



Project Report Indonesia 2013

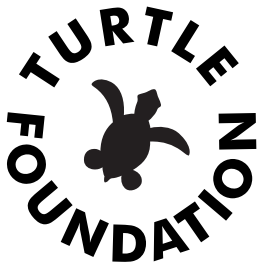
Dr. Hiltrud Cordes Program Manager Turtle Foundation

Vany Ahang Moord Project Leader Indonesia

Rachmad Basuki Deputy Project Leader Indonesia

Dr. Thomas Reischig Scientific Director Indonesia





TURTLE FOUNDATION

Protecting Sea Turtles and their Habitats

Content

PROJECT REPORT	3
Turtle Foundation and Yayasan Penyu Berau	3
Project Background	3
Vision & Mission	4
Goals	4
Project locations and logistics	4
Description of the protective measures and results	5
Accompanying measures: public relations and environmental education	8
Creation of alternative livelihoods	11
Challenges	11
Partnerships	12
Measures of evaluation and monitoring	13
PLANNING 2014	13
Continued work on the protection of Bilang-Bilangan and Mataha	13
Continued sea patrols in the southern Derawan archipelago	13
Environmental education	13
Human capacity development	13
Enhanced cooperation with Kecamatan Batu Putih	13
Anti head-starting campaign	14
Regional eco-tourism, development of a volunteer program	14
Hawksbill turtles in the Derawan archipelago: population assessment and first protection measures	14
OUTLOOK FOR THE NEXT YEARS	14
ACKNOWLEDGEMENTS	15

PUBLISHING DETAILS **** Published by Turtle Foundation **** Charity organization in Germany, Indonesia, Cape Verde, Switzerland, USA **** www.turtle-foundation.org **** Turtle Foundation Switzerland, Kerbelstrasse 18, CH-9470 Buchs **** Turtle Foundation Germany, Zum Keltershof 12, D-50999 Köln **** Turtle Foundation USA, 2615 Jefferson Street, Bellingham, WA 98225 **** Turtle Foundation Indonesia (*Yayasan Penyu Berau*), Jl. Dahlia no 1, Tanjung Redeb, Berau **** Editing: Dr. Thomas Reischig **** Texts: Dr. Thomas Reischig, Dr. Hiltrud Cordes **** Layout & typography: Dr. Thomas Reischig **** Banking account CHF: Swiss Post, PostFinance, account number: 40-429368-1 IBAN: CH13 0900 0000 4042 9368 1, BIC: POFICHBEXX **** Banking account EUR: Sparkasse Bad Tölz-Wolfratshausen, Account number: 555 1 5555, bank number: 700 543 06, BIC: BYLADEM1WOR, IBAN: DE90 7005 4306 0055 5155 55 **** Status: January 2014

Cover: Green sea turtle resting in a coral reef of the Derawan archipelago

PROJECT REPORT

Turtle Foundation and Yayasan Penyu Berau

The non-governmental organization Turtle Foundation was founded in 2000 in Germany and has conservation projects operating in Indonesia (since 2000) and on the Cape Verde island of Boavista (since 2008). In 2006, in accordance with Indonesian law, Yayasan Penyu Berau (YPB, or Turtle Foundation Berau) was founded as a nonprofit organization. YPB leads all protective measures and public relations at the conservation site. YPB is funded more than 90% by the Turtle Foundation. Furthermore, the Turtle Foundation is registered as a charitable organization in Cape Verde, Switzerland, and USA.

Project Background

All species of sea turtles are considered endangered or critically endangered and, despite local conservation successes in individual decades-long projects, are still declining world-wide. Turtle Foundation's Indonesian Conservation Project is located in the Derawan archipelago off eastern Borneo, a group of small islands belonging to the Berau district of which only three are inhabited (Derawan, Maratua, and Balikukup). The archipelago lies in the so-called Coral Triangle, which is considered the

richest marine biodiversity hotspot in the world. Here is the world's eighth largest nesting area for the green turtle (*Chelonia mydas*), and significant feeding grounds for hawksbill turtles (*Eretmochelys imbricata*). Since 1999, all species of sea turtles and their eggs and body parts (tortoiseshell, etc.) have been nominally completely protected under Indonesian law. Nevertheless, on the Derawan islands the local government had awarded concessions for collecting green turtle eggs for decades, only ending the practice in 2001. The result of this collection of almost 100% of the nests laid since the 1940's is the precipitous decline by more than 90% of the turtles and eggs. Despite the legal ban on egg collecting, there is little doubt that collection would continue virtually unchecked without systematic and continuous protection of the nesting beaches, as is still the case on the as yet unprotected islands of Belambangan and Sambit. Eggs illegally collected from the Derawan archipelago are mainly sold on the markets of Samarinda and Tarakan (the latter lying north of the Berau district), where they reach prices of about 0.65 €/0.90 US\$, which is more than five times as much as a chicken egg. Thus, further decline and eventual extinction of the population can only be prevented by consistent and continuous protection of the nesting islands. With the islands of Bilang-Bilangan and Mataha, the Turtle Foundation currently protects about 50% of the turtle nests in the Derawan archipelago.



