

**Studbook breeding program**  
***Cuora mccordi***  
**(McCord's box turtle)**



Photo: Henk Zwartepoorte

**Annual report 2014**

**Henk Zwartepoorte, studbook keeper**

**Elmar Meier, co studbook keeper**



**E**uropean  
**S**tudbook  
**F**oundation

KvK nr. 41136106  
[www.studbooks.eu](http://www.studbooks.eu)

## Contents:

1. Introduction
2. Studbook population
3. Locations
4. Living population
5. Births
6. Imports
7. Deaths
8. Transfers
9. New entries
10. Discussions
11. Activities planned for 2015
12. References

### **1.Introduction:**

*Cuora mccordi* was described by Ernst (1988), based on a series of 12 specimens collected in the early 1980's. All specimens were derived from the Hong Kong turtle dealer, Oscar Shiu.

They were reported to have been purchased from locals near the city of Baise/Bose/ Paise in south-western Guangxi Province, China, close to the border of Yunnan Province, China.

The locals claimed to have collected them in the surrounding "Highlands" of that city. Since those years there is an ongoing discussion about possible sightings in the wild, however concrete reliable information on this is not available. By many the species is supposed to be extinct in the wild.

During 2008 a field trip was made by Ting Zhou, Torsten Blanck, William P. McCord and Pi-Peng Li in search of the natural habitat of the species. No living specimens have been found, but reliable information from local people were gathered (2008). Additional field trips were planned.

Also with respect to the pure status of the species for a long time there has been disagreement and confusion. Genetic analyses during the past 8 years however indicate that *C.mccordi* is not a hybrid, but a valid species with proof of wild origin still pending. (Stuart and Parham, 2004; Stuart and Parham, 2006; Spinks and Shaffer, 2006).

What is for sure is the fact that the captive population in both the USA and Europe is still very small with few founder animals. Reproduction in Europe so far was only officially reported by the International Centre for Conservation of Turtles (IZS) in the Munster Zoo in Germany. Good to see that in 2014 at 4 more ESF studbook collection reproduction is reported. The basis for this ESF

studbook consists mainly of the three founder groups in the Munster Zoo/IZS and along with these new breeding 2014 results some additional founders animals from two private collections. The exact number of founders animals is unknown. All three groups at the Munster Zoo/IZS are producing offspring on a regular basis since 2004.

Positive element since the start of the studbook is the increase from 15 animals to a total of 147 registered specimens mainly caused by the good breeding results at the Munster Zoo/IZS during the first years but followed by others during the past years.

But the arrival during the past few years of 6 specimens at A Cupulatta on Corsica/France and from several privates are very welcome. In 2014 the group at A Cupulatta reproduced 4 offspring from one pair. At the Rotterdam Zoo 3 were born from one Sire and two possible Dams. Furthermore 4 births are reported by two private ESF locations, respectively 4 and 1.

## **2. Studbook population:**

December 31, 2014 the total studbook population consists of 152.64 (147). This again is, like last year, a growth of the studbook population compared to December 31, 2013 of this time with 18 specimens. Remarkable is the unequal balance between males and females. Certainly an increase of males would be very welcome.

## **3. Living population:**

December 31, 2014 the living studbook population consists of 114.76 (133) specimens. These 133 specimens are kept at 11 private collections (6 in Germany, 2 in the Netherlands, 1 in the Czech Republic, 1 in the United Kingdom and 1 in Austria) and at 3 EAZA institutions and A Cupulatta on Corsica/France and the Natural History Museum in Dresden. In total 22 specimens have to be considered as Lost To Follow up (LTF). In 2014 15 animals were transferred to a location outside the ESF-studbook and as such have to be considered as LTF. Two females were exchanged with the Atlanta Zoo in the USA in 2010 and as such being no longer available for the Europe based ESF studbook.

## **4. Locations:**

December 31, 2014 the number of participants counts twelve collections; 11 private collections (6 in Germany, 2 in the Netherlands, 1 in the United Kingdom, 1 in the Czech Republic, 1 in Austria) and 3 EAZA zoos (Munster/IZS, Whipsnade and Rotterdam), the Natural History Museum in Dresden/Germany and the turtle park A Cupulatta on Corsica/France. For

privacy reasons the names of the private collections are not mentioned in this annual report.

### **5. Births:**

During 2014 in total 16 births are reported; 4 were born at the Munster Zoo/IZS, 3 at the Rotterdam Zoo and 4 at Cupulatta/Corsica.

### **6. Imports:**

There has been no reported imports into the studbook during 2014. However the entrance of 4 females at a private collection can be considered as an import.

### **7. Deaths:**

During 2014 just 1 death is reported. It concerned a 2 years old captive born animal at Munster/IZS. In general the death rate within the studbook is remarkably very low which is a positive element.

### **8. Transfers:**

During 2014 14 transfers were carried out within the studbook. These 14 transfers concerned transfers from the Munster zoo/IZS to privates. 4 Adult founder animals were returned to the legal owner; whether this location will remain a studbook participant has to become clear. 8 Captive born Munster zoo/IZS animals were sent on loan to 3 different private locations, resulting in two new private studbook participants. 2 Specimens were transferred from 1 studbook participant to another. 14 Munster Zoo/IZS animals went to locations outside the studbook and as such have to be considered as Lost To Follow up (LTF). Of course these 14 LTF animals are a great loss for the studbook. The fact that they all were captive born makes this loss more or less acceptable.

