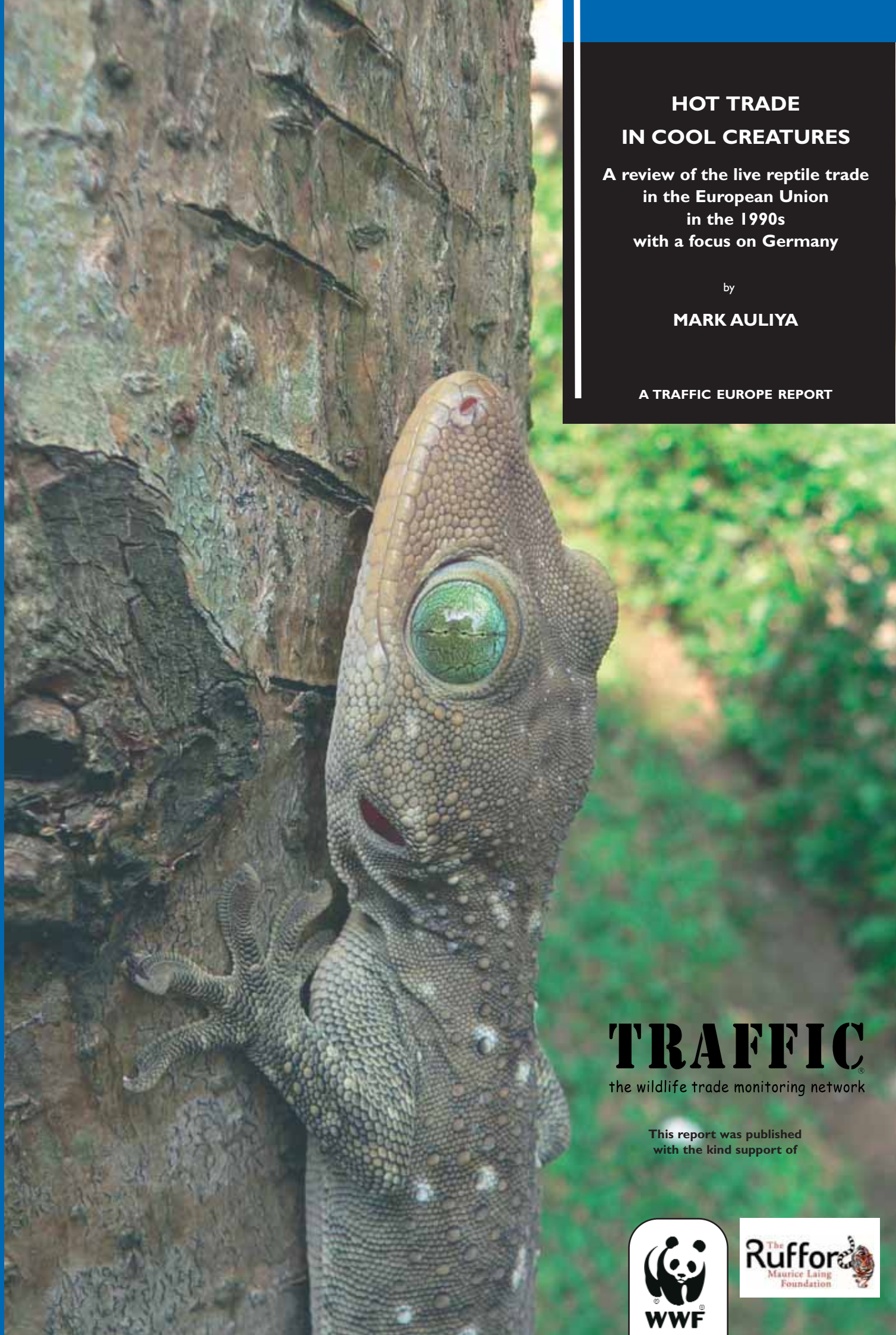

HOT TRADE IN COOL CREATURES

A review of the live reptile trade in the European Union in the 1990s with a focus on Germany

by

MARK AULIYA

A TRAFFIC EUROPE REPORT

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The Green-eyed Gecko *Gekko smithii* from southern Sumatra.
Photograph credit: Mark Auliya

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HOT TRADE IN COOL CREATURES

A REVIEW OF THE LIVE REPTILE TRADE IN THE EUROPEAN UNION IN THE 1990s WITH A FOCUS ON GERMANY

The Yellow Monitor *Varanus melinus*. This species was first discovered through the pet trade when specimens arrived in Germany in 1997. It has a very restricted range and is known to inhabit a small group of islands in the Moluccas of the Indonesian Archipelago. © *Mark Auliya*

by Mark Auliya

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EXECUTIVE SUMMARY

The European Union (EU)[1] is one of the world's largest markets for live reptiles, such as snakes, lizards and tortoises, and the exotic and scaly animals have become increasingly fashionable as pets since the early 1990s. Even though captive-breeding efforts have improved significantly in the last few decades, a large proportion of the reptiles offered in pet shops in the EU still originate from the wild and hence the live reptile trade can have a considerable impact on the conservation status of these species.

To date, around 8000 reptile species have been described, however only a portion of these are regulated in national and international trade: for example, approximately 500 reptile species are listed in one of the three Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (hereafter CITES) that regulates international trade in around 30 000 animal and plant species. In addition, several countries protect native reptile species from exploitation through harvest and trade restrictions. All 15 EU Member States are Parties to CITES and the Convention is jointly implemented by all EU Member States through Council Regulation (EC) No. 338/97 and Commission Regulation (EC) No. 1808/2001 (hereafter referred to as the EU Wildlife Trade Regulations). Most of the available information on the trade in live reptiles in the EU originates from annual reports prepared by EU Member States for CITES. Data to document trade in non-CITES species are more difficult to obtain and often lacking.

The objective of this report is to provide an overview for the market of live reptiles in the EU in the 1990s, by compiling data on legal and illegal trade, analysing trends, including supply and demand and other aspects, such as trade routes, main countries of export, species in trade, and prices. It is hoped that the content of this report reflects the diversity of issues related to these markets and that the conclusions and recommendations drawn from it will assist decision-makers from the relevant authorities in the EU and elsewhere in their efforts to ensure that the trade in live reptiles of CITES-listed as well as non-CITES species is well regulated and not posing a threat to wild populations.

The report focuses primarily on the market for live reptiles in Germany, one of the largest importers of live reptiles among the 15 EU Member States with a large domestic market, as a case study of the situation and trends in the late 1990s, when the EU comprised 15 Member States. Therefore this report is a 'snapshot' of the reptile trade and market in the late 20th century, but may no longer reflect the current situation, in the first years of the new millennium.

An attempt has been made to compile information on trade in CITES-listed as well as non-CITES species. However, due to the lack of comprehensive data on the trade in non-CITES species, information for these species remains incomplete. To get an overview of the legal trade in CITES-listed reptiles involving the 15 EU Member States, CITES trade data for the years 1990 to 1999 were obtained and analysed. Information was also gathered through the analysis of approximately 100 price lists, interviews, standardized questionnaires, literature and internet research. In addition, 15 fairs were visited between 1998 and 2000 in Belgium, the Czech Republic, Germany and the Netherlands to gather information on the range and number of species offered for sale, sources of the animals (wild or captive bred), prices, trends, and the profiles of exhibitors and visitors.

Based on the analysis of the CITES trade data, between 1990 and 1999 the EU imported a total of 1 338 633 live specimens of reptile species listed in the CITES Appendices. During this period, demand boomed and EU imports increased by over 300%, from about 60 000 live specimens in 1990 to 225 000 in 1999.

[1] The report covers the 15 Member States which were part of the European Union at the time of writing (2003), namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK.

The five most important countries of origin of the reptiles imported to the EU were Colombia, Madagascar, El Salvador, Ghana and Guatemala. The main EU importers were Spain and Germany, each importing a total of around 300 000 specimens between 1990 and 1999, followed by the Netherlands, France, the UK and Belgium, each importing around 150 000 specimens.

In total, 273 CITES-listed reptile species were reported in trade in the 10-year period. A single species, the Green Iguana *Iguana iguana*, dominated the trade as it accounted for 45% of all imports. Sixteen per cent of all reptile imports in the period belonged to the family Boidae (boas and pythons). The Royal Python *Python regius*, which is found in West and Central Africa, was by far the most commonly traded CITES-listed snake species. Geckos and chameleons together accounted for almost a quarter of all CITES imports of live reptiles into the EU and the endemic Striped Day Gecko *Phelsuma lineata* from Madagascar and the Senegal Chameleon *Chamaeleo senegalensis*, which occurs throughout equatorial Africa, were among the species traded in the highest quantities. Six per cent of the imports belonged to the tortoise family Testudinidae and four per cent were monitor lizards (*Varanus* spp.). The Horsfield Tortoise *Testudo horsfieldii* from Central Asia and the Savannah Monitor *Varanus exanthematicus* which can be found in subsaharan Africa, were among the most popular species in these two groups. **Table E1** shows the top 10 live CITES-listed reptile species imported by the EU from 1990 to 1999 and the percentage of these that were wild caught.

Table E1
The top 10 live CITES-listed reptile species imported by the EU from 1990 to 1999 and the percentage of these that were wild caught.

Species common name	Species scientific name	Quantity	% wild caught
Green Iguana	*Iguana iguana*	605 519	12
Royal Python	*Python regius*	140 931	51
Striped Day Gecko	*Phelsuma lineata*	45 630	71
Four-spot Day Gecko	*Phelsuma quadriocellata*	41 192	72
Flat-tailed Day Gecko	*Phelsuma laticauda*	40 016	74
Madagascar Day Gecko	*Phelsuma madagascariensis*	37 769	75
Savannah Monitor	*Varanus exanthematicus*	31 062	81
Boa Constrictor	*Boa constrictor*	27 496	13
Senegal Chameleon	*Chamaeleo senegalensis*	23 701	73
Horsfield's Tortoise	*Testudo horsfieldii*	19 604	97

Source: CITES trade data (comparative tabulations) compiled by UNEP-WCMC, 2001.

Captive-bred or wild harvested?
The reptiles imported by the EU Member States were reported to derive from various sources. In total, around 44% of the imported reptiles were declared as captive-bred and 41% as taken from the wild. Over the 10-year period, the percentage of captive-bred specimens in total trade increased steadily from seven per cent of imported reptiles declared as captive-bred, to 32% in 1992 and 52% in 1999. The percentage of wild-caught specimens varied considerably between different reptile groups. For example, whereas the majority of chameleons (84%), monitor lizards (77%), geckos (71%) and tortoises (66%) imported into the EU have been harvested from the wild, only 12% of the Iguanidae originated from the wild (**Table E1**).

Values of live reptiles in the EU
Prices of live reptiles are variable and can be very high. There is competition between pet shops, private breeders and illegal traders. The highest prices presented at fairs in 1998 were for CITES-listed species. The top five, in order of decreasing value, were Angolan Python *Python anchietae*, Black Python *Morelia boeleni*, Boa Constrictor *Boa constrictor* (albino), Green Tree Python *Morelia viridis* and the Appendix I-listed Madagascar Boa *Acrantophis madagascariensis*, with prices ranging from EUR10 226 to 2 505. High values are associated

with species' rarity on the market, which can be due to isolated endemic populations in the wild, low reproductive rates, newly described species, highly protected species, mutants and attractive colour morphs. High prices and the increasing demand of a wide variety of species in trade are also strong incentives to import live reptiles illegally.

Trade in non-CITES species

Species for which trade is not regulated by CITES are also abundant in the EU market. The trade in non-CITES species is difficult to monitor and comprehensive data on the quantities and range of species traded are not available. The number of non-CITES species in trade in the EU is estimated at around 600, twice the number of CITES-listed species recorded in trade. In the fairs visited, 200 non-CITES taxa were recorded and price-lists (1977-1999) revealed an additional 400 taxa not listed in the CITES Appendices. Among the non-CITES species in trade in the EU were also species classified as Critically Endangered in the *IUCN Red List of Threatened Species* (Hilton-Taylor, 2002), such as the Cyclades Blunt-nosed Viper *Macrovipera schweizeri* and the Roti Island Snake-necked Turtle *Chelodina mccordi* (**Table E2**).

Table E2

Non-CITES reptile species classified as Threatened in the *2002 IUCN Red List of Threatened Species* and offered for sale as live specimens (1977-1999)

Species common name	Species scientific name	IUCN listing
Cyclades Blunt-nosed Viper	*Macrovipera schweizeri*	Critically Endangered
Roti Island Snake-necked Turtle	*Chelodina mccordi*	Critically Endangered
Caucasian Viper	*Vipera kaznakovi*	Endangered
Pig-nosed Turtle	*Carettochelys insculpta*	Vulnerable
Lebanon Viper	*Vipera bornmuelleri*	Vulnerable
Dinnik's Viper	*Vipera dinniki*	Vulnerable

Source: Literature, the internet, price-lists and personal observations.

Illegal trade of live reptiles to the EU

Although a great portion of the EU's trade in live reptiles is legal, illegal trade in live reptiles also occurs and is believed to pose a serious threat to the survival of reptile species in the wild. Of particular concern in this regard is the trade involving so-called "specialist" collectors that spur the smuggling of some of the world's rarest reptile species. The interest in rare and protected species and the enormous sums of money involved provide the main motive for illegal trade. Unscrupulous traders that wish to abuse CITES controls can use the confusion surrounding reptile taxonomy as an excuse for misdeclaring specimens.

The scale and scope of the illegal trade in CITES-listed reptile species cannot be easily quantified. Trade data from CITES annual reports provide some information on seizures made by Customs and show that, from 1990 to 1999, 10 128 live CITES-listed reptiles imported by the EU were seized. Specimens from the Testudinidae family (land tortoises) were most frequently seized, followed by Iguanidae (iguanas), Gekkonidae (geckos) and Boidae (boas). The Member States that reported the highest number of live reptiles seized during the period were the UK, Austria and Spain. The main countries of origin for the specimens confiscated, where these were known, were the USA and Madagascar.

Species in high demand by European keepers

Species in particularly high demand among illegal traders in Europe are those restricted to isolated geographical regions, comprising an endemic fauna, and receiving strict protection, and these can fetch the highest prices in illegal trade. Species or subspecies that are newly described or are difficult to breed in captivity or banned from trade and therefore difficult to obtain in legal trade. Examples include varanids from Australia and South-east Asia, several tortoise species such as the Appendix I-listed Ploughshare Tortoise *Geochelone yniphora* from

Madagascar, and giant snake species such as the Black Python *Morelia boeleni*, the Savu Python *Liasis mackloti savuensis* and some of the Caribbean boids (**Table E3**).

Table E3
Examples of some of the CITES-listed reptile species in greatest demand in the EU

Taxa
Tortoises
Ploughshare Tortoise *Geochelone yniphora*
Radiated Tortoise *Geochelone radiata*
European tortoises of the genus *Testudo*
Madagascar Flat-shelled Tortoise *Pyxis planicauda*
Spider Tortoise *Pyxis arachnoides*
Lizards
Crocodile Monitor *Varanus salvadorii*
Komodo Dragon *Varanus komodoensis*
Aru Black Tree Monitor *Varanus prasinus beccari*
Fiji Iguana *Brachylophus* spp.
Ground Iguana *Cyclura* spp.
Heloderms *Heloderma* spp.
Girdled Lizards *Cordylus cataphractus* and *Cordylus giganteus*
Snakes
Black Python *Morelia boeleni*
Savu Python *Liasis mackloti savuensis*
Caribbean boids or the Bismarck Ringed Python *Bothrochilus boa*
Subspecies of the Boa constrictor *Boa constrictor* such as *B. constrictor longicauda*
Central Carpet Python *Morelia bredli*

Captive breeding of reptiles

Captive breeding of live reptiles is widespread and involves many different species. Captive breeding operations form an important and increasing source of live reptiles for the EU market and in 1999, more than 50% of the CITES-listed reptile species imported into the EU were reported to have been captive-bred. Captive breeding of reptiles for the pet trade is also widespread in the EU and has steadily increased over the 1990s. Many such breeding initiatives are 'non-commercial' in character, but there are certainly also numerous commercial breeding facilities in the EU. However, exact figures on the number of such initiatives, the species involved and breeding success are lacking, which makes it difficult to characterize this part of the market.

Many of the popular reptile species, such as Hermann's Tortoise *Testudo hermanni*, Greek Tortoise *Testudo graeca*, Reticulated Python *Python reticulatus* and Boa constrictor *Boa constrictor* are nowadays regularly offered as captive bred. Often captive-bred specimens are more attractive for the hobbyist market as they are more resistant to disease and hence easier to keep. However, captive breeding remains economically unprofitable for a large number of reptile species and hence the majority of these species are still coming to Europe from the wild.

Trade in animals that were born and bred in captivity are less strictly regulated than trade in wild specimens. However, there are indications that these derogations are being abused, for example, to launder wild-caught specimens by importing them as captive bred or by making false declarations about their source when applying for a certificate for internal EU trade. Such fraud is difficult to detect, as it requires special expertise in distinguishing between wild and non-wild specimens.

Recommendations

To address some of the deficiencies in the regulation and control of trade in live reptiles for the EU market, TRAFFIC Europe recommends that the following measures be taken:

Scientific research and review of the protection status of selected reptile species in EU trade

- EU Member States should review the potential conservation impact of the current levels of trade in reptile species that are not yet listed in the CITES Appendices and the EU Annexes but are classified as threatened in the *2002 IUCN Red List of Threatened Species* and have been reported in trade in this report (see **Box 1**), and, where necessary, they should consider legislative measures (e.g. through listing under CITES or the EU Wildlife Trade Regulations) that will help to improve monitoring and/or regulation of the trade.

- EU Member States should undertake further research to assess the impact of trade on the conservation status of species listed in Annexes A and B to determine whether additional regulatory measures are required to ensure that trade is not detrimental to populations in the wild. Efforts should be directed towards the main countries of origin and the main families, genera and species in trade, with a special focus on the number of specimens taken from the wild.

- The European Commission and the EU Member States should provide technical and financial assistance to the main exporting countries of live reptiles to the EU to help them conduct scientific studies on the conservation status of selected reptile species (including assessment of habitat quality, carrying capacity, effectiveness of captive breeding and/or ranching activities and levels of current CITES export quotas). These studies should form the basis for management measures, such as the establishment or adjustment of CITES export quotas and the establishment of non-detriment findings for reptile species in trade. Assistance should also be provided to support capacity-building initiatives such as training courses and workshops on making non-detriment findings for CITES-listed species etc., to promote more efficient and effective implementation of the provisions of CITES and monitoring of trade.

Implementation of the EU Wildlife Trade Regulations

- The European Commission should establish an updated inventory of EU Member States' legal requirements on marking methods and procedures used for the different species and specimens (i.e. juveniles and adults), and assess ways in which a more harmonized system for the marking of live reptiles could be achieved in order to have a unified control system throughout the EU.

- Each EU Member State should gather information on the breeding and trading activities of commercial captive breeding facilities in its territory and an EU register should be created that will include information on the number of facilities, the species bred in captivity, their origin and the current number of specimens and offspring, in order to measure the importance and assess trends in captive breeding of reptiles in the EU and to allow for better monitoring and control of such activities.

Enforcement of EU Wildlife Trade Regulations and national laws

- More focus should be set on emerging illegal trade problems and practices involving live reptile markets in the EU. Trends should be monitored through the exchange and analysis of information on seizures and confiscations, including information on the species involved, trade routes, smuggling techniques and *modus operandi.*

- The co-operation and information exchange among the different enforcement authorities responsible for the implementation of the EU Wildlife Trade Regulations at national as well as EU level should be strengthened

through the development of national CITES enforcement units including focal points functioning at the national and EU level.

- EU Member States should consider the development of a "risk list" of Annexes A and B reptile species that are most exposed to illegal trade to facilitate the work of enforcement officers when controlling reptile trade into and inside the EU.

- EU Member States should review their penal laws that punish violations of the EU Wildlife Trade Regulations, and where necessary, increase the level of sanctions and penalties to ensure that they act as an effective deterrent. Legislative differences and discrepancies between the Member States should be minimized to ensure a more standard approach wherever possible.

- CITES Management Authorities of EU Member States should strengthen their co-operation with public prosecutors involved in the prosecution of cases dealing with illegal trade in reptiles, and assess ways in which they can better support their work, for example through the provision of information on the relevance of trade, quantities, values and species status, to ensure that illegal trade is punished adequately.

- EU Member States, in co-operation with interested animal welfare organizations and zoological institutions, should exchange information on rescue centres in their countries that have the capacity to house confiscated animals (including venomous species). EU Member States should also consider the development of an EU-wide network of rescue centres that will allow the placement of specimens in rescue centres in other EU Member States.

- Veterinary inspection services, responsible for the control of welfare legislation and standards, should carry out regular controls at reptile fairs. They should inform CITES Management Authorities of their findings and review whether the sanctions for neglect or abuse of this legislation are sufficient to deter companies, traders, sellers or breeders from engaging in improper practices.

Public awareness and education

- The European Commission and EU Member States should further support and, where possible, develop public awareness initiatives and activities, including on the internet and with brochures, that aim to provide targeted information on the requirements of CITES and the EU Wildlife Trade Regulations to reptile associations, traders, breeders, fair organizers and consumers through easily accessible communication tools (e.g. assist in updating, translating and maintaining "www.eu-wildlifetrade.org").

- The European Commission and the EU Member States should also actively disseminate such information to CITES authorities of the main exporting countries in order to inform reptile exporters about the requirements of the EU Wildlife Trade Regulations, especially with regard to provisions that are stricter than CITES and to the CITES-listed species that are temporarily banned from importation into the EU.

- Reptile associations, traders, breeders and other stakeholders should inform their members and customers about the legislative measures, conservation issues and welfare requirements related to the trade in live reptiles in the EU, and should actively disseminate information about the husbandry needs of the reptile species they sell to their clients, to ensure that consumers are made aware of the captive requirements of the reptiles they obtain.

INTRODUCTION

The history of the live reptile trade in Europe

Reptiles have been popular as pets in Europe for many centuries. It is reported that ancient Greeks and Romans kept tortoises as pets (Hoover, 1998). From 1633 to 1753, a Spur-thighed Tortoise *Testudo graeca* was kept by an archbishop in the garden of Lambeth Palace in England (Scherpner, 1955). Circuses and carnivals attracted public attention with giant snakes in the 19th century (Murphy and Henderson, 1997).

Dr. med. Wilhelm Klingelhöffer, born in 1871 in Gladenbach, Germany, is credited with contributing to the popularity of keeping reptiles as pets on the European continent; he provided information on how to keep reptiles in captivity and described more than 1300 species kept in captivity. Zoological gardens may have also contributed to the popularity of keeping reptiles as pets. In the beginning of the 20th century, for example, the snake collection in the Berliner Aquarium exhibited 60 reptile taxa including boas *Boa* spp., pythons *Python* spp., rattlesnakes *Crotalus* spp., cobras *Naja* spp. and the Rhinoceros Viper *Bitis nasicornis* (Weise, 1930). New species obtained by the zoo were reported in weekly journals (e.g. *Wochenschrift für Aquarien- und Terrarienkunde*).

In 1950, as a result of uncontrolled exports of tortoises to the UK, protective legislation was passed in Cape Province, South Africa (Boycott and Bourquin, 1988). International trade in tortoises increased during the mid to late 1960s. Between 1967 and 1981, it is estimated that more than one million tortoises (Greek Tortoise *Testudo graeca* and the Gilbert White's Selborne Tortoise *Testudo whitei* (presumably invalid species, and included in the *Testudo graeca* – complex) were collected in Morocco (Highfield, 1990). An estimated 400 000 tortoises (Eastern Hermann's Tortoise *Testudo hermanni boettgeri*) were exported from Yugoslavia to other European countries in 1971 (Honegger, 1981).

The development of equipment for terraria and improved methods for transporting live reptiles have contributed to the expansion of keeping and breeding of reptiles in captivity and have also led to an increase in the number of species available on the market. The captive husbandry and breeding of reptiles originated about 20 years ago as a socio-cultural phenomenon. Since then, herpetoculture (= *the hobby of keeping and breeding reptiles*) has become very popular and widespread. These trends have also contributed to an increase in the availability in Europe of imported wild, as well as captive-bred reptiles (Vosjoli, 1998).

Obtaining live reptiles to keep as pets has become relatively easy because vendors are widespread, easy to locate and active in promoting sales via the internet (Love, 1997). Furthermore, a great variety of literature is available for beginners and experts alike. At the same time, however, beginners still often lack the necessary knowledge on how to keep and care for their pets, which often leads to illness and mortality.

Nowadays, the European Union is one of the largest wildlife markets in the world. For the majority of the 8134 reptile species that have been described (Hilton-Taylor, 2002) trade is not regulated at international or national levels and data on trade in these species are virtually non-existent. Most of the available information on the trade in live reptiles originates from annual reports prepared by the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Convention accords varying degrees of regulation to more than 30 000 species of animals and plants and is based on a system of permits and certificates that have to be obtained before international trade can take place.

Objective, scope and limitations of this report

The objective of this report is to provide an overview of the EU trade in, and market for, reptile species in the 1990s. This was done by compiling data regarding legal and illegal trade and markets for live reptiles in the EU, analysing trade trends, trade routes, main countries of export, species in trade, prices and trends in offer and demand.

The report focuses on the situation and trends in the late 1990s, when the EU still comprised only 15 EU Member States. Therefore the report provides primarily a 'snapshot' of the reptile trade and market in the late 1990s, but may no longer reflect the actual situation as it is in the first years of the new millennium. In addition the report focuses on the market for live reptiles in Germany as a case study, as it is one of the largest importers of live reptiles amongst the 15 EU Member States and has a large domestic market.

An attempt has been made to compile information on trade in CITES-listed as well as non-CITES species but due to the lack of comprehensive data on the trade in non-CITES species, information for these species remains incomplete.

Despite these limitations, it is hoped that the information provided offers an overview of some of the very many different aspects of the live reptile trade in the EU and that the conclusions and recommendations drawn from this report will inform decision makers from the relevant institutions and authorities in the EU and elsewhere, in order to ensure that the trade in live reptiles of CITES as well as non-CITES species is well regulated and does not pose a threat to wild populations.

METHODOLOGY

The main source of information on the trade in CITES-listed reptiles was annual report data from the CITES Parties, which are compiled by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), on behalf of the CITES Secretariat. Staff of TRAFFIC Europe-Italy analysed the trade data reported by importing countries, in comparative tabulation format, for live reptiles that were imported, exported or re-exported by EU Member States during the period 1990 to 1999.

These data are very useful in assessing overall quantities and trends of trade in CITES-listed species, but have certain limitations. For example, although Parties are required to submit their trade data to the Secretariat in the form of annual reports, not all Parties submit their annual reports on time and some Parties fail to submit annual reports altogether. All EU Member States were CITES Parties before 1990 apart from two: Greece acceded to CITES on 8 October 1992 and Ireland acceded on 8 January 2002.

Additional information was compiled through interviews, distribution of standardized questionnaires, and literature and internet searches. In addition, 15 fairs selling reptiles were visited between 1998 and 2000 in different European countries (Austria, Belgium, the Czech Republic, Germany and the Netherlands) to gather information on species diversity, sources of the animals (wild or captive-bred), prices, trends, composition of exhibitors (hobbyists/professional dealers) and the sales techniques employed by reptile vendors.

For price information, the Euro (EUR) is used throughout the report. Prices were not adjusted for inflation. On 1 January 1999, 11 European countries (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain) replaced their national currencies with the Euro (but national currencies remained in use until early 2002), using the following rates:

Country	Currency	1 Euro =
Austria	ATS	13.7603
Belgium	BEF	40.3399
Finland	FIM	5.94573
France	FRF	6.55957
Germany	DEM	1.95583
Ireland	IEP	0.787564
Italy	ITL	1936.27
Luxembourg	LUF	40.3399
Netherlands	NLG	2.20371
Portugal	PTE	200.482
Spain	ESP	166.386

Source: Pacific Exchange Rate Service, 2001

On 1 January 2002, bills and coins of the above national currencies were replaced by Euro bills and coins and national bills and coins ceased to be legal tender at specific dates ranging, depending on the country, from 31 December 2001 to 28 February 2002. In the report, any prices which were recorded in one of the above local European currencies, were converted into Euros using the above conversion rates, irrespective of the year to which the price refers. The value of the Euro to the US dollar on 1 January 1999, when the Euro came into existence, was 1 Euro = 1.16740 US dollar. The following list provides information on average US dollar (USD) to Euro conversion rates for each year (from 1 January to 31 December, using www.oanda.com) for which price data are given in the report:

USD to the Euro

Before 1 January 1999	1 USD = 1.16740 EUR
1999	1 USD = 1.06677 EUR
2000	1 USD = 0.92492 EUR
2001	1 USD = 0.89658 EUR

Standardized questionnaires were distributed to dealers, breeders, herpetologists and other people with knowledge of the live reptile trade. However, overall, the questionnaires were found to be ineffective in capturing the entire range of information available from the different target groups. Some respondents were cautious in their answers, which resulted in subjective or biased information. A positive result of this activity was that numerous contacts provided useful data throughout the study. Interviews with Customs officials yielded information on illegal trade and markets.

Literature and internet searches proved to be an important source of information for some of the species described in this report. A range of scientific journals and hobbyist magazines provided information on the availability of, and demand for, specific species and species groups. In addition, nearly 100 wholesale and retail price lists, published from 1977 to 1999, were analyzed. Information from these lists included species available, trends, prices and shifts in consumer demand. To obtain more information about the species composition on these price lists, 10 random price lists were selected from the total number of price lists and the average percentage of CITES to non-CITES species was calculated based on this subset.

This report uses different data sets to provide some insight into the species and the number of specimens involved in captive breeding in the EU: reptile breeding statistics compiled by the *Deutsche Gesellschaft für Herpetologie und Terrarienkunde* (DGHT, the German Society for Herpetology and Husbandry of Reptiles and Amphibians) (1990-1997) and breeding statistics (1995) of the ZG Chamaeleonidae in Germany, a German Society founded to breed chameleons. These statistics derive from information recorded by the members of these associations and depend on the willingness of breeders to provide their figures. There may also be some overlap when breeders provide their statistics to several databases. Although these data are relatively limited and outdated, it is hoped that they can still provide some indication of the trends in captive breeding of reptiles in the mid-1990s.

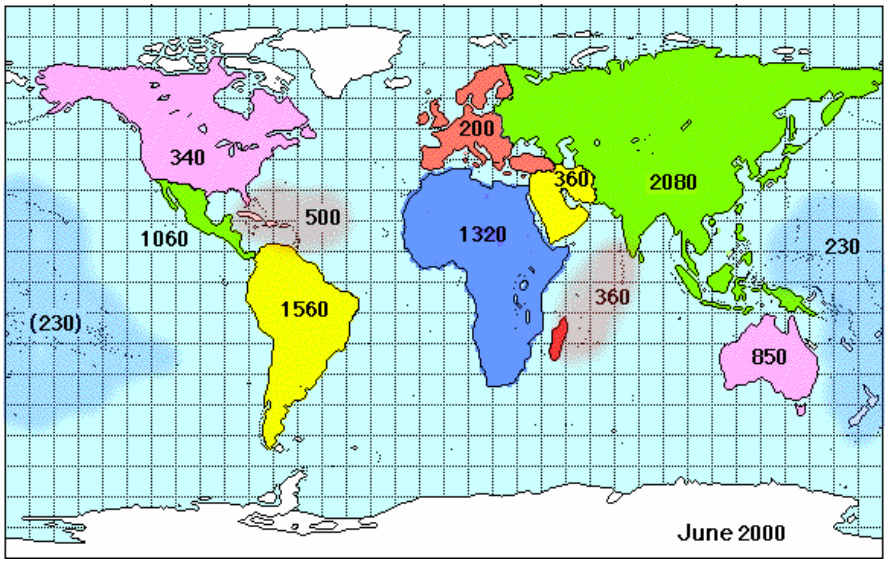
The taxonomic classification of reptiles is dynamic because ongoing scientific research yields new information and the classification of certain reptile taxa is often revised or new species are described. Accordingly, there remains considerable disagreement among reptile experts on certain areas of reptile classification and nomenclature. The taxonomy used in this report is mainly based on Böhme and Sander (2003). Following McDowell (1975), this report recognizes the families Boidae and Pythonidae, hence pythons are not included in the Boidae. Note that the taxonomy used in this report does not reflect the taxonomy used by CITES in some areas (see **Annex I**).

