

ECOVOLUNTEER EXPERIENCE

Marine turtles, mangroves and coral reef
Thailand

January – April 2010

January – April 2011

Cooperation:

NAUCRATES FOUNDATION & ECOVOLUNTEER PROGRAM

You can freely download this project file from the homepage for this project in the Ecovolunteer website: <http://www.ecovolunteer.org/> (or from the national ecovolunteer domains).

As it is necessary for participants in this project to be able to communicate in English, this text is provided only in English.

The text of this brochure is developed in cooperation with the project staff. Annually, under the supervision of the staff the text is updated. Nevertheless you may experience some changes in the field compared to the brochure text. It is inherent to wildlife programs that during the operations incidentally changes are necessary because of unexpected results, behaviour by the wildlife, etc. Be prepared for such changes. (Last update June 2009).

Please help us: If you happen to find any of the information below no longer to be valid, or when you have useful additions, then kindly report so to: Ecovolunteer Program: info@ecovolunteer.org

That way we shall be able to provide better information to future participants.

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1 LOCATION

The project is located at Phra Thong Island. The island, 100 km² is situated in Phang Nga province, on the west coast of Thailand. It is separated from the mainland by a canal, which is about 7 m deep. The island has a tropical climate with rain falling intermittently throughout the year. There are two main seasons: the rainy season (April to November) and the dry season (December to March) with an average temperature of 28.7 C°. The East coast of the Island is covered by mangroves, with fine sand beaches (total length 15 km) on the opposite side of the island. Tourist development was limited to three small resorts which had bungalows made with local materials that did not disturb the beauty of the island. All the resorts were washed away by the tsunami in December 2004. Flora and fauna are still natural and rich in number of species. Together with marine turtles, there are hornbills, sea eagles, many other beautiful and colourful birds, monitor lizards, pangolins, deer, long tailed macaques, reef fish, bats, lizards, snakes, dolphins, mangroves, coconut trees, etc. The island does not have electricity or roads. IN 2004 the tsunami destroyed completely one of the three fishing villages of the island and damaged a second one. International organizations and Thai Government have been working since then towards the rebuilding of the local community livelihood. One resort has been rebuilt, a village has been rebuilt and the other communities were helped in rebuilding what it was lost.



2 SEA TURTLE BIOLOGY & CONSERVATION

2.1 SEA TURTLE LIFE CYCLE

Marine turtles spend most of their lives in the water, but their existence starts from the land as hatchlings and later on, as adults, the females return to land to lay their eggs. The life cycle, the sequence of events from the origin (birth) of an individual to its death, for marine turtles, is set mostly in the water and only part takes place on land.

The seven species of marine turtles living in the world share a common life cycle with only minor differences. Hatchlings enter the sea and they will only be seen again as juveniles in the open ocean in the foraging zone. The elapse of time between the hatchling stage and the juvenile one (found in the open ocean) is unknown, likewise is the ocean area where they spend this part of their life.

As juveniles they will then be found again in a developmental habitat. Moving to the foraging habitat, they will share the same zone with adults.

For the reproductive period, they migrate from the foraging habitat to the mating area. Females and males encounter each other in the nesting habitat for a while; then, the males return to the foraging habitat and the females spend the season in the nesting habitat. At the end of the reproductive period the females will return to the foraging area. Once the eggs are laid on the beach, hatchlings emerge after about two months and they then crawl into the sea. After emerging from the nest, sea turtles go into the sea, beginning a pelagic phase that is believed to last at least several years. The early pelagic stage that occurs in most sea turtle species is the poorest known life-stage and has become known as the "lost year".

Hatchlings sequentially use three different sets of cues to maintain orientation during their initial migration offshore. While on the beach, they find the ocean by crawling toward the brighter seaward horizon, orientating away from the elevated silhouettes of vegetation and dunes. Upon entering the sea, they initially orientate seawards by swimming into the waves; by setting a magnetic course on the basis of near shore cues they continue on offshore migration. As soon as they enter the sea they undergo a period of hyperactive continuous swimming activity (frenzy period), which lasts, for an average of 24 hours. By the second/third day (post frenzy period), hatchlings start to swim only during the day; variation in frenzy and post frenzy behaviour may be found from species to species. They undertake migration offshore to the open ocean, often taking refuge in circular current systems (gyres) that serve as moving, where they grow for a period of years to juveniles.

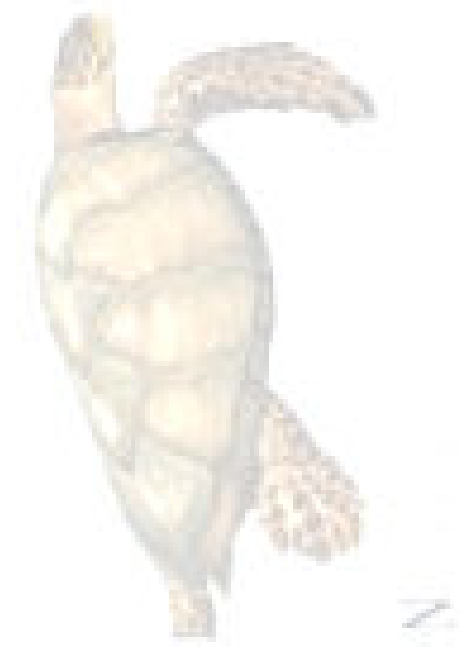
The juvenile nursery habitats (pelagic and oceanic) are often found in the sea in association with weed lines or drift lines that exist near the frontal boundaries near major currents. The duration of this period varies from species to species and

also among population. Green turtle apparently spends a shorter time in the oceanic nursery than loggerhead. The loggerheads stay in the pelagic area to a much larger size than the green turtles. The end of this part of the life cycle is determined when the juveniles reappear in the juvenile developmental habitat (neritic and demersal). From a physiological point of view, the shift from the pelagic to the demersal stage could be explained by the greater capacity of older specimens to dive deeper and for longer periods than juveniles. The leatherback represents an exception, because they are pelagic even as adults. During this phase, juveniles may make seasonal foraging migration into temperate latitude. According to several authors seasonal juvenile migrations were recorded within the Mediterranean. Once the juveniles reach adult size (that is they are larger than the minimum breeding size), they are found in the adult foraging habitat, which is an area usually separated from the nesting habitat. Adult-size turtles within foraging habitats include sexually immature and mature individuals. Although foraging areas occur over a wide range around the world, the primary marine turtle foraging habitats are located within the north and the south 20 °C isotherm of the average sea surface temperature and on the relatively shallow continental shelf areas.

At the beginning of the breeding season both female and male adults travel from the foraging habitat to the breeding habitats (breeding migration), which are located near the nesting habitat. Female sea turtles generally do not reproduce every year whereas males may breed every year or every two years. The mean interval between reproductive seasons of the same female varies among species; the range is from 1 to 9 years. Very little is known about courtship behaviour, most observations were done in captivity. Mating often occurs near the nesting beach but it could also take place along migratory corridors. It generally occurs in the month or two preceding the egg laying cycle of the season. Copulation lasts several hours and mating pairs can be seen on the surface of the sea and multiple mating of females during a nesting season have been reported. In the green turtle, the carapace of the older females is often deeply and permanent scarred in the marginal, where the claws of the male clasp the female. At the end of the mating period males return to the adult foraging habitat, whereas females swim between the breeding and nesting habitats (the internesting habitat). The adult female emerges on the nesting beach laying several clutches of eggs at approximately 2-week intervals, variable depending on the species.

