

# Do breeding facilities for chelonians threaten their stability in the wild?

Text by Thomas & Sabine Vinke, Filadelfia, Paraguay

Translation of the German article:

*Bedrohen Schildkrötenfarmen die Wildbestände? - Schildkröten im Fokus, Bergheim 6 (4): 3–21, 2009.*

Photographs by Torsten Blanck, Deutschlandsberg, Austria, Rajeev Chauhan, Etawah, India, Mark Klerks, Waalwijk, The Netherlands, Stefan Kundert, Wolfhausen, Switzerland, Tim McCormack, Hanoi, Viet Nam, Tunali Mukherjee, Mumbai, India, Job Stumpel, Utrecht, The Netherlands, Atherton de Villiers, Stellenbosch, South Africa, and the authors.

Those who are familiar with us from our publications (i. e. VINKE & VINKE 2000) or from personal communication are aware of our deep skepticism concerning commercial farms on which tortoises are bred. In the course of researching our South American tortoise book (VINKE et al. 2008) we found hints again and again that among so-called farm-bred red-footed tortoises (*Chelonoidis carbonaria*), wild-caught animals were to be found. We also found irregularities leading us to suspect that red-footed tortoises had been mislabeled intentionally according to origin (VINKE & VINKE 2008). Galvanized by reports and innuendo from different sources about the mushrooming trade in pancake tortoises (*Malachochersus tornieri*) we started to research other species in other countries. And what we found out is truly scandalous.

To understand the “breeding farm” system, one first must analyze the terminology and background. Exploration of this rather dry topic is crucial in order to recognize the legal loopholes, because not every tortoise legally sold by a breeding facility is actually “bred” there strictly speaking—as we will demonstrate. But that’s not the end of it. Even publicly available statistics

contain unequivocal cases of sloppiness and/or corruption by the responsible authorities.

## The Role of CITES

At first one has to clarify who or what CITES actually is. A detailed and interesting article with good background information about the goals, function, success, but also limitations of CITES has been prepared by the insider PETER PAUL VAN DIJK (2004) for readers of *Schildkröten im Fokus*. To simplify,

CITES is a federation of nations sharing the common goal of the sustainable use of natural resources. Therefore the main interest is not species conservation, but the commercial trading of animals and plants with the proviso that the trade will be possible on a long-term scale, meaning sustainable and therefore not leading to the extirpation of the species. When joining CITES a nation obligates itself to establish adequate legislation to implement CITES require-



**Fig. 1**

Turtles hatched at breeding farms have often not been farm “bred”; the meaning of the classification varies.

Photo: THOMAS & SABINE VINKE

Taxon	Import	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Testudo graeca</i>	AT Austria	0	3	50	0	0	0	0	0	0	53
<i>Testudo graeca</i>	CH Switzerland	60	60	0	0	50	0	0	130	0	300
<i>Testudo graeca</i>	GE Germany	0	0	0	400	1,400	750	3,223	2,520	6,534	14,827
<i>Testudo graeca</i>	GB United Kingdom	0	0	0	100	500	500	1,790	2,055	1,300	6,245
<i>Testudo graeca</i>	IT Italy	0	0	0	0	100	0	0	0	0	100
<i>Testudo graeca</i>	JP Japan	0	0	0	0	0	0	50	0	0	50
<i>Testudo graeca</i>	NO Norway	0	0	0	0	0	2	0	0	0	2
<i>Testudo graeca</i>	SE Sweden	0	0	2	150	0	0	0	0	0	152
<i>Testudo graeca</i>	US U.S.A.	160	100	0	1	0	0	0	0	0	261
<b>Total</b>		<b>220</b>	<b>163</b>	<b>52</b>	<b>651</b>	<b>2,050</b>	<b>1,252</b>	<b>5,063</b>	<b>4,705</b>	<b>7,834</b>	<b>21,990</b>

**Table 1**

Turkey has been exporting increasing numbers of autochthonous spur-thighed tortoises (*Testudo graeca*). All exported specimens are declared as "captive bred."

ments. Additionally a *Management Authority* (MA) and a *Scientific Authority* (SA) must be designated. These national CITES authorities have comprehensive authority. For example only their decision is definitive on the number of protected animals and plants to be harvested from nature for the international trade. The national CITES authorities can determine the quota, which means maximum export numbers, and are supposed to implement non-detriment studies. Unfortunately neither quotas nor non-detriment studies are mandatory—but if export quotas are applied, it is impermissible to exceed them (HOOGMOED pers. comm.). Furthermore each specific import and export permit and their control fall under the responsibility of these authorities, which also means checking the breeding farms.

The European Union plays a special role. Each member of the EU is like any nation, an inde-

pendent member of CITES and therefore has implemented its own national CITES authorities, which check every single case of import and export. However, at the level of the EU the members have established the *Scientific Review Group* (SRG), to whose decisions such as import bans (see Limitations and Opportunities, pp. 14–16) all members are bound. In this way it is assured that within the European Union all nations have the same policy. This also means that the rejection of an import by a national Management Authority automatically establishes a temporary import ban for all member countries, until the SRG comes to a decision (HOOGMOED 2002).

The international *CITES Secretariat* is administered by the UNEP and thus by the UN. It is located in Geneva and besides its administrative, organizational and informative function it plays a predominant advisory and servicing role. Significantly, Article XII of

the Convention specifies: “. . . to study the reports of Parties and to request from Parties such further information with respect thereto as it deems necessary to ensure implementation of the present Convention” (CITES 1973). Accordingly, the CITES secretariat undertakes investigations of its own (HOOGMOED, pers. comm.).

### Bred, Born or Raised in Captivity?

An important distinguishing feature about how imported animals had been produced on farms is to be found in the classification which is printed on any import and export permit (and the yellow EU certificate as well).

The classification with the highest demand is “**bred in captivity**”, abbreviated “c” (or “d” in the case of commercially bred species listed on Appendix I of CITES, that is, on Appendix A of the EU species protection regulation). To receive this classification, the breeding stock has to have been established in accordance with the provisions of CITES and relevant national laws and in a manner not detrimental to the survival of the species in the wild. The latter constraint is of special importance, for example whether animals collected before a nation became a member of CITES,

Taxon	1998*–2005	2006	2007	2008	Total
<i>Testudo marginata</i> Import	0	52	13	0	65
<i>Testudo marginata</i> Export	0	0	170	730	900
<i>Malacochersus tornieri</i> Import	0	0	0	0	0
<i>Malacochersus tornieri</i> Export	0	24	0	0	24
* Enforcement of CITES					

**Table 2**

Exports of allochthonous "captive-bred" tortoises from Turkey, and imports of the same species into Turkey.



**Fig. 2**

It is highly unlikely that pancake tortoises (*Malacochersus tornieri*) could be bred in great numbers at breeding farms.

