CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Eighteenth meeting of the Conference of the Parties
Colombo (Sri Lanka), 23 May – 3 June 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of all species of arboreal and ornamental tarantula in the genus *Poecilotheria* in Appendix II. This proposed inclusion is in accordance with Article II paragraph 2(a) of the Convention, satisfying Criterion B, Annex 2(a) of Res. Conf. 9.24 (Rev. CoP16)

A species should be included in Appendix II when, on the basis of available trade data and information on the status and *trends of the wild population(s), at least one of the following criteria is met:*

B. It is known, or can be inferred or projected, that regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.

Poecilotheria formosa	(Pocock, 1899)
Poecilotheria metallica	(Pocock, 1899)
Poecilotheria miranda	(Pocock, 1900)
Poecilotheria ornata	(Pocock, 1899)
Poecilotheria regalis	(Pocock, 1899)
Poecilotheria rufilata	(Pocock, 1899)
Poecilotheria tigrinawesseli	(Smith, 2006)
Poecilotheria striata	(Pocock, 1895)

and in accordance with Article II paragraph 2(b) of the Convention, satisfying Criterion A, Annex 2(b) of Res. Conf. 9.24 (Rev. CoP16).

Species may be included in Appendix II in accordance with Article II, paragraph 2(b), if either one of the following criteria is met:

A. The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2(a), or in Appendix I, so that enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between them:…

Poecilotheria chaojii	(Mirza, Sanap & Bhosale, 2014)
Poecilotheria fasciata	(Latreille, 1804)
Poecilotheria hanumavilasumica	(Smith, 2004)
Poecilotheria rajaei	(Nanayakkara, Kirk, Dayananda, Ganehiarachchi, Vishvanath & Kusuminda, 2012)
Poecilotheria smithi	(Kirk, 1996)
Poecilotheria subfusca	(Pocock, 1895)
Poecilotheria vittata	(Pocock, 1895)

B. Proponent

Sri Lanka and United States of America*:

C. Supporting statement

1. Taxonomy

1.1 Class: Arachnida

1.2 Order: Araneae

1.3 Family: Theraphosidae

1.4 Genus, species or subspecies, including author and year: *Poecilotheria* Simon, 1885

1.5 Scientific synonyms:

P. chaojii	none
P. fasciata	*Mygale fasciata Latreille, 1804* *Scurria fasciata* C.L. Koch, 1850
P. formosa	*Poecilotheria nallamalaiensis* Rao et al., 2006
P. hanumavilasumica	none
P. metallica	none
P. miranda	none
P. ornata	none
P. rajaei	none
P. regalis	*Ornithoctonus gadgili* Tikader, 1977
P. rufilata	none
P. smithi	*Poecilotheria pococki* Charpentier, 1996
P. striata	none
P. subfusca	*Scurria fasciata* Ausserer, 1871 *Poecilotheria uniformis* Strand, 1913 *Poecilotheria bara* Chamberlin, 1917
P. tigrinawesseli	none
P. vittata	*Poecilotheria pederseni* Kirk, 2001

1.6 Common names: English:

P. chaojii	none
P. fasciata	Sri Lankan ornamental tarantula
P. formosa	Salem ornamental tarantula
P. hanumavilasumica	Rameswaram ornamental tarantula
P. metallica	Gooty ornamental tarantula
P. miranda	none
P. ornata	Fringed ornamental tarantula
P. rajaei	none
P. regalis	Indian ornamental tarantula
P. rufilata	Red slate ornamental tarantula
P. smithi	Yellow-backed ornamental tarantula
P. striata	Mysore ornamental tarantula
P. subfusca	Ivory-billed ornamental tarantula
P. tigrinawesseli	Wessel's tiger ornamental tarantula
P. vittata	Ghost ornamental tarantula

1.7 Code numbers: N/A

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

2. Overview

CITES does not currently include any species of the genus *Poecilotheria* in the Appendicies. The World Spider Catalog (2018) currently recognizes 15 species of *Poecilotheria*, though these distinctions are based on morphological features rather than DNA technology. There have been several revisions to the list of species, including an addition as recently as 2014 (Mirza, Sanap & Bhosale 2014). Eight species are endemic to India, five are endemic to Sri Lanka, and two species can been found in both countries (World Spider Catalog 2018). Sri Lanka and the United States submitted a proposal for the listing of the genus on Appendix II at CoP11, but the measure was rejected based on the lack of information on international trade and confiscations, as well as the lack of information on the population status of all species in the genus. It was also noted that the main threat faced by some of the species seemed to be habitat destruction and human encroachment, and therefore the genus did not fit the criteria for listing in Appendix II (CITES 2000a).

The IUCN Red List (www.iucnredlist.org) lists two *Poecilotheria* species as Critically Endangered, three as Endangered, one species as vulnerable, one species as least concern, and one species as data deficient; the remaining seven species have not had species assessments completed (see Table 2). There is a lack of data on the distribution and biology of *Poecilotheria*; however, it is assumed that many species in the genus have decreasing populations based on habitat loss and degradation (Molur et al. 2008a). Studies on the population size and distribution of these spiders have begun to increase subsequent to the proposal to list the genus at CoP11, though much remains unknown (Molur et al. 2003).

Poecilotheria is the only genus of Theraphosidae that is completely arboreal, and thus is threatened by deforestation and habitat fragmentation (Siliwal et al. 2013). The genus is also very popular in the pet trade due to their coloration and size, and though captive breeding occurs, specimens are often sourced from the wild due to low reproductive rates and the limited gene pool of the captive population (Sunil 2011, Siliwal et al. 2011). The species in the genus are reported to have low reproductive rates, and short life spans and high mortality rates prior to maturity, making them (especially females) particularly vulnerable to commercial exploitation (CITES,2000b). Given female spider's longer lifespan once they reach maturity, harvest from the wild has a significant impact to all future potential offspring.These species have patchy distributions with fragmented populations and poor dispersal, therefore collection from a single area may drastically affect the survival of entire wild populations (Molur et al. 2003, Robin des Bois 2014, Siliwal et al. 2011). The threat posed by the pet trade continues in India because the spiders are not listed under the Wildlife Protection Act of 1972. *P. regalis, P. miranda, P. rufilata, P. metallica,* and *P. striata* are ranked by experts as very common in the pet trade; *P. formosa* and *P. tigrinaweseli* are ranked as common in the pet trade. (Siliwal et al. 2011). In the IUCN Red List assessment, it was recommended that all *Poecilotheria* species from India and Sri Lanka be included under the CITES Appendix II to safeguard them from trade (Molur et al. 2008c).

