

Turtle Trade in Southeast Asia: Regional Summary (Indonesia, Malaysia, Papua New Guinea, and Thailand)

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Patterns of Trade

Two fundamentally different types of non-marine turtle trade operate in the Southeast Asian subregion, which in this regional summary means Indonesia, Malaysia, Papua New Guinea, and Thailand (and also Singapore). These are the high value, moderate volume trade in rare and unusual animals for the international pet market, and the high volume commodity trade in turtles as a food item. Most of the food trade involves animals collected from nature for export, though some is for local consumption. The trade in farmed exotic Chinese softshell turtles represents a significant proportion of the overall food trade. The proportion of local use is very small in western Indonesia, but is significant in Irian Jaya, Papua New Guinea, and Thailand.

The food trade exports high volumes of wild-caught turtles, mainly from Sumatra, Kalimantan, Java, and Sulawesi, to the consumer markets of East Asia. The trade from Sulawesi is routed through Kalimantan. Much of the documented trade, particularly of softshell turtles, occurs by air, an unknown proportion of the trade goes by sea. Only a limited number of airports handle turtle shipments, dependent primarily on the available routes and schedules of airline connections to East Asia. For example, previously turtles were shipped directly from Padang to Kuala Lumpur and onwards, but when the regional economic collapse forced closure of the Padang - Kuala Lumpur air link, the turtle trade re-routed through Medan. At present, the main regional airports involved in export and/or transit are Medan, Jakarta, Surabaya, Denpasar, Kuala Lumpur, Singapore,

Bangkok, and possibly Kuching. The relative importance of sea routes is not clear; mortality rates during sea transport are much higher, but shipping costs are lower and inspection and enforcement at sea ports are deficient, making overseas shipping an economically feasible alternative. The importance of the Philippines as a source region and trans-shipment area is unknown.

The source regions of the trade in captured wild turtles for consumption have shifted every few years over the past decade. In the early 1990s, the largest volumes were exported from Kalimantan; a few years later Sumatra became a larger exporter. Within Sumatra there has been a similar shift in greatest trade volume from northern to southern regions.

Farming of non-native Chinese softshell turtles (*Pelodiscus sinensis*) is widely established in the Southeast Asian subregion. Large closed-cycle farms exist in Thailand, and rearing farms which raise hatchlings imported from Taiwan or Thailand exist in at least Peninsular Malaysia, Sarawak, and Sumatra. Virtually all raised animals are exported by air to East Asia, directly from Bangkok and Kuala Lumpur, and from Kuching and Medan via Singapore or Kuala Lumpur.

The trade in turtle parts and derivatives is poorly known. There are indications of a significant trade in turtle plastra from Indonesia, particularly Sulawesi, to East Asia where these are used as traditional Chinese medicine (TCM) ingredients. It also appears that at least some processing of turtle shells into turtle paste or jelly is carried out in Sulawesi; shells are obtained from other parts of Indonesia and the paste is shipped to China, Taiwan, or Hong Kong. This

reduces storage and shipping expenses and makes identification impossible, which creates problems for trade controls and enforcement and provides opportunities for mislabeling of the end-products.

The pet trade, in contrast, is most significant in Irian Jaya, with some sources reaching back into Papua New Guinea and possibly northern Australia. Legal export of turtles from Papua New Guinea is strictly controlled and insignificant; instead illegal trade apparently occurs along the southern Papua New Guinea – Irian Jaya border, with animals possibly being exported from Daru to Merauke. Some illegal trade appears also to filter across from Australia's Cape York Peninsula to Daru, and from Darwin in Australia's Northern Territory to Kupang on Timor. Pet turtles from Papua New Guinea and Irian Jaya are processed and shipped from Merauke (and Sorong to a lesser extent) by air to Jakarta and onwards into the international pet trade. Because the pet trade tends to focus on particular species, there is little indication of shifting source areas, except as occurs after a new species has been described, when the pet trade quickly focuses on obtaining specimens of the newly described species. This pattern has already led to commercial extinction of *Chelodina mccordi* from Roti Island, described in 1994, and contributed to the severe impacts on *Heosemys yuwonoi* from Sulawesi, described in 1995. Some hatchlings or juvenile turtles collected in other parts of the Southeast Asian subregion also enter the pet trade, but their numbers are relatively low.

It is worth noting that the "four-inch rule" imposed by several western countries as a measure to limit mass trade in potentially *Salmonella*-bearing farmed hatchlings, and thus reduce impulsive purchases, clearly obstructs trade in hatchlings. This makes captive breeding for the pet trade economically unattractive and thus shifts the pet trade to wild collection of half-grown and adult animals larger than four inches in size.

Species in Trade

The consumption trade in the Southeast Asian subregion is not particularly species-specific, but generally takes in all animals found by collectors. *Amyda* softshell turtles fetch the highest prices per kg and are consequently more intensively searched for. The primary native species (i.e., excluding farmed *Pelodiscus sinensis*) in the food trade, by number of individuals, are *Cuora amboinensis* and *Amyda cartilaginea*; lesser but still high numbers are traded of *Siebenrockiella crassicollis*, *Heosemys grandis*, and *Orlitia borneensis*. The next most numerous species in subregional consumption trade are *Notochelys platynota*, the *Cyclemys dentata* complex, *Malayemys subtrijuga*, *Indotestudo forstenii*, *Hieremys annandalii*, *Manouria emys*, *Indotestudo elongata*, *Pelochelys cantorii*, and *Dogania subplana*. It is worth pointing out that certain species are relatively less desirable to traders, such as *Notochelys platynota* which has an exceptionally high mortality rate during transport, and *Dogania subplana* whose meat is considered of inferior

quality and consequently in low demand from consumers.