Photo: THOMAS & SABINE VINKE

depending on the threat to the species, may be included or excluded. Furthermore in accordance with this regulation a breeding group, which had been legalized by a permit founded on corruption, can lose its status. Other conditions for the label “captive-bred” specify that after a breeding group is founded, it is maintained without the introduction of specimens from the wild. Occasionally exceptions, for example to prevent inbreeding or to dispose of confiscated animals, are possible. Additionally the breeding group has to be managed in a manner that offspring of the second generation can be produced, meaning that hatchlings have to be held back and raised there. An exception to the latter is only possible if the breeding group exclusively consists of animals which are captive-bred themselves. Besides these conditions regarding origin, extension and maintenance of the breeding group, only one further condition exists concerning the offspring: Their parents must have been mating in the controlled environment. This is not a very important and clear point regarding tortoises,

because the actual moment of siring is not to be proven, and the incubating of eggs gathered from wild nests is forbidden to qualify for “captive bred” status.

In contrast to the latter the conditions for “**born in captivity**” or “**farmed**”, abbreviated as “f” are quite simple to fulfill. Farming is restricted to species that are listed on Appendix II, which means species which also may be traded as wild caught animals. Regarding

*“Breeding stocks have to be established in a manner not detrimental to the survival of the species”*

the breeding stock no regulations exist, but the basic CITES conditions for sustainable trade are implicit. Therefore this category may consist of wild-caught animals, and some specimens neither need to remain in the breeding stock, nor must the stock be sustained in following generations. The one and only condition is that the animals had been sired in the controlled environment. Therefore, it is a widespread practice to keep wild-caught females for a time in “transit,” to incubate the eggs and

afterwards to export both parent and offspring (THEILE 2002). The hatched animals are just extra income, because the main profit is made from exporting the adult wild-caught animals.

The last category “**raised in captivity**” or “**ranch**ed”, abbreviated as “r” does not even demand a sire or birth in captivity. It permits the exporting party to collect eggs and incubate them or to catch juvenile animals in the wild and raise them. The basic idea of “ranching” is to rear the animals and to return them to the wild, where they have higher survival rates (like head-starting programs).

Usually a specified portion of the hatched or ranched animals can be sold. Although this practice formerly was set up for Appendix I species, and is mainly used for crocodylians, it may be applied to species listed on Appendix II as well. Meanwhile the system has veered in the opposite direction, at least concerning tortoises and their release into the wild (if evaluated half-heartedly and without thoroughness by a specialist) and becomes mere tokenism. For example over 100,000 Russian tor-



tortoises (*Testudo horsfieldii*) were collected and exported by a breeding farm in Uzbekistan over 4 years (1997–2000). During that period 6,874 tortoises hatched from eggs laid at that farm, from which only 700 were released (THEILE 2002). In the following years (2001–2008) only on two other occasions were tortoises released, once in 2001, the number not having been noted. Again, in an unknown year, only 201 young tortoises were released, although the number of animals hatched surely increased significantly, as eggs began to be collected systematically from the wild, and every gravid female was injected with an oxytocic pharmaceutical (SOROCHINSKIY 2009).

The *Animals Committee* of CITES is aware of the need for

action. Proposals include everything from completely deleting the source “r” from export permits, to restricting it to species listed on Appendix I, and to limiting this category to marine turtles and/or crocodylians. At the moment a proposal to redefine the term “ranching” is strongly advisable, so as to highlight the conservation benefit demonstrable by higher survival rates of animals hatched under artificial conditions rather than wild-hatched, and thus to return to the original intention of the classification (CITES 2009c). However, the final decision about how to proceed in future is not up to the *Animals Committee*, but can only be carried out by the *Conference of the Parties*, probably at the next meeting (CoP 15) in Doha, Qatar 2010.

### Misleading the Customer

For laymen who buy a tortoise imported from a breeding farm, the practice of labeling is usually misleading. Independent of whether a tortoise is bred, born or only raised in captivity, it is labeled as “captive offspring” and thus the customer will not connect the purchase to the exploitation of wildlife. In the worst case, explaining the ranching concept will cause him to believe he is supporting species conservation by buying a ranched tortoise. And the problem gets even worse. At many farms tortoises of the same species are housed, but of categorically different origins (ranching, farmed, captive-bred, and wild-caught), (JENKINS et al. 1998, THEILE 2002). What controlling party will be able to distinguish which tortoise had



**Fig. 3**

"Captive-bred" spur-thighed tortoises (*Testudo graeca iberica*) from Turkey are traded internationally. Photo: THOMAS & SABINE VINKE

been produced under which conditions? Isn't it obvious that if the export quota of wild-caught animals has been filled, that animals from different categories will be moved around within the same facility for the sake of increasing business, meaning profit? And it gets even worse!

### Looking for Loopholes

To get an overview about the trade in tortoises we evaluated the public CITES Trade Database. In the past few years thousands of tortoises have been exported from Turkey, in increasing numbers (table 1). The spur-thighed tortoise (*Testudo graeca*) has borne the lion's share. This species is listed under the highest protection class only within the European Union (Appendix A), but as Appendix II in CITES. Therefore it is legal to build up the breeding stock with wild-caught animals, insofar as is permitted by the national authorities. To be granted and to retain the classification "captive-bred" it is forbidden to add additional wild-caught animals, but whether this condition is

fulfilled or not, is impossible to judge from viewing the publicly available data.

To evaluate how accurately the Turkish authorities work when checking facilities and issuing export permits we took a closer look at the import figures into and the export figures from Turkey of non-native species (table 2). The data on the Marginated tortoises *Testudo marginata* are remarkable, but within the realm of possibility. Apparently, the breeding groups must have a reproduction rate at the highest possible limit to fulfill the conditions of captive-bred—the classification of the exported offspring. If it is postulated that the sex ratio of the previously imported tortoises is 1 male to 3–5 females, and that all animals had come into Turkey as sexually mature adults, and started immediately to reproduce themselves their reproduction rate is at least 14–17 hatchlings per female per year. Actually the sex ratio usually is skewed to even more males on breeding farms—that means there would be fewer females and therefore the reproductive rate of the

imported females must be even higher (compare with 1:1,5 in HERNÁNDEZ & BOEDE 2001 or 1:3 in PHILIPPEN 2008).

The only obvious irregularity in the statistics concerns 24 pancake tortoises (*Malacochersus tornieri*), allegedly "bred" in Turkey and imported into the U.S.A. in 2006 without any previously or concomitantly reported import of that species into Turkey. Surely one can argue that the dubious trafficking of 24 tortoises isn't the end of the world, and perhaps is only due to a filing mistake. We would agree, if this was an isolated case, but unfortunately it isn't.

### Fraudulent labeling in El Salvador

After evaluating figures from El Salvador (table 3a–b) we were really shocked. In 1995, that nation imported 10 wild-caught African spurred tortoises (*Geochelone sulcata*), and three years later, 34 more. As quickly afterwards as the year 2000, El Salvador reported the export of 2,902 "captive-bred" specimens and in 2001, a seven-fold increase

Taxon	1987*–1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
<i>Geochelone sulcata</i> Importe	0	10	0	0	34	0	0	0	0	0	0	0	0	0	44
<i>Geochelone sulcata</i> Exporte	0	0	0	0	130	150	2,902	21,420	1,900	1,320	1,390	735	1,025	1,220	32,192

Taxon	1987*–2004	2005	2006	2007	Total
<i>Testudo horsfieldii</i> Export	0	0	2,559	3,129	5,688
<i>Testudo horsfieldii</i> Import	0	10,000	0	0	10,000

\* Enforcement of CITES

**Table 3a–b**

Exports from and Imports to El Salvador. African spurred tortoises (a, *Geochelone sulcata*): During the years 1998 and 1999 they were declared as "farmed"; from 2001 on, as "captive bred." Note the low number of imported specimens. 10,000 imported "wild-caught" steppe tortoises (*Testudo horsfieldii*) became "captive-bred" specimens, with carapace lengths of at least 4 inches, exported to the US the next year (b).



