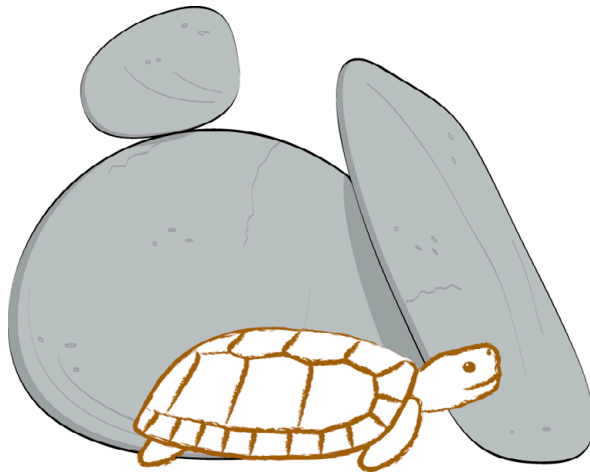


Dwarf Tortoise Conservation



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Annual Report 2022

*Victor Loehr
January 2023*

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Dwarf Tortoise Conservation (previously Homopus Research Foundation) is a non-commercial organisation entirely run by volunteers. The aim of the foundation is to gather and distribute information on dwarf tortoises, to facilitate their survival in the wild. This aim is achieved through scientific field studies, and through the development and study of captive studbook populations. Our results are published in scientific and popular outlets.

1. INTRODUCTION AND ACHIEVEMENTS IN 2022

Dwarf Tortoise Conservation aims to facilitate the long-term survival of dwarf tortoises (*Chersobius* spp. and *Homopus* spp.) in the wild, by gathering and distributing information about their biologies and by the formation of genetically healthy *ex situ* populations. Dwarf Tortoise Conservation is the successor of the Homopus Research Foundation, which was renamed in 2018, following the resurrection of the genus *Chersobius* (previously *Homopus*). In 2022, several activities contributed to the aim of Dwarf Tortoise Conservation. The current report presents an overview of achievements in 2022, as well as activities planned for 2023 and thereafter. Moreover, the actual studbook populations for *Chersobius boulengeri*, *Chersobius signatus*, *Homopus areolatus* and *Homopus femoralis* are described, focussing on changes that occurred in 2022. All [previous annual reports since 1995](#) can be found on the website of Dwarf Tortoise Conservation.

1.1. Policies and permanent action points

From time to time, Dwarf Tortoise Conservation communicates policies and permanent action points to the participants in the *Chersobius* and *Homopus* studbooks and to other stakeholders. To avoid losing sight of actual issues, they are listed here.

- *Dwarf Tortoise Conservation and illegal activities (1 May 2011)*
Dwarf Tortoise Conservation strongly condemns illegal activities. All *Chersobius* and *Homopus* registered in the studbooks and at studbook participants have legal and traceable origins. Each participant is responsible for the paperwork for his or her tortoises and will not fraud. Dwarf Tortoise Conservation will fully collaborate with authorities in case of legal investigations, providing backgrounds of studbook tortoises, DNA samples, etc. Moreover, illegal activities noted within the studbooks will be actively reported to the authorities, to facilitate prosecution. Obviously, participants involved in illegal activities will be unable to continue their participation.
- *Information exchange with the studbook coordinator (20 December 2017)*
Changes (births, deaths, transfers, physical and e-mail addresses, etc.) should be sent to the studbook coordinator by e-mail, and not via social media. The e-mail address that should be used is studbookhomopus@gmail.com.
- *New registrations of H. areolatus (January 2018)*
Because offspring *H. areolatus* produced in the studbook has been transferred outside the studbook (i.e., were lost to follow-up), there is a risk that genetically related tortoises will be registered in the studbook as unrelated founders. To avoid this, the studbook will not accept new founders with unknown or uncertain origin.
- *Outdoor husbandry of C. signatus (February 2019)*
Outdoor husbandry of *C. signatus* in Europe has yielded unacceptable mortality rates, possibly due to climatic mismatches or due to stress involved with frequent transfers among indoor and outdoor enclosures. Since *C. signatus* does well in indoor enclosures, tortoises loaned from Dwarf Tortoise Conservation should be housed indoors year-round. Exceptions require written consent.

1.2. Outstanding action points in the 2021 annual report

The following table summarises plans in the [2021 annual report](#), with results obtained in 2022.