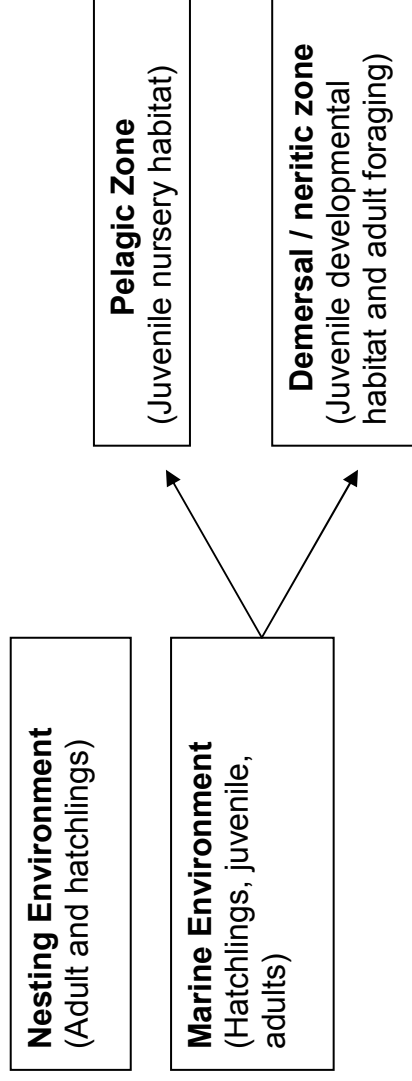
The nesting sites usually correspond to the region of the turtle birth; it is still not clear what range of km defines it, because it varies from 0 to 290 km. A nesting beach is usually a beach that is accessible from the sea, high enough to prevent inundation of the eggs by tides, with a suitable substrate for gas exchange in the egg chamber and able to provide the right level of moisture for the eggs. The nesting process is very similar among the different species of marine turtles and it has been fully described by many authors. The eggs, white, spherical and with a diameter of 4-6 cm (depending on the species), buried in the sand, at about 50 cm deep, are naturally incubated for a period of about 50-70 days, depending on the species and on the temperature. The number of eggs per clutch and the number of clutches per season is also variable depending on the species. An average of 100 eggs per clutch is generally found. The nest environment has to be compatible with need for certain conditions that allows embryo development, such as gas exchange, moisture and temperature. Temperature is certainly one of the main elements, which affect marine turtles,

and it determines the sex of the hatchlings. Although it varies among species, cooler temperatures generally produce males and warmer temperatures produce females. Hatching success is typically high (80% or more) unless external factors interfere. Hatchlings mostly emerge during the night; this event is controlled by a gradient of sand temperature on the surface. Hatchlings in a nest are not independent individuals; they meet the challenge of emerging from the nest with group action. The first young that hatches, does not start digging at once, but lies still until some other nest mates are free from their eggs. Turtles at the top layer scratch down the ceiling, those at the bottom trample and compact the sand that filters down from above. They help each other by climbing up the flask-shaped egg chamber and hatch often in groups.



2.2 SEA TURTLE HABITATS

According to their life-cycle marine turtles depend on two main habitats: land and sea.



2.3 THREATS

Threats are grouped to the two environments where they spend their life: on land and at sea.

According to recent threat review they can be listed as follow:

- On land: tourist development, increased human presence, artificial lighting, beach vehicle driving, sand mining, beach erosion, garbage on the beach, recreational beach equipment, predation (natural and human), inundation, hunting, egg poaching.
- At sea: incidental catch, ghost gear, turtle exploitation, boat collision, pollution and marine debris, underwater explosion, predation (natural and human), disease and parasites.



3 PROJECT

3.1 BACKGROUND

Thailand is a country, which still has many pristine nature reserves. Many remaining enclaves of biodiversity are slowly eroding away because the Government lacks sufficient manpower to control illegal loggers and wildlife poachers.

These islands of the west coast are one such area. While appearing stunningly beautiful and pristine to the visitor, most of the big hardwoods have been removed from the forest and the sea turtles and offshore marine life are under constant threat.

The island is remarkably pristine with a great variety of wildlife. Over 100 species of birds have been recorded, including large numbers of hornbills. Long tailed macaque, Bryde whale, dolphin, otter, deer and Malayan pangolin have been observed.

Tourist development was limited to two small resorts which have few bungalows made with local materials that do not disturb the beauty of the island.

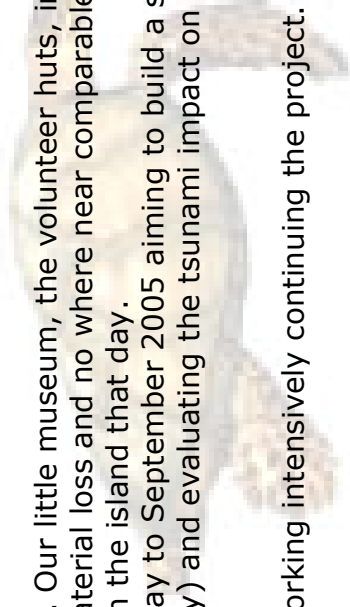
This Sea Turtle Project, established in 1996, has been effective in controlling the low-level poaching by villagers who dig up the turtle nests in order to earn the high prices paid for the eggs by local merchants. A research station has been established within a resort, a sensitive Eco-tourism facility. The project is carried out in co-operation with the Phuket Marine Biological Centre under the Thai Department of Fisheries.

Four marine turtle species have been recorded in Thailand and three of them occur regularly along the coast of the island. Only few reports about the island have been published in the past and therefore the out coming results year by year have a great value that provides a contribution to the knowledge about marine turtle nesting activities in Thailand. The research team patrolled the beach every day to prevent poaching, helped hatch and raised the hatchlings, and educated the local community (especially village school children) and a small number of tourists on the need for conservation of these endangered species.

On 26th December 2004 the project was completely washed away. Our little museum, the volunteer huts, instruments, turtle tank etc. are lost in the Andaman Sea. However, this is a material loss and no where near comparable to the loss of 2 members of staff and several employees of the resort working on the island that day.

After the tsunami, we conducted a first mission in Thailand from May to September 2005 aiming to build a sala in one of the local schools, in collaboration with *Aiutare I Bambini* (from Italy) and evaluating the tsunami impact on the mangrove forest.

In January 2006 the team went back to the island and has been working intensively continuing the project.



Part of the money that was raised after the tsunami is being used in the village in order to help local people. We have built a new library for the children (Summer 2005) with lots of lovely books, bought equipment for the school and paid for a teacher, who has been teaching conservation and English.

A mangrove cleaning campaign was conducted in August 2005 and a mangrove restoration project started aiming to replant all the species that were there before the tsunami.

The reef was surveyed and results are now being analysed to estimate the impact of the tsunami and to plan restoration activities. A restoration project is needed.

The 2007 season was encouraging providing nests laid by the most endangered turtle species: the leatherback. The team was able to protect them and to assist hatchlings while crawling to the sea.

In 2008, the project changed its base. Since January 2008 the conservation team is located within a local village which was rebuilt after the tsunami. The team is based in one house, where a room is set up as an office/fieldwork centre/shop (locally called "Ban Tau" or turtle house), whilst two other rooms provide accommodation for the team members.

In addition to the change in the location, both olive ridley and green turtles visited the island laying various clutches on the beach and providing a high number of hatchlings to the Andaman Sea in 2008. This is an encouraging result and the occurrence of a reasonable number of nests could be the beginning of the result of our conservation efforts from the last twelve years.