DISTRIBUTION AND CONSERVATION STATUS OF REPTILES

Reptile species and their distribution

The class Reptilia has among the terrestrial vertebrates the second highest diversity (after the class Aves) with species distributed over all continents and many waterways (Uetz, 2001; Zug *et al*. 2001). According to Uetz (2001), 8134 reptile species have been described to date, of which the largest number are found in Asia, followed by South America and Africa (see **Figure 1**).

Figure 1
Worldwide distribution and numbers of described reptile species.



Source: Uetz (2000).

Conservation status – the *IUCN Red List of Threatened Species*

IUCN – The World Conservation Union assesses the conservation status of species, subspecies, varieties and selected sub-populations on a global scale in order to identify taxa threatened with extinction and to promote their conservation. The *2002 IUCN Red List of Threatened Species* (Hilton-Taylor, 2002) uses the following eight categories:

Extinct (EX), Extinct in the wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Lower Risk (LR), Data Deficient (DD) and Not Evaluated (NE).

A species is considered as Threatened by IUCN when it is listed in one of the three categories Critically Endangered, Endangered or Vulnerable. Although the categories themselves do not provide any legislative measures for the conservation of species or the restriction of their trade, they are widely recognized internationally as an authoritative source on the conservation status of species.

The *2002 IUCN Red List of Threatened Species* reflects the assessment of the conservation status of 473 reptile species, which represent only around 17% of all described reptiles. Of the 473 species assessed, 293 were categorised as Threatened (Hilton-Taylor, 2002) (see **Annex II**).

REGULATION OF THE LIVE REPTILE TRADE IN THE EUROPEAN UNION

This chapter provides an overview of the main regulatory mechanisms in place that apply to the reptile trade in the EU, namely CITES and the EU regulations on wildlife trade. Althought there exist EU-wide regulations on wildlife trade, because the relevant provisions are implemented by national laws in the EU Member States, and because countries are allowed to adopt stricter measures, national differences in the regulation for conservation and trade do occur within the EU.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES was established in 1973 and entered into force on 1 July 1975 with the aim to regulate international trade in specimens of wild species, to ensure that the trade does not threaten their survival. As of January 2003, CITES had 161 Parties, including all 15 EU Member States. CITES lists around 30 000 animal and plant species in its three Appendices.

Appendix I includes over 820 plant and animal species that are threatened with extinction and international commercial trade in these species and their products is generally prohibited. Non-commercial trade in Appendix I species may be authorized in exceptional circumstances, for example if it concerns specimens that have been acquired before the Convention became applicable to them ('Pre-Convention specimens') or specimens that have been bred in captivity, according to definitions adopted by CITES. Each shipment must be authorized and accompanied by an export permit from the country of origin and an import permit issued by the importing country.

Appendix II includes nearly 32 000 species (of which 28 000 are plant species) that are not necessarily threatened with extinction, but may become so unless international trade in specimens of these species is carefully regulated. Some species are listed because they have a similar appearance to certain threatened species ('Look-alike species'), in order to facilitate the identification of specimens in trade by the authorities. Appendix II species may be traded for commercial purposes if the CITES Scientific Authority of the exporting country has determined that the export will not be harmful to the survival of the species in the wild. Each shipment must be authorized and accompanied by an export permit issued by the CITES Management Authority of the country of origin or a re-export certificate issued by the CITES Management Authority of the country of re-export.

Appendix III includes around 300 species that are legally protected within the borders of individual CITES Parties and for which assistance from other CITES Parties is needed in order to control the international trade. Each shipment must be accompanied by an export permit if exported from the country that listed the species or a certificate of origin if exported or re-exported from any other CITES Party.

As of the 12th meeting of the Conference of the Parties to CITES (November 2002) there were around 600 reptile species listed in one of the three Appendices of the Convention. The approximate[2] number of species per Appendix is shown in **Table 1**.

Table 1
Number of reptile taxa in the CITES Appendices (November 2002).

Appendix I	Appendix II	Appendix III
67 species	508 species	25 species
3 subspecies	3 subspecies	-
4 populations	4 populations	-

Source: CITES Secretariat (2002).

[2] Please note that these numbers are approximate because there are no agreed species lists for some of the higher taxa.

Every two to three years, the Parties to CITES, collectively referred to as the Conference of the Parties (CoP), meet to review the implementation of the Convention. These meetings (or CoPs) provide the occasion for the Parties to consider proposals to amend the lists of species in Appendices I and II.

Upon joining CITES, each Member State is required to designate its own CITES Management and Scientific Authorities and to submit annual reports to the CITES Secretariat of CITES-listed specimens traded. The principal task is to determine when to allow the trade in CITES-listed specimens to or from their country. For example, a very important task of a Scientific Authority is to ensure any exports to be allowed will not be detrimental to the wild population of the species.

CITES is not a self-executing treaty. It contains no internal implementation or enforcement mechanism that automatically establishes penalties or infrastructures within the countries that have acceded to the treaty (De Klemm, 1993). Instead, the Convention requires that Parties themselves take "appropriate measures". Domestic legislation needs to be enacted, including the establishment of appropriate sanctions for violations. Generally, Customs and/or police authorities are given responsibility for enforcing national CITES-implementing legislation. CITES can be effective only to the extent that Parties enact and enforce the required measures (De Klemm, 1993). If a Party does not fulfil the requirements properly, it may be susceptible to trade suspensions under CITES.

Marking requirements under CITES

CITES also provides for the marking of animals as a tool for identifying individual specimens. Article VI, paragraph 7, of the Convention states that "Where appropriate and feasible a Management Authority may affix a mark upon any specimen to assist in identifying the specimen. For these purposes "mark" means any indelible imprint, lead seal or other suitable means of identifying a specimen, designed in such a way as to render its imitation by unauthorized persons as difficult as possible." Further, CITES Resolution Conf. 8.13 (Rev.) discusses the use of coded-microchip implants for marking live animals in trade. This Resolution recommends that "Parties, where possible and appropriate, without excluding the use of other methods, adopt the use of implantable transponders bearing permanent, non-programmable, unalterable and permanently unique codes for the identification of live animals."

The EU Wildlife Trade Regulations

The European Union is not a Party to CITES in its own right. However, all 15 EU Member States are Parties to the Convention and CITES has been implemented jointly in the Union through a common regulation since 1984. In 1997, two new Regulations, *Council Regulation (EC) No. 338/97* and *Commission Regulation (EC) No. 1808/2001* were adopted. These two Regulations (in the following also referred to as the 'EU Wildlife Trade Regulations') fully implement the requirements of CITES and address most of the currently applicable Resolutions and Decisions of the Conference of the Parties to the Convention. Although the EU Wildlife Trade Regulations are directly applicable in all 15 EU Member States, national differences in the application and regulation of trade may occur, as the relevant provisions are implemented by national laws and countries are allowed to adopt stricter measures. In addition, the necessary enforcement provisions including penalties and sanctions, must be transferred into national laws, as these are matters that remain under the sovereignty of each Member State, who must ensure that infractions are punished in an appropriate manner.

The EU Annexes

Species can be included in one of four Annexes (A, B, C and D) to *Council Regulation (EC) No. 338/97*. The EU Annexes contain all species listed in the CITES Appendices, but also contain some species not listed in CITES (see **Table 2**). In addition, the listing of species in a given Annex does not always correspond to the same Appendix, for example some species that are listed in Appendix II of CITES are listed in Annex A of the EU Wildlife Trade Regulations. Examples are the Spur-thighed Tortoise *Testudo graeca* and the Common Chameleon *Chamaeleo chamaeleon.*

Table 2
Overview of the species included in the EU Annexes

EU Annex	Includes … :
Annex A:	All CITES Appendix I species Some CITES Appendix II and III species for which the EU has adopted stricter measures Certain non-CITES species
Annex B:	All other CITES Appendix II species Certain CITES Appendix III species Certain non-CITES species
Annex C:	All other CITES Appendix III species
Annex D:	Certain non-CITES species CITES Appendix III species for which the EU holds a reservation

Whenever the list of species listed in the Annexes to *Council Regulation (EC) No 338/97* changes, a new Regulation is adopted. **Tables 3 and 4** show the differences in the listing of reptiles under the EU Wildlife Trade Regulations and under CITES.

Table 3
Differences between the EU Annexes and the CITES Appendices with regard to reptile species. The table shows the listing according to the EU Regulations, the relevant listing in the CITES Appendices is indicated in parenthesis (January 2003)

Taxa	EU Annex A	EU Annex B	EU Annex C
Freshwater turtles		*Trachemys scripta elegans* (-)	
Tortoises	*Homopus bergeri* (II) *Malacochersus tornieri* (II) *Pyxis planicauda** (II) *Testudo graeca* (II) *Testudo hermanni* (II) *Testudo marginata* (II)		There are no differences between the EU Annexes and the CITES Appendices with regard to reptile species listed in Annex C and Appendix III
Iguanas		*Liolaemus gravenhorstii* (-)	
Chameleons	*Chamaeleo chamaeleon* (II)		
Geckos	*Phelsuma guentheri* (II)		
Lizards	*Podarcis lilfordi* (II) *Podarcis pityusensis* (II)		
Monitor lizards	*Varanus olivaceus* (II)		
Boas	*Eryx jaculus* (II)		
Colubrids		*Philodryas chamissonis* (-)	
Vipers	*Vipera latifii* (-)	*Crotalus unicolor* (-) *Crotalus willardi* (-)	

(-) = not listed in the CITES Appendices, * This species was transferred from CITES Appendix II to Appendix I at CoP12 and this listing will come into effect on 13 February 2003.

Table 4
Reptile species listed in Annex D of the EU Wildlife Trade Regulations (January 2003)

Common name	Scientific name	Common name	Scientific name
Pig-nosed Turtle	*Carettochelys insculpta*	**Sunbeam Snake**	*Xenopeltis unicolor*
Gekkos	*Geckolepis maculata*	**File snakes**	*Acrochordus javanicus*
	Rhacodactylus auriculatus		*Acrochordus granulatus*
	Rhacodactylus ciliatus		
	Rhacodactylus leachianus	**Colubrids**	*Ahaetulla prasina*
	Uroplatus spp.		*Boiga dendrophila*
	Teratoscincus microlepis		*Elaphe carinata*
	Teratoscincus scincuas		*Elaphe radiata*
			Elaphe taeniura
Agamas	*Acanthosaura armata*		*Enhydris bocourti*
			Enhydris chinensis
Chameleons	*Brookesia decaryi**		*Enhydris enhydris*
	Brookesia ebenaui		*Enhydris plumbea*
	Brookesia minima		*Homalopsis buccata*
	*Brookesia perarmata**		*Langaha nasuta*
	Brookesia stumpfii		*Leioheterodon madagascariensis*
	Brookesia superciliaris		*Ptyas korros*
	Brookesia thieli		*Rhabdophis chrysargos*
			Rhabdophis subminiatus
Spiny-tailed lizards	*Zonosaurus karsteni*		*Zaocys dhumnades*
	Zonosaurus laticaudatus		
	Zonosaurus madagascariensis	**Elapids**	*Bungarus candidus*
	Zonosaurus quadrilineatus		*Laticauda* spp.*
Skinks	*Hemisphaeriodon gerrardii* (syn. = *Tiliqua gerrardii*)	**Vipers**	*Calloselasma rhodostoma*
	Tiliqua gigas		
	Tiliqua scincoides	**Sea snakes**	*Hydrophis* spp.
	Tribolonotus gracilis		*Lapemis curtus*
	Tribolonotus novaeguineae		

Source: Commission Regulation (EC) No. 2724/2000. *Note that although in *Commission Regulation (EC) No. 2724/2000* *Laticauda* spp. are listed under the elapid family Elapidae, these species are actually sea snakes and should fall under the sea snake family Hydrophiidae.

* These taxa were listed in CITES Appendix I at CoP12 and the listings will come into effect on 13 February 2003. Following that, the taxa will be transferred to Annex A of the EU Wildlife Trade Regulations.

More than CITES

The EU Wildlife Trade Regulations not only implement all the provisions of CITES and the bulk of currently applicable recommendations of CITES Parties, but also go beyond the requirements of the Convention in some respects. For example:

- The EU Wildlife Trade Regulations have stricter import conditions than those imposed by CITES. Import permits are not only required for species listed in Annex A (equivalent to Appendix I) but also for species listed in Annex B (equivalent to Appendix II). Import notifications are required for Annexes C and D.

- Proper housing conditions are required for live specimens of species in Annex A and B and transport conditions apply for all live specimens.
- More comprehensive restrictions are applicable for internal trade in specimens of species listed in Annex A. Commercial trade in all Annex A specimens is generally prohibited. Exemptions can only be granted on a case-by-case basis and special certificates have to be issued.
- *Council Regulation (EC) No. 338/97* authorizes the EU Member States to suspend imports with regard to certain species and countries, even if trade is allowed under CITES (via negative opinions of the Scientific Review Group of the EU and EU import restrictions – see below).

The permitting system for species included in these Annexes is harmonized within the EU and is slightly stricter than that for species included in the CITES Appendices.

The EU Scientific Review Group and EU import restrictions

The conditions that need to be met before an import or export permit can be issued are also stricter that those under CITES. In the EU, a Scientific Review Group (SRG) has been established, consisting of the representatives of each Member State's CITES Scientific Authority and chaired by a representative of the European Commission. The role of the SRG is to examine scientific questions related to the application of the EU Wildlife Trade Regulations. The SRG reviews information on the trade of wild plants and animals to ensure that imports by the EU comply with the conservation requirements of *Council Regulation (EC) No. 338/97*.

The SRG can form opinions on whether or not imports of certain species listed in Annex A and B, from a particular country of origin, comply with the conditions set out in the EU Wildlife Trade Regulations. For example, the SRG will determine whether or not the import of a species will have a harmful effect on the conservation status of that species, or on the extent of the territory occupied by the relevant population of the species. If the SRG determines that conditions are not met, a 'negative opinion' can be formed, and in this case all Management Authorities of the EU Member States are advised not to issue any import permits for the species coming from one or more range States.

The European Commission will consult with the country or countries of origin concerned and request additional information related to the trade and conservation status of the species. Depending on the information received, the SRG may revert its opinion to a 'positive opinion', or may subsequently establish a binding import restriction (usually specific to a particular species/country combination), which is published in the *Official Journal of the European Communities* and applied by all 15 EU Member States.

Annex III shows the specimens of reptile species that were not permitted to be imported into the EU according to the latest (as of January 2003) 'Suspension Regulation' *Commission Regulation (EC) No. 2087/2001* that was published on 24 October 2001.

Internal EU trade in species listed in Annex A and marking requirements in the EU

As a general rule, no permits or certificates are needed for the commercial use or the keeping or moving of a specimen of a species listed in Annexes B, C or D inside the EU. Species listed in Annex A are generally not permitted in trade for commercial purposes and their movement inside the EU is subject to specific regulations. Only captive-bred individuals are allowed in commercial trade and only if an EU sales exemption certificate ("Article 10" certificate) issued by the relevant CITES Management Authority accompanies the specimens. In addition, all live vertebrate species, including captive-bred specimens, listed in Annex A that are used for commercial purposes have to be "uniquely marked", for example with a microchip implant for reptiles and mammals or a closed ring for birds. The details of the mark are to be specified on the Article 10 certificate. Consequently, the certificate is only valid for a specific individual. The combination of a unique and unchangeable mark and a specimen-specific certificate allows the easy identification and the establishment of the legality of an Annex-A specimen. However, certain specimens, such as juvenile tortoises or snakes, cannot be

marked with microchips until they have reached a certain size. In these cases, a new certificate is needed for each sales transaction.

The Regulation makes specific provisions related to what type of marks should be used and recommends that all live reptiles should be marked with a uniquely numbered unalterable microchip transponder conforming to ISO standards 11784:1996 (E) and 11785:1996 (E). Where this method is not appropriate because of the physical or behavioural properties of the specimen or species, other methods such as uniquely numbered rings, bands, tags, tattoos or any other appropriate means should be used. Some EU Member States have developed guidelines that specify which marking method can be used for which species and specimen. For example, the use of photo documentation has been developed for selected reptile species by the *Deutsche Gesellschaft für Herpetologie und Terrarienkunde* (DGHT, the German Society for Herpetology and Husbandry of Reptiles and Amphibians) in conjunction with the German Management Authorities (Anon., 2001; Bender, 2001).

Other relevant legislation

Beside the EU Wildlife Trade Regulations, there are other legislative provisions that concern the trade, transport, handling and care of live reptiles in the EU and its Member States. These involve for example nature conservation legislation, such as the Council Directive 92/43/EEC (Habitats Directive), or laws and regulations dealing with animal welfare, veterinary issues, health and safety matters or invasive species. Annex IV of the Habitats Directive lists species of plants and animals that are in need of strict protection and Member States are required to take the requisite measures to establish a system of strict protection for these species in their natural range, prohibiting all forms of deliberate capture or killing of specimens including the deliberate destruction or taking of eggs from the wild. The reptile species listed in Annex IV of the Habitats Directive are shown in **Annex IV**.

TRADE IN LIVE CITES-LISTED REPTILES BY EU MEMBER STATES

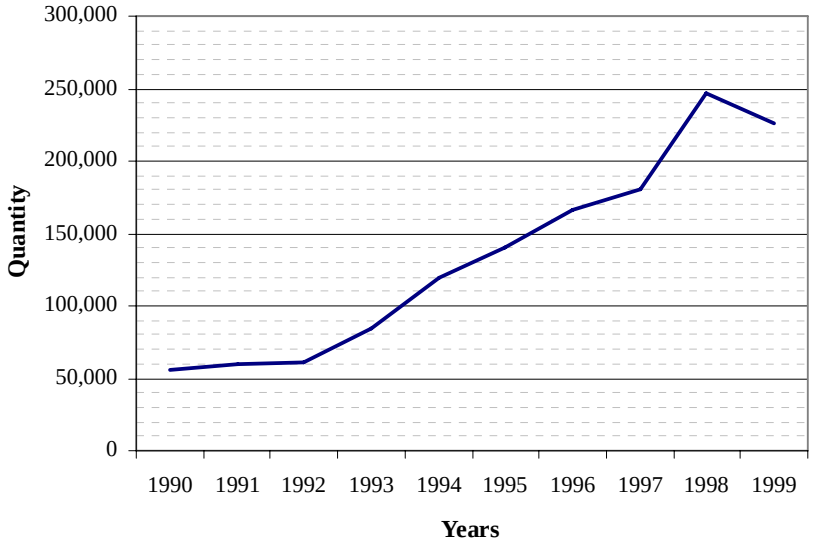
Imports

The following chapter provides an overview of the EU's trade in live CITES-listed reptiles for the 10-year period 1990 to 1999, as reported by CITES Parties.

Import quantities

Between 1990 and 1999, a total of 1 338 633 live CITES-listed reptiles were imported into the EU (**Figure 2**). According to CITES trade data, imports in the early 1990s (1990-1992) were relatively low and ranged around 60 000 specimens a year. However, as of 1993, import quantities increased rapidly and almost doubled every two to three years. In 1998, imports peaked at around 250 000 specimens, which represents a 500% increase in six years. Following this peak, import fell slightly to 230 000 specimens in 1999.

Figure 2
Annual imports of live CITES-listed reptiles by the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Main reptile species in trade

In total, 273[3] of the approximately 500 CITES-listed reptile species were reported in trade in the 10-year period. A single species, the Green Iguana *Iguana iguana*, dominated trade, accounting for 45% of all imports by the EU between 1990 and 1999. Sixteen per cent of all reptile imports in the period belonged to the family Boidae and Pythonidae (boas and pythons). The Royal Python *Python regius*, found in West and Central Africa, was by far the most commonly traded snake species. Together, geckos and chameleons accounted for almost a quarter of all imports by the EU and the endemic Striped Day Gecko *Phelsuma lineata* from Madagascar, the Senegal Chameleon *Chamaeleo senegalensis*, which occurs throughout equatorial Africa, were among the species traded in the highest quantities. Six per cent of the imports belonged to the tortoise family Testudinidae and four per cent were monitor lizards Varanidae. The Horsfield's Tortoise *Testudo horsfieldii*, from Central Asia, and the Savannah Monitor *Varanus exanthematicus*, of West, Central and East Africa, were amongst the most popular species in these two groups (see **Table 5**).

Table 5
The main reptile families and species of CITES-listed specimens imported into the EU (1990 to 1999)

Family	Total number of specimens	% Total imports	% Wild-caught
Iguanas (Iguanidae)	**605 743**	**45**	**12**
Green Iguana *Iguana iguana*	605 519		
Boas and pythons (Boidae)	**217 848**	**16**	**44**
Royal Python *Python regius*	140 931		
Geckos (Gekkonidae)	**175 816**	**13**	**71**
Striped Day Gecko *Phelsuma lineata*	45 630		
Chameleons (Chamaeleonidae)	**129 033**	**10**	**85**
Senegal Chameleon *Chamaeleo senegalensis*	23 701		
Land tortoises (Testudinidae)	**79 797**	**6**	**66**
Horsfield's Tortoise *Testudo horsfieldii*	19 604		
Monitor lizards (Varanidae)	**50 252**	**4**	**77**
Savannah Monitor *Varanus exanthematicus*	31 062		
Others	**80 144**	**6**	
Total	**1 338 633**	**100**	**41**

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The Savannah Monitor *Varanus exanthematicus* was one of the CITES-listed reptile species most frequently imported into the EU from 1990 to 1999.

Credit: W. Böhme (Zoologisches Forschungsinstitut & Museum Alexander Koenig, Bonn, Germany)

Source of specimens imported

The reptiles imported by EU Member States were reported to derive from various sources. Around 44% of the imported reptiles were declared as captive-bred and 41% as taken from the wild. However, over the 10-year period the percentage of captive-bred specimens in total trade has increased steadily from only seven per cent of imported reptiles being declared as captive-bred, to 32% in 1992 and 52% in 1999. As **Table 5** shows, the percentage of wild-caught specimens can vary considerably between different reptile groups. For example, whereas the majority of chameleons (85%), monitor lizards (77%), geckos (71%) and tortoises (66%) imported

[3] Note: many taxa were not reported in the CITES annual trade data at species level and hence are not included in this figure.

into the EU were harvested from the wild, only 12% of the Iguanidae originate from the wild. The source was not declared for 11% of the specimens.

Approximately 99% of the live CITES-listed reptiles imported between 1990 and 1999 by EU Member States were species listed in Appendix II, 0.9% of the specimens imported were listed in Appendix III and only 0.1% were in Appendix I (see **Table 6**). The majority of the Appendix I specimens imported were captive bred (89%), while Appendix II specimens comprised wild and captive-bred specimens in almost equal proportions (40% and 44% respectively). The majority of the Appendix III specimens were of wild origin (72%).

Table 6
CITES Appendices and sources for live CITES-listed reptiles imported by the EU (1990-1999)

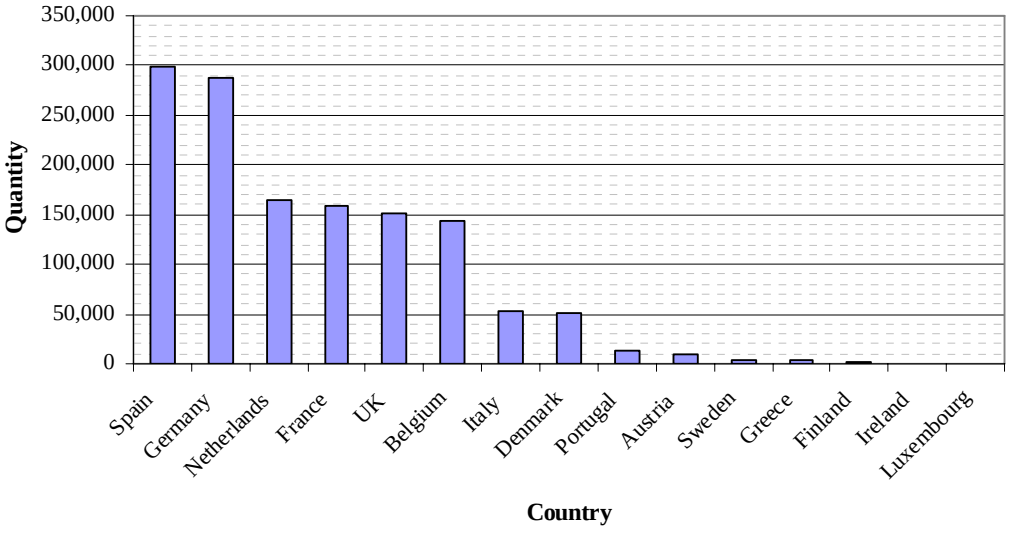
CITES Appendix	% Total	% Wild	% Captive-bred	% Other	% Not declared
Appendix I	<1	1	89	5	4
Appendix II	99	40	44	5	11
Appendix III	<1	72	1	2	25

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Main importers in the EU

Spain and Germany were the largest importers of live CITES-listed reptiles among the 15 EU Member States with almost 45% of the reptiles entering the EU being destined for these two countries **(Figure 3)**. Spain imported a total of around 300 000 specimens between 1990 and 1999, followed by Germany with 290 000 specimens. Other important importing countries were the Netherlands, France, the UK and Belgium, with imports ranging from around 165 000 to 143 000 for the 10-year period.

Figure 3
CITES-listed live reptiles imported by EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Imports from non-range States

In total, 341 471 (26%) of the reptile specimens imported by the EU were imported from a re-exporting country rather than directly from the country of origin. **Table 7** shows the numbers of live reptiles re-exported to the EU by the top 10 of these re-exporting countries. The vast majority of the re-exported specimens (90%) was re-exported by the USA.

Table 7
Top 10 countries of re-export for live CITES-listed reptiles imported by the EU (1990-1999)

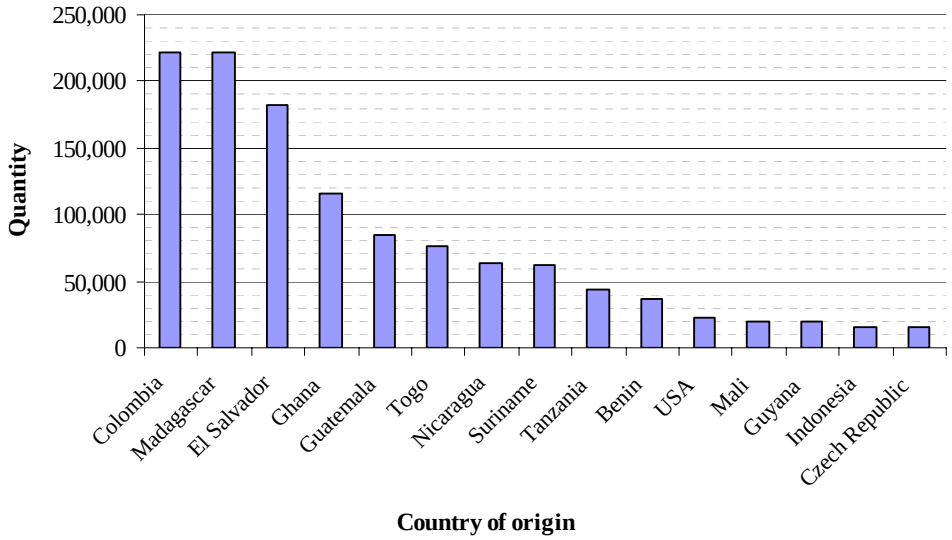
Country of re-export	No. of specimens
USA	305 651
Benin	10 434
Russia	5 785
Togo	4 597
Singapore	3 007
Mali	1 810
Switzerland	1 651
Canada	1 276
Ukraine	1 220
Morocco	1 135
Other	4 905
Total	**341 471**

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Countries of origin

The 15 most important countries of origin for live reptiles imported into the EU from 1990 to 1999 were identified as the 'Top 15' (**Figure 4**). Among these, Colombia and Madagascar are the two most important countries of origin with 222 357 and 221 560 specimens imported by the 15 EU Member States, followed by El Salvador and Ghana with 181 780 and 115 249 specimens respectively.

Figure 4
Most important countries of origin of reptiles imported by EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Table 8 shows the quantities of reptiles imported by the EU from the 15 most important countries of origin and the declared sources for these per country. The majority of reptiles imported from Madagascar, Ghana, Togo, Suriname, Tanzania and Benin are of wild origin, while the majority from some of the other countries, such as the Colombia, El Salvador, Guatemala, Nicaragua and the Czech Republic were declared as being of captive-bred origin.

Table 8
Top 15 countries of origin and sources for live CITES-listed reptiles imported by the EU (1990-1999)

Country of origin	Number of specimens	% Wild	% Captive-bred	% Other	% Not declared
Colombia	222 357	2	96	<1	2
Madagascar	221 560	75	<1	<1	25
El Salvador	181 780	7	92	<1	0.3
Ghana	115 249	61	6	16	17
Guatemala	84 726	1	99	-	-
Togo	76 834	53	2	23	23
Nicaragua	63 999	11	88	-	<1
Suriname	62 826	78	2	-	20
Tanzania	43 236	83	1	2	14
Benin	36 656	45	5	27	23
USA	22 398	33	52	13	1
Mali	20 327	99	-	<1	1
Guyana	19 738	71	1	<1	28
Indonesia	16 072	68	7	<1	25
Czech Republic	15 541	<1	>99	-	<1

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Table 9 provides an overview of the most important species imported by the EU from the five major countries of origin. Trade was often dominated by only one or two species exported in large quantities. For example, Colombia, El Salvador and Guatemala mainly exported one species, Green Iguana *Iguana iguana* and exports comprised respectively 95%, 99% and almost 100% of these countries' total CITES-listed reptile exports to the EU. Madagascar, in contrast, exported a number of different gecko species of the genus *Phelsuma*. Exports of these species accounted for 79% of Madagascar's total export to the EU between 1990 and 1999.

Table 9

Top five species of live CITES-listed reptiles imported by the EU directly or indirectly (via re-export) from the five main countries of origin (1990-1999)

	Colombia	Quantity	Madagascar	Quantity	El Salvador	Quantity	Ghana	Quantity	Guatemala	Quantity
1	Green Iguana *Iguana iguana*	211 026	Striped Day Gecko *Phelsuma lineata*	45 630	Green Iguana *Iguana iguana*	180 776	Royal Python *Python regius*	69 077	Green Iguana *Iguana iguana*	84 504
2	Boa Constrictor *Boa constrictor*	9 431	Four-spotted Day Gecko *Phelsuma quadriocellata*	41 181	Common Red-tail Boa (Boa constrictor) *Boa constrictor*	442	Savannah Monitor *Varanus exanthematicus*	25 568	Common Red-tail Boa (Boa constrictor) *Boa constrictor*	192
3	Black Tegu *Tupinambis teguixin*	794	Flat-tailed Day Gecko *Phelsuma laticauda*	39 947	African Spurred Tortoise *Geochelone sulcata*	262	Helmeted Turtle *Pelomedusa subrufa*	5 163	Brown Caiman *Caiman crocodilus fuscus*	30
4	Golden Tegu *Tupinambis nigropunctatus*[1]	661	Madagascar Day Gecko *Phelsuma madagascariensis*	37 716	Imperial Boa *Boa constrictor imperator*	200	Graceful Chameleon *Chamaeleo gracilis*	4 013		
5	Brown Caiman *Caiman crocodilus fuscus*	257	Carpet Chameleon *Furcifer lateralis*	16 636	Iguana *Iguana* spp.	100	Senegal Chameleon *Chamaeleo senegalensis*	3 584		

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

[1] A synonym of *Tupinambis teguixin* and therefore the totals for *T. teguixin* and *T. nigropunctatus* can be added together.

