

Implementation of Decision 14.128

A study of progress on conservation of and trade in CITES-listed tortoises and freshwater turtles in Asia

This report has been prepared by the IUCN/SSC Tortoise & Freshwater Turtle Specialist Group as an update to Annex 2 of CoP15 Doc. 49. Submission of this report fulfills the direction of the Conference of the Parties under Decision 14.128.

Background

Worldwide some 313 species of tortoises and freshwater turtles inhabit tropical, subtropical and some temperate regions, of which about 90 inhabit Asia (Fritz & Havas, 2007). The IUCN Red List records 128 non-marine turtle species as threatened, placing tortoises and freshwater turtles among the most threatened groups of vertebrates.

Tortoises and freshwater turtles have been an integral part of CITES from its very beginning: about 50 tortoise and freshwater turtle species were listed in the Appendices in 1975, all tortoises were included in Appendix II in 1977, and additional species were added over time, accelerating by 2000. Currently, 139 tortoise and freshwater turtle species are included in Appendices I (20 species), II (89) and III (30). Through listing proposals, inclusion in the Review of Significant Trade, and other developments, tortoises and freshwater turtles have become increasingly significant within CITES, and formulation and implementation of appropriate trade regulation has demanded significant resources from Party authorities, the Secretariat and others. Annexes A and B provide overviews of developments concerning tortoises and freshwater turtles in CITES.

Decision 14.128, directed to the Secretariat, states that:

The Secretariat shall, subject to external funding, contract the Tortoise and Freshwater Turtle Specialist Group of the IUCN Species Survival Commission to undertake a study which would assist in the implementation of Resolution Conf. 11.9 (Rev. CoP13).

Funding was sought and obtained by the Secretariat from the United States of America, but due to administrative delays the study was only initiated in May 2009. As a result of the very short time available, the report submitted by deadline for documents for CoP15 was considered provisional, with this final report submitted to the Conference of the Parties as an Information Document.

Study objectives and methods

CITES Resolution Conf. 11.9 (Rev. CoP13) urges Parties trading in tortoises and freshwater turtles to enact and implement a suite of measures. The present study uses available CITES documentation and other sources of information to review Parties' progress implementing these measures, and draws on a wider body of literature and documentation to evaluate the wider context of Asian turtle trade, identify shortcomings and obstacles to effective management of turtle trade, and recommend priority actions to address these.

The geographical scope of the present study focuses on all Parties in the Asian region with native tortoise or freshwater turtle species, and Asian Parties exporting tortoises or freshwater turtles. Limited analysis could be carried out in the available time with regard to Parties reporting significant tortoise or freshwater turtle exports to Asian Parties. The study was limited to data relevant to turtle trade in the 12-year window from 1997 to the present.

Trade data for CITES-listed species were obtained from the trade database maintained by UNEP-WCMC, with additions from CoP13 Doc.33 (Conservation of and trade in tortoises and freshwater turtles). Data on exports of turtles from the United States of America were obtained from the LEMIS database maintained by USFWS.

Available CITES Biennial Reports from Asian Parties were reviewed for information on management, trade and enforcement actions concerning tortoises and freshwater turtles.

Scientific names of tortoises and freshwater turtles follow the *Checklist of Chelonians of the World* (Fritz & Havas, 2007), the CITES Standard Reference for turtles.

Results

The following is a summary of actions and progress referable to the various specific recommendations urged by Resolution Conf. 11.9 (Rev. CoP13), listed according to the various lettered subsections of that Resolution.

- a) all Parties, especially range States and exporting and importing States of Asian tortoises and freshwater turtles, to enhance and increase enforcement efforts with regard to existing legislation as a matter of urgency.

A substantial number of enforcement cases involving tortoises and freshwater turtles were reported by Parties. Confiscations and other enforcement actions have taken place in nearly every Asian country where turtles are traded, concerned offenses ranging from exceeding permitted quantities to repeat smuggling of Appendix I species, and involved from single animals to over 9000 turtles per case. Representative confiscations and summaries included in Annex C are indicative of efforts made by Parties and the scope of the challenges. Yet despite these efforts, market surveys and other trade observations continue to document widespread illegal trade in tortoises and freshwater turtles in Asia, particularly the illegal export of live turtles from Myanmar for the consumption trade, trade in protected species of turtles as part of the high-end pet trade throughout the region, and the trade in turtle shells and bones to East Asia (Nijman & Shepherd, 2007; Chen *et al.*, 2009; Gong *et al.*, 2009).

- b) *all Parties, especially range States and exporting and importing States of Asian tortoise and freshwater turtles, to enhance cooperation amongst wildlife-law enforcement agencies at national and international levels concerning control of trade in tortoises and freshwater turtles, and between enforcement agencies and national CITES authorities.*

International cooperation between CITES Authorities was reported in the context of collaboration to improve information exchange, permit verification and enforcement coordination, as well as consultation with the country of origin on the disposal of confiscated specimens including collaboration to repatriate animals where appropriate. These cooperative actions occur at many levels, from formal missions to personal communications by phone, fax, email and at meetings, and are part of the normal activities of CITES authorities. It appears that trade concerning Asian tortoises and freshwater turtles is widely recognized as one of the main wildlife trade challenges in Asia that is addressed as an integrated part of systematic implementation of CITES, including recent initiatives such as the ASEAN Wildlife Enforcement Network (CoP13 Doc.33).

- c) *all Parties, especially range States of Asian tortoises and freshwater turtles, to assess current efforts to manage native tortoise and freshwater turtle populations, and to improve those efforts as necessary, e.g. by establishing quotas that take into consideration the particular biology of tortoises and freshwater turtles.*

China suspended the commercial export of tortoises and freshwater turtles (except for two widely farmed species) in June 2000, and placed restrictions on turtle imports in June 2001. In July 2002 China imposed an import ban on turtles less than 10 cm carapace length, and in 2003 it restricted trade in turtles to the import and export of live and butchered specimens of *Pelodiscus sinensis*, *Trachemys scripta elegans*, and *Macrochelys temminckii*. In conjunction with CoP13, China placed all native freshwater turtle species that were not already included in Appendices I or II on Appendix III, effective 17 February 2005, and withdrew the Appendix III listing for *Pelodiscus sinensis* effective 23 June 2005. (CoP13 Doc.33).

Several Parties maintained, established and/or adjusted harvest and export quotas for tortoise and freshwater turtle species during the period 1997-2009; these are summarized in Annex D.

The Management Authority of Peninsular Malaysia reported in early 2004 its plans to suspend trade in wild-collected tortoises and freshwater turtles later in 2004 (CoP13 Doc.33: 6). Peninsular Malaysia communicated zero quotas for wild-collected freshwater turtles to the Secretariat in 2007, and imposed zero quotas for live freshwater turtles for 2008 and 2009. This change closed the possibility of exporting live captive-bred freshwater turtles from 2008 onwards, and theoretically opened the possibility of export of parts and derivatives from wild-collected turtles. However, the latter trade is considered not significant, and no permits for such trade had been issued to date (Loo Kean Seong, Law and Enforcement Division, Department of Wildlife and National Parks, in litt, 10 Sept. 2009).

In their biennial reports, Asian Parties did not specify details on management efforts concerning collection and trade management. Reports on tortoise and freshwater turtle management efforts concerned conservation programs for tortoise and freshwater turtle species that are considered threatened in their survival and legally protected from commercial exploitation. These include *Batagur baska* in Cambodia and in Malaysia,

Geochelone platynota and *Kachuga trivittata* in Myanmar, and *Chitra chitra* in Thailand. Detailed studies of the biology, status and exploitation of *Cuora amboinensis* in Indonesia and Malaysia have been conducted as foundation for Non-Detriment Findings (NDF) required under CITES Article IV, and were reported at the CITES NDF workshop (AC24 Doc. 9; Schoppe, 2008a, 2008b).

The challenges in formulating NDFs for tortoises and freshwater turtles, at the trade volumes reported for many of these species, is indicated by the fact that 12 species have been or remain subject to the Review of Significant Trade (RST) (see Annex B), indicating concern about whether or not the authorized trade levels are sustainable and not detrimental, and concern regarding the scientific basis for the findings and issuance of export permits. During the RST process, national populations of several of these species in several Parties were excluded from the Review as these Parties' trade levels were not considered cause for concern. However, as the Review progressed for species from other Parties whose trade levels continued to give cause for concern, little substantive justification for these trade volumes has emerged. Consequently, Parties have either found themselves referred to the Standing Committee for further measures, or succeeded in being removed from the RST process by simply declaring a voluntary ban on further exports, or declaring a very substantial reduction in permitted trade levels without providing substantive data that past or current trade levels were based on scientific data that indicated a sustainable level of offtake. The scientific basis for approval of commercial high volume export remains very weak for most turtle species.

d) *all Parties to develop and implement research programmes to identify the species involved in trade, to monitor and assess the impact of trade on wild populations, and to evaluate the conservation risks and benefits of large-scale commercial breeding of tortoises and freshwater turtles.*

Extensive research has taken place in China on the scale of commercial turtle farming, the species involved in farming including which species have successfully produced F2 and F3 generations in captivity as well as the species which do not or barely reproduce in captivity, and the impact of turtle aquaculture on wild populations of turtles (ESIEMO PR China, 2002b; Shi *et al.* 2007; Zhou *et al.*, 2005, 2008; Zhou & Wang, 2009).

A number of Parties, listed below, reported supporting other aspects of research and conservation of tortoise and freshwater turtle populations.

Indonesia initiated a program for the conservation of the Roti snake-necked turtle (*Chelodina mccordi*, App.II) by releasing 50 captive-bred animals of commercial origin into native habitat.

Malaysia (Peninsular) continues its *Batagur baska* conservation program in Perak, established in 1968, by continuing to incubate wild-collected eggs, and eggs from captive adults, and rearing juveniles for one or more years before releasing them to their native river in order to supplement the remaining wild population, and at two other facilities established in 1981 in Kedah and Terengganu, as well as maintaining a long-term partnership with local NGO and University partners to conserve *Batagur* and *Callagur* in their natural habitat in Terengganu and Melaka [CoP13 Doc. 33 p. 6].

Myanmar reported a reintroduction project of Myanmar Star Tortoises, *Geochelone platynota*, at Minzontaung Wildlife Sanctuary in the country's central dry zone. It also carried out a survey of the Myanmar Roofed Turtle (*Kachuga trivittata*) in collaboration with WCS and captive breeding of the species at Yadanabon Zoo, Mandalay. (Myanmar, biennial report 2003-2004).

In **Thailand**, the SA continued to support a breeding program for the Striped Giant Softshell Turtle, *Chitra chitra* (Thailand, biennial reports 2003-2004, 2005-2006).

e) *all Parties whose national legislation is not sufficient to control effectively the unsustainable harvest of and trade in tortoises and freshwater turtles to enact legislation to protect and manage these species appropriately.*

The Council of Ministers of **Cambodia** on 27 July 2009 approved a subdecree entitled "Endangered Fisheries Production". Prepared by the Fishery Administration, Ministry of Agriculture, the subdecree declares almost all native species of freshwater turtles as endangered, consequently prohibiting their capture and trade. The Cambodian Forest Administration had earlier added *Manouria impressa* to the list of protected wildlife species.

Viet Nam issued Decree 32/2006/ND-CP, dated 30 March 2006, on Management of Endangered, Precious, and rare Species of Wild Plants and Animals, which replaced Decree 48 of 2002. Decree 32/2006/ND-CP added *Manouria impressa*, *Mauremys annamensis* and *Platysternon megacephalum* to Category IIB, but excluded *Pelochelys bibroni*, which is thus no longer protected despite its previous inclusion in Category I of

Decree 48/2002. Viet Nam also adopted Decree No. 159/2007/ND-CP setting out penalties for forest and wildlife crimes.

No other Parties reported enacting legislation that specifically focuses on conservation and management of tortoises and freshwater turtles, but general wildlife legislative developments of particular significance for regulating turtle trade were implemented by Malaysia and Singapore.

Peninsular Malaysia reported in its 2003-2004 and 2005-2006 biennial reports that it was in the process of revising its legislation concerning CITES, including jurisdiction over turtle conservation and trade. *Act 686 – International Trade in Endangered Species Act 2008* was approved and published in February 2008, and transitional measures for its entry into force throughout Malaysia were announced in December 2009.

Singapore enacted the revised Endangered Species (Import and Export) Act in March 2006. The Act empowers the Agri-food and Veterinary Authority to issue permits for import, export, re-export and introduction from the sea, for any CITES species included in the Schedules. The Schedules list all species in CITES Appendices I, II and III by name, including all CITES-listed turtles.

f) *all Parties, especially in the Asian region, to increase public awareness of the threats posed to tortoises and freshwater turtles from unsustainable harvest and unregulated trade, to encourage non-governmental organizations to develop, produce and distribute posters and other educational and informative materials on this subject, and to facilitate, where necessary, the compilation, dissemination and translation into local languages of information on tortoises and freshwater turtles for their use by enforcement officers, drawing on existing identification and enforcement guides, and focusing on identification, local names, distribution and illustrations.*

China produced a turtle and tortoise poster as part of a 2005-2006 series of six public awareness posters focusing on priority species groups in CITES trade, published in both Chinese and Vietnamese (China, biennial report 2005-2006). China had already produced an *Identification Manual for Common Turtles and Tortoises*, in Chinese and English-language versions, in March 2002 (ESIEMO PR China, 2002a). This was recently followed by the *Identification Manual for Traded Turtles in China* in December 2008 (Shi *et al.*, 2008)

Hong Kong SAR produced a leaflet 'Protect Endangered Freshwater Turtles' in 2004 (Hong Kong SAR biennial report 2003-2004).

Indonesia conducted a local workshop on CITES implementation and conservation of the Roti Island Snake-necked Turtle (*Chelodina mccordi*) in Roti Island, East Nusa Tenggara Province, 12-13 December 2005. The workshop was conducted by the CITES MA of Indonesia and TRAFFIC SE Asia. (Indonesia, biennial report 2005-2006).