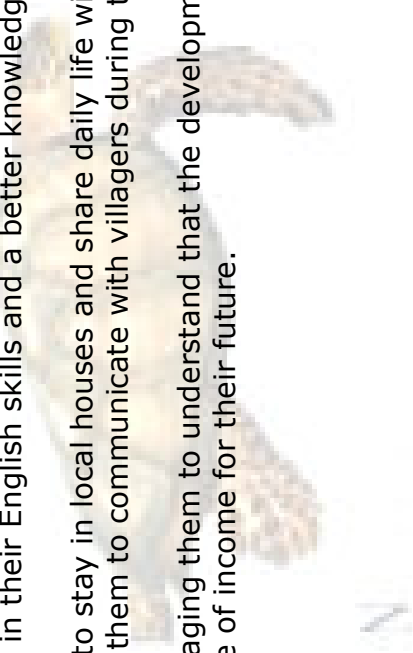
Another rewarding feeling emerged when observing the young mangrove trees (planted three years ago as part of the Mangrove Rehabilitation Project), which are growing fast and healthy thus contributing to the restoration of the forest that was completely destroyed by the tsunami.

We collaborate with the mangrove project developing programmes that focus on mangrove rehabilitation, education and conservation on the island.

As the team lives within the local community, activities and programmes were developed for both children and villagers. A teacher was employed to conduct environmental education lessons and to teach English in the school and to the villagers. A drawing competition, games, talks, lessons and various activities were all part of the school programme. At the end of the three months, the children showed an improvement in their English skills and a better knowledge about turtles and mangroves.

A pilot home-stay programme was introduced allowing volunteers to stay in local houses and share daily life with the community. Thai lessons were given to volunteers in order to help them to communicate with villagers during their stay at the project.

The team brings life and innovation to the local community encouraging them to understand that the development of ecotourism programmes could be a precious alternative and source of income for their future.



3.2 OBJECTIVES

Marine Turtles

- Evaluation of the status of the nesting and foraging population;
- Protect nesting females and eggs on important nesting beaches;
- Strengthening of local capacity to implement conservation programs on nesting beaches;
- Increase the knowledge about biology and conservation of marine turtles in the area and to increase the chance of survival of this endangered species involving the local community and by protecting their habitats (beach and sea);
- Estimate the impact of artisanal fisheries on turtles;
- Estimate the status of feeding ground near the island.
- Behavioural observations of turtle juveniles while feeding.

Mangrove Forest (if funding will be available)

- Rehabilitation activities: planting, nursery restoration, collecting seedlings, clearing path, etc.

Coral reef (if funding will be available)

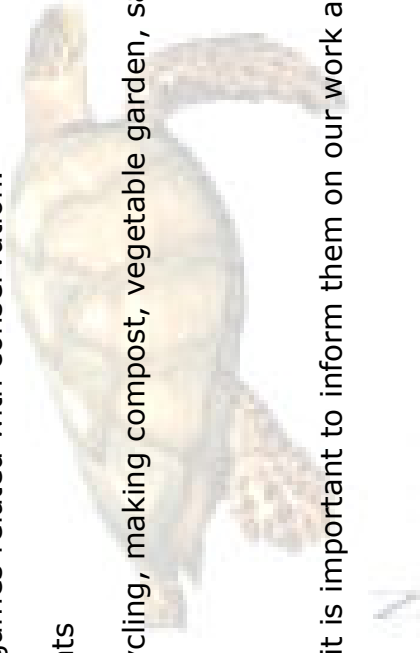
- Conduct repeat surveys and collect data to assess the status of the reef and monitor its recovery;
- Remove harmful debris and construct artificial reefs;
- Promote awareness of the value and threats to coral reefs amongst school children, boat drivers and tourists;
- Initiate a reef restoration project.

English & environmental education in local school

- Teaching English to the local community involving them in games related with conservation.
- Teach conservation to local children and villagers
- Organize field trip on the island to show the different habitats
- Cultural exchange between volunteers and Thai villagers
- Introduce simple environmental friendly habits such as recycling, making compost, vegetable garden, save water, stock rain water, etc.
- Provide temporary employment to local people

Tourist awareness

- Guests and visitors to the island often visit the project and it is important to inform them on our work and conservation efforts.



Home stay in the village

- Volunteers will stay in villagers' houses encouraging them to develop a home-stay programme in the future and during the year.

Community programme

A collaborative project is carried out in the village; it aims to provide support to the community by building capacity and awareness. Environmental management activities are organized, in order to introduce environmental friendly ways of living and increasing the capacity of the villagers. A "green" area in the village will be created by planting native trees. A home stay project will be organized and a plan for marketing will be set up. In addition, conservation activities for and with villagers will be organized, likewise an environmental education program for the school children and village youth will be established.



3.3 SOME RESULTS: SEA TURTLE NESTING

Since the project started in 1996 many results have been achieved. Volunteers helping on the field are giving us a great help, year by year we have many requests and thanks to their help we are able to present you some hypothesis on what is going on at the islands sea turtles:

The total number of nests found in each season:

| SEA TURTLE NESTS AT THE ISLANDS | | | | | |
|--------------------------------------|--------------|----------------|----------------|-------|---------------|
| | Olive ridley | Leatherback | Green turtle | Total | Poached nests |
| '96-'97 | 6 | | 5 | 11 | 3 |
| '97-'98 | 3 | 9 | | 12 | 3 |
| '98-'99 | 8 | 5 | | 13 | 4 |
| '99-'00 | 7 | | 3 | 10 | |
| '00-'01 | 4 | 3 | | 7 | 1 |
| '01-'02 | 4 | | | 4 | 1 |
| '02-'03 | 3 | | 3 ¹ | 6 | |
| '03-'04 | 3 | | | 3 | |
| '04-'05 | | | | | |
| Data are missing due to the tsunami. | | | | | |
| '05-'06 | 1 | | 4 | 6 | 4 |
| '06-'07 | 1 | 2 ² | 1 | 4 | 0 |
| '07-'08 | 3 | 0 | 5 | 8 | 0 |
| '08-'09 | 0 | 0 | 0 | 0 | 0 |

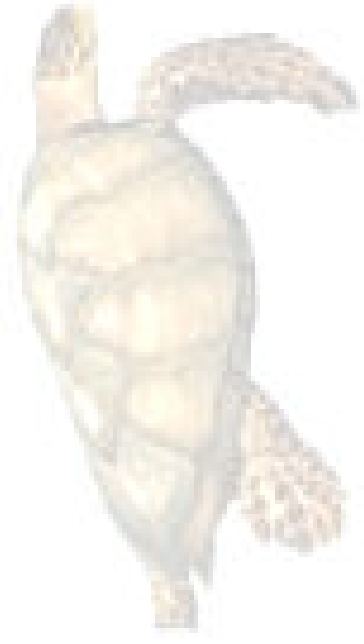
More than 3000 hatchlings were successfully released into the sea since 1997.

