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## Introduction

Marine turtles have been utilized by people in Southeast Asia in many different ways. The eggs, which are of high nutritive value and said to possess special qualities have been harvested commercially for decades, while the animals are hunted for their shell, meat, oil, skin and bones. Products are used for both domestic purposes and international export, often violating national and international legislations.

Egg collection for consumption is one of the major forms of exploitation of marine turtles in the Southeast Asian region, with the Philippines, Indonesia and Malaysia known to be source and consumer countries. In the Philippines, although national laws now prohibit turtle egg collection, it is common knowledge that at the local level in the Tawi-Tawi Islands, up to 70 percent of the eggs are harvested and smuggled through an effective network which supplies neighboring countries. The turtle egg industry of the Berau District of East Kalimantan, Indonesia, which supports the largest aggregations of green turtles in the country has been estimated to generate an income of over US\$200,000 a year. In Malaysia, commercial egg collection takes place only in Terengganu where the local government issues licenses to the local villagers by tender. The value of this activity is estimated at no more than US\$50,000 per year.

# Marine Turtles: The Scenario in Southeast Asia



Prof. Chan (standing, first from left) examining turtle eggs being freely sold in the markets of Brunei Darussalam. The vendor openly informed the author that these eggs did not originate from the country, but were obtained through a well-established network of suppliers operating in the region.

The world's largest trade in live green turtles has been centered in Bali, Indonesia, for many decades. This trade has supplied turtle meat and shell to countries as far as Japan, Hong Kong and Europe, in addition to meeting the local demand where turtle meat is served as food in Balinese-Hindu culture. Although government decree sets the quota at 5,000 turtles to be captured, it is believed that many times over this number are harvested. Government Regulation No. 7 of 1999 has now outlawed the exploitation of all marine turtles.

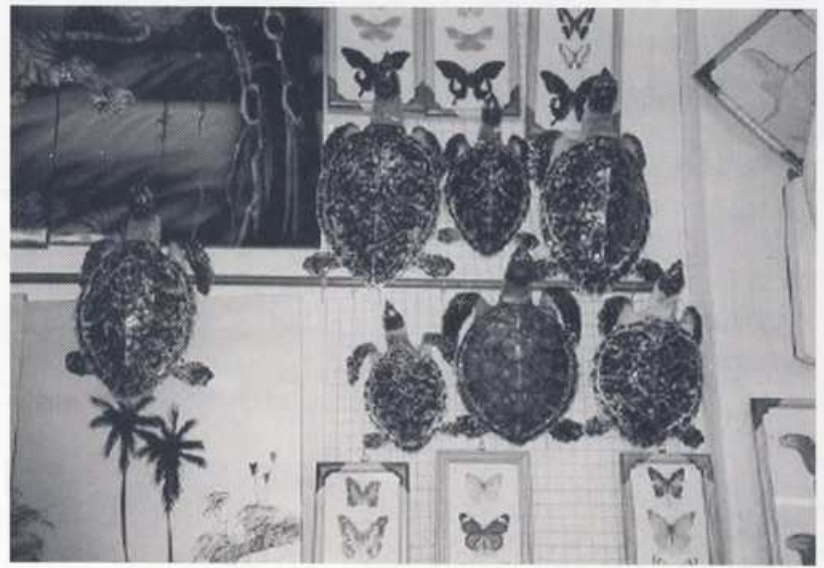
Hawksbill turtles have been and still are relentlessly hunted in the past for their carapace, which is fashioned into ornamental products, commonly known as tortoise shell. The supply of hawksbill shells to Japan has supported a guild of several hundred craftspeople in Japan in what is known as the "bekko industry". Tortoise shell is



also imported by dealers in China, including Hong Kong, Taiwan, South Korea and other countries.

In some societies, sea turtles bear a cultural value. In Bali, for instance, green turtles are offered sacrificially in temple ceremonies, while in Buddhist culture which practices "release of life", marine turtles recovered from incidental captures are kept collectively for eventual release during special occasions as in Taiwan. In Thailand, hatchlings are raised in captivity for several months and later used in similar ceremonies. This practice has recently been adapted by the Sea Turtle Research Unit (SEATRU) in Malaysia where Buddhist groups make nest adoptions which are purchased from licensed egg collectors for in-situ incubation by SEATRU. The "release of life" is achieved through the natural release of hatchlings as they emerge on the beach. This novel approach is gaining acceptance among local religious groups and offers an alternative to the purchase of caged animals for release (which ultimately supports detrimental wildlife trade), besides supporting the nest adoption program of SEATRU.