TRAFFIC and Singapore Zoo published *An Identification Guide to the Tortoises and Freshwater Turtles of Brunei Darussalam, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore and Timor Leste* in December 2007 (Auliya, 2007). A comprehensive pictorial guide to Asian turtles was commercially published by Chimaira Verlag in 2006 (Vetter & van Dijk, 2006)

Chelonian Research Foundation and the IUCN Tortoise and Freshwater Turtle Specialist Group have begun publication of a series of detailed species accounts reviewing biology and conservation of tortoises and freshwater turtles, including detailed status and life history data where available; these accounts would provide essential biological information to be used when making a non-detriment finding (NDF). The published accounts are accessible by following the links at www.iucn-tftsg.org/cbftt/.

Status assessments for tortoise and freshwater turtle species on the IUCN Red List of Threatened Species are being updated on an ongoing basis, and recently revised accounts contain a summary of status and conservation data, including generation times and other information that is relevant when making NDFs. Turtle species data can be accessed by searching for a specific species at www.iucnredlist.org

Much remains to be done, however, even in generating awareness among other branches of government, as insufficient internal coordination and conflicting policies and enforcement procedures often exist at or between the national, provincial and local levels. As an example, the municipal council of Agartala, in northeast India's Tripura State, issued an official circular designating market tax rates for the sale of turtles, elephant ivory, and other wildlife species that are strictly protected under national laws (Sengupta & Bhattacharjee, 2009). Internal actions such as this, while not explicitly regulated under CITES, simply serve to reinforce the persistence of

illegal domestic turtle trade markets, which may provide an ongoing supply of turtles and tortoises into illegal international trade.

- g) *all Parties to explore ways to enhance the participation of collectors, traders, exporters, importers and consumers in the conservation of and sustainable trade in tortoises and freshwater turtle species.*

It appears that no such enhanced participation has been reported by Parties.

- h) *all Parties, especially in the Asian region, to collaborate on all aspects of conservation and management of, trade in, and implementation of the Convention for, tortoises and freshwater turtles, taking into consideration the recommendations formulated at the technical workshop on Conservation of and trade in tortoises and freshwater turtles held in Kunming, China, 25-28 March 2002.*

Activities by Parties under other sections of Resolution Conf. 11.9 (Rev. CoP13) may also address the recommendations from the technical workshop.

- i) *all Parties, particularly those in the Asian region, to develop plans of action, in compliance with Resolution Conf. 10.7, that can be executed without delay in the event that live specimens of tortoises and freshwater turtles are confiscated.*

Details of contingency plans to deal with confiscated tortoises and freshwater turtles that are in place in China, Hong Kong SAR and Japan were summarized in document CoP13 Doc. 33. No other parties have reported details of such plans of action that they may have developed.

A list of rescue facilities has been compiled by the Species Survival Network (SSN) and, as notified in Notification to the Parties No. 2009/009, is available online at www.ssn.org/cites_rescue_intro_EN.htm.

Myanmar hosted a workshop on placement of confiscated tortoises and freshwater turtles in Mandalay in January 2009, whose results included detailed protocols to evaluate animals' suitability for inclusion in assurance colonies or return to native habitat, selection of suitable release sites and habitat, and upgrading and establishment of facilities to temporarily house and process confiscated animals.

- j) *range States of tortoises and freshwater turtles to develop management strategies concerning CITES-listed tortoises and freshwater turtles, including regional action plans for the conservation of Asian tortoises and freshwater turtles, in collaboration with the Secretariat, industry representatives, interested governmental and non-governmental organizations and other stakeholders as appropriate.*

It appears that no such comprehensive management strategies have yet been established. A South and Southeast Asian regional Action Plan for the conservation of large riverine turtles of the genera *Batagur*, *Callagur* and *Kachuga* is currently taking shape through the efforts of the Turtle Survival Alliance, San Diego Zoological Society, Universiti Terengganu Malaysia, Wildlife Conservation Society, IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, and other participants.

- k) *all Parties to ensure that all shipments of live tortoises and freshwater turtles are transported in compliance with relevant IATA guidelines.*

No specific reports are available of Parties which have encountered challenges in this respect. However, as evidenced by the conditions in which animals are found during confiscations, inadequate shipping of live tortoises and freshwater turtles and non-compliance with IATA guidelines remain serious concerns.

- l) *all Parties to facilitate the development of partnerships between interested nongovernmental organizations or other bodies to develop and operate rescue centres for seized or confiscated tortoises and freshwater turtles, in cooperation with range States and relevant government agencies.*

Efforts in this respect were described under paragraph i), above.

- m) *range States of tortoises and freshwater turtles that authorize trade in these species to include in their periodic reporting under Article VIII, paragraph 7 (b), information on progress in implementing this Resolution.*

Following CoP12, a specific reporting format was developed and circulated by the Secretariat. Reports were received by the Secretariat only from the Management Authorities of China, Hong Kong SAR, Japan and

Malaysia, and the information contained in these country reports was summarized by the Secretariat and presented in CoP13 Doc. 33. No further country reports were received by the Secretariat after the deadline for submission of documents for CoP13. At CoP13, Parties voiced that the additional reporting burden involved was undesirable, and it was agreed that further reporting of progress on implementation of Res. Conf. 11.9 should be part of regular biennial reports.

Review of available biennial reports shows that activities concerning tortoises and freshwater turtles have been absorbed into regular CITES implementation and reporting activities, with specific actions concerning tortoises and freshwater turtles being reported in a minority of biennial reports. The available information is included in the preceding results under paragraphs a) to l). Comparison of the biennial reports and the information contained in the four specific turtle reports (as summarized in CoP13 Doc.33) demonstrates the great utility of the original specific reporting format on progress in turtle conservation and management, which remain some of the best sources of information on actions taken by Asian CITES Authorities for tortoises and freshwater turtles.

It must be pointed out, however, that 6 weeks before the deadline for submission of documents for CoP15, biennial reports were available for only 14 of 25 Asian Parties with native tortoises and/or freshwater turtles for the years 2003-2004, and only 12 of 26 for the years 2005-2006. As such, information contained in biennial reports represents valuable historical data but is available too late to be of significant assistance to evaluate this dynamic trade.

Discussion

Trends in trade volumes

Trade volumes of selected Asian tortoise and freshwater turtle species are graphed in Figures 1 and 2, displaying net exports (in number of individuals) per species for all countries and from all sources combined. Species were selected if reported annual trade exceeded 800 individuals in at least 2 separate years. Numbers of traded animals of all source codes (W, C, R and U) were combined, because the only Asian turtle species understood to be produced in closed-cycle farming without significant effect on wild populations are *Mauremys reevesii* and *Pelodiscus sinensis* (ESIEMO PR China, 2002b; Shi *et al.*, 2004; Zhou *et al.*, 2008). Declared trade in parts and derivatives is reported and included only for *Mauremys reevesii*; published average weight of a turtle plastron (Chen *et al.*, 2009) was used to calculate the number of turtles involved in trade of plastron shipments recorded by weight, at a ratio of 1 kg equals 10 turtles. Trade in weight-declared quantities of live animals only occurred for *Lissemys punctata*; these were conservatively converted as 1 kg weight equals 1 live turtle.

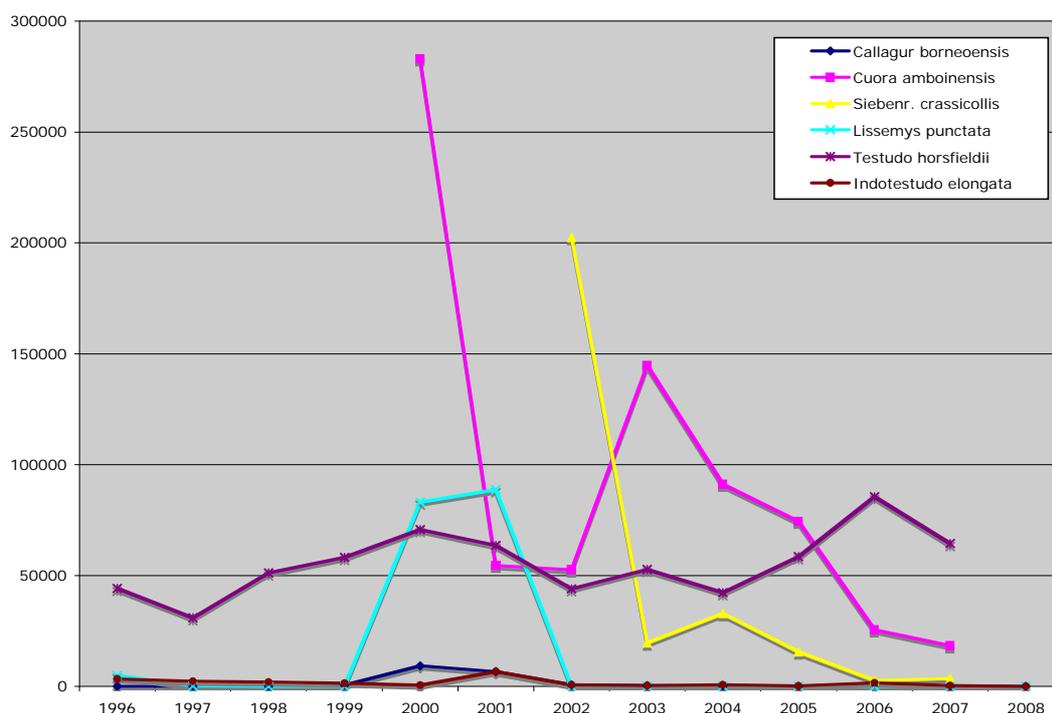


Figure 1. Total net exports of selected Asian turtle species (numbers of animals traded) during the period 1996-2008, based on recorded trade data.

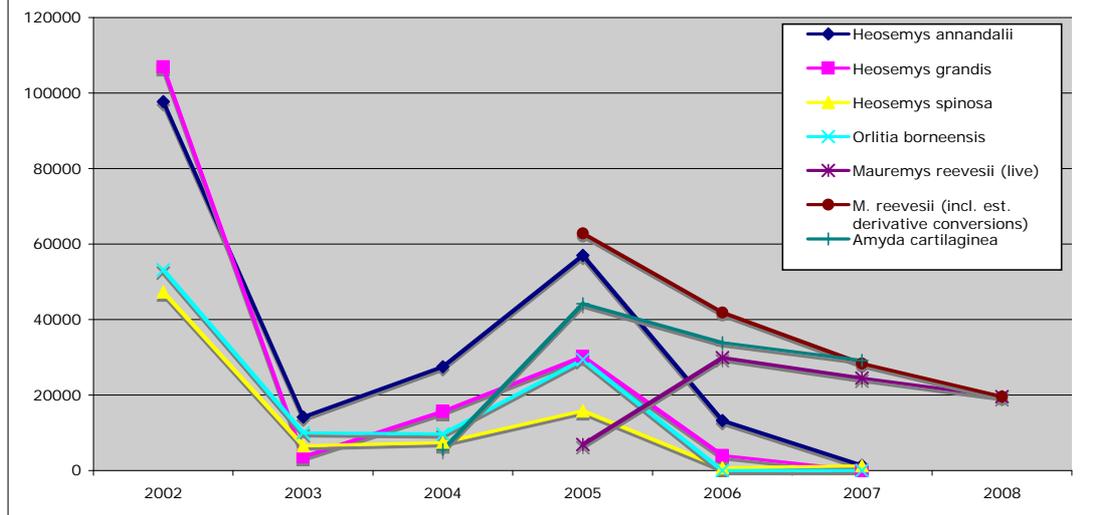


Figure 2. Total net exports of selected Asian turtle species (numbers of animals traded) during the period 2002-2008, based on recorded trade data.

There are obvious challenges when analyzing trends in declared turtle trade volumes. One is the fairly short data series available, five or six years for many species, as a result of their relatively recent inclusion in the CITES Appendices and the time taken by Parties to compile and submit their annual report data. These data sets are further constrained by the likelihood of a lag time between the inclusion of a species in the Appendices and the complete collection and submission of trade volume data for that species by all trading parties (probably resulting in an under-reporting of total trade volume in the first year after inclusion), as well as the slow compilation and submission of trade data (so that most recent total trade volumes do not include data from all Parties). Available trade data are not detailed enough to separate turtle trade reliably into the different market segments, specifically pet trade, consumption trade, and trade for medicinal usage; thus, supplementary data (including market survey and pet trade information from importing Parties) are brought into consideration when interpreting trade patterns. Finally, there remain concerns about the quality and completeness of overall trade data with regard to accurate identification of animals, the trade in parts and derivatives, and illegal and unreported trade.

Despite data constraints, a number of general trends are evident, particularly in the species for which 8-year or longer data sets are available (*Testudinidae* spp., *Lissemys*, *Callagur*, *Cuora*). Four distinct trade patterns emerge:

1. A clear pulse of increasing, then declining trade volume is evident for *Callagur* in the period 1999-2003, coinciding with a similar but more extreme pulse in exports of *Lissemys punctata* during 2000-2001. This pattern is also shown to some degree by *Indotestudo elongata*.
2. Some tortoise and freshwater turtle species show high trade volumes that have continued at about the same order of magnitude throughout the years within the study period for which trade data were available. This is shown by *Amyda cartilaginea*, listed in Appendix II in 2004 and the most voluminously traded CITES-listed Asian freshwater turtle by 2007, and *Mauremys reevesii*, an Appendix III species since 2004 which is extensively farmed and used for parts and derivatives. Trade levels of *Testudo horsfieldii* (App. II) exported from Central Asia to the global pet trade and occasionally into the food trade have remained steadily high.
3. Other tortoise and freshwater turtle species have shown trade volumes that started high at the time of their inclusion in Appendix II, but have declined steadily in subsequent years. This pattern is clearly shown by *Siebenrockiella crassicollis* and the three *Heosemys* species. *Cuora amboinensis* was traded at around 300,000 animals annually at the time of inclusion in 2000, and its high trade volumes have gradually and irregularly declined by an order of magnitude,
4. Some species have shown steady trade at modest levels of a few 100 to less than 1000 animals annually. This is predominantly shown by tortoises (*Indotestudo*, *Manouria*) exported into the global pet trade.