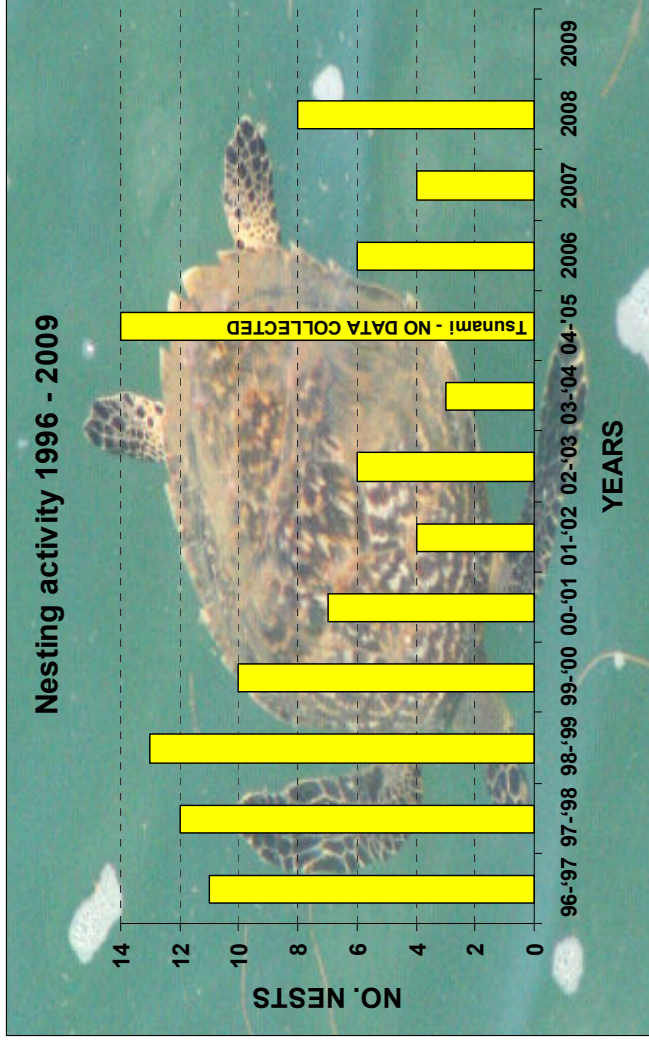
Data are missing for the season 2004-05 because the project was interrupted by the tsunami.

¹ tracks were not confirmed to be nests.

² nests were laid on Ko Ra (adjacent island).

Note: the numbers on this location are very low.





On Phra Thong, Ra and Kho Khao islands the total number of nests laid each year (with the exception of the season 2004-05 when the tsunami occurred and monitoring was not conducted) varied between 0 and 14 nests from 1996 to 2009 (see graph). Regular nests belong to the olive ridley turtle (*Lepidochelys olivacea*), with the leatherback (*Dermochelys coriacea*) and green turtle (*Chelonia mydas*) nesting less frequently.

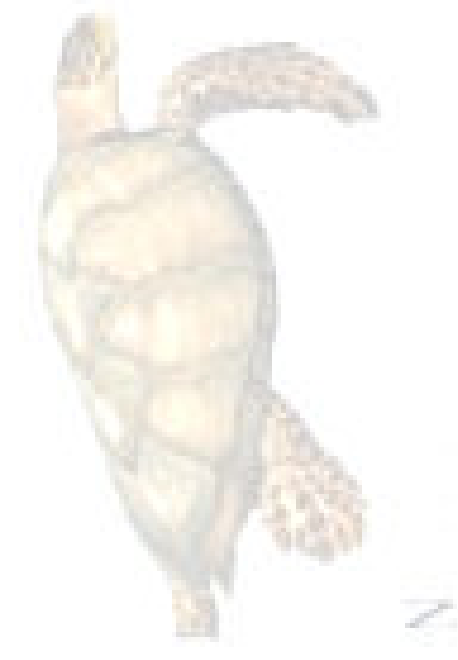
The drastic decline of nests along the south west coast of Thailand indicates that only a few nesting females have survived in the area. The absence of emergence recorded in 2009 represented a significant drop in nesting effort from previous seasons (since the beginning of the monitoring project) when up to 14 nests were observed. However this cannot be viewed as indicating a permanent decline, given the periodicity with which turtles nest and the fact that in 2009 unusual weather conditions were recorded. Cool sea and air temperature in January, sudden variation in sea current, blooming of jelly fish were all unusual events that could be related to an effect of climate change in the area.

In particular, a reduction of 82% of Olive Ridley laid nests was recorded between 1979 (total 238) and 1990 (total 42). Since our work started the decrease is still of 83%.

Considering that sea turtles reach sexual maturity after 19-25 years, the low number of olive ridley nests found in the last 4 years at the island could be due to the excessive egg harvest documented 20 years ago. The annual decrease in numbers of nests over the decade 1979-1990, could also be a consequence of egg harvesting in the previous 20 years. In

addition to egg harvesting the consumption of turtle meat, the hunting of turtles to use the shells, etc. has also contributed to the actual result. Assuming that females take 20 to 50 years to reach adult hood and to remain reproductively active for 20 years, a green turtle population with 100% of egg harvest, would reach extinction in about 70 years. Adapting this model to the Olive Ridley population nesting in the area of the island, extinction would be reached after about 40 years. The low number of Olive Ridley nests at the island could indicate the beginning of the species extinction in the area.

Nests laid on long sandy beaches are all protected by the team monitoring effort in collaboration with local people. From recent interviews to fishermen it resulted that the young generation of people in the villages has probably participated in our environmental education programme carried out over the last ten years. The positive effect of this education is now reflected in their greater conservation knowledge and their stronger attitude towards conservation. The attitudes of the younger fishermen can be attributed to our environmental education programme over the last decade. The children previously taught in the local schools are now the new generation of fishermen. They are concerned about environmental issues and have the will to help. They should and will be actively involved in the conservation effort. On the other hand this study has brought forward another worrying factor. Although the estimate of big boats undertaken every season has always shown a relatively large number of big squid boats and trawlers, a notable increase has been seen this year, probably due to post tsunami aid. This increase brings a serious threat to the juvenile population which is the future of a sea turtle population currently struggling to survive.



4 YOUR INVOLVEMENT

The activities of the project are mainly conducted on sandy tropical beaches, which are very isolated and unspoilt by tourism. Beaches are affected by a strong erosion process and tide excursion is evident. Littoral vegetation mainly consists of coconut palm and Casuarina trees, and a variety of tropical bushes and trees. The island is covered by different habitats, which offer small spots of forest, savannah, mangrove canals and small coral reefs. Inside the island, ponds are found in old tin mining caves.

- You will follow a scientific and conservation research program that will require you to monitor 15 kilometres of beaches on two islands, to conduct behavioural observation on turtles feeding and to assist nest hatching. Every day your duties will include monitoring nesting beaches either during the night or early in the morning.
- In the afternoon, other activities such as collecting data on the beach, preparing materials for schools, etc. will be carried out.
- Environmental education will be conducted in the local school of the village and meetings will be set up with villagers to discuss conservation.
- English classes will be carried out by volunteers in the local village.
- You will also be involved in activities working towards the restoration of the mangrove forest. The site was badly damaged by the tsunami and a replanting project was initiated in 2005 along with cleaning of the area.
- You will be involved in the reef survey which consists of snorkelling along transects.

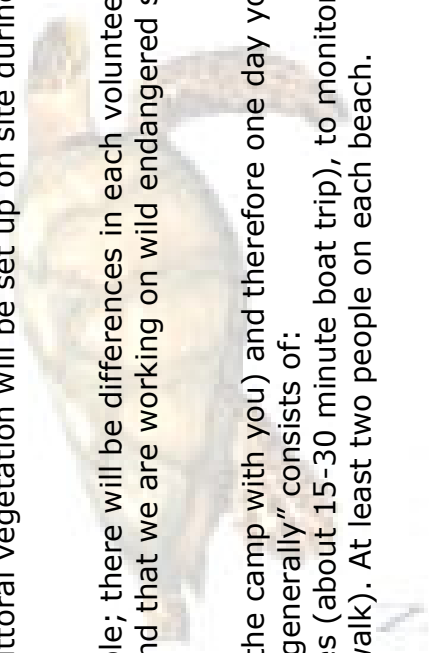
Training will be given to volunteers on their arrival.

Other activities such as beach cleaning, fund raising and planting littoral vegetation will be set up on site during the project.

The following description should be considered as a general example; there will be differences in each volunteer's experience due to the nature of the project. You should bear in mind that we are working on wild endangered species and in a foreign country in South East Asia.