Left: Newly hatched green sea turtle heading to the sea on the beach of the island of Bilang-Bilangan. Right: In 2000, on Sangalaki, egg collecting still occurred on a large scale with the permission of the local government; the sea turtles had little chance. Still, turtle eggs are threatened by poaching in all places where they are not effectively protected.

Although the critically endangered hawksbill turtles are found on the reefs of the Derawan archipelago, it is still unknown where their nesting areas are. The current population size is therefore difficult to estimate. The main threat to these turtles in the area is primarily the hunting of juvenile and adult animals. Their coveted tortoise shell is either peeled from still living animals in a very cruel manner, with animals slowly but surely dying, or the animals are directly killed to end up as stuffed wall decoration. On the eponymous island of the archipelago, Derawan, both tortoiseshell products as well as stuffed animals are sold illegally but openly in souvenir shops.

Other threats to all sea turtles in the region are direct hunting of turtles by local and foreign fisheries (e.g., fishing fleets of China's Hainan Province), unintentional but for the turtles usually fatal by-catch in other fisheries, habitat destruction (especially illegal cyanide and bomb fishing), and environmental pollution (plastic waste, waste oils).

Vision & Mission

Our vision is a future where sea turtles and their habitats are sustainably protected, healthy, and safe from threat of extinction and destruction.

Our mission is to contribute to sea turtle conservation at our own project sites by cooperating with local communities to create a future where both sea turtles and people can thrive.

Goals

- Protection of green turtle nests in the Derawan Archipelago from illegal egg theft
- Protection of local nesting habitats of green turtles and feeding grounds of green and hawksbill turtles (seagrass beds, coral reefs)
- Education and environmental education for the local population, especially with regard to the protection of sea turtles and their habitats
- Creating alternative livelihoods for local communities
- Promoting the participation of local and national authorities in the protection of sea turtles

- Improving the scientific and general knowledge of marine turtles in the project area

Project locations and logistics

The Indonesian Derawan islands belong to the Berau administrative district (*Kabupaten*) in the province of East Kalimantan. Kalimantan is the name of the Indonesian part of the island of Borneo. The main town of the district of Berau is Tanjung Redeb, the provincial capital Samarinda.

The headquarters and office of the Turtle Foundation/YPB is located in Tanjung Redeb, and is headed by Vany Ahang Moord and Rachmad Basuki. The project islands of Bilang-Bilangan and Mataha are reached first by car to the village of Lenggo, and then taking a speed boat for the two hour trip to the islands. Turtle Foundation maintains two motor boats for sea crossings.

Until late 2012, Turtle Foundation maintained a ranger station on Sangalaki Island. A station on the nearby island of Samama was manned by employees of the local conservation authority BKSDA, whose logistics were completely financed by Turtle Foundation. As of the end of 2012, the turtle protection on Sangalaki has been completely taken over by the BKSDA, and Sangalaki and Samama are no longer included in the active protection program of the Turtle Foundation. Unfortunately, on these islands the quality of the protection work and data collection has drastically decreased since Turtle Foundation's exclusion.

Two other islands with significant nesting populations that have yet to be protected are Belambangan and Sambit. The main feeding grounds of the sea turtles in the archipelago are located around Pulau Panjang (seagrass) and at the large coral reefs Karang Besar (near the island of Balikpapan), Karang Daengalahan (between the islands of Balikpapan and Mataha), and Karang Muaras (near the island of Maratua). Also the fringing reefs of the islands of the region are habitats of the sea turtles.

The project islands are uninhabited, so in order to protect the nests from poachers it is necessary to





Project location in the Derawan Archipelago, east of the Indonesian part of Borneo. This area is outlined with a rectangle in the inset showing Indonesia.



Left: The southern islands of Mataha (foreground, right) and Bilang-Bilangan (background, left). Right: Leaving for the evening beach monitoring tour on Bilang-Bilangan

create an infrastructure including a supply chain of shelter, personnel, food, and drinking water.

Description of the protective measures and results

Beach guarding

The ranger stations on the islands of Bilang-Bilangan and Mataha are occupied year-round by three to six men, who remain several weeks on the islands and work on a rotation system to allow for return visits and vacations to their hometowns.

To prevent illegal egg theft on the islands, the whole 2–2½ kilometers of each island’s nesting beaches are patrolled at least three times a day. The first tour takes place shortly after dawn. At this time almost all the turtles have finished their egg laying. The second tour takes place in the early evening just before sunset, and the last tour occurs at night since nesting occurs primarily during the night on flood tides. The eggs, however, are constantly threatened by poachers, and particularly landing boats must be closely inspected.