### **9. New entries:**

During 2014 0.4.0 new animals were reported to the studbook by a Dutch participant.

### **10. Discussions:**

As indicated earlier the accurate assessment of all founder animals was not easy. However now all individual specimens are identified and photographed. Good development is the involvement and cooperation with private keepers. The total number of current active participants (zoos and privates) increased to fifteen. At present still a limited number of EAZA zoos is involved in active breeding programs for *Cuora* species. At EAZA meetings this situation will get more attention soon in order to include zoos more actively in this.

At the March 2013 CITES Conference Of Parties all *Cuora* species (with an exception for *Cuora amboinensis*) remained listed as CITES appendix 2 with a zero export quota. However for *C.amboinensis* the situation remained unchanged although international trade in this species still exists. For a number of *Cuora* species international legal trade is non existing and of some species such as *C. mccordi*, *C. yunnanensis*, *C. zhoui* occurrence in the wild is highly doubted. Illegal trade however is ongoing. The zero export quota will certainly hamper the international exchange of studbook animals within legal and well respected studbook breeding programs by EAZA, AZA and ESF. Exception in a sense of quicker and easier application and issuing of CITES documents for these species need to be investigated. Furthermore law enforcement in the countries of origin desperately needs improvement.

### **11. Activities planned for 2015:**

1. Drafting and publishing husbandry and breeding guidelines. This action point was already included in former reports. But we definitely hope to carry it out this year. This point is a repetition of last years plan but due to lack of time this is postponed.

2. Search for additional studbook specimens. This point is still slowly improving. A few Munster zoo/IZS born animals were transferred to private collections creating and improving zoo/private cooperation. How many private animals are kept outside the studbook is still unknown but it can be expected that as soon as private keepers become aware of the fact that species conservation is not just a zoo matter they will soon follow and seek contact with the ESF studbook. Contact about participation is in progress with keepers in Europe.

3. Incubation temperature experiments with respect to producing males. These experiments are currently running and next year certainly results of these can be expected. In the USA experiments with *Cuora flavomarginata* egg incubation showed that incubation at 23 degrees Centigrade resulted in a majority of males. By one non studbook participating breeder in Europe incubation at low (23 degrees C) temperatures resulted in a higher death of embryos. This indicates that these experiments need to be carried out very carefully and perhaps low incubation at 22 to 24 must be done only during the sex determining period between 3 and 4 weeks after laying.

A strongly to be recommended apparatus for incubation at lower temperatures is the Lucky Reptile incubator which is sold Europe wide for reasonable prices. At the Rotterdam Zoo there are good experiences with that.



Photo: Henk Zwartepoorte

4. Further improvement of the efforts exchanging specimens with TSA members in the USA.

But given the difficult legal procedures this aim will remain difficult and slow.

5. Gathering and compiling of all relevant literature.

6. Completion of the studbook specimens photo archive. This aim is almost finished and all new entries will be photographed. All studbook specimens are photo documented. See below the ESF *C.mccordi* studbook keepers at work photographing and numbering Munster Zoo/IZS *Cuora* specimens.

7. At the EAZA 2013 reptile and amphibian midyear meeting in Leipzig/Germany by the ESF studbook keeper/turtle RCP officer/EAZA RTAG vice chair for turtles Zwartepoorte a proposal was done to form a *Cuora* task force consisting out of a number of representatives from EAZA and ESF. At present these efforts did not result in concrete participation by many EAZA zoos. At the 2015 EAZA conference at the Wroclaw Zoo in Poland new initiatives will be taken and within the Regional Collection (RCP) the *Cuora* genus will have top priority.



Photo: Richard Struijk

## 12. References:

SPINKS, P. & H. B. SHAFFER. 2006. Conservation phylogenetics of the Asian box turtles (Geoemydidae, *Cuora*): mitochondrial introgression, numts, and inferences from multiple nuclear loci. *Conservation Genetics* 8(3):641–657.

STUART, B. L. & J. F. PARHAM. 2004. Molecular phylogeny of the critically endangered Indochinese box turtle *Cuora galbinifrons*.

*Molecular Phylogenetics and Evolution* 31:164–177.

Stuart, B.L. & J.F. Parham. 2006. Recent hybrid origin of three rare Chinese turtles.

*Conservation Genetics* 8(1):169–175.

Ting Zhou, Torsten Blanck, William P. McCord and Pi-Peng Li. 2008.

Tracking *Cuora mccordi* Ernst, 1988: The first record of its natural habitat; a re-description; with data on captive populations and its vulnerability.

*Hamadryad* Vol. 32, No. 1, pp. 57 – 69, 2008.

Copyright 2008 Centre for Herpetology, Madras Crocodile Bank Trust.

May, 2015.

Henk Zwartepoorte. ESF *Cuora mccordi* studbook keeper.