You will work in shifts (depending on the number of volunteers at the camp with you) and therefore one day you might do activities that you will not do the following day. The timetable "generally" consists of:

- Early morning (about 05.30), transfer by boat to the beaches (about 15-30 minute boat trip), to monitor by walking one of the two beaches (about 5 km long, about 2 hours walk). At least two people on each beach.
- Breakfast (Picnic) on the beach, after the monitoring.



- Around 09.15 weather condition measurements.
- Late morning (around 09.30): "observations from the rock" take place. Two volunteers will go up on the rock near a tourist resort with binoculars to observe the sea, looking for sea turtles swimming there, dolphins or other animals.
- If you are not on the rota for "observations from the rock" you might have free time for swimming or walking on the beach.
- Every two days at 10.00, after daily monitoring, the boat will take the team to a nearby island (about 30 minutes boat trip) to monitor other nesting beaches.
- At 13.00 – 13.30 Lunch in the village or Picnic on the beach.
- Afternoon: around 15.00. Second shift of "observations from the rock" takes place.
- Afternoon: around 14.00. English or environmental education lessons in the local schools.
- Afternoon: at 17.00 – 17.30 English lessons for the villagers.
- About 18.00: conservation talks by staff / assistants.
- At 19.00 Dinner in the village.
- Night shift: Dependent on the position within the egg laying season, weather conditions and nest locations, the team will monitor nests when hatching is due. A tent will be set up on the beach and two volunteers in turn will sleep there until the nest has hatched.

Other activities that can be planned on site are: work in the office preparing materials for the school, monitoring and display, path making, conducting guided tours for visitors, bird watching, etc. Activities are organized in daily schedules in turn. The work is not structured from 9 to 17; you should be flexible to adapt working few hours then having time free and then another two hours working, there will be plenty of free time to enjoy the beauty of the island.

4.1 REQUIREMENTS

No experience is needed, however you must be willing and able to work hard as the research requires long walks (up to 15 km) in warm and humid conditions.

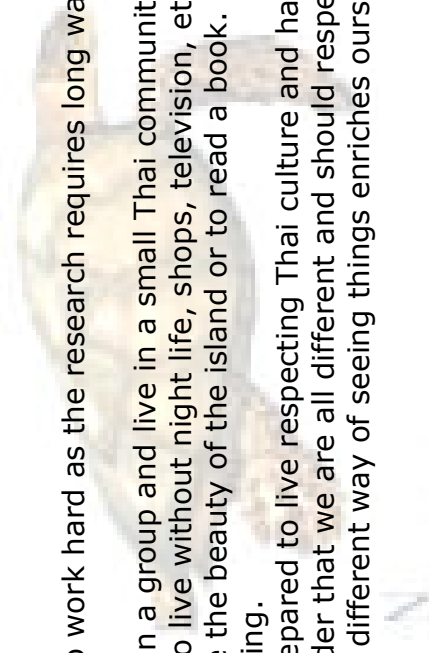
You also need to be friendly and communicative, be able to work in a group and live in a small Thai community.

You will be on a remote tropical island, and need to be prepared to live without night life, shops, television, etc.

You will have a lot of free time during the day to walk and explore the beauty of the island or to read a book.

Any health issues must be communicated at the latest when booking.

You will be based in a Thai village and you should be open and prepared to live respecting Thai culture and habits. You might find Thai daily habits different from yours, but please consider that we are all different and should respect the culture of the country where we are. The exchange of culture and different way of seeing things enriches ourselves and brings positive effects.



Women are kindly asked to respect the local community culture and religion by wearing suitable clothes and covering up when in the village (T-shirts and long trousers or skirts would be ideal). While monitoring beaches or when out of the village you can wear swimwear and shorts.

The villagers are not used to having foreigners in the village living with them. It is only in the last few years that a few have visited the community to bring post tsunami support.



5 TRAVEL INFORMATION

5.1 PRICES

Prices: as specified in the Ecovolunteer website <http://www.ecovolunteer.org> or your national ecovolunteer website or your national ecovolunteer agency (see: <http://www.ecovolunteer.org/contact.html>).

5.2 PERIOD

You are welcome for participation between 10th January 2010 and 4th April 2010, and then from 10th January 2011 and 4th April 2011.

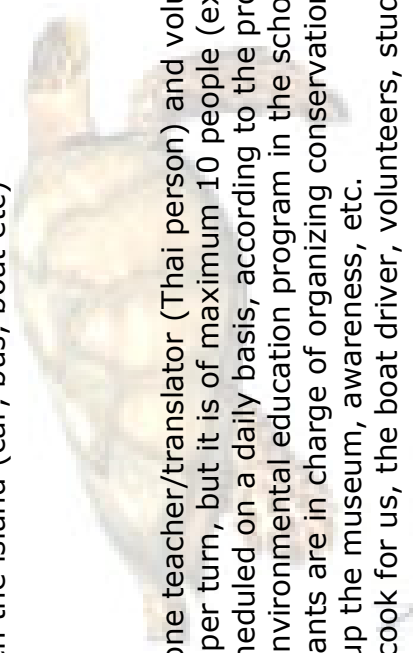
Please note that turtles are migratory species and that turtle nesting is a seasonal phenomenon. It is no use to sent applications for participation in other months of the year. In other months of the year the project will be closed because there will be no turtles nesting on the beaches.

5.3 INCLUDED IN THE PRICE

- Accommodation in room in Thai house
- Three meals a day at the village
- Supervision
- Training on fieldwork
- One year Naucrates membership (if agreed)
- Information materials about the Conservation Project

5.4 NOT INCLUDED IN THE PRICE

- Flight to/from Thailand, airport taxes, local transport to reach the island (car, bus, boat etc)
- Passport/Visa
- Personal extra expenses: telephone bill, drinks at bar, etc.



5.5 PARTICIPANTS & THE TEAM

The team is composed by a fieldwork leader, research assistants, one teacher/translator (Thai person) and volunteers. The size of the team varies according to the number of volunteers per turn, but it is of maximum 10 people (exception might be encountered for special occasions). Your activities are scheduled on a daily basis, according to the program of the season. The teacher/translator is in charge of conducting the environmental education program in the schools and to facilitate communication with villagers. Fieldwork leader and assistants are in charge of organizing conservation work, including turtle monitoring, mangrove rehabilitation work, setting up the museum, awareness, etc. In addition local people will be part of the team, like the lady that cook for us, the boat driver, volunteers, students, etc.

5.6 FOOD AND ACCOMMODATION

You will live with a Thai family (home-stay) in different homes but houses are very close to each other. You may have to share a room with another volunteer depending on availability. Thai houses are different from western standard houses: bed consists of a mattress on the floor covered with a bed sheet; bed sheet are not provided but a pillow is provided; toilets have 'Thai showers', a big tank of water, please bring your own towel. One house is used as office and research assistant's accommodation as well as a volunteer common area. Electricity will be available but only in the evening (after 18.00 every day until about 22.00 at night).

Drinking Water will be essential during the day, but must be carried with you so bring a large water bottle. Three meals a day will be prepared by a local Thai woman in her house (Vegetarian option available on request). Transport to the beach, which is located about 30 minutes walk from the village, will be organized every day by boat; a local driver will be employed for the project.

In the village a local Thai lady provides a laundry service at a reasonable price there are also two small shops, selling drinks, small snacks and essentials like shampoo, etc. No souvenirs are sold in the village and there are no restaurants. You will live closely with the local community and they will be involved in the programme.

After the season 2008, the local community appreciated the idea of working together with a conservation team. For this reason, the project is planning to improve aspects that will provide support to the community by building capacity and awareness.