Left: After a morning beach tour on Bilang-Bilangan, rangers carry the eggs of a turtle nest rescued from inundation to the hatchery. Right: In the sand of the hatchery, eggs are incubated for about 55–60 days until the young turtles hatch.



Left: About half of the hatchery is covered by palm fronds to incubate parts of the eggs in the shade. Thereby, we try to achieve a balanced sex ratio, since in turtles sex is determined by the incubation temperature. Right: A ranger of the Turtle Foundation saws stranded driftwood to keep the beach accessible for nesting turtles.

Through continuous beach monitoring illegal egg collecting has been eliminated virtually completely.

Nest relocation

Occasionally, turtles will place a nest too close to the high tide line. If these nests are subjected to salt water early in development, the eggs will die, leading to the loss of the entire clutch. These nests are carefully dug up and reburied in a more suitable location on the beach or placed in enclosed, lockable hatcheries where they are protected from water, monitor lizards, and human egg thieves. About 20% of nests are moved in this way and thus saved from destruction.

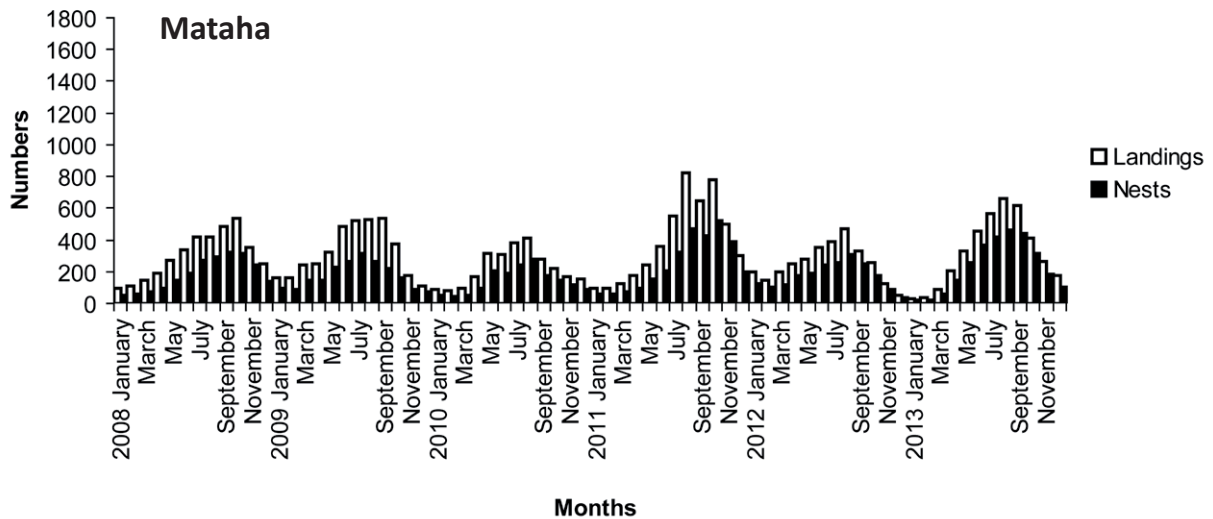
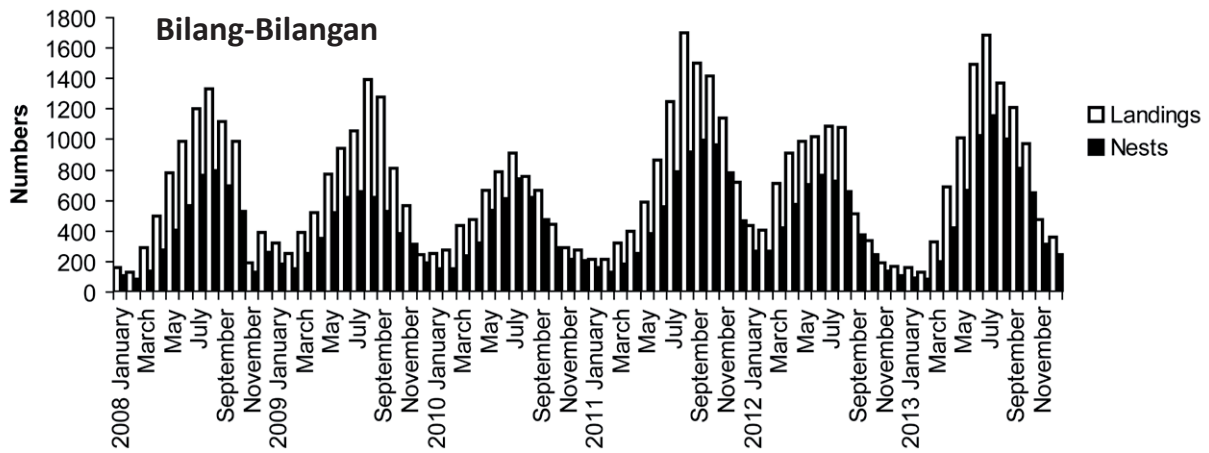
Beach clean-up