High volume trade, here considered as annual net export of over 5000 animals or over 10 tons per year, is understood to represent trade driven primarily by demand for consumption, with the known exception of

Testudo horsfieldii which is exported mainly for the pet trade. In the case of *Callagur* and *Indotestudo elongata*, the available data seem to have captured a full cycle of rapidly increasing, demand-driven exploitation, followed by an equally rapid decline in large-volume trade, with trade subsequently trailing off to relatively low numbers which probably represent continuing pet trade. Many other species seem to have been included in the Appendices at or after the peak pulse in their trade [in fact, the trade pulse was the primary rationale for inclusion of these species], and CITES trade records capture only the second, declining part of their trade pulse.

The key questions are, what leads to the substantial decline in reported trade volume for many freshwater turtle species, and why do some species not show this trend? Declining trade volumes have been suggested to reflect the local depletion of wild turtle populations, so that a steady supply of wild-collected turtles of a particular species is no longer available and the species disappears from high-volume trade. It has been demonstrated that such 'boom and bust' cycles of overexploitation have occurred widely concerning freshwater turtles, from *Malaclemys terrapin* in the USA in the 1920s (Carr, 1952: 168) to *Leucocephalon yuwonoi* (IUCN TFTSG & ATTWG, 2000) in Indonesia in the 1990s and *Callagur* in Indonesia and Malaysia a few years later. By this rationale, the steady trade volumes of (other) widespread species may not represent a long-term sustainable offtake across a wide area inhabited by these species, but has been interpreted as a series of overlapping pulses of overexploitation of different populations of the same species (van Dijk *et al.*, 2000), creating an overall steady trade volume as these different populations are sequentially exploited. From a trade perspective, it may be more economically advantageous to develop new source areas and exploit large standing populations, rather than to continue to exploit established areas through established trade channels, when declining populations result in reduced catch per unit effort. As such, sequential trade focus may coincidentally avoid total extirpation of local populations as they shift to new source areas to supply turtles at unit market prices that make further collection and shipment of animals from already depleted remnant populations economically unrewarding. This is rarely a conscious, conservation-inspired decision by collectors and traders, but instead an unintended consequence of economic realities.

Support for the concept of sequential exploitation of new species and geographic source areas is indicated when combining net export data for Southeast Asian turtles (which is understood to reflect predominantly trade from Southeast to East Asian countries) with net exports of turtles from the United States to Asia. Figure 3 documents successive increases of trade volumes of Snapping Turtle (*Chelydra serpentina*), Florida Softshell (*Apalone ferox*) and Spiny Softshell Turtle (*Apalone spinifera*) as trade volumes for wild-collected *Cuora amboinensis* and other Asian hardshelled turtles (*Heosemys*, *Orlitia*, *Siebenrockiella*) and softshells (*Amyda*, *Lissemys*) progressively decline, in a context of overall increasing turtle trade volume in Asia. The majority of exports of *Chelydra* and *Apalone* had declared source codes C, R or F, indicating that the animals came from some sort of managed production system; it is not unreasonable to accept that these animals were juveniles destined for rearing by the Chinese aquaculture industry.

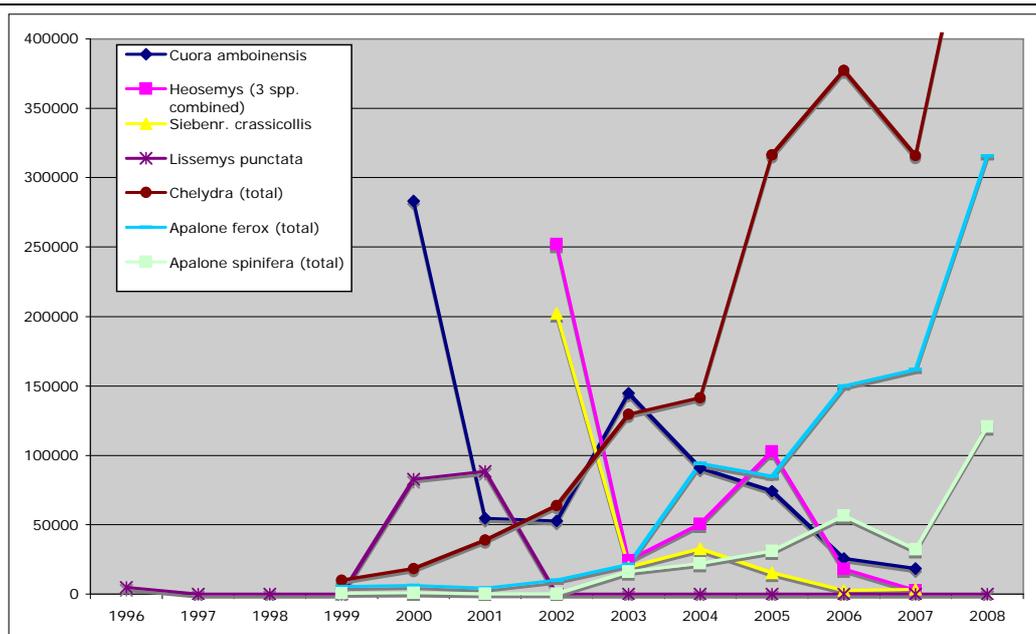


Figure 3. Total net exports of selected Asian turtle species and USA species exported to Asia during the period 1999-2008 (numbers of animals traded), based on reported trade data. USA exports are charted as animals with declared source code W [wild], R [ranch], F [farmed] and C [captive] combined.

An alternative explanation could be that declining trade volumes of Asian turtles do not reflect declining populations, but are a result of increased regulation and enforcement. By inclusion in CITES, a species may transfer in status under domestic legislation from an unregulated to a regulated resource, and with regulation comes restriction on quantities that may be exploited and exported. Malaysia specifically reported that the establishment of administrative quotas led to significant declines in levels of authorized trade (CoP13 Doc. 33: 5). The particular challenges of making non-detriment findings for tortoises and freshwater turtles, in some cases reinforced by findings of the Review of Significant Trade process, has led a number of Parties to take precautionary actions, including setting reduced or zero quotas.

Presently available data do not have enough resolution to demonstrate the validity of one interpretation over another, and indeed, what applies to one species or area may not apply in different circumstances. Analysis is further complicated by the fact that not all Asian turtle-exporting countries work with a quota system, but instead make case-by-case determinations, and by the great differences that exist in enforcement efforts between countries and between years. It will require scientifically robust long-term data sets from the locations where offtake from wild populations occurs, combined with population monitoring of exploited and non-exploited populations. The Reptile and Amphibian Working Group at the CITES NDF Workshop called for MAs to collect and evaluate such data, as only a thorough understanding of what populations are exploited at what intensity, combined with long-term monitoring of the effects of exploitation, can differentiate between high trade volumes representing possibly sustainable offtake from a large and stable wild population, and high trade volumes representing sequential depletion of different wild populations.

Turtle life history & annual survivorship rates

Factors threatening tortoise and freshwater turtle populations and species include habitat loss and degradation, targeted exploitation for food, pets/ornamentals and traditional medicine, and impacts from invasive or subsidized native species. Correspondingly, a few turtle species [*Pelodiscus sinensis*, *Trachemys scripta*, and arguably *Mauremys reevesii*] have been produced in large quantities in controlled environments and have been widely traded, with some establishing extralimital populations and in some cases representing an invasive species threat themselves.

Turtles have evolved not only a unique body design, with a bony shell providing effective protection against many natural predators, but also a remarkable life history strategy characterized by slow growth and late maturity (usually on the order of 10-15 years), longevity (typically living for six or more decades, and generation times often at 25-30 years) and successful reproduction throughout life without senility, relatively modest annual reproductive output (one to over 100 eggs per mature female per year, depending on species), very low survivorship of eggs and juveniles, but increasingly high average annual survivorship of subadults and adults. In short, the key to turtle life history is to reach maturity, live for a long time, and produce a modest number of eggs each year, so that over a lifetime enough eggs are produced to ensure that a few will successfully hatch and some of these will survive to adulthood.

As a result of their specialized body plan and life history strategy, turtle populations can and do sustain their greatest natural losses in the egg and early juvenile stages, but experience very low natural adult mortality. Few natural generation times are known with certainty for tortoise and freshwater turtle species, but available estimates and calculations include about 10-12 years for *Deirochelys reticularia* (Buhlmann et al., 2008), at least 25 years for *Chelydra serpentina* (Steyermark et al., 2008), about 25-30 years for *Clemmys guttata* (Litzgus, 2006) and 36-47 years for *Emydoidea blandingii* (Congdon et al., 2000).

Targeted exploitation of adult turtles for human consumption and trade, therefore, introduces a novel factor in turtle population dynamics and significantly reduces a population's reproductive output and associated recruitment over time; once depleted, a turtle population recovers very slowly, typically requiring several decades to recover, if it recovers at all. At least seven turtle species have gone extinct in historical times, all from islands in the Indian Ocean, as well as two additional subspecies from the Galapagos Islands and one subspecies from northern Mexico. Targeted exploitation by humans was the primary cause for all but two of these ten extinctions, with its impact on depleted populations further leveraged by the impacts from introduced predators, habitat degradation and destruction, and natural disasters. This clearly demonstrates that sustainable exploitation of adult tortoises from the wild, at least, is fraught with difficulty and the result of anything but the most precautionary offtake levels may lead to extinction of populations and species. This is reinforced by the fact that of 28 turtle species listed as Critically Endangered in the IUCN Red List, targeted exploitation by humans has been a driving or major contributing factor for 18 of these species.

Harvest management and Non-detriment Findings (NDFs) for tortoise and freshwater turtle species

As noted in earlier reviews (CoP13 Doc.33, page 8), dedicated management of collection and trade of wild-collected tortoises and freshwater turtles appears nearly non-existent in Asia. Where management is attempted it generally takes the form of allocating provincial and/or national harvest and export quotas, whose levels tend to be set initially to reflect previous trade volumes, and are subsequently adjusted based on realized export volumes or pressure from commercial or conservation interests. Proper management protocols should be based on a knowledge of approximate population size and density, an understanding of population dynamics to estimate annual recruitment rates and mortality rates from natural causes and subsistence exploitation, as well as the dynamics of habitat loss, habitat restoration and habitat creation across the landscape, and calculating levels of possible offtake for commercial trade, in a context of monitoring actual trade levels and population stability. Such management protocols do not appear to exist for any Asian tortoise or freshwater turtle population or species.

Experience with trade management efforts for a tortoise and a freshwater turtle species greatly informed the Reptile and Amphibian Working Group at the recent CITES Non-Detriment Finding (NDF) workshop in Mexico (AC24 Doc.9; <http://www.cites.org/eng/prog/ndf/index.shtml>; http://www.conabio.gob.mx/institucion/cooperacion_internacional/TallerNDF/taller_ndf.html). The Working Group recognized that turtles are subject to a wide variety of production and utilization systems and practices, and considered that the NDF process needs to be practical and also have various degrees of rigor as appropriate. Details of the factors that should or could be considered when making an NDF for tortoise or freshwater turtle trade, and a suggested decision tree comprising a provisional risk assessment followed by a rigorous analysis of available data, are presented in AC24 Doc. 9.1 Annex 3.

The only Asian turtle species for which a detailed analysis of status and trade impacts has been made and published is *Cuora amboinensis* in Indonesia and Malaysia (Schoppe, 2008a & b, 2009a & b). Results of this analysis highlighted the scarcity of comprehensive status and trade data across the species' exploited geographical range, and documented steep localized boom and bust cycles where such data were locally available. Concern about trade in this and 11 other species has led to their inclusion in the Review of Significant Trade, from which Parties were generally only released when they pragmatically reduced or eliminated their export quotas, rather than providing substantive documentation that authorized trade levels were based on sustainable offtake. Clearly, substantial improvements are needed in the data incorporated into NDFs, the process of making and recording NDFs, and the implementation of management measures by many Parties trading tortoises and freshwater turtles.

Enforcement issues

Illegal trade in Asian tortoises and freshwater turtles remains at significant levels. This includes trade volumes exceeding authorized trade levels in particular species, turtle exports from Parties which have closed collection and trade of some or all native turtle species, imports of turtle species which are protected in their country of origin, and trade in imported specimens of species whose local populations are protected under domestic native species legislation.

Schoppe (2009a) documented continuing, and therefore illegal, exports of *Cuora amboinensis* (App.II) from Peninsular Malaysia after the country imposed a zero export quota in 2005, destined mainly for the food trade to China and Hong Kong, with a smaller percentage exported to Singapore. The total illegal export trade of this species was conservatively estimated as exceeding 20,000 adult animals in 2008. A parallel study of the species in Indonesia (Schoppe, 2009b) estimated illegal undeclared exports from Indonesia to comprise 10 to 100 times the legal volume of 18,000 live animals.

Market and farm surveys in East Asia continue to document ongoing trade in protected turtle species, including trade in a variety of Appendix I species (Cheung & Dudgeon, 2006), and trade in species that are strictly protected from commercial exploitation and trade under national legislation in their entire range of occurrence, or at least protected in the country where the animals are traded (Goh & O'Riordan, 2007). This includes the trade in *Siebenrockiella leytensis*, a rare endemic species that is strictly protected and has never been legally exported from the Philippines, yet has been offered for sale on websites in Japan, Europe and possibly the United States. A significant reason for lack of enforcement appears to lie with shortcomings in national legislation to implement CITES, specifically that non-native CITES-listed species are not listed in national legislation, or that amendment of species lists needs passage through legislature and as a result may take several years.

