



Young Explorers Programme

**Malaysia, November 2009
Lankayan Island - Turtle Project**



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1. Lankayan Island

Lankayan Island (figure 1) is located in a coastal shallow reef area, 15 km off the coast of Sabah (Malaysian Borneo) and about 80 km from Sandakan. It is part of Sugud Islands Marine Conservation Area (SIMCA).

Lankayan Island has the simple form of an egg (figure 2). It is not hilly but low-lying and covered with dense vegetation. The island is inhabited, a military camp, a resort and a turtle hatchery can be found on the tiny island.



Fig. 1: Lankayan: GPS position 6°29'59.96"N 117°55'00.06"E (source: google earth)



Fig 2: Lankayan island (source: <http://www.reef-guardian.org/SIMCA.html>)

During the Malaysia Expedition, Mike Horn, his team and nine Young Explorers spent three days at Lankayan and had the chance to learn from the local guides and participate in the Lankayan Sea turtle program.

2. Turtle Project

Green turtles (*Chelonia mydas*) and hawksbill turtles (*Eretmochelys imbricata*) make this island a key nesting spot in the Sulu Sea.

The green turtle can be found worldwide and is mostly herbivorous. The adults commonly inhabit shallow lagoons, feeding mostly on various species of sea grass. *Chelonia mydas* is listed as endangered by the IUCN and CITES and is protected from exploitation in most countries.

The hawksbill turtle is a critically endangered sea turtle. It primarily feeds on sea sponges. Some of the sponges eaten by *Eretmichelys imbricata* are lethally toxic to other organisms.



Fig.3: Hawksbill turtle (Photo: Mike Horn SARL/Dmitri Sharomov)

The turtles are banded by the local marine preserve staff, the eggs are retrieved and counted, and then reburied in a fenced off hatchery area to prevent poaching and predation, and to assist in documenting turtle productivity. After hatching, the live birth count is recorded and then the young turtles are safely released to sea in order to avoid predation from birds.

The number of nestlings has been increasing since 2004. Total recorded nestlings for both green and hawksbill turtles was 138 nests in 2004, 181 nests in 2005, 296 in 2006 and 158 nests in 2007. Green turtle nests comprised 70% of total nests.



Fig. 4: Green Turtle on the beach
(Photo: Mike Horn SARL/Dmitri Sharomov)



Fig.5: Young Explorers counting the eggs
(Photo: Mike Horn SARL/Dmitri Sharomov)

The Young Explorers were able to work hand in hand with the rangers of Lankayan island. We went on night watch, walking around Lankayan island spying for female turtles who left the safety of the sea to nest. We waited until the turtle went back to the sea, then carefully dug up the eggs and counted them. We found 79 eggs.

The eggs were light and the size of ping pong balls. We carried them to a protected hatching area and buried them again in a depth of 70cm, just as the mother turtle did before. After 7

weeks the little baby turtles hatch. Our nest hatched around new year, 60 days after laying. We had a good hatching rate of 97%. Only 2 out of 79 eggs didn't hatch. The temperature determines the sex of the turtles. This means that the top eggs that get more heat from the sun become males, while the deeper lying and cooler eggs become females.

The next morning early at 5 am some baby turtles hatched. From a previous dug nest, they dug themselves through the sand to the surface. Then we put them into a bowl to carry them to the beach and release them into the wide ocean. Sadly only 1% of the small turtles will mature and lay eggs one day.

But there is more to be done in a turtle hatchery. After a nest has hatched you need to dig up the empty eggs and those which didn't hatch. After some calculations for the statistics we had to open the eggs, which didn't hatch. Some of these eggs weren't fertilised, in other eggs the embryos stopped their development.



*Fig. 6: Hatchling green turtles
(Photo: Mike Horn SARL/Dmitri Sharomov)*



*Fig.7: Green Turtle babies ready to be released
(Photo: Mike Horn SARL/Dmitri Sharomov)*

3. Our feedback

We have learned and enriched our personal knowledge and experience greatly thanks to our active participating in the "Sea Turtle Programme". We, Young Explorers, got in contact with these unique animals. We now understand their life cycle and their sense of living. When you hold a small turtle which is trying to get free and run into the ocean it really changes your mind. We were amazed by their enthusiasm for survive. We could feel how much they want to live and that we have to help them because humans have already disturbed the natural cycle and we have to put our effort into regenerating a balance in nature.

We saw that conservation can be "easy" as it is simple to build a hatchery, which just looks like a sand box, and dig and bury eggs there. But at the same time we experienced that conservation activities are sometimes hard and tiring (like night watch), but an essential part of the project. It is difficult to motivate oneself at 3 am to walk carefully once around the island looking for a turtle which left the water to lay eggs. But if you don't, the eggs might be stolen or the young hatchlings might be eaten by birds.

We learned how important this project is. Commercial selling of one turtle egg for 1RM (=0,31USD) is a tragedy similar to the killing of elephants for their ivory or shark finning just for a traditional soup. Sea turtles were one of the most amazing moments in our diving and marine life seems unimaginable without them. The SIMCA project has the same point of view and they are acting hard on saving them. These turtles have a positive effect on the local biodiversity and thanks to the SIMCA project they have a bigger chance to survive.

We were impressed by the educational work the staff is doing. They set up a museum which informs visitors about the threats harming the turtle population. Maybe one could try to make this museum more interactive and modern, but also present some more specific data on the conservation program.

Moreover the project (<http://www.reef-guardian.org>) doesn't have a good homepage. The facts presented on their page are old and not complete. It is difficult to get an image of their work.

The island could offer school camps where local kids participate in the program just as we did and learn about the turtles, their life-cycle and the threats they are exposed to. By doing this one would raise environmental awareness among the Malaysian population. In general the project could focus a little more on teaching people how they should behave, for example try to avoid plastic waste and do not throw waste onto the beaches as this waste would be washed into the water. The staff should go to the schools and teach children about environmental issues.

The Young Explorers could help to modernise the Museum. Maybe it would also be a good idea to make it bilingual, so far it is only in English, Malaysians can't understand it.

4. Conclusion

We feel that this is an excellent project and an example to other islands on how to manage their environment. The project is working in a balanced way between environment, tourism, economy and education. Staff on the Lankayan Island is well informed and most importantly they have the enthusiasm for saving nature.



Fig. 8: A just hatched green turtle