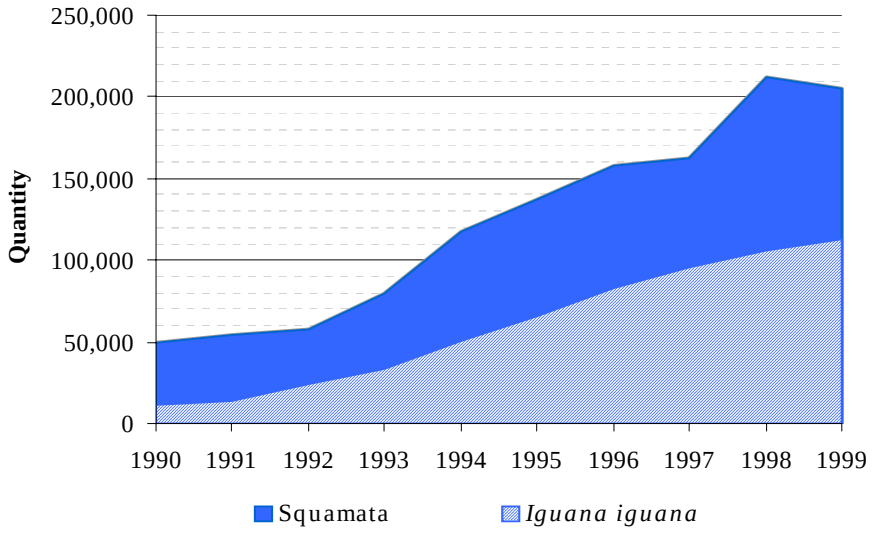
EU imports per taxonomic group

EU imports of live CITES-listed reptiles are discussed for the main taxonomic groups. Information is provided on total import quantities, annual trade trends, main species in trade and most important importing country.

Squamata (lizards and snakes)

The majority of the reptiles imported by the EU belong to the order Squamata, which includes lizards and snakes. EU Member States imported 1 222 694 live CITES-listed Squamata specimens between 1990 and 1999 and the trade in this group has grown significantly over this period (**Figure 5).** As more than 90% of the EU reptile trade in CITES-listed species consists of species in the order Squamata, the graph in **Figure 5** is almost identical to that in **Figure 2,** which shows the annual import trends for all reptiles. As mentioned before, the trade in this group is largely dominated by increasing imports of Green Iguana *Iguana iguana* from 1990 to 1999.

Figure 5
Annual imports of live CITES-listed Squamata and *Iguana iguana* into the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The EU imported 205 species of lizards and snakes, 13 subspecies, 10 unidentified taxa reported at the genus level, and one unidentified taxa reported at the family level were imported (**Table 10)**.

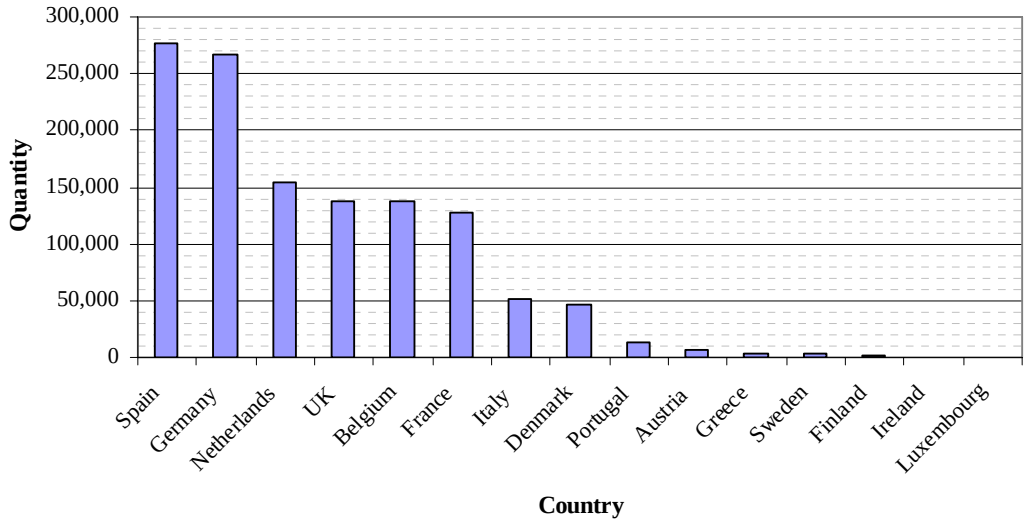
Table 10
Numbers of Squamata specimens per family imported into the EU (1990-1999)

Family	Number of specimens imported	% of all Squamata imports
Iguanidae - Iguanas	605 743	50
Boidae/Pythonidae – Boas and pythons	217 848	18
Gekkonidae – Gekkos	175 816	14
Chamaeleonidae – Chameleons	129 033	11
Varanidae – Monitor lizards	50 252	4
Others	44 002	4
Total	**1 222 694**	**100**

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Almost half of the imports (46%) were declared as captive-bred and 38% as taken from the wild. Spain and Germany were the main importers of Squamata, followed by the Netherlands, the UK, Belgium and France (**Figure 6**).

Figure 6
Numbers of live CITES-listed Squamata imported into the EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Iguanidae

Iguanas were by far the largest group of reptiles imported by EU Member States between 1990 and 1999. According to CITES annual report data, a total of 605 743 live CITES-listed Iguanidae, belonging to only six species and one unidentified taxon (reported at genus level), were imported into the EU. This constitutes almost 50% of all CITES-listed reptiles imported between 1990 and 1999. The overwhelming majority (over 99%) of iguanas imported belonged to only one species, the Green Iguana *Iguana iguana*. Imports of Iguanidae, which are mostly due to increases in imports of *Iguana iguana*, increased dramatically from about 11 800 specimens in 1990 to almost 115 000 in 1998.

Overall, 84% of the Iguanidae imports consisted of captive-bred specimens and only 12% were reported as wild-caught specimens, more than half of which originated from Suriname (**Table 11**).

Table 11
Top five countries of origin and sources for live CITES-listed Iguanidae imported into the EU (1990-1999)

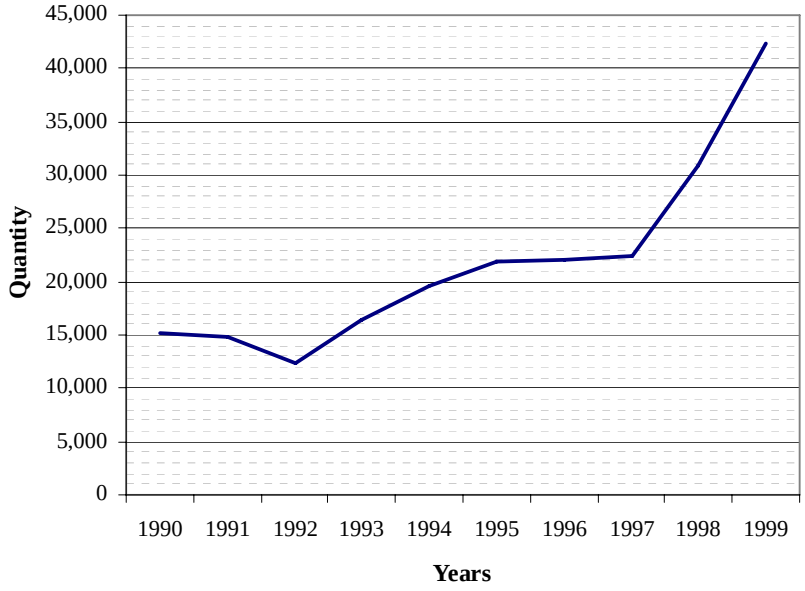
Country of origin	Number of specimens	% Wild	% Captive-bred	% Other	% Not declared
Colombia	211 026	2	95	<1	2
El Salvador	180 876	7	92	<1	<1
Guatemala	84 504	1	99	-	-
Nicaragua	54 974	12	88	-	<1
Suriname	51 331	77	1	-	21

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Pythonidae and Boidae

From 1990 to 1999, the EU imported 217 848 live CITES-listed boas and pythons, belonging to 51 species, four subspecies, four unidentified taxa reported at the genus level and one unidentified taxon reported at the family level. Imports steadily increased during the period, especially in 1998 and 1999 (**Figure 7**).

Figure 7
Annual imports of live CITES-listed boas and pythons into the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The genera *Python* (76%) and *Boa* (13%) were the principal genera imported into the EU from 1990 to 1999. *Python* spp. imports consisted of nine species but imports of the Royal Python *P. regius* dominated significantly with 85%. The genus *Boa* contains only one species, Boa Constrictor *B. constrictor*. Overall, imports were mainly of wild origin (44%) and, to a more limited extent, of captive-bred origin (25%).

The main countries of origin are shown in **Table 12**. Interestingly, these include also a non-range State the Czech Republic from where 12 757 specimens were imported between 1990 and 1999. In contrast to the other four countries, the large majority of imports from the Czech Republic were declared as captive bred. Overall, these imports included mainly specimens of wild origin (44%) and, to a more limited extent, of captive origin (25%).

Table 12
Top five countries of origin and sources for live CITES-listed boas and pythons imported into the EU (1990-1999)

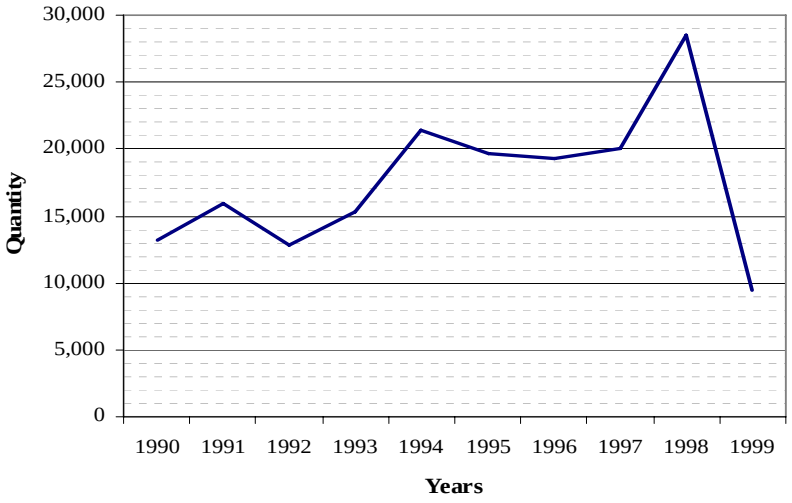
Country of origin	Number of specimens	% Wild	% Captive-bred	% Other	% Not declared
Ghana	71 662	48	10	25	17
Togo	33 187	40	2	32	26
Benin	25 327	51	7	14	28
Czech Republic	12 757	0.1	99.9	0.1	0.1
Guyana	5 370	72	4	0.1	25

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Gekkonidae

From 1990 to 1999, the EU imported 175 816 live CITES-listed Gekkonidae belonging to 27 species, one subspecies and one unknown taxon (reported at the genus level). The annual imports increased from around 13 000 in 1990 to around 28 000 specimens in 1998; in the following year the imports plummeted to under 10 000 specimens (**Figure 8**).

Figure 8
Annual EU imports of live CITES-listed Gekkonidae (1990-1999)



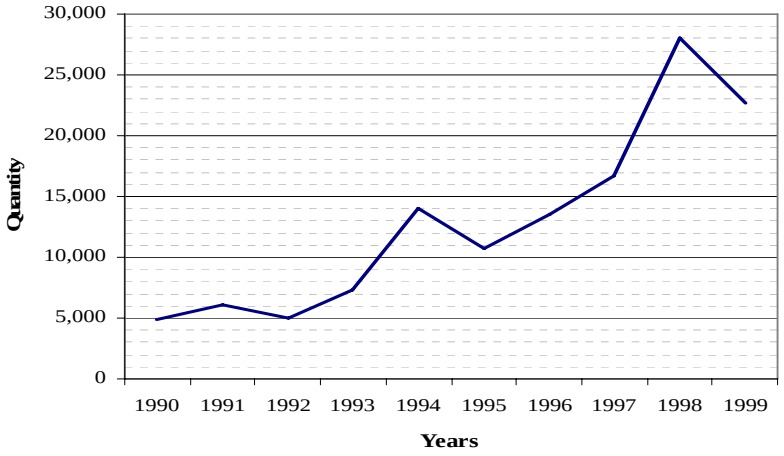
Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The large majority (>99%) of this trade was of *Phelsuma* spp. with the main species being the Striped Day Gecko *P. lineata* (26%), the Four-spot Day Gecko *P. quadriocellata* (23%), the Flat-tailed Day Gecko *P. laticauda* (23%) and the Madagascar Day Gecko *P. madagascariensis* (22%). Almost all specimens (99%) came from Madagascar, where they are native and the majority was imported directly by the EU (99%), with only 1% imported indirectly through a country of re-export.

Chamaeleonidae

From 1990 to 1999, the EU reported importing 129 033 live CITES-listed Chamaeleonidae belonging to 60 species, one subspecies and two unidentified taxa reported at the genus level. Overall, reported imports increased during the period, and peaked in 1998 (**Figure 9**).

Figure 9
Annual imports of live CITES-listed Chamaeleonidae into the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The most heavily traded taxa were *Chamaeleo* spp. (57%), followed by *Furcifer* spp. (31%). *Bradypodion* spp. (7%) and *Calumma* spp. (6%) were also imported. Twenty-nine species of *Chamaeleo* spp. were imported, with trade dominated by *C. senegalensis* (32%). *Furcifer* spp. consisted mainly of Carpet Chameleon *F. lateralis* (42%) and the Panther Chameleon *F. pardalis* (31%), and included 15 other species.

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The principal countries of origin for Chamaeleonidae were Madagascar, Tanzania, Togo, Cameroon and Ghana (**Table 13**). All these countries exported mostly wild specimens. Overall, the percentage of wild specimens was 85% and only three per cent were captive-bred animals.

Table 13
Top five countries of origin and sources for live CITES-listed Chamaeleonidae imported into the EU (1990-1999)

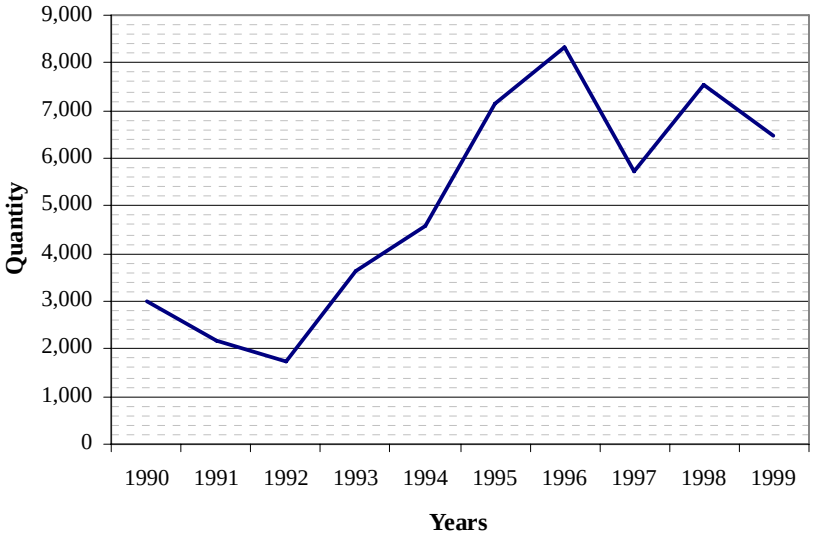
Country of Origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
Madagascar	46 541	88	<1	<1	11
Tanzania	28 309	94	<1	<1	5
Togo	18 978	76	<1	10	13
Cameroon	13 407	>99	<1	<1	-
Ghana	7 597	98	<1	<1	2

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Varanidae

From 1990 to 1999, the EU imported 50 252 live CITES-listed Varanidae belonging to 22 species, four subspecies and one unidentified taxon (reported at the genus level). Imports increased steadily from 1992 to 1996 and then fluctuated during the following three years (**Figure 10**).

Figure 10
Annual imports of live CITES-listed Varanidae into the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The family Varanidae includes only the single genus *Varanus*. All Varanidae are listed in the CITES Appendices. The species imported into the EU in the largest numbers from 1990 to 1999 was Savannah Monitor *V. exanthematicus* (62% of the EU's *Varanus* spp. imports) followed by the Nile Monitor *V. niloticus* (25%) and Water Monitor *V. salvator* (6%). Another 24 species occurred in trade, but comprised only seven per cent of total imports for this family.

The main countries of origin for Varanidae were Ghana, Togo, Indonesia, Benin and Republic of Tanzania (**Table 14**). None of these countries provided large numbers of captive-bred animals and most were captured in the wild. The overall percentage of wild specimens was 77%, while only one per cent of the specimens were reported as captive bred.

Table 14
Top five countries of origin and sources for live CITES-listed Varanidae imported into the EU (1990-1999)

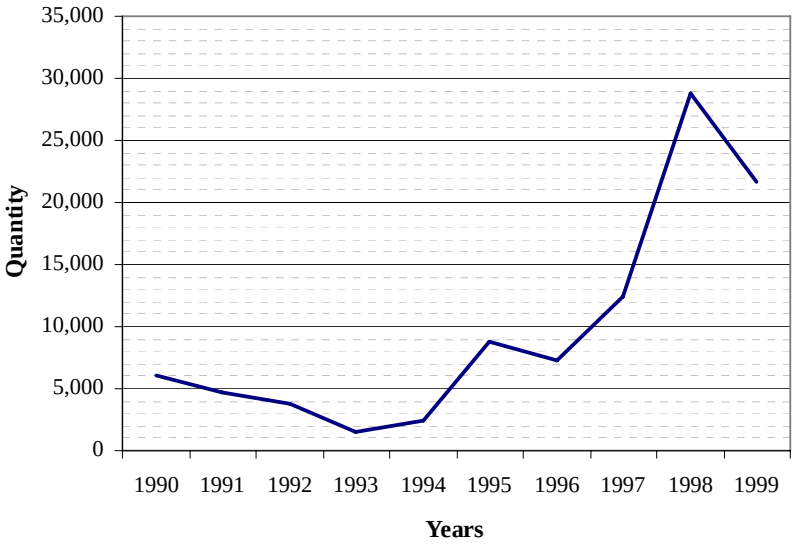
Country of Origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
Ghana	25 571	84	<1	<1	15
Togo	11 265	64	2	20	14
Indonesia	4 234	79	2	<1	18
Benin	2 629	40	4	34	22
Tanzania	2 238	96	-	-	4

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Testudines (tortoises and freshwater turtles)

Tortoises and freshwater turtles were the second most important species group after the Squamata with regard to total imports from 1990 to 1999 (97 222 specimens in total) (**Figure 11**).

Figure 11
Annual imports of live CITES-listed Testudines into the EU (1990-1999)

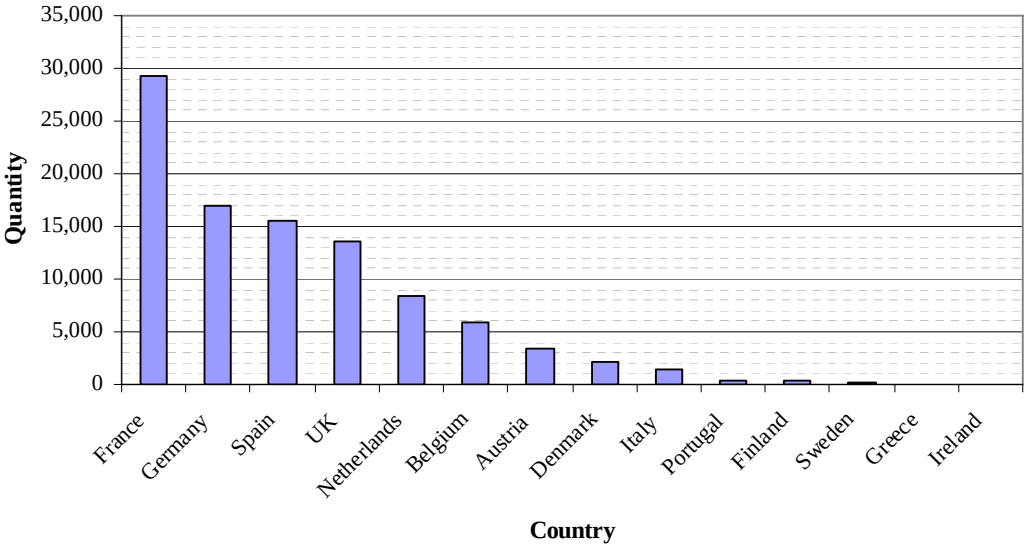


Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Imported specimens came from five families and included 50 species, two subspecies, five unidentified taxa reported at the genus level and one reported at the family level. The most abundant family in these imports was land tortoises, Testudinidae (55%), followed by Pelomedusidae (12%) and Emydidae/Geoemydidae (6%).

Within the EU, France was the largest importer of Testudines, followed by Spain, Germany and the UK (**Figure 12**).

Figure 12
Numbers of live CITES-listed Testudines imported into the EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Testudinidae

From 1990 to 1999, the EU imported 79 797 live CITES-listed Testudinidae belonging to 31 species, two unidentified taxa reported at the genus level and one reported at the family level. The imports increased from 1992 to 1998, with an especially distinct increase from 1996 to 1998, and decreased in 1999.

The major genera imported over the period were *Geochelone* spp. (36% of the EU's Testudinidae imports), *Testudo* spp. (31%) and *Kinixys* spp. (24%). *Geochelone* spp. mainly consisted of *G. pardalis* (65%) and included eight other species. Imports of *Testudo* spp. comprised *T. horsfieldii* (79%) and included four other species. Imports of *Kinixys* spp. consisted mainly of *K. belliana* (70%) and included three other species.

Most of these Testudinidae specimens were taken from the wild (66%) (**Table 15**). Only 10% of the Testudinidae specimens imported by the EU was reported to comprise captive-bred animals.

Table 15
Top five countries of origin and sources for live CITES-listed Testudinidae imported into the EU (1990-1999)

Country of Origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
Zambia	15 045	98	-	2	-
Uzbekistan	12 578	>99	-	<1	-
Togo	9 342	34	2	28	37
Tajikistan	6 246	100	-	-	-
USA	4 235	-	51	49	<1

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Pelomedusidae

From 1990 to 1999, the EU imported 11 279 live CITES-listed Pelomedusidae belonging to eight species and two unidentified taxa reported at the genus level. Imports of the genus *Pelomedusa*, which consists of only one species, *Pelomedusa subrufa*, accounted for 67% of the EU's Pelomedusidae imports, and imports of *Pelusios* spp. accounted for 32%. Imports of *Pelusios* spp. consisted mainly of *P. niger* (58%) and *P. gabonensis* (41%).

Table 16 shows the five major countries of origin for Pelomedusidae imported by the EU. Seventy per cent of all imports were reported as wild caught.

Table 16
Top five countries of origin and sources for live CITES-listed Pelomedusidae imported into the EU (1990-1999)

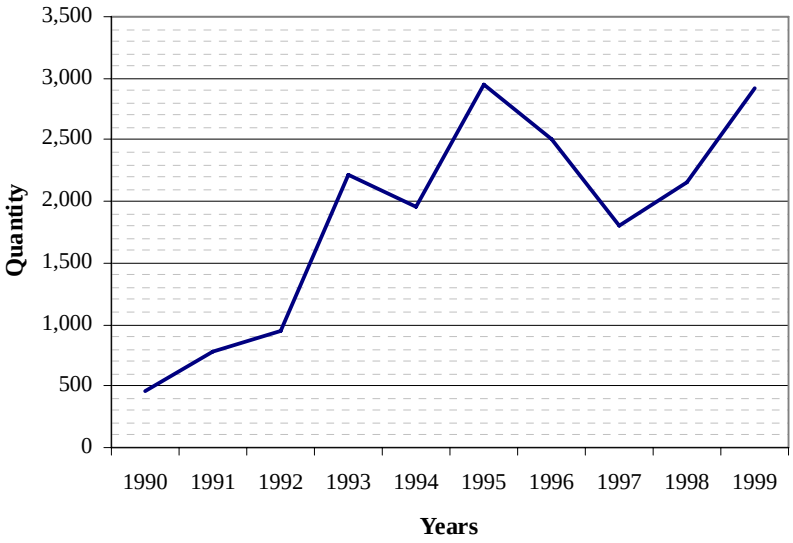
Country of Origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
Ghana	6 661	83	<1	<1	16
Togo	3 958	58	-	1	40
Benin	288	50	-	35	15
Tanzania	200	100	-	-	-
Suriname	61	38	-	-	62

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Crocodylia (crocodiles, alligators and gavials)

Twenty-three crocodile species have been described and all of these are included in the CITES Appendices. Based on CITES trade data, 17 species were reported in international trade between 1990 and 1999, belonging to two different families: Alligatoridae (89% of Crocodylia imports) and Crocodylidae (11%). In total, 18 699 live specimens of species belonging to the order Crocodylia were imported by the EU from 1990 to 1999. Overall, imports increased between 1990 and 1999, with peaks in 1995 and 1999 (**Figure 13**).

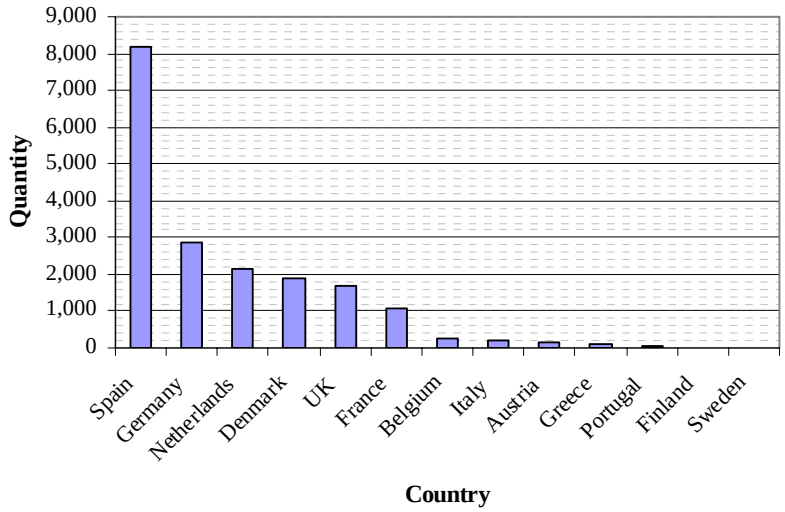
Figure 13
Annual imports of live CITES-listed Crocodylia into the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Within the EU, Spain was the largest importer of live Crocodylia, followed by Germany, the Netherlands, Denmark, the UK and France (**Figure 14**).

Figure 14
Numbers of live CITES-listed Crocodylia imported into the EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Alligatoridae

The major genera of Alligatoridae traded were *Caiman* spp. (88% of Alligatoridae imports) and *Alligator* spp. (10%). *Caiman* spp. imports consisted mainly of *Caiman crocodilus crocodilus* (80%), and included five other taxa. *Alligator* spp. imports consisted of *A. mississippiensis* (97%) and *A. sinensis* (3%).

The American Alligator *Alligator mississippiensis* is one of the most common crocodilians in the pet trade

Credit: P. Kornacker (BfN, Federal Agency for Nature Conservation, Germamy)

The major countries of origin for *Alligator* spp. imported by the EU are shown in **Table 17**. The specimens from Guyana and Suriname were taken mostly from the wild. The USA also exported a considerable number of wild specimens (44% of all imports). For Venezuela and Colombia the majority of the specimens was also captive bred. Overall, wild specimens comprised 34%, while 60% of the EU's Alligatoridae imports were captive bred.

Table 17

Top five countries of origin and sources for live CITES-listed Alligatoridae imported into the EU (1990-1999)

Country of Origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
Venezuela	9 170	<1	95	4	<1
Guyana	3 317	98	-	1	<1
Suriname	1 858	81	1	-	18
USA	1 561	44	55	1	-
Colombia	307	-	56	-	44

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Crocodylidae

Crocodylus niloticus accounted for the majority of the imports (90%) of Crocodylidae specimens by the EU. The main countries of origin were South Africa, Namibia, Madagascar and Thailand. Most specimens were captive bred (96%) (**Table 18**).

Table 18

Top four countries of origin and sources for live CITES-listed Crocodylidae imported into the EU (1990-1999)

Country of origin	Number of Specimens	% Wild	% Captive-bred	% Other	% Non declared
South Africa	949	-	>99	<1	-
Namibia	646	-	100	-	-
Madagascar	264	8	92	-	-
Thailand	93	-	100	-	-

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Rhynchocephalia (tuataras)

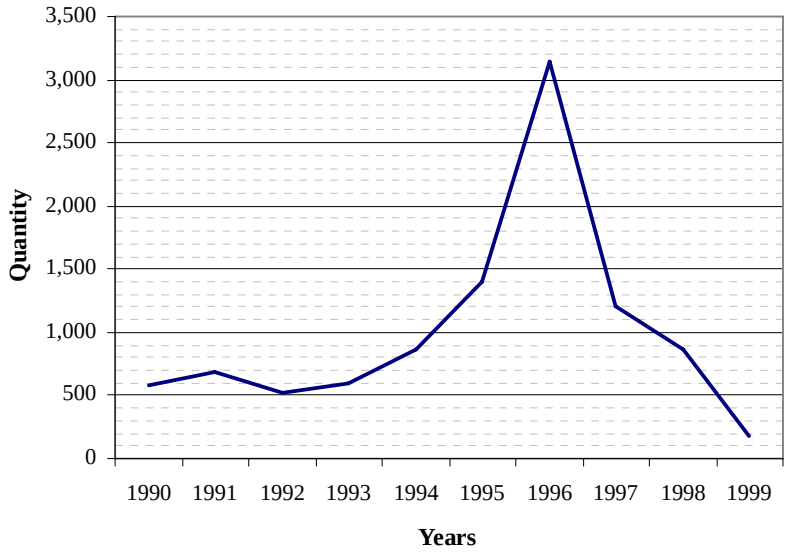
Imports of specimens from the order Rhynchocephalia by the EU were insignificant from 1990 to 1999. The order includes two species, *Sphenodon punctatus* and *S. guntheri*, both listed in CITES Appendix I and EU Annex A. Only *S. punctatus* was reported as traded during the period. In total, 18 captive-bred specimens were imported from New Zealand by Germany (56%) in 1991 and the UK (44%) in 1994.

Exports

Overview

A total of 10 043 live reptile specimens were exported by the EU from 1990 to 1999. These belonged to nine families, involving 118 species, seven subspecies and five unidentified taxa reported at the genus level. During this period, reported exports of reptiles increased dramatically from 1992 to 1996 and then decreased markedly from 1996 to 1999 (**Figure 15**).

Figure 15
Annual exports of live CITES-listed reptiles by the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Species and countries involved

The major reptile families exported by the EU were Boidae/Pythonidae (26%), Iguanidae (22%), Gekkonidae (17%), Agamidae (15%) and Testudinidae (12%), together accounting for 92% of the live reptile exports from 1990 to 1999. The remaining exports concerned the families Chamaeleonidae (4%), Varanidae (3%), Crocodylidae and Alligatoridae (both <1%).

The majority (96%) of the specimens exported by the EU were listed in CITES Appendix II. Overall, the exported reptiles were mainly captive-bred (84%) and only a small percentage came from wild sources (7%).

Table 19 shows the top 10 reptile species exported. Together they accounted for 73% of the total.

Table 19
Top 10 live CITES-listed reptile species exported by the EU (1990-1999)

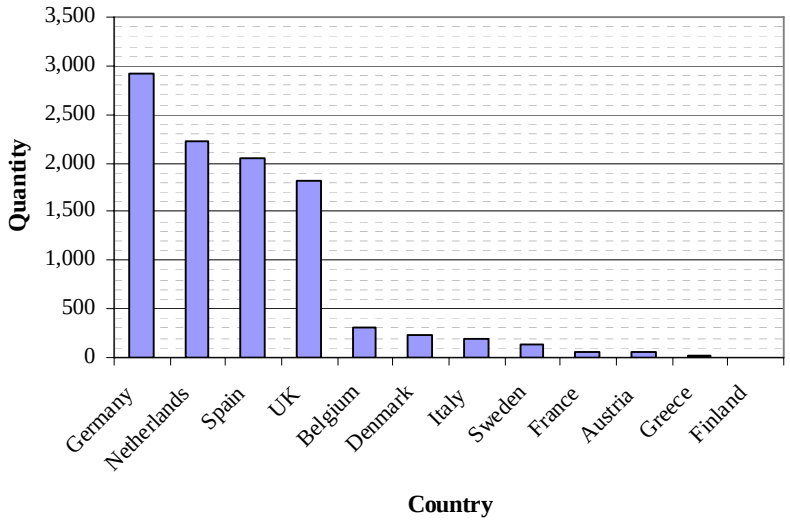
Species	Family	Number of specimens	% of total
Iguana iguana	Iguanidae	2 199	22
Uromastyx acanthinura	Agamidae	1 485	15
Phelsuma cepediana	Gekkonidae	562	6
Testudo hermanni	Testudinidae	538	5
Boa constrictor	Boidae	484	5
Phelsuma ornata	Gekkonidae	469	5
Python molurus bivittatus	Pythonidae	455	5
Phelsuma guimbeaui	Gekkonidae	431	4
Epicrates cenchria	Boidae	365	4
Chamaeleo calyptratus	Chamaeleonidae	299	3

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Germany, the Netherlands, Spain and the UK were the major reptile exporting countries, together accounting for 90% of the total reptile exports from 1990 to 1999 (**Figure 16**).

