Phelsuma dubia Boettger, 1881

FAMILY: Gekkonidae

COMMON NAMES: Bright-eyed Day Gecko, Dull-green Day Gecko (English); Gecko diurne sombre (French)

GLOBAL CONSERVATION STATUS: Not yet assessed by IUCN.

SIGNIFICANT TRADE REVIEW FOR: French Polynesia, Mayotte, Wallis and Futuna Islands (France); Kenya; Madagascar; Mozambique; United Republic of Tanzania

Range States selected for review

Range State	Exports* (1994-2003)	Urgent, possible or least concern	Comments
France	0	Least concern	No trade reported; species does not occur in French Polynesia or on Wallis and Futuna Islands
Kenya	0	Least concern	No trade reported
Madagascar	1,488	Least concern	No commercial exports since 1994 because of Standing Committee recommendation to Parties concerning this and other Malagasy species.
Mozambique	0	Least concern	No trade reported
United Republic of Tanzania	14,114	Least concern	Quotas set. Locally abundant and probably introduced. High reproductive rate. Trade levels unlikely to be a threat.

*Excluding re-exports

SUMMARY

Phelsuma dubia is one of 30-40 species of day gecko in the genus *Phelsuma*. It is one of the most widespread species in the genus, occurring at low altitude in the western half of Madagascar, the Comoro islands, including Mayotte (to France), the east coast of mainland Africa and Zanzibar (Tanzania). Generally found at low altitudes, the species adapts well to human presence.

Day geckos in general are popular as pets and among specialists. Captive-bred individuals now also supply a considerable proportion of the market in consumer countries. Wild-caught specimens recorded in international trade in the period 1994-2003 have originated in Tanzania and the Comoros (not part of the review), the former beginning exports in 1996, the latter in 2000. Around 25,000 animals in total were recorded in international trade during the period. Tanzania established an annual export quota of 2,000 wild-caught animals per year in 1997; although exports in recent years, as recorded by importing countries, have considerably exceeded it. The basis for Tanzania's quota is not known. The Comoros exported almost 11,500 specimens since 2000.

It is at least locally abundant, although the overall size of the population is not known and no published population density estimates for this species have been located. Its wide range and ability to thrive in secondary habitats and to tolerate human disturbance mean that it is extremely unlikely to be threatened with extinction. Given the widespread distribution and potential reproductive rate of the species and the absence of local use, it is very unlikely that current levels of trade will have a significant impact on the wild population, even if there is substantial mortality between collection and export. International trade in this species is therefore of least concern. The situation should be reviewed if any significant changes in trade are noted.

SPECIES CHARACTERISTICS

Phelsuma dubia is one of 30-40 species of day gecko in the genus *Phelsuma*. It is one of the most widespread species in the genus, occurring at low altitude in the western half of Madagascar, the

Comoro islands, including Mayotte (to France), the east coast of mainland Africa and Zanzibar (Tanzania). It is likely that the populations on the African mainland and Zanzibar, and quite possibly those on the Comoros, are a result of introductions by humans (Anonymous, undated; Glaw and Vences, 1994; Spawls *et al.*, 2002).

The genus *Phelsuma* itself occurs in the Indian Ocean region, with a centre of diversity in Madagascar (ca 20-30 species) and a few species occurring on the other island groups in the region including the Comoros, Seychelles and Mascarenes. One species (*Phelsuma dubia* q.v.) occurs on mainland Africa, very likely as a result of accidental human introduction, and one as far east as the Andaman Islands. A few species are now established as feral populations in other parts of the world, such as Hawaii and Florida (USA) (Anonymous, undated).

The species is generally found at low altitudes and is at least locally abundant. It adapts well to human presence and occurs widely in plantations, gardens and other cultivated areas, predominantly in palm trees (including coconut palms), bananas and pandanus, but also in large shrubs and in buildings (Anonymous, undated; Glaw and Vences, 1994; Spawls *et al.,* 2002).

Oviparous, the female can lay up to six clutches of two eggs each following a single copulation. The eggs are glued to a suitable substrate, the female generally standing guard over them while they dry. Sometimes females return to eggs over the next several days, and may eat the shells once the young have hatched. Incubation period is generally 40-45 days (Glaw and Vences, 1994), sometimes over 50 (Anonymous, undated). Sexual maturity may be reached within eight months (Glaw and Vences, 1994). *Phelsum dubia* are largely insectivorous but will also take soft fruits, nectar, pollen and plant exudates (Spawls *et al.*, 2002).

The global conservation status of *Phelsuma dubia* has yet to be assessed by IUCN's Global Reptile Assessment. Its wide range and ability to thrive in secondary habitats and to tolerate human disturbance mean that it is extremely unlikely to be threatened with extinction. The overall size of the population is not known and no published population density estimates for this (or indeed any other) *Phelsuma* species have been located. However, ecologically similar species of *Anolis* in the Neotropics have been shown regularly to reach densities of many hundreds to several thousand individuals per hectare (Rodda *et al.,* 2001; Stamps *et al.*, 1997). Observation indicates that the more adaptable *Phelsuma* species, such as *P. dubia,* may achieve similar population levels at least locally (author's observations).