Throughout the area, the nesting beaches are strewn with garbage (plastic waste, abandoned fishing nets, etc.), which can deter nesting females

and trap the hatchlings. The tasks of the rangers thus include collecting the garbage regularly. The disposal of the garbage is currently done only by burning. Another problem is driftwood that is the result of extensive deforestation on the mainland of Borneo, washed downriver, which then floats onto the nesting beaches. Massive logs block the adult turtles from reaching suitable nesting areas, and prevent the newly hatched turtles from reaching the sea. Currently, the wood is cut and, unless used for construction or repairs on the station, it is burned. However, the use of the wood for local handicrafts is being considered.

Data acquisition

From 2002 to 2012 on Sangalaki, and since 2008 on Bilang-Bilangan and Mataha, on a daily basis the rangers have been collecting data on numbers of emergences, nests laid, and eggs per nest, as well



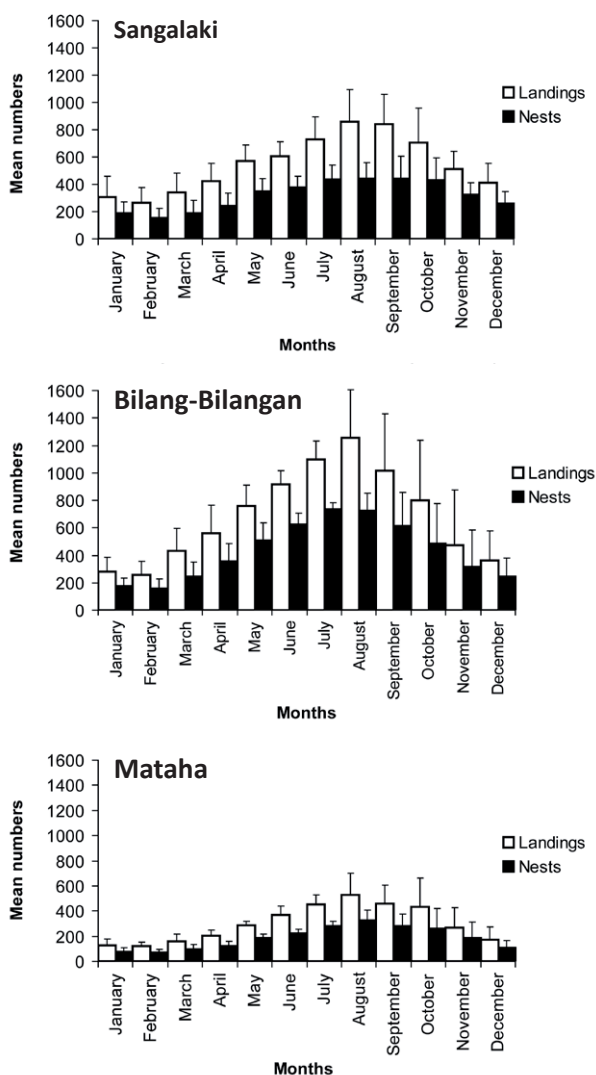
The monthly numbers of emergences (Landings) and nesting events (Nests) for female green sea turtles on Bilang-Bilangan and Mataha between January 2008 and December 2013 show year round nesting with seasonal peaks between July and October. The annual fluctuations of nesting numbers show the same pattern on both islands.

as other aspects of population and nesting behavior of green turtles on the islands. The data are being scientifically analyzed and published by Vany Ahang Moord, Rachmad Basuki and Dr. Thomas Reischig.

According to our current calculations, about 3,200–3,500 green turtle females are nesting annually throughout the entire archipelago. On the islands of Sangalaki, Bilang-Bilangan, and Mataha, an average of 3,824 (years 2003–2011), 5,446, and 2,307

nests (both 2008–2013), respectively, is laid per year (total: 11,577 nests). Together, this comprises about 75% of all nest of the archipelago. In 2013 we counted on Bilang-Bilangan 6,734 nests (2012: 5,248 nests) and on Mataha 2799 nests (2012: 2,080 nests), together 9,533 nests. Thus, nesting numbers were considerably higher than the average of the previous six years, which is attributed to the natural yearly fluctuations of nesting numbers. Extrapolated from an average of 1.5% of nests lost





The average monthly numbers of landings and nesting events show similar nesting behavior on all three islands. Most turtles nest on Bilang-Bilangan, contradicting prior reports of Sangalaki as the largest nesting area within the Derawan archipelago. Observation periods: Sangalaki 9 years (2003–2011), Bilang-Bilangan and Mataha: 6 years each (2008–2013). The error bars represent standard deviations.