Unresolved taxonomy as well as similarity in appearance of many *Poecilotheria* species make it imperative to list the entire genus. As with many species, trade continues to follow a well-known pattern in which exploitation and trade shift from one species to another when: 1) a species becomes so depleted or rare that it is no longer commercially exploitable; or 2) a species becomes the subject of stricter regulation, and as such is less exploitable. An Appendix II listing of genus *Poecilotheria* will help ensure the legal and sustainable international trade in these arboreal tarantulas. The threats of habitat destruction and fragmentation place more stress on the coveted spiders, providing urgency for the listing of the genus.

3. Species characteristics

3.1 Distribution

Arboreal tarantulas of the genus *Poecilotheria* only occur within Sri Lanka and India. Initial findings suggest that these tarantulas have restricted dispersal and are closely associated with their microhabitat (Samarawickrama et al. 2005). Despite increased surveying effort, the spiders' patchy distribution and cryptic nature lead to incomplete knowledge of their ranges (Molur et al. 2004). Known distribution data is described by species in Table 1.

3.2 Habitat

Poecilotheria spiders live in forested areas where they can remain hidden, sometimes including in teak and banana plantations (Samarawickrama et al. 2005, Molur et al. 2003). As opportunistic burrowers, they live in pre-existing holes or cavities in trees or behind loose bark, and have been found in crevices of buildings located nearby to forested areas (Samarawickrama et al. 2005, Molur et al. 2003, Nanayakkara et al. 2012a). These protected and dark microhabitats allow the spiders to actively hunt while camouflaged against the tree bark. Studies of spider distribution have shown that old growth forests with high biodiversity support a greater

number of species and abundance of *Poecilotheria* due to a larger number of tree holes and a greater prey base (Molur et al. 2003). Species vary in their preferred tree species and forest type (dry or moist deciduous). Known species-specific habitat preferences are described in Table 1.

3.3 Biological characteristics

Much of what is known about the biology of the genus has been observed in captive specimens, and large knowledge gaps remain. Males live for about 2 years and mature after 12-18 months; females have a life span of 10-18 years and mature after 5-7 years (Molur et al. 2008a&b, Sunil 2011). However, in the wild the maturity time would probably prolong due to environmental conditions and prey availability. Both sexes experience high juvenile mortality rates prior to reaching maturity. Juvenile spiderlings are subject to high mortality due to cannibalism and natural predation (Molur et al. 2008a). *Poecilotheria* females in general have low reproductive rates, producing an average of only 100 eggs per yearly egg sac (CITES 2000b). As ectotherms, growth and reproduction of *Poecilotheria* are influenced by body temperature, and time to maturity depends in part on the temperature that young are raised at (USFWS 2018). It is also known that droughts can greatly reduce reproductive success (USFWS 2018).

These spiders are nocturnal and hunt at night, feeding on insects as well as small vertebrates such as rats or lizards (Siliwal 2011). They are agile, fast, and armed with a potent venom used to paralyze prey as it walks past their retreat (Nanayakkara 2013). They are highly sensitive to vibrations that serve as cues for both defense and predation (Molur et al. 2003). Though these species are commonly kept as a pets and frequently handled, their venom can cause severe, long-lasting muscle cramps in humans (Fuchs et al. 2014).

3.4 Morphological characteristics

Poecilotheria are known for their large size and bright coloration. Males grow to between 6 and 8 cm in body length, while females can be up to 9 cm in body length (Molur et al. 2006). Adult leg spans may reach 15-25 cm (USFWS 2018). In most species, the dorsal side of the body is colored with brown and grey patterns that serve as camouflage against the tree trunks they live on. *P. metallica*, however, shows brilliant blue coloration on the entire dorsal side with yellow markings. On the ventral side of all species, the dark brown body contrasts with bright white, blue, and yellow coloration with black bands on legs . The aposematic coloration of these legs is unique to each species and has been a key morphological feature in differentiating between species of the genus (Nanayakkara et al. 2012a). When threatened, the tarantulas are known to rear back and raise these fore legs as a warning (Pocock 1899, Fuchs et al. 2014). However morphological identification of spiderlings , even for experts, remains challenging since they do not poses the distinguishing characteristics of adults (CEC, 2017).

3.5 Role of the species in its ecosystem

Poecilotheria play an important role in controlling pests in their ecosystem (Nanayakkara 2013). Globally, spiders kill between 400-800 million tons of prey each year, the majority of which are insects, collembolans and other spiders, including some insect pests, often harmful to crops and trees (Nyffeler & Birkhofer 2017). Spiders in forests and grasslands accounted for more than 95% of this annual prey kill (Nyffeler & Birkhofer 2017). In addition to being ecologically important predators, spiders are a food source for arthropod-eating carnivores including birds, frogs, toads, lizards, snakes, rats, bats, fish, and specialized parasites and parasitoids (Nyffeler & Birkhofer 2017).

4. Status and trends

4.1 Habitat trends

It is estimated that India's forested area decreased from 869,012 km^2 in 1930 to 625,565 km^2 in 2013, a loss of 28%; much of this loss was due to conversion of forest to agricultural land (Reddy et al. 2016). The highest net annual rate of deforestation was 0.63% between 1930 and 1975 (Reddy et al. 2016). The annual rate slowed significantly in the years 2005—2013 to 0.03% (Reddy et al. 2016). The Government of India estimated a forest cover of 697,898 km^2 in 2013, which increased to 708,273 km^2 in 2017 by their calculations (Ministry of Environment & Forests 2013, 2017). Firewood continues to serve as a major source of cheap fuel throughout rural India, and increasing population pressure has caused consumption to exceed supply (M.S. Swaminathan Research Foundation 2010).