Of particular concern is the recent pulse in illegal trade of Indian Star Tortoises (*Geochelone elegans*, App. II, native to India, Pakistan and Sri Lanka) for the pet trade, typically smuggled in shipments of several hundred

juveniles from South India to Southeast Asia and beyond (Lenin, 2007). Numerous such shipments have been confiscated in India, where the species is protected from commercial trade and exports (reiterated in CITES Notification 1999/39), and in some of the destination countries, but the ease at which the animals are observed in local public pet trade (Shepherd *et al.*, 2004; Cheung & Dudgeon, 2006; Goh & O’Riordan, 2007; Shepherd & Nijman, 2008) indicates that enforcement efforts achieve little sustained success to halt these activities. No significant legal export trade in *Geochelone elegans* has been declared by its range countries during the period 1975-2008 (only 58 from Sri Lanka in 1985, 20 in 1987, and 47 in 1988 for trade or zoo exchange); however, substantial numbers are recorded in the CITES-WCMC trade database as re-exports by third countries of wild-caught animals originating from Pakistan and Sri Lanka, but no corresponding exports were declared by these countries of reputed origin; likewise a shipment of 450 wild-sourced animals from Pakistan to the Czech Republic in 1998 was declared as imported, but no corresponding export record is included in the CITES trade database. Other records of the species concern repatriations of confiscated animals to India (10 animals from Hong Kong, 582 animals from Malaysia and 2330 animals from Singapore). Of greatest concern are the considerable quantities of Indian Star Tortoises declared as captive-bred that have originated from Jordan (17,902, 2004-2008), Lebanon (15,952, 2000-2006), Ukraine (2870, 2000-2008), United Arab Emirates (2687, 1992-1999), and Slovenia (1260, 2000-2006). Detailed trade records show distinct pulses of reported captive production of the species for a number of years by country, with alleged production originating from a different country every few years, and with no reported imports in the years preceding captive-bred exports. And finally, Afghanistan exports are recorded as 2100 *G. elegans* in 2002, 2800 in 2003, 494 in 2004, and none afterwards, all declared as wild-sourced although the country is not part of the range of the species and no imports are on record.

This widespread but illegal trade in Indian Star Tortoises appears to have facilitated recent expansion of the pet star tortoise trade to include substantial numbers of the Radiated Tortoise (*Astrochelys radiata*, App.I) and Ploughshare Tortoise (*A. yniphora*, App.I) from Madagascar, which have been recorded in Asia in recent pet market surveys (Cheung & Dudgeon, 2006; Nijman & Shepherd, 2007; Shepherd & Nijman, 2007, 2008; Wu, 2007) and confiscations in Hong Kong SAR, Kuala Lumpur (Malaysia) and Taipei (Taiwan) (Annex C). Other Appendix I species (*Geoclemmys hamiltonii*, *Morenia ocellata*, *Pangshura tecta*, *Pyxis arachnoides*, *Testudo kleinmanni*) have also been reported from pet markets in Bangkok, Guangzhou, Hong Kong, Jakarta and Shenzhen (Cheung & Dudgeon, 2006; Shepherd & Nijman, 2007, 2008; Gong *et al.*, 2009) and confiscations.

Disposal of confiscated live tortoises and freshwater turtles remains challenging. Single shipments can be large enough to overwhelm the capacity of rescue and holding facilities, creating problems for further confiscations. Repatriation of confiscated turtles is often cost-prohibitive considering the transport costs inherent in the confiscation volumes. While adherence to the CITES and IUCN Guidelines for the disposal of confiscated specimens and for re-introductions is recommended, confiscated specimens of rare tortoise and freshwater turtle species represent valuable potential additions to conservation breeding colonies managed by various zoos, aquaria, studbook programs, and the Turtle Survival Alliance. These organizations also have extensive expertise with husbandry and veterinary care of turtles and represent valuable sources of potential advice and support to Authorities when dealing with confiscations.

A significant trade monitoring and enforcement challenge is posed by the trade in parts and derivatives of tortoises or freshwater turtles. Large quantities of intact turtle plastra, broken shell bones, and dried cartilaginous pieces from Trionychid softshell turtles are in trade within East Asia and from South and Southeast Asia to East Asia (Jenkins, 1995; Chauhan, 2000; Noureen & Khan, 2007a, 2007b; Kendrick & Ades, 2009; Chen *et al.*, 2009; Schoppe, 2009b). Imports into Taiwan alone averaged 228 metric tons per year during 1999-2008 (Chen *et al.*, 2009), representing roughly 2 million turtles, although at least part of this trade is thought to represent byproducts from the trade in live turtles for consumption and may partly derive from farmed production. While Taiwanese import data demonstrate that much of these imports represent CITES-listed species (see table 3 in Chen *et al.*, 2009) that are not farmed in significant quantities anywhere, almost no trade in shells and other parts is reported to CITES by Parties, as evidenced by data in the WCMC trade database. While much of this trade in turtle bone and cartilage is destined for consumption as part of traditional medicine at retail level in the importing jurisdiction, part of it is used as raw ingredients for industrial-scale preparation of standardized medicinal and possibly cosmetic preparations and may subsequently be exported. With the exception of recorded exports from China of bones and preparations derived from (farmed) *Mauremys reevesii* (App.III), no such trade data have been officially reported. This indicates a significant unreported trade in parts and derivatives of CITES-listed turtles and requires attention from CITES regulatory authorities in order to monitor and supervise this trade, as well as awareness and training of enforcement personnel to recognize this trade and enforce the permit requirements.

Farming and Aquaculture

Farming of freshwater turtles has expanded greatly in China and Viet Nam in the past decade, but reportedly little in other Asian countries. An overview of the history and trends of turtle farming in Asia up to 2002 was provided in Annex 1 of document AC19 Doc. 15.2 (Rev. 1), supplemented by document CoP12 Inf. 8 submitted by China. A detailed description of captive production systems for *Testudo horsfieldii* in Uzbekistan was provided in Annex 4e of document AC24 Doc. 8.1.

In addition, a number of books and peer-reviewed and popular articles (Shi *et al.*, 2001, 2004, 2007, 2008; Zhou *et al.*, 2005, 2008, 2009) have documented and illustrated further details of turtle aquaculture in China. The dominant segment of the Chinese turtle aquaculture industry appears to be developing towards closed-cycle farming of native species, particularly *Pelodiscus sinensis*, *Mauremys reevesii*, *M. sinensis*, and *Cuora trifasciata* (Shi *et al.*, 2008; Zhou *et al.*, 2008, 2009). Another large segment comprises captive rearing of hatchling or small juvenile turtles imported from abroad, mainly *Trachemys scripta*, *Chelydra serpentina*, *Apalone* species, and *Macrochelys temminckii* from the United States. Indications are that the Chinese rearing aquaculture of *Trachemys* and *Chelydra*, and perhaps *Apalone*, is maturing towards partial closed-cycle farming of these species (Zhou *et al.*, 2008, 2009). The third segment of turtle aquaculture efforts comprise other species, native as well as exotic, which are generally of higher unit value but whose captive production remains subject to technical difficulties of relatively high mortality and reduced productivity of captive animals. Consequently, adult breeding animals continue to be sought from wild populations, generating an ongoing demand and high prices for wild-origin animals of these species and thus continuing to exert exploitation pressures on remnant wild populations that are considered to threaten the survival of these species (Zhou *et al.*, 2005, 2008, 2009; Shi *et al.*, 2007). Clearly, while turtle aquaculture meets a significant proportion of consumer demand for turtles, it also represents a degree of threat to some turtle species.

Conclusions and Recommendations

Many Asian freshwater turtle species seem to have followed a common trajectory in CITES: 1) a species is proposed and adopted for inclusion in Appendix II based on records or observations of significant international trade quantities; 2) after a few years of trade data have been included in the CITES-WCMC Trade Database that species is selected for the Review of Significant Trade, and then 3) Parties often succeed in having themselves removed from the Review by announcing a voluntary cessation of commercial exports.

Due to their life history characteristics, turtles and tortoises are highly vulnerable to over-exploitation, and sustainable offtake of wild populations is exceedingly difficult to achieve. It is not evident that any Party has conclusively demonstrated that substantial offtake of tortoises or freshwater turtles from its wild populations is sustainable over the long term. Detailed status information throughout a species' range, combined with life history and ecological data establishing parameters on which to base levels and quantities of sustainable offtake, are not available for a single Asian turtle species, and are only available for a few populations outside Asia. Thus, management of turtle offtake remains empirical and reactive, and confounded by conflicting interpretations of trade levels as sustainable offtake of a regenerating population versus depletion of the standing crop of a species with limited understanding of the dynamics of turtle population recovery.

1. More and better data need to be collected to understand population and trade dynamics. Non-detriment findings need to incorporate these data and need to draw on technical expertise available outside the national authorities to formulate science-based robust quotas and permitted trade levels.

Trade in shells, bones and cartilage of tortoises and freshwater turtles is widespread and substantial across Asia, potentially at levels threatening populations and species, yet is barely recorded in CITES trade data. Correspondingly, trade in medicinal preparations and other parts and derivatives is barely registered and likely greatly underreported.

2. Better understanding of the scope and scale of the trade in parts and derivatives is required, including its impact on populations of Asian tortoises and freshwater turtles, and requires prioritized attention from CITES regulatory authorities to monitor and supervise this trade, as well as awareness and training of enforcement personnel to recognize this trade and enforce its permit requirements.

Since 1992 (Res. Conf. 8.9) the Review of Significant Trade continues to evaluate the implementation of Article IV, through the Animals and Plants Committees. However, a variety of issues affecting the conservation of tortoises and freshwater turtles concern problems other than the implementation of Article IV, and are thus not addressed by the Review of Significant Trade. Examples include, but are not limited to, commercial trade in Appendix I tortoises and freshwater turtles, exports of substantial quantities of

Appendix II turtles questionably permitted as captive-bred, insufficient oversight of facilities claiming to breed CITES-listed turtle species, persistent patterns of illegal and/or unreported trade, and unimpeded domestic trade in turtle species native to other countries which are not reported as having been legally imported into the country.

3. To address these issues, it is recommended that the Parties refer the following non-biological implementation matters to the Standing Committee for consideration and further recommendations. All of these matters concern implementation and enforcement of Articles III, VI, VII and VIII of the Convention, in some cases a direct result of inadequate national legislation to fully meet CITES obligations:
 - Availability of CITES I species, and CITES II species that have never been legally exported, for sale outside range countries, with insufficient enforcement action reported in the country where such animals are traded: *Astrochelys radiata*, *Astrochelys yniphora*, *Geoclemmys hamiltonii*, *Morenia ocellata*, *Pangshura tecta*, *Pyxis arachnoides*, *Testudo kleinmanni*, *Siebenrockiella leytensis*.
 - Export of substantial numbers of *Geochelone elegans* originating from or shipped through Jordan, Kazakhstan, Lebanon, Slovenia, Ukraine, and United Arab Emirates and declared as 'captive-bred' while no import records of parental stock exist, no large captive breeding facilities are known, and declared export quantities require numerous long-lived parental animals yet declared CB exports only occur for a few years (CITES-WCMC Trade database). Correspondingly, further information is desirable about reported wild-origin exports from Afghanistan, which recorded no imports and is not a range state.
 - Uneven patterns of enforcement as evidenced by public availability of animals that are subject to an export ban in the country of origin and have not been recorded in official trade records as imported from a legal source; while illegal trade has been clearly documented by extensive confiscations in the country of origin, and retail trade offers, but few corresponding confiscations are reported in destination countries, as a result of either insufficient legislation, insufficient enforcement, or inadequate coordination between different government authorities. The widespread trade in *Geochelone elegans* in Southeast Asia (Annex C) is the most obvious case.
4. It is recommended that Parties evaluate and, if necessary, adjust their national legislation governing CITES implementation such that:
 - all tortoise and freshwater turtle species listed in the CITES Appendices, both native and non-native, are effectively and incontrovertibly covered by domestic legislation;
 - there is clear assignment of jurisdiction over tortoises and freshwater turtles among wildlife, fisheries and other authorities as appropriate;
 - national legislation effectively incorporates changes to the CITES Appendices in a timely manner.

Turtle farming in Asia has expanded greatly in recent years and is now a mature, diversified industry. Much of Asian turtle aquaculture involves closed-cycle production of a limited number of native and exotic species, but initiatives to produce additional species have met with mixed results and at present rely heavily on intake of additional animals collected in the wild. Aquaculture thus represents a potential threat to such species.

5. Further evaluation and regulation of the turtle aquaculture industry by national authorities is warranted.

Inclusion of freshwater turtle species in CITES Appendix II in the past 10 years appears to have gradually resulted in lower volumes of permitted trade compared to pre-CITES authorized trade volumes, in accordance with improved domestic regulation and the adoption of increasingly reduced quotas by Range State Parties over the years, as well as improved regulation of turtle imports by other Parties, and increased enforcement of these regulations resulting from their higher profile as CITES-listed species.

6. Parties may wish to evaluate whether it is warranted to extend this set of measures to other traded freshwater turtle species by including them in the CITES Appendices, with the intention that this will result in more precautionary offtake levels and improved implementation of conservation measures in all Parties

involved in trade. Asian turtle taxa currently not included in the CITES Appendices, but subject to significant trade volumes of wild-collected animals, include the genus *Cyclemys* and the species *Hardella thurjii*, *Morenia petersi*, *Aspideretes leithii*, *Dogania subplana* and *Nilssonina formosa*. Additionally, the North American genera *Chelydra* and *Apalone* feature prominently in the Asian turtle trade and may warrant consideration for listing in the Appendices.

Due to the life history characteristics of late maturity, low fecundity, high juvenile mortality, and long reproductive life-spans, wild turtle populations are highly susceptible to over-exploitation, and sustainable harvest from wild populations is exceedingly difficult if not impossible to achieve. Trade in most Asian turtle species has historically far exceeded sustainable levels, though now decreased by CITES measures as they have been implemented, and continues at an apparently unsustainable high rate, in particular considering the substantial illegal and unreported trade volumes.

7. The Parties need to significantly enhance the monitoring, management, enforcement, and public awareness efforts concerning their wild turtle populations, export and import trade.
8. Alternatively, Parties may choose to give serious consideration to prohibiting all mass trade in wild-sourced turtles and tortoises within their jurisdiction, with allowance only for trade from certified turtle farming facilities that have developed successful closed-cycle operations, and perhaps limited quantities from closely supervised management schemes focused on offtake of juvenile turtles.
9. As the specific reporting format on trade in turtles and tortoises as originally included in Res. Conf. 11.9, and refined in Annex 1 of CoP13 Doc.33, has provided highly valuable information and may be more effective than the inclusion of information into the general biennial reports, Parties may wish to re-evaluate how and in what detail they report progress towards implementation of CITES Res. Conf. 11.9 (Rev. CoP13).
10. Confiscated specimens of rare tortoises and freshwater turtles may have great value for conservation efforts. Substantial expertise and resources exist within IUCN, the public zoo and aquarium community, and the NGO community to assist Parties to deal with confiscated tortoises and freshwater turtles. Parties are urged to engage these partners when evaluating disposal options such as repatriation or addition to in-situ or ex-situ conservation breeding programs.