**Fig. 4**

In El Salvador African spurred tortoises (*Geochelone sulcata*) are "bred" in large numbers without sufficient imports of specimens for founding breeding groups.

Photo: STEFAN KUNDERT

of 21,420, of which 19,000 went to the U.S.A. Of course El Salvador is allowed to import animals from countries which are not CITES members, but if so, they should be identified as such in the statistics as well, and such a case precludes a rating of the highest possible classification "captive bred."

Just as bad are the reports regarding Russian tortoises (*Testudo horsfieldii*) in the same country. In 2005, 10,000 wild-caught specimens were imported into El Salvador, exported by Ukraine and having originated in Tadzhikistan. In the following year 2,559 "captive bred" specimens were exported to the U.S.A. and a further 3,129 in 2007. In light of the four-inch rule, without any doubt these "captive-bred" tortoises had to have been the same tortoises which had entered the country as "wild-caught." The paper work for the bulk of these tortoises still gave their origin as "Tadzhikistan," rather than El

Salvador. Thus, if these tortoises had been hatched in El Salvador from eggs laid by the 2005 imported specimens, those adults would have to have started reproducing immediately, and the offspring would have grown to 4 inches (about 10 cm) in record time. This is clearly impossible. DEVAUX

*"Until the year 2004 most exports from Lebanon do not report any other country of origin"*

(2007) showed that even under artificial, continuous spring-like climatic conditions, and being fed an extremely protein-rich diet on a commercial breeding farm in Uzbekistan, such growth takes 3 years—apart from the huge improbability of being able to breed *Testudo horsfieldii*, a temperate species requiring hibernation for successful reproduction, in a Central American country.

### The Kazakhstan–Lebanon–Japan Connection

A fascinating but unhappy odyssey is the fate of 13 chelonian species of highly diverse geographical origins including the Burmese star tortoise (*Geochelone platynota*), pancake tortoise (*Malacochersus tornieri*), Madagascar big-headed turtle (*Erymnochelys madagascariensis*), various roofed turtles (*Kachuga* spp. and *Pangshura* spp.), and even the hard-to-breed spider tortoise (*Pyxis arachnoides*) (table 4). All these species were exported more or less continuously in the years 2000–2006 from Lebanon to Japan, with the designated origin of Kazakhstan, and all labeled as "captive bred." Lebanon is not a member of CITES, but Japan and Kazakhstan are. None of these species is native to Kazakhstan, and according to CITES trade data, had never been imported into that country nor exported from it. Nevertheless the CITES authorities of Japan issued all these import permits.

From where we sit, it's impossible to check whether the fraudulent labeling had been done in Lebanon alone, whether Kazakhstan was involved involuntarily without the knowledge of the Kazakh authorities, or whether they played an active role in that game. What is conspicuous is that until the year 2004 most exports from Lebanon do not report any other country of origin, and then Kazakhstan appears.

From this research, it came as no surprise that in the years 2004 and 2005, 550 "captive-bred tortoises" (Testudinidae) were

imported into Japan by the same route. With these import papers each tortoise can be subsequently legalized! Overall 25,142 protected turtles and tortoises were imported into Japan from Lebanon between 2000 and 2006. In the years 2004–2005 Thailand imported a total of 3,240 protected chelonians via the same route.

Although the trade in native species was not a focus of our research, it's notable that between 1999–2004 a considerable number of wild-caught spur-thighed tortoises (*Testudo graeca*) were exported from Lebanon. Japan imported 4,833 of these. But the U.S.A. obviously had no problem allowing the importation of wild-caught animals from a non-CITES country. Between 2001 and 2004 11,629 wild-caught spur-thighed tortoises from Lebanon (table 5) entered the U.S.A. legally. Fortunately these exports were stopped following the objections and protests of Lebanese biologists (DAKDOUK 2009).

### Jordan as Successor to Lebanon?

The pet trade is nothing if not resilient. To the same degree to which the tortoise exports from Lebanon decreased, those from Jordan took off (table 6). Wild-caught spur-thighed tortoises now are simply sold by Jordan, the U.S.A. importing 4,415 specimens between 2005–2007, for example. Although Jordan ratified CITES more than 30 years ago, it is surely questionable whether it is complying with CITES' uppermost condition, that the survival of the species is not actually threatened. Jordanian breeding certificates seem not to be worth the paper they are printed on. For example



**Fig. 5a–c**

The Indian flap-shelled turtle (*Lissemys punctata*) (a) and many other species of chelonians like the yellow-bellied tent turtle (*Pangshura tentoria flaviventer*) (b) or Burmese star tortoise (*Geochelone platynota*) (c) supposedly came to Asia along a trade route from Kazakhstan via Lebanon – all of them as "captive bred."

Photos: JOB STUMPEL (a), TORSTEN BLANCK (b, c),

17,882 star tortoises (*Geochelone elegans*), classified as "bred in captivity" have been exported since 2004, but the total number of imported adult tortoises, at best comprising the Jordanian breeding colony, amounts to merely 30 specimens. In contrast to the export of 715 pancake tortoises (*Malacochersus tornieri*) from Jordan, not one single specimen of that species had been imported by that country. Proportionately mild is the count of 20 Burmese star tortoises (*Geochelone platynota*) and 35 alligator snapping turtles (*Macrochelys temminckii*) — also "bred" in captivity without parents. In light of this glaring numerical impossibility, how can one really believe that 76,876

native spur-thighed tortoises (*Testudo graeca*) exported from Jordan had been bred in captivity there (table 7)?