Sri Lanka's forest cover decreased from 23,500 km^2 in 1990 to 19,330 km^2 in 2005, a loss of 17.74% (Mongabay 2006). Causes of deforestation in Sri Lanka include farming, large-scale plantations, agriculture settlements, and filling wetlands for housing; many of these stem from the increasing human

population (Perera et al. 2012). The rate of deforestation was approximately 400 km^2 per year in 1956-1992, which has slowed considerably to 71 km^2 per year from 1992-2010 (USFWS 2018). Since the end of Sri Lanka's civil war in 2009, however, the government has implementing a development plan that may lead to increased deforestation and forest degradation (USFWS 2018).

4.2 Population size

Data on *Poecilotheria spp*. population sizes are incomplete due to the cryptic nature of the genus, but available information is presented in Table 2.

4.3 Population structure

The population structures of *Poecilotheria* species are largely unknown, but a study done in 2008 provides some insight. In surveys for *P. hanumavilasumica* done on Rameswaram Island, the average number of individuals observed by class and sex are as follows: 39.98 adult females, 2.4 male adults, 15.88 subadults, 88.02 juveniles, and 34.20 spiderlings (Siliwal et al. 2008f).

4.4 Population trends

Among the genus, five species are threatened with extinction according to the IUCN Red List (see Table 2). All species with available data have decreasing population trends.

4.5 Geographic trends

Poecilotheria species have very limited dispersal abilities and specific habitat requirements. *P. hanumavilasumica*, for instance, has an estimated extent of occurrence of less than 100km^2, with an area of actual occupancy estimated to be less than 6 km^2 (Siliwal et al. 2008a). For this reason, distribution of species of this genus is not known to have changed geographically over time.

5. Threats

Threats to the species of the genus include habitat loss, habitat fragmentation, and collection for the pet trade. Due to their specialized habitat needs, *Poecilotheria* spiders are highly threatened by habitat loss through deforestation (Molur et al. 2008b). Forest degradation directly reduces or eliminates the availability of trees that *Poecilotheria* species rely on for reproduction, foraging and protection (Samarawickrama et al. 2005; Smith et al. 2002). In addition, due to the limited dispersal ability of this genus, forest loss is likely to result in spider mortality through intentional killing when encountered by loggers, or through physical trauma caused by falling trees.

Collection from the wild to supply the international pet trade is known to occur in both range countries and could have significant negative impacts (USFWS 2018; Siliwal et al. 2008f). According to IUCN Red List assessments, collection for the international pet trade is reported to be a major threat for *P. striata* (reported to be common in trade), P.rufilata and an additional threat for *P. formosa P. metallica, P. miranda* and *P.regalis*.The species in the genus are reported to have low reproductive rates, and short life spans and high mortality rates prior to maturity making them particularly vulnerable to commercial exploitation (CITES, 2000b).Given female spider's longer lifespan once they reach maturity, harvest from the wild has a significant impact to all future potential offspring. Due to the patchy distributions and poor dispersal of *Poecilotheria* species, collection of even a few individuals at a single location could impact the genetic viability, population demographics, and ultimately survival of a species (USFWS 2018). In the IUCN Red List assessment, it was recommended that all *Poecilotheria* species from India and Sri Lanka be included under the CITES Appendix II to safeguard them from trade (Molur et al. 2008c).

Indian and Sri Lankan communities also kill *Poecilotheria* spiders both when found inside their homes and in plantations as they are known to have a venomous bite (Siliwal et al. 2008f). Males wandering in search of a mate may be more likely to be intentionally killed, which may reduce density of males and thus percentage of females laying eggs in a given year (USFWS 2018).

6. Utilization and trade

6.1 National utilization

In India, individuals that are aware of the international pet trade capture the spiders to sell to an intermediary who can sell to foreign buyers (Siliwal et al. 2008f), but no domestic uses are known.

6.2 Legal trade

Poecilotheria became popular in the pet trade in 1999 due to their size, coloration, and the listing of *Brachypelma* species from Central and South America on Appendix II of CITES (Siliwal et al. 2008f). India's Wildlife Protection Act does not list any of the species of this genus, therefore collection and trade is legal in this country outside of protected areas (Molur et al. 2008c).

United States trade data for species of this genus were provided by the U.S. Fish & Wildlife Service Office of Law Enforcement. Between 2006 and 2017, the United States imported 22,918 live individuals of *Poecilotheria spp.* in 609 shipments and exported 802 live individuals over 172 shipments (USFWS OLE 2018). *P. metallica, P. regalis, P. ornata* and *P. rufilata* were the most commonly traded species and a large majority were imported from European countries.

According to the U.S. Fish and Wildlife Service, between 1995 and 1999, 2,694 live specimens of *Poecilotheria spp.* were declared to have been imported into the U.S. and 392 live specimens were declared to have been exported from the U.S. (CITES 2000b). From 2013-2017, the most recent 5-year period with complete data, the number of declared imports of *Poecilotheria spp.* was 16,510 and the number of declared exports was 145 (USFWS OLE 2018). The demand for specimens of this genus for the pet trade has risen considerably over the past three decades. Captive-bred specimens have consistently made up the majority of trade over those declared as wild-origin. Additionally, the actual number of *Poecilotheria spp.* imported into or exported out of the U.S. or other nations is unknown, as many likely are not reported.

6.3 Parts and derivatives in trade

Only live animals are known to be in trade.

6.4 Illegal trade

Spiders from National Parks and other protected areas are known to be illegally collected and sold on the international market (Capannini 2003). One such incident was recorded in 2002 when Europeans smuggled several *P. metallica* specimens out of India and advertised them for sale online (Molur et al. 2008a). There are indications that illegal smuggling from Sri Lanka occurs for introduction into the pet trade, but few detailed accounts are available (USFWS 2018). We are aware that collection (legal/illegal) of spiders for the pet trade is having a negative effect on wild populations in India. As such the U.S. Fish and Wildlife Service recently through its Combating Wildlife Trafficking Fund is providing funding for a *study to understand the pervasive threat of exploitation and trade of Indian Theraphosid spiders and to involve local community for species and habitat conservation through education*. This study will be undertaken by ANJA College, Sivakasi, Tamil Nadu, India in conjunction with the Living In Fine Environment (LIFE)Trust – India and run from 2018 to 2020 (CWT1810).

