

Transfer of Indochinese Box Turtle *Cuora galbinifrons* from Appendix II to Appendix I

Proponent: Viet Nam

Summary: The Indochinese Box Turtle *Cuora galbinifrons* is a medium-sized omnivorous turtle, reaching up to 19 cm carapace length, known from China, Lao PDR, Viet Nam and possibly northeastern Cambodia. It is predominantly terrestrial and inhabits cool upland, moist, closed-canopy forest, usually between 300 and 1700 m altitude. From observations in captivity it seems that *C. galbinifrons* is slow to mature (10-15 years) and has low fecundity, with a single clutch of one to three eggs produced annually.

Apparently once common, field encounters with species are reportedly now rare even during dedicated surveys, indicating that populations have suffered severe declines. These are ascribed to over-collection, as the species is reportedly in high demand in the international pet trade and the Asian food market. The species is collected both during targeted searches and when encountered in searches for other forest products. It is reported that any individuals encountered are collected, regardless of legal protection status or location inside protected areas. Collected turtles are traded, apparently mostly illegally, through a network of local middlemen before being exported or consumed locally. The species is also affected by habitat loss and degradation, although this is generally considered to have less of an impact than over-collection. The species was classified as Critically Endangered by IUCN in 2000 due to an inferred 80% population decline. It is listed as endangered in the Viet Nam Red Data Book, and also as endangered in the China Red Data Book of Endangered Animals. It is legally protected from exploitation in China and Lao PDR. In Viet Nam it is under evaluation for inclusion under strict protective legislation. Enforcement is said to be insufficient.

The species has been included in Appendix II since 2000. Since then around 2500 specimens have been reported in trade in the CITES trade database, the majority in a single shipment of 1500 recorded by Viet Nam as imported from Lao PDR in 2006, and reported as ranched specimens. No exports were reported by Lao PDR in that year. However, the species is known to be difficult to raise in captivity, owing to a high rate of mortality in eggs and hatchlings and there are not known to be any facilities for rearing the species in Lao PDR. Around 480 animals traded under CITES since 2000 have been recorded as being of wild origin. Observations from markets indicate that actual volumes in trade may be or may have been several orders of magnitude greater than reported legal trade volumes. From 2000-2003 over 15 000 individuals were recorded from Hong Kong markets alone yet only 905 individuals were reportedly exported worldwide in that period, suggesting a very high level of illegal trade in this species. The species was included in the Animals Committee's Review of Significant Trade process, which eventually resulted in the Standing Committee recommending in July 2009 that all Parties suspend trade in the species with Lao PDR and Viet Nam. These trade suspensions are still (late 2012) in place.

Analysis: *Cuora galbinifrons* is a relatively widespread species that has been harvested intensively. There is no quantitative information on population levels or trends. However, the species is now apparently rarely recorded in surveys, with anecdotal information indicating that it was once common. It may meet the criteria for inclusion in Appendix I in Paragraph C of Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)* on the basis of inferred population decline.

Supporting Statement (SS)	Additional information
China, Lao PDR, Viet Nam, Cambodia (unconfirmed).	<p style="text-align: center;"><u>Range</u></p> <p><i>The proposal to list the genus Cuora in Appendix II at CoP 11 included Cambodia as a range state for this species based on Lehr et al. (1998).</i></p>

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<u>IUCN Global Category</u>	
Critically Endangered (Assessed 2000).	<i>Critically Endangered A1d + 2d ver 2.3 (needs updating).</i>
Biological criteria for inclusion in Appendix I	
<u>A) Small wild population</u>	
(i) Population or habitat decline; (ii) small sub-populations; (iii) concentrated geographically during one or more life-history phases; (iv) large population fluctuations; (v) high vulnerability	
<p>No population data are available for this species. Anecdotal evidence suggests this species is uncommon and rarely encountered. Field surveys in Lao PDR 1993-1999 had an encounter rate of one <i>C. galbinifrons</i> per day when working with a trained turtle hunting dog in prime turtle habitat.</p> <p>Field surveys from Phu Yen province, Viet Nam, in 2012 found a single <i>C. galbinifrons</i> in a traditional collecting area during a week using a team of dogs, estimating a density of less than one <i>C. galbinifrons</i> per km².</p> <p><i>C. galbinifrons</i> does not reach sexual maturity until 10-15 years old, and breeding records from captive animals suggest they produce one clutch a year of 1-3 eggs. This slow growth rate and low fecundity makes this species vulnerable to high rates of decline.</p>	
<u>B Restricted area of distribution</u>	
(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability; (iv) decrease in distribution, population, area or quality of habitat, or recruitment)	
<p>No estimation is given on the area of distribution of this species. It is recorded from southern China including Hainan, from northern, central and southern Viet Nam, and neighbouring provinces in Lao PDR. Its range possibly extends into north-eastern Cambodia however this remains unconfirmed. Its area of habitat will be much smaller than this as it is restricted to upland, moist, closed canopy forest, much of which has been lost due to deforestation.</p>	<i>Within Lao PDR, C. galbinifrons is known from just three provinces, all of which share a border with Viet Nam (Stuart and Platt, 2004; Stuart et al., 2011).</i>
<u>C) Decline in number of wild individuals</u>	
(i) Ongoing or historic decline; (ii) inferred or projected decline due to decreasing area or quality of habitat, levels of exploitation, high vulnerability, or decreasing recruitment	
<p><i>C. galbinifrons</i> has suffered dramatic population declines due to harvesting for the international pet trade and the Asian consumption trade. It was listed as Critically Endangered on the IUCN Red List of Threatened Species in 2000 due to an estimated 80% or greater decline in the past three generations, which was also</p>	<i>In 2011, the Conservation of Asian Tortoises and Freshwater Turtles Workshop noted that habitat destruction and intensive hunting have caused rapid declines in C. galbinifrons (Horne et al., 2012).</i>