This compilation of dubious data from the very reports of various countries is far from complete, but should be sufficient for this article. In other cases the same pattern involving the same species is conspicuous. For example, the trading statistics of the Ukraine are nearly the same as Jordan's. Whoever is interested in more information should peer into the public statistics provided by the World Conservation Monitoring Centre, London, available via the Internet (see literature section). Prior to each Conference of the Parties of CITES, various NGOs

Taxon	Import	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Cuora flavomarginata</i>	JP Japan	0	0	0	0	0	100	0	0	0	100
<i>Cuora galbinifrons</i>	JP Japan	0	0	0	0	0	13	0	0	0	13
<i>Kachuga dhongoka</i>	JP Japan	0	0	0	0	0	0	30	0	0	30
<i>Kachuga kachuga</i>	JP Japan	0	0	0	0	0	6	8	0	0	14
<i>Pangshura sylhetensis</i>	JP Japan	0	0	0	0	0	0	90	0	0	90
<i>Pangshura tentoria</i>	JP Japan	0	0	0	0	0	850	0	0	0	850
<i>Terrapene carolina</i>	JP Japan	0	0	0	0	100	0	0	0	0	100
<i>Testudinidae spp.</i>	JP Japan	0	0	0	0	450	215	0	0	0	665
<i>Aldabrachelys gigantea</i>	JP Japan	0	0	0	0	50	0	0	0	0	50
<i>Aldabrachelys gigantea</i>	TH Thailand	0	0	0	0	50	0	0	0	0	50
<i>Chersina angulata</i>	JP Japan	0	0	0	0	20	14	8	0	0	42
<i>Chersina angulata</i>	TH Thailand	0	0	0	0	20	50	0	0	0	70
<i>Geochelone elegans</i>	FR France	0	150	0	0	0	0	0	0	0	150
<i>Geochelone elegans</i>	JP Japan	700	1,870	1,870	689	825	6,914	900	0	0	13,768
<i>Geochelone elegans</i>	MX Mexico	0	0	0	0	200	0	0	0	0	200
<i>Geochelone elegans</i>	TH Thailand	0	0	0	0	350	1,500	0	0	0	1,850
<i>Geochelone platynota</i>	JP Japan	0	0	0	0	200	134	20	0	0	354
<i>Geochelone platynota</i>	TH Thailand	0	0	0	0	350	300	0	0	0	650
<i>Geochelone sulcata</i>	TH Thailand	0	0	0	0	40	200	0	0	0	240
<i>Malacochersus tornieri</i>	JP Japan	0	0	0	0	0	50	0	0	0	50
<i>Malacochersus tornieri</i>	TH Thailand	0	0	0	0	130	0	0	0	0	130
<i>Pyxis arachnoides</i>	JP Japan	0	0	0	100	598	0	0	0	0	698
<i>Pyxis arachnoides</i>	TH Thailand	0	0	0	0	150	100	0	0	0	250
<i>Testudo graeca</i>	GB United Kingdom	0	1,494	0	0	0	0	0	0	0	1,494
<i>Testudo graeca</i>	JP Japan	3,000	1,800	1,950	500	300	0	0	0	0	7,550
<i>Testudo graeca</i>	SI Slovenia	0	200	0	0	0	0	0	0	0	200
<i>Testudo graeca</i>	US U.S.A.	0	558	3,824	0	0	0	0	0	0	4,382
<i>Testudo horsfieldii</i>	FR France	0	500	0	0	0	0	0	0	0	500
<i>Testudo horsfieldii</i>	JP Japan	0	450	0	0	0	0	0	0	0	450
<i>Lissemys punctata</i>	JP Japan	0	0	0	0	100	100	30	0	0	230
<i>Erymnochelys madagascariensis</i>	JP Japan	0	0	0	0	0	88	0	0	0	88
											35,308

**Table 4**

Export data of all so-called "captive bred" chelonians from Lebanon.

Taxon	Import	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Testudo graeca</i>	DE Germany	15	0	0	0	0	0	0	0	0	0	0	0	15
<i>Testudo graeca</i>	JP Japan	0	0	800	700	0	500	1,525	1,308	0	0	0	0	4,833
<i>Testudo graeca</i>	MX Mexico	0	0	0	0	0	0	0	100	0	0	0	0	100
<i>Testudo graeca</i>	SI Slovenia	0	0	0	0	0	700	0	0	0	0	0	0	700
<i>Testudo graeca</i>	US U.S.A.	0	0	0	0	200	3,629	4,000	3,800	0	0	0	0	11,629
<b>Total</b>		15	0	800	700	200	4,829	5,525	5,208	0	0	0	0	17,277

**Table 5**

Exports of wild-caught spur-thighed tortoises (*Testudo graeca*) from Lebanon.





**Fig. 6**  
30 star tortoises (*Geochelone elegans*) were imported to Jordan and "bred" to produce 17,882 hatchlings for exports. The high export numbers must have been largely illegal tortoises like the 2,016 hatchlings that were seized in India.

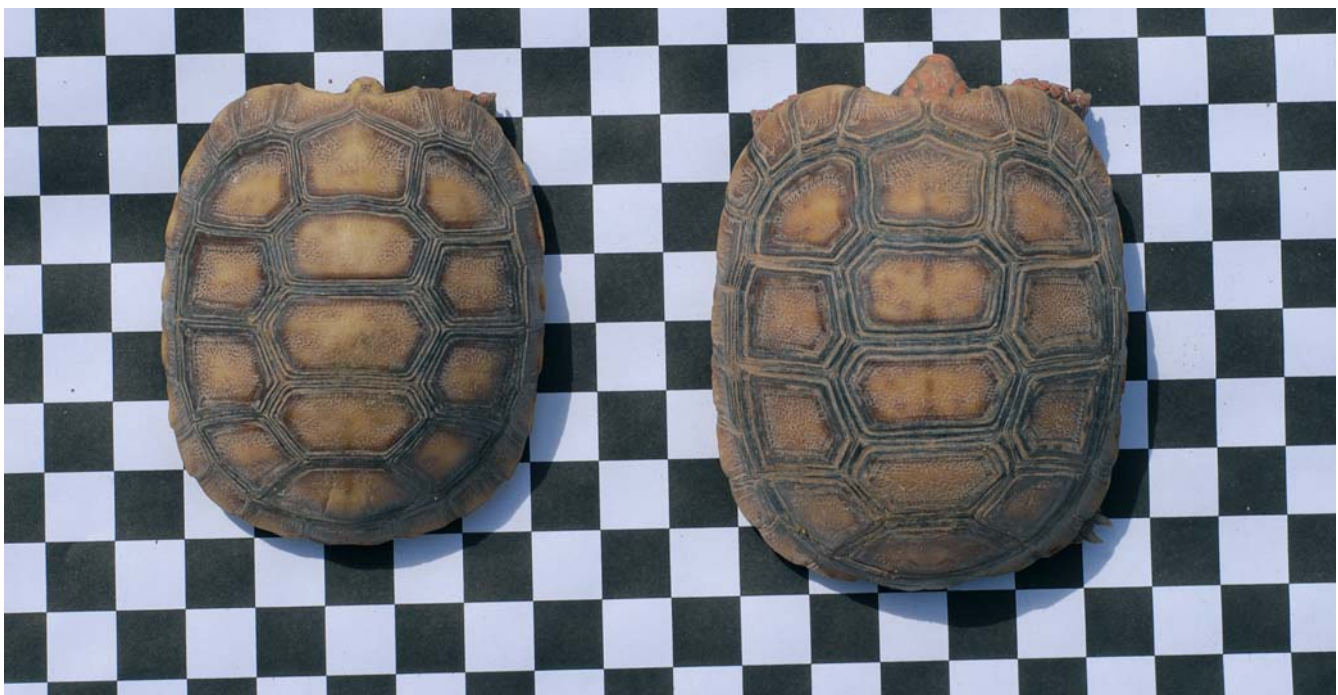
Photo: TUNALI MUKHERJEE

(i.e. IUCN Specialist Groups, TRAFFIC, Humane Society, etc.) view and comment on the data, besides which the Scientific Review Group (SRG) of the European Union uses the statistics to form its "negative or positive opinion" leading to restricted trade in a species, or banning trade altogether

(HOOGMOED, pers. comm., see Limitations and Opportunities, pp. 14–16).