The local people of the village come from different villages which were affected by the tsunami. They are now getting to know each other and slowly becoming a community. The project provides a contribution toward the establishment of several groups in this new community stimulating the community spirit and unity. The village is very new and it still need time to adjust itself.

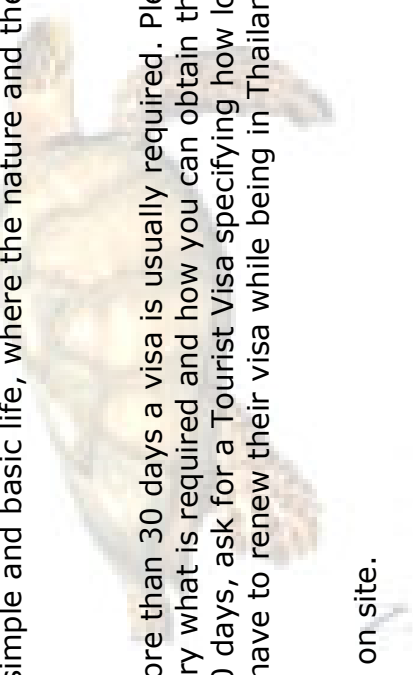
Living in the village means that you will share culture and daily habits with Thai people. Living conditions and tradition are very different from the western world. You will experience a simple and basic life, where the nature and the beauty of the place will be part of each day.

5.7 PASSPORT / VISA

To visit Thailand you need a valid passport and when you stay more than 30 days a visa is usually required. Please check with your booking office or the Thai embassy in your home country what is required and how you can obtain the necessary documents. When you apply for a visa of more than 30 days, ask for a Tourist Visa specifying how long you will stay in Thailand. Participants for longer than sixty days may have to renew their visa while being in Thailand.

5.8 EMERGENCIES

All members of staff and the researcher will have a mobile phone on site.



5.9 HOW TO REACH THE PROJECT

You will have to travel independent to the project location at the island. Your booking agency will provide you with detailed information on how to travel independently to the project location.

5.10 MEDICAL ADVICE

You will be on a remote tropical island, and any health issues must be communicated before booking. No vaccinations are required, but several vaccines plus malaria prophylaxis are recommended. Contact your public health authorities well in advance before leaving for Thailand to check on the health recommendations in your home country for Thailand travellers.

5.11 MEDICAL SERVICES

In case of any medical emergencies:

A first aid kit is available at the project site.

The nearest small medical clinic is in the village about two km away. From the project accommodation it can be reached in about half an hour.

A new hospital has been built by the Thai Royal family on the mainland in Kura Buri, about an hour by boat from the village.

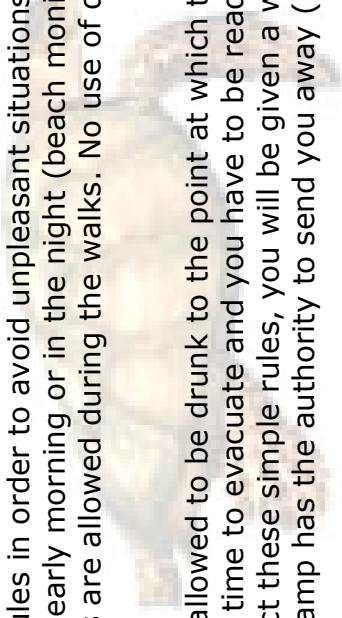
The nearest big hospital providing up-to-international-standard service is at Phuket (for example the Phuket International hospital). In case of an emergency there might be a helicopter service that might still take an hour to get into the hospital. Otherwise transport to a big hospital at Phuket by boat to the mainland and then by car, would usually take about four hours.

5.12 SAFETY AND RULES AT THE CAMP

Some simple rules for you have to be followed in order to guarantee a successful season.

While staying at the camp you are required to follow some basic rules in order to avoid unpleasant situations which could create negative feelings within the team. If you are on duty in the early morning or in the night (beach monitoring) you are requested not to be drunk the night before. No alcoholic drinks are allowed during the walks. No use of drugs is allowed while participating in the project.

You are requested not to drink excessively. Specifically, no one is allowed to be drunk to the point at which they fall unconscious. In case of a tsunami warning, there will be very little time to evacuate and you have to be ready without interference from other members of the team. If you do not respect these simple rules, you will be given a warning. At the second warning, the staff member who is responsible for the camp has the authority to send you away (without refund) from the project.



6 ORGANIZATION

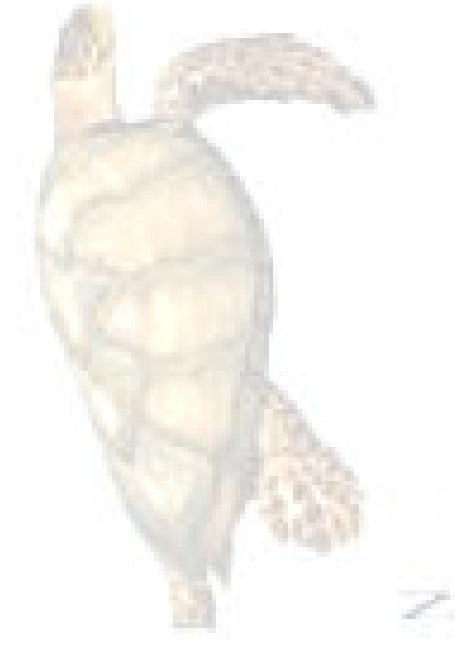
Naucrates Onlus (from Greek language "who dominate the sea") is the foundation in charge with the project, in collaboration with Phuket Marine Biological Centre and National Research Council of Thailand; it carries on this Sea Turtle project. It is a non governmental organization based in Italy operating in different countries of the world with the aim to contribute to the survival of sea turtles, to the conservation of mangrove forests and to help with conservation in general.

The work is mainly conducted in the Mediterranean region and in Thailand.

The main purpose is to work on three important aspects: scientific research, conservation and education.

- Scientific data and information are collected on the field in order to provide a database for compilation of conservation strategy plans suitable for each investigated area.
- Conservation strategies and actions are applied in order to preserve or to improve the status of sea turtle population and their habitats, and of mangrove forest and nature.
- Local communities are always involved in any of our project or initiative, participating in our activities. Educational programmes are carried out in local schools, by qualified teachers. Awareness among tourists is also one of our priorities.

In addition, we work on: training for local and foreign students and volunteers; participation to international meeting or conferences; compilation of reports and scientific papers; keeping media informed on our activities; promotion of sustainable tourism, with particular attention to tourism impact assessment.



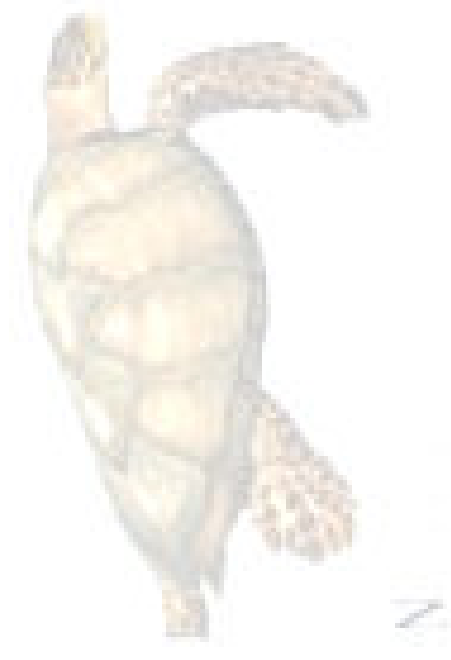
7 LEISURE TIME ACTIVITIES

Possible additional leisure activities (not included in the price):

- Snorkelling. You can swim to the reef or get a boat (has to be paid)
- Canoeing at sea or among the mangroves (has to be paid)
- Jeep tour inside the island (has to be paid)
- Trip with local fishermen (donation)
- Trips to Ra island (walk in the forest, one day),
- Trip to Surin islands Marine National Park (about two hours by boat)
- Thai massage (service available in the village at 100 Thai Baht per hour)
- Thai cooking lesson: how to make Thai dessert (other topic can be added on request), conducted by a local lady of the village.