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<p>projected to continue. Although this assessment needs updating, the Conservation of Asian Tortoises and Freshwater Turtles Workshop held in 2011 recommends that <i>C. galbinifrons</i> retains this status.</p> <p>Much of the information on the population trends of this species is anecdotal – it is reported that <i>C. galbinifrons</i> is collected intensively throughout its range, and hunters report that this once common species is now increasingly difficult to find. The majority of research for <i>C. galbinifrons</i> comes from Viet Nam, for instance hunters have claimed that where they used to be able to collect 20 individuals a day in the 1990s, by 2006 they could only find a few animals a week.</p> <p>In 2012 local hunters in south-eastern Viet Nam reported that they use a large pack of hunting dogs to collect 50 individuals annually. Given that this is the same area with an estimated density of less than one individual per km², this level of collection appears unsustainable.</p> <p>A great deal of survey work has been undertaken in Viet Nam between 2009 – 2012 focused on determining the range and priority habitat for <i>Cuora galbinifrons</i>, with a focus on <i>Cuora g. bourreti</i> and <i>Cuora g. picturata</i>. Anecdotal information from interviews throughout the range has found that historic quantities of the species available for collection in the forest have been greatly reduced, with many hunters stating that while the species was common 7-15 years ago, it is now increasingly difficult to find.</p>	

Trade criteria for inclusion in Appendix I

The species is or may be affected by trade

This species is in decline due to the collection of wild individuals for the international pet trade and Asian consumption trade. It is believed that most *Cuora galbinifrons* traded in Viet Nam are exported to Chinese markets.

All age classes except hatchlings are seen in trade; juveniles are normally kept at the village level as traders prefer not to buy very small individuals due to high mortality.

Some shells or shell fragments are traded internationally, *Cuora galbinifrons* were reported as rare but present among imported turtle shells for Chinese traditional medicine in Taiwan POC.

The UNEP-WCMC CITES trade database recorded a total of 2529 net exported animals or specimens of *C. galbinifrons* during the period 2000-2011 (Gross exports amounted to 2569 animals or specimens).

According to the CITES trade database, 2497 animals were reported as imported between 2000-2011, of which 2479 were live. The most common reported source of the animals was ranched (60%) although these all come from one shipment of 1500