The long-term consumptive use of marine turtles, coupled with incidental captures in fishing gear, loss of feeding and breeding habitats, and marine pollution have resulted in dramatic declines in the major nesting populations of the region. The loss of the leatherbacks in Terengganu, Malaysia, is often cited as a classic example of population crash. Similar trends of decline have recently been reported for the leatherback populations of the Pacific Ocean. Declines in hawksbill and olive ridleys turtles have been no less dramatic. Currently, only the green turtle continues to nest in significant though much reduced numbers, in Indonesia, Malaysia and the Philippines (Figure 1). Notwithstanding, the rates of decline in the



Stuffed specimens of sub-adult and juvenile of green and hawksbill turtles, and products made from turtle scales are commonplace in any souvenir shop in Vietnam, such as this one in Yung Tau City. A national sea turtle action plan hopes to reduce exploitation in the next few years.

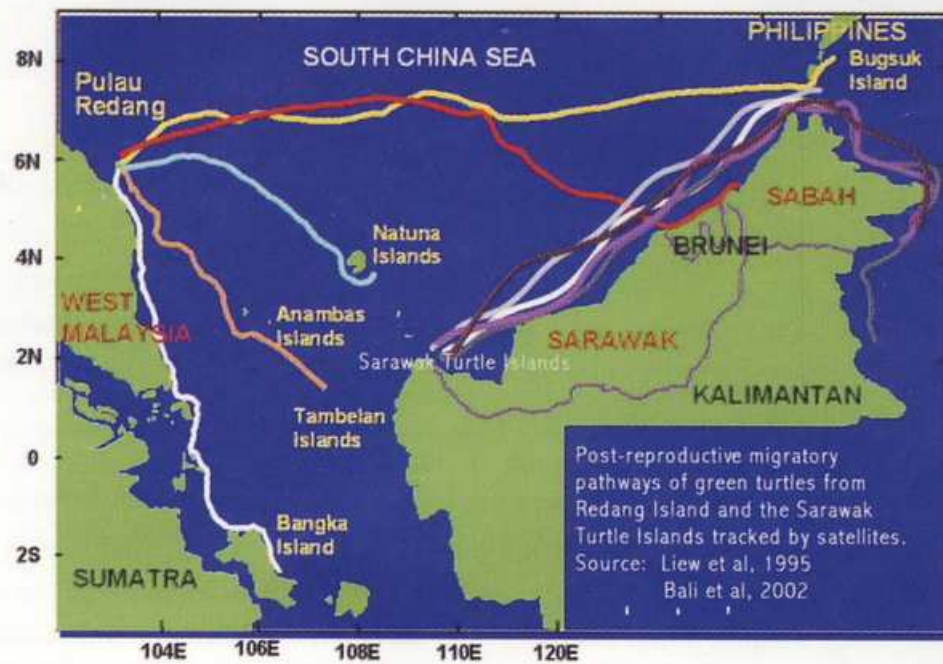


Figure 1. The migration of green turtles between nesting grounds in Malaysia and resident feeding grounds in nearshore waters of neighboring countries demonstrates that marine turtles are shared resources among the countries of Southeast Asia. Hence, conservation efforts must be undertaken collaboratively to ensure that all habitats critical to the survival of the populations in question are adequately protected.



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region have been estimated to range from 50 to 80 percent for most populations. It is critical that conservation work be intensified to ensure that the remaining populations can be sustained in the long-term.

## Conservation Efforts

Marine turtle conservation in Southeast Asia has taken an upswing in the last five years. Testimony to this is the conclusion of several regional instruments: the establishment of the transboundary Turtle Islands Heritage Protected Area in 1996; the Memorandum of Understanding on ASEAN Sea Turtle Conservation and Protection in 1997, and the Memorandum of Understanding (MOU) on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and Southeast Asia in 2001. The latter was facilitated by the Convention on Migratory Species. This MOU contains 24 programs and 105 specific activities, which aim to reverse the decline of marine turtle populations throughout the region.

However, these conventions and agreements must be effectively implemented and enforced if they are to have an impact on marine turtle conservation.

At the global level, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) serves as the major instrument in curbing the international trade of marine turtles. All species of sea turtles are listed on Appendix I of CITES, which prohibits any trade for commercial reasons. All countries in Southeast Asia are party to CITES, with the exception of Lao PDR and East Timor.