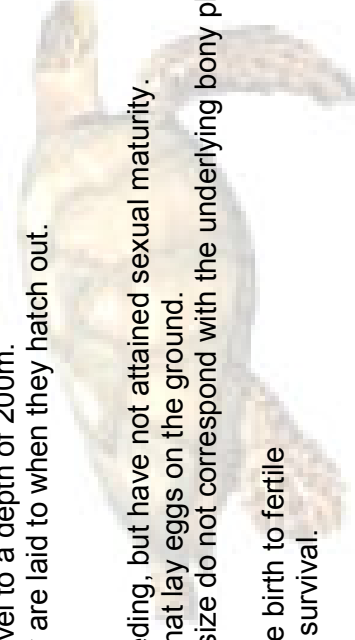
Others (free):

Swimming, bird watching, walking in the forest, reading, learning Thai language chatting with local villagers, relaxing ...



8 TURTLE GLOSSARY

- Adult stage:** turtles that have attained adult size, i.e. that are larger than minimum breeding size.
- Artificial lighting:** light created by human-made sources, such as lamp posts and porch lights.
- Beak:** hard horny part of the turtle's mouth.
- Brick of extinction:** animals declared by international laws as threatened with extinction.
- Carapace:** dorsal osseous shell of the turtle covered by horny scutes or leathery skin.
- Carapace length:** measurement of the carapace taken from....
- Chamber:** a hole from 40 to 80 cm deep in the shape of a flask in which eggs are laid.
- Clutch:** a nest of eggs.
- CITES:** Convention on International Trade in Endangered Species: agreement to control international trade of endangered species.
- Egg chamber:** the part of a turtle nest where the eggs incubate.
- Egg laying:** process of depositing eggs in a hole in the sand.
- Extinction:** when a species is disappeared from the earth.
- Flipper:** limb a sea turtle.
- Habitat:** a place where a plant or an animal naturally lives.
- Hatchlings:** young turtles emerging from a nest.
- Hatching:** emergence from an egg.
- Incubation period:** the time that elapses between laying of the eggs and the emergence of the hatchlings on the surface of the beach.
- Life cycle:** the sequence of events from the birth of an individual to its death
- Migrate:** move from one place to go in another
- Natal beach:** the beach where a sea turtle was born
- Neritic zone:** applied to the part of the ocean extending from the low-tide level to a depth of 200m.
- Nest:** the place on the beach where the eggs are incubated from when they are laid to when they hatch out.
- Pelagic zone:** open sea area.
- Plastron:** the lower or ventral portion of a turtle's shell.
- Juvenile:** animals who are not yet adults. Turtles that have commenced feeding, but have not attained sexual maturity.
- Reptile:** class of cold-blooded vertebrates well adapted to life on land and that lay eggs on the ground.
- Scutes:** horny shields covering the carapace and plastron. The shape and size do not correspond with the underlying bony plates. They are important for identifying turtle species.
- Species:** group of "similar" animals able to breed with each other and to give birth to fertile
- Threat:** indication or warning of a kind of danger that can affect the species survival.



9 PERSONAL EQUIPMENT

You will be on a remote tropical island, and need to be prepared to live without night life, shops, television, etc.

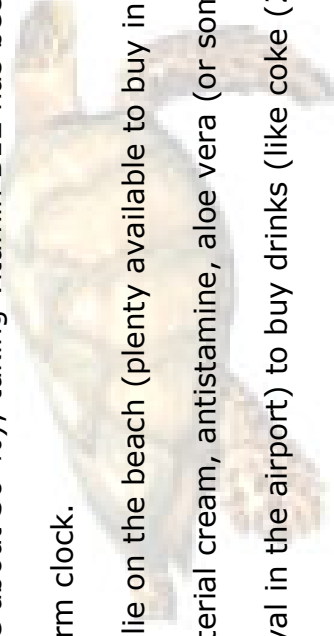
You will have a lot of free time during the day to walk and explore the beauty of the island or to read a book.

You will be based in a Thai village and you should be open and prepared to live respecting Thai culture and habits. You might find Thai daily habits different from yours, but please consider that we are all different and should respect the culture of the country where we are. The exchange of culture and different way of seeing things enriches ourselves and brings positive effects. Especially women are kindly asked to respect the local community culture and religion by wearing suitable clothes and covering up when in the village (T-shirts and long trousers or skirts would be ideal). While monitoring beaches or when out of the village you can wear swimwear and shorts.

The villagers are not used to having foreigners in the village living with them. It is only in the last few years that a few have visited the community to bring post tsunami support.

What to bring with you:

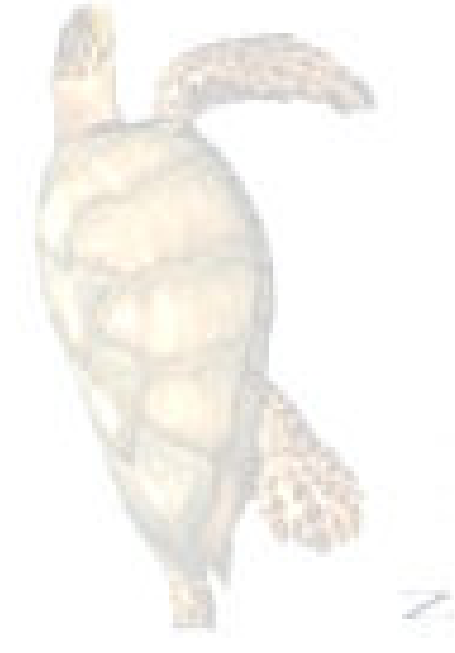
- A print out of this brochure and documentation of your travel, health & cancellation insurances.
- Comfortable summer clothing (shorts, T-shirts, bathing suit), for women shorts and skirts that comes below the knees and shirts that cover the shoulders when you are in the village, cotton sweater (long sleeve), long pants (trousers), remember that dark colours feel hotter in the sun than light colours. Sand shoes (for walking distances with wet sandy feet, something like walking sandals, water shoes, diving shoes), flip flops, waterproof jacket.
- Sunglasses, sun block / sun cream (one bottle per person per 2 weeks), & sun hat or cap.
- Personal toiletry items, sewing kit, towels.
- Insect repellent (containing DEET, diethyltoluamide, best are about 30 %); taking vitamin B12 has been advocated as making you less attractive to insects, it might be worth to try.
- Camera, binoculars, flash light/torch with spare battery, alarm clock.
- Flask/ water bottle of high quality plastic or metal.
- Big cotton sheet or sarong to cover yourself at night and to lie on the beach (plenty available to buy in Thailand).
- Cotton pillow case.
- Basic medicine and personal belongings (band aids, antibacterial cream, antistamine, aloe vera (or something to soothe sun burn), anti diarrhoea could be useful.
- Pocket money (Thai Baht, that can be changed on your arrival in the airport) to buy drinks (like coke (20 baht), beer (40 baht), etc).
- Snorkelling equipment.