In New Guinea (combining Irian Jaya and Papua New Guinea), by far the most exploited species is the pig-nosed turtle, *Carettochelys insculpta*. Adults and eggs of this species are esteemed for local consumption, and up to 2 million eggs are collected annually in limited areas of Irian Jaya. A proportion of these eggs are incubated and the hatchlings enter the pet trade.

Other species are also exploited by a combination of local consumption and international pet trade, legal from Irian Jaya and illegal from Papua New Guinea. These are, in decreasing order of number of individuals traded, *Emydura subglobosa*, *Elseya* sp. (southern lowlands), *Chelodina parkeri*, *Elseya novaeguineae*, *Chelodina siebenrocki*, *Chelodina reimanni*, *Pelochelys cantorii*, *Pelochelys bibroni*, and *Chelodina pritchardi*.

Effects of Trade on Native Turtle Populations

The importance of impacts of trade on individual species is very different from the proportional numbers of animals traded. The species of the whole subregion whose populations are known or suspected to be most seriously impacted by the food trade are *Batagur baska*, *Callagur borneoensis*, *Orlitia borneensis*, *Chitra chitra*, and *Heosemys yuwonoi*. The species identified as most seriously impacted by the pet trade are *Chelodina mccordi*, *Heosemys yuwonoi*, and *Chitra chitra*. It is significant to note that these species are either large riverine species or extremely restricted-range species, or both.

The effects of farming non-native Chinese softshell turtles on the exploitation of native turtle populations are unclear and can be interpreted differently. Whether farming eases the pressure on wild populations or creates an increased demand for turtles and increased pressure on wild populations remains unknown and debatable. Farming also represents a potential invasive species problem, and may additionally serve as a possible conduit for laundering illegally caught wild animals. The topic deserves further study, but this should not proceed at the expense of studies of native populations. It should be kept in mind that farming is profitable and that economic factors tend to outweigh ecological concerns.

The introduction and spread of invasive species is clearly facilitated by international trade in turtles. Exotic species are introduced to regional countries as pets and some are released, while some farmed softshell turtles escape and may establish feral populations. The views of the delegates diverged on the actual and potential impacts of exotic species introductions, and it was agreed that the topic deserves further study but is not a top priority.

Current Regulations and Controls

•Thailand, Malaysia, Indonesia, and Papua New Guinea afford adequate legal protection to their native turtle species, at least on paper, except for Peninsular Malaysia.

- The responsibility for implementation and enforcement of legal protection rests with several agencies in most countries, and coordination of efforts is not optimal.

- Conservation authorities have conflicting interests from utilization authorities, frequently involving economic factors.

- Enforcement of existing legislation is seriously hampered by administrative complications as well as lack of manpower, species identification skills, and other resources.

- The IATA guidelines governing the transport of live animals by air are appropriate but are insufficiently implemented. Increased inspection, compliance, and discriminating acceptance of shipments are required at points of export and of trans-shipment, by the airlines and by airport and other government authorities in places where the IATA guidelines are legally binding.

- Systematic inspection of turtle shipments is spotty and inadequate. The reasons behind this are lack of facilities, resources, incentive, and the generally low profile of wild-life trade.

- Enforcement at trans-shipment points is particularly lacking, despite the fact that trans-shipment points are obliged to enforce CITES provisions.

Priority Projects

Improved implementation and enforcement of existing legislation is essential. We suggest that a small number of airports in our area be selected to begin inspecting trade. We suggest the selection of these airports on criteria including offering the best cooperation and chances of success and high trade volumes based on available information. These airports are Medan, Kuala Lumpur International Airport, Bangkok, Kuching, and Singapore. Sea ports are considered a lesser priority at this moment. The group members in collaboration with (fellow) authorities resolved to take responsibility for implementing a plan of action:

- Medan Airport, Indonesia: provide identification materials and training in species identification and build incentive.

- Kuala Lumpur International Airport, Malaysia: systematic monitoring, enforcement assistance, and capacity building through training and identification materials.

- Bangkok International Airport, Thailand: working with responsible authorities, species identification assistance, checks on compliance with IATA guidelines.

- Kuching Airport, Sarawak, Malaysia: assist with implementation and enforcement, species identification, and a characterization of the turtle trade through Kuching airport.

- Singapore Airport: cooperation and encouragement by working with local graduate students and NGOs.

The delegates from the Southeast Asian subregion noted that every single turtle species of this area is heavily affected by trade and strongly recommend that every Southeast Asian turtle species be included in at least Appendix II of CITES, and that *Callagur borneoensis*, *Heosemys yuwonoi*, *Chitra chitra*, *Chelodina mccordi*, and possibly *Orlitia borneensis* be considered for inclusion in Appendix I of CITES.

The delegates also made recommendations that the following specific projects be carried out:

- An investigation into the actual areas of origin of *Orlitia borneensis* in trade.

- Investigation of the level of illegal turtle trade from Papua New Guinea to Irian Jaya and onwards, with specific monitoring of exports from Port Moresby, Daru, and along the southern border.

- Continual monitoring of export shipments, trans-shipment points, and consumer markets.

- Urgent evaluation of the status of *Chelodina mccordi* on Roti Island and development of a recovery plan including consideration of *ex-situ* breeding.

- Case studies on and recovery plans for species proposed for inclusion on CITES Appendix I (*Callagur borneoensis*, *Heosemys yuwonoi*, *Orlitia borneensis*, *Chitra chitra*, and *Chelodina mccordi*), plus *Batagur baska* which already is on CITES I.

- Taxonomic study and identification characteristics of *Indotestudo* tortoises.

- Ecological study of the effects and impacts of invasive turtle species (lesser priority).

- Study of the socio-economic effects of softshell turtle farming and its effects on exploitation levels and trends of native softshell turtles (lesser priority).