It is evident that while progress has been made towards trade regulation, sustainable production systems, and conservation measures, the challenges inherent in ensuring the survival of Asian tortoises and freshwater turtles in the wild remain highly significant, and, on-going analyses and evaluation will be needed.

11. Non-governmental organizations and the academic sector need to continue researching, recording, analyzing and disseminating status and conservation information.
12. In the course of this study, it has become evident that there remain significant problems relating to management and enforcement of trade in CITES-listed tortoises and freshwater turtles outside the Asian region, in particular for species from Madagascar, and detailed studies of trade problems for turtles outside Asia are warranted.

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Annex A

Summary of CITES regulations and actions concerning Asian turtle trade during the period 1997-2009.

CoP 10, 1997: Inclusion of *Callagur borneoensis* in App. II by consensus.

CoP 11, 2000: Inclusion of genus *Cuora* (9 species) in App. II by consensus.

Adoption of Res. Conf. 11.9 - *Conservation of and trade in freshwater turtles and tortoises in Asia and other regions*; and adoption of Decisions 11.93 and 11.150.

Technical Workshop on Conservation of and Trade in Tortoises and Freshwater Turtles was held in Kunming, China, 25-28 March 2002.

CoP 12, 2002: Inclusion of *Platysternon megacephalum*, *Annamemys annamensis* [now *Mauremys annamensis*], genus *Heosemys* (4 species; *H. leytenis* now in *Siebenrockiella*), *Hieremys annandalii* [now *Heosemys annandalii*], genus *Kachuga* (6 species, including genus *Pangshura*), *Leucocephalon yuwonoi*, *Mauremys mutica*, *Orlitia borneensis*, *Pyxidea mouhotii* (now *Cuora mouhotii*), *Siebenrockiella crassicollis*, genus *Chitra* (3 species) and genus *Pelochelys* (3 species) in App. II by consensus. [12 proposals, 24 species].

Adoption of Res. Conf. 11.9 (Rev. CoP12) - *Conservation of and trade in tortoises and freshwater turtles*.

Adoption of Decisions 12.41 and 12.42; repeal of Decisions 11.93 and 11.150.

November 2004: P.R. China placed all 18 remaining non-listed native turtle species on Appendix III; *Pelodiscus sinensis* was withdrawn in May 2005 [Notification 2004/074; Notification 2005/029]

CoP13, 2004: Inclusion of *Carettochelys insculpta*, *Chelodina mccordi*, *Malayemys subtrijuga* (incl. *M. macrocephala*), *Notochelys platynota*, and *Amyda cartilaginea* in App. II by consensus. [5 proposals, 6 species].

Adoption of Fritz & Havas Checklist of Turtles as Standard Reference for Turtles.

Adoption of Res. Conf. 11.9 (Rev. CoP13) - *Conservation of and trade in tortoises and freshwater turtles*.

Adoption of Decisions 13.36 and 13.37, superseding Decisions 12.41 and 12.42.

CoP14, 2007: Adoption of Decisions 14.126 (superseding Dec. 13.37 a), Dec. 14.127 (superseding Dec. 13.36), Dec. 14.128 (leading to this study) and Dec. 14.129. Sections b) and c) of Dec. 13.37 were implemented as documented by Doc. AC18 Inf. 12, and CoP14 Doc.57, respectively.

Annex B

Summary of Asian tortoises and freshwater turtles in the Review of Significant Trade during the period 2000-2009.

Cuora amboinensis: Selected for review at AC17 [July 2001]. Reviewed at AC18 [April 2002] based on available information provided in AC18 Doc. 7.1 Annex 2 p.67, and placed in Category 1 for Indonesia, Malaysia, and Viet Nam, with detailed questions to be posed, and placed in Category 3 for SG with some clarification sought regarding regulations regarding transit and re-export [AC18 Summ.Rec. p.71-72]. Responses from Indonesia, Malaysia and SG were presented at AC19 [Aug 2003]; no response was received from Viet Nam. Indonesia provided information on distribution and status but not on the basis of the quota or how it is set. Malaysia reported that the quota is based only on exports in previous years, and observed stocks in collection centers. Singapore reaffirmed its implementation of CITES-compatible regulation of all consignments of turtles. The AC concluded that it was clear that Article IV was not being complied with by Indonesia and Malaysia, and thus retained Indonesia, Malaysia and Viet Nam in Category 1, and recommended that their cases be brought forward to the SC [AC19 Summ.Rec p.60-61]. SC54 [Oct 2006] considered the cases of Indonesia and MY based on further information provided by these parties and summarized in SC54 Doc. 42 p.6. Indonesia reported having reduced its annual quotas from 500,000 specimens before inclusion in Appendix II to 90,000 specimens in 1999 and 18,000 since 2001, and referred to preparations for a status assessment and field study to be carried out by TRAFFIC Southeast Asia (i.e., Schoppe, 2008a, 2009b); Indonesia was removed from the RST following these actions [SC54 Doc. 42 p.6; SC54 Summ.Rec. p. 33]. Malaysia reported that the species was widespread and generally abundant. Several hundred thousands of animals were exported annually before its inclusion in Appendix II. Malaysia established export quotas in 2001 and 2002 (50,000 specimens), which were reduced to 15,000 specimens in 2003 and 2004, and zero for wild-caught specimens in 2005 (to be reviewed only after Malaysia had developed clear methodology for making NDFs for export of turtles and tortoises). Malaysia reported having initiated surveys in 2005 and referred to forthcoming assistance from TRAFFIC Southeast Asia in determining non-detrimental levels of export (i.e., Schoppe, 2008b, 2009a), and further measures to secure the conservation and sustainable utilization of the species included the promotion of captive breeding, active collaboration with China to combat illegal trade and revising its legal protection status. Malaysia was removed from the RST following these actions [SC54 Doc. 42 p.6; SC54 Summary Record p. 33; AC21 WG2 p.1-2]. No response was received from Viet Nam, which remained in Category 1, with AC24 [April 2009] recommending that action be taken by the Secretariat with the AC Chair [AC24 Doc. 7.2 p.3, AC24 Summ.Rec. p.6]. At SC58 [July 2009] the Secretariat noted that reported trade data do not appear to give cause for concern, and that the SC should therefore remove Viet Nam from the RST, while requesting the country to pay particular attention to the correct implementation of the convention for this species [SC58 Doc. 21.1 p.13]. However, the SC recommended that, until the recommendations of the AC have been implemented to the satisfaction of the Secretariat and the AC Chair, all Parties suspend trade in *Cuora amboinensis* with Viet Nam. The SC also instructed the Secretariat to report on these issues at SC61 and to contact and work with Viet Nam to address the AC's recommendations, so that they could be resolved in a manner that addressed the conservation concerns for these species [SC58 Sum. 3 (Rev. 1) (07/07/2009) p. 1].

Cuora flavomarginata: Selected for review at AC17 [July 2001]. Reviewed at AC18 [April 2002] based on available information provided in Doc. 7.1 Annex 2 p.89-101, and placed in Category 2 for China and Category 3 for Japan [AC18 Summ.Rec. p.72]. At AC19 [Aug 2003] China reported that it had suspended commercial export of this species since June 2000; consequently China was placed in Category 3 and was removed from the RST [AC19 Summ.Rec. p.61]. This concluded the RST of *Cuora flavomarginata*.

Cuora galbinifrons: Selected for review at AC17 [July 2001]. Reviewed at AC18 [April 2002] based on available information provided in AC18 Doc. 7.1 Annex 2 p.102-112, and placed in Category 2 for all range States [AC18 Summ.Rec.p.72]. Range States were asked if there had been any reported trade since the completion of the desk based review, and to clarify the legal conditions pertaining to exports of turtles from the Parties. At AC19 [Aug 2003] the AC was informed that China had suspended commercial export of this species since June 2000; consequently China was placed in Category 3 and was removed from the RST [AC19 Summ.Rec. p.61]. No replies were received from Lao PDR and Viet Nam, and the AC recommended that they be placed in Category 1 [AC19 Summ.Rec. p.61]. AC24 [April 2009] recommended that action be taken by the Secretariat with the AC Chair [AC24 Doc. 7.2 p.3, AC24 Summ.Rec. p.6]. At SC58 [July 2009] the Secretariat suggested that, in view of the unsatisfactory conservation status of this species and the indication of some continuing exports from Lao PDR and Viet Nam, the Standing Committee should request the Secretariat to pursue contacts with these countries about the implementation of Article IV, paragraphs 2 (a) and 3 for this species and report to SC59 [SC58 Doc. 21.1 p.14-15]. However, the SC recommended that, until the recommendations of the AC have been implemented to the satisfaction of the Secretariat and

the AC Chair, all Parties suspend trade in *Cuora galbinifrons* with Lao PDR and Viet Nam. The SC also instructed the Secretariat to report on these issues at SC61 and to contact and work with Lao PDR and Viet Nam to address the AC's recommendations, so that they could be resolved in a manner that addressed the conservation concerns for these species [SC58 Sum. 3 (Rev. 1) (07/07/2009) p. 1].

Lissemys punctata: Selected for review at AC17 [July 2001]. Reviewed at AC18 [April 2002] based on available information provided in AC18 Doc. 7.1 Annex 2 p.113-127, and placed in Category 2 for Bangladesh; questions were formulated [AC18 Summ.Rec.:72] and a letter sent by the Secretariat; no response was received, and at AC19 the AC recommended that Bangladesh be placed in Category 1 [AC19 Summ.Rec. p.61]. Revisiting the case, AC24 [April 2009] recommended that action be taken by the Secretariat with the AC Chair [AC24 Doc. 7.2 p.3, AC24 Summ.Rec. p.6]. The Secretariat and the AC Chair concluded that the AC's recommendations for *Lissemys punctata* from Bangladesh had been implemented, and after consultation with the SC Chair, the Secretariat notified Bangladesh that this species had been removed from the RST [SC58 Doc. 21.1 p.5], bringing the review to a close.

Callagur borneoensis: Selected for review at AC 20 [March 2004] [AC20 Summ.Rep. p.28] for all four range states Brunei Darussalam, Indonesia, Malaysia and Thailand, based on the information prepared by UNEP-WCMC [AC20 Doc. 8.5 p.163-164]. The species was discussed at AC21 [May 2005]: replies to correspondence from the Secretariat were received from Indonesia and Malaysia, but not from Brunei Darussalam and Thailand; Indonesia reported a zero quota and was excluded from RST; the other three Parties were retained in the RST [AC21 WG2 Doc.1 (Rev.1) p.6]. Biology, status and trade were reviewed at AC22 [AC22 Doc. 10.2 Annex 4, p.40-46]. No exports have been recorded from Brunei Darussalam; Malaysia reported having set zero quotas for 2005 and 2006; and in Thailand the species is fully protected from exploitation. Authorized trade levels from these three Parties were thus all considered Least Concern [AC22 Summ.Rec. p.14], and these Parties were therefore removed from the RST at AC22, which concluded the RST of *Callagur borneoensis*.

Testudo graeca: Selected for review at AC21 [May 2005] for reported wild-origin exports from Lebanon only [AC21 Summ.Rec. p.26]. No reply was received to the Secretariat's letter of June 2005 [AC22 Doc. 10.3 Annex 1, p.2] and AC22 [July 2006] agreed not to eliminate *Testudo graeca* from Lebanon from the RST. Pertinent information was provided to AC23 [April 2008] by IUCN [AC23 Doc. 8.4 Annex 1, p.3-6], including that commercial export of wild and captive-bred specimens had been banned since June 2004. This ban remains in place and will not be lifted until appropriate regulations are in place. Trade in the species was thus considered to be of least concern, leading to the elimination of the population of Lebanon from the RST and concluding the RST for *Testudo graeca* [AC23 Summ.Rec. p.12].

Heosemys annandalii, *H. grandis*, and *H. spinosa*: Selected at AC23, excluding the populations of Malaysia (which confirmed a zero export quota). Recorded trade in all three species involve large numbers [AC23 Summ.Rec. p.14]. Following correspondence from the Secretariat in May 2008, responses were received from Indonesia, Myanmar, the Philippines and Thailand, documenting their respective trade regulation or species protection measures in force [AC24 Doc. 7.4 (Rev. 1) p.5], and these Parties were thus removed from the Review [AC24 Summ.Rec. p.12]. No responses were received from Brunei Darussalam, Cambodia, Lao PDR and Viet Nam, and these Parties were retained in the RST [AC24 Doc. 7.4 (Rev. 1) p.5; AC24 Summ.Rec. p.12].

Indotestudo forstenii: Selected at AC23. The species' sole range state, Indonesia, reduced its quota to 270 for 2008. A population survey was being conducted [AC23 Summ.Rec. p.14]. AC24 was provided with detailed information on Indonesia's trade in this species, which at 270 individuals per year, some apparently originating from four breeding operations [AC24 Doc. 7.4 (Rev. 1) p.6], was considered no cause for concern and it was removed from the Review at AC24 [AC24 Summ.Rec. p.13], closing the RST for this species.

Testudo horsfieldii: This species was subject to earlier studies of trade and production systems [Theile, 2001: AC17 Inf. 8]. Selected at AC23 because the species is heavily traded, and mainly adult specimens are found in trade. China, which strictly protects its native population, was excluded from the Review [AC23 Summ.Rec. p.14]. Following correspondence from the Secretariat in May 2008, responses were received from Azerbaijan (not a range state), Kazakhstan (no authorized capture or export at present), Kyrgyzstan (not protected, no captive breeding/ranching facilities, sharp decline for which commercial export is perceived to be a major cause) and Uzbekistan (commercial export affecting the species; ranching specimens represent an increasing proportion of total exports [17,000 of 22,000 quota in 2008]). No responses were received from Afghanistan, Armenia (neither Party at time of inquiry nor range state), Islamic Republic of Iran, Pakistan, Russian Federation, Tajikistan and Turkmenistan (non-Party) [AC24 Doc. 7.4 (Rev. 1) p.6]. Following deliberations at AC24, Armenia, Azerbaijan, Kazakhstan and Turkmenistan

were removed from the review, while Afghanistan, Islamic Republic of Iran, Kyrgyzstan, Pakistan, Russian Federation, Tajikistan and Uzbekistan were retained in the RST [AC24 Summ.Rec. p.13]. The AC also decided to bring the matter of very substantial exports from Ukraine (not a range state) to the attention of the SC [AC24 Summ.Rec. p.14].