due natural reasons (mostly nest plundering by monitor lizards, which are part of the island's eco system), from an average clutch size of 99 eggs, and from an average hatching success of about 85% we concluded that about 788,000 turtles hatched on our project islands in 2013. Without our protection measures, this would not have been possible because the majority of the eggs would have been

poached. In total, on these islands, which are the largest (Bilang-Bilangan) and third largest (Mataha) nesting habitats of the archipelago in terms of nesting numbers, we protect about 50 % all nests of the entire archipelago. Thus, adding the years of our protection work on the islands (Sangalaki: 2000–2012; Bilang-Bilangan and Mataha: each 2008–2013), we calculate that about 7.4 million green turtle hatchlings were allowed to hatch as a result of Turtle Foundation's protection; without protection, most if not all eggs would have been collected and eaten. According to a statistical survival rate of about 1:500–1:1,000, about 7,400 to 14,800 of them will return to the islands in about 30–40 years for reproduction. Against the background that the current reproductive population of green turtles in the Derawan archipelago comprises only about 20,000 animals, this is an invaluable basis for the future stabilization and recovery of this heavily depleted sea turtle population. However, to be possible to achieve this goal its protection must be continued uninterrupted and expanded to hitherto unprotected islands.

Sea patrols

The green turtle in the waters of the Derawan archipelago is only occasionally hunted for its meat. However, the critically endangered hawksbill turtle is heavily threatened by hunting for its coveted tortoise shell. Furthermore, the marine habitats of sea turtles (seagrass beds and coral reefs) in the archipelago are endangered and already affected by illegal and destructive fishing practices. Therefore, to ensure the protection of sea turtles and their habitats in the sea as well as on the nesting beaches, we started this year with our program for the implementation of sea patrols. Co-financed by the Indonesian WWF, we conducted a multi-day boat patrol, which was accompanied by police officers. Further, our project area is continuously monitored by our rangers from the beach and from our transport boats.

Accompanying measures: public relations and environmental education

School projects

To ensure the sustainability of the conservation work, education programs for students are con-



ducted to sensitize and to teach the children about their wildlife and nature. Our aim is to raise local awareness that not only the turtles are endangered, but that it is of enormous importance that marine environments stay intact because the people on the islands and on the coast of the district of Berau depend on the resources of the sea. Unfortunately, in 2013 our funds for educational projects have been very limited. Therefore, we were only in February 2013 able to conduct a school event in the sub district of Batu Putih in the southern Derawan archipelago. At two elementary schools in two classes, respectively, lessons about sea turtle life history, threats to sea turtles, and about nature conservation were held in both playful and serious manner. The programs took place with enthusiastic teacher and student participation and approval.

Anti head-starting brochure

In Indonesia, the so-called head-starting (rearing sea turtle hatchlings and juveniles under artificial conditions for later release) is increasingly popular as an alleged means to give the animals better chances to survive in the seas. However, there are many scientific statements indicating that this method does not successfully increase the rate of turtles surviving into maturity. In contrast, due to rearing in unnaturally crowded and unclean conditions hatchlings are nearly always injured and sick, with most of them eventually dying. Since for

head-starting attempts eggs are taken from their natural environment in considerable amounts, threats to the depleted turtle populations are even increased. Further, most head-starting facilities are rather intended as tourist attractions where conservation is only a pretext covering a new form of unsustainable exploitation of sea turtles. Moreover, the turtles are often fed with other protected species such as giant clams, doing further damage to the local reef. For this reason, we created an educational brochure against head starting for locals and tourists. We printed 5,000 copies of this brochure in Indonesia, which we handed out via local partners.

Conference of ProFauna in Jakarta; Indonesian network for sea turtle protection initiatives

In October 2013, the annual conference of Indonesia's largest conservation organization ProFauna was held in Malang (East Java), in which our program manager Dr. Hiltrud Cordes participated. Among the approximately 120 participants of the conference there were employees and volunteers of local conservation organizations, thus creating a lively and very valuable exchange of information. One of the main topics of the conference was about dealing with the increasing resistance of politics and economics in Indonesia against the legitimate interests of species and nature conservation. Thus, the conference set a framework to establish



Left: Environmental education lesson held by the Turtle Foundation/YPB for school kids in an elementary school in Batu Putih. Right: Public demonstration of ProFauna and Turtle Foundation/YPB against the destructive exploitation of the sea turtles in Indonesia



Memelihara tukik supaya menjadi lebih besar sebelum dilepas dinamakan „headstarting“. Hal ini menyebabkan banyak masalah. Tukik yang dipelihara sering terserang berbagai macam penyakit seperti infeksi mata dan sering juga mereka saling menggigit karena mereka hidup di dalam satu kondisi yang tidak alami.

Keeping turtle hatchlings in captivity to let them grow bigger before releasing them is called headstarting. This technique creates many problems. Hatchlings in captivity suffer from diseases like eye infections and often bite each other, due to living under unnatural conditions.