Outstanding action points in 2021 annual report, and results in 2022	Due
Manuscripts submitted on:	
• tick infestation in a European indoor dwarf tortoise collection;	31-12-2022
• habitat use by wild <i>C. boulengeri</i> ;	31-12-2022
• annual survival in the studbook population <i>C. signatus</i> ;	31-12-2022
• female aggression in <i>C. boulengeri</i> ;	31-12-2022
• field studies on <i>C. boulengeri</i> (French).	31-12-2022

Outstanding action points in 2021 annual report, and results in 2022	Due
2022: A preliminary version of the manuscript on tick infestations was included in the 2020 annual report of Dwarf Tortoise Conservation , but a final version has not yet been submitted. Manuscripts on habitat use by <i>C. boulengeri</i> and on annual survival in <i>C. signatus</i> were submitted (see chapter 6). Manuscripts on female aggression in <i>C. boulengeri</i> and field studies on <i>C. boulengeri</i> were rescheduled. In 2022, three additional manuscripts were submitted (see chapter 6), on acclimation, husbandry and breeding of <i>C. boulengeri</i> , and on severe population decline in <i>C. boulengeri</i> (popular article and a peer-reviewed note).	
Presentations held on:	
• field research, husbandry and breeding of <i>C. boulengeri</i> (Basel Zoo);	01-04-2022
• field research, husbandry and breeding of <i>C. boulengeri</i> (Dutch-Belgian Turtle and Tortoise Society).	01-05-2022
2022: Both presentations were held as planned. In addition, a presentation about the collapse of a <i>C. boulengeri</i> population was held at a mini-symposium of the Herpetological Association of Africa on 9 May. The latter presentation is available online . Two interviews about threats and conservation efforts for <i>C. boulengeri</i> were broadcasted on the Czech national radio (circa 1 million listeners).	
Husbandry guidelines for <i>C. boulengeri</i> , <i>C. signatus</i> , <i>H. areolatus</i> and <i>H. femoralis</i> prepared following format of the Dutch-Belgian Turtle and Tortoise Society (NBSV)	31-12-2022
2022: The conversion of the existing Dwarf Tortoise Conservation guidelines into the NBSV format is in progress and will be completed in 2023.	

Further achievements that are worth listing:

- Dwarf Tortoise Conservation entered a formal agreement with the Dutch-Belgian Turtle and Tortoise Society, temporarily transferring board mandates to the society in case Dwarf Tortoise Conservation would unexpectedly lack its own board (e.g., due to illness or passing). The agreement consolidates business continuity.
- Ongoing collaboration with the Endangered Wildlife Trust (South Africa) led to joint efforts to increase the effectiveness of surveys of *C. boulengeri* and *C. signatus* by using a sniffer dog. The studbook populations of *C. boulengeri* and *C. signatus* provided ample male, female and juvenile scent samples to train the dog.
- Potential donors offered funding for *in situ* conservation of *C. boulengeri*. Because most conservation work will be conducted by the Endangered Wildlife Trust, direct connections were established between donors and the Endangered Wildlife Trust.
- The Wildlife Society published [an interview about decline in *C. boulengeri*](#).
- Ecologists working on various power grid extensions near Beaufort West, Victoria West, Loxton and Sutherland (South Africa) requested input on the likeliness of occurrences of *C. boulengeri* in these areas. Wind farms may offer benefits for conservation of *C. boulengeri* and its habitat.
- A proposal to investigate the status of heavy metals/metalloid contamination in wild *H. areolatus* was reviewed.
- Reprints of papers produced by Dwarf Tortoise Conservation were distributed through its [website](#), [ResearchGate](#), and directly to several researchers and private individuals. Studbook participants receive all papers produced.
- Review requests were received from Chelonian Conservation and Biology, African Journal of Ecology, and Ecology and Evolution.
- Information requests were received regarding:
 - sex-specific maturation time in *C. boulengeri* (Centre for Ecological Research, Hungary);
 - analysis of home ranges and movement patterns in *H. femoralis* (University of the Free State, South Africa);



- availability of population size estimates for dwarf tortoises (South African National Biodiversity Institute);
 - dwarf tortoise species to be included in distribution modelling to predict range shifts under climate change in relation to species ecology, physiology and phylogeny (University of Johannesburg, South Africa);
 - research to quantify predation of tortoises by corvids (South Africa);
 - physiological, morphological, behavioural and cognitive changes in tortoises as a result of domestication;
 - identification of wild *H. areolatus* (South Africa);
 - localities of *C. boulengeri*, *C. signatus* and *H. areolatus* (South Africa);
 - opportunities to volunteer in *C. boulengeri* fieldwork;
 - acquisition of *C. signatus* from the studbook for husbandry in South Africa.
- Photographic material was provided to:
 - Chinese book introducing turtles of the world;
 - South African field guide on reptiles.
 - The Dwarf Tortoise Conservation website received minor updates regarding [C. boulengeri husbandry guidelines](#), and [list of publications](#).