The status of hawksbill and leatherback turtles has been listed as "critically endangered" by The World Conservation Union, although some parties have made attempts at downlisting certain populations of hawksbill turtles. Green, loggerhead and olive ridley turtles are listed as "endangered". Though most of the countries in Southeast Asia have ratified CITES, international trade of sea turtle products in the region is still rife. Sea turtles, easily

recognized by their pliable, parchment-type shell and ping-pong ball shape and size, can be purchased in many markets in the region. As recently as September of 2002, 120 kg of turtle eggs were seized from an Indonesian fishing vessel by customs officers in Singapore. Seizures of lorry loads of the eggs smuggled from Indonesia have also been occasionally reported in Sarawak, Malaysia. Tortoise shell products as well as stuffed turtles are available for sale in handicraft and souvenir shops in many countries, often in large quantities. Many of these are sold to tourist and retailers, and taken to other countries, which is in direct violation of CITES regulations.

While regional and international agreements and conventions set the stage for intergovernmental efforts, it is often the local grass-roots level projects which help address the everyday issues in marine turtle conservation.

## Brunei Darussalam

Currently, there is no law to prohibit egg collection and exploitation, although the Wildlife Protection Act prohibits the hunting, killing or capture of sea turtles. Hatcheries have been established and local egg collectors are encouraged to surrender eggs for incubation. A national committee, headed by the Director of Fisheries, has been formed to carry out turtle conservation, research and educational projects.



## Box 1. The species in question.

### Cambodia

Very low nesting activity, probably less than 50 nests per year, has been recorded. Currently, sea turtles and eggs are exploited by the rural poor for consumption and trade. There is currently no existing national legislation for the protection and conservation of sea turtles, but plans are in place to develop relevant laws and regulations, and to initiate public awareness campaigns. A National Sea Turtle Training Workshop held on 2-4 September 2002 in Sihanoukville served as the springboard to marine turtle conservation in the country.

### Indonesia

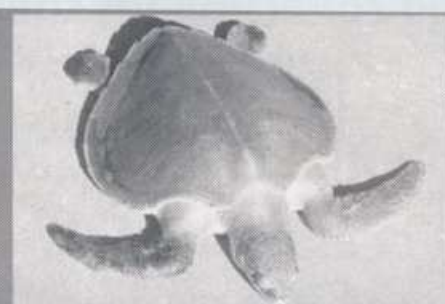
All six species of sea turtles are listed as endangered and are protected by law. Government Regulation (PP) No. 7/1999 together with Act No.5/1990 prohibit utilization of both live or dead sea turtles or their parts and derivatives. Commercial egg collection is controlled by law. In January 2002, the local government of the Berau District in East Kalimantan introduced new rules to reduce the level of egg exploitation and to protect up to 60 percent of the eggs produced. In a few locations (e.g., Kepulauan Seribu) head-starting programs are practiced.

### Malaysia

Malaysia has a long history of sea turtle conservation programs, dating back to the 1970s. Efforts are focused



*Dermochelys coriacea* (Leatherback turtle)



*Lepidochelys olivacea* (Olive ridley turtle)



*Eretmochelys imbricata* (Hawksbill turtle)



*Caretta caretta* (Loggerhead turtle)



*Natator depressus* (Flatback turtle)



*Chelonia mydas* (Green turtle)

Of the seven species of sea turtles which roam the world's oceans, the six depicted above are found in Southeast Asia.

Only one significant nesting population of leatherbacks remains - in Bird's Head Peninsula, Irian Jaya, Indonesia, where up to 3,000 nests are currently documented. The once renowned population in Terengganu, Malaysia, is now essentially extinct. Myanmar has reported about 300 nests of olive ridleys per year, while elsewhere in Indonesia, Malaysia, Thailand and Brunei Darussalam, less than 50 nests are known to be found per year. The only important remaining populations of hawksbills occur in Malaysia and Indonesia. In Malaysia, between 400-600 nests are deposited in the Sabah Turtle Islands and 200-300 in Melaka; while overall density in Indonesia ranges from 1,000 to 2,000 nests per year.

Loggerheads are rarely found since these are a subtropical nester. However, Myanmar has documented up to 100 nests of loggerheads per year.

The Australian flatback does not nest here, although some have been reported to feed in the waters of Indonesia.

