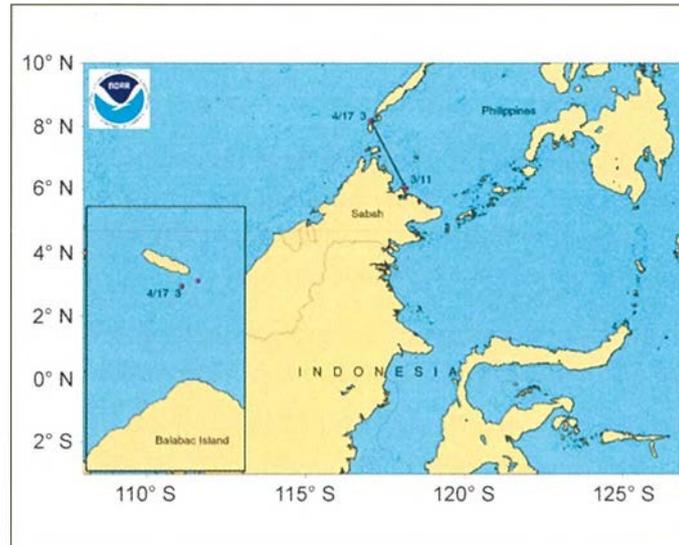


Figure 15. Migratory Route of Three Post-Nesting Hawksbill Turtles Tracked by Satellite After Nesting in the Turtle Islands Heritage Protected Area in 2001



**Figure 16.** Migratory Pathway of Hawksbill Turtle Released from the Turtle Islands Heritage Protected Area in 2002

Telonics ST 14 were used. During 2001-2002, four hawksbill turtle nesters were tagged, two in Lihiman Island and two in Sabah Parks, Malaysia. Telonics ST 14 transmitters were used (Cruz, 2004).

The first four Telonics ST 14 transmitters were provided by the Coastal Resources Management Program, a USAID-funded program of the DENR. The Telonics ST 18 transmitters were donated by the WWF-Philippines and the Telonics ST 14 transmitters which were attached to hawksbill turtles were provided by the National Oceanic and Atmospheric Administration (NOAA) of the US Department of Commerce (Cruz, 2004).

The satellite tracking results showed that the probable feeding areas for green turtles are within the waters of the Balabac, Palawan and the Provinces of Jolo and Basilan, Philippines. The feeding areas for hawksbill turtles are in Balabac, Palawan, northern part of Sabah, and south beyond East Kalimantan, Indonesia (Cruz, 2004).

### International/Regional Cooperation

Collaborative activities undertaken by PCP-PAWB are as follows:

1. World Wildlife Fund-USA funded the First ASEAN Symposium-Workshop on Marine Turtle Conservation held in Manila, Philippines in 1993.
2. World Wildlife Fund-Philippines. A MoU was signed between the DENR-WWF to compliment similar activities done by both entities in the conservation and protection of sea turtles in the Philippines:
  - Satellite Telemetry Project for green turtle nesters in the Turtle Islands Heritage Protected Area (TIHPA).
  - Integrated Conservation Development Project in the Turtle Islands.
  - Ecological Studies in TIHPA.
  - Sea turtles protection and conservation in other areas in the Philippines.

3. Conservation International, Philippines is involved with TIHPA and will be involved in the preparation of establishing a tri-national sea turtles conservation program among Indonesia, Malaysia and the Philippines.
4. Coastal Resource Management Program (USAID-funded program):
  - Satellite telemetry project for green turtle nesters in TIHPA.
  - Established and is maintaining a website for sea turtle program and other marine species in the Philippines ([www.oneocean.org](http://www.oneocean.org)).
5. Convention on the Conservation of Migratory Species of Wild Animals (CMS). Secretariat on the MoU on Marine Turtles in the Indian Ocean and South East Asia.
6. National Oceanic and Atmospheric Administration (NOAA), US Department of Commerce. NOAA provided training on satellite telemetry and four transmitters for hawksbill turtles in TIHPA from 2001-2002.
7. SEAFDEC/MFRDMD provided the first batch of 1000 pieces of monel tags and pit tags in 1998 and 2003, respectively.

### Regional and International Treaties and Agreements Related to Sea Turtles

There are eight regional and international treaties and agreements related to the conservation and protection of sea turtles that the Philippines is signatory to, namely:

- The MoU between the Government of the Republic of Indonesia, the Government of Malaysia and the Government of the Republic of the Philippines on the Adoption of the Conservation Plan for the Sulu-Sulawesi Marine Ecoregion signed on 13 February 2004.
- The MoU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia that was finalized and signed by the Philippines on 23 June 2001.
- The MoU on ASEAN Sea Turtle Conservation and Protection that was signed on 12 September 1997 by the ASEAN Ministers on Agriculture and Forestry.
- The Memorandum of Agreement between the Government of the Republic of the Philippines and the Government of Malaysia on the establishment of the Turtle Islands Heritage Protected Area (TIHPA) that was signed on 31 May 1996.
- The Convention on the Conservation of Migratory Species of Wild Animals (CMS) (Bonn Convention). The date of accession was on 4 February 1994.
- The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention). The date of accession was on 8 November 8 1994.
- The Convention on Biological Diversity (CBD). The date of Accession was on 8 October 1993.
- Convention on International Trade in Endangered Species of Fauna and Flora (CITES). The date of accession was on 20 April 1981.
- The International Union for the Conservation of Nature and Natural Resources (IUCN). The year of accession was in 1968.

## Research Activities

At present, only the Pawikan Conservation Project of the Protected Areas and Wildlife Bureau, Department of Environment and Natural Resources conducts sea turtles research in the Philippines. The focal persons in research are:

1. Mr. Renato D. Cruz,  
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Pawikan Conservation Project,  
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