6.5 Actual or potential trade impacts

Arboreal tarantulas of the genus *Poecilotheria* are in high demand in western countries for the pet trade (Siliwal et al. 2008f). Though many *Poecilotheria* specimens are declared captive-bred and many pet traders advertise their spiders to be captive-bred, the low reproductive rate of this genus and the restricted gene pool of the captive population have made attempts to breed them in high numbers unsuccessful (Sunil 2011). For certain species, it is still more economical to supply adult wild-caught specimens than to raise captive-bred specimens to adulthood (Capannini 2003). This increases the demand for wild individuals to supply the pet trade. Collectors often try to capture gravid females from which additional spiders can be born in captivity, eliminating both reproductive females and future progeny from wild populations (Capannini 2003). Already threatened by habitat loss and fragmentation, collection of these spiders from the wild may have a significant effect on wild populations; the loss of individuals from a single location or population could significantly decrease the genetic diversity of that species and make the survival of that population more vulnerable to natural or anthropogenic threats

(USFWS 2018). Together, these pressures may cause extinction of certain species such as *P. metallica* and *P. rufilata* from known locations in the near future (Molur et al. 2008a, Siliwal et al 2008c).

Another concern is that as with many species trade continues to follow a well-known pattern in which exploitation and trade shift from one species to another when: 1) a species becomes so depleted or rare that it is no longer commercially exploitable; or 2) a species becomes the subject of stricter regulation, and as such is less exploitable.

7. Legal instruments

7.1 National

The Indian Wildlife Protection Act of 1972 (WLPA) provides for the protection of animals and plants to ensure the ecological and environmental security of India. This legislation establishes protected areas, regulates trade in wildlife parts and products, and provides a framework to regulate hunting and to protect and manage wildlife habitats. The Act provides varying levels of protection for wildlife according to six schedules; if an animal is listed in schedule I-IV, hunting, possession, and trade in the species is highly restricted (Sinha 2010; Bharathi 2017). The WLPA does not currently list any species of *Poecilotheria* as protected (Ministry of Environment & Forests 2011). Protected areas established under the Act, such as National Parks, prohibit use of wildlife resources and collection in these areas would be illegal (Bharathi 2017).

In Sri Lanka, the primary legislation for the protection of wildlife and plant species is the Fauna and Flora Protection (Amendment) Act, No. 22 of 2009 (FFPA), part of the Fauna and Flora Protection Ordinance of Sri Lanka (Obank et al. 2015). The FFPA affords protection of habitat and wildlife through designation of protected areas and provides protection for certain species outside of protected areas. Under the FFPA, commercial collection and export of any *Poecilotheria* species is prohibited (USFWS 2018). Though Sri Lanka has a legislative framework for the conservation of this genus, all steps of enforcement are weak due to enforcement gaps. (Obank et al. 2015).

In the United States on August 30, 2018, five species of this genus were listed as endangered under the United States Endangered Species Act: *Poecilotheria subfusca*, *P. ornata*, *P. vittata*, *P. smithi*, and *P. fasciata* (USFWS 2018).

The Endangered Species Act (ESA) requires the U.S. Fish and Wildlife Service to list species as endangered or threatened regardless of which country the species lives in. Benefits to the species include prohibitions on certain activities including import, export, take, commercial activity, interstate commerce, and foreign commerce. By regulating activities, the United States ensures that people under the jurisdiction of the United States do not contribute to the further decline of listed species. Although the ESA's prohibitions regarding listed species apply only to people subject to the jurisdiction of the United States, the ESA can generate conservation benefits such as increased awareness of listed species, research efforts to address conservation needs, or funding for in-situ conservation of the species in its range countries.

7.2 International

None.

8. Species management

8.1 Management measures

To our knowledge, there are no management programs in place for any of these fifteen tarantula species.

8.2 Population monitoring

Subsequent to the unsuccessful proposal to list the genus *Poecilotheria* at CoP11, studies on the distribution and population sizes of these spiders have been undertaken in both range countries, though much remains unknown (Molur et al. 2003). One such program, the Indian Mygalomorph Spider Project, was supported by the Conservation Treaty Support Fund, Rufford Maurice Laing Foundation, Brookfield Zoo, Oakland Zoo, Fauna and Flora International, and Cleveland Metroparks Zoo (CBSG

2007). In addition, a collaborative workshop presented by the U.S. Fish and Wildlife Service trained biologists in India on identification and taxonomy of tarantulas. This workshop created a community of informed and interested parties that now report sightings of tarantulas around the country, and resulted in many new mygalomorphs being described (CBSG 2007). A monitoring project by the Living in Fine Environment Trust – India (LIFE Trust – India) was recently funded by the U.S. Fish & Wildlife Service and will be carried out from 2018-2020. The goal of the project is to gain a better understanding of the threat posed by exploitation and trade, to address species and habitat quality decline, and to educate communities to become involved in spider conservation. Surveys will be done to estimate habitat status and threats to four species (*P. rufilata, P. striata, P. regalis,* and *P. formosa*).

In Sri Lanka, population and distribution studies are ongoing. One such study between 2009 and 2012 recorded sightings of hundreds of individuals, two of which were likely new species (Nanayakkara et al. 2012b).

8.3 Control measures

8.3.1 International

None.

8.3.2 Domestic

Educational programs aimed at raising awareness are being undertaken in India. As part of their 2008 study on the distribution and conservation status of tarantulas in southern India, Siliwal et al. interacted with nearby communities to communicate the positive role of tarantulas in the environment, and the need for their conservation (Siliwal et al. 2008f). Communities were taught that the spider bite was not fatal for humans, and were encouraged to release the spiders in plantations rather than killing them on sight. Forest guards were also given brief lessons on spider surveys and population estimation (Siliwal et al. 2008f).

The government of Sri Lanka encourages community participation in protected area and forest management. They have implemented engagement programs aimed at reducing encroachment of cash crops and tea in the wet forest zone and reducing slash-and-burn agriculture in the dry forest zone in an effort to keep forest habitats intact (USFWS 2018).

8.4 Captive breeding and artificial propagation

The pet trade is supplied by wild caught, captive-bred, and captive-born individuals (Capannini 2003). Captive breeding protocols for all species of this genus have not been effectively established (Samarawickrama et al. 2005). Hobbyist Michael Jacobi describes the difficulties of breeding *Poecilotheria*, specifically *P. smithi* and *P. subfusca*, in captivity (Jacobi 2005). He faces issues simulating the humidity and temperatures experienced by the spiders in the wild and his spiders experience very high juvenile mortality rates during or just before their molt to the second instar (Jacobi 2005). Hobbyist Richard Gallon, however, describes his successes with raising and breeding *P. ornata* in captivity, a species which may be more easily captive-reared (Gallon 2012). It is unknown how much of the trade is supplied by wild or captive specimens.