The USA was by far the major importing country of live reptiles exported by the EU during the period and imported 69% of the total, followed by Japan, Switzerland, Norway and South Africa.

Figure 16
Numbers of live CITES-listed reptiles exported by the EU Member States (1990-1999)



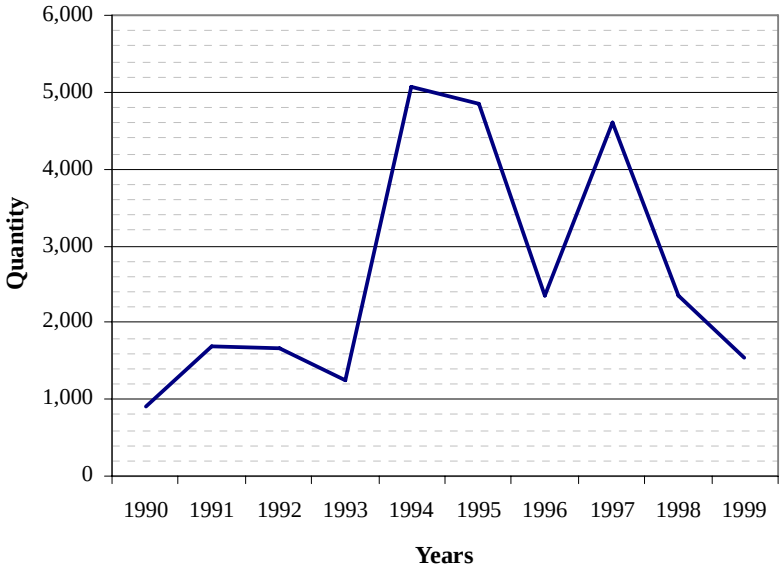
Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

Re-exports

Overview

A total of 26 286 live reptiles were re-exported by the EU from 1990 to 1999. These species belong to nine families, involving 105 species, five subspecies and three unidentified taxa reported at the genus level. During this period, reptiles were re-exported in the largest numbers in 1994, 1995 and 1997 (**Figure 17**).

Figure 17
Annual re-exports of live CITES-listed reptiles by the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

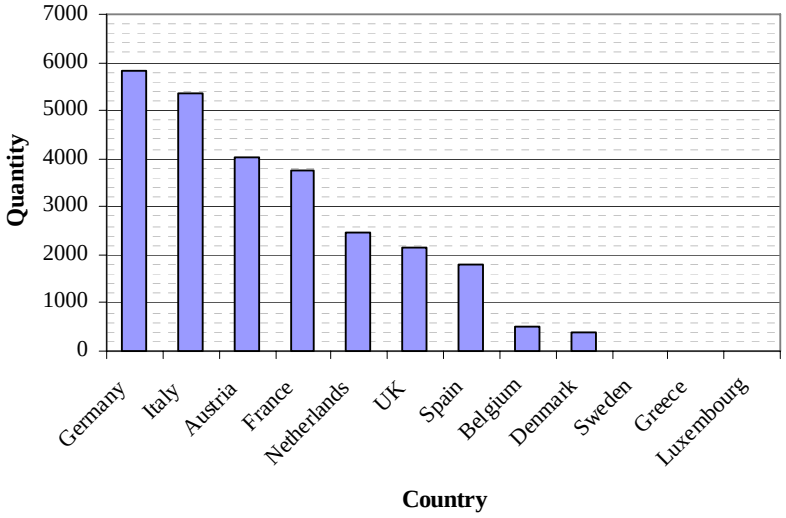
Since the EU imports large numbers of reptiles of the order Squamata, it is not surprising that re-exports of Squamata specimens constituted 65% of all reptiles re-exported by the EU from 1990 to 1999. Crocodylia (24%) and Testudines (10%) specimens were also re-exported in significant quantities.

Most re-exported reptiles were species listed in CITES Appendix II (>99%). The remainder were species listed in Appendix I. Overall, the specimens were mainly of wild origin (62%) and to a lesser extent bred in captivity (27%). In addition, specimens reported without a source, specimens with an unknown source and confiscated specimens together accounted for 8% of reptiles re-exported by the EU from 1990 to 1999.

Countries and species involved

Germany, Italy, Austria and France accounted for 72% of all live reptiles re-exported from the EU from 1990 to 1999 (**Figure 18**).

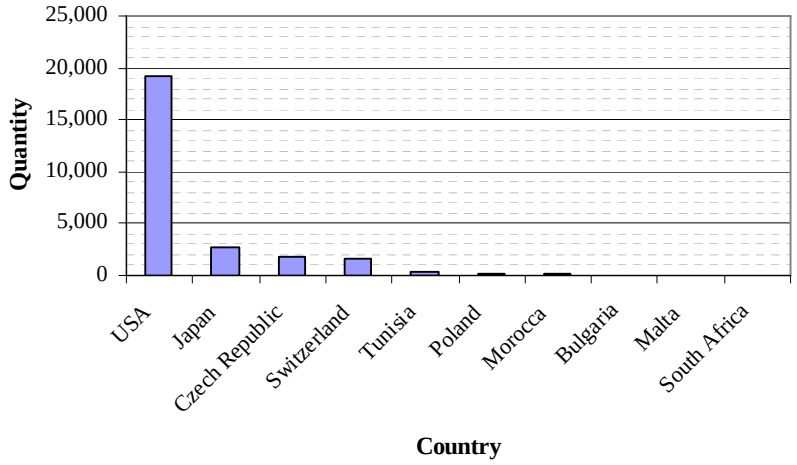
Figure 18
Numbers of live CITES-listed reptiles re-exported by the EU Member States (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The major importing country of live reptiles re-exported by the EU was the USA, accounting for 73% of the total. Japan, the Czech Republic and Switzerland also imported large numbers of reptiles re-exported by the EU (**Figure 19**).

Figure 19
Top 10 countries of import for live CITES-listed reptiles re-exported by the EU (1990-1999)



Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

The major reptile families re-exported from the EU were Varanidae (24%) and Alligatoridae (24%), together accounting for nearly 50%. Families of other species re-exported included Iguanidae (18%), Boidae/Pythonidae (11%), Testudinidae (10%), Gekkonidae (6%), Chamaeleonidae (4%) and Agamidae (1%).

Table 20 shows the top 10 species re-exported. Together they accounted for 79% of the total during the period.

Table 20
Top 10 CITES-listed reptile species re-exported by the EU (1990-1999)

Species	Family	Number of specimens	% of total
Nile Monitor *Varanus niloticus*	Varanidae	6257	24
Brown Caiman *Caiman crocodilus fuscus*	Alligatoridae	5067	19
Green Iguana *Iguana iguana*	Iguanidae	4524	17
Royal Python *Python regius*	Pythonidae	1131	4
Common Caiman *Caiman c. crocodilus*	Alligatoridae	1121	4
Flat-tailed Day Gecko *Phelsuma laticauda*	Gekkonidae	685	3
Herman's Tortoise *Testudo hermanni*	Testudinidae	519	2
Indian Star Tortoise *Geochelone elegans*	Testudinidae	504	2
Senegal Chameleon *Chamaeleo senegalensis*	Chamaeleonidae	428	2
Sumatran Short-tailed Python *Python curtus*	Pythonidae	398	2

Source: Adapted from CITES trade data compiled by UNEP-WCMC, Cambridge, UK

THE EU MARKET FOR LIVE REPTILES WITH A FOCUS ON GERMANY

The following chapter provides some more details on the EU market for live reptiles and its characteristics and dynamics. The information is based on research undertaken by TRAFFIC Europe in 1998 and 1999, including personal interviews and questionnaires with relevant stakeholders such as traders, importers and exporters, regulators, herpetologists and hobbyists. A special focus is given to the situation in Germany, which is one of the largest markets for live reptiles in the EU and therefore is taken as an illustrative case study. However, it should be noted that the market structure, trends and dynamics may be different in other EU countries and therefore the information is not necessarily representative of all 15 EU Member States.

The suppliers - countries of origin

The analysis of CITES annual report data revealed that the top five countries of origin for live CITES-listed reptiles imported into the EU between 1990 to 1999 were, in order of importance, Colombia, Madagascar, El Salvador, Ghana and Guatemala. Other important countries of origin were Togo, Nicaragua, Suriname, Tanzania, Benin, the USA, Mali, Guyana and Indonesia. These countries export sometimes only a rather small range of species and most of the exports to the EU consist mainly of one species. For example, the imports of the EU from Colombia and El Salvador consisted almost exclusively of captive-bred Green Iguanas *Iguana iguana.* Other countries of origin however, such as Madagascar, export a larger variety of species to the EU and the majority of these are wild caught.

Because CITES data are limited to CITES-listed species, they do not give an overview of the market structures and dynamics of the overall trade (which includes trade in species not listed in the CITES Appendices), or of the relationships amongst traders in range and consumer countries. However, CITES trade data can provide an indication of trade levels of specific CITES-listed species.

Indonesia, for example, is an important exporter of pythons *Python* spp., *Morelia* spp., *Liasis* spp. and monitor lizards *Varanus* spp., all listed in the CITES Appendices. Legal shipments of pythons and monitor lizards from Indonesia often include species that are not regulated by CITES, for example, scincids (e.g. *Mabuya* spp.), various gecko species (e.g. *Gekko* spp.) as well as colubrids (e.g. whipsnakes *Ahaetulla* spp.) (Witte, 1999). A live reptile dealer in Indonesia offered a diverse assortment of endemic reptiles with distributions restricted to the Mollucas and Papua and adjacent islands (Anon., 1999b). In this region, where Asian and Australian faunas meet, australo-papuan taxa, especially members of the Elapidae such as king brown snakes *Pseudechis* spp., the Papuan Taipans *Oxyuranus scutellatus canni* or the Pacific Coral Snake *Micropechis ikaheka*, are collected for the international market. The same exporter offered death adders *Acantophis* spp. from Halmahera, Seram, Obi and the extreme southern Papua province (Merauke), representing different island morphs (Anon., 1999b). Their taxonomy remains unclear.

Additionally, the rare and geographically restricted and monotypic turtle *Carettochelys insculpta* (CITES Appendix II), has been observed in the pet trade (Walls, 1996). Demand for this species was described already at the beginning of the 20th century (Georges and Rose, 1993). The non-CITES Frillneck Lizard *Chlamydosaurus kingii* is exported from southern Papua province, representing an Austral element.

Cameroon is an another important exporting country for reptiles, particularly because of the country's high diversity in chameleons (Anon., 1999c; N. Lutzmann, MSc. Herpetology, pers. comm., July 1998). An importer who claims to be the "UK's largest specialist supplier of hardy, high mountain chameleons" from Cameroon offered specimens from at least 10 species (Anon., 1996).

The foreign capital brought in by the reptile trade to the countries of origin is important and should not be underestimated. The benefits accrued by reptile traders are reportedly lucrative and as some of this benefit is passed on to the network of reptile hunters and collectors, the effect upon local economies may be substantial.

For example, the national minimum wage in Togo, an important supplier of live reptiles such as pythons and chameleons to the EU, works out at around EUR6 per month, yet during the hunting season, a hunter could easily collect two or three hundred gravid female Royal Pythons *Python regius*, selling them for up to EUR3 equivalent each (Jenkins, 1997).

Trade routes

Reptiles destined for trade originate from various sources. They are collected in the wild, as well as ranched (wild specimens reared in a controlled environment) in the country of origin or bred in captivity, in or outside their country of origin, by amateur or professional breeders. For reptiles collected in the wild, trade routes are complicated and can involve many players. For example, reptiles could be captured by a professional collector who delivers them to a supplier, who in turn supplies the exporter with the specimens. Specimens are also collected by farmers and local people living in or near the collecting sites and sold to professional collectors or middlemen. Middlemen can negotiate between these people, for example, by finding an exporter for the collector and a source for the exporter. They may buy and sell from everyone in the supply chain, so it can be difficult to trace the exact location from which the reptiles originated. Middlemen can be amateurs who work only once or on an occasional basis or they can be professionals who work on a more permanent basis (Anon., reptile trader, pers. comm., March 2002).

In Madagascar, for example, dealers buy reptiles that they have ordered in advance from village chiefs. This trade is lucrative. According to a German reptile enthusiast in 1998, the value of one Madagascar Tree Boa *Sanzinia madagascariensis* can be as high as almost 25% of the monthly income in rural areas. In this case, gravid females are captured from November to January and, after the reptiles have been bought by the dealers, they are transported to the airport in the capital Antananarivo. Madagascar's infrastructure includes a network of local airports across the island. East to west connections to Antananarivo as well as south to north connections to Antananarivo and Maschanga are abundant. It may take approximately 14 days from capture to export, after which the reptiles are transported to Europe or other destinations. Most shipments transit through Paris (France) or Prague (Czech Republic) into the EU. Other transit airports include Moscow (Russia), Rome (Italy) and Munich (Germany). When the gravid females have entered the EU market, they are occasionally housed temporarily until the offspring (around 10 young per female) can be distributed to a wholesaler (German reptile enthusiast, pers. comm., April 1998).

Generally, local collectors of reptiles are paid only a fraction of the final price paid by the consumer of the same animals in Europe. Local collectors in Tanzania, for example, receive approximately EUR0.06 for one Pancake Tortoise *Malacochersus tornieri*, while the middleman receives EUR0.44 (Klemens and Moll, 1995). The retail price for an adult specimen for sale at a German reptile fair that was visited in 1998 for the purpose of this study, was EUR486.

Live reptiles are placed in numerous temporary housing facilities as they are moved from the collector to the final buyer. According to Steinmetz *et al.* (1998), five such facilities may be used from the time the animal is captured until it is acquired by a hobbyist. When international demand rises for different species, the number of people involved in the trade structure of the country of origin is bound to increase. Thus, more people make profit by the sale of the same specimens and the prices in the countries of destination increase. There are also consequences for the animals, as a high number of temporary housing facilities and frequent transport tend to have negative impacts on their welfare.

The main exporting countries ship regular consignments to the EU, either directly or via non-EU countries. For instance, exporters of chameleons originating from Madagascar, Tanzania or Cameroon supply the European market two to six times annually (N. Lutzmann, MSc. Herpetology, pers. comm., July 1998).

In Germany, wildlife importers are required to inform airport Customs officials at least 18 hours before a consignment arrives at that airport. The importer must provide information on the origin of the shipment, day, date and time of arrival, the species included, the species' CITES listings, the number of specimens shipped and the flight number (R. Fenske, Düsseldorf Airport Customs, Germany, pers. comm., June 1999). This provision used to be implemented by the Naturschutzrecht (a law on the protection of nature) until 8 May 1998. It expired for four years until it was again implemented by the Bundesnaturschutzgesetz (Federal Nature Protection Law) on 4 April 2002 (F. Böhmer, Federal Agency for Nature Conservation, pers. comm., April 2002). Violation of this law can be punished with a fine of EUR250 to 10 000.

In the late 1990s, one of the main importers of chameleons in the EU was based in Hasselt, Belgium (N. Lutzmann, MSc. Herpetology, pers. comm., July 1998). Six German importers and wholesalers supplied more than 250 retailers or pet stores in Germany (NMB Pet Store, Germany, pers. comm., May 1999). Some German wholesalers, as well as most wholesalers in the Netherlands, Belgium and France, lack reception areas or quarantine facilities for imported reptiles. Therefore, the buyer can obtain the animals at a much lower price, as electricity costs and rental fees associated with quarantine facilities are omitted (NMB Pet Store, Germany, pers. comm., May 1999).

The consumers

Reptile buyers in the EU include professionals (commercial reptile dealers) and hobbyists. While buyers may be interested in making a profit from the trade, other factors, such as a passion for reptile species morphology, behaviour and taxonomy are reasons people become involved in buying, keeping, breeding and selling these animals. Herpetologists often form clubs that focus their attention on collecting certain types of reptiles, such as *Elaphe* spp., *Lampropeltis* spp., *Bitis* spp. and *Vipera* spp. Within such circles, specimens are often exchanged or sold. Geographically isolated vipers, such as *Vipera pontica* and *V. dinniki*, are especially desirable among these hobbyists. The same applies to people focusing on other reptile groups such as tortoises, giant snakes, chameleons or geckos.

Since the early 1990s, a large number of popular and scientific reptile magazines have emerged in the EU. These include advertisements for reptiles for sale and announcements of upcoming reptile fairs. The internet has also contributed enormously to online promotion of reptile acquisition and trade. For example, several internet sites include copious information on herpetological literature and provide access to databases, some of them containing references for approximately 45 000 publications (Anon., 2002b). *Reptilian*, a magazine published in the UK, is available online in German, Spanish, French and Italian (Anon., 2002c). Several websites also provide the opportunity for people to advertise reptiles for sale or particular species they are seeking to buy.

Many enthusiastic herpetologists have formed working groups, clubs and societies. The UK, for example, has around 30 clubs such as the *British Giant Snake Society* in West Yorkshire and the *Salisbury Reptile Club* (Anon., 2002d). A Swiss tortoise club (*Schildkröten-Interessengemeinschaft Schweiz* SIGS) registered 1200 members in May 1998 in the eight counties of Switzerland. The German association *Deutsche Gesellschaft für Herpetologie und Terrarienkunde* (DGHT, the German Society for Herpetology and Husbandry of Reptiles and Amphibians) was founded in 1964 as a successor to the association *Salamander* and has since grown to become the largest herpetological society worldwide. Membership grew steadily from 4738 in 1993 to 7687 in 2002 (A. Prast, DGHT, *in litt.*, April 2002). More than 30 nationalities are represented in DGHT and in 1999, the 708 foreign members came from Switzerland (285), Austria (159), the Netherlands (63), Denmark (25), USA (25), Luxembourg (17), Belgium (14), France (13) and Spain (13) (A. Kupfer, former staff of the DGHT, pers. comm., 1999).

The DGHT organises an annual symposium with international participation and is composed of working groups specialized in a variety of species groups (such as tortoises, chameleons, iguanas, monitor lizards and snakes), that also meet once a year. In addition, regional clubs of the DGHT have a monthly meeting that includes an

evening lecture addressing topics and subjects ranging from scientific research, husbandry and species to nature conservation. Members receive two quarterly scientific publications that are included in the annual membership. Additionally, a quarterly journal of advertisements, the *Anzeigenjournal*, includes a wide range of invertebrates, amphibians, reptiles, literature and technical equipment that are offered for sale or sought.

Reptile fairs

Reptile exhibitions and fairs flourished in the 1990s and the numbers of stands, vendors, visitors and species offered increased steadily, providing additional opportunities to offer species to a wider public. Posters and advertisements in herpetological magazines announced local fairs in advance of these events and attracted new people to the hobby of keeping reptiles. In 1998, around 50 fairs were organized in Europe, primarily in Germany, Austria and the Czech Republic. A calendar of most European reptile fairs can be obtained online (Anon., 2002e). Exhibition facilities occupy halls reaching 6000 m², such as the *Terraristika* in Hamm, Germany, the largest biannual reptile fair in Europe, which started in 1999.

On 10 January 1998, the German Federal Ministry of Food, Agriculture and Forestry (BML) published guidelines for wholesalers, retailers, private individuals and fairs on the housing of all reptiles (Mindestanforderungen an die Haltung von Reptilien). According to these guidelines, each animal offered by vendors should be identified with a label that provides its common name and scientific name, its origin, its source (whether captive-bred or wild), its sex and, where appropriate, its protection status (CITES Appendices/EU Annexes). Since the new *German Animal Protection Act* (*Tierschutzgesetz*) entered into force on 25 May 1998, all animal fairs can be subject to official controls.

For the purpose of this study, some reptile fairs were visited between 1998 and 2000 (one in Austria, two in Belgium, nine in Germany, one in the Czech Republic and two in the Netherlands). It was observed that many of the species offered were incorrectly labelled. Only a few vendors complied with the labelling guidelines and the majority used labels which (a) were not readable (b) did not include sufficient information, (c) showed only prices or (d) showed false information. In other cases, no labels were used at all. One dealer reported that some vendors only provide limited information on the labels so that customers will ask for additional information. This allows the vendor to engage the customer and to implement knowledge gained in the conversation in his sales pitch. On the other hand, vendors who provide all the required information on the labels may appear to be more professional than those who do not, and customers may prefer to buy from the latter.

In addition to reptiles, most of these fairs also offer insects, spiders, amphibians, mammals, and equipment for terraria and terrarium plants. Some reptile fairs display venomous snakes in a separate area, offering the whole range, e.g. elapids, vipers, rattlesnakes and opisthoglyphs. The Expo Syd, one of the largest reptile fairs in Scandinavia, advertises by stating that it offers no wild animals. Preparatory organization, e.g. building up the various stands and arranging the terrariums, allows sellers to enter the halls up to two hours prior to the official opening hours. This gives them time to make new contacts, exchange information on the latest trends and do some business with colleagues.

Exhibitors and vendors at the fairs surveyed were from numerous countries, including Belgium, the Czech Republic, Denmark, France, Germany, Italy, the Netherlands, Spain, the UK and even South Africa. It was noted that there was an increasing number of exhibitors from eastern Europe. Most of the exhibitors at reptile fairs are professional dealers, while the hobbyist breeders form the minority.

Besides reptile fairs, reptile exhibitions occasionally take place for private collections or private organizations. Such exhibitions may run for a few days and move around to different locations to allow the general public or even school classes to become more familiar with tame reptiles. Sometimes animals are also offered for sale.

Trends and fashions

The wide variety of information available through various media, such as journals, magazines and the internet, plays an important role in influencing trends in the reptile trade. Dealers may also play a role in sparking new trends when they offer species that are rare, seldom in trade or from isolated geographic regions. For instance, a Chinese exporter of live reptiles offered lizards from the Gobi desert and at that time, was the only exporter of Agamidae (e.g. *Japalura* spp., *Trapelus* spp. and *Laudakia* spp.), *Eremias* spp. and other Lacertidae species from that region.

Keeping Mediterranean tortoises such as Greek Tortoises *Testudo graeca* and Hermann's Tortoise *Testudo hermanni* has been fashionable for at least 30 years in Europe. In 1969, the UK imported 77 713 live Greek Tortoises *Testudo graeca*, 59 000 *Testudo hermanni* and 13 016 Mediterranean Pond Turtles *Mauremys leprosa*. In the following two years, imports of *Testudo graeca* totalled 402 181 specimens (Honegger, 1981). Since then, the availability of this species may have increased due to experience gained in captive breeding operations. Greek Tortoises *Testudo graeca* are easily kept outdoors in pens under natural climate conditions, which partly explains their popularity.

Snakes are also very 'trendy'. The colourful American kingsnakes and milksnakes *Lampropeltis* spp. have sustained more than 20 years of interest in Europe (Murphy and Campbell, 1987; Stratton, 1982). From 1993 to 1998, the DGHT *Anzeigenjournal* showed that the demand for these species had increased. This is attributed to their attractiveness as well as the relative ease with which they are bred and handled. Fifty-one species and subspecies of *Lampropeltis* spp. have been described and divided into two complexes. Within the more diverse *triangulum*-complex, *Lampropeltis triangulum* consists of 25 subspecies (Nietzke, 2002; Thissen and Hansen, 1996). Many dealers maintain a large stock of *Lampropeltis* spp. (e.g. M&S Reptilien, 1999). Some American dealers specialize in rare colour morphs of captive-bred milksnakes (e.g. *Lampropeltis pyromelana knoblochi*) or albino milksnakes (e.g. *Lampropeltis ruthveni*).

Garter snakes *Thamnophis* spp. and Corn Snakes *Elaphe guttata* have been popular for decades. It is likely they will continue to be popular because they are easily kept and bred (Nicholis, 1990; Nietzke, 2002; Trutnau, 1985). These species, particularly the Corn Snake, are often recommended for beginners. The Corn Snake is advertised in a variety of commercially produced colour morphs, such as the "Amelanistic Corn", the "Anerythristic Corn", the "Motley Corn" and the "Snow Corn". Several books have been published on this species and its colour varieties (Bartlett and Bartlett, 1999; McEachern, 1998; Love and Love, 2000; and Walls, 1994). According to Bechtel (1995), the colour trend in herpetoculture was introduced with the Corn Snake.

Colour morphs and albino reptiles are frequently advertised in literature for herpetoculturists. "Marvelous Mutants" is a regular column in *Reptilian* magazine and has included such animals as the albino Golddust Day Gecko *Phelsuma l. laticauda*, a xanthic Madagascar Ground Gecko *Paroedura pictus*, tiger and black Short-tailed Pythons *Python curtus* and white Mexican Burrowing Pythons *Loxocemus bicolor*. Some authors have suggested that the availability of these abnormal and man-made colour morphs, which are attractive and interesting for keepers, may reduce the demand for wild specimens (Clark, 1996).

According to one dealer in 1999, Giant snakes (boas and pythons) were being offered by almost every dealer and favoured as pets by the bulk of herpetoculturists. Colour patterns and mutants of giant snakes were also trendy and attracted the attention of snake keepers and the general public (Murphy and Henderson, 1997).

Some specialist collectors are interested mainly in rare, endemic and protected species that are in high demand and very valuable. An example of such a species is the Angolan Python *Python anchietae*, one of the rarest pythons available on the market and not easy to find in its natural habitat in Angola and Namibia (Anon., 2002f). Species that have not yet successfully reproduced in captivity are also in high demand and can be of high value.

For example, Black-headed Python *Aspidites melanocephalus* remains a very rare and expensive species in the pet trade, that has been offered for around USD4000-5000 (Walls, 1998).

Demand for species profiled by herpetological journals and herpetoculture magazines, as well as newly discovered species (such as *Varanus melinus* illustrated on the inside front cover of this report) has been found to often increase. Species that are uplisted from CITES Appendix II to Appendix I also sometimes attract new attention, such as *Testudo kleinmanni* that was uplisted in 1995 (H.-J. Gruber, M.Sc. Biology, pers. comm., December 1998). **Table 21** outlines trend fluctuations observed by a single retailer.

Table 21
Fluctuations in reptile popularity as observed by a German retailer from 1990 to 1998

Year	Trend
1990	➢ Small, affordable species (e.g. *Thamnophis* spp., *Anolis carolinensis* and *Anolis sagrei*)
1991	➢ Mainly snakes (e.g. *Elaphe guttata*, *Lampropeltis* spp. and *Thamnophis* spp.)
1992	➢ Increased demand for exotic species, not native to the EU (e.g. *Anolis roquet*, *Anolis roquet summus* and *Anolis equestris*)
1993	➢ Primarily giant snakes (e.g. *Python molurus bivittatus*, *Python regius* and boas).
1994	➢ Giant snakes commanding higher prices (e.g. albino *Python molurus bivittatus*, *Boa constrictor imperator* or *Acrantophis dumerili*).
1995	➢ *Pogona* spp. were in fashion
1996	➢ Steady demand for *Chlamydosaurus kingii*, *Lampropeltis* spp. and *Python regius*
1997	➢ Exotic species (not native to the EU) including venomous snakes (e.g. albino *Python regius*, *Morelia viridis*, *Corallus caninus)*
1998	➢ Consumer demand expands (e.g. rare monitor lizards, caimans and crocodiles, albino *Python regius*); demand for poisonous snakes increased, and spiders and insects also became more trendy.

Source: NMB Pet Store, 1998.

Trade in non-CITES reptile species in the EU

The number of species involved in the pet trade and not regulated by law is at times much higher than the number of species listed in CITES or the EU Annexes. Nearly 200 non-CITES reptile species were recorded at the reptile fairs visited and more than 400 additional non-CITES taxa were offered on approximately 100 price lists analysed (for the years 1977-1999), totalling around 600 non-CITES species observed in the EU pet trade. **Annex V** provides an overview of non-CITES species observed in the live reptile trade.

In recent years, the species composition of live reptiles shipped to Düsseldorf, Germany has been estimated to consist of approximately 40% CITES-listed species and 60% non-CITES species (R. Fenske, Düsseldorf Airport Customs, Germany, pers. comm., June 1999). To obtain more information about this composition, 10 random price lists (1981-1999) offering a great range of species were reviewed. The average percentage of CITES to non-CITES species turned out to be 29% to 71% (**Table 22**). The fact that more non-CITES reptile species than CITES-listed reptile species are available in trade was confirmed by a dealer in the Netherlands who reported receiving more non-CITES species than CITES-listed species (**Table 23**). Although this relation cannot be generalized, it does illustrate the large amount of non-CITES reptile taxa involved in the pet trade.

Table 22
Ratio of CITES-listed and non-CITES reptile species offered for sale on 10 price lists

Country	Year	CITES-listed species	Non-CITES species	Percentage
Germany	1998	48	124	28 / 72
Germany	1998	63	129	33 / 67
Switzerland	1998	19	68	22 / 78
Germany	1991	37	135	22 / 78
Germany	1998	34	34	50 / 50
UK	1997	27	38	42 / 58
Belgium	1997	27	78	26 / 74
Netherlands	1981	12	64	16 / 84
Germany	1999	7	54	11 / 89
USA	1992	32	56	36 / 64
Average				**29 / 71**

Table 23
Ratio of CITES and non-CITES reptile species imported from seven countries by one dealer

Country	CITES Species	Non-CITES Species	Percentage
Indonesia	29	73	28 / 72
Viet Nam	11	-	100 / 0
Peru	-	15	0 / 15
Paraguay	1	10	9 / 91
Tanzania	11	23	32 / 68
Egypt	5	25	17 / 83
Nigeria	1	9	10 / 90
Average			**27 / 73**

Source: "Monet Overseas Trading", the Netherlands, 1999.

A dealer in the Netherlands had a stock of specimens of more than 50 non-CITES species in January 1999 (Anon., 1999a). **Table 24** shows a selection of non-CITES reptiles that are commonly kept as pets in the EU.

Table 24
Non-CITES reptile taxa commonly kept as pets in the EU

TESTUDINES	Origin	SAURIA	Origin	SERPENTES	Origin
Chrysemys spp.	USA	*Anolis* spp.*	New World	*Elaphe guttata*	USA
Trachemys spp.	USA	*Sceloporus* spp.	New World	*Lampropeltis* spp.	USA
Cuora spp.**	SE Asia	*Crotaphytus* spp.	New World	*Thamnophis* spp.	USA
Chinemys spp.	China	*Hemidactylus* spp.	SE Asia, Africa	*Atheris* spp.	Africa
		Physignathus spp.	Indo-Australia	*Elaphe* spp.	Eurasia
		Ptychozoon spp.	SE Asia	*Natrix* spp.	Eurasia
		Takydromus spp.	SE Asia		
		Eublepharis macularius	Central Asia		
		Pogona spp.	Australia		

Source: Anon. German reptile trader, pers. comm., November 1998.
*mainly *Anolis carolinensis, A. equestris* and *A. sagrei*; ** Listed in CITES Appendix II on 19 July 2000.

It is difficult to quantify and monitor the trade in non-CITES species in the EU as the importation and exportation of these species are not recorded systematically. **Table 24** on non-CITES reptile taxa list some selected reptile taxa that are not listed in CITES and/or under the EU Wildlife Trade Regulations but that were included on the *2002 IUCN Red List of Threatened Species* (Hilton-Taylor, 2002). These species are marketed in the EU through a variety of means, including reptile fairs, magazines and the internet.

Other species, including softshell turtles (Trionychidae) such as *Amyda cartilaginea* (listed in CITES Appendix II in 2004), have also been observed in the pet trade. Some of these species are over-exploited for the food trade in Asia (Auliya, 2000).

Trends in offer and demand

Indications of trends in the species offered for sale and sought for purchase were noted mainly from reviewing the *Anzeigenjournal* published by the DGHT. Approximately 85% of these announcements of offers for sale or purchase involved reptile species. The offers are made by DGHT members, so the results may be biased by a number of factors, such as the background of the DGHT members, numbers of members over the years and seasonal fluctuations in the number of advertisements. Therefore, the results only represent some indications of market dynamics for live reptiles in Germany, and possibly the EU.