That we did not check the tortoise trade in member countries of the European Union is easily explained. Not that we believe that everything is handled correctly in the EU, nor do we wish to spare

these countries embarrassment for whatever reason. Rather, the special way of trading within the European Union and the unique method of reporting to CITES preclude our arriving at a reasonable estimation of data. Virtually all chelonians heretofore mentioned have been imported into



**Fig. 7**  
"Legitimate" breeding facilities have to compete against fraudulent labelling practices. For exporting to the US market, chelonians have to be raised to a size of more than 4 inches. This encourages illegal capture of more chelonians from the wild, and is also counterproductive to animal welfare. The photo compares red-footed tortoises (*Chelonoidis carbonaria*) at 11 and 22 months of age, raised under near-natural species-specific conditions within the distribution area in Paraguay.

Photo: THOMAS & SABINE VINKE

Taxon	1979*– 2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Geochelone elegans</i> Import	10	0	0	0	0	0	20	0	<b>30</b>
<i>Geochelone elegans</i> Export	0	0	0	600	1,980	4,810	5,540	4,952	<b>17,882</b>
<i>Geochelone platynota</i> Import	0	0	0	0	0	0	0	0	<b>0</b>
<i>Geochelone platynota</i> Export	0	0	0	0	20	0	0	0	<b>20</b>
<i>Geochelone sulcata</i> Import	0	0	7	0	0	0	0	0	<b>7</b>
<i>Geochelone sulcata</i> Export	0	0	0	0	0	0	30	30	<b>60</b>
<i>Macrochelys temminckii</i> Import	0	0	0	0	0	0	0	0	<b>0</b>
<i>Macrochelys temminckii</i> Export	0	0	0	0	0	35	0	0	<b>35</b>
<i>Malacochersus tornieri</i> Import	0	0	0	0	0	0	0	0	<b>0</b>
<i>Malacochersus tornieri</i> Export	0	0	0	0	0	485	230	0	<b>715</b>
<i>Stigmochelys pardalis</i> Import	0	100	0	0	0	0	0	0	<b>100</b>
<i>Stigmochelys pardalis</i> Export	0	0	0	0	0	460	305	0	<b>765</b>
<i>Testudo hermanni</i> Import	0	0	0	0	0	0	0	300	<b>300</b>
<i>Testudo hermanni</i> Export	0	0	0	200	0	0	0	300	<b>500</b>

\* Enforcement of CITES

**Table 6**

Export data of so-called "captive-bred" non-autochthonous species from Jordan and all import data of the same species.

Taxon	Import	1979*– 2001	2002	2003	2004	2005	2006	2007	2008	Total
<i>Testudo graeca</i>	AE United Arab Emirates	0	0	0	0	0	0	200	0	<b>200</b>
<i>Testudo graeca</i>	AU Australia	4	0	0	0	0	0	0	0	<b>4</b>
<i>Testudo graeca</i>	CA Canada	0	0	0	0	3	0	0	0	<b>3</b>
<i>Testudo graeca</i>	CH Switzerland	0	0	0	0	0	0	60	0	<b>60</b>
<i>Testudo graeca</i>	CZ Czech Republic	0	0	0	400	100	198	575	600	<b>1,873</b>
<i>Testudo graeca</i>	DE Germany	0	0	150	0	0	0	0	0	<b>150</b>
<i>Testudo graeca</i>	DK Denmark	0	0	300	0	0	0	0	0	<b>300</b>
<i>Testudo graeca</i>	ES Spain	0	0	0	0	0	200	0	0	<b>200</b>
<i>Testudo graeca</i>	GB United Kingdom	0	0	0	800	300	0	0	0	<b>1,100</b>
<i>Testudo graeca</i>	HK Hong Kong	0	0	150	600	750	550	300	0	<b>2,350</b>
<i>Testudo graeca</i>	HR Croatia	0	0	1,000	500	0	0	0	0	<b>1,500</b>
<i>Testudo graeca</i>	ID Indonesia	0	0	500	0	0	0	515	0	<b>1,015</b>
<i>Testudo graeca</i>	JP Japan	0	1,200	2,550	3,950	8,850	10,430	9,950	7,900	<b>44,830</b>
<i>Testudo graeca</i>	KR Korea	0	0	0	400	0	220	70	0	<b>690</b>
<i>Testudo graeca</i>	MO Macao	0	0	0	0	250	0	0	0	<b>250</b>
<i>Testudo graeca</i>	MX Mexico	0	0	0	0	0	80	0	0	<b>80</b>
<i>Testudo graeca</i>	MY Malaysia	0	0	0	0	0	250	0	0	<b>250</b>
<i>Testudo graeca</i>	NL The Netherlands	0	0	250	0	0	0	0	0	<b>250</b>
<i>Testudo graeca</i>	SI Slovenia	0	0	0	500	0	200	2,250	500	<b>3,450</b>
<i>Testudo graeca</i>	SK Slovakia	0	0	0	0	0	0	20	0	<b>20</b>
<i>Testudo graeca</i>	TH Thailand	0	0	0	0	200	0	0	0	<b>200</b>
<i>Testudo graeca</i>	TW Taiwan	0	0	0	1,470	1,500	1,410	1,120	1,100	<b>6,600</b>
<i>Testudo graeca</i>	UA Ukraine	0	0	0	0	200	200	300	0	<b>700</b>
<i>Testudo graeca</i>	US U.S.A.	0	1,600	800	700	200	1,650	1,950	3,805	<b>10,705</b>
<i>Testudo graeca</i>	XX unknown	0	0	0	0	0	100	0	0	<b>100</b>
<b>Total</b>		<b>4</b>	<b>2,800</b>	<b>5,700</b>	<b>9,320</b>	<b>12,353</b>	<b>15,488</b>	<b>17,310</b>	<b>13,905</b>	<b>76,880</b>

\* Enforcement of CITES

**Table 7**

Exports of "captive-bred" spur-thighed tortoises (*Testudo graeca*), from Jordan.



EU over the years, by different EU member states. Public statistics about trading volumes within the EU do not exist, because they are not reported to CITES. Only imports into the EU from non-EU countries, and exports to those from the EU are available for analysis. Thus, which EU state holds a given number of a given species is untraceable. Most captive-bred chelonians are sold within the EU; only a small portion is exported annually. For such exported progeny, one always finds a sufficient pool of possible parents, having been imported previously by any EU member. For that reason it's impossible to declare whether everything is above board at European breeding farms.

### Clean Breeding Farms?

This analysis shows that the trade in wild-caught animals and in fraudulently labeled "captive bred" chelonians is widespread. Every

breeding farm must come to terms with these facts when it tries to function properly. Except for hobbyists, who don't have to sell turtle and tortoise offspring for a living, any commercial breeding farm has to compete with such crooked schemes. Because a fraudulently labeled animal is also "captive bred" as far as the purchaser is concerned, there is no way to expect to get a higher price for a properly produced animal. To set up a breeding colony with legally obtained animals, to provide them species-appropriate care, to incubate the offspring and to sustain the breeding stock by raising offspring on a long-term scale is expensive with regard to time, money and space.