8.5 Habitat conservation

Several populations of *Poecilotheria spp*. are found in or near protected areas in India. *P. regalis* is reported from Nagarjuna-Srisailam Tiger Reserve and Mudumalai Wildife Sanctuary (Molur et al. 2008b). *P. metallica* is known to occur 20 km from the Gundla Brahmeshwaram Wildlife Sanctuary, but it remains unknown if the species occurs within the Sanctuary (Molur et al. 2008a). *P. striata* is known to occur in Parambikulam Wildlife Sanctuary and is likely to occur in the nearby Indira Gandhi Wildlife Sanctuary (Siliwal et al. 2008d). *P. miranda* is thought to occur in Simlipal Tiger Reserve but further studies are required to confirm this (Siliwal et al. 2008b). *P. rufilata* is recorded from Agastyavanam Reserve (Siliwal et al. 2008c).

The first invertebrate sanctuary in India has been proposed by the Zoo Outreach Organization and WILD for the protection of *P. hanumavilasumica*. The proposed Rameswaram Tiger-Spider Sanctuary would protect the largest population of the species in its 6km^2 range (Zoo Outreach Organization 2017).

A two-year survey done by Samarawickrama et al. between 2003 and 2005 revealed that *Poecilotheria* species are also found in Sri Lankan protected areas. *P. vittata* was recorded in the Bundala National Park as well as the Madunagala Sanctuary. *P. ornata* was found in Kitulgala forest reserve and Sinharaja World Heritage Site. *P. subfusca* was found in Dotulugala MAB reserve (Samarawickrama et al. 2005).

Sri Lanka has taken steps to conserve its forests in recent years including imposing a moratorium on logging in all natural forests in 1990, implementing management plans for forests, and encouraging community forest and protected area management (USFWS 2018). The Forest Ordinance (Amendment) Act No. 65 of 2009 and the Fauna and Flora Ordinance (Amendment) Act No. 22 of 2009 place legal requirements on the management of forests and wildlife reserves (USFWS 2018). Between 12% and 28% of the country's land area is reportedly protected though deforestation and degradation are ongoing problems (USFWS 2018).

8.6 Safeguards

Not applicable.

9. Information on similar species

Not applicable.

10. Consultations

United States of America and India

11. Additional remarks

12. References

Bharathi, D. 2017. Nature of offences for Wildlife Conservation in India. International Journal on Recent and Innovation Trends in Computing and Communication 5(8):50-53.

Capannini. S. 2003. Wild caught – captive bred: the never ending dilemma. *British Tarantula Society Journal* 18(4): 106-109.

CBSG (Conservation Breeding Specialist Group). 2007. Species Survival Commission, IUCN – The World Conservation Union. CBSG News 18(2):7. Available online at: https://www.cpsg.org/sites/cbsg.org/files/Newsletters/CBSG%20News%20vol%2018%232_2007.pdf ; accessed November 13, 2018.

CEC. 2017. *Sustainable Trade in Tarantulas: Action Plan for North America*. Montreal, Canada: Commission for Environmental Cooperation. 52 pp.

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2000a. Consideration of proposals for amendment of Appendices I and II. Eleventh Meeting of the Conference of the Parties Gigiri (Kenya). Doc 11.59.3. 70-71. Available online at: https://cites.org/sites/default/files/eng/cop/11/doc/59_03.pdf ; accessed October 30, 2018.

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2000b. Inclusion in Appendix II (Sri Lanka, United States of America). *Poecilotheria spp*. Eleventh Meeting of the Conference of the Parties Gigiri (Kenya). Prop. 11.52. 8 pp. Available online at: https://cites.org/sites/default/files/eng/cop/11/prop/52.pdf ; accessed October 15, 2018.

Fuchs, J., von Dechend, M., Mordasini, R., Ceschi, A., Nentwig, W. 2014. A verified spider bite and a review of the literature confirm Indian ornamental tree spiders (*Poecilotheria* species) as underestimated therphosids of medical importance. Toxicon 77:73-77.

Gallon, R. 2012. Keeping and breeding *Poecilotheria ornata* Pockock, 1899 in captivity. British Tarantula Society Journal 22(2): 62-69.

Jacobi, M. 2005. Experimental housing for montane "Tiger Spiders" – Poecilotheria smithi and P. subfusca: a preliminary report with comments on P. rufilata. Arachnoculture 1(1): 31-41.

M.S. Swaminathan Research Foundation. 2010. Status report on use of fuelwood in India. UK Department for International Development. 12pp. Available online at:

https://assets.publishing.service.gov.uk/media/57a08b32ed915d3cfd000bc8/Status_Report_on_Use_of_Fuelwood_in_India.pdf ; accessed November 13, 2018.

Ministry of Environment & Forests, Government of India. 2011. ENVIS Center on Wildlife and Protected Areas : Schedule Species Database. Available online at : http://wiienvis.nic.in/Database/ScheduleSpeciesDatabase_7969.aspx ; accessed November 5, 2018.

Ministry of Environment & Forests, Government of India. 2013. India State of Forest Report. Forest Survey of India. Available online at http://fsi.nic.in/cover_2013/sfr_forest_cover.pdf; accessed November 16, 2018.

Ministry of Environment & Forests, Government of India. 2017. India State of Forest Report. Forest Survey of India. Available online at http://fsi.nic.in/isfr2017/isfr-forest-cover-2017.pdf; accessed November 16, 2018.

Mirza, Z. A., Sanap, R. V. & Bhosale, H. 2014. Description of a new species of arboreal tarantula of the genus Poecilotheria Simon, 1885 (Araneae: Theraphosidae) from Satpura Hills, central India. Journal of the British Tarantula Society. 29. 60-65. 10.13140/2.1.1139.5206.

Molur, S., Daniel, B. A., Siliwal, M. 2004. Distribution of the regal parachute spider *Poecilotheria regalis* Pocock, 1899. Zoos' Print Journal 19(10):1665-1667.