Amyda cartilaginea: Selected at AC23; only Indonesia was requested to demonstrate its non-detriment finding [AC23 Sum.Rec. p.14], as Malaysia imposed a zero export quota for 2008 and no exports have been recorded from other Parties. Indonesia provided detailed information on trade quantities, size limitations and usage of traded animals, but was unable to estimate population numbers other than considering this a common species. Demand for the species for consumption is increasing, while no registered breeders are on record in Indonesia [AC24 Doc. 7.4 (Rev. 1) p.6-7]. At AC24 Indonesia was retained in the RST because there were no population estimates available, the numbers exported were high and the export quota had recently been substantially increased [AC24 Summ.Rec. p.11].

Orlitia borneensis: Evaluated for inclusion in RST at AC 23 [April 2008] but not retained in Review; however, the AC requested the Secretariat to seek clarification from Lao PDR and Viet Nam regarding their reported trade in this species [AC23 Summ.Rec. p.14]. No responses were received and the species was retained at AC24 [April 2009], where the AC recommended that the Secretariat inform the SC accordingly to take appropriate action [AC24 Summ.Rec. p.6, p.11]. The available session reports from SC58 do not indicate that this case was discussed.

Annex C

Selected confiscations of illegally traded tortoises and freshwater turtles reported by Parties in biennial reports and other sources

Cambodia:

- 2 December 2009: Royal Cambodian Police seized nearly 2 tonnes of wild tortoises and snakes near the Chhrey Thom border checkpoint. It is believed the alleged smugglers brought the reptiles from around the Tonle Sap River and intended to ship them by boat to Vietnam. Police arrested two men caught driving the boat. The shipment included an unreported number of *Indotestudo elongata* and other wildlife species, and were released at an undisclosed location. (<http://www.phnompenhpost.com/index.php/2009120429994/National-news/tonnes-of-reptiles-seized-at-border.html> ; Phnom Penh Post, 4 December 2009).
- 30 March 2009: The Wildlife Rapid Rescue Team (WRRT) rescued 150 live animals from wildlife traders in Pursat Province. The shipment, weighing 381 kgs, included 47 *Heosemys annandalii*, 1 *Amyda cartilaginea*, 2 *Python molurus bivittatus*, and other vulnerable, threatened and endangered species. (<http://wildlifealliance.org/news-events/press-releases/wildlife-traders-apprehended.html>).
- On 9 November 2008, Cambodia's Wildlife Rapid Rescue Team (WRRT) rescued hundreds of live reptiles from traffickers in Kg Chnnang Province. More than 120 kg of turtles and tortoises (mainly *Amyda cartilaginea*, with some *Heosemys annandalii* and *Malayemys subtrijuga*) and 165 kg of snakes (including *Python reticulatus*, *Python molurus* and *Ophiophagus hannah*) were recovered from two vehicles headed for the Viet Nam border. Two people were arrested. (www.asean-wen.org/index.php?option=com_content&view=article&id=75:major-wildlife-law-enforcementactions-southeast-asia-july-december-2008&catid=34:lawenforcement-actions&Itemid=86; TRAFFIC Bulletin Vol.22 (2), June 2009).
- On 28 April 2008, authorities seized a cargo (418.5 kg) of live pythons and turtles in Battambang Province that was being smuggled from Thailand into Cambodia. The animals included 68 *Cuora amboinensis*, 175 *Malayemys subtrijuga*, 7 *Siebenrockiella crassicollis*, and 12 *Heosemys annandalii*, as well as 11 *Python reticulatus* and 13 *Python molurus*. Most of the animals, which had been illegally collected in Cambodia and then held in a holding facility in Thailand before shipping to Viet Nam by road through Cambodia, were released into their natural habitats, including Tonle Sap lake. Yellow-headed Temple Turtles, which are depicted on the walls of the Angkor temples, are of special cultural significance in Cambodian folklore and legend. (<http://www.wildlifealliance.org/news/press-releases/successful.html>; <http://afp.google.com/article/ALeqM5hF2MtvP6dDNTdR0jJ-C2779CzlpA>, 1 May 2008).
- 29 November 2005: Cambodian authorities supported by NGO partners seized 17 *Indotestudo elongata*, 1 *Heosemys annandalii*, 5 *H. grandis*, 5 *Malayemys subtrijuga*, 2 *Amyda cartilaginea*, boar meat and live snakes from a well-known wildlife trader in Kampong Cham. The live animals were checked for health and released into natural habitat in Mondulhiri province (<http://wildlifealliance.org/news-events/press-releases/well-known-wildlife-trader.html> Page)
- 12 August 2005: Cambodian authorities supported by NGO partners seized 12 *Indotestudo elongata*, 1 *Cuora amboinensis*, 9 *Heosemys annandalii*, 3 *Malayemys subtrijuga*, 2 *Amyda cartilaginea* and a watersnake from a known wildlife trader's house in Phnom Penh. The animals, stockpiled in anticipation of export to Vietnam, were health-checked and then released at Bokor NP; the trader was fined. (<http://wildlifealliance.org/news-events/press-releases/successful-raid-with-us.html>)
- 12 July 2005; Cambodian authorities supported by NGO partners seized 54 *Indotestudo elongata*, 9 *Heosemys grandis*, 18 kg turtle shellbones, a wide variety of live and butchered wildlife, and AK47 bullets, from a known wildlife trader's house in Mondulhiri. The animals and parts were intended for export to Vietnam. The live animals were released into the wild, the animal parts were seized as evidence, and the trader was placed under house arrest pending trial. (<http://wildlifealliance.org/news-events/press-releases/wildlife-trader-under-house.html>)

China:

- On 3 March 2008, the Ruili Customs of Yunnan Province seized 19 Burmese Eyed Turtles *Morenia ocellata* (CITES I), one Elongated Tortoise *Indotestudo elongata* (II) and 177 Indian Flapshell Turtles *Lissemys*

punctata (II), which had been smuggled from Myanmar. Two suspects were detained. (*TRAFFIC Bulletin*, Vol 22 (1), October 2008).

On 1 February 2008, anti-smuggling officers searching a vessel in Shantou, Guangdong Province, seized 5776 monitor lizards *Varanus* (CITES I/II), 260 Malaysian Box Turtles *Cuora amboinensis*, and 370 Giant Asian Pond Turtles *Heosemys grandis* (the latter two both CITES II species and all nationally protected), as well as 1170 cobras. The animals were reported to have been smuggled from South-east Asia. Three suspects were detained and several are being sought. Most of the animals had perished. (*TRAFFIC Bulletin*, Vol 22 (1), October 2008)

On 8 June 2005 in Ruili, Yunnan, one suspect was detained for import of unknown quantity of tortoises and freshwater turtles hidden in goods (China, biennial report 2005-2006).

On 26 May 2004, forestry officials in Yunnan province, at the border with Myanmar, seized a 500kg shipment of shells of tortoises and freshwater turtles coming into the country. These are estimated to derive from some 5000 specimens, including *Indotestudo elongata*, *Orlitia borneensis*, and *Morenia ocellata*. They were reported to have been destined for sale in Chengdu city in Sichuan province, where the largest TCM market in south-east China is located. (*TRAFFIC Bulletin*, Vol. 20 (2), February 2005)

Hong Kong SAR:

On 9 February 2009, at Hong Kong International Airport, Agriculture, Fisheries and Conservation Department personnel, in collaboration with the Customs and Excise Department, foiled an attempt by a Hong Kong resident to import in his luggage two Angonoka (Ploughshare) Tortoises *Astrochelys yniphora* (CITES I), and 44 small mammals, from Thailand. The man will be charged under the *Prevention of Cruelty to Animals Ordinance (Cap 169)*, the *Protection of Endangered Species of Animals and Plants Ordinance (Cap 586)*, and the *Rabies Ordinance (Cap 421)*. (Agriculture, Fisheries and Conservation Department press release, 10 February 2009).

On 9 January 2007, at Tsuen Wan Magistrates' Court, a Chinese male was fined HKD16,000 and sentenced to six months' imprisonment, suspended for two years, following his attempt the previous day to import an illegal shipment of animals from Thailand, destined for China, through Hong Kong International Airport. The Agriculture, Fisheries and Conservation Department (AFCD) and Customs officials arrested the man following the detection in his luggage of 46 turtles/tortoises : Three-keeled Land Tortoise *Melanochelys tricarinata*, Black Pond Turtle *Geoclemys hamiltonii*, Radiated Tortoise *Astrochelys radiata*, true tortoises Testudinidae spp., and other CITES-listed reptiles as well as non-listed flying squirrels *Petaurista* spp. The requisite permit and health certificates were missing. The man was charged under the *Protection of Endangered Species of Animals and Plants Ordinance, Cap 586*, and the *Rabies Ordinance, Cap 421*. (Agriculture, Fisheries and Conservation Department, Hong Kong, press release, 9 January 2007)

On 17 January 2006, Customs officers at Kwai Chung Customhouse seized 25 cartons of turtle plastrons (the bony plate forming the ventricle part of the turtle) from an incoming container. The consignment, weighing a total of 897 kg, consisted of 602 kg of *Cuora amboinensis*, 260 kg of *Siebenrockiella crassicollis* and 35 kg of *Orlitia borneensis* (all CITES II), collectively comprising approximately 10,000 whole and broken turtle plastra. The plastra were concealed under dried snakes in a container declared as dry snakes and *Trachemys scripta elegans*. The consignment had been shipped from Indonesia to Hong Kong on 14 January, for re-export to the Mainland. No arrests were made. The seized goods were handed over to the Agriculture, Fisheries and Conservation Department (AFCD) for further investigation. (*TRAFFIC Bulletin*, Vol. 21 (1), July 2006; http://www.iucn-iftsg.org/turtlelog_online_newsletter/tln004/).

On 4 November 2004, Hong Kong Customs officials apprehended a local resident who had arrived from Thailand. In his baggage were 23 *Astrochelys radiata*, 7 *Geochelone elegans*, 3 *Stigmochelys pardalis* and 1 monitor lizard. He was later prosecuted and fined HKD30000 (USD3800). (*TRAFFIC Bulletin*, Vol. 20 (2), February 2005).

On 27 June 2004, Customs officials at Kwai Chung Terminal examining an unclaimed container from Malaysia found 3580 dead turtles (including *Cuora amboinensis*, *Heosemys grandis* and *Siebenrockiella crassicollis*). Since the owner could not be traced, the Agriculture, Fisheries and Conservation Department applied for a court order to forfeit the specimens. (*TRAFFIC Bulletin*, Vol. 20 (2), February 2005).

1 March 2004: Hong Kong customs officials seized 307 Indian star Tortoises and arrested the Malaysian man who tried to smuggle them in on a flight from Kuala Lumpur. (*The Star (Malaysia)*, 3 March 2004, page 29).

On 11 March 2002, the Anti-Smuggling Taskforce seized some 9000 live freshwater turtles from the cargo holds of two mainland vessels off Po Toi Island, southeast of Hong Kong, close to mainland waters. Eleven crew members were arrested. The consignment had been issued with a health certificate by Thai authorities and was imported from Bangkok by cargo plane on the same day. However, there was no export document. The turtles had been taken to the cargo handling area in Wan Chai by an employee of a local company. About 30 police and Customs officers then mounted a surveillance operation during which time the boxes were seen to be loaded on to a fishing boat and later transferred to another boat off Po Toi Island, where police speedboats were sent to intercept them. The consignment was reported to be destined for Huiyang, Guangdong. (*TRAFFIC Bulletin*, Vol. 19 (2), November 2002).

On 11 December 2001, an illegal shipment of 9300 live turtles was seized at the Yau Ma Tei Public Cargo Working Area during a joint operation involving the Customs Ship Search and Cargo Command and the Agriculture Fisheries and Conservation Department (AFCD). This is the largest ever seizure of live turtles in Hong Kong. The animals, en route from Singapore via Macau to China, were in four three-metre containers and were intended for the food trade. They were in a poor condition, and had clearly been caught in the wild: many still had hooks in their mouths. They were placed at the Wild Animal Rescue Centre at Kadoorie Farm and Botanic Garden (KFBG) for identification and initial triage. With the help of the IUCN Turtle Survival Alliance (TSA), the turtles were placed with reputable establishments throughout the USA and at EAZA-registered zoos in Europe for rehabilitation and long-term management. The species included *Manouria emys*, *Batagur baska*, *Batagur (Callagur) borneoensis*, *Cuora amboinensis*; *Cyclemys* spp. *Heosemys annandalii*, *Heosemys grandis*, *H. spinosa*, *Malayemys subtrijuga*, *Notochelys platynota*, *Orlitia borneensis*, and *Siebenrockiella crassicolis* (*TRAFFIC Bulletin*, Vol. 19 (2), November 2002).

Taiwan

On 22 July 2009, Taipei Customs found 21 CITES App I tortoises and turtles (2 *Astrochelys yniphora*, 12 *Astrochelys radiata* and 7 *Geoclemys hamiltonii*) hidden inside a pile of boxes from an Air Cargo from Hong Kong. Animals will be sent to a rescue center in Taipei Zoo, and the case is under investigation for violating Wildlife Conservation Act. The violator can be punished with 6 months to 5 years imprisonment and fine of TWD 300,000 to 1.5 million. (http://www.cdnews.com.tw/cdnews_site/docDetail.jsp?coluid=112&docid=100844101)

India:

Substantial quantities of Indian Star Tortoises, *Geochelone elegans*, have been confiscated at intervals during attempts to be smuggled out of India, and arrests of domestic traders have been made. India has also consistently acted against domestic trade in tortoises and freshwater turtles.