Depending on the actual location of a breeding farm, it may be possible to operate in some places at low cost, for example, in a country with low labor costs, or by minimizing energy costs in a country with a suitable climate, or

where land was really cheap. But nowhere is there a goose that lays the golden egg. Even if chelonians are bred in the country of origin (which is rarely the case) and adequate climatic conditions are free, problems frequently arise regarding the provision of food. In arid areas for example food costs are extremely high, that is, either food



**Fig. 8a-b**

Not all countries ensure that exports are sustainable and the chelonians could survive long-term in nature - like these bowsprit tortoises (*Chersina angulata*) in South Africa.

Photos: ATHERTON DE VILLIERS (a), MARK KLERKS (b)





Taxon	Source	Terms	Country of origin
<i>Aldabrachelys gigantea</i>	wild	all	Seychelles
<i>Amyda cartilaginea</i>	wild	all	Indonesia
<i>Callagur borneoensis</i>	wild	all	all
<i>Chelonoidis denticulata</i>	wild	all	Bolivia, Ecuador
<i>Chitra chitra</i>	wild	all	Malaysia
<i>Chrysemys picta</i>	alle	live	all
<i>Cuora amboinensis</i>	wild	all	Indonesia, Malaysia
<i>Cuora galbinifrons</i>	wild	all	China
<i>Erymnochelys madagascariensis</i>	wild	all	Madagascar
<i>Geochelone elegans</i>	wild	all	Pakistan
<i>Geochelone platynota</i>	wild	all	Myanmar
<i>Geochelone sulcata</i>	ranching „r“	all	Togo, Benin
<i>Gopherus agassizii</i>	wild	all	all
<i>Gopherus berlandieri</i>	wild	all	all
<i>Gopherus polyphemus</i>	wild	all	U.S.A.
<i>Heosemys spinosa</i>	wild	all	Indonesia
<i>Indotestudo elongata</i>	wild	all	Bangladesh, China, India
<i>Indotestudo forstenii</i>	wild	all	all
<i>Indotestudo travancorica</i>	wild	all	all
<i>Kinixys belliana</i>	wild	all	Mozambique
	ranching „r“	all	Benin
<i>Kinixys homeana</i>	wild	all	Benin, Togo
	ranching „r“	all	Benin
<i>Kinixys spekii</i>	wild	all	Mozambique
<i>Leucocephalon yuwonoi</i>	wild	all	Indonesia
<i>Malayemys subtrijuga</i>	wild	all	Indonesia
<i>Manouria emys</i>	wild	all	Bangladesh, India, Indonesia, Myanmar, Thailand
<i>Manouria impressa</i>	wild	all	Viet Nam
<i>Notochelys platynota</i>	wild	all	Indonesia
<i>Pelochelys cantorii</i>	wild	all	Indonesia
<i>Peltocephalus dumerilianus</i>	wild	all	Guyana
<i>Podocnemis erythrocephala</i>	wild	all	Colombia, Venezuela
<i>Podocnemis expansa</i>	wild	all	Colombia, Ecuador, Guyana, Peru, Trinidad and Tobago, Venezuela
<i>Podocnemis lewyana</i>	wild	all	all
<i>Podocnemis sextuberculata</i>	wild	all	Peru
<i>Podocnemis unifilis</i>	wild	all	Suriname
<i>Siebenrockiella crassicollis</i>	wild	all	Indonesia
<i>Stigmochelys pardalis</i>	wild	all	Democratic Republic of the Congo, Mozambique, Uganda, Tanzania
	ranching „r“	all	Mozambique, Zambia
	farming „f“	all	Zambia
<i>Testudo horsfieldii</i>	wild	all	China, Kazakhstan, Pakistan
<i>Trachemys scripta elegans</i>	all	live	all

**Table 8**

Import suspensions for red-eared sliders (*Trachemys scripta elegans*) and painted turtles (*Chrysemys picta*) are for the protection of autochthonous species (article 4.6 of the Commission Regulation no. 338/97). Import suspensions for all other species are for their own conservation (article 4.6b). Unfortunately, all suspensions due to concerns for animal welfare (article 4.6c) were lifted with CR-no. 605/2006. At that time 16 chelonian species were involved.



**Fig. 9a-c**

It is the responsibility of the importing countries to verify trade routes to prevent illegal wild-caught animals from crossing borders and being called "captive bred." This is the only way to support the efforts of countries that are seriously attempting to curtail illegal trade within their own borders. In the photo, seized Indian flap-shelled turtles are released again in India.

Photos: RAJEEV CHAUHAN

cultivation presents difficulty, or food is only seasonally available. Elsewhere, multiple year-round harvests of food plants may be possible, but the land needed for cultivation is extremely expensive. To sell chelonians on the U.S. market they must have attained a carapace length of at least 4 inches (over 10 cm). For a dealer to stay competitive in order to comply with this condition, animal welfare must be overlooked, as by the

practice of 'power feeding' to accelerate growth.

The richly illustrated article of PHILIPPEN (2007) shows how Hermann's tortoises (*Testudo hermanni*) are raised on a breeding farm in Slovenia. From 40 to 50 juveniles live in tubs measuring 200×50 cm (about 80×20 inches) without any hiding places, on a substrate of bran pellets "so as to bring them as soon as possible up to the desired size." Saying that

light and a UV source are provided, plus grass trimmings to supplement the diet from time to time, does not redeem the negative first impression. This kind of husbandry cannot be called species-appropriate, as declared by CITES. SOROCHINSKIY (2009) describes the pyramiding of dorsal scutes in juvenile Russian tortoises (*Testudo horsfieldii*) raised in Uzbekistan without hibernation. It may be presumed that these deformities,





**Fig. 10a–b**

China is well known for its immense consumption of chelonians as food and raw material for traditional medicine, but the pet trade also plays its roll in threatening these species. Photos: TORSTEN BLANCK

which decrease the market value of the tortoise, could cause serious health problems later.

### Limitations and Opportunities

It's no secret that many countries are held under the sway of corruption, sometimes infecting the entire administration, and ravaging the citizenry. It is naïve to hope that the pet trade would advocate effective reform in such exporting countries. Therefore it is the responsibility of the importing countries to influence and improve this regrettable situation.

The first step, needless to say, is to inspect thoroughly and consistently. This should be done also in countries involved in trans-shipping, such as Japan, Taiwan and Thailand, which obviously are easily satisfied by suspicious paperwork, and permit importation with no questions asked (see also CHEN et al. 2009). In particular, certificates which record specimens identified only at the genus or family level should be rejected outright for commercial live animal importation. This practice

may be admissible for certain plants or for animal parts such as bones having a scientific purpose, but regarding the pet trade it's an invitation for deception and racketeering. Imports from non-CITES countries should be discontinued, because of the greater difficulty of assessing sustainability (see The Kazakhstan–Lebanon–Japan–Connection, pp. 6–7).

