Studbook breeding programme
Testudo hermanni hermanni
(Hermann's tortoise)

Photo by: L. Woldring (Sardinia 2013)

Annual report 2013

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1. Introduction

It has been a while since the last annual report and studbook was published (2007 and 2010). Main reason for this delay was caused by software related problems. I lost half of the studbook due to computer failure and a broken back up. Also the fact that SEBAG doesn't work properly under Windows 8, it will not generate a report automatically, took me some time to make a report.
Since I have re-entered the missing animals and updated the studbook as good as possible I am very motivated to continue managing this studbook in a pro-active way. I will publish reports on an annual basis as is requested by the ESF.
Next to the administrational task as studbook keeper I also undertook other activities. I contacted several serious breeders of locality pure animals mainly in Italy. I hope they will register their animals in the studbook. I also contacted Chris Leone who keeps a studbook for this subspecies within the US.
During a holiday in Sardinia last year I did a small survey. I only found two young males.

2. Current living studbook population

The current population consists of 129 living animals. Of which: 28 males, 35 females and 66 juveniles. (28.35.66)
Only 19 animals are from Wild or Unknown origin. This means that most of the population consist of F1 and F2 captive bred specimens.
The original localities of the founder animals are: Var region (F), Southern Tuscany (I), Apulia (I) and animals from mixed or unknown origin. No more animals from Corsican (F) origin are alive in the studbook.

3. Locations

The living population is spread over 15 locations, 9 in the Netherlands, 4 in Germany and 1 in Italy.

4. Births

Births did take place at several locations. Unfortunately not all births were reported to the studbook keeper. 22 hatchlings were entered the studbook. These animals were born at 3 locations.

5. Imports

The Hermann's tortoise in general is listed in CITES appendix 2 EU appendix A. According to CITES (cites.org) between 2009 and 2013 41377 *Testudo hermanni* were exported and imported. This number includes also some carapaces. 75 animals have as source: Wild and were exported from China into the USA. This is highly remarkable as *Testudo hermanni* does not naturally occurs in China!!!!
Most animals came from source D and C. Commercially and not-commercially bred specimens.
I am quite surprised that so many Hermann's tortoises are exported each year.

6. Deaths

Between 2009 and 2013 8 deaths were reported. 3 animals originated from the wild, 2 from unknown origin and 3 were captive bred.
Hatchlings are very delicate and especially within the first two years mortality is registered.

7. Transfers

Several transfers took place. Animal 47 moved from location WOLDRING to location BISSCHOP as it was a French male and is put together with a nonrelated French female. Animals 115 and 116 were obtained by location RULFFS from breeder NIESSEN. The number 130, 131 and 132 were obtained by location POL from breeder BERG. Animals 134, 135, 136, 137 moved from breeder BANZIGER to location BOT.

8. New entries

Several captive bred specimens were registered in the studbook. Mainly juveniles applied by the breeder. In a few cases a new owner applies obtained animals for the studbook.

9. Activities planned for 2014

I have put up several aims for next years:

- Animals of uncertain or mixed origin will be removed from the studbook. The reason for this is that that are enough animals bred of known locality within Europe each year to obtain a healthy ex-situ assurance colonies of various localities. Animals of uncertain origin have in this case little value from a conservational point of view. Within the studbook several localities are

present. Phylogenetic research has been done on Hermann's tortoises. Within the Western subspecies at least 7 haplotypes are found. (Fritz et al 2006)

According to Fritz et al, 2006 the most common haplotype, H1 occurs in southern Italy, Tuscany and southern France. Haplotypes H2 and H4, connected only to H1, were found in one tortoise each from southern Italy and Tuscany.
H3, differing in one nucleotide from H1, is another rather common haplotype that appears to be confined to Spain (Ebro Delta, Albera, Mallorca, Menorca). Haplotype H5 differing in two or three mutation steps from H1, occurs in the Ebro Delta, on Menorca, Sicily, Corsica and Sardinia. Closely related haplotypes H6 and H7 were detected in one tortoise each from Corsica and Sardinia, respectively.

This in contrast to van der Kuyl et al. (2002) who found only 2 haplotypes within *Testudo hermanni hermanni*.

Testudo hermanni hermanni shows relatively little phylogeographical variation compared to the eastern subspecies. *(Testudo hermanni boettgeri, Testudo h. hercegovinensis)* As haplotypes can vary within one population and no genetic research is done within the studbook, the founder locality of the animals and their descendants are considered leading when matching animals for breeding purposes.

- Animals of locations who don't answer repetitive mails and calls of the studbookkeeper or are lost for follow up are also excluded from the studbook. A studbook is only functioning when participants are actively involved.

- New studbook participants will be sought especially keepers from animals of localities not represented within the studbook. Mostly in Italy and Spain there are breeders of localities not represented within the studbook.

10 Publications and suggested reading

<u>Articles:</u>

- Cheylan, M. (2001). Testudo hermanni Gmelin, 1789 — Griechische Landschildkröte. In U. Fritz (Ed.) Handbuch der Reptilien und Amphibien Europas. Band 3/IIIA: Schildkröten I (pp. 179–289) Wiebelsheim: Aula-Verlag.

- Fritz, U., Auer, M., Bertolero, A., Cheylan, M., Fattizzo, T., Hundsdörfer, A.

K., Martín Sampayo, M., Pretus, J. L., Siroky, P. & Wink, M. (2006). A rangewide phylogeography of Hermann's tortoise, Testudo hermanni (Reptilia: Testudines: Testudinidae): implications for taxonomy. Zoologica Scripta, 35, 531–543

- Giacalone, G., Lo Valvo M., Fritz U., (2009) Phylogeographic link between Sicilian and Corso-Sardinian Testudo h. hermanni confirmed. Acta Herpetologica 4(2): 119-123, 2009

- Kuyl van der, A. C., Ballasina, D. L. P., Dekker, J. T., Maas, H., Willemsen, R. E. & Goudsmit, J. (2002). Phylogenetic relationships among the species of the genus Testudo (Testudines: Testudinidae) inferred from mitochondrial 12S rRNA gene sequences. Molecular Phylogenetics and Evolution, 22, 174–183.

Books:

- Rinaldi M., (2014) *Testudo hermanni hermanni Popolazioni della peninsula italiana e sue isole.* Casa Editrice Noitrè, Battipaglia

- Rogner M., (2005) *Griechischen Landschildkröten.* Natur und Tier- Verlag, Münster

- Santoni L., Cavaterra M., (2007) *Testudo hermanni in Umbria.* Edizioni Tartoombria

- Vetter H., (2006) *Griekse landschildpad Dalmatische en Italiaanse landschildpad.* Edition Chimaira, Frankfurt am main

- Wegehaupt W., (2004) *Sardinien, die insel der europäischen Schiltkröten.* Wegehaupt Verlag, Kresborn

- Wegehaupt W., (2003) *Die natürliche halting und zucht der Griechischen Landschildkröten.* Wegehaupt Verlag, Kresborn

Websites:

- http://www.tartoombria.org/
- http://www.hermannihaven.com/
- https://www.cites.org

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