On 22 January 2009, more than five tonnes of tortoises—some 3000 animals—were seized in Allahabad, Uttar Pradesh, by the Special Task Force (STF) of the Uttar Pradesh police. This is one of the largest freshwater turtle hauls ever recorded. Three species listed in Schedule 1 of the *Wild Life (Protection) Act* were identified: Indian Softshell Turtle *Aspideretes gangeticus* (CITES I), Black Pond Turtle *Geoclemys hamiltonii* (I) and Indian Flapshell Turtle *Lissemys punctata punctata* (II). The reptiles were contained in 60 jute sacks, some 50–55 specimens in each. They were released under a court order on the banks of the Yamuna, in the presence of STF officers, Uttar Pradesh State Forest Department officials, and two representatives from the Wildlife Protection Society of India (WPSI) who assisted in the case. Three people, who were transporting the turtles in a lorry, were arrested and sent to Naini Jail. (*TRAFFIC Bulletin* Vol.22 (2), June 2009)

On 7 February 2009, a car carrying three tonnes of live tortoises [species not reported], again sourced from Uttar Pradesh and bound for Kolkata, was seized at a forest checkpoint near Barachatti in Gaya, Bihar (*TRAFFIC Bulletin* Vol.22 (2), June 2009).

On 2 August 2008, Customs officials at Chennai Airport, Tamil Nadu, seized 950 live Indian Star Tortoises *Geochelone elegans* (CITES II) from the baggage of a city resident bound for Bangkok via Colombo. (*TRAFFIC Bulletin*, Vol 22 (1), October 2008)

Consignments of Indian Star Tortoises were reported seized at Anna International Airport, Chennai, on 25 and 30 July, 3, 26, and 29 October, 28 November, 18, 27 and 28 December 2007, involving 870, 320, 333, 555, 599, 909, 900, 621 and 657 specimens, respectively. Where reported, the animals were destined for Bangkok, Kuala Lumpur and Sri Lanka. (<http://www.smh.com.au/news/unusual-ales/smugglers-caught-at-airport-with-870-tortoises/2007/07/25/1185043145846.html>;

<http://newstodaynet.com/newsindex.php?section=7&id=1297>;
<http://newstodaynet.com/newsindex.php?section=7&id=1455>;
<http://newstodaynet.com/newsindex.php?section=7&id=2434>;
<http://newstodaynet.com/newsindex.php?section=7&id=3229>;
<http://newstodaynet.com/newsindex.php?section=7&id=3563>; TRAFFIC Bulletin 21(3), January 2008).

On 19 and 22 October 2007, 610 and 365 Indian Star Tortoises, respectively, were seized at Mumbai international airport from passengers on their way to Bangkok. On 24 August 2007, two persons were remanded in custody after 2016 Star Tortoises were seized from them after checking in at Mumbai international airport to board a flight to Kuala Lumpur. (<http://www.expressindia.com/latest-news/975-star-tortoises-res-cued-sent-to-Sanjay-Gandhi-park-for-care/231595/>; TRAFFIC Bulletin 21(3), January 2008).

7 July 2007: 681 Star Tortoises were seized at Yeshwantpur railway station, Shivajinagar, bound for Howrah, West Bengal (TRAFFIC Bulletin 21(3), January 2008).

22 March 2007: over 1200 Star Tortoises were seized and two Indian nationals arrested at Mumbai Airport, bound for Malaysia via Colombo

(<http://www.dnaindia.com/report.asp?NewsID=1086534>).

23 November 2006: 430 Star Tortoises were seized and a passenger from Tamil Nadu bound for Kuala Lumpur was arrested at Mumbai Airport; Kuala Lumpur was believed to be a transit point with Europe being the tortoises' intended final destination. The animals were placed with the Sanjay Gandhi NP authorities for release.

15 October 2006: 447 Star Tortoises, procured from Chennai, were seized at Bangalore Airport (HAL), Karnataka, destined for Kuala Lumpur. The animals were handed over to the Forest Department of India

(<http://www.thehindu.com/2006/10/15/stories/2006101518390400.htm>).

13 September 2006: 1460 *Geochelone elegans* were seized at Chennai Airport from a Malaysian national on a Kuala Lumpur-bound flight

(<http://www.hindu.com/thehindu/holnus/401200609131431.htm>).

2005: a passenger was apprehended boarding a Malaysia-bound flight with 989 Star Tortoises. A total of 3207 Star tortoises were reportedly seized in the course of 2005

(<http://www.hindu.com/thehindu/holnus/401200609131431.htm>).

27 August 2003. Two persons were arrested at Chennai Airport trying to board a flight to Singapore with 960 Indian Star Tortoises. On 7 August 2003, at Chennai Airport, authorities of the Deputy Directorate of Wildlife, Southern Region, seized 900 Star Tortoises *Geochelone elegans* from the luggage of a passenger bound for Singapore. The man was taken into custody but later escaped. The tortoises were released in Guindy National Park (TRAFFIC Bulletin, Vol. 19(3), November 2003). Over 2100 Star Tortoises had been seized at Chennai airport during the previous month and four arrests had been made

(http://news.bbc.co.uk/2/hi/south_asia/3185773.stm), while an additional 2000 tortoises were confiscated during September 2003-January 2004

(<http://timesofindia.indiatimes.com/cms.dll/html/uncomp/articleshow/450803.cms>)

Indonesia:

Several cases of illegal trade involving tortoises and freshwater turtles were recorded by Indonesia, involving both export of native species and import of exotic species.

30 June 2006: 7000 *Amyda cartilaginea* were attempted to be smuggled from Tembilahan, Riau, Indonesia, to Hong Kong. 310 *Amyda* were returned to Indonesia. No details are available on prosecution of smuggler. (Indonesia, biennial report 2005-2006)

15 June 2006: 2520 *Cuora amboinensis* were attempted to be smuggled from Batam, Riau, Indonesia, to Singapore. The surviving 57 *Cuora* were repatriated to Batam. The smuggler was imprisoned for 5 months and fined SGD 20,000 by the Singapore Government. (Indonesia, biennial report 2005-2006)

- 7 June 2006: 10 *Geochelone elegans* confiscated from pet shop 2, Sumatra (Indonesia, biennial report 2005-2006)
- 7 June 2006: 10 *Geochelone elegans* confiscated from pet shop 3, Sumatra (Indonesia, biennial report 2005-2006)
- 6 June 2006: 9 *Geochelone elegans* confiscated from pet shop 1, Medan, Sumatra (Indonesia, biennial report 2005-2006)
- 5 November 2005: illegal possession registered of 1 *Astrochelys radiata* at Soekarno Hatta Airport, Jakarta. (Indonesia, biennial report 2005-2006)
- 16 August 2005: Reported smuggling of 14 *Batagur baska*, 20 *Indotestudo forstenii*, 19 *Manouria emys*, 1 *Orlitia borneensis*, 21 *Chelodina novaeguineae*, 15 *Cyclemys oldhamii*, and 15 *Geoemyda spengleri*, at Manado. Investigated and processed by Sulawesi Police Office. (Indonesia, biennial report 2005-2006)
- 4 June 2005: 4 *Astrochelys radiata*, 17 *Kinixys erosa*, 1 *Pyxis planicauda*, 5 *Chelonoidis carbonaria* confiscated at Soekarno Hatta Airport, Jakarta. (Indonesia, biennial report 2005-2006)
- 4 June 2005: 6 *Astrochelys radiata*, 2 *Geochelone sulcata*, 1 *Geochelone platynota*, 1 *Chelus fimbriatus*, 7 *Trachemys scripta* confiscated at Soekarno Hatta Airport, Jakarta. (Indonesia, biennial report 2005-2006)
- 14 March 2005: 7275 *Carettochelys insculpta* seized at Surabaya, en route from Merauke. (TRAFFIC Bulletin, 1997-2008).
- 11 Sept 2004: 21 *Leucocephalon yuwonoi* seized from trader in Sulawesi. (TRAFFIC Bulletin, 1997-2008).
- 29 Feb 2004: attempt foiled at Jakarta Airport to smuggle 309 hatchling *Carettochelys insculpta* to Japan, following 2 earlier Japan-bound shipments of 100 and 390 juveniles of this species.
- 12 July 2002: 113 *Batagur baska* and 1423 *Cuora amboinensis* stopped in illegal transit from Banjarmasin, South Kalimantan, to Guangzhou, China. (TRAFFIC Bulletin 19(2), Nov.2002)

Japan:

- On 12 June 2008, two people were sentenced at Tokyo District Court to gaol for, respectively, a year and ten months and a year and six months (suspended for three years), and fined JPY800 000 (USD7453) and JPY400 000. The pair had illegally imported nine Lesser Slow Lorises *Nycticebus pygmaeus* and five Radiated Tortoises *Astrochelys radiata* from Bangkok, Thailand, between February 2007 and November 2007. All except two lorises had been sold. (TRAFFIC Bulletin, Vol 22 (1), October 2008)
- On 5 December 2007, officers of the Consumer and Environmental Protection Division of Tokyo Metropolitan Police Department arrested a former pet shop owner for falsifying registration cards and selling two Radiated Tortoises *Astrochelys radiata*. The registration card is needed to trade legally in species protected under the *Law for the Conservation of Endangered Species of Wild Fauna and Flora* (LCES). The suspect created the registration cards for the tortoises from a card he already had for trade in Asian Arowana *Scleropages formosus* and sold them to a pet shop. (TRAFFIC Bulletin, Vol 22 (1), October 2008)
- On 21 July 2007, the president of one of Japan's biggest reptile wholesalers was sentenced following his conviction on charges relating to fraudulent registration and fraudulent trading of reptiles during 2004 to 2005, including Radiated Tortoises, *Astrochelys radiata*. Two smugglers providing the tortoises to the wholeseller were sentenced to jail time and fines (TRAFFIC Bulletin 21(3), January 2008).
- In August 2004, two persons smuggled Radiated Tortoises (*Astrochelys radiata*) by Express Mail Service from Bangkok, Thailand, and sold them on an internet auction site during September and October of the same year. Tokyo Metropolitan Police Department arrested them on suspicion of the violation of the Foreign Exchange and Foreign Trade Control Law, and the Law for the Conservation of Endangered Species of Wild Fauna and Flora; 3 other suspects who bought these tortoises were also arrested in January 2005. (Japan, biennial report 2005-2006).
- In 2003, a pet-shop manager smuggled Radiated Tortoises and other protected species; Tokyo Metropolitan Police Department arrested 5 suspects including the manager on suspicion of the violation of Article 157 of

the Criminal Law (false entry in a license), the Foreign Exchange and Foreign Trade Control Law, and the Law for the Conservation of Endangered Species of Wild Fauna and Flora until March 2006. (Japan, biennial report 2005-2006).

Jordan

Confiscations involving Greek Tortoises were reported by Jordan, but no details were provided (Jordan, biennial report 2003-2004: page 3).

Malaysia:

In September 2007, Department of Wildlife and National Parks (PERHILITAN) officials at Kuala Lumpur International Airport seized 37 Radiated Tortoises *Astrochelys radiata* and two Ploughshare Tortoises *Astrochelys yniphora* from luggage in transit to Penang. It is unclear why the owner was not stopped in Penang. The reptiles were transferred to Malacca Zoo, PERHILITAN's official rescue centre. (<http://thestar.com.my/news/story.asp?file=/2007/10/21/nation/19211556&sec=nation>; TRAFFIC Bulletin 21(3), January 2008).

12 June 2007: 76 Leopard Tortoises *Geochelone pardalis* were seized at the Low Cost Carrier Terminal in Sepang, Selangor. Discussions were still under way in October with the Government of Tanzania to decide the fate of the reptiles. (<http://thestar.com.my/news/story.asp?file=/2007/10/21/nation/19211556&sec=nation> ; TRAFFIC Bulletin 21(3), January 2008).

In April 2007, 404 Indian Star Tortoises were seized from an Indian national upon arrival at Kuala Lumpur. In late June 2007, the surviving 385 Indian Star Tortoises were repatriated to India. (TRAFFIC Bulletin 21(3), January 2008; <http://www.mumbaimirror.com/index.aspx?Page=article§name=News%20-%20World§id=4&contentid=200706260230366094b588265>; <http://www.smh.com.au/news/unusual-ales/smugglers-caught-at-airport-with-870-tortoises/2007/07/25/1185043145846.html>).

Pakistan:

In March 2009, Sindh Wildlife Department officials seized a consignment of some 550 Horsefield's Tortoises *Testudo horsefieldii* (CITES II) from the cargo compartment of a Quetta-Karachi bound train. The Pakistan Railways must check before registering any cargo to see what it holds; these boxes had been officially registered as normal cargo. Daulat Khan was arrested and fined Rs2000 (USD40). He was ordered to sign an agreement that he will stop capturing and trading tortoises; if he reoffends he will be fined Rs0.5 million. The tortoises were to be released in the wild. They had been collected from the apple and grape orchards of Quetta, Naushaki and other districts of Balochistan; they were to be sold at market in Karachi. Fish aquaria in Karachi have apparently started to keep this species as showpieces and the reptile is also in demand in the pet trade. (www.dailytimes.com.pk/default.asp?page=2009%5C03%5C05%5Cstory_5-3-2009_pg12_6, 5 March 2009; TRAFFIC Bulletin Vol.22 (2), June 2009)

Singapore:

In June 2006, a turtle importer was caught smuggling 632 Asian soft-shelled turtles [*Amyda cartilaginea*]. He was subsequently prosecuted and fined \$10,000 for the offence. The turtles were confiscated and the surviving ones repatriated to Indonesia. (Singapore, biennial report 2005-2006).

On 13 or 15 June 2006, 2520 *Cuora amboinensis* (II) and an unreported number of *Dogania subplana* and *Cyclemys dentata* were confiscated in Singapore on 13/15 June 2006, en route from Batam, Riau, Indonesia, to Hong Kong. The surviving 57 *Cuora* were repatriated to Batam. The smuggler was imprisoned for 5 months and fined SGD 20,000 by the Singapore Government. (Singapore, biennial report 2005-2006).

Nearly 2500 *Geochelone elegans* were seized by Singaporean authorities during May-August 2002, of which 1830 were repatriated, and about 600 perished during smuggling or while in holding facilities. (http://www.thewe.cc/contents/more/archive/august2003/rare_tortoises_escape_hand-luggage_hell.htm).