Box 1: Non-CITES reptile species that are classified as Threatened in the *2002 IUCN Red List of Threatened Species*, that have been observed in the EU market:

1. Cyclades Blunt-nosed Viper *Macrovipera schweizeri* (IUCN – Critically Endangered)

- Described in the pet trade (Honegger, 1978; 1981)
- Collection for the pet trade is described by Schweiger (1981)
- Listed on a price list of a German reptile importer/wholesaler on 25 June 1980 (EUR66.50)
- Specimens offered and sought in the quarterly announcements *Anzeigenjournal* of the DGHT in May and November 2001

2. Roti Island Snake-necked Turtle *Chelodina mccordi* (IUCN – Critically Endangered)

- Offered on a price list of a Dutch dealer on the internet on 14 March 1999 (Anon., 1999d; Anon, 1999e)
- Collection for the pet trade is reported by the Asian Turtle Trade Working Group (2000)
- Offer and/or demand in the quarterly announcements *Anzeigenjournal* of the DGHT in February and May 1999, November 2000 and November 2001

3. Caucasian Viper *Vipera kaznakovi* (IUCN – Endangered)

- Offered on a price list by a Czech dealer (*in litt*., 30 October 1993)
- Collection for the pet trade is described by Kuzmin (1994)
- Offer and/or demand in the quarterly announcements *Anzeigenjournal* in January 1993, February and May 1999, February, May and November 2001
- On 19 April 1999, Customs officials at the Czech-German border seized five *V. kaznakovi* from a smuggler (Anon., 1999f).
- Nine of 15 *Vipera* spp. listed are collected for the pet trade (Dodd, 1987)
- Collection of related taxa has been observed and may cause a severe threat to local populations (Stümpel and Hahn, 2001)

4. Pig-nosed Turtle *Carettochelys insculpta* (IUCN – Vulnerable)

- Observed at a reptile fair in Prague on 19 December 1998
- Offered on a price list of a German importer/wholesaler in September 2000 (Anon., 2000)
- Collection for the pet trade is reported by the Asian Turtle Trade Working Group (2000)
- Offer and/or demand in the quarterly announcements *Anzeigenjournal* of the DGHT in February 1999, November 2000 and February 2001
- In addition to collection for the pet trade, there are other more severe threats, e.g. consumption, that exploit local populations (Georges and Rose, 1993)

5. Lebanon Viper *Vipera bornmuelleri* (IUCN – Vulnerable)

- Offer and/or demand in the quarterly announcements *Anzeigenjournal* of the DGHT in November 2001
- Collection of related taxa has been observed and may cause a severe threat to local populations (Stümpel and Hahn, 2001)

6. Dinnik's Viper *Vipera dinniki* (IUCN – Vulnerable)

- Offered on a price list by a Czech dealer (*in litt*., 30 October 1993)
- Offer and/or demand in the quarterly announcements *Anzeigenjournal* of the DGHT in February 2001
- Collection of related taxa has been observed and may cause a severe threat to local populations (Stümpel and Hahn, 2001)

Table 25 shows that there was a slight increase in the number of genera that were offered and/or sought by at least five different persons from 1993 to 1998.

Table 25
Numbers of reptile genera with more than five offers for sale/purchase by different persons from 1993 to 1998

Year	Total Genera	CITES-listed Genera	Sauria	Serpentes	Testudines	Crocodylia
1993	71	24	8	11	4	1
1994	73	23	7	12	4	-
1995	81	27	9	13	5	-
1996	88	28	9	11	8	-
1997	82	28	9	12	7	-
1998	83	28	8	13	6	1

Source: Anzeigenjournal from 1993 to 1998.

Table 26 shows the numbers of advertisements of offer and demand for CITES-listed reptiles per genus. The Serpentes included the most genera and commanded the most advertisements (offers for sale and demand announcements for purchase). Overall, the number of offers were much larger than the number of demand announcments, which was in particular the case for snakes. This may indicate the existence of a large stock in Europe of these reptiles. Species of the following genera were offered more often than sought: *Python* spp. (712), *Boa* spp. (680), *Epicrates* spp. (524), *Morelia* spp. (375) and *Phelsuma* spp. (361). For seven genera, the number of demand announcements was larger than the number of offer announcements. These were *Sanzinia madagascariensis*, *Terrapene* spp., *Bradypodion* spp., *Homopus* spp., *Geochelone* spp., *Psammobates* spp. and *Pyxis* spp..

Table 26
Number of advertisements for offer (O) and demand (D) of CITES-listed reptiles per genus from 1993 to 1998

Sauria (O / D)	Serpentes (O / D)	Testudines (O / D)	**Crocodylia (O / D)**
Phelsuma spp.	*Python* spp.	*Testudo* spp.**	*Caiman* spp.
596 / 235	1048 / 336	995 / 804	10 / 2
Varanus spp.	*Boa* spp.	*Geochelone* spp.***	
447 / 361	930 / 250	315 / 320	
Iguana spp.	*Morelia* spp.*	*Emys orbicularis*	
440 / 114	655 / 280	205 / 129	
Chamaeleo spp.	*Epicrates* spp.	*Terrapene* spp.	
375 / 213	654 / 130	62 / 103	
Uromastyx spp.	*Liasis* spp.	*Indotestudo* spp.	
275 / 138	457 / 112	12 / 3	
Cordylus spp.	*Acrantophis* spp.	*Malacochersus tornieri*	
122 / 71	272 / 47	6 / 2	
Furcifer spp.	*Corallus* spp.	*Kinixys* spp.	
63 / 39	195 / 115	5 / 1	
Bradypodion spp.	*Sanzinia madagascariensis*	*Homopus* spp.	
26 / 53	127 / 48	- / 11	
Corucia zebrata	*Lichanura* spp.	*Psammobates* spp.	
18 / 2	101 / 48	- / 5	
Tupinambis spp.	*Eunectes* spp.	*Pyxis* spp.	
6 / 1	79 / 21	- / 5	
	Candoia spp.		
	62 / 20		
	Eryx spp.		
	39 / 32		
	Cyclagras spp.****		
	11 / 7		
	Aspidetes spp.		
	5 / -		
	Tropidophis spp.		
	5 / -		
Total	**Total**	**Total**	**Total**
2 368 / 1 227	**4 640 / 1 446**	**1 600 / 1 383**	**10 / 2**

Source: DGHT *Anzeigenjournal* quarterly announcements from 1993 to 1998.
* including *Chondropython viridis*; ** including *Agrionemys horsfieldi(i)*; *** including *Asterochelys* spp. and *Chelonoides* spp.; **** *Cyclagras = Hydrodynastes*.

The dynamics of offer and demand – two case studies

Two species, the Green Tree Python *Morelia viridis* and the Madagascar Tree Boa *Sanzinia madagascariensis*, were selected to illustrate some of the dynamics involving offer and demand trends in the live reptile trade in the EU.

Green Tree Python Morelia viridis

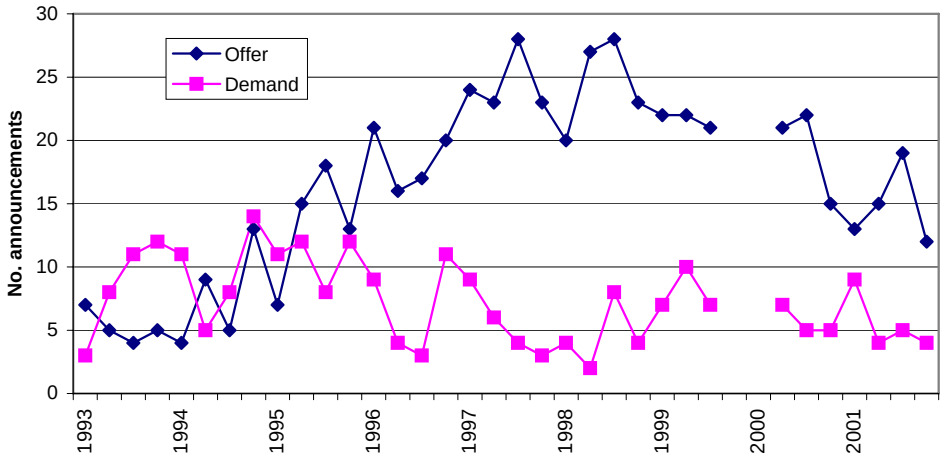
The Green Tree Python (CITES Appendix II/EU Annex B) is reputed to be one of the most attractive pythons and has very colourful young. Several books are specifically dedicated to this python, such as Weier and Vitt (1999) and Kivit and Wiseman (2000), and the species was said by one breeder in 2002 to be very much in demand. The species occurs in New Guinea and on adjacent islands. Various populations can be distinguished, revealing specific phenotypes (e.g. from Aru, Biak and Sorong) (Kirschner and Abend, 2001). Although the Green Tree Python is bred successfully in captivity, wild-captured specimens still supply the pet market (Walls, 1998).

Figure 20 shows distinct fluctuations in the availability of and demand for this python on the German market. The demand for this species showed the highest level in the early and mid-1990s. Since captive-bred individuals are easier to keep than wild specimens (owing to lower levels of aggression and less chance of infection by parasites), the demand for this species by beginners was said by one breeder in 2002 to have increased during this period. Offer for sale of these pythons increased until the late 1990s, peaking in 1997 and 1998, possibly as a result of successful captive breeding efforts by exporters, wholesalers and hobbyists.

As the availability of these pythons became more widespread, announcements seeking them levelled off, with the fewest announcements recorded in 1998. The number of offers to sell specimens decreased from the middle of 1998 until the end of 2001 to a level similar to that of the mid-1990s. However, these drops do not necessarily reflect a saturation of the market, because many hobbyists keeping this species may have acquired specimens from professional breeders, thus reducing the need to advertise on the part of sellers and buyers. According to one breeder, the demand was still high in 2002.

Small peaks in demand during the period from 1999 to 2001 may reflect an interest for specific island forms and colour variations of the Green Tree Python. Breeders focus on rare morphs, the blue pigmented specimens from Sorong in particular (Kirschner and Abend, 2001; Walls, 1998).

Figure 20
Offer and demand trends for the Green Tree Python *Morelia viridis* from 1993 to 2001.



Source: DGHT *Anzeigenjournal* quarterly announcements from 1993 to 2001 (excluding IV/1999 and I/2000).

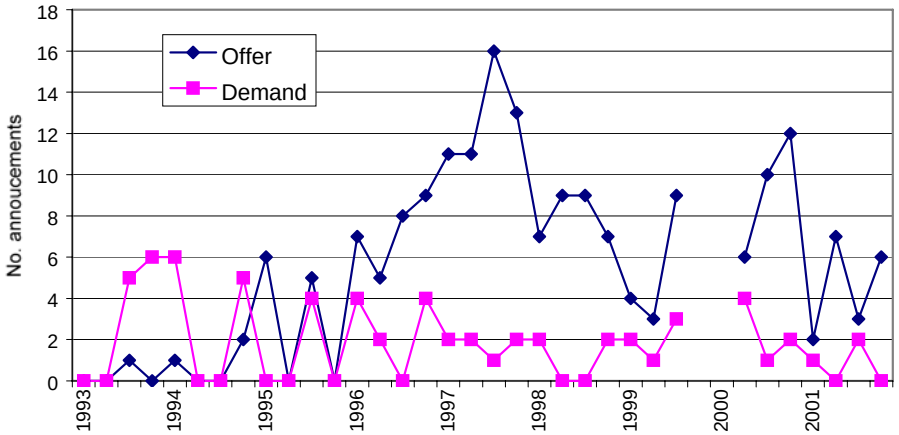
Madagascar Tree Boa Sanzinia madagascariensis

Similar trends were observed for the Madagascar Tree Boa *Sanzinia madagascariensis* (CITES Appendix I/EU Annex A). The main difference was that there were far fewer announcements. This is due to the differences in the conservation status of the two species and the fact that the Madagascar Tree Boa is not bred as easily as the two other boa species in Madagascar such as *Acrantophis dumerili* and *A. madagascariensis*.

The highest number of offers to sell Madagascar Tree Boas were in 1997 and 1998 (**Figure 21**). The subsequent drop in demand announcements could be the consequence of a new German regulation that entered into force in 22 October 1999 (*Bundesartenschutzverordnung* or BartSchV), concerning the subcutaneous implantation of microchip transponders. Since 1 January 2001, an alternative marking method has been accepted by the Federal Agency for Nature Conservation and Federal Environment Ministry, regulated by BartSchV, which prescribes the photographic documentation of individual colour patterns in selected Appendix I reptile species (Bender, 2001; IGR, 2000). This change in required marking methods, however, has not corresponded with an increase in the demand for *S. madagascariensis*.

Even though the Madagascar Tree Boa is more attractive in terms of colour patterns, according to a breeder in 2002, many breeders prefer to breed *A. dumerili* and *A. madagascariensis* (also CITES Appendix I/EU Annex A). This trend has caused the a significant drop in both the demand and price for these two alternative species. According to one breeder in 2002, specimens could be purchased for EUR1500 from 1993 to 1997, but the price dropped to EUR350 in 2002. According to one breeder in 2002, although the demand for *S. madagascariensis* was very low, it was still higher than that for *A. dumerili* and *A. madagascariensis*.

Figure 21
Offer and demand trends for the Madagascar Tree Boa *Sanzinia madagascariensis* (1993-2001)



Source: DGHT *Anzeigenjournal* quarterly announcements from 1993 to 2001 (excluding IV/1999 and I/2000)

The value of the live reptile trade

Overall, there are many factors that influence the price of a reptile, from the species itself, to the sex, size and condition of the animal. The source is also a very important factor. The price includes all costs incurred to the various persons involved in getting an animal to a retailer in the EU, including packing, shipping, general import costs, mortality of animals, acclimatization, husbandry, risk until resale and profit of enterprise. According to a

German reptile trader in 1998, the final consumer can pay around 4.5 times the price that would be asked in the country of origin. However, this differs between high and low priced species. The additional charges can remain on a similar level and thus form a higher percentage of the final price for low priced species.

The following example may illustrate the price developments from source to consumer market: Madagascar gecko species such as *Phelsuma lineata, P. quadriocellata, P. laticauda* and *P. madagascariensis* (see photo) are mainly harvested from the wild. *Phelsuma* spp. collectors in Madagascar receive about EUR0.03 per specimen of a small species and EUR0.06 per specimen of a large species. The animals are exported to Europe, the USA and Japan for around EUR8 to 15 each. There they can be purchased for EUR80 to 150 each. This high increase in price is caused by compensation for the high mortality (G. Hallmann, pers. comm., April 2002).

All these different factors make it difficult to identify price trends and their causes. Well-known trends include the increase of prices for rare species that are in high demand and the decrease for common or captive-bred species.

Phelsuma madagascariensis grandis

Credit: G. Hallmann

The type of person offering a reptile also influences the price. For example, **Table 27** shows that crocodiles offered by private individuals are generally less expensive than those offered by a professional dealer. The dealers are often subject to higher costs and, in order to maintain the quality of the reptiles, they need to ask for higher prices (Anon., German reptile trader, pers. comm., November 1998; NMB Pet Store, Germany, pers. comm., May 1999).

Table 27
Values (in Euros) of the most common crocodilians in the pet trade

Species	Prices charged by the private individuals	Prices charged by dealers
Caiman crocodilus	51 – 128	128 – 230
Paleosuchus palpebrosus	205 – 383	307 – 614
Paleosuchus trigonatus	358 – 614	
Alligator mississippiensis	383 – 767	511 – 1023
Osteolaemus tetraspis	409 – 767	767 – 1278
Alligator sinensis	1074	

Source: T. Wiegmann, DGHT AG Crocodiles, pers. comm., May 1999.

Factors influencing price

Dealers are sometimes forced to lower their prices due to increased competition. Occasionally, species are sold below cost prices (e.g. Green Iguana *Iguana iguana* juveniles were offered for approximately EUR1 in Orlando, Florida), according to one dealer in 1998. The following factors can also influence prices of live reptiles:

- **Law enforcement.** After the newly discovered *Varanus melinus* had been described by Böhme and Ziegler (1997), the first animals imported into the USA were priced at EUR2216-3324 each. After several consignments of around 200 specimens each were imported to the USA, the price dropped. Then Indonesia established an export ban for the species, which resulted in an increased value, back to EUR2216 (C. Hoover, TRAFFIC North America, *in litt.*, 1999). According to a German dealer's price list (1999), *Varanus melinus* could be obtained for EUR4857. The first breeding record of *Varanus melinus* has recently been published by Dedlmar and Böhme (2000). Captive-bred specimens have been offered for sale by DGHT members in the *Anzeigenjournal* of 20 February 2001 and by reptile exporters in Bali on 22 April 2002 (Anon., 2002i).

- **Mass imports.** In the early 1990s, adult *Uromastyx* spp. were priced at approximately EUR256-614 in Germany. Commercial prices were higher than those of private individuals. Captive-bred specimens could be obtained for EUR153 to 179 in Germany (T. Wilms, M.Sc. Herpetology, pers. comm., September 1998). Due to mass imports, primarily since 1995 and 1996, the price dropped significantly. For example, *Uromastyx maliensis* (now *U. dispar maliensis*) was sold by a wholesaler for EUR31-51, whereas the retailer sold adults for EUR102-153 each. In the mid-1990s (1995-1997), the UK exported large quantities of *Uromastyx acanthinura*, claimed to have been bred in captivity, some of which were imported by Germany. Several importers mentioned a price between EUR18 and 26. The species retailed for about EUR92-205 (T. Wilms, M.Sc. Herpetology, pers. comm., September 1998). In this specific case, there was some doubt as to the origin of the animals, as the high number of juveniles could not originate from just one breeder and several young died due to severe infection with parasites that are especially common in wild specimens. In addition, the prices were very low, taking into consideration the high energy costs which would be incurred when keeping and breeding specimens in captivity.
- **Transport charges.** A captive-bred *Iguana iguana* costs around EUR4 in the USA. Freight costs from the USA to Germany (one box up to 50 kg) are around EUR55. Customs in Düsseldorf charge EUR61 for CITES Appendix II species per box and, occasionally, a veterinary surgeon is consulted who charges another EUR41. Therefore, one Green Iguana costs the German wholesaler EUR6 to 7 (NMB Pet Store, Germany, pers. comm., May 1999). A retailer pays about EUR10 to 11, excluding taxes. Specimens imported illegally are priced at EUR7, but because these animals have often not been transported properly they may be of lesser quality (NMB Pet Store, Germany, pers. comm., May 1999).
- **From wholesaler to final consumer.** The wholesalers' value for chameleons imported from Tanzania or Cameroon is EUR20 to 39 (e.g. for *Rhampholeon spectrum, R. brevicaudatus, Chamaeleo werneri, C. gracilis, C. fuelleborni*) and up to EUR230 (e.g. for *Chamaeleo deremensis*). The final consumers have to pay EUR51 to 102 more for each specimen (N. Lutzmann, M.Sc. Herpetology, pers. comm., July 1998).

The top 15 most expensive CITES-listed reptile species offered at the fairs visited in 1998 are included in **Table 28**. This table includes three Appendix I and 12 Appendix II species. Reasons for these high values are species rarity and infrequent availability on the market, low reproductive rates, newly described species, highly protected species, mutants and attractive colour morphs.

Table 28
The 15 most expensive CITES-listed species observed at reptile fairs in 1998

Species	CITES listing	Price/specimen (EUR)
Python anchietae	Appendix II	10 226
Morelia boeleni	Appendix II	5 113
Boa constrictor (Albino)	Appendix II	2 812
Morelia viridis	Appendix II	2 556
Acrantophis madagascariensis	Appendix I	2 505
Python timoriensis	Appendix II	2 301
Aspidetes ramsayi	Appendix II	2 301
Geochelone elegans	Appendix II	1 841
Varanus prasinus	Appendix II	1 227
Sanzinia madagascariensis	Appendix I	1 125
Varanus yuwonoi	Appendix II	1 023
Varanus indicus ("black morph")	Appendix II	1 022
Malacochersus tornieri	Appendix II	971
Boa constrictor orophias	Appendix II	971
Boa constrictor occidentalis	Appendix I	920

Table 29 shows the 15 most expensive non-CITES species observed at reptile fairs in Europe in 1998. Overall, the values are much lower than those for CITES-listed species, but generally the same reasons for high prices are applicable. National protection measures may also affect prices of these species.

Table 29
The 15 most expensive non-CITES species recorded at reptile fairs in 1998

Species	Price/specimen (EUR)
Atheris spp.	562
Drymarchon corais couperi	358
Egernia kingii	358
Tribolonotus gracilis	332
Elaphe schrenkii	281
Gonyosoma oxycephalum	256
Tribolonotus novaeguineae	256
Lampropeltis triangulum sinaloae	243
Chlamydosaurus kingii	230
Spilotes pullatus	225
Bitis g. gabonica	205
Pogona vitticeps	205
Boiga dendrophila ssp.	179
Ceratophora stoddartii	176
Physignathus lesueurii	153

Overall, 60% of the 50 most expensive reptile species observed at fairs in 1998 consisted of snake species (Boidae, Colubridae and Viperidae), all listed in CITES Appendix I or II. Other species belonged to the suborder Sauria (Scincidae and Varanidae), which accounted for 22% and Testudines (particularly tortoises), which accounted for 18% of the 50 most expensive reptile species observed at fairs in 1998.

Other sources have provided additional examples of prices of CITES-listed species. For example, python mutants can be priced at EUR8300 (Clark, 1996). A person offered EUR138 330 for a pair of albino *Python reticulatus* (T. Holtmann, German reptile trader, pers. comm., March 1999). Furthermore, *Testudo hermanni boettgeri*, *T. h. hermanni* and *T. marginata* were sold for EUR164 each in a German department store on 1 April 1999.

Additional price examples with regard to non-CITES species are shown in **Table 30**.

Table 30
Additional examples of expensive non-CITES reptiles offered by various dealers (e.g. in Germany, the USA, the Netherlands, the UK and Switzerland) in 1998 and 1999

Species	Price (EUR)	Date
Lampropeltis triangulum hondurensis	2 214	1999
*Cuora mccordi**	2 156	1998
*Cuora aurocapitata**	1751 – 1 987	1998
*Cuora pani**	1010 – 1 280	1998
Chelus fimbriatus	357	1998
Drymarchon corais couperi	348	1998
Chelodina mccordi	340	1999
Tribolonotus blanchardi	340	1999
Tribolonotus schmidti	340	1999
Lampropeltis pyromelana ssp.	297	1998
Elaphe porphyracea ssp.	277	1999
*Elaphe frenata***	277	1999
Tribolonotus gracilis	272	1999
Tribolonotus novaeguineae	272	1999
Atheris spp.	255	1999
Staurotypus triporcatus	255	1999
Elaphe taeniura ridleyi	245	1998
Naja haje	245	1998
Gerrhonotus spp.	225	1999
Micropechis ikaheka	221	1999
Oxyuranus scutellatus	221	1999
Goniurosaurus lichtenfelderi	200	1999
Bitis gabonica rhinoceros	199	1998
Bitis nasicornis	199	1998
*Coluber hippocrepis****	194	1998
Lampropeltis mexicana thayeri	194	1998
Spilotes pullatus	194	1998
Pogona vitticeps	192	1998
Physignathus lesueurii	179	1999
Thamnophis marcianus (albino)	179	1999
*Brookesia perarmata*****	170	1999
*Langaha nasuta******	166	1998
Crotalus vegrandis	164	1998
Gonocephalus robinsonii	159	1999
*Elaphe subocularis*******	153	1999

* Listed in CITES Appendix II since 19 July 2000 ** *Gonyosoma frenatum*, *** *Hemorrhois hippocrepis*, **** Listed in CITES Appendix I at CoP12 and this listing will come into effect on 13 February 2003, ***** *Langaha madagascariensis*, ****** *Bogertophis subocularis*

Some of the species in **Table 30** are also present in **Table 29**. These are *Drymarchon corais couperi* (EUR348 to 358), *Tribolonotus gracilis* (EUR272 to 332), *Tribolonotus novaeguineae* (EUR256 to 272), *Atheris* spp. (EUR255 to 562), *Spilotes pullatus* (EUR194 to 205), *Pogona vitticeps* (EUR179 to 192) and *Physignathus lesueurii* (EUR153 to 179).

***Tribolonotus gracilis* was one of the most expensive non-CITES species recorded at reptile fairs in the EU in 1998**

Credit: Mark Auliya

ILLEGAL TRADE IN LIVE REPTILES IN THE EUROPEAN UNION

Introduction

Although a great portion of the EU's trade in live reptiles is legal and likely to be conducted at sustainable levels, illegal and unsustainable trade can pose a serious threat to the survival of the species in the wild. Of particular concern in this regard is the trade that exists to meet the demand of "specialist" collectors for some of the world's rarest reptile species. These collectors often specialize in particular groups of taxa with a view to collecting the broadest range of species and particularly the rarest. It is such demand that fuels the illegal collection and smuggling of some of the rarest reptile species.

Similar to legal traders, illegal traders adapt quickly to changing laws and markets - targeting new species for which demand is high, shifting to new markets or sources, or developing new smuggling methods and routes to avoid detection. Often smugglers will identify routes where the risk of detection is minimal and specifically target countries with weak border controls. This is of particular significance with regard to controlling wildlife trade in the EU, where systematic controls only take place at the EU external borders. Consequently, animals that have been smuggled into one EU Member State can be transported to other Member States without a high risk of further controls.

Illegal trade by tourists also occurs but is mainly linked to ignorance. Some markets in popular holiday destinations, such as Tunisia for example, offer reptile species such as *Testudo graeca graeca* or *Chamaeleo chamaeleon* to European tourists (Bogaerts, 1998). Both species are listed in Annex A of the EU Wildlife Trade Regulations. Similar observations were made in Morocco, where both species were sold in the thousands on local markets.

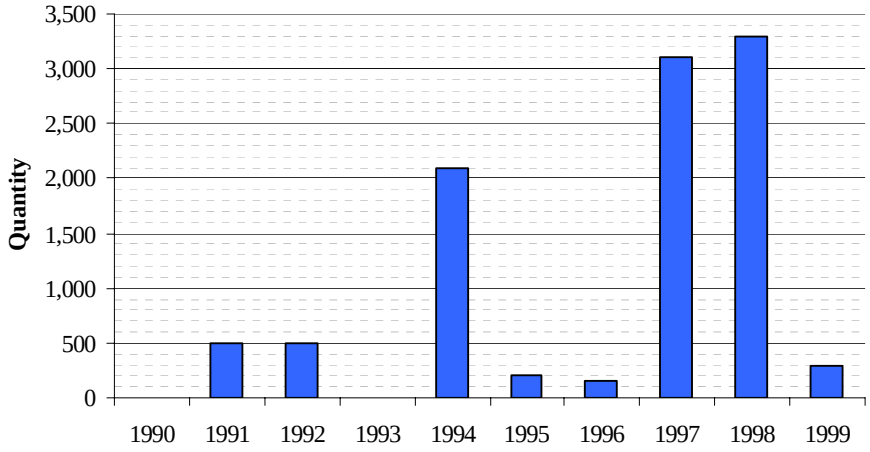
The size of the illegal trade in reptiles is unknown, but globally it must certainly involve many thousands of specimens every year. However, the very nature of wildlife smuggling is such that no reliable data are available to confirm such an estimate, although reported seizures and confiscations can provide an important indication of the illegal trade in reptiles, including indications of trade routes and methods used.

Information on illegal trade in wild animals is often difficult to obtain, due to the illegal and secretive nature of the trade. In order to gather some information on illegal trade in live reptiles in the EU, the CITES annual report data were analysed to assess reported seizures and confiscations. However, as already discussed, these data have some limitations and additional aspects need to be kept in mind when interpreting the results of this analysis. For example, if country A has seized many more live reptiles in a year while other countries have not, this does not necessarily mean that country A has a larger illegal market than other countries. On the contrary, this can also indicate that enforcement efforts are higher in country A and consequently more illegal trade is discovered and more specimens are seized than in the other countries. In other cases, previously seized specimens can reappear in trade, for example when a seized specimen is exported to another country for educational purposes or scientific research. In these cases, the transaction itself is actually legal, but involves a specimen that was once of illegal origin. This may, in some cases, lead to an overestimation of the number of specimens seized as reported by CITES Parties.

Reported seizures

According to the CITES trade data for 1990 to 1999, a total of 10 128 live CITES-listed reptiles, that were imported by the EU, were seized. The main peaks in reported seizures took place in 1994, 1997 and 1998 (**Figure 22**).

Figure 22
Annual reported seizures of live CITES-listed reptiles imported by the EU (1990-1999)



Source: CITES trade data (comparative tabulations) compiled by UNEP-WCMC, 2001.

Table 31 shows the overall composition of orders and families for the seized reptiles. Specimens of certain families were imported illegally and seized more often than others. For example 54% of the total number of live CITES-listed reptiles seized by the EU during this period were Testudinidae.

Table 31
Orders and families for live CITES-listed reptiles seized upon importation by the EU (1990-1999)

Order	Number of specimens	% of total	Family	Number of specimens	% of order
Testudines	5 466	54%	Testudinidae	5 349	98%
			Pelomedusidae	88	2%
			Cheloniidae	25	0%
			Emydidae	4	0%
Squamata	4 585	45%	Iguanidae	1 702	37%
			Gekkonidae	1 592	35%
			Boidae	598	13%
			Chamaeleonidae	401	9%
			Agamidae	151	3%
			Varanidae	113	2%
			Cordylidae	15	0%
			Teiidae	8	0%
			Elapidae	4	0%
			Viperidae	1	0%
Crocodylia	77	1%	Alligatoridae	70	91%
			Crocodylidae	7	9%
Total	**10 128**	**100%**			

Source: CITES trade data (comparative tabulations) compiled by UNEP-WCMC, 2001.

The EU Member States that reported the highest number of live reptiles seized upon importation were the UK, Austria and Spain. Belgium, Greece, Ireland, Italy and Luxembourg did not report any seizures of live reptiles during the period. The main countries of origin for the specimens seized by the EU Member States included the

USA and Madagascar. In total, 67 different countries of origin were recorded. Of the 10 128 seized specimens, 8651 were imported directly from the country of origin, while 1477 were imported from a re-exporting country. In total, 17 re-exporting countries were recorded.

Smuggling techniques

Illegal trade is motivated by various factors. Tourists are sometimes unwitting smugglers, unaware of the provisions that apply to certain souvenirs that they take back with them to their home countries. However, there is also commercial and organized illegal trade targeted at specific reptile species. Transport by air traffic is one of the main methods of transportation for illegal trade in live reptiles into the EU and live animals are often smuggled in hand luggage. When smuggling occurs through cargo, live reptiles are often hidden in legal shipments (R. Fenske, Düsseldorf Airport Customs, Germany, pers. comm., June 1999; B. Marx, Customs search officer, pers. comm., April 1999). Often reptiles are also smuggled via express mail shipments with false invoices or carried by human couriers through transit countries to the final destination (Watson, 1998).

Smuggling techniques are quite variable. Live reptiles have been smuggled, among other places, in double floors in lorries, interior side coverings of caravans, behind car seat covers and doors, in hidden compartments in luggage, inside clothing, in stockings, socks, undergarments and in pillowcases (Holden, 1998; R. Fenske, Düsseldorf Airport Customs, Germany, pers. comm., June 1999; M. Krieg, Frankfurt Airport Customs, Germany, pers. comm., May 1999). Mail delivery by courier service from abroad to the EU, for example with live reptiles enclosed in empty video boxes, form another example of smuggling techniques (Minister for Justice and Customs, Australia. Media Release, 16 March 2000). Furthermore, live reptiles have also been smuggled by inclusion in shipments of other wildlife, such as live tropical fish (Anon., 1997; Anonymous dealer, pers. comm, May 1999). Smuggling wildlife is occasionally linked to illegal trade in drugs (Holden, 1998) and there have been incidences where giant snakes stuffed with plastic bags of cocaine have been used to smuggle drugs across international borders.

Another strategy to mask protected reptiles is to declare them under the name of a non-protected species. This is mainly used for species groups that have a confusing taxonomy (Morris, 1996). Animals are sometimes painted to make them look more like another species. For example, an Indonesian exporter painted Papuan Pythons *Apodora papuana* and Timor Pythons *Python timorensis* (CITES Appendix II, EU Annex B) with a water-soluble dye to make them look like water snakes (Lilley, 1994).

Fraudulent entering of incorrect information into Customs declarations and/or CITES permits is another common method of smuggling reptiles into the EU, and one that is of increasing concern. Detection of such fraud often requires specific skills, as well as experience on the part of Customs officers, for example, to identify species or assess the likelihood of illegal trade. There are different ways in which such ‘misdeclaration’ can be used (e.g. misdeclaration of the origin or the source of the specimen, misdeclaration of the species, value, purpose of trade, etc.). Probably the most common form of misdeclaration in the EU is misdeclaration of the source and/or origin of specimens, for example, when an Annex-A listed animal of wild origin is claimed to be captive-bred, a means often used to launder illegally obtained specimens, for example wild-caught specimens, into the EU.

