

Short Communication

Are tortoises and freshwater turtles still traded illegally as pets in Singapore?

Ter Yang Goh and Ruth M. O'Riordan

Abstract The red-eared slider *Trachemys scripta elegans* is currently the only reptile species that can be legally sold as a pet in Singapore. We report on the species of tortoises and freshwater turtles that were found for sale during a survey of 27 pet shops in 2004. Although the red-eared slider was the most common species for sale, small numbers of 11 other species were available. Of these, the import of one species (the Chinese soft-shell turtle *Pelodiscus sinensis*) is allowed for food but import of the other 10 species is not permitted for either food or

the pet trade. We found that illegally held chelonians are often not kept on the pet shop premises. Our findings suggest that the Singaporean authorities' efforts to address illegal wildlife trade have to include other methods in addition to conducting raids on shop premises.

Keywords Freshwater turtles, pet trade, red-eared slider, Singapore, tortoises, *Trachemys scripta elegans*.

In Singapore, under the Wild Animals and Birds Act 1965 (Chapter 351), the trapping, keeping and/or killing of native tortoise and turtle species for trade is prohibited without a licence, and licences are not issued (Singapore Statutes, 2004). Therefore, tortoises and freshwater turtles for the pet trade have to be imported. The red-eared slider *Trachemys scripta elegans*, native to the south-eastern USA, is currently the only reptile species permitted as a pet in Singapore. The restriction of pets allowed in Singapore is a national policy and not gazetted as a law. The import of red-eared sliders is regulated under the Animals and Birds Act and the Animals and Birds (Ornamental Fish) Rules (15 September 2002); 587,852 individuals were imported in 2005 (F. Keng Lye, Agri-Food and Veterinary Authority, pers. comm.).

Singapore became a Signatory to CITES in November 1986 and the Agri-Food and Veterinary Authority of the Ministry of National Development is the Management Authority responsible for implementation and enforcement (AVA, 2006). The Authority also functions as the Scientific Authority responsible for advising the Management Authority. The First Schedule of the

Endangered Species (Import and Export) Act 1989 (Chapter 92A), which implements CITES commitments in Singapore, provides a list of tortoise and turtle species of which the sale, import, export, re-export or introduction from sea is restricted (Singapore Statutes, 2004). At time of publication, Chapter 92A, repealed on March 2006, was replaced with the Endangered Species (Import and Export) Act 2006 (Act 5 of 2006). With respect to tortoises and freshwater turtles, Singapore imposes stricter domestic measures than are called for under CITES.

Singapore is well documented as a legal importer and trans-shipment location in the Asian turtle trade network (Shepherd, 2000; Van Dijk *et al.*, 2000). Despite having regulations on chelonian trade, concern has been expressed that Singapore continues to be a centre for illegal trade in tortoise and freshwater turtles (Kaur, 2003). Singapore is an attractive base for wildlife smugglers because of its location in the Asia-Pacific region and its air and sea transport connections. We surveyed the tortoise and freshwater turtle pet trade in Singapore to examine the number of tortoise and freshwater turtle species (legal and illegal) available in pet shops. Our survey was modelled on a similar study carried out in west Malaysia (Shepherd *et al.*, 2004). Twenty-seven pet shops were selected randomly and visited once in September/October 2004. The species, number and size of chelonians available for sale (including those not on display in the premises) were recorded. Identification was based on Lim & Lim (2002), and relied on information provided by the shopkeepers

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for those species not on display. Size was categorized based on carapace length as: small (<5 cm), medium (5–10 cm) and large (>10 cm). Gender could not be determined. The shop owners or sales assistants were questioned casually by TYG, posing as a potential customer, on the retail price of the tortoises or turtles, their origin and whether there was other stock available. In addition, size was either asked directly or measured, approximately, under the pretext of ascertaining the appropriate aquarium size.

In total 12 species of tortoises and turtles were available. The most widely available was *Trachemys scripta elegans* (Table 1), found in all shops visited. Many of the shopkeepers stated that they did not consider selling other species because they were not allowed to and that there is a seasonal variation in the demand for *T. s. elegans*, with the available stock starting to deplete around the Lunar New Year period.