17

Double page of our anti head-starting brochure

a network of sea turtle conservation initiatives in Indonesia. This network will foster the exchange of experiences in conservation work, but also will strengthen our position at a political level and serves the development of common strategies.

Lectures on the University of Yogyakarta

Upon invitation of Dr. Ali Imron, professor of Wildlife Conservation and Management (Department of Forestry) at the Gaja Madah University in Yogyakarta (Central Java), our program manager Dr. Hiltrud Cordes lectured about our conservation projects in student seminars.

Public demonstrations

In cooperation with the Indonesian conservation organization ProFauna, at the end of the year we conducted demonstrations and information campaigns in three large Indonesian cities (Jakarta,

Java; Samarinda, East Kalimantan; Denpasar, Bali) to draw public attention to the plight of the exploited sea turtles in Indonesia.

Petition

Our conservation project on the island of Sangalaki, begun in 2000 and successfully running continuously since 2002, was taken over by the local conservation authority BKSDA in September 2012. This action was triggered by the increasing political influence and the agitation of the organizers of the egg trade, who in former times earned a lot of money with this business and who even now are still active in it. While it has always been our long-term goal to pass the duty of species conservation into the hands of the local authorities and communities, the current situation is such that due to lack of money and expertise, as well as local political pressure, the BKSDA is not equipped to maintain

the level of protection that we were able to sustain. Formerly, we had eliminated egg theft on Sangalaki virtually completely, but now this activity again has drastically increased. Therefore, in 2013 we started an online petition against this situation, which we want to present to the responsible authorities in early 2014.

Creation of alternative livelihoods

Currently, the Turtle Foundation is financing 17 full-time jobs in Indonesia that are staffed exclusively with local personnel. The two project managers, two office workers, a logistics manager, and 12 rangers (with special functions as station manager and boat driver served by two of them each) are employed by the YPB.

Life on the isolated islands has its own challenges, and some employees will not stay very long with our team. However, the training they received from Turtle Foundation/YPB provides them with skills that transfer to other jobs.

Challenges

Problem Sangalaki

The island of Sangalaki was the starting point of our activities in the region in 2000, and with a contribution of about 25% to the total nesting number it is the second most important nesting island in the archipelago. Further, Sangalaki is located right next to the island of Derawan, the most well known island of the region. This has resulted in the public identification of Sangalaki with Indonesia's largest nesting rookery of the green turtle.

In late September 2012 beach protection on Sangalaki was taken over by the local conservation authority BKSDA. Until the end of 2012, we have supported the BKSDA financially and logistically.

Since Sangalaki island has legal status as a conservation area with limited use for recreational purpose (*Taman Wisata Alam*), it is actually a mandatory task of BKSDA to monitor the island.

As such, the Turtle Foundation would welcome the decision of the authority to take this duty seriously

and provide staff and financial resources to operate and maintain the ranger station, which was built by us. Unfortunately, our fears have come true that due to that due to lack of money and expertise, as well as local political pressure, the BKSDA is not able to provide a comparable level of protection that we were able to sustain. Formerly, we had eliminated egg theft on Sangalaki virtually completely, but now this activity again has drastically increased. Obviously, the egg theft is organized by people from the nearby island Derawan, who already controlled the lucrative turtle egg trade before its official ban.

A further problem for the sensitive ecosystem of Sangalaki is the re-opening of a dive resort on the barely 14-hectare island in January 2013. Already during renovations significant amounts of trash have been piled up in the forest and on surrounding beaches, which does not bode well in terms of environmental awareness of the new operator. In anticipation of this, in 2012 we compiled a comprehensive report on the likely negative impact of the resort on the nesting turtles based on our long years of collected data, and presented it to the BKSDA. However, little attention was drawn to this report. In principle, we welcome the development of the tourism sector in the Derawan archipelago, if it contributes to increasing prosperity of the local population, which often lives in rather precarious situations, and if it is carried out in a sustainable way without further destruction of the natural resources of the region. Unfortunately, currently we can monitor the developments on Sangalaki only from distance. With online petitions to the local authorities, press releases, and lobbying we will continue trying to improve the situation on Sangalaki relating to the sustainable protection of the marine turtles and their habitats. We advocate either for the reinstatement of the official permit for Turtle Foundation to take up the conservation project again together with the BKSDA and the Indonesian WWF and continue it in proven quality, or that the BKSDA protects the island in a manner that egg theft on Sangalaki can be completely eliminated.

According to our information, there was recently a change in management of the BKSDA headquarter in the provincial capital Samarinda, but is still not clear whether this change was influenced by our



The littering of the beach during renovation of the dive resort threatens nesting sea turtles as well as hatchlings, and involves the risk of introduction of rats.

protests, and/or whether it will have significant advantages for the situation on Sangalaki.