Very often a chain of smugglers is involved, with any specific smuggler in the chain not necessarily knowing the persons involved at the start or the end of the operation. As an example, person A smuggles a number of rare and CITES-listed reptile specimens by aircraft out of Madagascar to the French Island of Réunion, where person B takes over and delivers the “hot” freight by plane to person C in the transit section of the airport in Paris. Then, person D delivers the reptiles to a distribution point anywhere in Europe. (Anon., pers. comm., November 2001). The organized character of illegal wildlife trade is of increasing concern in the EU.

Most wanted species

Among the European species that were still in demand in 2002, and also smuggled into the EU, were *Testudo hermanni*, *Testudo marginata*, *Elaphe situla*, endemic lacertids from Mediterranean islands (*Podarcis lilfordi*), reptiles from the island Milos, Greece (e.g. *Macrovipera [Vipera lebetina] schweizeri*), and southeast European vipers with distribution in Turkey such as *Vipera xanthina*-complex, *V. kaznakovi*, *V. raddei*, *V. barani*, *V.wagneri* and *V. darevskii.*

Other tortoise species that were in high demand are the Appendix I-listed Ploughshare Tortoise *Geochelone yniphora* (local name: "Angonoka"), the Radiated Tortoise *G. radiata* (local name: "Sokaka"), the Madagascar Flat-shelled Tortoise *Pyxis planicauda*[4] (local name: "Kapidolo") and the Appendix II-listed Spider Tortoise *Pyxis arachnoides* (local name: "Kapila") (see **Table E3**). Additionally, the Indian Star Tortoise *Geochelone elegans* is offered for sale illegally, along with South African species such as *Psammobates* spp. and *Homopus* spp. Due to their size and the attractive carapace *P. arachnoides* and *Geochelone radiata* are probably among the tortoise species most in demand in the pet trade (Mähn, 1998). *Geochelone yniphora* is believed to be the world's rarest tortoise, with around 100-400 individuals left in the wild, in Madagascar (Glaw and Vences, 1994). The species is bred in captivity in the Ampijora Forest Station, supervised by the Jersey Wildlife Preservation Trust, since 1986. In May 1996, 76 Angonoka's were stolen from the Ampijora Forest Station and soon after some of the specimens appeared in illegal trade in Europe and elsewhere (Anon., 2002j).

According to a German reptile enthusiast in 1998, varanids were in high demand, in particular slow-growing Australian species and species that are of particular interest to the specialist are those for which no captive-bred specimens are available in illegal trade. Also, the Crocodile Monitor *Varanus salvadorii*, the Komodo Dragon *V. komodoensis*, the black coloured Aru Black Tree Monitor *Varanus prasinus beccari* (formerly: *Varanus beccarii*) from the Aru-islands in Indonesia, as well as the former subspecies of *V. prasinus* e.g. *V. kordensis* from Biak island, Indonesia, are in demand. A single specimen of *Varanus prasinus beccarii* could be obtained for EUR500 from a German dealer in spring 1999. The Appendix I-listed Fiji iguanas of the genus *Brachylophus*, the ground iguanas of the genus *Cyclura*, and the black coloured specimens of the Appendix II-listed heloderms (*Heloderma* spp.) are also in high demand among specialists in Europe.

Despite the strict legal regulations in South Africa and Australia relating to the export of native species, particularly rare and/or endemic reptile species distributed in these regions are also in high demand. For example, the Girdled Lizard *Cordylus cataphractus* and *Cordylus giganteus* endemic to South Africa, were smuggled to Europe and North America in 1977 (Branch, 1988). *Cordylus giganteus* was probably exported legally for the last time at the beginning of the 1980s, as the latest price-list discovered offering this species was in 1980. Adult specimens were sold at around EUR80. Almost 20 years later, the species was offered by an American dealer for USD2000 per specimen. The dealer advertised the reptiles not using the scientific name, but the rather uncommon English name "Sungazer". The lizards are also known as the "Giant Girdled or Giant Spiny-tailed Lizard" and are the species of girdled lizards in greatest demand.

Among the giant snakes highly in demand are mainly species endemic to islands or with a restricted range, for example the Black Python *Morelia boeleni*, the Savu Python *Liasis mackloti savuensis*, Caribbean boids (from the island of Dominica), or the Bismarck Boa *Bothrochilus boa* from the Bismarck Archipelago (German reptile enthusiast, pers. comm., 1998). *Morelia bredli* was only recently recognized as a full species, with a very restricted distribution in the centre of Australia. Both *M. bredli* and *Morelia oenpelliensis*, which occurs in northern Australia, are abundant in illegal trade. Subspecies of the *Boa constrictor* are in demand by professional collectors such as *B. constrictor longicauda* from Peru, and probably also *Corallus annulatus* from central and northern South America (German reptile enthusiast, pers. comm., 1998).

[4] This species was transferred from CITES Appendix II to Appendix I at CoP12 and this listing will come into effect on 13 February 2003.

It is not only species for which trade is regulated by conventions such as CITES, that are in high demand. Attractive species with restricted distributions and low densities, which are not yet regulated by specific laws are often collected by local people to supply demand in Europe. The non-CITES giant scincids *Tiliqua [Trachydosaurus] rugosa* as well as *T. scincoides* and *T. gigas* (Beltz, 1996) are of high interest and have been observed in illegal trade.

One striking example is the non-CITES *Vipera kaznakovi*, listed as threatened in the *2002 IUCN Red List of Threatened Species*, which has been illegally collected for the European pet trade since the mid eighties in north-eastern Turkey. According to Kasparek (1994) specific regions are regularly visited and the snakes in demand such a *Vipera kaznakovi* or *Vipera wagneri* are collected systematically.

Prices of specimens traded illegally

The "appetite for rarities" has stimulated illegal trade activities in live reptiles. Species, in particular those restricted to isolated geographical regions, comprising an endemic fauna and receiving strict protection, are in high demand among illegal traders because they can fetch the highest values in illegal trade (Werner, 1997).

Table 32 lists the prices of some CITES-listed reptile species in illegal trade. While the highest price for a CITES-listed species in the legal trade was recorded to be EUR10 226 (see **Table 28**), the maximum price in illegal trade can be considerably higher. This is because the species often cannot be obtained through legal channels and because certain collectors are very persistent in trying to obtain such an animal, which allows illegal dealers quite some freedom to ask for these high prices.

Some of the Appendix II species presented in **Table 32** (list of prices in illegal trade) also occurred in **Table 28**, which presented prices for legal specimens. For *Python anchietae* the legal price for a specimen was EUR2556, higher than the price for an illegal one. For *Morelia boeleni* the legal price was EUR1205 higher than the illegal one and for *Geochelone elegans* the legal price was EUR951, lower than its illegal equivalent. It is not easy to make any conclusion about the prices of species traded illegally that can also be bought legally. Again this depends on many factors and is in particular highly dependent on offer and demand. Smuggled reptiles can be cheaper in some cases, e.g. when offer is higher than demand or when animals are in poor health. Thus, the risk of being caught for smuggling does not necessarily add to the price.

***Sphenodon punctatus* confiscated on 4 July 1997, smuggled from Stephens Island in the Cook Strait, New Zealand (Bishop, 1998).**

Credit: Wildlife Enforcement Group, New Zealand

Table 32

Approximate values of CITES-listed reptiles traded illegally (values for end consumer in the EU)

Species	CITES Listing	Approximate Value in Illegal Trade (EUR)
Geochelone yniphora	Appendix I	33 501
Varanus komodoensis	Appendix I	33 501
Sphenodon punctatus	Appendix I	16 071 – 33 501
Alligator sinensis	Appendix I	16 750
*Clemmys muhlenbergii**	Appendix I	11 167
*Varanus olivaceus***	Appendix II	5 583 – 8 934
Python anchietae	Appendix II	7 670
Tomistoma schlegelii	Appendix I	5 583
Aspidetes melanocephalus	Appendix II	4 467 – 5 583
Geochelone radiata	Appendix I	1 675 (J) – 5 583 (A)
Morelia boeleni	Appendix II	3 908
Geochelone elegans	Appendix II	2 792
Pyxis spp.	Appendix II	2 233

Sources: Fischer, 1998; Holden, 1998; German reptile enthusiast, pers. comm., April 1998, *Reptilian* Vol. 4, No. 4 and personal observations (1998). J = Juvenile; A = Adult; * synonym of *Glyptemys muhlenbergii* ** listed as *Varanus grayi*.

The Tomistoma, *Tomistoma schlegelii*, a freshwater crocodile distributed in SE-Asia, which is found in illegal trade in the EU.

Credit: M. Auliya

CAPTIVE BREEDING

Reptile breeding statistics compiled by the DGHT (1990-1997)

The German Society for Herpetology and Husbandry of Reptiles and Amphibians (DGHT) is s considered by some to be the world's largest herpetological society. Its journal *Elaphe*, a supplement to the *Salamandra* magazine published quarterly, reports breeding statistics on amphibians and reptiles kept in captivity. These statistics are based on information provided by about three to four per cent of DGHT's total membership of approximately 7000 (Mendt, 1997). As a result, the annual breeding statistics provide only a partial overview on the extent of captive breeding by members. Further, *Elaphe* does not provide information on the exact number of people who submit data each year. This complicates the identification and explanation of trends. It is clear, though, that the data include only offspring that have survived past six months after birth.

Table 33 shows that the number of reptile offspring reported to DGHT was highest in 1990 and 1991 (above 6000) and then decreased and remained relatively stable (around 4500) for the years 1992 to 1997. Most offspring were reported as Testudinidae and Colubridae, together accounting for almost 38% of the total. From 1990 to 1994, there was a decrease from 315 to 193 taxa producing offspring in captivity, while from 1995 to 1997, the offspring of around 233 taxa were born in captivity. These figures do not seem to support the idea that an increasing number of species are being bred in captivity as a result of better developed techniques and available literature.

Table 33
Number of offspring of different reptile families born in captivity in Germany from 1990 to 1997

Family	No. of taxa	1990	1991	1992	1993	1994	1995	1996	1997	Total
Testudinidae	26	1047	1025	1 070	957	1020	857	968	1053	**7 997**
Colubridae	131	1435	1096	818	887	698	675	619	694	**6 922**
Gekkonidae	183	548	641	448	421	624	403	500	370	**3 955**
Chamaeleonidae	38	765	396	109	211	70	1322	140	410	**3 423**
Boidae	59	673	523	488	238	212	269	341	318	**3 062**
Emydidae and Geoemydidae (Bataguridae)	54	388	421	371	362	371	216	437	252	**2 818**
Agamidae	30	547	484	76	241	300	95	315	254	**2 312**
Iguanidae	73	256	473	259	323	128	104	157	279	**1 979**
Viperidae	71	227	263	260	257	134	80	173	228	**1 622**
Eublepharidae	8	147	178	215	219	110	90	146	152	**1 257**
Lacertidae	29	159	289	141	165	44	141	174	89	**1 202**
Chelidae	15	160	100	58	24	355		6	133	**836**
Elapidae	20	26	41	93	202		153	196	78	**789**
Varanidae	15	19	48	28	111	119	70	22	59	**476**
Scincidae	30	95	101	55	37	39	52	33	41	**453**
Kinosternidae	13	40	29	37	43	25	37	120	34	**365**
Cordylidae	13	11	25		18	4	4	3	5	**70**
Xenosauridae	1	11	11	8	6	7	4		2	**49**
Alligatoridae	3	7			8				28	**43**
Pelomedusidae	3					13			7	**20**
Helodermatidae	1	1		2		2			6	**11**
Anguidae	3		1	2			2			**5**
Teiidae	1	4								**4**
Gymnophthalmidae	1				3					**3**
Total	**821**	**6566**	**6145**	**4538**	**4 733**	**4275**	**4574**	**4350**	**4492**	**39 673**

Source: DGHT journal *Elaphe* (1990-1997).

Table 34 shows the top 10 reptile species that were reported by DGHT to produce the most offspring. It is notable that these include six species listed in the CITES Appendices and the Annexes to the EU Wildlife Trade Regulations. Five of these species are tortoises *Testudo* spp. that have been popular as pets for some time and are relatively easy to breed in captivity.

Table 34

Top 10 reptile species with number of reported offspring born in captivity in Germany (1990-1997)

Species	CITES listing	EU listing	1990	1991	1992	1993	1994	1995	1996	1997	Total
Testudo hermanni boettgeri	II	A	186	261	249	305	318	289	331	345	**2284**
Testudo graeca ibera	II	A	202	205	212	146	249	253	282	139	**1688**
Chamaeleo calyptratus	II	B	389	287		152	50	373	137	265	**1653**
Elaphe g. guttata			234	360	160	85	158	164	77	74	**1312**
Pogona vitticeps			350	147	28	134	292		193	167	**1311**
Emys orbicularis			184	199	175	219	111	55	154	84	**1181**
Testudo marginata	II	A	255	165	96	101	143	106	138	136	**1140**
Eublepharis macularius ssp.			147	178	209	202	85	48	117	151	**1137**
Testudo hermanni ssp.	II	A	115	219	180	53	79	29	64	194	**933**
Testudo h. hermanni	II	A	170	172	79	109	180	106	61	41	**918**

Source: DGHT journal *Elaphe* (1990 to 1997).

Breeding statistics (1995) of the ZG Chamaeleonidae in Germany

The ZG Chamaeleonidae, a German Society founded to breed chameleons, reported offspring statistics in 1994 and 1995 for 34 species. In 1994, the society was unable to breed 18 taxa in captivity, but by 1995 it was unable to breed only three species (*Brookesia superciliaris*, *Chamaeleo werneri* and *Chamaeleo dilepis*). The increase in species bred in 1995 probably results in part from a larger number of herpetologists submitting breeding statistics, as well as being due to wider knowledge gained by professional breeders. Despite the fact that more taxa were bred in captivity, it was also apparent that 14 species had fewer than 10 offspring born in captivity in Germany in 1995. **Table 35** lists the 10 species that were bred in the largest numbers under captive conditions.

Looking at specimens that survived the first four weeks from hatching in captivity, the breeding totals (for all 34 species) included 207 animals in 1994 and 893 animals in 1995. Chameleons generally require a lot of attention and specialized husbandry when kept in captivity. Many African countries such as Tanzania, Cameroon and Madagascar export chameleons for the pet trade, but not all species survive well or reproduce in captivity. Although more professional breeders of chameleons have become successful in breeding chameleons, including rarer species (Tröger, 1994), overall mortality rates remain high.

Table 35

Number of individuals of the top 10 chameleon taxa bred in captivity in 1994 and 1995 in Germany

Species	CITES listing	EU listing	1994	1995	Total
Chamaeleo calyptratus	II	B	150	101	**251**
Furcifer pardalis	II	B	69	153	**222**
Furcifer oustaleti	II	B	111	45	**156**
Chamaeleo melleri	II	B	117	33	**150**
Chamaeleo jacksonii xantholophus	II	B	45	57	**102**
Chamaeleo bitaeniatus	II	B	0	92	**92**
Furcifer lateralis	II	B	25	66	**91**
Chamaeleo jacksonii	II	B	48	34	**82**
Chamaeleo montium	II	B	17	54	**71**
Chamaeleo hoehnelii	II	B	0	44	**44**
Total			**582**	**679**	**1261**

Source: ZG Chamaeleonidae.

Other aspects related to captive breeding and other production forms

Studbook programmes and other initiatives undertaken by zoos as well as dedicated amateur circles can provide valuable knowledge on species biology and can potentially contribute to species conservation.

Many of the popular reptile species, such as *Testudo hermanni*, *T. graeca*, *Python reticulatus* and *Boa constrictor* are regularly offered as captive-bred specimens. Often, captive-bred specimens are more attractive for the hobbyist market as they are reputed to be parasite and disease-free and hence easier to keep. However, captive breeding remains economically unprofitable for a large number of reptile species and hence the majority of these species are still coming to Europe from the wild, for example chameleons (e.g. *Rhampholeon* spp.), gekkos (e.g. *Ptychozoon* spp.), Lacertidae spp. and Scincidae spp. (e.g. *Tiliqua* spp., *Mochlus fernandi*) and various snake species such as members of the Colubridae spp., Elapidae spp. and Viperidae spp. While methods and breeding techniques have improved over the past 10 years, information on the biology and reproduction that would inform the breeding efforts and improve breeding success is still lacking for many species.

The issue of captive breeding is a complex subject in the context of wildlife trade and conservation, as various direct and indirect aspects need to be considered. For example, commercial breeding operations are not always sufficiently documented, which makes it difficult to determine, for example, off-take from the wild to maintain the breeding stock and to determine and monitor effects of such harvest on wild populations.

Moreover, with captive breeding in non-range countries there is a risk that the animals may escape and subsequently become established in an environment in which they can have detrimental effects on the native fauna and flora. However, similar risks exist in range States where escaped specimens can introduce infections or viruses to wild populations or endanger the intra-specific genetic variation of the species, for example when specimens from one population are accidentally introduced into another area.

It has been argued that the increased availability of captive-bred specimens may have stimulated the market and potentially increased the demand. It has also been suggested that wild collection may in certain cases be more beneficial to wild populations than captive breeding, for instance, when the harvest is well regulated, locally managed and conducted at sustainable levels and hence provides an incentive for local people to look after wild populations and their habitats. However, this may not be the case in several circumstances, for example when the animals are harvested from agricultural areas, where there is no incentive to protect these habitats. Also if reptile hunters do not own the land from which the animals are collected, they may not be empowered to protect it. Finally, surplus animals are not currently released where they or their parents were collected, thus reducing the likelihood of sustainability in collecting areas (Jenkins, 1997).

Along with the growing demand for live reptiles and the increased levels of regulatory measures in place for harvesting and trade, several range countries have established facilities to breed specimens in captivity for the international pet trade. Such initiatives often supply reptiles with better health conditions than those captured from the wild. In addition, they can bring foreign capital to the countries of origin, with some important effects on the local economies and the livelihoods of hunters and collectors.

Other production forms, such as ‘farming’ or ‘ranching’ are also becoming more widespread. A German pet store mainly sells ‘ranched’ species (meaning specimens are harvested from the wild and reared in a controlled environment), such as *Varanus niloticus*, even though the prices for specimens are much higher than those for wild-caught specimens. The prices incurred by the consumer include the salaries of the employees at the farms, as well as costs associated with the importation, veterinary care and transportation. The store claimed that serious reptile keepers preferred the farmed (captive-bred in the country of origin), healthier and more expensive specimens to less expensive alternatives (NMB Pet Store, Germany, pers. comm., May 1999).

The origin of specimens was not recorded as "ranched" in the EU's CITES annual report data until 1996. From 1996 to 1999, 48 033 live ranched CITES-listed reptiles were imported by the EU. The two main countries of origin were Ghana (37%) and Togo (35%) and the species most often involved was *Python regius* (CITES Appendix II, EU Annex B) (66%). The major importing countries of the ranched reptiles were France (30%), Spain (18%), Belgium (17%) and Germany (13%).

Illegal trade in wild-caught specimens under the cover 'captive bred'

Because trade in animals that were born and bred in captivity is not believed to have the same potential negative impact on wild populations as wild harvest, CITES and the EU Wildlife Trade Regulations include provisions that are less strict for trade in such specimens. For example, specimens of species listed in Annex A of the EU Regulations will be treated as Annex B specimens if they were bred in captivity in accordance with the criteria outlined in the Regulations. Therefore imports of species listed in Annex A are allowed for commercial purposes when the specimens are captive bred; imports of wild specimens of Annex A species are generally prohibited. In addition, the import of wild-caught specimens of a number of reptile species from certain range States has been suspended by the EU for several years and often only captive-bred specimens are allowed in trade (see **Annex III**). This applies for example to a number of tortoise species such as *Testudo horsfieldii*, a large number of chameleons from Madagascar and some snake species such as *Boa constrictor* from El Salvador and Honduras.

Likewise, internal EU trade, including the sale of Annex-A specimens inside the EU which is normally prohibited, is allowed for captive-bred specimens but requires the prior issuance of a certificate authorising the use of the specimen. In addition, all captive-bred specimens of Annex A species that are used for commercial purposes have to be marked, for example with a microchip. The details of the mark such as the unique numeric code have to be provided on the certificate accompanying the specimen to help ensure that a specimen is the one referred to in the accompanying document. Ultimately these marking requirements have been developed to prevent fraud and to curtail illegal trade.

However, the derogations for captive-bred specimens are being abused, for example, to launder wild-caught specimens for example by declaring them as captive-bred or making false declarations about their source when applying for a certificate for internal EU trade. Such fraud is difficult to detect, as it requires special expertise in distinguishing between wild and non-wild specimens, a skill that normally only experts have. In 1998, Belgian authorities seized 282 live and 92 dead reptiles, including several rare and strictly protected species. Among these were, for example, three Madagascar Tortoises, or Angonoka, *Geochelone yniphora*, one Radiated Tortoise *Geochelone radiata*, 17 Kleinmann's Tortoises *Testudo kleinmanni* (all three species are EU Annex A/CITES Appendix I), 20 Marginated Tortoises *Testudo marginata* (EU Annex A/CITES Appendix II), five Spider Tortoises *Pyxis arachnoides* (EU Annex B/CITES Appendix II) and four Horsfield's Tortoises *Testudo horsfieldii* (EU Annex B/CITES Appendix II). The majority of the tortoises had been imported illegally from the Czech Republic and false documents had been used to legalize the transactions prior to their distribution to buyers in the EU. The illegal trader had declared the tortoises as captive-bred to the Belgian authorities and applied for internal sale certificates to legitimize the sale.

In other cases, breeders may try to obtain certificates for genuinely captive-bred specimens whose parents were illegally obtained or introduced into the EU. In these cases, only further investigations such as DNA analysis can help identify the fraud. In many EU Member States, the system for issuing certificates for captive-bred specimens relies on a certain level of honesty from the applicants and is therefore open to abuse (Pendry and Allan, 2002).

According to reports by enforcement agencies and non-governmental organizations, certificates that allow trade inside the EU for a particular specimen only (specimen-specific certificate) are being duplicated, forged and used fraudulently. For many reptile species such as tortoises, it is not until they are three to five years old that they are large enough to be microchipped. Some countries, such as Germany, have introduced the use of alternative

marking methods such as individual photo-documentation, but in most other EU Member States juvenile specimens will not be uniquely marked until they reach a certain age. Therefore, wild-caught Annex A reptile species can be laundered into the EU market with certificates under the guise of being captive bred, as they are not yet uniquely marked in many EU Member States.

SUMMARY AND CONCLUSIONS

Trade in CITES-listed reptiles

An analysis of the reported trade in CITES-listed reptile species has shown that the EU is one of the largest importers of live reptiles in the world. From 1990 to 1999, 10.5 million live CITES-listed reptiles were reported in international trade. The majority of these were destined for the USA (80%), but around 13% (1.3 million specimens) was imported by EU Member States. In the 1990s, the EU market grew significantly and the annual import quantity of live CITES-listed reptiles increased from under 60 000 in 1990 to over 250 000 specimens in 1999.

Most important importers

The main EU importers of live reptiles were Spain and Germany (each importing a total of around 300 000 specimens between 1990 and 1999 followed by the Netherlands, France, the UK and Belgium (each importing around 150 000 specimens). All 15 EU Member States were, to some extent, involved in the import of live reptiles during this period.

The main countries of origin exporting live reptiles to the EU were Madagascar, Ghana and Togo for wild-caught specimens (see **Table 36**) and Colombia, El Salvador and Guatemala for captive-bred specimens.

Table 36
The main reptile families and the main countries of origin for wild CITES-listed specimens imported by the EU from 1990 to 1999

Family common name	Family scientific name	Total number imported	Main origin for wild specimens
Iguanas	Iguanidae	605 743	Suriname
Boas and pythons	Boidae	217 848	Ghana, Togo and Benin
Geckos	Gekkonidae	175 816	Madagascar
Chameleons	Chamaeleonidae	129 033	Madagascar, Tanzania and Togo
Monitor lizards	Varanidae	50 252	Ghana and Togo
Land tortoises	Testudinidae	79 797	Zambia and Uzbekistan
Side-necked turtles	Pelomedusidae	11 279	Ghana and Togo
Alligators and caimans	Alligatoridae	16 621	Guyana and Suriname
Crocodiles	Crocodylidae	2 078	Zimbabwe and Madagascar

Source: CITES trade data (comparative tabulations) compiled by UNEP-WCMC, 2001.

In total, 341 471 (26%) of the approximately 1.3 million live reptile specimens imported by the EU were imported indirectly from a re-exporting country rather than directly from the country of origin. In 90% of these cases the USA was the country of re-export. Other important re-exporters were Benin, Russia, Togo and Singapore.

Re-exports and exports by EU Member States

Only a relatively small quantity of CITES-listed reptile species was re-exported (around 26 300 specimens) or exported by EU Member States (around 10 000 specimens) between 1990 to 1999. Re-exports increased exponentially from 1992 to 1996, but decreased considerably from 1996 to 1999. This trade involved at least 118 species of nine different families. The main EU Member States re-exporting live reptiles during the period were Germany, Italy, Austria and France. The main country importing specimens re-exported by the EU was the USA. Other importing countries included Japan, the Czech Republic and Switzerland.

Species involved

EU imports involved at least 273 species of the approximately 500 reptile species listed in the CITES Appendices. The five families with the most species in trade are the Boidae (61 species), followed by the Chamaeleonidae (60 species), the Testudinidae (37 species), the Gekkonidae (35 species) and the Varanidae (25 species). Of the 1.3 million specimens imported by the EU between 1990 and 1999, 44% were declared as captive-bred and 41% as being caught in the wild.

The ten reptile species listed in the three CITES Appendices which were imported into the EU in greatest quantities (1990-1999) are shown in **Table 37**. Among the 271 CITES-listed species recorded in trade in the EU, one species clearly dominates the picture: the Green Iguana *Iguana iguana*, which accounts for 45% of all live CITES-listed reptile imports by the EU between 1990 and 1999. The large majority (83%) of these specimens originate from captive-bred sources.

Sixteen per cent of all reptile imports into the EU were either boas or pythons. The Royal Python *Python regius*, which is found in West and Central Africa, is by far the most commonly traded CITES-listed snake species. Together, geckos and chameleons accounted for almost a quarter of all CITES-listed reptile imports by the EU. The endemic Striped Day Gecko *Phelsuma lineata* from Madagascar and the Senegal Chameleon *Chamaeleo senegalensis*, which occurs throughout equatorial Africa, were among the species traded in the highest quantities. Six per cent of the imports belonged to the tortoise family Testudinidae and four per cent were monitor lizards. The Horsfield's Tortoise *Testudo horsfieldii* from Central Asia and the Savannah Monitor *Varanus exanthematicus* which can be found in Central Africa were among the most popular species in these two groups.

Table 37

The top 10 live CITES-listed reptile species imported by the EU from 1990 to 1999 and the percentage of these that were wild caught.

Species common name	Species scientific name	Quantity	% wild caught
Green Iguana	*Iguana iguana*	605 519	12
Royal Python	*Python regius*	140 931	51
Striped Day Gecko	*Phelsuma lineata*	45 630	71
Four-spot Day Gecko	*Phelsuma quadriocellata*	41 192	72
Flat-tailed Day Gecko	*Phelsuma laticauda*	40 016	74
Madagascar Day Gecko	*Phelsuma madagascariensis*	37 769	75
Savannah Monitor	*Varanus exanthematicus*	31 062	81
Boa Constrictor	*Boa constrictor*	27 496	13
Senegal Chameleon	*Chamaeleo senegalensis*	23 701	73
Horsfield's Tortoise	*Testudo horsfieldii*	19 604	97

Source: CITES trade data (comparative tabulations) compiled by UNEP-WCMC, 2001.

Captive bred or wild harvested ?

The reptiles imported by the EU Member States were reported to derive from various sources. In total, around 44% of the imported reptiles were declared as captive-bred and 41% as taken from the wild. Over the 10-year period, the percentage of captive-bred specimens in total trade increased steadily from seven per cent of imported reptiles declared as captive-bred, to 32% in 1992 and 52% in 1999. As **Table 37** shows, the percentage of wild-caught specimens can vary considerably between different reptile species and groups. For example, whereas the majority of chameleons (84%), monitor lizards (77%), geckos (71%) and tortoises (66%) imported into the EU have been harvested from the wild, only 12% of Iguanidae originate from the wild. The source of the imported specimens was not declared for 11%.

The EU market

The EU market for live reptiles is large and complex. EU importers have particular relationships with exporters in countries of origin, depending on their preferences for species, trade conditions and prices. Animals collected from the wild change hands numerous times during transport and holding before arriving at their final destination and consequently the value of the animal increases with each transaction.

Over the last decade, an increasing number of people have been drawn to commercial and amateur keeping and breeding of reptiles in the EU. Their interests and backgrounds are diverse and strongly influence the overall market. The market is also fuelled by numerous associations, magazines, books, internet sites and fairs that disseminate information and provide opportunities for reptile enthusiasts to buy and sell live animals. These means of communication also set trends in professional and amateur circles, such as increased demand for specific colour morphs for particular species. Trends in availability and demand for certain species are dependent on many factors.

Values of live reptiles in the EU

Prices of live reptiles are not standardized and can be very high. There is competition between pet shops, private breeders and illegal traders. The highest prices presented at fairs in 1998 concerned CITES-listed species. The top five, in order of decreasing value, consisted of Angolan Python *Python anchietae*, Black Python *Morelia boeleni*, Boa Constrictor *Boa constrictor* (albino), Green Tree Python *Morelia viridis* and the Appendix I-listed Madagascar Boa *Acrantophis madagascariensis*, with prices ranging from EUR10 226 to 2505. High values are associated with species' rarity on the market due to species only occurring in isolated endemic populations in the wild, low reproductive rates, species being newly described or highly protected, specimens being mutants and attractive colour morphs. High prices and the increasing demand for a wide variety of species in trade are also strong incentives to import live reptiles illegally.

Trade in non-CITES species

The number of non-CITES species in trade in the EU is estimated at around 600, twice the number of CITES-listed species recorded in trade. In fairs, 200 non-CITES taxa were recorded and price-lists of dealers revealed additional 400 taxa not listed in the CITES Appendices. Although both sources occasionally include the same species, they only provide an idea of the type and number of taxa involved in the live reptile trade. The trade in non-CITES species sometimes involves threatened species based on the *2002 IUCN Red List of Threatened Species* (see **Table 38**).

Table 38
Non-CITES reptile species classified as Threatened in the *2002 IUCN Red List of Threatened Species* and observed in the live pet trade sector (1977-1999)

Species common name	Species scientific name	IUCN listing
Cyclades Blunt-nosed Viper	*Macrovipera schweizeri*	Critically Endangered
Roti Island Snake-necked Turtle	*Chelodina mccordi*	Critically Endangered
Caucasian Viper	*Vipera kaznakovi*	Endangered
Pig-nosed Turtle	*Carettochelys insculpta*	Vulnerable
Lebanon Viper	*Vipera bornmuelleri*	Vulnerable
Dinnik's Viper	*Vipera dinniki*	Vulnerable

Source: Literature, the internet, price-lists and personal observations.

Illegal trade of live reptiles to the EU

Although a great portion of the EU's trade in live reptiles is legal, illegal trade in live reptiles is believed to pose a serious threat to the survival of reptile species in the wild. Of particular concern in this regard is the trade involving so-called "specialist" collectors that spur the smuggling of some of the world's rarest reptile species.

The interest in rare and protected species and the enormous sums of money involved provide the main motive for the existence of illegal trade. Smuggling techniques are quite various and can be very inventive. Sometimes the illegal trade in live reptiles is linked to smuggling of other goods. The risk of getting caught and the punishment for violating the relevant laws are probably not high enough to limit this market.

The size of the illegal trade in reptiles is unknown and information on illegal trade in wild animals is often difficult to obtain, due to the illegal and secretive nature of the trade. According to the CITES annual report trade data for 1990 to 1999, a total of 10 128 live CITES-listed reptiles imported by the EU were seized during the period. Specimens from the Testudinidae family (land tortoises) were most frequently seized, followed by Iguanidae (iguanas), Gekkonidae (geckos) and Boidae (boas). The Member States that reported the highest number of live reptiles seized during the period were the UK, Austria and Spain. The main known countries of origin for the specimens confiscated were the USA and Madagascar.