Other than being kept as pets, another use of tortoises and freshwater turtles in Singapore is for their release into the wild. It is believed by Buddhists that the release of captive animals will lead to the accumulation of good karma. *T. s. elegans* with the Chinese word 生 (*sheng*), meaning 'release from captivity', painted in red on the carapace have been spotted in various reservoirs and freshwater ponds in Singapore (Goh, 2004). *Sheng* is a sign to inform others that a turtle has been released and should not be captured. Medium to large *T. s. elegans* were also seen on sale on market stalls (TYG, pers. obs.), where they were being sold for release. The large numbers of *T. s. elegans* imported into Singapore for sale as pets every year, some of which may be released, is a cause for concern (Sulaiman, 2002) because they are present in many freshwater bodies. Some localities, such as the Botanic Gardens, Bedok Reservoir and Bukit Batok Town Park, have high population densities (Goh,

Table 1 Tortoise and freshwater turtle species for sale in 27 pet shops in Singapore, with their source country (according to the shop), retail price per individual, number for sale per shop, % of shops where on sale, and IUCN Red List category and CITES Appendix listing.

Species	Source	Retail price, SGD (size) ¹	No. for sale (size) ^{1,2}	% of shops where on sale	Red List category ³	CITES Appendix ⁴
Pig-nose turtle	Indonesia	25–50 (S)	1–22 (S)	25.9	VU	(II, in force since Jan. 2005)
<i>Carettochelys insculpta</i>		100 (M)	1 (M)			
Malayan box terrapin	South-east Asia	28 (M)	1 (M)	3.7	VU	II
<i>Cuora amboinensis</i>						
Indian star tortoise	India	75 (S)	(1) (S)	3.7	LR	II
<i>Geochelone elegans</i>						
Leopard tortoise	Africa	380 (M)	(1) (M)	3.7		II
<i>Geochelone pardalis</i>						
Argentine snake-necked turtle	South America	30–50 (S) 70+ (M)	(1) (S) 1 (M)	11.1		
<i>Hydromedusa tectifera</i>						
Bell's hinged tortoise	Africa	280 (L)	(1–2) (L)	3.7		II
<i>Kinixys belliana</i>						
Home's hinged tortoise	Africa	<260 (S)	(1) (S)	7.4	DD (VU since 2005)	II
<i>Kinixys homeana</i>		280 (L)	(1–2) (L)			
Alligator snapping turtle	USA	120–150 (S)	2 (S)	3.7	VU	(III, in force since June 2006)
<i>Macrolemys temminckii</i>						
Pancake tortoise	Africa	380 (M)	(1) (M)	3.7	VU	II
<i>Malacochersus tornieri</i>						
Chinese soft-shell turtle	Malaysia	1.50–3.00 (S)	4–25 (S)	11.1	VU	(III, for a short period in early 2005)
<i>Pelodiscus sinensis</i>						
Razor-back musk turtle	USA	55 (S)	(2) (S)	3.7		
<i>Sternotherus carinatus</i>						
Red-eared slider	USA	3–5 (S)	3–40+ (S)	100.0		
<i>Trachemys scripta elegans</i>		10 (M) 15 (L)	1 (M) 8 (L)			

¹S, small (carapace <5 cm in length); M, medium (carapace 5–10 cm in length); L, large (carapace >10 cm in length)

²Figures in parentheses denote number of individuals available for sale but not on display in the shop.

³VU, Vulnerable; DD, Data Deficient; LR, Lower Risk (IUCN, 2006)

⁴Trade in CITES Appendix II species is regulated and commercial trade is allowed with CITES permits. Appendix III species have lower protection, the trade in which is regulated at the request of a Party that needs the cooperation of other countries to prevent unsustainable exploitation.

2004). It is unknown what adverse effects, if any, *T. s. elegans* as an alien species may have. The European Union (Council Regulation (EC) No 338/97 of 9 December 1996) banned the import of *T. s. elegans* because they were reported to be out competing and posing a serious threat to native European pond turtles (Williams, 1999; Salzberg, 2000), and in New Zealand their import was banned because of concerns of possible transmission of *Salmonella* to humans (Thomas & Hartnell, 2000). There are also concerns regarding the depletion of *T. s. elegans* populations in their natural habitats in the USA because of overcollection from the wild for captive-breeding stock to supply the pet trade (Warwick *et al.*, 1990).