Until the situation on Sangalaki can be clarified we focus our main activity to the south of the archipelago, where we continue to protect the islands of Bilang-Bilangan and Mataha based on our proven methods. In this area lie also the hitherto unprotected islands of Belambangan and Sambit.

Political headwinds

The incidents on Sangalaki are associated with a general and increasing tendency against environmental and species conservation projects in Indonesia. Political responsibilities for nature conservation become increasingly intransparent, the already scarce public funds for nature conservation are further reduced, and economic development usually is given priority over the interests of nature conservation. The corrupt influence of economic interests in politics makes the situation in Indonesia particularly difficult.

Political restructuring of the region

The Indonesian government is currently planning to separate the southern part of the district of Berau, where we operate our project, and to establish a new district called Berau Pesisir with Talisayan as district capital. The timing of this action is still unclear, as are the administrative consequences for us. However, given our good contacts to the cur-

rent local administration there we expect mainly positive impacts on our conservation project.

Beach erosion

We are currently observing increased erosion of some parts the beaches of our project islands. Since the shallow coral sand islands (coral keys) are subject to natural dynamics of continuous restructuring, the long-term trend of this process is not yet clear, nor is the extent to which anthropogenic factors (destruction of coral reefs, climate change) are responsible for this development. For now we can only monitor the development and, as we are already practicing, to relocate those turtle nests that are endangered by inundation.

Financing problems

Unfortunately, the year 2013 was marked by a significant decline in financial contributions to our conservation project in Indonesia, which forced us to take drastic austerity measures and even threatened the future of the project. Therefore, many planned activities for environmental education, the creation of alternative sources of income (handicraft workshop for women on Derawan and Maratua), and the extension of our ranger stations on Bilang-Bilangan and Mataha could not be realized in favor of maintaining the basic beach protection program.

Partnerships

- *District Government of Berau*: The safeguard measures are carried out under license from and in collaboration with the local government of Berau.
- *Indonesian conservation authority (Balai Konservasi Sumber Daya Alam, BKSDA)* and its subdivision in Berau: The BKSDA guards the Samama nesting ground and since October 2012 the island of Sangalaki.
- *World Wildlife Fund for Nature (WWF) Indonesia*: In 2012, a cooperation agreement with the WWF was signed, which includes a three-year funding for the YPB for the ongoing protection activities and the implementation of educational programs. Other features of the agreement govern joint public relations, publications, etc.

- *ProFauna*: ProFauna is the largest Indonesian nature conservation and animal welfare organization, and our program manager Dr. Hiltrud Cordes is a member of its board. In the past we have supported ProFauna in its initiatives against the slaughters of sea turtles on Bali. In 2013, with the financial help of the Turtle Foundation and with the participation of our Indonesian YPB members ProFauna organized public demonstrations and information campaigns against the destructive exploitation of seas turtles in Indonesia.
- *Bestari*: Bestari is a local non-governmental organization that performs eco-tourism programs, especially in collaboration with the population of the inhabited islands of Derawan and Maratua. Bestari supports us in the implementation of educational programs.

Measures of evaluation and monitoring

Internal evaluation

- Reports of the rangers about unusual events (egg theft, bomb fishing, etc.) to the project management of the Turtle Foundation and, if necessary, to the local authority and police
- Evaluation of nesting data
- Thorough training of rangers by the local project leaders
- Semi-annual site visits by project manager Dr. Hiltrud Cordes and/or project coordinator Dr. Thomas Reischig: monitoring of data collection, clarification of the strategies on the ground, discussion of problems, questions, proposals etc. with our local staff, employee attitude surveys with questionnaires
- Annual meetings of the International Board of the Turtle Foundation; developing strategies

External evaluation

External evaluation results from the publication and distribution of our annual report to all stakeholders such as sponsors, partner organizations, government departments, etc.

PLANNING 2014

Continued work on the protection of Bilang-Bilangan and Mataha

The main objective for 2014 is the continuation of the protection of sea turtles and their habitats, including the collection of nesting data from the islands of Bilang-Bilangan and Mataha.

Continued sea patrols in the southern Derawan archipelago

Co-financed by the Indonesian WWF, at least three extensive sea patrols accompanied by police officers are planned to restrict hunting of turtles at sea and to prevent illegal and destructive fishing methods.

Environmental education

We plan to continue our environmental education programs at local schools as far as our financial and human resources will allow.

Human capacity development

Most members of our local team have enjoyed only a very basic education. A few of them have even learned to read and write only after they started to work with us. To provide them with better development of their professional opportunities, but also to ensure the quality of the protection work, we work on a training program for rangers titled "Sea turtles and their habitats – biology and conservation".

Enhanced cooperation with Kecamatan Batu Putih

We were able to extend our good relations with the mayor and community members of the sub-district of Batu Putih, which contains the islands of Bilang-Bilangan and Mataha. These contacts will help lead to the long-term security of the project in the area. This district is currently the primary target of Turtle Foundation's educational initiatives.