Species, in particular those restricted to isolated geographical regions, comprising an endemic fauna, and receiving strict protection, are in high demand among illegal traders in Europe and they can fetch the highest values in illegal trade. Species that are in demand in illegal trade are often species that have a restricted geographic distribution, are newly described species or subspecies, or are species that are difficult to breed in captivity or banned from trade and therefore difficult to obtain in legal trade. Examples include varanids from Australia and South-east Asia, several tortoise species such as the Appendix I-listed Ploughshare Tortoise *Geochelone yniphora* from Madagascar, and among the giant snake species such as the Black Python *Morelia boeleni*, the Savu Python *Liasis mackloti savuensis* or some of the Caribbean boids are in high demand.

Captive breeding of reptiles

Captive breeding of live reptiles is widespread and involves many different species. Captive breeding operations form an important and increasing source of live reptiles for the EU market and in 1999, more than 50% of the reptiles imported into the EU were captive-bred. Captive breeding of reptiles for the pet trade is also widespread in the EU and has steadily increased over the 1990s. Many of such breeding initiatives are 'non-commercial' in character, but there are certainly also numerous commercial breeding facilities in the EU. However, exact figures on the number of such initiatives, their species range and breeding success are lacking, which makes it difficult to characterize this part of the market.

Many of the popular reptile species, such as *Testudo hermanni*, *Testudo graeca*, *Python reticulatus* or *Boa constrictor* are nowadays regularly offered as captive bred. Often captive-bred specimens are more attractive for the hobbyist market as they are more resistant and hence easier to keep. However, captive breeding remains economically unprofitable for a large number of reptile species and hence the majority of these species are still coming to Europe from the wild. In addition, other production forms, such as 'farming' or 'ranching' are also becoming more widespread and, from 1996 to 1999, 48 033 live ranched CITES-listed reptiles were imported by the EU.

Trade in animals that were born and bred in captivity are less strictly regulated than trade in wild specimens (imports of species listed in Annex A are allowed for commercial purposes, when the specimens are captive bred; imports of wild specimens of Annex A species are generally prohibited; internal EU trade allowed in captive-bred specimens listed in Annex A). However, there are indications that these derogations are being abused, for example, to launder wild-caught specimens by importing them as captive bred or making false declarations about their source when applying for a certificate for internal EU trade. Such fraud is difficult to detect, as it requires special expertise in distinguishing between wild and non-wild specimens.

RECOMMENDATIONS

To address some of the deficiencies in the regulation and control of the trade in live reptiles for the EU market, TRAFFIC Europe recommends the following measures be taken:

Scientific research and review of the protection status of selected reptile species in EU trade

- EU Member States should review the potential conservation impact of the current levels of trade in reptile species that are not yet listed in the CITES Appendices and the EU Annexes but are classified as threatened in the *2002 IUCN Red List of Threatened Species* and have been reported in trade in this report (see **Box 1**), and, where necessary, they should consider legislative measures (e.g. through listing under CITES or the EU Wildlife Trade Regulations) that will help to improve monitoring and/or regulation of the trade.

- EU Member States should undertake further research to assess the impact of trade on the conservation status of species listed in Annexes A and B to determine whether additional regulatory measures are required to ensure that trade is not detrimental to populations in the wild. Efforts should be directed towards the main countries of origin and the main families, genera and species in trade, with a special focus on the number of specimens taken from the wild.

- The European Commission and the EU Member States should provide technical and financial assistance to the main exporting countries of live reptiles to the EU to help them conduct scientific studies on the conservation status of selected reptile species (including assessment of habitat quality, carrying capacity, effectiveness of captive breeding and/or ranching activities and levels of current CITES export quotas). These studies should form the basis for management measures, such as the establishment or adjustment of CITES export quotas and the establishment of non-detriment findings for reptile species in trade. Assistance should also be provided to support capacity-building initiatives such as training courses and workshops on making non-detriment findings for CITES-listed species etc., to promote more efficient and effective implementation of the provisions of CITES and monitoring of trade.

Implementation of the EU Wildlife Trade Regulations

- The European Commission should establish an updated inventory of EU Member States' legal requirements on marking methods and procedures used for the different species and specimens (i.e. juveniles and adults), and assess ways in which a more harmonized system for the marking of live reptiles could be achieved in order to have a unified control system throughout the EU.

- Each EU Member State should gather information on the breeding and trading activities of commercial captive breeding facilities in its territory and an EU register should be created that will include information on the number of facilities, the species bred in captivity, their origin and the current number of specimens and offspring, in order to measure the importance and assess trends in captive breeding of reptiles in the EU and to allow for better monitoring and control of such activities.

Enforcement of EU Wildlife Trade Regulations and national laws

- More focus should be set on emerging illegal trade problems and practices involving live reptile markets in the EU. Trends should be monitored through the exchange and analysis of information on seizures and confiscations, including information on the species involved, trade routes, smuggling techniques and *modus operandi.*

- The co-operation and information exchange among the different enforcement authorities responsible for the implementation of the EU Wildlife Trade Regulations at national as well as EU level should be strengthened through the development of national CITES enforcement units including focal points functioning at the national and EU level.

- EU Member States should consider the development of a "risk list" of Annexes A and B reptile species that are most exposed to illegal trade to facilitate the work of enforcement officers when controlling reptile trade into and inside the EU.

- EU Member States should review their penal laws that punish violations of the EU Wildlife Trade Regulations, and where necessary, increase the level of sanctions and penalties to ensure that they act as an effective deterrent. Legislative differences and discrepancies between the Member States should be minimized to ensure a more standard approach wherever possible.

- CITES Management Authorities of EU Member States should strengthen their co-operation with public prosecutors involved in the prosecution of cases dealing with illegal trade in reptiles, and assess ways in which they can better support their work, for example through the provision of information on the relevance of trade, quantities, values and species status, to ensure that illegal trade is punished adequately.

- EU Member States, in co-operation with interested animal welfare organizations and zoological institutions, should exchange information on rescue centres in their countries that have the capacity to house confiscated animals (including venomous species). EU Member States should also consider the development of an EU-wide network of rescue centres that will allow the placement of specimens in rescue centres in other EU Member States.

- Veterinary inspection services, responsible for the control of welfare legislation and standards, should carry out regular controls at reptile fairs. They should inform CITES Management Authorities of their findings and review whether the sanctions for neglect or abuse of this legislation are sufficient to deter companies, traders, sellers or breeders from engaging in improper practices.

Public awareness and education

- The European Commission and EU Member States should further support and, where possible, develop public awareness initiatives and activities, including on the internet and with brochures, that aim to provide targeted information on the requirements of CITES and the EU Wildlife Trade Regulations to reptile associations, traders, breeders, fair organizers and consumers through easily accessible communication tools (e.g. assist in updating, translating and maintaining "www.eu-wildlifetrade.org").

- The European Commission and the EU Member States should also actively disseminate such information to CITES authorities of the main exporting countries in order to inform reptile exporters about the requirements of the EU Wildlife Trade Regulations, especially with regard to provisions that are stricter than CITES and to the CITES-listed species that are temporarily banned from importation into the EU.

- Reptile associations, traders, breeders and other stakeholders should inform their members and customers about the legislative measures, conservation issues and welfare requirements related to the trade in live reptiles in the EU, and should actively disseminate information about the husbandry needs of the reptile species they sell to their clients, to ensure that consumers are made aware of the captive requirements of the reptiles they obtain.

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Annex I

The classification of reptiles based on Böhme and Sander (2003) and other literature source

Order	Suborder	Family
Testudines	**Pleurodira**	Pelomedusidae (Afro-American side-necked turtles)
		Chelidae (Austro-American side-necked Turtles)
	Cryptodira	Cheloniidae (Marine turtles)
		Dermochelyidae (Leatherback turtles)
		Chelydridae (Snapping turtles)
		Emydidae (American pond turtles)
		Bataguridae (Asian pond turtles)
		Testudinidae (Land tortoises)
		Platysternidae (Big-headed turtles)
		Dermatemydidae (River turtles)
		Trionychidae (Softshell turtles)
		Carettochelyidae (Pig-nosed turtles)
		Kinosternidae (American mud and musk turtles)
Rhynchocephalia		Sphenodontidae (Tuataras)
Squamata	**Sauria**	Iguanidae (Iguanas)
		Corythophanidae (Casquehead lizards)
		Crotaphydidae (Collared and leopard lizards)
		Hoplocercidae (Wood lizards)
		Opluridae (Madagascar iguanas)
		Phrynosomatidae (Earless, spiny, tree, side-blotched, horned lizards)
		Polychrotidae (Anoles)
		Tropiduridae (Neotropical ground lizards)
		Agamidae (Agamas)
		Chamaeleonidae (Chameleons)
		Gekkonidae (Geckos)
		Pygopodidae (Legless lizards)
		Xantusiidae (Night lizards)
		Lacertidae (Lacertids)
		Teiidae (Tegus)
		Gymnophthalmidae (Spectacled tegus)
		Scincidae (Skinks)
		Cordylidae (Spinytail lizards)
		Gerrhosauridae (Plated lizards)
		Dibamidae (Blind lizards)
		Amphisbaenidae (Tropical worm lizards)
		Bipedidae (Two-legged worm lizards)
		Rhineuridae (Shovelnose worm lizards)
		Trogonophidae (Short-headed worm lizards)
		Anguidae (Lateral-fold lizards)
		Anniellidae (American legless lizards)
		Xenosauridae (Knob-scaled lizards)
		Helodermatidae (Gila monsters)
		Lanthanotidae (Earless monitor lizards)
		Varanidae (Monitor Lizards)
	Serpentes	Anomalepididae (Dawn blind snakes)
		Leptotyphlopidae (Slender blind snakes)

		Typhlopidae (Blind worm snakes) Aniliidae (Coral pipe snakes) Anomochilidae (Dwarf pipe snakes) Uropeltidae (Short-tailed snakes) Xenopeltidae (Sunbeam snakes) Cylindrophiidae (Asian pipe snakes) Loxocemidae (Mexican burrowing pythons) Tropidophiidae (Woodsnakes, Round Island “boas”) Xenophidionidae (Spine-jawed snakes) Bolyeridae (Round Island boas) Boidae (Boas) Acrochordidae (File snakes) Atractaspididae (Mole vipers) Colubridae (Advanced snakes) Elapidae (Cobras, kraits, coral snakes, sea snakes) Viperidae (Vipers)
Crocodylia		Alligatoridae (Alligators and caimans) Crocodylidae (Crocodiles) Gavialidae (Gavials)

Annex II

Reptile species listed in the *2002 IUCN Red List of Threatened Species*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
Extinct	Bataguridae *Cuora yunnanensis* Testudinidae *Cylindraspis borbonica* *Cylindraspis indica* *Cylindraspis inepta* *Cylindraspis peltastes* *Cylindraspis triserrata* *Cylindraspis vosmaeri*	Anguidae *Celestus occiduus* Cordylidae *Tetradactylus eastwoodae* Gekkonidae *Hoplodactylus delcourti* *Phelsuma gigas* Scincidae *Leiolopisma mauritiana* *Macroscincus coctei* *Tachygia microlepis* Teiidae *Ameiva cineracea* *Ameiva major* Tropiduridae *Leiocephalus eremitus* *Leiocephalus herminieri*	Boidae *Bolyeria multocarinata* Colubridae *Alsophis sancticrucis* Typhlopidae *Typhlops cariei*		
Extinct in the wild	Trionychidae *Aspideretes nigricans*	Gekkonidae *Nactus coindemirensis*			
Critically Endangered	Bataguridae *Batagur baska* *Callagur borneoensis* *Cuora aurocapitata* *Cuora galbinifrons* *Cuora mccordi*	Anguidae *Abronia montecristoi* *Celestus anelpistus* *Diploglossus montisserrati* Chamaeleonidae	Colubridae *Alsophis antiguae* *Alsophis ater* *Chironius vincenti* *Coluber gyarosensis* *Liophis cursor*		Alligatoridae *Alligator sinensis* Crocodylidae *Crocodylus intermedius* *Crocodylus mindorensis*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Cuora pani *Cuora trifasciata* *Cuora zhoui* *Heosemys depressa* *Heosemys leytensis* *Kachuga kachuga* *Leucocephalon yuwonoi* *Mauremys annamensis* Chelidae *Chelodina mccordi* *Phrynops dahli* *Pseudemydura umbrina* Cheloniidae *Eretmochelys imbricata* *Lepidochelys kempii* Dermochelyidae *Dermochelys coriacea* Testudinidae *Geochelone platynota* Trionychidae *Apalone ater* *Chitra chitra* *Rafetus swinhoei*	*Bradypodion taeniabronchum* Gekkonidae *Lepidoblepharis montecanoensis* Iguanidae *Brachylophus vitiensis* *Cyclura carinata* *Cyclura collei* *Cyclura pinguis* *Cyclura ricordi* Lacertidae *Gallotia simonyi* Polychrotidae *Anolis roosevelti* Scincidae *Eumeces longirostris* *Lerista allanae* Teiidae *Ameiva polops*	*Opisthotropis kikuzatoi* Viperidae *Bothrops insularis* *Bothrops* sp. *Crotalus unicolor* *Macrovipera schweizeri* *Vipera bulgardaghica* *Vipera darevskii* *Vipera pontica*		*Crocodylus siamensis*
Endangered	Bataguridae *Chinemys megalocephala* *Chinemys nigricans* *Chinemys reevesii* *Cuora flavomarginata* *Geoemyda japonica* *Geoemyda silvatica*	Agamidae *Calotes liocephalus* *Ceratophora tennentii* Anguidae *Celestus carruai*	Boidae *Aspidites ramsayi* *Casarea dussumieri* Colubridae *Adelphicos daryi* *Alsophis rijersmai*		Crocodylidae *Crocodylus rhombifer* *Tomistoma schlegelii* Gavialidae *Gavialis gangeticus*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Geoemyda spengleri *Heosemys spinosa* *Hieremys annandalii* *Kachuga dhongoka* *Kachuga sylhetensis* *Kachuga trivittata* *Mauremys mutica* *Ocadia sinensis* *Orlitia borneensis* *Pyxidea mouhotii* *Sacalia bealei* *Sacalia quadriocellata* Chelidae *Chelodina pritchardi* *Elseya bellii* *Elusor macrurus* *Phrynops hogei* Cheloniidae *Caretta caretta* *Chelonia mydas* *Lepidochelys olivacea* Dermatemydidae *Dermatemys mawii* Emydidae *Clemmys muhlenbergii* *Graptemys flavimaculata* *Graptemys oculifera* *Pseudemys alabamensis* *Terrapene coahuila* *Trachemys aduitrix*	Chamaeleonidae *Bradypodion setaroi* Crotaphytidae *Gambelia sila* Gekkonidae *Nephrurus deleani* *Phelsuma guentheri* *Sphaerodactylus micropithecus* Iguanidae *Brachylophus fasciatus* *Cyclura rileyi* Lacertidae *Lacerta clarkorum* Phrynosomatidae *Uma inornata* Scincidae *Eulamprus leuraensis* *Lerista vittata* *Tiliqua adelaidensis*	*Alsophis rufiventris* *Calamodontophis* sp. *Coluber cypriensis* *Liophis ornatus* *Liophis perfuscus* Typhlopidae *Typhlops monensis* Viperidae *Vipera albizona* *Vipera kaznakovi* *Vipera ursinii* *Vipera wagneri*		

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Pelomedusidae *Erymnochelys madagascariensis* *Podocnemis lewyana* Platysternidae *Platysternon megacephalum* Testudinidae *Geochelone yniphora* *Indotestudo elongata* *Indotestudo forstenii* *Manouria emys* *Psammobates geometricus* *Pyxis planicauda* *Testudo kleinmanni* Trionychidae *Chitra indica* *Nilssonia formosa* *Palea steindachneri* *Pelochelys cantorii* *Rafetus euphraticus*				
Vulnerable	Bataguridae *Cuora amboinensis* *Geoclemys hamiltonii* *Hardella thurjii* *Heosemys grandis* *Malayemys subtrijuga* *Melanochelys tricarinata* *Morenia ocellata* *Morenia petersi* *Notochelys platynota* *Rhinoclemmys rubida*	Agamidae *Ctenophorus yinnietharra* Anguidae *Elgaria panamintina* Chamaeleonidae *Brookesia perarmata* *Furcifer campani* *Furcifer labordi* *Furcifer minor*	Boidae *Acrantophis dumerili* *Acrantophis madagascariensis* *Epicrates subflavus* *Sanzinia madagascariensis* Colubridae *Achalinus werneri* *Calamodontophis paucidens* *Iguanognathus werneri* *Lamprophis fiskii*	Spenodontidae *Sphenodon guntheri*	Crocodylidae *Crocodylus acutus* *Crocodylus palustris* *Osteolaemus tetraspis*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Siebenrockiella crassicollis Carettochelyidae *Carettochelys insculpta* Chelidae *Acanthochelys pallidipectoris* *Chelodina parkeri* *Elseya branderhorstii* *Hydromedusa maximiliani* *Phrynops zuliae* *Rheodytes leukops* Chelydridae *Macroclemys temminckii* Emydidae *Clemmys guttata* *Clemmys insculpta* *Clemmys marmorata* *Graptemys caglei* *Trachemys decorata* *Trachemys gaigeae* *Trachemys terrapene* Kinosternidae *Kinosternon angustipons* *Kinosternon dunni* *Kinosternon sonoriense* *Sternotherus depressus* Pelomedusidae *Peltocephalus dumeriliana* *Pelusios broadleyi* *Pelusios seychellensis* *Podocnemis erythrocephala*	Cordylidae Cordylus cataphractus *Cordylus giganteus* *Cordylus mclachlani* *Pseudocordylus nebulosus* *Tetradactylus breyeri* Gekkonidae *Christinus guentheri* *Goniosaurus kuroiwae* *Hoplodactylus stephensi* *Lepidodactylus listeri* *Lygodactylus methueni* *Nactus serpensinsula* *Phelsuma standingi* *Phyllodactylus europaeus* Helodermidae *Heloderma horridum* *Heloderma suspectum* Iguanidae *Amblyrhynchus cristatus* *Conolophus pallidus* *Conolophus subcristatus* *Cyclura cornuta* *Cyclura cychlura* *Cyclura nubila* *Iguana delicatissima* Lacertidae *Algyroides marchi* *Lacerta bonnali* *Podarcis lilfordi* *Podarcis milensis*	*Liophis atraventer* *Natrix megalocephala* *Thamnophis gigas* *Thermophis baileyi* Elapidae *Austrelaps labialis* *Denisonia maculata* *Echiopsis atriceps* *Echiopsis curta* *Furina dunmalli* *Hoplocephalus bungaroides* *Ogmodon vitianus* Hydrophiidae *Laticauda crockeri* Typhlopidae *Ramphotyphlops exocoeti* Viperidae *Bitis inornata* *Bitis schneideri* *Bothrops pirajai* *Trimeresurus mangshanensis* *Vipera bornmuelleri* *Vipera dinniki* *Vipera latifii*		

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Podocnemis sextuberculata *Podocnemis unifilis* Testudinidae *Geochelone chilensis* *Geochelone denticulata* *Geochelone gigantea* *Geochelone nigra* *Geochelone radiata* *Geochelone sulcata* *Gopherus agassizii* *Gopherus flavomarginatus* *Gopherus polyphemus* *Homopus bergeri* *Indotestudo travancorica* *Malacochersus tornieri* *Manouria impressa* *Pyxis arachnoides* *Testudo graeca* *Testudo horsfieldii* Trionychidae *Amyda cartilaginea* *Aspideretes gangeticus* *Aspideretes hurum* *Aspideretes leithii* *Pelochelys bibroni* *Pelochelys sinensis*	*Podarcis pityusensis* Polychrotidae *Anisolepsis undulatus* Pygopodidae *Aprasia aurita* *Delma impar* *Delma labialis* *Delma torquata* *Ophidiocephalus taeniatus* *Paradelma orientalis* Scincidae *Aconthiops lineatus* *Anomalopus mackayi* *Ctenotus lancelini* *Ctenotus zastictus* *Cyclodina alani* *Cyclodina lichenigera* *Cyclodina macgregori* *Cyclodina whitakeri* *Egernia kintorei* *Leiolopisma telfairii* *Neoseps reynoldsi* *Niveoscincus palfreymani* *Oligosoma grande* *Oligosoma homalonotum* *Oligosoma microlepis* *Oligosoma otagense* *Oligosoma striatum* *Oligosoma waimatense* *Scelotes guentheri* *Scelotes kasneri* *Typlosaurus lomii* Teiidae			

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
		Cnemidophorus vanzoi Tropiduridae *Liolaemus huacahuasicus* *Liolaemus lutzae* *Liolaemus occipitalis* *Liolaemus rabinoi* Varanidae *Varanus komodoensis* *Varanus olivaceus* Xantusiidae *Xantusia riversiana*			
Lower Risk	Bataguridae *Cyclemys dentata* *Kachuga smithii* *Mauremys japonica* *Melanochelys trijuga* *Rhinoclemmys annulata* *Rhinoclemmys funerea* *Rhinoclemmys nasuta* Chelidae *Acanthochelys macrocephala* *Acanthochelys radiolata* *Acanthochelys spixii* *Chelodina oblonga* *Chelodina reimanni* *Chelodina siebenrocki* *Phrynops rufipes* *Phrynops vanderhaegei* Emydidae *Emydoidea blandingii*	Anguidae *Celestus warreni* Chamaeleonidae *Bradypodion nemorale* *Bradypodion thamnobates* Cordylidae *Cordylus lawrenci* *Gerrhosaurus typicus* *Platysaurus relictus* *Pseudocordylus langi* *Pseudocordylus spinosus* *Gekkonidae* *Afroedura hawequensis* *Homopholis mulleri* *Hoplodactylus kahutarae* *Hoplodactylus rakiurae* *Phelsuma ocellata* *Phyllodactylus microlepidotus*	Boidae *Epicrates angulifer* *Epicrates inornatus* *Python molurus* Colubridae *Homoroselaps dorsalis* *Lamprophis fuscus* *Lamprophis swazicus* *Opheodrys herminae* Elapidae *Elapognathus minor* *Simoselaps calonotus*		Alligatoridae *Melanosuchus niger* Crocodylidae *Crocodylus moreletii*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Emys orbicularis *Graptemys barbouri* *Graptemys ernsti* *Graptemys gibbonsi* *Graptemys nigrinoda* *Graptemys versa* *Malaclemys terrapin* *Pseudemys gorzugi* *Pseudemys rubriventris* *Terrapene carolina* *Terrapene ornata* *Trachemys scripta* *Trachemys stejnegeri* Kinosternidae *Claudius angustatus* *Kinosternon acutum* *Kinosternon creaseri* *Kinosternon oaxacae* *Staurotypus salvinii* *Staurotypus triporcatus* Pelomedusidae *Podocnemis expansa* Testudinidae *Homopus signatus* *Kinixys natalensis* *Testudo hermanni* Trionychidae *Cyclanorbis elegans* *Cyclanorbis senegalensis* *Cycloderma frenatum*	*Underwoodisaurus sphyrurus* Iguanidae *Stenocercus fimbriatus* Lacertidae *Australolacerta rupicola* *Lacerta schreiberi* Pygopodidae *Aprasia pseudopulchella* Scincidae *Coeranoscincus reticulatus* *Eumeces kishinouyei* *Oligosoma fallai* *Oligosoma infrapunctatum* *Scelotes gronovii*			
Data Deficient	Bataguridae *Mauremys iversoni*	Agamidae *Gonocephalus abbotti*	Aniliidae *Anomochilus leonardi*		Crocodylidae *Crocodylus cataphractus*

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
	Mauremys pritchardi *Ocadia glyphistoma* *Ocadia philippeni* *Sacalia pseudocellata* Chelidae *Elseya georgesi* *Elseya purvisi* Cheloniidae *Natator depressus* Pelomedusidae *Pelusios upembae* Testudinidae *Kinixys erosa* *Kinixys homeana* Trionychidae *Lissemys scutata*	*Hydrosaurus pustulatus* Anguidae *Celestus duquesneyi* *Celestus fowleri* *Celestus microblepharis* Gekkonidae *Phyllodactylus melanostictus* *Phyllodactylus peringueyi* *Cryptactites peringueyi* Lacertidae *Lacerta alpina* Polychrotidae *Pristidactylus alvaroi* *Pristidactylus valeriae* Scincidae *Barkudia insularis* *Isopachys gyldenstolpei* *Lygosoma haroldyoungi* *Lygosoma koratense* *Oligosoma gracilicorpus* *Phoboscincus bocourti* *Tribolonotus ponceleti* Teiidae *Callopistes maculatus* *Cnemidophorus hyperythrus* Tropiduridae *Liolaemus constanzae* *Liolaemus curis* *Liolaemus donosoi* *Liolaemus fuscus*	Colubridae *Calamaria pfefferi* *Elachistodon westermanni* *Elaphe situla* *Oligodon nikhili* *Opisthotropis boonsongi* *Opisthotropis spenceri* *Pareas iwasakii* *Philodryas chamissonis* *Thamnophis hammondi* *Xenocalamus transvaalensis* Viperidae *Trimeresurus cornutus*		

STATUS	TESTUDINES	SQUAMATA SAURIA	SQUAMATA SERPENTES	RHYNCHOCEPHALIA	CROCODYLIA
		Liolaemus gravenhorsti *Liolaemus hellmichi* *Liolaemus kuhlmanni* *Liolaemus lemniscatus* *Liolaemus leopardinus* *Liolaemus lorenzmuelleri* *Liolaemus nitidus* *Liolaemus paulinae* *Liolaemus walkeri* *Liolaemus zapallarensis* *Tropidurus tarapacensis*			

Annex III

Reptile species suspended from imports into the European Union based on Commission Regulation (EC) No. 2087/2001 of 24 October 2001

Species	Source covered	Specimen covered	Countries of origin covered	Basis in Article 4(6)
TESTUDINES				
Emydidae				
Callagur borneoensis	Wild	All	All	b
Trachemys scripta elegans	All	Live	All	d
Testudinidae				
Geochelone chilensis	Wild	All	Argentina	b
	Wild	Live	All	c
Geochelone denticulata	Wild	All	Bolivia, Ecuador	b
	Wild	Live	All	c
Geochelone elegans	Wild	All	Bangladesh, Pakistan	b
	Wild	Live	All	c
Geochelone gigantea	Wild	All	Seychelles	b
Geochelone pardalis	Wild	All	Democratic Republic of the Congo, Tanzania	b
Geochelone platynota	Wild	All	Myanmar	b
Gopherus agassizii	Wild	All	All	b
Gopherus berlandieri	Wild	All	All	b
Gopherus polyphemus	Wild	All	USA	b
Homopus areolatus	Wild	Live	All	c
Homopus boulengeri	Wild	Live	All	c
Homopus femoralis	Wild	Live	All	c
Homopus signatus	Wild	Live	All	b
Indotestudo elongata	Wild	All	Bangladesh, China, India	b
Indotestudo forstenii	Wild	All	All	b
Kinixys belliana	Wild	All	Mozambique	b
	Ranched	All	Benin, Mozambique	b
	Wild	Live	All	c
Kinixys erosa	Wild	All	Togo	b
	Wild	Live	All	c
Kinixys homeana	Ranched	All	Benin	b
	Wild	Live	All	c
Kinixys natalensis	Wild	Live	All	c
Manouria emys	Wild	All	Bangladesh, Brunei, Cambodia, China, India, Indonesia, Laos, Myanmar, Thailand	b
	Wild	Live	All	c
Manouria impressa	Wild	All	All (except Viet Nam)	b
	Wild	Live	All	c
Psammobates spp.	Wild	Live	All	c
Pyxis arachnoides	Wild	All	All	b
	Wild	Live	All	c
Testudo horsfieldii	Wild	Live	All	c
	Wild	All	China, Pakistan	b
Pelomedusidae				
Erymnochelys madagascariensis	Wild	All	Madagascar	b
Podocnemis erythrocephala	Wild	All	Colombia, Venezuela	b
Podocnemis expansa	Wild	All	Colombia, Ecuador, Guyana, Peru, Trinidad and Tobago, Venezuela	b
Podocnemis lewyana	Wild	All	All	b
Podocnemis sextuberculata	Wild	All	Peru	b
Podocnemis unifilis	Wild	All	Suriname	b

Species	Source covered	Specimen covered	Countries of origin covered	Basis in Article 4(6)
CROCODYLIA				
Alligatoridae				
Caiman crocodilus	Wild	All	El Salvador, Guatemala, Mexico	b
Crocodylidae				
Crocodylus niloticus	Wild	All	Madagascar	b
SAURIA				
Agamidae				
Uromastyx acanthinura	Wild	All	Sudan	b
Uromastyx aegyptia	Animals born in captivity[1)]	All	Egypt	b
Uromastyx dispar maliensis	Wild	All	All	b
Chamaeleonidae				
Furcifer (Chamaeleo) angeli	Wild	All	Madagascar	b
Furcifer (Chamaeleo) antimena	Wild	All	Madagascar	b
Furcifer (Chamaeleo) balteatus	Wild	All	Madagascar	b
Furcifer (Chamaeleo) belalandaensis	Wild	All	Madagascar	b
Furcifer (Chamaeleo) bifidus	Wild	All	Madagascar	b
Calumma (Chamaeleo) boettgeri	Wild	All	Madagascar	b
Calumma (Chamaeleo) brevicornis	Wild	All	Madagascar	b
Furcifer (Chamaeleo) campani	Wild	All	Madagascar	b
Calumma (Chamaeleo) capuroni	Wild	All	Madagascar	b
Calumma (Chamaeleo) cucullatum	Wild	All	Madagascar	b
Chamaeleo deremensis	Wild	All	Tanzania	b
Chamaeleo ellioti	Wild	All	Burundi	b
Calumma (Chamaeleo) fallax	Wild	All	Madagascar	b
Chamaeleo feae	Wild	All	Equatorial Guinea	b
Calumma (Chamaeleo) furcifer	Wild	All	Madagascar	b
Calumma (Chamaeleo) gallus	Wild	All	Madagascar	b
Calumma (Chamaeleo) gastrotaenia	Wild	All	Madagascar	b
Calumma (Chamaeleo) globifer	Wild	All	Madagascar	b
Chamaeleo gracilis	Ranched	All	Togo	b
Calumma (Chamaeleo) guibei	Wild	All	Madagascar	b
Calumma (Chamaeleo) hilleniusi	Wild	All	Madagascar	b
Furcifer (Chamaeleo) labordi	Wild	All	Madagascar	b
Calumma (Chamaeleo) linotum	Wild	All	Madagascar	b
Calumma (Chamaeleo) malthe	Wild	All	Madagascar	b
Furcifer (Chamaeleo) minor	Wild	All	Madagascar	b

Species	Source covered	Specimen covered	Countries of origin covered	Basis in Article 4(6)
Furcifer (Chamaeleo) monoceras	Wild	All	Madagascar	b
Calumma (Chamaeleo) nasutum	Wild	All	Madagascar	b
Calumma (Chamaeleo) oshaughnessyi	Wild	All	Madagascar	b
Calumma (Chamaeleo) parsonii	Wild	All	Madagascar	b
Furcifer (Chamaeleo) petteri	Wild	All	Madagascar	b
Calumma (Chamaeleo) peyrierasi	Wild	All	Madagascar	b
Chamaeleo pfefferi	Wild	All	Cameroon	b
Furcifer (Chamaeleo) rhinoceratus	Wild	All	Madagascar	b
Calumma (Chamaeleo) tsaratananense	Wild	All	Madagascar	b
Furcifer (Chamaeleo) tuzetae	Wild	All	Madagascar	b
Chamaeleo werneri	Wild	All	Tanzania	b
Chamaeleo wiedersheimi	Wild	All	Cameroon	b
Furcifer (Chamaeleo) willsii	Wild	All	Madagascar	b
Gekkonidae				
Phelsuma abbotti	Wild	All	Madagascar	b
Phelsuma antanosy	Wild	All	Madagascar	b
Phelsuma barbouri	Wild	All	Madagascar	b
Phelsuma befotakensis (=P. abbotti)	Wild	All	Madagascar	b
Phelsuma breviceps	Wild	All	Madagascar	
Phelsuma cepediana	Wild	All	Madagascar	b
Phelsuma chekei (=P. abbotti chekei)	Wild	All	Madagascar	b
Phelsuma dubia	Wild	All	Madagascar	b
Phelsuma edwardnewtoni	Wild	All	Mauritius	b
Phelsuma flavigularis	Wild	All	Madagascar	b
Phelsuma guttata	Wild	All	Madagascar	b
Phelsuma klemmeri	Wild	All	Madagascar	b
Phelsuma leiogaster (=P. modesta leiogaster)	Wild	All	Madagascar	b
Phelsuma minuthi (=P. lineata)	Wild	All	Madagascar	b
Phelsuma modesta ssp.	Wild	All	Madagascar	b
Phelsuma mutabilis	Wild	All	Madagascar	b
Phelsuma pronki	Wild	All	Madagascar	b
Phelsuma pusilla	Wild	All	Madagascar	b
Phelsuma seippi	Wild	All	Madagascar	b
Phelsuma serraticauda	Wild	All	Madagascar	b
Phelsuma standingi	Wild	All	Madagascar	b
Phelsuma trilineata (=P. cepediana)	Wild	All	Madagascar	b
Iguanidae				
Conolophus pallidus	Wild	All	Ecuador	b
Conolophus subcristatus	Wild	All	Ecuador	b
Iguana iguana	Wild	All	El Salvador	b
Helodermatidae				
Heloderma horridum	Wild	All	Guatemala, Mexico	b
Heloderma suspectum	Wild	All	Mexico, USA	b

Species	Source covered	Specimen covered	Countries of origin covered	Basis in Article 4(6)
Scincidae				
Corucia zebrata	Wild	All	Solomon Islands	b
Varanidae				
Varanus albigularis	Wild	All	Lesotho	b
Varanus beccarii *(=V. prasinus beccarii)*	Wild	All	Indonesia	b
Varanus bogerti	Wild	All	Papua New Guinea	b
Varanus dumerilii	Wild	All	Indonesia	b
Varanus exanthematicus	Wild	All	Benin	b
	Ranched	All	Benin, Togo	b
Varanus jobiensis (syn. = *V. karlschmidti*)	Wild	All	Indonesia	b
Varanus niloticus	Wild	All	Burundi, Mozambique	b
	Ranched	All	Benin, Togo	b
Varanus rudicollis	Wild	All	Philippines	b
Varanus salvadorii	Wild	All	Indonesia	b
Varanus salvator	Wild	All	China, India, Singapore	b
Varanus telenesetes	Wild	All	Papua New Guinea	b
Varanus keithornei (syn. = *V. teriae*)	Wild	All	Australia	b
Varanus yemenensis	Wild	All	Saudi Arabia, Yemen	b
SERPENTES				
Boidae				
Boa constrictor	Wild	All	El Salvador, Honduras	b
Calabaria reinhardtii	Ranched	All	Benin, Togo	b
Eunectes deschauenseei	Wild	All	Brazil	b
Eunectes murinus	Wild	All	Paraguay	b
Gongylophis colubrinus (syn. = *Eryx colubrinus*)	Wild	All	Tanzania	b
Morelia boeleni	Wild	All	Indonesia	b
Python molurus	Wild	All	China	b
Python reticulatus	Wild	All	India, Singapore	b
Python sebae	Wild	All	Mauritania, Mozambique	b
	Ranched	All	Mozambique	b
Colubridae				
Ptyas mucosus	Wild	All [2)]	Indonesia	b

[1)] but for which the criteria of Chapter III of *Commission Regulation (EC) No. 1808/2001* are not met

[2)] except specimens from the marked and registered stockpiles of 102 285 skins that were acquired before 30 September 1993 provided that the CITES Secretariat has confirmed the validity of the Indonesian export permit

Annex IV

Reptile species listed in Annex IV of *Council Directive 92/43/EEC* (Habitats Directive). The CITES and EU listings are shown in brackets.