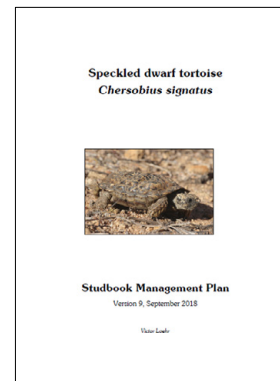
1.3. Studbook management plan *Chersobius signatus*

The first version of the [studbook management plan for *C. signatus*](#) was finished in 2013, and the plan was updated in 2016 and in 2018. It provides directions for the development of the studbook in the next years and decades, and will be updated every five years. The plan will also be updated after every supplementation of the studbook with new founders, and after each change in the IUCN conservation status of the taxon. The [annual reports of Dwarf Tortoise Conservation](#) report annual progress of the realisation of the plan. In 2023, a meeting with studbook participants will be held to discuss the next update of the plan, and communication with the South African authorities about the update is ongoing.

Both available founder couples remained alive in 2022, and one produced offspring. Two partial founder couples also survived but produced no offspring. One founder male was kept solitarily. All founders survived and no bloodlines went extinct.

The table at the right shows how well the genes of each founder (i.e., bloodline) are represented in the studbook population. Important changes for 2022 are the first addition of third-generation offspring originating from founder 2, and the loss of one out of two available offspring from deceased founder 151. Genetic material from founders 151 and 154 is represented in single live individuals. Both individuals are kept in breeding couples with unrelated mates.

According to the studbook management plan, each founder couple should produce 11 reproducing offspring, and couples in



Founder	F1 offspring		F2 offspring		F3 offspring		Remark
	All	Available	All	Available	All	Available	
WILD1	1	0	4	0	0	0	Founder in the wild
WILD2	3	0	0	0	0	0	Founder in the wild
WILD3	2	1	1	1	0	0	Founder in the wild
1	34	4	75	35	11	7	
2	14	1	27	13	4	4	
3	21	3	54	22	5	2	
4	0	0	0	0	0	0	Bloodline extinct
35	30	14	43	24	6	4	
36	30	14	43	24	6	4	
37	23	11	19	15	0	0	
38	13	7	16	12	0	0	
60	13	1	2	1	0	0	
150	3	3	0	0	0	0	
151	5	1	0	0	0	0	
152	3	3	0	0	0	0	
153	8	5	0	0	0	0	
154	0	0	0	0	0	0	
155	0	0	0	0	0	0	Bloodline extinct
156	7	3	0	0	0	0	
157	3	3	0	0	0	0	
158	8	5	0	0	0	0	
159	2	1	1	1	0	0	

Grey numbers indicate unavailable founders. Red and green numbers indicate decreases and increases, respectively, compared to the previous annual report. Founders that were lost to follow-up and have no available offspring have been removed from the table. Unknown ancestors from offspring have been removed from the table. Note that each offspring has at least two founders, so numbers of offspring in a column should not be summed.

subsequent generations should each produce two reproducing replacement offspring. For most founders that entered the studbook first (i.e., 1, 2, 3, 35, 36, 37, 38, and 60), the number of 11 offspring per founder couple was reached, but not all offspring has yet reproduced into a second generation although most of these founders have been lost by now. Founders that entered the studbook later and are still alive (i.e., 150, 152, 154, 156 and 157) have also not yet produced sufficient first-generation offspring. Bloodlines of first-entered founders have been entirely merged in the third generation, whereas bloodlines of later founders are still mostly separated in the first generation. Bloodlines from first- and later-entered founders are entirely separated and provide opportunities for breeding a genetically healthy fourth generation in the future.

Reproduction into subsequent generations is unbalanced (i.e., some first-generation offspring have not reproduced, whereas others have produced more than a dozen second-generation offspring), jeopardising the genetic variation in the studbook population after multiple generations due to overrepresentation of some bloodlines. Table 3 in [chapter 3](#) provides quota for each available breeding couple in the studbook population in 2023, to optimise genetic variation in the population. This approach inherently means that some eggs will need to be discarded. This will be a challenge for studbook participants who are keen on hatching eggs and producing offspring. Institutional studbook participants that are familiar with conservation breeding in zoo studbooks can play an exemplary role for private participants.