Thailand

On 1 February 2007, some 1000 Indian Star Tortoises being smuggled into the country were seized by Bangkok Customs officers (<https://www.timesonline.co.uk/article/0,,25689-2576995,00.html>).

On 26 June 2006, authorities at Don Muang Airport, Bangkok, seized a shipment of 63 Black Marsh Turtles *Siebenrockiella crassicollis*, one *Malayemys subtrijuga*, and 245 Malayan Pangolins *Manis javanica*. The cargo was in transit from Penang, Malaysia, to Lao PDR. Two Thai nationals were held for questioning. The animals had been concealed in 60 crates falsely declared as Red-eared Sliders *Trachemys scripta elegans*, an unprotected North American freshwater turtle (TRAFFIC Bulletin, Vol. 21 (1): July 2006).

United Arab Emirates

The following confiscations were recorded in 2006: 8 March (or 3 August) 2006: 41 *Testudo graeca terrestris* from Syria confiscated at Abu Dhabi; 23 May 2006: unreported number of *Testudo graeca terrestris* from Syria confiscated at Abu Dhabi; 21 Sept 2006: 60 *Testudo graeca* from Syria confiscated at Al Ghuaifat; 24 Sept 2006: 60 *Testudo* spp. (unknown origin) confiscated at Abu Dhabi International Airport; 8 Nov (or 11 Aug) 2006: 45 *Testudo* spp. (unknown origin) confiscated at Abu Dhabi – Saudi Arabia border; 12 Nov (or 11 Dec) 2006: 4 *Testudo* spp. (unknown origin) confiscated at Abu Dhabi (UAE Biennial Report 2005-2006, p. 23).

United Arab Emirates / Abu Dhabi

9 September 2005: confiscation of 100 live Testudinidae (originating from Syria) at UAE-Saudi Arabia border post (UAE Biennial Report 2005-2006, p. 19).

United Arab Emirates / Dubai & Northern Emirates

30 October 2005: confiscation at Dubai Airport of 2 Testudinidae, originating from Azerbaijan.

13 July 2005: confiscation at Sharjah Airport of 1 *Testudo graeca* of unknown origin (UAE Biennial Report 2005-2006, p. 21).

6 March 2005 (or 3 June 2005): confiscation at Dubai Airport of 2 Testudinidae originating from Iran (UAE Biennial Report 2005-2006, p. 20).

28 January 2005: confiscation at Dubai Airport of 1 *Testudo graeca* of unknown origin on (UAE Biennial Report 2005-2006, p. 20).

Viet Nam

No recent turtle seizures have been reported in biennial reports, but the Vietnamese authorities have a long track record of acting against illegal domestic and international trade in tortoises and freshwater turtles. Available information documents a minimum of 19 cases, involving over 1900 live turtles plus a 20-foot container of turtle shells in 2009; 21 cases, 1870+ turtles in 2008; 23 cases, 1140+ turtles in 2007; 20 cases, 700+ turtles in 2006; 15 cases, 900+ turtles in 2005; 13 cases, 2260+ turtles in 2004; 3 cases, numbers not reported (7 species) in 2002; 3 cases, 400+ turtles in 2001; 21 cases, 3800+ turtles in 2000; 11 cases, 800+ turtles in 1999; and 5 cases, 600+ turtles in 1998 (ENV-ATCN records, 1996-2009; TRAFFIC Bulletin, 1997-2008).

In July 2008, environment police and Customs officers acting on information seized more than two tonnes of live snakes and 770 kg of tortoises being transported by lorry in Quang Ninh Province, destined for China. It was reported that the animals, all in good condition, had been illegally imported from Lao PDR and may have been bound for Chinese restaurants. The specific species involved was not reported but the tortoises were said to consist of six species listed in CITES. All animals were transferred to the Soc Son Wild Animal Rescue Center in Ha Noi. (TRAFFIC Bulletin, Vol 22 (1), October 2008)

Croatia

On 1 April 2007, at Zagreb Airport, Customs officers stopped a Croatian citizen returning from Bangkok, Thailand, via Budapest, Hungary, after he was found to be carrying in his luggage 10 Radiated Tortoise *Astrochelys radiata* and 175 chameleons. The animals were confiscated and placed in quarantine. All specimens originated from Madagascar. Owing to the failure of the perpetrator to declare the goods and present the requisite veterinary and CITES documents, a court hearing is pending. On 30 May it was confirmed that the surviving specimens had been returned to Antananarivo. All the tortoises survived; only about half the original number of Chameleons survived and were repatriated. (Ministry of Culture, Nature Protection Directorate, Zagreb; TRAFFIC Bulletin, Vol. 21 (2), July 2007).

Madagascar

5 June 2009: 9 *Astrochelys yniphora* and 355 *A. radiata* were seized hidden in the suitcase of a passenger destined for Bangkok, Thailand. The passenger failed to board the plane. (<http://www.laverite.mg/societe-a-madagascar/nouvelle-saisie-a-laeroport-divato.html>; the initial report noted 364 Radiated tortoises, expert verification documented 9 *yniphora* among 355 *radiata* [R.Lewis, pers.comm.]).

United States of America

On 1 April 2008, an American citizen from Diamond Bar, California, was sentenced to 6.5 months' imprisonment and a further 6.5 months of home detention for participating in the smuggling of Asian tortoises into the country. He had earlier pleaded guilty to smuggling and conspiracy charges and in his plea agreement admitted to receiving Radiated Tortoises *Astrochelys radiata* (CITES I) and Indian Star Tortoises *Geochelone elegans* (CITES II) from an accomplice in Singapore and smuggling the specimens into the country. The accomplice has been charged with conspiracy, smuggling and money laundering but remains at large. (TRAFFIC Bulletin, Vol 22 (1), October 2008; http://www.washingtonpost.com/wp-dyn/content/article/2007/05/18/AR2007051800023_pf.html)

31 August 2007: The owner of a Brooksville, FL, reptile company pleaded guilty to smuggling 46 Indian Star and Burmese Star tortoises from Singapore in 2002. (<http://www2.tbo.com/content/2007/aug/31/brooksville-man-admits-smuggling-46-rare-tortoises/?news-breaking>)

Seizures in Newark, New Jersey, included a shipment of Asian medicinals valued at \$6,000 that contained products made from seal, seahorse, antelope, and tortoise. (USA, Biennial report 2005-2006: 35)

A Miami man was sentenced to serve 24 months in Federal prison for conspiring to smuggle CITES-listed wildlife into the United States from southeast Asia. The defendant and a co-conspirator from Singapore smuggled more than 500 animals (reptiles and primates) with a market value of between \$200,000 and \$400,000. The co-conspirator received a 37-month sentence in December 2003. (USA, Biennial report 2005-2006: 38)

Two other individuals involved in smuggling protected reptiles from southeast Asia pleaded guilty to felony violations. One was fined \$1,000 and ordered to spend three years on probation, while the other must pay a \$2,500 fine. (USA, Biennial report 2005-2006: 38)

A person from Orange County, California, was sentenced to one year probation and fined \$5,000 for smuggling 10 CITES Appendix-II Indian star tortoises into the United States. The tortoises were shipped from Singapore in a mail package labeled as containing toy cars. (USA, Biennial report 2005-2006: 38)

A San Francisco, California, man who smuggled 36 rare tortoises into the United States via express mail was sentenced to serve five months in Federal prison followed by five months home detention. CITES species involved included Appendix-I Madagascar radiated tortoises and Appendix-II Indian star tortoises and Burmese star tortoises. (USA, Biennial report 2005-2006: 38)

A Virginia man who pleaded guilty to illegally importing and possessing CITES-listed tortoises, including Appendix-I Madagascar radiated tortoises and Appendix-II Indian star tortoises, was fined \$15,000 and was placed on probation for four years. The USFWS investigation showed that the man, who was offering the reptiles for sale via the Internet, brought in three shipments of tortoises from Singapore in violation of CITES. (USA, Biennial report 2005-2006: 38)

A reptile smuggler based in Washington State was sent to prison for two years for the unlawful importation of more than 230 reptiles from Thailand; the shipments, valued at over \$30,000, entered the United States in falsely labeled express mail packages. (USA, Biennial report 2005-2006: 38)

5 March 2004: reptile smugglers were convicted in Milwaukee, Wisconsin, of smuggling protected species and money laundering involving Singapore and Thailand. There was also evidence of conspiracy to commit human trafficking (TRAFFIC Bulletin, vol. 20(1), July 2004)

A Singaporean pet trader was arrested upon entering the USA on 28 June 2003 and indicted by a federal grand jury in Orlando, FL, following confiscation of a consignment of Indian Star Tortoises and Fly River Turtles in January 2003 in Memphis, TN. (TRAFFIC Bulletin, vol. 19 (3), November 2003)

Annex D

Export Quotas for specimens of Asian Tortoises and Freshwater Turtles reported to the CITES Secretariat /
 Cupos de exportación para especímenes de tortuga asiática (especies de agua dulce y de la tierra) fueron reportados a la Secretaría de CITES /
 Quotas d'exportation relatifs aux spécimens d'espèces des tortues asiatiques rapportées aux Secrétariat CITES

Party / Parte / Partie	Species / Especies / Espèces	Specimens / Especímenes / Types de spécimens	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Indonesia / Indonésie	<i>Amyda cartilaginea</i>	live/vivos/spécimens vivants						27,000	27,000	27,000	25,200	25,200
Indonesia / Indonésie	<i>Callagur borneoensis</i>	live/vivos/spécimens vivants	180	180								
Indonesia / Indonésie	<i>Cuora amboinensis</i>	live/vivos/spécimens vivants	6,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Indonesia / Indonésie	<i>Heosemys spinosa</i>	live/vivos/spécimens vivants				2,000	1,800	1,800	1,800	1,800	450	450
Indonesia / Indonésie	<i>Indotestudo forstenii</i>	live/vivos/spécimens vivants	45	450	400	500	475	475	475	475	270	270
Indonesia / Indonésie	<i>Leucocephalon yuwonoi</i>	live/vivos/spécimens vivants				100	100	100	100	100		
Indonesia / Indonésie	<i>Malayemys subtrijuga</i>	live/vivos/spécimens vivants							475	475	180	180 (max 15 cm CL)
Indonesia / Indonésie	<i>Manouria emys</i>	live/vivos/spécimens vivants	450	450	450	500	475	475	475	475		
Indonesia / Indonésie	<i>Notochelys platynota</i>	live/vivos/spécimens vivants							1,350	1,350	450	450 (max 15 cm CL)
Indonesia / Indonésie	<i>Pelochelys bibroni</i>	live/vivos/spécimens vivants				90	90	90	90	90	90	90
Indonesia / Indonésie	<i>Pelochelys cantorii</i>	live/vivos/spécimens vivants				100	90	180	180	180	90	90 (max 15 cm CL)
Indonesia / Indonésie	<i>Siebenrockiella crassicollis</i>	live/vivos/spécimens vivants				4,500	4,500	4,500	4,500	4,500	4,500	4,500
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Amyda cartilaginea</i>	wild-taken / recolectados en el medio sivestre / spécimens sauvages								0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Amyda cartilaginea</i>	live/vivos/spécimens vivants									0	0

Party / Parte / Partie	Species / Especies / Espèces	Specimens / Especímenes / Types de spécimens	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Callagur borneoensis</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			1,000	600				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Callagur borneoensis</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Chitra chitra</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages								0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Chitra chitra</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Cuora amboinensis</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages		50,000	50,000	15,000	15,000	0		0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Cuora amboinensis</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys annandalii</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			--	6,000				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys annandalii</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys grandis</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			--	6,000				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys grandis</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys spinosa</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			--	6,000				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Heosemys spinosa</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Indotestudo elongata</i>	live/vivos/spécimens vivants	500	500	500	500	500	500	500	450	200	200
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Malayemys macrocephala</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages				0				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Malayemys macrocephala</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Manouria emys</i>	live/vivos/spécimens vivants	200	200	500	500	500	500	400	350	150	150

Party / Parte / Partie	Species / Especies / Espèces	Specimens / Especímenes / Types de spécimens	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Manouria impressa</i>	live/vivos/spécimens vivants										0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Notochelys platynota</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages				0				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Notochelys platynota</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Orlitia borneensis</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			--	6,000				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Orlitia borneensis</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Pelochelys cantorii</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages								0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Pelochelys cantorii</i>	live/vivos/spécimens vivants									0	0
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Siebenrockiella crassicollis</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages			--	15,000				0		
Malaysia - Peninsular / Malasia - peninsular / Malaisie - péninsulaire	<i>Siebenrockiella crassicollis</i>	live/vivos/spécimens vivants									0	0
Kazakhstan / Kazajstán	<i>Testudo horsfieldii</i>	live/vivos/spécimens vivants	39,000	40,000	40,000							
Tajikistan / Tayikistán / Tadjikistan (Non-Party / No Parte / Non-Partie)	<i>Testudo horsfieldii</i>	wild-taken / recolectados en el medio sivistre / spécimens sauvages		20,000						17,000	17,000	17,000
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	eggs / huevos / oeufs								5,000	5,000	5,000
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	live/vivos/spécimens vivants	35,000								22,000	27,000
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	live (wild-taken and ranches) / vivos (recolectados en el medio sivistre y criados en granjas) / spécimens vivants (spécimens sauvages et spécimens de ranch)		30,000	30,000							

Party / Parte / Partie	Species / Especies / Espèces	Specimens / Especímenes / Types de spécimens	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	wild-taken / recolectados en el medio silvestre / spécimens sauvages				25,000	23,000	22,000	22,000	22,000		
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	live, ranched / vivos, criados en granjas / spécimens vivants élevés en ranch				5,000	7,000	13,000	14,000	13,000	17,000	17,000
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	live, captive-bred / vivos, criados en cautividad / spécimens vivants, élevés en captivité									2,000	
Uzbekistan / Uzbekistán / Ouzbékistan	<i>Testudo horsfieldii</i>	live (confiscated animals) / vivos (animales confiscados) / spécimens vivants (animaux confisqués)				1,150						