TESTUDINES	SQUAMATA	SQUAMATA
Testudinidae	**SAURIA**	Lacertidae (cont.)
Testudo hermanni (II/A)	Agamidae	*Podarcis peloponnesiaca*
Testudo graeca (II/A)	*Laudakia stellio* (syn. = *Stellio stellio*)	*Podarcis pityusensis* (II/A)
Testudo marginata (II/A)	Anguidae	*Podarcis sicula*
	Ophisaurus apodus	*Podarcis taurica*
Cheloniidae	Chamaeleonidae	*Podarcis tiliguerta*
Caretta caretta (I/A)	*Chamaeleo chamaeleon* (II/A)	*Podarcis wagleriana*
Chelonia mydas (I/A)		
Lepidochelys kempii (I/A)	Gekkonidae	Scincidae
Eretmochelys imbricata (I/A)	*Cyrtopodion kotschyi*	*Ablepharus kitaibellii*
		Chalcides bedriagai
Dermochelyidae	*Euleptes europaea* (syn. = *Phyllodactylus europaeus*)	*Chalcides polylepis occidentalis*
Dermochelys coriacea (I/A)	*Tarentola angustimentalis*	*Chalcides ocellatus*
		Chalcides sexlineatus
Emydidae	*Tarentola boettgeri*	*Chalcides viridanus*
Emys orbicularis	*Tarentola delalandii*	*Ophiomorus punctatissimus*
Mauremys caspica	*Tarentola gomerensis*	
Mauremys leprosa		**SERPENTES**
	Lacertidae	Boidae
	Algyroides fitzingeri	*Eryx jaculus* (II/A)
	Algyroides marchi	
	Algyroides moreoticus	Colubridae
	Algyroides nigropunctatus	*Hierophis caspius (syn. = Coluber caspius)*
	Lacerta agilis	*Hemorrhois hipocrepis* (syn. *=Coluber hippocrepis)*
	Lacerta bedriagae	*Hierophis jugularis (syn. =Coluber jugularis)*
	Lacerta danfordi	*Hierophis gemonensis* (syn. *=Coluber laurenti)*
	Teira dugesii (syn. = Lacerta dugesii)	*Coluber najadum*
	Lacerta graeca	*Hemorrhois nummifer (*syn. *=Coluber nummifer)*
	Iberolacerta horvathi (syn. = Lacerta horvathi)	*Hierophis viridiflavus (*syn. *=Coluber viridiflavus)*
	Iberolacerta monticola (syn. =Lacerta monticola)	*Coronella austriaca*
	Lacerta schreiberi	*Eirenis modestus*
	Lacerta trilineata	*Elaphe longissima*
	Lacerta viridis	*Elaphe quatuorlineata*
	Gallotia atlantica	*Elaphe situla*
	Gallotia galloti	*Natrix natrix cetti*
	Gallotia galloti insulanagae	*Natrix natrix corsa*
	Gallotia simonyi (I/A)	*Natrix tessellata*
	Gallotia stehlini	*Telescopus falax*
	Ophisops elegans	
	Podarcis erhardii	Viperidae

	Podarcis filfolensis *Podarcis hispanica atrata* *Podarcis lilfordi* (II/A) *Podarcis melisellensis* *Podarcis milensis* *Podarcis muralis*	*Vipera ammodytes* *Macrovipera schweizeri (*syn. *=Vipera schweizeri)* *Vipera seoanei** *Vipera ursinii* (I/A) *Vipera xanthina*

*except Spanish populations.

Annex V

Non-CITES reptile species and subspecies observed in the EU market. Species appearing in both the *2002 IUCN Red List of Threatened Species* /EU –Regulations and in the pet trade are marked in bold.

A. Non-CITES reptiles involved in the live trade, recorded at fairs in 1998.

1. *Agama agama*
2. *Agamura* sp.
3. *Ahaetulla mycterizans*
4. *Ahaetulla prasina*
5. *Ameiva ameiva*
6. *Ameiva bifrontata*
7. *Anolis allisoni*
8. *Anolis carolinensis*
9. *Anolis equestris*
10. *Anolis luteogularis*
11. *Anolis sagrei*
12. *Arizona elegans*
13. *Atheris* sp.
14. *Atheris squamigera*
15. *Basiliscus basiliscus*
16. *Basiliscus plumifrons*
17. *Basiliscus vittatus*
18. *Bitis gabonica gabonica*
19. *Bitis gabonica rhinoceros*
20. *Bitis nasicornis*
21. *Bitis worthingtoni*
22. *Boiga* cf. *cynodon*
23. *Boiga dendrophila*
24. *Boiga irregularis*
25. ***Brookesia perarmata***[*]
26. *Calotes* cf. *jubatus*
27. *Calotes versicolor*
28. *Carettochelys insculpta*
29. *Ceratophora stoddartii*
30. *Chalcides chalcides*
31. *Anolis barbatus (syn. =Chamaeleolis barbatus)*
32. *Chelodina siebenrocki*
33. *Chelus fimbriata*
34. *Chlamydosaurus kingii*
35. *Chlararodon madagascariensis*
36. *Chrysemys picta*
37. *Cnemidophorus lemniscatus*
38. *Crotalus lepidus*
39. *Crotalus ruber ruber*
40. *Crotaphytus collaris*
41. *Ctenosaura similis*
42. *Cuora amboinensis*
43. *Cuora galbinifrons*
44. *Cyclemys dentata*
45. *Cyrtodactylus louisiadensis*
46. *Vipera palaestinae*
47. *Vipera xanthina*
48. *Dasia smaragdina*
49. *Dasypeltis scabra*
50. *Deinagkistrodon acutus*
51. *Dendroaspis angusticeps*
52. *Dendroaspis polylepis*
53. *Dendroaspis viridis*
54. *Dipsosaurus dorsalis*
55. *Drymarchon corais couperi*
56. *Egernia kingii*
57. *Elaphe bimaculata*
58. *Elaphe flavolineata*
59. *Elaphe guttata*
60. *Elaphe guttata guttata*
61. *Elaphe helena*
62. *Elaphe obsoleta lindheimeri*
63. *Elaphe mandarina*
64. *Elaphe obsoleta quadrivittata*
65. *Elaphe obsoleta spiloides*
66. *Elaphe quatuorlineata*
67. *Elaphe radiata*
68. *Elaphe rufodorsata*
69. *Elaphe schrenkii*
70. *Elaphe subocularis*
71. *Elaphe taeniura*
72. ***Elaphe taeniura friesei***
73. ***Elaphe taeniura taeniura***
74. *Elseya* cf. *branderhorsti*
75. *Elseya* cf. *novaeguineae*
76. *Emoia cyanura*
77. *Emydura albertisi (=Emydura subglobosa)*
78. *Eumeces schneideri*
79. *Gambelia wislizenii*
80. *Gekko gecko*
81. *Gekko gecko (Tokee)*
82. *Gekko smithii*
83. *Gekko vittatus*
84. *Geckonia chazaliae*
85. *Geoemyda spengleri*
86. *Gerrhosaurus flavigularis*
87. *Gerrhosaurus major*
88. *Gerrhosaurus nigrolineatus*
89. *Gerrhosaurus* sp.
90. *Gerrhrosaurus flavigularis*
91. *Gonocephalus chamaeleontinus*
92. *Gonocephalus* sp.
93. *Gonyosoma oxycephalum*
94. *Graptemys kohni*
95. *Hemidactylus frenatus*
96. *Hemidactylus mabouia*
97. *Hemitheconyx caudicinctus*
98. ***Heosemys spinosa***[5]
99. *Heterodon n. nasicus*

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100. *Hydrosaurus amboinensis*
101. *Hydrosaurus weberi*
102. *Kinosternon integrum*
103. *Lacerta jayakari*
104. *Lampropeltis getula californiae*
105. *Lampropeltis calligaster*
106. *Lampropeltis getula floridana*
107. *Lampropeltis getula splendida*
108. *Lampropeltis mexicana* cf. *greeri*
109. *Lampropeltis m. mexicana*
110. *Lampropeltis nigritus*
111. *Lampropeltis p. pyromelana*
112. *Lampropeltis ruthveni*
113. *Lampropeltis* sp.
114. *Lampropeltis triangulum campbelli*
115. *Lampropeltis t.* cf. *sinoloae*
116. *Lampropeltis triangulum hondurensis*
117. *Lampropeltis t. triangulum*
118. *Lampropeltis* cf. *getula nigrita*
119. *Lamprophis fuligonosus*
120. *Leioheterodon madagascariensis*
121. *Mauremys caspica*
122. *Mochlus fernandi*
123. *Morenia petersi*
124. *Naja haje*
125. *Naja kaouthia*
126. *Naja siamensis*
127. *Natrix vittata*
128. *Nerodia fasciata*
129. *Nerodia sipedon sipedon*
130. *Opheodrys aestivus*
131. *Oplurus cuvieri* (syn. =*Oplurus sebae*)
132. *Oplurus* sp.
133. Orlitia borneensis*
134. *Pachydactylus bibroni*
135. *Philothamnus irregularis*
136. *Philothamnus semivariegatus*
137. *Lophognathus temporalis*
138. *Physignathus* cf. *temporalis*
139. *Physignathus cocincinus*
140. *Physignathus lesueurii*
141. *Physignatus* sp.
142. *Pituophis catenifer*
143. *Pituophis melanoleucos*
144. *Platemys platycephala*
145. *Podarcis sicula*
146. *Pogona vitticeps*
147. *Pseudemys concinna* cf. *hieroglyphica*
148. *Pseudemys floridana peninsularis*
149. *Ptychozoon kuhlii*
150. Pyxidea mouhotii*
151. *Rhacodactylus auriculatus*
152. *Rhinoclemmys punctularia*
153. *Sceloporus olivaceus*
154. *Sceloporus poinsetti*
155. *Sceloporus variabilis*
156. *Scincus scincus*
157. Siebenrockiella crassicollis*
158. *Spalerosophis diadema*
159. *Spalerosophis* sp.
160. *Spilotes pullatus*
161. *Sternotherus odoratus*
162. *Takydromus sexlineatus*
163. *Tarentola annularis*
164. *Teratoscincus* cf. *fasciata*
165. *Thamnophis radix*
166. *Thamnophis sauritus*
167. *Thamnophis sirtalis*
168. *Thamnophis sirtalis parietalis*
169. *Tiliqua gerrardi*
170. Tiliqua gigas
171. Tiliqua scincoides
172. Trachemys s. elegans
173. Trachemys s. scripta
174. Tribolonotus gracilis
175. Tribolonotus novaeguineae
176. *Trimeresurus albolabris*
177. *Trimeresurus albolabris insularis*
178. *Trimeresurus flavomaculatus*
179. *Trimeresurus purpureomaculatus*
180. *Trimeresurus s. stejnegeri*
181. *Trimeresurus* sp.
182. *Trimeresurus sumatranus*
183. *Tropidolaemus wagleri*
184. *Tropidophorus grayi*
185. *Uroplatus henkeli*
186. *Uta stansburiana*
187. *Xenopeltis unicolor*
188. Zonosaurus madagascariensis

***** These species were listed in CITES Appendix II at CoP12 and the listing will come into effect on 13 February 2003.

B. Non-CITES reptiles involved in the live trade, recorded on price lists of wholesalers and retailers between 1977 and 1999. Taxonomic invalid names (synonyms) were included, and incorrect names appear corrected in brackets.

1. *Aalvadora hexalepis*
2. *Acanthodactylus boscianus*
3. *Acanthodactylus pardalis*
4. *Acanthosaura capra*
5. *Acanthosaura crucigera*
6. *Acanthosaura* sp.
7. *Acantophis antarcticus*
8. *Adolphus jacksoni*
9. *Agamata armata*
10. *Agama agama lionotus*
11. *Agama aculeata*
12. *Agama agama*
13. *Agama atricollis (=Acanthocercus atricollis)*
14. *Agama melanura (=Laudakia melanura)*
15. *Agama mutabilis (=Trapelus mutabilis)*
16. *Agama nupta fusca (=Laudakia nupta fusca)*
17. *Agamura persica*
18. *Agkistrodon rhodostoma*
19. *Agkistrodon bileneatus taylori (=A. taylori)*
20. *Agkistrodon piscivorus conanti*
21. *Ahaetulla nasuta*
22. *Ailuronyx seychellensis*
23. *Ameiva ameiva*
24. *Ameiva* cf. *undulate*
25. *Ameiva chaitzami*
26. *Amphiglossus* cf. *waterloti*
27. *Annamemys annamensis*[*]
28. *Anolis pilote (=A. roquet* ssp.*)*
29. *Anolis allisoni*
30. *Anolis armouri*
31. *Anolis baraocuensis (=A. bahorucoensis)*
32. *Anolis bahorucoensis southerlandi*
33. *Anolis bartschi*
34. *Anolis bequllaenis* ?
35. *Anolis brevirostris*
36. *Anolis bimaculatus sabanus (=A. bimaculatus* or *A. sabanus)*
37. *Anolis carolinensis*
38. *Anolis chlorocyanus*
39. *Anolis cybotes*
40. *Anolis equestris*
41. *Anolis lucius*
42. *Anolis olssoni*
43. *Anolis r. martiniquensis (=A. roquet* ssp.*)*
44. *Anolis richardii*
45. *Anolis roquet*
46. *Anolis sagrei*
47. *Anolis wileyae (=A. cristatellus wileyae)*
48. *Apalone ferox*
49. *Arizona elegans*
50. *Asaccus elisae*
51. *Atheris ceratophorus*
52. *Atheris chloroechis*
53. *Atheris superciliaris*
54. *Barisia* cf. *moreleti (=Barisia* sp.*)*
55. *Basiliscus plumifrons*
56. *Basiliscus vittatus*
57. *Bitis gabonica gabonica*
58. ***Bitis gabonica rhinoceros***
59. *Bitis nasicornis*
60. *Boaedon fuliginosus (=Lamprophis fuliginosus)*
61. *Boiga dendrophila*
62. ***Brookesia perarmata***[*]
63. *Brookesia stumpffi**
64. *Callisaurus draconoides*
65. *Bronchocoela (Calotes) cristatella (=Bronchocela cristatella)*
66. *Bronchocoela (Calotes) jubata(-us) (=Bronchocela jubata)*
67. *Callopistes flavipunctatus*
68. *Calotes andamani (=C. andamanensis)*
69. *Calotes emma*
70. *Calotes mystaceus*
71. *Calotes versicolor*
72. *Cerastes cerastes*
73. *Cerastes vipera*
74. *Ceratophora stoddartii*
75. *Chelodina longicollis*
76. *Chelodina novaeguineae*
77. *Chelodina siebenrocki*
78. *Chelus fimbriata (=C. fimbriatus)*
79. *Chelydra s. serpentina*
80. *Chelydra serpentina*
81. *Chinemys kwangtungensis (=C. nigricans)*
82. *Chinemys reevesii*
83. *Chlamydosaurus kingii*
84. *Chrysemys ornata (=Trachemys scripta ornata)*
85. *Chrysemys picta belli*
86. *Chrysemys picta dorsalis*
87. *Chrysemys picta picta*
88. *Chrysopelea ornata* ssp.
89. *Claudius angustatus*
90. *Clemmys guttata*
91. *Cnemaspis africana*
92. *Cnemidophora deppi (=Cnemidophorus deppei)*
93. *Cnemidophorus lemniscatus*
94. *Coleonyx brevis*
95. *Coleonyx mitratus*
96. *Coluber constrictor*
97. *Cophosaurus texanum (=C. texanus)*
98. *Corythophanes cristatus*
99. *Crotalus atrox*
100. *Crotalus enjo (=C. enyo)*
101. *Crotalus vegrandis*

102. *Crotalus viridis oreganus*
103. *Crotaphytus collaris*
104. *Crotaphytus collaris fuscus*
105. *Crotaphytus insularis*
106. *Ctenosaura palearis*
107. *Ctenosaura quinquecarinata*
108. *Ctenosaura similis*
109. *Cuora amboinensis*
110. *Cuora aurocapita*
111. *Cuora flavomarginata*
112. *Cuora galbinifrons*
113. *Cuora galbinifrons bourreti*
114. *Cuora mccordi*
115. ***Cuora pani***
116. *Cyclemys dentata*
117. *Cyclemys tscheponensis*
118. *Cyrtodactylus louisiadensis*
119. *Cyrtodactylus pulchellus*
120. *Vipera palaestinae*
121. *Vipera raddei*
122. *Dasia olivacea*
123. *Dasia smaragdina*
124. *Deirochelys reticularia*
125. *Dendrelaphis pictus*
126. *Dendroaspis angusticeps*
127. *Dendroaspis polylepis*
128. *Dendroaspis viridis*
129. *Diposaurus dorsalis*
130. *Draco volans*
131. *Drymarchon c. melaneura (=D. melanurus)*
132. *Drymarchon corais*
133. *Egernia frerei*
134. *Egernia striolata*
135. *Elaphe bairdi*
136. *Elaphe bimaculata*
137. *Elaphe carinata*
138. *Elaphe climacophora*
139. *Elaphe flavirufa*
140. *Elaphe flavirufa pardalina*
141. *Elaphe g. guttata*
142. *Elaphe guttata* ssp.
143. *Elaphe helena*
144. *Elaphe mandarina*
145. *Elaphe moellendorffi*
146. *Elaphe o. linderheimeri*
147. *Elaphe obsoleta*
148. *Elaphe obsoleta quadrivittata*
149. *Elaphe rufodorsata*
150. *Elaphe s. schrenki*
151. *Elaphe situla*
152. *Elaphe subocularis*
153. *Elaphe taeniura frisei*
154. *Elaphe taeniura ridley (=E. t. ridleyi)*
155. *Elseya brandenhorsti (=E. branderhorsti)*
156. *Elseya latisternon (=E. latisternum)*
157. *Elseya novaguinea (=E. novaeguineae)*
158. *Elseya* sp.
159. *Emoia cyanurum (=E. cyanura)*
160. *Emydura albertisi (=Emydura subglobosa)*
161. *Emydura macquarii*
162. *Emydura* sp.
163. *Emydura subglobosa*
164. *Emys orbicularis*
165. *Enyaliosaurus quinquecarinatus (=Ctenosaura quinquecarinata)*
166. *Eremias argus*
167. *Erpeton tentaculum (=E. tentaculatum)*
168. *Eublepharis macularius*
169. *Eumeces laticeps*
170. *Eumeces schneideri*
171. *Gambelia wiszlenzini (=G. wislizenii)*
172. *Gecko auratus (=Gekko ulikovskii)*
173. *Gecko* cf. *ulikovskii*
174. *Gecko gecko (=Gekko gecko)*
175. *Gecko grossmanni (=Gekko grossmanni)*
176. *Gecko marmoratus (=Hemidactylus marmoratus)*
177. *Gecko petricolus (=Gekko petricolus)*
178. *Gecko ulikowski (=Gekko ulikovskii)*
179. *Gecko vittatus (=Gekko vittatus)*
180. *Geckonia chazaliae*
181. *Geoemyda spengleri*
182. *Geomyda spinosa (=Heosemys spinosa)*
183. *Gerrhosaurus flavigularis*
184. *Gerrhosaurus major*
185. *Gerrhosaurus nigrolineatus*
186. *Gerrhosaurus validus*
187. *Gonatodes albigularis (=G. albogularis)*
188. *Goniurosaurus l. lichtenfelderi*
189. *Goniurosaurus lichtenfelderi*
190. *Gonocephalus chamaeleontinus*
191. *Gonyosoma oxycephala (=G. oxycephalum)*
192. *Graptemys kohnii (=Graptemys pseudogeographica kohnii)*
193. *Graptemys* cf. *pseudogeographica kohnii*
194. *Graptemys nigrinoda*
195. *Graptemys ouachitensis*
196. *Graptemys p. pseudogeographica*
197. *Graptemys versa*
198. *Hemidactylus brookii*
199. *Hemidactylus flaviredes (=H. flaviviridis)*
200. *Hemidactylus frenatus*
201. *Hemidactylus mabouia*
202. *Hemitheconyx caudicinctus*
203. *Heosemys grandis*[*]
204. ***Heosemys spinosa***
205. *Heterodon nasicus*
206. ***Hieremys annandalii***[*]
207. *Holbrookia texana*
208. *Holodactylus africanus*
209. *Hydromedusa tectifera*
210. *Hydrosaurus amboinensis*

211. *Hydrosaurus pustulatus*
212. *Hydrosaurus weberi*
213. *Japalura splendida*
214. *Kachuga smithi*[*]
215. *Kachuga tentoria circumdata*
216. *Kinosternon carinatus (=Sternotherus carinatus*)
217. *Kinosternon* cf. *acutum*
218. *Kinosternon flavescens*
219. *Kinosternon l. leucostomum*
220. *Kinosternon l. postinguinale*
221. *Kinosternon leucostomum* ssp.
222. *Kinosternon s. scorpioides*
223. *Kinosternon cruentatum* ssp.
224. *Kinosternon scorpoides*
225. *Kinosternon subrubrum hippocrepis*
226. *Lacerta agilis*
227. *Laemanctus serratus*
228. *Lampropeltis alterna*
229. *Lampropeltis campelli*
230. *Lampropeltis getula californiae*
231. *Lampropeltis g. floridana*
232. *Lampropeltis g. getulus*
233. *Lampropeltis g. holbrooki*
234. *Lampropeltis g. nigritus*
235. *Lampropeltis getula*
236. *Lampropeltis m. greeri*
237. *Lampropeltis m. mexicana*
238. *Lampropeltis mexicana thayeri*
239. *Lampropeltis p. pyromelana*
240. *Lampropeltis ruthveni*
241. *Lampropeltis t. campbelli*
242. *Lampropeltis t. hondurensis*
243. *Lampropeltis t. stuarti*
244. *Lampropeltis t. triangulum*
245. *Lampropeltis triangulum hondurensis*
246. *Langaha nasuta*
247. *Latastia longicaudata*
248. *Leiocephalus barahonensis*
249. *Leiocephalus c. hobadom*
250. *Leiocephalus carinatus*
251. *Leiocephalus carinatus hodsoni*
252. *Leiocephalus personatus*
253. *Leiocephalus schreibersii*
254. *Leioheterodon madagascarensis*
255. *Leiolepis reevesi*
256. *Leiolepis triploidata*
257. *Lemanctus longipes*
258. *Lepidodactylus lugubris*
259. *Lepidophyma flacimaculatum*
260. *Leptodrymus pulcherrimus*
261. *Leptophis mexicanus*
262. *Lycodon laoensis*
263. *Lygadactylus capensis*
264. *Lygodactylus* cf. *angularis*
265. *Lygodactylus picturatus*
266. *Lygosoma variegata*
267. *Mabuya macularia*
268. *Mabuya maculilabris*
269. *Mabuya multifasciata*
270. *Mabuya perrotetii*
271. *Mabuya quinquetaeniata*
272. *Mabuya* sp.
273. *Mabuya striata*
274. *Mabuya sundevalli*
275. *Macrochelys temminckii*
276. *Mauremys c. caspica*
277. *Mauremys caspica rivulata (=M. rivulata)*
278. *Mauremys japonica*
279. ***Mauremys mutica***[*]
280. *Melanochelys trijuga edeniana*
281. *Mochlus fernandi*
282. *Morenia petersi*
283. *Naja haje*
284. *Naja kaouthia*
285. *Natrix fasciata*
286. *Natrix maura*
287. *Natrix natrix*
288. *Natrix stolata (=Amphiesma stolatum)*
289. *Natrix vittata (=Xenochrophis vittata)*
290. *Nerodia cyclopion*
291. *Nerodia fasciata*
292. *Notochelys platynota*
293. *Ocadia sinensis*
294. *Oedura castelnaui*
295. *Oedura monilis*
296. *Oligodon* sp.
297. *Opheodrys aestivus*
298. *Oplurus cuvieri* ssp.
299. *Oplurus quadrimaculatus*
300. *Oplurus cyclurus*
301. *Pachydactylus bibronii*
302. *Pachydactylus capensis*
303. *Pachydactylus tigrinus*
304. *Paroedura bastardi*
305. *Paroedura pictus (=P. picta)*
306. *Philothamnus semivariegatus*
307. *Phrynops geoffroanus tuberosus (=P. tuberosus)*
308. *Phrynops geoffroanus*
309. *Phrynops gibbus*
310. *Phrynops hilarii*
311. *Phrynops nasutus*
312. *Phrynosoma modestum*
313. *Phrynosoma platyrhinus*
314. *Phyllodactylus siamensis*
315. *Physignathus cocincinus*
316. *Physignathus temporalis (=Lophognathus temporalis)*
317. *Physignatus lesueurii*
318. *Pituophis catenifer*
319. *Pituophis melanoleucus*

320. *Pituophis melanoleucus* ssp.
321. *Pituophis* sp.
322. *Platemys platycephala*
323. *Platysaurus imp. rhodesianus*
324. *Platysaurus imperator*
325. *Platysaurus peguense (=P. pungweensis blaikei)*
326. ***Playsternon megacephalum****
327. *Pogona vitticeps*
328. *Polychrus marmoratus*
329. *Pseudechis porphyriacus*
330. *Pseudemys concinna hieroglyphica*
331. *Pseudemys floridana (=Pseudemys peninsularis)*
332. *Pseudemys nelsoni*
333. *Pseudemys rubriventris*
334. *Pseudemys s. elegans (=Trachemys scripta elegans)*
335. *Pseudemys s. scripta (=Trachemys s. scripta)*
336. *Pseudemys scripta (=Trachemys scripta)*
337. *Ptychozoon kuhli*
338. *Ptyodactylus guttatus*
339. ***Pyxidea mouhotii****
340. *Rhampholeon boulengeri*
341. *Rhampholeon kerstenii*
342. *Rhinocheilus lecontei*
343. *Rhinoclemmys pulcherrima incisa*
344. *Rhinoclemmys pulcherrima manni*
345. *Rhinoclemmys punctularia*
346. *Riopa koratense (=Lygosoma koratense)*
347. *Sacalia bealei*
348. ***Sacalia quadriocellata***
349. *Sauromalus obesus*
350. *Sceloporus clarkii*
351. *Sceloporus cyanogenys*
352. *Sceloporus jarrovii*
353. *Sceloporus magister*
354. *Sceloporus malachiticus*
355. *Sceloporus merriami*
356. *Sceloporus olivaceus*
357. *Sceloporus poinsettii*
358. *Sceloporus u. gamini (=S. undulatus garmani)*
359. *Sceloporus undulatus*
360. *Sceloporus variabilis olloporus*
361. *Sceloporus variabilis*
362. *Sceloporus varigatus (=Sceloporus variegatus)*
363. *Scincella lateralis*
364. *Scincus scincus*
365. *Sistrurus miliaris*
366. *Spalerosophis diadema*
367. *Spilotes pullatus*
368. *Staurotypus triporcatus*
369. *Stenocercus* sp.
370. *Stenodactylus sthenodactylus*
371. *Sternotherus odoratus*
372. *Storeria occipitomaculata*
373. *Takydromus sexlineatus*
374. *Tarentola annularis*
375. *Tarentola scaber*
376. *Thamnophis cyrtopsis*
377. *Thamnophis marcianus*
378. *Thamnophis ordinoides*
379. *Thamnophis radix*
380. *Thamnophis radix haydeni*
381. *Thamnophis sirtalis parietalis*
382. *Thamnophis radix* ssp.
383. *Thamnophis sirtalis similis*
384. *Thamnophis s. sirtalis*
385. *Thamnophis sauritus*
386. *Thecadactylus rapicauda*
387. *Tiliqua gigas*
388. ***Tiliqua scincoides***
389. *Tracheloptychus petersi*
390. *Trachemys s. callirostris (=Trachemys dorbigni)*
391. *Trachemys scripta*
392. ***Trachemys scripta elegans***
393. ***Trachemys scripta grayi***
394. ***Trachemys scripta ornata***
395. ***Trachemys scripta scripta***
396. ***Tribolonotus gracilis***
397. ***Tribolonotus novaeguineae***
398. *Trimeresurus albolabris*
399. *Trimeresurus* cf. *macrops*
400. *Trionyx sinensis (=Pelodiscus sinensis)*
401. *Tropidolaemus wagleri*
402. *Tropidophorus apulus (Troipidophorus* sp.)
403. *Tropidophorus scincoides (=Tiliqua scincoides)*
404. *Tropidurus* sp.
405. *Tropidurus torquatus*
406. *Uranoscodon superciliosus*
407. *Uromacer catesbyi*
408. *Uroplatus ebenaui*
409. ***Uroplatus fimbriatus***
410. ***Uroplatus henkeli***
411. ***Uroplatus lineatus***
412. ***Uroplatus phantasticus***
413. *Urosaurus ornatus*
414. *Uta stansburiana*
415. *Vipera lebetina obtusa (=Macrovipera l. obtusa)*
416. *Xenochrophis vittata (=X. vittatus)*
417. *Zonosaurus maximus*
418. *Zonosaurus ornatus*
419. *Zonosaurus quadrilineatus*

* These species were listed in CITES Appendix II at CoP12 and the listing will come into effect on 13 February 2003.

TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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