A very valuable and efficient tool regarding species preserva-

*“Frequently non-detriment studies within the exporting range countries are lacking”*

tion was set up by the European Union through a bundle of laws and regulations. Independently of the results from the CITES Union Conferences the possibility exists to upgrade the conservation status of a species (as for example with *Testudo* spp. or *Malacochersus tornieri*) and thus despite its listing in Appendix II of CITES, to treat it as if listed in Appendix I.

CITES postulates that trade should not imperil the survival of

a species in the wild, but as shown above, frequently “non-detriment studies” within the range countries are lacking, and/or mislabeled “offspring” are exported. Therefore, in conforming to CITES, the EU has the right to demand non-detriment findings for any prospective import into the EU.

The *Scientific Review Group* (SRG) usually meets three times a year and has the potential to ban imports effective immediately through a so-called “negative opinion.” Such a ban does not affect a species in general, but rather, specific combinations of countries, species

and sources (wild, captive bred, ranches or farmed). Such opinions are checked at intervals and are subject to change at any time. After contacting the exporting country the “negative opinion” can be modified into a long-term ban, if the situation does not improve. In such a case it will be listed in the Commission Regulation suspending the introduction of specimens of certain species of wild fauna and flora, usually updated annual-



Taxon	Origin	Terms
<i>Cuora amboinensis</i>	Viet Nam	all
<i>Cuora galbinifrons</i>	Laos, Viet Nam	all
<i>Malacochersus tornieri</i>	Tanzania	all, but single breeding farms

**Table 9**

Chelonian species recommended for a trade suspension by CITES. Furthermore trade suspensions are recommended for all CITES-listed species from Djibouti, Nigeria, Rwanda, and Somalia.

ly. The most recent version is EC No. 359/2009 of 30 April 2009 (see table 8). A complete list of all decisions of the SRG can be found at the German Federal Agency for Nature Conservation (BUNDESAMT FÜR NATURSCHUTZ 2009), opinions and decisions regarding single species can be researched at the UNEP-WCMC Trade Information Query Tool (<http://quin.unep-wcmc.org/isdb/extra/index.cfm>).

It is desirable that other nations adapt and/or develop such a model. Standard evaluations beforehand of any import permit would easily avoid such hair-raising imports as the 3,100 pancake tortoises (*Malacochersus tornieri*), exported from the Democratic Republic of Congo as wild-caught, although this species is not native to that country as far as is known.

CITES actually employs a similar tool, the so-called *Significant-Trade-Review-Process*. But the results are not comparable with EU regulations and opinions. One problem is that all nations participate on a voluntary base, which means that it is very difficult to put pressure on them, the other point being that all decisions are made exclusively at the CITES *Conference of the Parties (CoP)* which takes place triennially, meaning that reactions are extremely slow.

An example for this system-conditioned process is the case of

*Testudo graeca*. In 2005 at the 21st meeting of the Animals Committee, the *Significant-Trade-Review-Process* was initiated for Lebanese populations. However, by that time Lebanon had already outlawed the trade in that species. During the 23rd meeting in 2008 the case was closed with the remark that tortoises are no longer being exported from Lebanon, but from Jordan. Unfortunately this ruling bore no fruitful consequences, because the process had not been expanded to include Jordan (CITES 2008).

Russian tortoises (*Testudo horsfieldii*) provide another example for such built-in bureaucratic near-paralysis. These tortoises have been continuously traded in extremely high numbers (i.e., an average of 68,000 specimens per year between 2000–2008). In 2005 they were no longer monitored, with the justification that while the trading volume was indeed high, numbers always remained within the quota (CITES 2005). However, in 2009 it was determined that between 2000–2005 more than 150,000 Russian tortoises had been exported from the Ukraine, to which the species is non-native, without that figure previously having been deemed implausible (CITES 2009a). This discovery led to a new launching of the inquiry process by the Animals Committee and forwarding it to the Standing Committee, which provides policy guidance to

**Fig. 11**

Burmese star tortoises (*Geochelone platynota*) are not traded in high numbers but the true origin of traded specimens is often unclear. Importing wild-caught specimens from Myanmar to the European Union is banned. Photo: TIM MCCORMACK

the Secretariat concerning the implementation of the convention and oversees the management of the Secretariat's budget (CITES 2009b).

These examples show clearly that it may take many years until the trade in a species can be banned, even when an exporting country brazenly breaches the rules. For some species it could be too late by then. In an ever more fast-reacting global trade world, routes are changed much sooner than enacting a recommendation of CITES is possible. A (quite short) list of all countries currently subject to a recommendation to suspend trade is found on the CITES homepage ([www.cites.org/eng/news/sundry/trade\\_suspension.shtml](http://www.cites.org/eng/news/sundry/trade_suspension.shtml), regarding chelonians, see table 9).

When analyzing the trade statistics and seeing how obviously fraudulent labeling such as “bred

in captivity” is used, there remains but one possible consequence. As long as no ubiquitous control is installed, requirements for international trade in tortoises should include a complete collection of data with all stock movements, and markings for identification (i. e. photo documentation) of the breeding stock as well as a disclosure of all data as a precondition for any import permit of “captive bred” animals, including Appendix II species.

An effective conservation tool to regulate the trade much underutilized today would be species-specific size ranges as a condition on which importation would be based. The tradable range should be defined in a manner providing a compromise between species conservation and animal welfare, by declaring a maximum size which would eliminate (or at least

reduce) the trade in deliberately mislabeled wild-caught specimens, and by fixing a minimum size which prevents the trade of extremely young specimens to reduce their higher mortality at transports or shortly after arriving at the buyer (see THEILE 2002). Furthermore, every mixing of different classifications of the same species from the same breeding facility should be suspended; otherwise it is too easy to change the classification by origin of specimens to suit the demands of different recipient countries.

To recognize the range of the problem one should remember that we have analyzed only the international pet trade in living turtles and tortoises. Victims of such exploitation include many other reptiles as well as birds and mammals, not to mention the even more horrific conditions in the live food markets, and the medicinal trade in turtle and tortoise products (see the comment of BIDMON in *Science in Focus* to CHEN 2009). If the current mechanisms of exploitation tolerated under the cover of CITES are not stopped, the threat posed to chelonian species in the wild by the pet trade is on a par with that of habitat destruction.

### Acknowledgements

We must thank MARINUS HOOGMOED, Belém, Brazil, for his perceptive and helpful hints, corrections and information, which significantly improved and balanced the manuscript. Furthermore we give our thanks to the photographers, who responded swiftly and without complications to our appeal. Their quality images have added immeasurably to this article. A huge “thank you” goes to JIM



**Fig. 12**

Import of Chaco tortoises (*Chelonoidis chilensis*) into the European Union was suspended for many years for reasons of animal welfare. Since all restrictions of this kind have been lifted, imports of this species are again possible.

Photo: THOMAS & SABINE VINKE





**Fig. 13**

The steppe tortoise (*Testudo horsfieldii*) is frequently included in the CITES "Significant Trade Review Process" because the species is exploited for the pet trade in extremely great numbers.

Photo: THOMAS & SABINE VINKE

BUSKIRK for his assistance with the English version of the article and to STEVEN WINCHELL for providing corrections to the English captions in the published German version.

