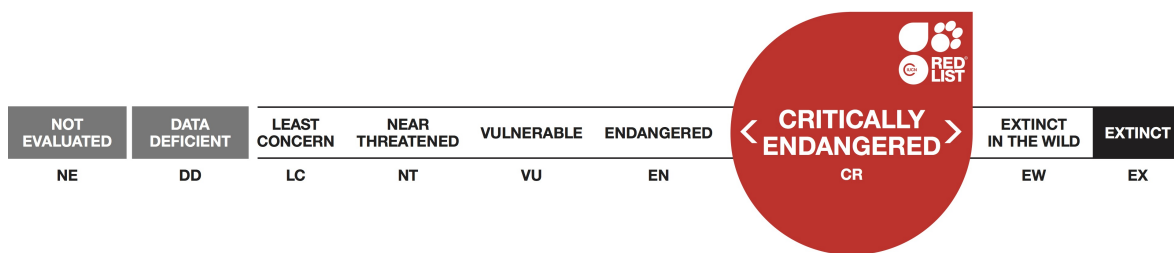


Cuora yunnanensis, Yunnan Box Turtle

Errata version

Assessment by: van Dijk, P.P., Blanck, T. & Lau, M.



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Taxonomy

| Kingdom | Phylum | Class | Order | Family |
|----------|----------|----------|------------|-------------|
| Animalia | Chordata | Reptilia | Testudines | Geoemydidae |

Taxon Name: *Cuora yunnanensis* (Boulenger, 1906)

Synonym(s):

- *Cyclemys yunnanensis* Boulenger, 1906

Common Name(s):

- English: Yunnan Box Turtle

Taxonomic Notes:

Cuora yunnanensis has been suggested to be an old example of an inter-specific hybrid, but a 1908 museum specimen was found to have unique mt-DNA indicating it to be a valid species status (Parham *et al.* 2004), and recent trade specimens of unreported origin agreed genetically with the 1908 specimen (He *et al.* 2007).

Assessment Information

Red List Category & Criteria: Critically Endangered B2ab(ii,iii,v); D [ver 3.1](#)

Year Published: 2010

Date Assessed: June 12, 2009

Justification:

The number of remaining individuals of *Cuora yunnanensis* are presumed to be exceedingly small, as only three animals have been confirmed since 1946, all since 2004, despite at least 15 years of searches for this species, combined with the intensive collection of all turtle species in China, and monitoring of these trade volumes for unusual turtles. Any remaining population(s) are therefore assumed to be extremely small and localized.

The known animals were obtained from three localities, but in at least two cases are thought to have been purchased in markets and had likely been transported there by humans.

Remaining animals of the species are under exceptional threat from collection, as the species potentially commands a very high price in the (illegal) pet trade, as well as in the consumption trade.

Previously Published Red List Assessments

2000 – Extinct (EX)

1996 – Data Deficient (DD)

1994 – Insufficiently Known (K)

1990 – Insufficiently Known (K)

Geographic Range

Range Description:

C. yunnanensis has been reported only from Kunming Fu and Tongchuan Fu [=Dongchuan *fide* Iverson, 1992, but refers to Zhongping (=Huize) City *fide* Blanck *et al.* 2006] in Yunnan, China, at the time of its 1906 description (Iverson 1992, Parham *et al.* 2004), and a single animal from Xi Shan (Western Mountains) near Kunming collected in 1940 (Zhang and Cheng 1946). It is likely that these animals were purchased in markets and may have been transported by humans, possibly for substantial distances (Blanck 2005). Three more specimens in the Institute of Zoology in Beijing (Parham *et al.* 2004, Blanck 2005) have no reported locality data or collection date. The origin of three recent specimens discovered since 2004 and now held in captivity has not been recorded (Zhou and Zhao 2004, Zhou 2005, He *et al.* 2007), and the precise geographic origin of *C. yunnanensis* remains subject of speculation, with northwestern Yunnan and adjacent Sichuan, northeastern Yunnan close to the Myanmar border, southern Yunnan, and northern Laos having been suggested (Blanck 2005, Blanck *et al.* 2006, Zhou *et al.* 2008, Yang and Rao, 2008).