Molur, S., Daniel, B.A. & Siliwal, M. 2008a. *Poecilotheria metallica*. *The IUCN Red List of Threatened Species* 2008: e.T63563A12681959. https://www.iucnredlist.org/species/63563/12681959 ; accessed November 8, 2018.

Molur, S., Daniel, B.A. & Siliwal, M. 2008b. *Poecilotheria regalis. The IUCN Red List of Threatened Species* 2008: e.T63566A12682744. https://www.iucnredlist.org/species/63566/12682744 ; accessed November 8, 2018.

Molur, S., Daniel, B. A., Siliwal, M., Srinivasulu, C., Nameer, P. O., Thakur, S., Gour-Broome, V. & Arthur, B. 2003. Distribution, status and effect of trade on large-bodied (Mygalomorph) spiders of the genus *Poecilotheria* and other Theraphosid spiders in India. Wildlife Information Liaison Development (WILD) Society.

Molur, S., Daniel, B. A., Siliwal, M., Srinivasulu, C., Nameer, P. O., Thakur, S., & Walker, S. 2006. Conservation status of tarantulas in India with implications of harvest for international trade. Wildlife Information Liaison Development (WILD) Society, Coimbqatore, Tamil Nadu, India. Final Report, January 2006.

Molur, S., Siliwal, M. & Daniel, B.A. 2008c. *Poecilotheria formosa*. *The IUCN Red List of Threatened Species* 2008:e.T63561A12691712. https://www.iucnredlist.org/species/63561/12691712 ; accessed November 8, 2018.

Mongabay. 2006. Sri Lanka. https://rainforests.mongabay.com/deforestation/archive/Sri_Lanka.htm ; accessed November 1, 2018.

Nanayakkara, R. P. 2013. Tiger spider of Sri Lanka; genus *Poecilotheria*. Journal of the Wildlife and Nature Protection Society of Sri Lanka, 53-54.

Nanayakkara, R. P., Ganehiarachchi, S., Dayananda, S. K., Vishvanath, N. 2012a. A new species of tiger spider, genus *Poecilotheria*, from northern Sri Lanka. British Tarantula Society Journal 28(1): 6-5.

Nanayakkara, R. P., Ganehiarachchi, G.A.S.M., Vishvanath, N., & Kusuminda, T.G.T. 2012b. Current distribution of tiger spiders (Genus: Poecilotheria). Abstract. Proceedings of the Annual Research Symposium 2012, Faculty of Graduate Studies, University of Kelaniya. Available online at: http://repository.kln.ac.lk/handle/123456789/8181 ; accessed on: November 13, 2018.

Nyffeler, M., & Birkhofer, K. 2017. An estimated 400–800 million tons of prey are annually killed by the global spider community. The Science of Nature, 104(3), 30.

Obank, R., A. Schatz, A. Flick, A. Heading, S. Kuzmierkiewicz, and E. Brookes. 2015. Empty threats 2015: Does the law combat illegal wildlife trade? A review of legislative and judicial approaches in fifteen jurisdictions. DLA Piper, 498 pp. Available online at: https://www.dlapiper.com/~/media/Files/News/2015/05/IllegalWildlifeTradeReport2015.pdf; accessed November 13, 2018.

Perera, K., Herath, S., Apan, A. & Tateishi, R. 2012. Application of MODIS data to assess the latest forest cover changes of Sri Lanka. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. 1(7): 165-170.

Pocock, R. I. 1899. The Genus *Poecilotheria*: its habits, history, and species. The Annals and Magazine of Natural History 7(3):82-98.

Reddy, C. S., Jha, C. S., Dadhwal, V. K., Hari Krishna, P., Vazeed Pasha, S., Satish, K. V., Kalloli Dutta, Saranya, K. R. L., Rakesh, ., Rajashekar, G. & Diwakar, P. G. 2016. Quantification and monitoring of deforesting in India over eight decades (1930-2013). Biodiversity and Conservation 25(1):93-116.

Robin des Bois. 2014. Tarantula-Mania. On the Trail: Information and analysis bulletin on animal poaching and smuggling 5: 129-131.

Samarawickrama, V. A. M. P. K., Janananda, M. D. B. G., Ranawana, K. B., Smith, A. 2005. Study of the distribution of the genus Poecilotheria of the gamily Theraphosidae in Sri Lanka. Ceylon Journal of Science (Biological Sciences) 34: 75-86.

Siliwal, M., Gupta, N. & Molur, S. 2013. The Striated Parachute Spider *Poecilotheria striata* Pocock, 1895 (Araneae: Theraphosidae): a note on taxonomy, distribution and conservation status. Journal of Threatened Taxa 5(12): 4630-4640; Available online at: https://threatenedtaxa.org/index.php/JoTT/article/view/1037 ;.accessed October 23, 2018.

Siliwal, M., Molur, S. & Daniel, B. A. 2008a. *Poecilotheria hanumavilasumica. The IUCN Red List of Threatened Species* 2008 : e.T63562A12681695. https://www.iucnredlist.org/species/63562/12681695 ; accessed November 8, 2018.

Siliwal, M., Molur, S., & Daniel, B.A. 2008b. *Poecilotheria miranda. The IUCN Red List of Threatened Species* 2008 : e.T63564A12682467. https://www.iucnredlist.org/species/63564/12682467 ; accessed November 8, 2018.

Siliwal, M., Molur, S. & Daniel, B.A. 2008c. *Poecilotheria rufilata. The IUCN Red List of Threatened Species* 2008: e.T63567A12683035. https://www.iucnredlist.org/species/63567/12683035 ; accessed November 8, 2018.

Siliwal, M., Molur, S. & Daniel, B.A. 2008d. *Poecilotheria striata. The IUCN Red List of Threatened Species* 2008: e.T63568A12691945. https://www.iucnredlist.org/species/63568/12691945 ; accessed November 8, 2018.

Siliwal, M., Molur, S. & Daniel, B.A. 2008e. *Poecilotheria tigrinawesseli. The IUCN Red List of Threatened Species* 2008: e.T63569A12692174. https://www.iucnredlist.org/species/63569/12692174 ; accessed November 8, 2018.