The studbook is not yet in a situation where reliable “on demand” reproduction is possible. Therefore, participants should continue optimising husbandry conditions and incubation techniques (see [chapter 5](#), [previous annual reports](#) and current [husbandry guidelines](#)). As a further mitigation measure, numbers of offspring as envisaged in the studbook management plan are not yet strictly controlled; founder couples may produce in excess of 11 offspring, couples in subsequent generations may produce 4 instead of 2 replacement individuals, and participants with couples that should not reproduce are allowed to breed at least one offspring to develop breeding experience.

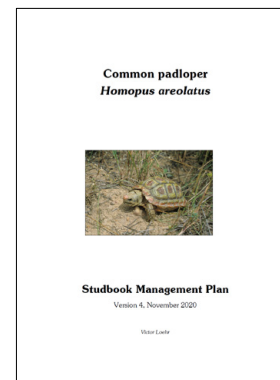
1.4. Studbook management plan *Homopus areolatus*

The first version of the [studbook management plan for *H. areolatus*](#) was finished in 2015, and the plan was updated in 2020. It follows the same format as the studbook management plan for *C. signatus*. A major difference between the two plans is that most tortoises in the studbook on *H. areolatus* are privately owned, meaning that the development of the studbook population (i.e., the execution of the studbook management plan) is directly in hands of the participants, whereas the studbook coordinator has only a facilitating role.

Six offspring (possibly siblings) from genetically unrelated individuals outside the studbook (verifiably unrelated to any tortoise in the studbook) were added to the studbook in 2022. Furthermore, founders 40 and 223 (both without offspring) were combined to form a new breeding couple unrelated to any other individual in the studbook. The origin of a tortoise (346) that surfaced and appears to be rare

offspring from founders 63 and 64 (outside the studbook) needs genetic verification. Offspring from founders 58, 59 and 60 reproduced into a third generation.

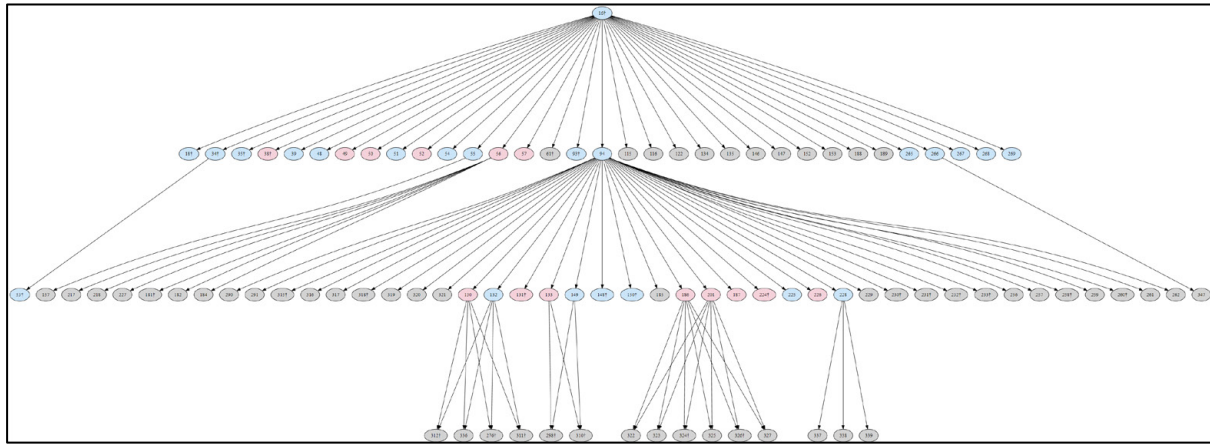
The table at the right shows how well the genes of each founder are represented in the studbook population. A major imbalance remains between founders 4, 5, 16, 17, 58, 59, 60, 63 and 64 that appear similarly represented in the



Founder	F1 offspring		F2 offspring		F3 offspring		Remark
	All	Available	All	Available	All	Available	
4	7	1	46	23	23	15	
5	7	1	46	23	23	15	
10	11	3	5	4	0	0	
11	14	3	5	4	0	0	
16	33	4	45	24	15	8	
17	34	4	45	24	15	8	
22	22	3	1	1	0	0	
24	22	3	1	1	0	0	
40	0	0	0	0	0	0	
47	9	0	8	0	0	0	Bloodline extinct
58	101	44	46	27	1	1	
59	101	44	46	27	1	1	
60	101	44	46	27	1	1	
63	2	1	30	20	0	0	Founder outside studbook
64	2	1	30	20	0	0	Founder outside studbook
223	0	0	0	0	0	0	
348	6	6	0	0	0	0	Founder outside studbook
349	6	6	0	0	0	0	Founder outside studbook