Country Occurrence:

Native: China (Yunnan)

Population

The type series of *Cuora yunnanensis* consists of five animals collected at Kunming by a single collector, plus one from Tongchuan [Zhongping] collected by another collector, and another three museum specimens from Kunming, all collected at the same time (Parham *et al.* 2004, Blanck 2005), suggesting that the species was not particularly rare at this early period of exploration (1900–1906). Four more specimens were subsequently collected and stored in Chinese collections, one of these in 1940 (Parham *et al.* 2004, Zhou and Zhao 2004, Blanck 2005). Commercial turtle collectors and traders have extensively harvested turtles throughout China (Lau and Shi 2000), and extensive but unsuccessful search efforts had been made to locate *Cuora yunnanensis* in the wild or in trade. Based on this information, the Asian Turtle Trade Working Group (2000) considered the species extinct. However, a single animal, without data on its origin, was purchased in a Kunming market in 2004 (Zhou and Zhao 2004), showing that this conclusion was premature. At least two animals have subsequently been reported and are held in captivity (Zhou 2005, He *et al.* 2007, Yang and Rao 2008). There were initial concerns that the single 2004 animal could have been a hybrid animal that resembled *yunnanensis* in its head and throat pattern, but not its absence of an anal notch; however, the identity of the live animals as *yunnanensis* was genetically confirmed by He *et al.* (2007).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

No information is available beyond the general assumption that *Cuora yunnanensis* inhabits streams, lakes and/or swampy wetlands, the typical lifestyle of most *Cuora* species. The type locality, Kunming, is at just under 1,900 m altitude; a distribution range of 2,000–2,260 m altitude is generally cited (e.g., Yu 1998, Lau and Shi 2000), but has been questioned as being too high (Blanck 2005).

Females reach up to 17.5 cm CL at 850 grams, males about 15 cm at 375 grams (Zhou and Zhao 2004, Zhou 2005, Zhou *et al.* 2008). In captivity, one or two clutches per female per year, of 4–8 eggs per clutch (maximum eight eggs per year), have been reported (Zhou *et al.* 2008). Hatchlings emerge after 64–68 days of incubation at 28–30°C, and measure 32–35 mm at a weight of 6.5–8.3 grams (Zhou *et al.* 2008).

Systems: Terrestrial, Freshwater

Use and Trade

Cuora yunnanensis is of great value and potential demand in domestic and global pet trade; it may have been used for subsistence consumption historically. A few specimens have been used for museum collections and anatomical studies.

No animals have been observed in surveys of commercial trade; a number of trade and museum animals reported as *yunnanensis* proved to have been misidentified (Blanck 2005).

Threats (see Appendix for additional information)

The main site of presumed historical occurrence of *yunnanensis*, Kunming, is now an expansive city surrounded mainly by agricultural fields especially in the flat areas. The adjacent Kunming Lake is heavily

polluted; the lake's endemic newt *Cynops wolterstorffii* is considered extinct as a result of water pollution. Monofilament fishing nets were seen abandoned at the lakeshore in 2005, suggesting a risk of accidental drowning if *yunnanensis* persists (van Dijk pers obs 2005). Substantial areas of the lake have been encroached upon by expansion of the city of Kunming, though a large area of open water remains. The Western Hills area has been extensively developed for tourism, including roads, trails and a cable car, and contains a long-term settlement of rural people tending vegetable and fruit gardens (and presumably gathering local flora, fungi and fauna, potentially including turtles). Hence, habitat degradation and destruction are believed to represent threats.

Cuora yunnanensis has been restricted from international trade by inclusion in CITES Appendix II in 2000, but is reputed to be worth about USD 50,000 for the first animal to emerge from China into the international pet trade (Blanck *et al.* 2006), and several USD 1,000 for subsequent animals, generating strong incentives to search for and smuggle out any animal.

Conservation Actions (see Appendix for additional information)

Cuora yunnanensis is protected under Chinese domestic legislation and is included in CITES Appendix II.

Surveys to locate and protect any remaining animals and populations and their habitat are in progress; should one or more populations be found, effective in-situ protection of the species and its habitat are urgently required, alongside the establishment of an assurance colony for future re-introduction and population reinforcement.

A single pair in captivity has successfully reproduced (Zhou *et al.* 2008) and could represent the nucleus of a captive assurance colony.

Credits

Assessor(s): van Dijk, P.P., Blanck, T. & Lau, M.

Reviewer(s): Rhodin, A.G.J. & Kuchling, G.