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<p>The species was present in nearly every reported market survey that looked at turtle trade in China and Hong Kong since recording began in 1993. All these animals appeared wild caught and most were offered in the food markets. During the period of 2000-2003 in Hong Kong markets alone over 15 000 <i>C. galbinifrons</i> were recorded. During this same period 905 animals are recorded as exported worldwide, indicating a high volume of illegal and unrecorded trade. Recent records shows a continued high volume of trade, with 1826 animals observed in food markets and 1944 animals in pet markets recorded in Guangzhou markets, China, for 2008-2011.</p> <p>There is a demand from commercial turtle farms for wild-caught turtles for founder stock, which is driving the collection of wild individuals through increased trade prices.</p> <p>In an innovative analysis of risk posed by international trade, <i>Cuora galbinifrons</i> emerged with a relatively high score (1.5 out of a maximum of 2.0) of endangerment from trade.</p>	<p><i>animals from Lao PDR, reported as imports by Viet Nam. The next most common source was wild (19%), followed by pre-Convention individuals (11%) and those bred in captivity (8%).</i></p> <p><i>For all reported (re-)exports, there were a total of 560 animals, 543 of which were live. The majority of animals were recorded as being for commercial purposes (88%), with 4% being recorded as for scientific purposes, 3% for zoos, 2% as personal and 2% for exhibits. The source for the animals was most commonly recorded as pre-Convention animals (85%), with 3% recorded as of wild origin and 3% bred in captivity. Eight per cent were recorded as of unknown origin (UNEP-WCMC, 2012).</i></p> <p><i>In a survey of turtles in markets in Hong Kong 2000-2003, C. galbinifrons was the fourth most traded species overall accounting for 4% of total trade, and was the third most traded food species, accounting for 10% of turtle trade in the food market (Cheung and Dudgeon, 2006).</i></p> <p><i>C. galbinifrons is the second most valuable species of turtle in trade in Viet Nam and Lao PDR after the C. trifasciata complex (Stuart in litt., 2012).</i></p> <p><i>The species is known to be in trade in the USA. According to one source writing in a US-based turtle forum in December 2011, hatchlings command prices of around USD800 while adults, being extremely hard to come by, are associated with even higher price tags (http://www.turtleforum.com/forum/upload/index.php?showtopic=143014&hl=%2Bgeoemyda+%2Bjaponica).</i></p> <p><i>The majority of trade in this species is illegal, and more must be done to increase national protection (particularly in the case of Viet Nam) and enforce legislation in order for international legislation to be effective (Raffel and Meier, 2012).</i></p> <p><i>Reported seizures involving C. galbinifrons provide evidence of illegal activities involving this species, although it is unclear whether any/all of these shipments were destined for international markets. In 1998, Vietnamese authorities reported having seized an estimated 700 (800 kg) of turtles and tortoises of 13 species, of which a small number were C. galbinifrons, from a public bus destined for Hanoi. The trader claimed that the animals were raised on farms in southern Viet Nam, but information provided to the authorities suggested they were collected from the wild in Viet Nam, Laos PDR and possibly Cambodia. The cargo was for possible onward shipment to the Chinese market (TRAFFIC, 2012). In 1999, an estimated 150 C. galbinifrons were among specimens seized from a truck travelling from Central Vietnam to Hanoi, which, at the time, was the largest number of specimens of this species observed in a single trade seizure (Hendrie, 1999). In 2004, 277 kg of turtles were seized en route to Vinh City, Viet Nam, of which an unknown number were C. galbinifrons. Police suspected that the turtles came across the border from Lao PDR (TRAFFIC, 2012).</i></p>

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<p>Other information</p> <p>This species is restricted to upland, moist, closed canopy forest and is therefore vulnerable to habitat loss particularly through deforestation. However, this is likely to be a localised threat, and parts of the species range do fall within protected areas.</p> <p style="text-align: center;"><u>Threats</u></p> <p style="text-align: center;"><u>Conservation, management and legislation</u></p> <p><i>Cuora galbinifrons</i> was included in CITES Appendix II 2000 and was selected for the Review of Significant Trade (RST) at AC17 in 2001.</p> <p>The genus <i>Cuora</i>, including <i>Cuora galbinifrons</i>, is included in Annex B of EU Commission Regulation no. 709/2010 (amending EC Regulation 338/97), which requires that a corresponding import permit must be issued by the country of import before a shipment of the species can enter the European Union.</p> <p>It has been listed in Appendix II of CITES since 2000. It is listed as Endangered in the Viet Nam Red data Book, and also as Endangered in the China Red Data Book of Endangered Animals.</p> <p>In China, <i>C. galbinifrons</i> is listed as a state major protected species, which limits the collection of wild individuals to scientific research, captive-breeding, exhibition and other special reasons. The import and export of this species must be certified by the government.</p> <p>There is a total ban on hunting and collecting this species in Lao PDR.</p>	<p><i>The species was selected for review of significant trade (RST) at AC17 (2001). The species was reviewed at AC18 (2002) and placed in Category 2 for all range States. At AC19 (2003) the AC was informed that China had suspended commercial export of this species since June 2000; consequently China was placed in Category 3 and was removed from the RST. No replies were received from Lao PDR and Viet Nam, and the AC recommended that they be placed in Category 1. AC24 (2009) recommended that action be taken by the Secretariat with the AC Chair. At SC58 (2009) the Secretariat suggested that, in view of the unsatisfactory conservation status of this species and the indication of some continuing exports from Lao PDR and Viet Nam, the Standing Committee should request the Secretariat to pursue contacts with these countries about the implementation of Article IV, paragraphs 2 (a) and 3 for this species and report to SC59. However, the SC recommended that, until the recommendations of the AC have been implemented to the satisfaction of the Secretariat and the AC Chair, all Parties suspend trade in <i>Cuora galbinifrons</i> with Lao PDR and Viet Nam. The SC also instructed the Secretariat to report on these issues at SC61 and to contact and work with Lao PDR and Viet Nam to address the AC's recommendations, so that they could be resolved in a manner that addressed the conservation concerns for these species.</i></p> <p><i>Since 10 May 2006, imports of wild specimens of <i>C. galbinifrons</i> from China have been subject to an EU import suspension (implemented on the basis of Article 4(6)(b) Council Regulation (EC) No 338/97). EU import suspensions have been in place for imports of wild specimens of this species from Viet Nam and Lao PDR since 26 November 2010.</i></p> <p><i>Although legally protected in Lao PDR, trade continues almost unabated due to the</i></p>