Pelodiscus sinensis, a species that can be legally imported into Singapore for food, but not as a pet, was available in 11% of the surveyed shops. All of the specimens were small and sold for about half the price of *T. s. elegans*. *P. sinensis* sold in markets and restaurants are larger and cost SGD 18–25 per individual (TYG, pers. obs.). This is the main turtle species eaten in Singapore (Choo & Chou, 1983), popularly in the form of soup, although the blood and eggs are also consumed. The most commonly found protected turtle species for sale was the pig-nose turtle *Carettochelys insculpta*. Although the majority of individuals for sale were small, they were selling for about ten times the price of *T. s. elegans*. *C. insculpta* is one of the preferred species in the tortoise and turtle pet trade from Asia (Asian Turtle Trade Working Group, 2000).

We found nine other species for sale illegally but not widely available, seven of which were not on display (Table 1). The most expensive tortoises for sale were medium-sized leopard tortoises *Geochelone pardalis* and pancake tortoises *Malacochersus tornieri*. Only one each of these two species was on sale and according to the shopkeeper they were from a one-off supply of a total of nine leopard and pancake tortoises for the entire Singapore market. At the time of the survey in September/October 2004 six of the species stocked were listed in Appendix II of CITES, which does not ban international trade but subjects it to licensing and regulation by CITES Parties. Five of the species for sale are categorized as Vulnerable on the IUCN Red List, and one as Data Deficient (IUCN, 2006).

Keeping chelonians as pets in South-east Asia is not uncommon and is increasing (Jenkins, 1995; Asian Turtle Trade Working Group, 2000). Our results indicate that the sale of protected species of tortoises and turtles in Singapore is catering to a small niche market. Shopkeepers revealed that a large proportion of customers buying protected species are young people who buy hatchlings, rear them to maturity and then sell them. Adult *C. insculpta* and *Macroclermys*

temminckii can fetch SGD 2,000–3,000 and 8,000, respectively.

Only 24 pet shops have been caught selling tortoises and turtles illegally in Singapore since 1998 (Kaur, 2003). However, 13 of the 27 pet shops surveyed were illegally selling protected species, although the number of species and individuals was low. These shopkeepers were fully aware that the species were protected, their trade forbidden, and that they had been collected mostly from the wild. Because of the latter, and the difficulty in smuggling them into Singapore, the shopkeepers explained that stock replenishment is infrequent. For some species, such as the Argentine snake-necked turtle, *Hydromedusa tectifera*, shopkeepers said that no new stock was available for the foreseeable future. A survey of 100 pet shops in Singapore in June–July 2005 found *C. insculpta* and *P. sinensis* for sale, and three species that we did not find (the Chinese striped-neck turtle *Ocadia sinensis*, the Australian snake-necked turtle *Chelodina longicollis* and an unidentified turtle species; ACRES, 2006) thus also indicating that stock replenishment is infrequent.

To evade detection protected tortoises and turtles were typically not displayed on the premises but kept at an undisclosed location and only delivered to the shops upon receipt of a confirmed order. Potential customers do not have any samples to view but the shopkeepers provide preliminary information. For regular customers the shopkeeper will collect the tortoise or turtle from the supplier and the customer has to collect and pay for the animal on the same day that it is delivered to the shop. For other customers the payment of a deposit is required when placing an order. Orders are not restricted to the species immediately available, and suppliers will attempt to source other species. The Agri-Food and Veterinary Authority has to consider, in addition to conducting raids on pet shop premises, other ways to best prevent this illicit trade, for example by investigating the identity of the small number of suppliers in Singapore.

Although the present survey examined the domestic market only, the chelonian species that are being legally imported into Singapore for re-export also merit investigation. Illegal animal trade is still occurring in Singapore to supply international markets, and the country has been criticized for failing to enforce its own legislation (Thornton *et al.*, 2003). It has been suggested that Singapore's lax customs policies regulating trans shipment and re-export, which were designed to facilitate rapid handling of cargo and ease the burden of customs officers and importing/exporting companies, 'provided valuable loopholes for smugglers to disguise and re-export illegal cargo, (Thornton *et al.*, 2003). The results of our survey have been passed on to the Agri-Food and

Veterinary Authority, which has been subsequently conducting follow-up investigations.

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Biographical sketches

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