INTERNATIONAL TRADE

Day geckos in general are popular as pets and among specialist collectors in Europe, North America and, to some extent, Asia, particularly Japan. Historically, Madagascar has been the source of most of the day geckos in international trade, with exports of tens of thousands annually reported in the late 1980s and early 1990s (Jenkins and Rakotomampison, 1994). At that time some 1,500 *P. dubia* a year were exported. However, since 1994 the CITES Standing Committee has recommended that importing countries do not accept commercial imports from Madagascar of any *Phelsuma* species except for *P. laticauda, P. lineata, P. madagascariensis* and *P. quadriocellata*, for each of which annual quotas of 2,000 specimens a year have been maintained. This has probably led to increased demand for *Phelsuma* species from other countries. Captive-bred individuals now also supply a considerable proportion of the market in consumer countries.

Table 1: Exports* excluding re-exports of live wild *Phelsuma dubia*, 1994-2003

Export Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Comoros	0	0	0	0	0	0	2623	5080	2475	0	**10178**
Madagascar	1485	0	0	0	0	0	0	3	0	0	**1488**
Tanzania, United Republic of	0	200	374	605	1809	1554	1442	1497	2736	3897	**14114**
Total	1485	200	374	605	1809	1554	4065	6580	5211	3897	**25780**

(Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP World Conservation Monitoring Centre, Cambridge, UK.)

*Based on a review of comparative tabulations, which showed significant double counting within gross export data, reported imports were used as the basis for trade analysis.

COUNTRY ACCOUNTS

France (Mayotte)

Status:

Occurs on the island of Mayotte in the Comoro group in the Indian Ocean. The species does not naturally occur in either French Polynesia or the Wallis and Futuna Islands in the Pacific Ocean. There are no known naturalised populations there, nor any records of exports. On Mayotte the species is reported to be found over virtually the whole island and to be locally abundant, often occurring in gardens and cultivated areas (Baars, undated).

Management and trade:

There is no known local use of the species, nor any recorded international trade.

Kenya

Status:

Recorded from the coast in and around Mombasa and Nyali in Mombasa District. No population surveys have been carried out (Omondi *in litt.*, 2005).

Management and trade:

No trade is known to exist and no export permits for the species have been issued by Kenya's CITES Management Authority.

Madagascar

Status:

Widely distributed in low-lying regions in the western part of the island, with records from Toliara (Tuléar) in the south to Antsiranana (Diégo-Suarez) in the far north; also on offshore islands including Makamby and Nosy Bé. Occurs largely on palm trees, and is often recorded in cities (Glaw and Vences, 1994).

Management and trade:

No commercial exports have been reported since 1994, when the CITES Standing Committee issued a notification to Parties recommending that they suspend commercial imports of all *Phelsuma* species from Madagascar except *P. madagascariensis*, *P. laticauda*, *P. lineata* and *P. quadriocellata*. Before this the species was exported in relatively small numbers (total of 4,325 recorded in CITES annual reports for the years 1992-1994). Since then a few specimens have been exported under scientific permits**.** The species is not used domestically.

Mozambique

Status:

Reported by Spawls *et al.* (2002) from Mozambique Island (Ilha de Moçambique) off northern Mozambique.

Management and trade:

No export has been reported and there is no evidence of any domestic use of the species.

United Republic of Tanzania

Status:

The species is reported from Zanzibar and the northern coast of mainland Tanzania from the region of Bagamayo south to Singino near the mouth of the Rufiji River (Spawls *et al.*, 2002). Not apparently recorded on Pemba or Mafia (Spawls *et al.*, 2002). Population density is said to be particularly high around Dar es Salaam (Anonymous, undated).

Management and trade:

Tanzania has issued an annual export quota for wild-caught live animals of 2,000 since 1997. For 2004, 2005 and 2006, an additional quota of 40 F1 captive-bred specimens was added. Total recorded exports from Tanzania for the period 1997 to 2003 amount to ca 14,100 specimens, very close to the total number allowed by the annual quotas (14,000). However numbers recorded in individual years have varied considerably: records by importing countries indicate that the quota was exceeded by a considerable margin in 2002 and 2003, and again in 2004 (ca. 3,200 per year on average), although apart from the year 2002 (when Tanzania reported exporting just over 3,000 specimens), this is not reflected in Tanzania's annual reports but by the importing Parties.

There is no known local use of the species.

Given the widespread distribution and potential reproductive rate of the species and the absence of local use, it is very unlikely that current levels of trade will have a significant impact on the wild population, even if there is substantial mortality between collection and export. The situation should be re-reviewed if any significant changes in trade are noted.

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