### Addendum

Too late for the German version of the article, we became aware of a well-researched work which denounced the practices of breeding farms in China. The authors (SHI et al. 2007) name breeding farms as primary purchasers of wild-caught turtles, and which are always seeking fresh breeders from the wild. The reliance on wild-collected individuals leads the authors to the inescapable conclusion that turtle farming is unsustainable.

### Literature

Unless otherwise noted all import and export data have been taken from the CITES Trade Database,

UNEP World Conservation Monitoring Centre, Cambridge, UK. – Online: [www.unep-wcmc.org/citestrade/index.cfm](http://www.unep-wcmc.org/citestrade/index.cfm). The data used for that article were last tallied on 13.9.2009. Data for the years 2006 and afterwards are not complete, because some individual countries report their statistics independently. Therefore these years are used to illustrate tendencies, but not absolute numbers.

All herein mentioned regulations of the European Union can be read on the homepage of the EU: [www.eur-lex.europa.eu](http://www.eur-lex.europa.eu), all documents of CITES at [www.CITES.org](http://www.CITES.org).

BIDMON, H.-J. (2009): Wissenschaft im Fokus. – Schildkröten im Fokus 6 (4): 21–24.

BUNDESAMT FÜR NATURSCHUTZ (2009): Zusammenstellung von Einzelentscheidungen zur Einfuhr geschützter Tierarten, ZEET. – Internet:

<http://www.bfn.de/fileadmin/MDB/documents/service/zeet.pdf> Bonn, 152 pp. – downloaded on 2 January 2009.

CHEN, T.-H., H.-S. CHANG & K.-Y. LUE (2009): Unregulated Trade in Turtle Shells for Chinese Traditional Medicine in East and Southeast Asia: The Case of Taiwan. – *Chelonian Conservation and Biology* 8 (1): 11–18.

CITES (1973): Convention on International Trade in Endangered Species of Wild Fauna and Flora. – Internet: [www.cites.org/eng/disc/text.shtml](http://www.cites.org/eng/disc/text.shtml), downloaded on 28 June 2009.

CITES (2005): Review of Significant Trade in Specimens of Appendix-II Species. Selection of Species for Trade Reviews after COP13. – Twenty-first meeting of the Animals Committee Geneva (Switzerland), 20–25 May 2005, AC21 Doc. 10.2: 1–75.

CITES (2008): Review of Significant Trade in Specimens of Appendix-II Species. Selection of Species for Trade Reviews after COP13. – Twenty-third meeting of the Animals Committee Geneva (Switzerland), 19–24 April 2008, AC23 Doc. 8.4: 1–45.

CITES (2009a): Review of Significant Trade in Specimens of Appendix-II Species (Agenda Item 7). – Twenty-fourth meeting of the Animals Committee Geneva, (Switzerland), 20–24 April 2009, AC24 WG1 Doc. 1: 1–8.

CITES (2009b): Executive Summary. – Twenty-fourth meeting of the Animals Committee Geneva, (Switzerland), 20–24 April 2009, AC24 Sum. 4 (24/04/2009): 1–4.

CITES (2009c): Review of the Use of Source "R". – Twenty-fourth meeting of the Animals Committee Geneva, (Switzerland), 20–24 April 2009, AC24 Doc. 8.1: 1–28.

Dakdouk, S. (2009): Lebanon – Back on the illegal Wild Animal Trade Map. – *Wildlife Middle East News* 4 (1):



- online: [http://wmenews.com/newsletters/File/Volume-4/Issue-1/support/Wildlife\\_trade\\_leb\\_web.pdf](http://wmenews.com/newsletters/File/Volume-4/Issue-1/support/Wildlife_trade_leb_web.pdf).
- DEVAUX, B. (2007): Samarcande, Tamerlan, et les tortues des steppes. – *La Tortue* 78: 54–75.
- HOOGMOED, M. (2002): The Netherlands – making a non-detriment finding and issuing an import permit under the EU stricter domestic measures. – pp. 35–37 in ROSSER, A. & M. HAYWOOD (eds.): *Guidance for CITES Scientific Authorities – Checklist to assist in making non-detriment findings for Appendix II exports.* – Occasional Paper of the IUCN Species Survival Commission No. 27, Gland.
- JENKINS, R., M. HOOGMOED & K. HOWELL (1998): *Captive Management of Tortoises and other Reptiles in the United Republic of Tanzania (Administration & Control).* – Report Animals Committee by order of the CITES Secretariat, 14 pp.
- PHILIPPEN, H.-D. (2007): Hinter den Kulissen einer slowenischen Schildkrötenfarm. – *Draco* 8 (4): 79–86.
- SHI H., J. F. PARHAM, M. LAU, T.-H. CHEN (2007): Farming Endangered Turtles to Extinction in China. – *Conservation Biology* 21 (1): 5–6.
- SOROCHINSKIY, G. (2009): Answers to the CITES concerning ranching of the Central Asian tortoise *A. horsfieldi* in Uzbekistan. – pp. 19–21 in CITES (ed.): *Review of the Use of Source "R".* – Twenty-fourth meeting of the Animals Committee Geneva, (Switzerland), 20–24 April 2009, AC24 Doc. 8.1.
- Theile, S. (2002): Ranching and Breeding of *Testudo horsfieldii* in Uzbekistan. – *Radiata English Edition, Haan* 11 (4): 3–20.
- VAN DIJK, P. P. (2004): CITES Handelsregulierungen für Schildkröten – Hilfe oder Hindernis für den Artenschutz? – *Schildkröten im Fokus, Bergheim* 1 (4): 19–28.
- VINKE, T. & S. VINKE (2000): Ranching – Wie steht es um den Artenschutz? –

*Radiata, Haan* 9 (4): 10–12.

- VINKE, S., H. VETTER, T. VINKE & S. VETTER (2008): South American tortoises. *Chelonian library* 3. – Frankfurt am Main (Edition Chimaira), 360 pp.
- VINKE, T. & S. VINKE (2008): Köhlerschildkröten – billige Masseware oder vom Aussterben bedroht? – *Schildkröten im Fokus, Bergheim* 5 (3): 28–31.

### Authors

Thomas & Sabine Vinke

Filadelfia 853

9300 Fernheim

Paraguay

email: [vinke@chaco-wildlife.org](mailto:vinke@chaco-wildlife.org)

### Abstract

## Do breeding facilities for chelonians threaten the stability in the wild?

### Abstract

After a short introduction into the aims of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the definition of the different breeding categories used by CITES ("captive bred", "captive born" or "farmed", and "captive raised" or "ranching"), we present and evaluate import and export statistics of different species and countries. These show many cases of incorrect and inconsistent data, in some cases chelonians are misidentified, or they enter into a country as "wild caught" and leave it as "captive bred." Examples of typical trading routes are given and named. We address the limits of CITES and show possibilities for the importing countries to improve the conservation status, i.e. by double-checking non-detriment findings, as is mandatory for each import into the European Union.

### Key words

Reptilia, Testudines, turtle, tortoise, breeding, ranching, farming, CITES, international wildlife trade, preservation, conservation, enforcement.