Siliwal, M., Molur, S., Daniel, B. A., Srinivasulu, C., Nameer, P. O. & Walker, S. 2008f. Status and Conservation of tarantulas in selected hot specks of southern India. Wildlife Information Liaison Development (WILD) Society, Coimbqatore, Tamil Nadu, India. Final Report, February 2008.

Siliwal, M., Molur, S. & Raven, R. 2011. Mygalomorphs of India: An Overview. Arthropods and their Conservation in India (Insects & Spiders). ENVIS Bulletin: Wildlife & Protected Areas, Wildlife Institute of India. 175-188.

Sinha, S. 2010. Handbook on Wildlife Law Enforcement in India. TRAFFIC India. Available online at : https://www.traffic.org/site/assets/files/6284/handbook-wildlife-law-enforcement-india.pdf ; accessed November 1, 2018.

Smith, A. M., Carpenter, P. & Lamoureux, J. P. 2002. Field Notes and Observations on the Highland Theraphosid spider Poecilotheria subfusca Pocock (Araneae: Mygalomorphae) From Sri Lanka, with Particular Reference to Habitat Destruction, Deforestation and Low Temperatures Encountered. https://www.scribd.com/document/31790989/Field-Notes-and-Observations-on-the-Highland-Theraphosid-Spider ; accessed November 5, 2018.

Sunil, J. K. 2011. Redescription of *Poecilotheria striata* Pocock with notes on the distribution of other Poecilotheria from Kerala, India (Araneae: Theraphosidae). Research Lines IV(I-B): 46-52.

USFWS (U.S. Fish & Wildlife Service). 2018a. Endangered and Threatened Wildlife and Plants: Endangered Species Status for Five Poecilotheria Tarantula Species from Sri Lanka. Federal Register 83(147): 36755-36773. Available online at: https://www.federalregister.gov/documents/2018/07/31/2018-16359/endangered-and-threatened-wildlife-and-plants-endangered-species-status-for-five-poecilotheria ; accessed November 15, 2018.

USFWS OLE (U.S. Fish and Wildlife Service Office of Law Enforcement). 2018. Internal Report on U.S. trade in species of *Poecilotheria* species 2006-2017. Data taken from Law Enforcement Management Information System (LEMIS) database. Report compiled on October 18, 2018.

World Spider Catalog. 2018. World Spider Catalog, version 19.5. Genus *Poecilotheria* Simon, 1885. National History Museum Bern. https://wsc.nmbe.ch/genus/3413/Poecilotheria ; accessed November 14, 2018

Zoo Outreach Organization. 2017. Feasibility study for establishment of the first invertebrate sanctuary in India for the Theraphosid spider *Poecilotheria hanumavilasumica* (Mygalomorphae, Araneae) on Rameswaram Island, Tamil Nadu, India. https://zooreach.org/ZOO_WILD_Activities/2017/Spider_sanctuary.htm ; accessed November 8, 2018.

Table 1. Detailed habitat and distribution information for each *Poecilotheria* species.

Species	Habitat	Distribution	Reference
Poecilotheria formosa	Dry deciduous forest with few patches of moist forests	India: Andhra Pradesh, Tamil Nadu	Molur et al. 2008c
Poecilotheria hanumavilasumica	Tamarind, palm, coconut and casuarina plantations	India: Tamil Nadu; Sri Lanka: Mannar Island	Siliwal et al. 2008a
Poecilotheria metallica	Dry deciduous forest	India: Jharkand, West Bengal	Molur et al. 2008a
Poecilotheria miranda	Mixed deciduous forest up to altitude of 800m.	India: Jharkand, West Bengal	Siliwal et al. 2008b
Poecilotheria regalis	Teak plantations,	India: Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu	Molur et al. 2008b
Poecilotheria rufilata	Moist deciduous and evergreen forests, teak plantations	India: Kerala, Tamil Nadu	Siliwal et al. 2008c
Poecilotheria striata	Dry and moist deciduous forest, teak plantations	India: Karnataka, Kerala, Tamil Nadu	Siliwal et al. 2008d
Poecilotheria tigrinawesseli	Dry deciduous forest	India: Andhra Pradesh, Chattisgarh, Orissa	Siliwal et al. 2008e
Poecilotheria chaojii	Likely dry deciduous, but type specimen found on wall of resort	India: Satpura Hills	Mirza, Sanap & Bhosale 2014
Poecilotheria fasciata	Dry and intermediate zones below 200-m elevation, coconut plantations	Central Sri Lanka	USFWS 2018, pg. 36760
Poecilotheria ornata	Plains and hills of lowland wet zone	Southwestern Sri Lanka	USFWS 2018, pg. 36761
Poecilotheria rajaei	Dry forest	Northern Sri Lanka	Nanayakkara et al. 2012a
Poecilotheria smithi	Originally found in wet zone at mid-elevations, described as montane	Central highlands of Sri Lanka, Kandy and Matale districts	USFWS 2018, pg. 36761
Poecilotheria subfusca	Wet zone in montane region (above 1,500-m elevation) and also at 500-600 m elevation	Central highlands of Sri Lanka, Nuwara Eliya, Badulla, Kegalla, Kandy, and Matale districts	USFWS 2018, pg. 36761
Poecilotheria vittata	Arid, dry, and intermediate zones; prefers Manilkara hexandra (Palu) trees	Southeastern Sri Lanka, Hambantota and Monaragala districts	USFWS 2018, pg. 36761

Table 2. Detailed population trend and status for each *Poecilotheria* species.