The green turtle is the only species which nests in appreciable numbers in the region. Current densities in Indonesia, Malaysia (mostly in the Turtle Islands of Sabah and Sarawak) and the Philippines (Tawi-Tawi Islands) stand at 10,000-20,000 nests per year, while Myanmar and Thailand have reported 500 and 300 nests, respectively, per year.

(NB: Since marine turtles lay about 5-6 nests per season, it is necessary to divide nesting density by this factor to arrive at an estimated number of mature female turtles in the population)



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mainly in protection of turtle eggs. Sabah and Sarawak currently protect close to 100 percent of eggs deposited while in Peninsular Malaysia, less than 50 percent of the eggs deposited are protected. While major nesting sites are protected, some of them (in Peninsular Malaysia) are still leased to local inhabitants for commercial egg collection.

Marine turtle conservation comes under the purview of the state governments, which have enactments specifically for the management and protection of sea turtles. Uniform legislation for sea turtle protection is currently being developed at the federal level for adoption by the various states of the country.

Sea turtle conservation issues are well known among the Malaysian public since these are well covered

by the media. Other activities, such as long-term turtle volunteer programs and turtle camps, help spread the message.

## **Myanmar**

Conservation work on marine turtles here is carried out by the Department of Fisheries, which has been responsible for providing complete protection to turtle nesting beaches since 1997. This involves mainly egg incubation in natural nests and hatcheries. Public educational programs have also been initiated.

Myanmar Marine Fisheries legislation has provisions for the protection of sea turtles, their habitats and nesting beaches with major nesting beaches being declared sanctuaries. Waters within 3 miles of the coastline of sanctuaries are also protected.

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## **Philippines**

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The Wildlife Resources Conservation and Protection Act or Republic Act No. 9147, which was approved by Congress in July of 2001, is intended to form the "backbone of marine turtle conservation and protection" in the Philippines (citing Atty. Wilfrido Pollisco, Director of the Department of Environment and Natural Resources, in July 2002). This law bans the exploitation of all endangered species, including marine turtles and their eggs. In spite of strong opposition from the local communities, implementing rules and regulations are expected to be approved soon and enforced.

Eight islands have been declared turtle sanctuaries by the Philippine Department of Environment and Natural Resources (DENR) but currently, only Baguan Island, one of six Philippine Turtle Islands, is actively protected. Commercial egg harvest has been allowed up to 2001 on the remaining five islands where as much as 70 percent of the eggs are marketed. In other remote islands, turtles are still exploited not just for their eggs, but for the meat as well. DENR is monitoring and confiscating sea turtles in trade, but such enforcement efforts are difficult to carry out in remote regions. An information and education campaign is being carried out jointly by a few agencies.



## Thailand

In Thailand, many provisions have been made to protect sea turtles. The commercial harvest, sale and consumption of sea turtle meat, eggs and other products are now banned. Important feeding grounds, such as seagrass beds and coral reefs, are protected by law. Harmful fishing gear (such as pushnets and trawl) are prohibited. Nesting beaches are protected, with all eggs transferred to hatcheries for incubation. In some locations, hatchlings are raised for a short period before release. Although release of headstarted hatchlings, as mentioned earlier is in accordance with practices in Buddhism, its effectiveness as a conservation measure needs to be reviewed.

## Vietnam

Sea turtles have only recently received national protection in Vietnam. Turtle eggs and meat have been widely consumed, while the hawksbill has been heavily exploited for its shell. Stuffed sub-adults and juveniles of both green and hawksbill turtles are prominently displayed in large quantities in souvenir and handicraft shops around the country, which are sold illegally, both within the country as well as abroad. A National Action Strategy is currently being developed to expedite the conservation of marine turtles and important nesting areas in the country.

**While regional and international agreements and conventions set the stage for intergovernmental efforts, it is often the local grass-roots level projects which help address the everyday issues in marine turtle conservation.**

## Conclusion

Trade in marine turtle products remains an important conservation issue in the Southeast Asian region. Although most of the countries in question have acceded to CITES, sea turtle products continue to be traded across international boundaries. The traders who are involved will continue to operate as long as there is a demand for the products and money to be made. Within

some countries, exploitation of turtles and their eggs is a deep-seated tradition, which cannot be easily abolished by new legislation. Educational programs aimed at various stakeholders in sea turtle exploitation, coupled with strict enforcement of legislation designed to protect the turtles should be carried out if sea turtles in Southeast Asia are to survive into the future. ■

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