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<p><i>C. galbinifrons</i> is currently not under any specific protection in Viet Nam. Hunting permits are required by law for the collection of any wild animals, and also for the transportation of wild animals. Non-protected wildlife species can be registered for farming as long as founder stock is bought from captive-bred animals or from the government. However, <i>C. galbinifrons</i> is currently under consideration for inclusion within Viet Nam's principal protection law Decree 32 which would give it a higher level of legal protection.</p> <p>In 2011 the Conservation of Asian Tortoises and Freshwater Turtles Workshop discussed recommendations for <i>C. galbinifrons</i> as a Critically Endangered species. This included the transfer of this species to Appendix I and stressed the need for increased enforcement efforts and higher penalties for those convicted of illegally trading the species.</p>	<p><i>porous border with Viet Nam and limited resources and capacity of law enforcement personnel (Stuart et al., 2011).</i></p> <p><i>According to the 2011 Conservation of Asian Tortoises and Freshwater Turtles Workshop, recent advances in captive husbandry techniques may allow captive breeding to play a greater role in the future conservation of this species. However, due to the species' relatively limited annual reproductive potential, it was considered that a decrease in human-induced adult mortality would have the greatest positive impact on the recovery of wild populations. The workshop therefore recommended greater protection of remaining wild populations of <i>C. galbinifrons</i>, through greater habitat protection and increased anti-poaching programmes, as well as transfer of the species from CITES Appendix II to I. Surveys to identify additional localities were regarded as a secondary priority (Home et al., 2012).</i></p>
<u>Similar species</u>	
<p><i>Cuora</i> box turtles can be separated from all other turtles by the combination of possessing a single hinge on the plastron allowing them to effectively close their shell, their distinctly domed to highly domed shell, and generally bright facial colouration that includes a strip of granular skin between the eye and tympanum. <i>C. galbinifrons</i> can be distinguished from other <i>Cuora</i> box turtles by a large yellow to orange area on each side of their carapace.</p>	
<u>Captive breeding/Artificial Propagation</u>	
<p>This species is regarded as difficult to breed and maintain in captivity as it is slow to mature and produces small clutches. There is high mortality in eggs and juveniles. It is maintained by hobbyists in Asia, Europe and USA in modest numbers, and there is a European studbook with over 150 registered animals.</p> <p>The Turtle Conservation Centre at Cuc Phuong National Park has been breeding <i>Cuora galbinifrons</i> (subspecies <i>bourreti</i> and <i>galbinifrons</i>) with limited success; survival in eggs is low and long term survival of hatchlings is lower. Around 30 <i>Cuora galbinifrons</i> of all three subspecies are maintained at the centre.</p>	

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<p>Three subspecies have been identified: <i>C. galbinifrons galbinifrons</i>, <i>C. galbinifrons bouretti</i> and <i>C. galbinifrons picturata</i>. These subspecies are recognised as distinct species by some authors.</p>	<p style="text-align: center;"><u>Other comments</u></p> <p><i>Stuart and Parham (2004) proposed that C. galbinifrons bouretti and C. galbinifrons picturata should be raised to full species based on morphological differences. However Fritz et al. (2006) argue that wide intergradation zones exist between specimens and subspecies status should thus be retained. This proposal follows this standard. Recent work by Spinks et al. (2012) once again recommends that C. galbinifrons bouretti and C. galbinifrons picturata should be raised to full species based on analyses of mitochondrial and nuclear DNA of the three subspecies.</i></p> <p><i>According to the IUCN Red List Assessment, the conservation situation of this species is made even more acute by the diversity of subspecies: C. g. bourreti Obst & Reimann, 1994, C. g. galbinifrons Bourret, 1939, C. g. picturata Lehr, Fritz & Obst, 1998 and C. g. serrata Iverson & McCord, 1992. Cuora galbinifrons serrata has since been elevated to full species. Some consider C. galbinifrons to be so highly terrestrial that it should not belong within the genus Cuora, proposing the genus Cistoclemmys to accommodate this. Other authors do not accept this.</i></p>

Reviewers: C. Shepherd.

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