Anti head-starting campaign

As a measure against the widespread head-starting practices in Indonesia, we currently work, together with the Indonesian conservation organization Pro-Fauna, on concepts to educate representatives of responsible authorities as well as other stakeholders including tourists, hotel managements, etc.

Regional eco-tourism, development of a volunteer program

Tourism is expected to become increasingly important in the Derawan archipelago including our project area. On the one hand, this offers chances to improve the often precarious income situation of the local population, but on the other hand, also carries the well-known risks to nature and environment. We are working on concepts for sustainable eco-tourism in the region in a way that it benefits the people as well as the needs of nature conservation. These concepts include the excellent conditions to observe the sea turtles. In parallel, we develop a volunteer program, where we incorporate our positive experiences from the Cape Verde project, but also take into account the special local conditions. The revenues from eco-tourism and volunteer program are in the long run expected to cover at least parts of the costs of our conservation project.

Preparation and realization of eco-tourism initiative and volunteer program will be coordinated by our new collaborator, the Czech marine biologist Hana Svobodová, who will from March 2014 on complement our local team in Berau.

Hawksbill turtles in the Derawan archipelago: population assessment and first protection measures

The coral reefs of Derawan Archipelago are home to the critically endangered hawksbill turtle. At present, however, neither the size of the population nor the nesting rookeries of the archipelago's hawksbills are known. In order to be able to coordinate the protection of these threatened animals in the region, we want to investigate these questions in cooperation with the Department of Forestry (Wildlife Ecology and Management) of the Gajah

Mada University of of Yogyakarta (Central Java). Concomitantly we plan an educational program against illegal production and sale of turtle shell products. For this project, we currently are applying for the necessary funds.

The implementation of all measures that go beyond the basic protection work will depend on the available funding.

OUTLOOK FOR THE NEXT YEARS

The long-term continuation, expansion, and improvement of the existing conservation projects is the main concern of the Turtle Foundation, as only with continued protection will the turtle population in the medium term stabilize and be able to recover from decades of exploitation.

In addition to the restoration of effective sea turtle protection on the islands of Sangalaki and Samama, our focus is on the still unprotected nesting islands of Belambangan and Sambit. Together, they make a contribution of at least 15% of the nesting numbers of green sea turtles in the Derawan archipelago. Protection from egg poachers is therefore of great importance for the archipelago's turtle population. In addition to the protection of these islands, protecting the nearby Muaras reef is also critical, as this area provides an important food source for the hawksbill turtle, which is threatened by destructive and illegal fishing methods. Thus, protection of the islands and the reef could be effectively combined. We have been prepared for quite a while to set up a protection program there, but have been unable to do so due to a lack of funds.

To perform successful species conservation, the creatures and habitats must be continuously protected. However, without the understanding and cooperation of the local community, all efforts will be futile in the long term. We will therefore continue our educational and environmental programs in local schools on a regular basis, knowing the young-

er generation will be the ones who must demand that their natural resource heritage be protected.

The creation of alternative sources of income as an alternative to destructive and unsustainable economies is essential for the sustainable success of nature conservation and species protection work. Since the beginning of our involvement in turtle conservation, we have included former egg collectors in our ranger teams, who then used their knowledge and experience for the protection of sea turtles.

In addition to our ongoing data collection, we plan research projects to lead to more accurate population surveys of the sea turtles of Derawan archipelago, including determining their migration routes and feeding grounds, as well as specific nest biology data that will help form management plans for their protection. This will be done in cooperation with Indonesian scientists.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank our donors and supporters of Aage v. Jensen Charity Foundation, Crea Group, CV Telecom, Commune of Vaduz, Gerda Techow Charitable Foundation, I + F Public Benefit Foundation, Malou Foundation for Animal Welfare, Margarethe and Rudolf Gsell Foundation, Pease at Last Foundation, RHW Foundation, SOS Seaturtles, Foundation of the Third Millennium, Foundation Sikamin, Turtle Foundation Friends association, U.S. Fish & Wildlife service, VP Bank Foundation, WWF Indonesia, Zurich Animal Protection, as well as all other persons and institutions, who supported and helped us in the last year in many ways. Without them, our conservation work and its positive results would not have been possible.

We especially thank our local staff and rangers. They spent entire months living on remote islands far away from their families and the comforts of civilization, to protect sea turtles from extinction.



Ranger team of Turtle Foundation on the project site of the south islands Bilang-Bilang and Mataha, from left to right: Muhdar, Ayup, Supriardi, Adit, Idhar, Girboy, Agung, Ibeng, Benny, Yusuf.

Image credits: Cover: Christian Redinger; page 3: Petra Minnasch, Eberhard Meyer; page 5: BKSDA, Thomas Reischig; page 6: Thomas Reischig; page 9: Rachmad Basuki; page 10: Barbara Steinitz & Turtle Foundation; page 12, 15: Thomas Reischig