Species	Population Status and Trend	Population Information	Reference
Poecilotheria formosa	IUCN (2008): Endangered; Decreasing	Reported from three localities, but these accounts are almost 100 years old. Locations are severely fragmented and almost completed degraded due to cutting for firewood and timber. Extent of occurance <5,000 km^2 and area of actual occupancy <500 km^2.	Molur et al. 2008c
Poecilotheria hanumavilasumica	IUCN (2008): Critically Endangered; Decreasing	Eight subpopulations in 13 severely fragmented locations. Subpopulation size varying from four individuals to 78 individuals depending upon the size of the plantation (Manju Siliwal pers. obs.). Entire estimated extent of occurrence is <100km^2 and actual area of occupancy estimated at <6km^2.	Siliwal et al. 2008a
Poecilotheria metallica	IUCN (2008): Critically Endangered; Decreasing	Population information is not available. Since it has been recorded to date from a single location (despite surveys conducted in adjacent areas by the Andhra Pradesh Forest Department ERM Laboratory in Srisailam), it is likely that the species has a very restricted extent of occurrence (<100km^2), is very rare with declining habitat quality.	Molur et al. 2008a
Poecilotheria miranda	IUCN (2008: Endangered; Decreasing	Population information is not available. The species is rare, and is similar to other *Poecilotheria* species in its patchy distribution. Found in less than 10 locations, some of which are very severely fragmented. The extent of its occurrence is <5,000km^2 while area of actual occurence is <2,000km^2.	Siliwal et al. 2008b
Poecilotheria regalis	IUCN (2008): Least Concern; Decreasing	Population information is not available. This species is the most common of the Poecilotheria species and is encountered frequently in different habitats. The populations are severely fragmented although the species has been found in more than 20 locations.	Molur et al. 2008b
Poecilotheria rufilata	IUCN (2008): Endangered; Decreasing	Population information is not available. Only six subpopulations have been reported from six locations. Extent of occurrence is <5,000 km^2 while actual occurrence is <2,000 km^2.	Siliwal et al. 2008c
Poecilotheria striata	IUCN (2008): Vulnerable; Decreasing	Population information is not available. The species has been reported from fewer than 10 severely fragmented locations, the abundance varying depending on the habitat. Range estimated to be about 12,000 km2, area of occupancy <2,000km^2. This species is the second most common species encountered after *P. regalis*. Two distinct populations exist north and south of the Palghat gap.	Siliwal et al. 2008d
Poecilotheria tigrinawesseli	IUCN (2008): Data Deficient; Unknown	Extent of occurrence is about 20,000km^2 but actual area of occupancy is unknown. Recorded from six locations.	Siliwal et al. 2008e
Poecilotheria chaojii	Unknown	Only one type specimen has been recorded from the Satpura Hills, additional surveys need to be done to determine population status and trend.	Mirza, Sanap & Bhosale 2014
Poecilotheria fasciata	National Red List of Sri Lanka: Endangered; Unknown	The habitat for this species is in continuing decline and the species is recognized on the National Red List of Sri Lanka as Endangered.	USFWS 2018, pg. 36760
Poecilotheria ornata	National Red List of Sri Lanka: Endangered; Unknown	Estimated to occupy <500 km^2 of its range and its habitat is in continuing decline.	USFWS 2018, pg. 36761
Poecilotheria rajaei	Unknown	Unknown	n/a
Poecilotheria smithi	National Red List of Sri Lanka: Critically Endangered; Unknown	Appears to be very rare and is described as "highly threatened." Very few individuals have been found since its description in 1996. It is estimated to occupy <15km^2 of its range and its habitat is in continuing decline.	USFWS 2018, pg. 36761
Poecilotheria subfusca	National Red List of Sri Lanka: Endangered; Unknown	Area of the range occupied by the species is <500km^2 and its habitat is in continuing decline.	USFWS 2018, pg. 36761

Poecilotheria vittata	National Red List of Sri Lanka: Endangered; Unknown	The species is estimated to occupy <500km^2 of its range, and its habitat is in continuing decline.	USFWS 2018, pg. 36761

Table 3. Detailed information on use and trade of each *Poecilotheria* species (USFWS OLE 2018). U.S. trade data represents imports and exports declared between 2006 and 2017. Several thousand imported and exported specimens were only declared at the genus level, and are therefore not represented in this table but are included in totals in section 6.2.

Species	Number Exported from U.S.	Number Imported to U.S.	Use and Trade
Poecilotheria formosa	0	539	The large majority of imports were marked as captive-bred specimens and originated in Europe.
Poecilotheria hanumavilasumica	0	134	Imports came from Germany, the Czech Republic, and the Netherlands. All recorded specimens were declared captive-bred.
Poecilotheria metallica	64	7,950	Exports were marked as captive-bred, and were shipped to the UK, Japan and Canada. Imports were largely from Germany and other European countries mostly declared to be captive-bred. Few shipments of specimens from Poland were marked as wild in origin.
Poecilotheria miranda	7	838	Exports were of U.S. origin, declared as captive-bred, and the majority were shipped to Japan and Canada. Imports were from Germany, the Netherlands and Poland, mostly declared as captive-bred. The few declared as wild origin came from Poland.
Poecilotheria regalis	340	2,019	Exports were mainly shipped to Canada, Europe, and Japan, among others, all declared as captive-bred. Imports mainly came from Europe, with Germany heavily represented as the country of origin, as well as Mexico. Most imported specimens were declared captive-bred, but 5 shipments declared as wild (from Poland, France and Thailand).
Poecilotheria rufilata	23	1,431	Exports were shipped to the UK, Mexico, Japan and Canada. Imports were largely from Germany and some from South Africa. Most imports and exports were declared captive-bred, one export and six imports were declared wild in origin.
Poecilotheria striata	16	380	Exports were shipped to UK, Thailand, Japan and Canada. Imports were mainly from Europe. Most specimens were marked as captive-bred but imports from Poland were often marked as wild.
Poecilotheria tigrinawesseli	7	932	Exports went to Canada and Hong Kong. Imports were from Europe. Most specimens were marked as captive-bred but imports from Poland were often marked as wild.
Poecilotheria chaojii	Not available	Not available	Not available
Poecilotheria fasciata	17	966	Exports were mainly of U.S. origin (captive-bred) and went to the UK and Canada. Imports were mainly from Europe, mostly captive-bred, but some shipments from Poland marked as wild.
Poecilotheria ornata	55	1549	Exports were shipped to Canada, Japan and Malaysia. Imports came from Europe, with many coming from Germany and Poland. Individuals were largely marked as captive-bred, but some specimens from Poland were marked as wild.
Poecilotheria rajaei	Not available	Not available	Not available
Poecilotheria smithi	0	344	Imports came from Germany, the Netherlands, the Czech Republic and Poland. All were declared to be captive-bred.
Poecilotheria subfusca	0	74	Imports came from Poland and Germany, mostly captive-bred; five individuals from Poland were declared to be of wild origin.

Poecilotheria vittata	188	345	Exports were mainly captive-bred, though eight individuals exported were wild. Exports went to Mexico, Japan, the UK, Korea, and various other countries. Imports came from Germany and were declared as captive-bred.