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External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| Habitat | Season | Suitability | Major Importance? |
|--|--------|-------------|-------------------|
| 0. Root -> 18. Unknown | - | Unknown | - |
| 5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha) | - | Unknown | - |
| 5. Wetlands (inland) -> 5.5. Wetlands (inland) - Permanent Freshwater Lakes (over 8ha) | - | Unknown | - |
| 5. Wetlands (inland) -> 5.2. Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks | - | Unknown | - |
| 5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls) | - | Unknown | - |

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| Threat | Timing | Scope | Severity | Impact Score |
|--|-----------|---|----------------------------------|------------------|
| 5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target) | Ongoing | Whole (>90%) | Very rapid declines | High impact: 9 |
| | Stresses: | 2. Species Stresses -> 2.1. Species mortality | | |
| 5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest] | Ongoing | Whole (>90%) | Very rapid declines | High impact: 9 |
| | Stresses: | 2. Species Stresses -> 2.1. Species mortality | | |
| 5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest] | Ongoing | Majority (50-90%) | Causing/could cause fluctuations | Medium impact: 6 |
| | Stresses: | 2. Species Stresses -> 2.1. Species mortality | | |
| 9. Pollution -> 9.1. Domestic & urban waste water -> 9.1.1. Sewage | Ongoing | Majority (50-90%) | Causing/could cause fluctuations | Medium impact: 6 |
| | Stresses: | 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other | | |
| 9. Pollution -> 9.2. Industrial & military effluents -> 9.2.3. Type Unknown/Unrecorded | Ongoing | Majority (50-90%) | Causing/could cause fluctuations | Medium impact: 6 |
| | Stresses: | 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other | | |
| 9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides | Ongoing | Majority (50-90%) | Causing/could cause fluctuations | Medium impact: 6 |

Stresses: 1. Ecosystem stresses -> 1.2. Ecosystem degradation
 2. Species Stresses -> 2.3. Indirect species effects ->
 2.3.8. Other

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| |
|---|
| Conservation Actions in Place |
| In-Place Research, Monitoring and Planning |
| Action Recovery plan: No |
| Systematic monitoring scheme: No |
| In-Place Land/Water Protection and Management |
| Conservation sites identified: Yes, over part of range |
| Occur in at least one PA: Unknown |
| Area based regional management plan: Unknown |
| In-Place Species Management |
| Harvest management plan: No |
| Successfully reintroduced or introduced benignly: No |
| Subject to ex-situ conservation: Yes |
| In-Place Education |
| Subject to recent education and awareness programmes: Unknown |
| Included in international legislation: Yes |
| Subject to any international management/trade controls: Yes |

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| |
|--|
| Conservation Actions Needed |
| 1. Land/water protection -> 1.1. Site/area protection |
| 1. Land/water protection -> 1.2. Resource & habitat protection |
| 2. Land/water management -> 2.1. Site/area management |
| 2. Land/water management -> 2.3. Habitat & natural process restoration |
| 3. Species management -> 3.2. Species recovery |
| 3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation |
| 4. Education & awareness -> 4.3. Awareness & communications |

| |
|--|
| Conservation Actions Needed |
| 5. Law & policy -> 5.1. Legislation -> 5.1.1. International level |
| 5. Law & policy -> 5.1. Legislation -> 5.1.2. National level |
| 5. Law & policy -> 5.1. Legislation -> 5.1.4. Scale unspecified |
| 5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.1. International level |
| 5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level |
| 5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.4. Scale unspecified |

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| |
|--|
| Research Needed |
| 1. Research -> 1.1. Taxonomy |
| 1. Research -> 1.2. Population size, distribution & trends |
| 1. Research -> 1.3. Life history & ecology |
| 1. Research -> 1.5. Threats |
| 1. Research -> 1.6. Actions |
| 3. Monitoring -> 3.1. Population trends |

Additional Data Fields

| |
|---|
| Distribution |
| Estimated area of occupancy (AOO) (km ²): 0-10 |
| Continuing decline in area of occupancy (AOO): Yes |
| Number of Locations: 1 |
| Population |
| Number of mature individuals: 0-50 |
| Continuing decline of mature individuals: Yes |
| Population severely fragmented: Yes |
| Habitats and Ecology |
| Continuing decline in area, extent and/or quality of habitat: Yes |
| Generation Length (years): 20 |

Errata

Errata reason: An errata assessment is required to generate a revised PDF without the range map which had been included in error; no range map was available when this assessment was originally published.

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