Some additional suggestions

- The mobile phone network coverage might be limited on the island and Thai networks might be different from the one of your country. An idea would be to purchase a THAI SIM card ("onetwork") before you get on the island (cost: about 300 baht). You can charge the card buying credit every where.
- You will often have to wade out to the boat, so a dry bag maybe useful for any valuables (camera, mobile etc.) and quick drying clothes.
- If you are able to find (and have space in your luggage for) please bring very basic English story/colouring books for children with a conservation theme or teaching assistant/methods/games for teachers (even second hand books are appreciated). There are about 15-20 children in the local school where the project is conducting environmental education activities.
- On the island there are no Banks or change facilities. Bring your own money.

Are you smoker? Cigarette-stubs are waste. It may take one to five years for a cigarette filter/ stub to decay. Therefore, take for example an empty film canister to put your stubs in. Such canisters have tight lids and you can conveniently empty them a waste bin.

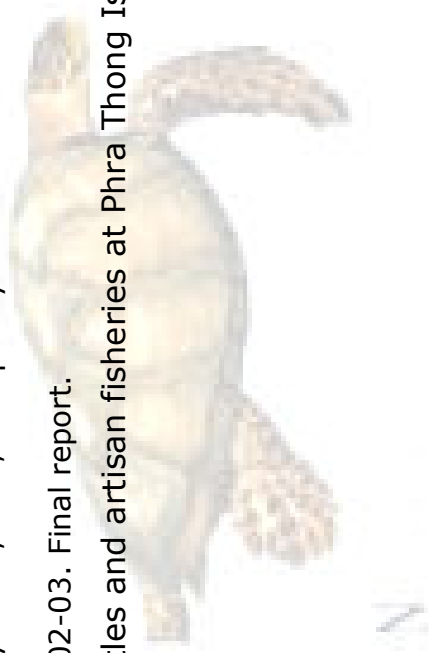


10 LITERATURE

10.1 ABOUT THE PROJECT AND SOUTH THAILAND

- Aureggi, M. and Chantrapornsy, S. 2006. Reproductive Biology and Conservation of the Olive Ridley turtle at Phra Thong Island, Andaman Sea, South Thailand. Phuket Mar. Biol. Center Bull. 67:81-87.
- Aureggi, M. and Adulyanukosol, K. 2006. Marine Turtle conservation in Thailand: a Post tsunami recovery? Oral presentation at 26th Annual Symposium on Sea Turtle Conservation, Crete, Greece.
- Aureggi, M. 2006. Conservation Project: sea turtles, mangrove and reef at Phra Thong island. Progress report, N.2. Naucrates, Via Corbetta, 11 - 22063 Cantu' (CO)-Italy. In preparation.
- Aureggi, M. 2006. Green Turtle a victim of post-tsunami aid? Bangkok Post of the 28 March 2006.
- Aureggi, M. (2006). The status of marine turtles in Thailand. *Testudo journal* 6(3): 50-63.
- Aureggi, M. (2004). Sea Turtle Conservation Management Plan - Phra Thong island, Thailand. Proceedings of the 5th SEASTAR 2000 workshop, 13-15 December 2004, Bangkok, Thailand: 21-23.
- Aureggi, M. and Chantrapornsy, S. (2003). Conservation Project: sea turtles at Phra Thong Island, South Thailand. *Kachhapa Newsletter* 9:3-5.
- Aureggi, M., Chantrapornsy, S. and L., Young (2003). Conservation Project at Phra Thong and Kho Khao Islands, South West Thailand. *TigerPaper* 30(3): 11-13.
- Aureggi, M. and Chantrapornsy, S. (in press). Sea Turtle research and conservation project at Phra Thong island, Phang Nga province, Thailand. 11-13 December 2001.
- Aureggi, M., Chantrapornsy, S., Conti, C., Boschetti, M. and Young, L. 2003. Sea turtle project at Phra Thong island, Thailand: working with local community, tourists and volunteers. Page 142 in Proceedings 23rd International Symposium on Sea Turtle Biology and Conservation (Editor: Pilcher, N.J.). NOAA Technical Memorandum NMFS-SEFSC-536, 261p.
- Aureggi, M., Gerosa, G. and Chantrapornsy, S. 2004. An update of sea turtle nesting along the Andaman coast of Thailand: 1996-2000. Pages 98-100 in Proceedings 21ST International Symposium on Sea Turtle Biology and Conservation (Editors: Coyne, M.S. and Clark, R.D.). NOAA Technical Memorandum NMFS-SEFSC-528, 368p.
- Aureggi, M., Gerosa, G. and Chantrapornsy, S. (in press). Elimination of egg poaching activity at Phra Thong island, Thailand. First Italian Meeting on Sea Turtle Biology and Conservation. Policoro, Italy.

- Aureggi, M., Gerosa, G. and Chantrapornsy, S. 1999. Marine Turtle survey at Phra Thong Island, South Thailand. Marine Turtle Newsletter 85:4-5.
- Chantrapornsy, S. 1992. Biology and conservation Olive Ridley turtle in the Andaman Sea, South Thailand. PMBC.Res.Bull.57:51-66.
- Conti, C. 2007. Mangrove Restoration Project at Phra Thong Island (west coast). Naucrates Final Report.
- Conti, C. 2006. Post tsunami cleaning, assessment and restoration of the mangrove forest at Phra Thong Island (west coast). Naucrates Final Report. 12pp.
- Dilkes, E. and Aureggi, M.. 2006 . Post-tsunami comparative survey of the coral reef at PRING Island (Phra Thong Island - Thailand). Final report. 15pp.
- Dilkes, E. and Aureggi, M.. 2004 . Preliminary survey of the coral reef at Pring island (Phra Thong Island - Thailand). Final Report.
- Morse, J. and Boschetti, M. 2003. Biology of Mangroves and GIS Mapping. Final Report.
- Morse, J., Boschetti, M, Conti, C., Aureggi, M. and Nimsantijaroen, S. 2003. Mangrove forest research, conservation education, and ecotourism in Thailand: a pilot study using novice volunteers. Poster presentation at the Annual Meeting of the Ecological Society of America, August 2003, Savannah, GA, USA.
- Morse, J., 2003.Ko Phra Thong Digital Herbarium on mangrove forest. Database.
- Jones, L. 2002. Tourism Impact Assessment. Final report.
- Perusson, O. (in draft). Reef survey of Ko Pa, Ko Kho Khao. Final Report.
- Phasuk, B. and Rongmaungsart, 1973. Growth studies on the ridley turtle, L. o., in captivity and the effect of food preference on growth. Phuket MBC Res. Bull. 1:14pp.
- Tsaros, P. (in draft) Tourism Impact Assessment, Ko Kho Khao 2002-03. Final report.
- Tsaros, P and Aureggi, M. 2007. Interaction between sea turtles and artisan fisheries at Phra Thong Island. Naucrates Final report.



10.2 GENERAL READING ON SEA TURTLES

- IUCN/SSC MTSG, 2001. Research and Management Techniques for the Conservation of Sea Turtles. Eckert, K.L, Bjorndal, K.A., Abreu-Grobois, F.A., Donnelly, M. (Eds). Publication No.4.
- Lutz, P.L. Musick, J.A. - The Biology of Sea Turtles. CRC Press, Boca Raton.
- Bjorndal, K.A. - Biology and Conservation of sea turtles. Revised edition,1995, Smithsonian Inst. Press, Washington D.C., 605-609.
- Gerosa, G. and Aureggi, M. 2001. Sea Turtle handling guidebook for fishermen (31pp) and teaching book (48 pp). UNEP, Mediterranean Action Plan, Regional Activity Centre for Specially Protected Areas – Boulevard de l’Environnement, BP 337 – 1080 Cedex – Tunisie.

Reading on the Tsunami experience of the team on the island

Lyall Kimina. 2006. Out of the blue – Facing the tsunami. ABC Books.