Grey numbers indicate unavailable founders. Red and green numbers indicate decreases and increases, respectively, compared to the previous annual report. Founders that were lost to follow-up and have no available offspring have been removed from the table. Note that each offspring has at least two founders, so numbers of offspring in a column should not be summed.

second generation, and less well-represented founders 10, 11, 22, 24, 40 and 223. Moreover, genes of the former founders were transferred into a second and third generation via severe bottlenecks; relatively few first-generation offspring produced the majority of second-generation offspring. This can be illustrated with the pedigree of founder 16 (figure below). Founder 16 produced 33 first-generation offspring, but almost the entire second and third generations were produced by a single first-generation offspring (number 94). Consequently, only the approximately 50% genes from 16 inherited by 94 were dispersed in the studbook population.



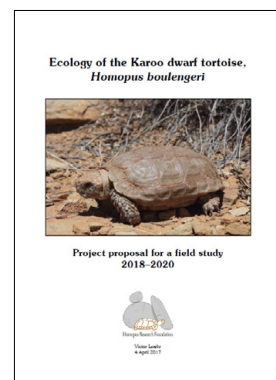
Despite the recommendation not to inbreed individuals, the number of inbred individuals grew. Moreover, some participants have not registered their offspring (whether or not inbred), or registered offspring was transferred to keepers outside the studbook. Consequently, a growing number of genetically related tortoises circulates (and reproduces) outside the studbook. This development hampers registration of new tortoises from outside the studbook, due to potential unknown relationships with studbook tortoises. In addition, registration of recently imported tortoises from South Africa is complex, because these are captive-bred and may be genetically related (e.g., siblings). Overall, management of the genetic quality of the studbook population increasingly demands strict requirements (e.g., genetic testing) for new registrations.

Recommendations to optimise the genetic quality of the studbook population remain unchanged: Participants should increase the production of offspring from scarce bloodlines (e.g., 10x11 and 40x223) and exchange individuals originating from different founders to avoid inbreeding (this might require exchange of animals between Europe and the USA). In addition, it would help to reduce reproduction by “bottleneck” individuals, in particular 94, 128, and 234. These individuals could be exchanged with siblings that have not yet reproduced (for 234 only possible after genetic testing of 346).

1.5. Progress field study *Chersobius boulengeri*

All originally planned fieldwork had been conducted in 2018–2020, just prior to the COVID-19 pandemic. However, results from the captive study (see [paragraph 1.6](#)) raised an important question if wild *C. boulengeri* females have not one, but two egg-laying seasons per year. Therefore, additional fieldwork was conducted in April 2022. The latter fieldwork also yielded unanticipated data about mortality in the population.

In 2021, a first scientific article was published in *Herpetologica*. Another was published (open access) in *Journal of Wildlife Management*, and a third has been accepted by *Ichthyology and Herpetology*. Two scientific notes about reproduction were published in *African Herp News*, and a third about severe decline of the study population was accepted by the same outlet. See also [chapter 6](#).





The *C. boulengeri* field study is a co-production of Dwarf Tortoise Conservation and an independent South African researcher (Toby Keswick). Moreover, the study collaborates with the University of the Western Cape (South Africa; Retha Hofmeyr), Utrecht University (Netherlands; Ineke Westerhof), Van Hall Larenstein University of Applied Sciences (Netherlands; Ralf Mullers and Marcella Dobbelaar) and the Northern Cape Department of Environment and Nature Conservation (South Africa). Several organisations and individuals have generously provided funds, discounted prices, or in-kind contributions to the project:

- [Knoxville Zoo](#) (Quarters for Conservation Program)
- [Turtle Conservation Fund](#) and [Conservation International](#)
- [Holohil Systems Ltd.](#)
- [Dutch-Belgian Turtle and Tortoise Society](#)
- [British Chelonia Group](#)
- [Turtle Survival Alliance Europe](#)
- [Crocodile Zoo Prague](#)
- [Pedak](#)
- Jan Barth
- Kurt Engl
- Sheryl Gibbons
- Silja Heller
- Brian Henen
- Retha Hofmeyr
- Courtney Hundermark
- Lutz Jakob
- Johann Klutz
- Martijn Kooijman
- Matthias Kupferschmid
- Koos and Coby Loehr
- Frank van Loon
- Marcel and Lydia Reck
- Peter Sandmeier
- Uwe Seidel
- Paul van Sloun



1.6. Progress captive study *Chersobius boulengeri*

During the field study on *C. boulengeri* (see [paragraph 1.5](#)), it became clear that the composition of the population and secretive behaviour of the species hampered collection of data on reproduction and growth. Consequently, a small-scale captive study was initiated. Two males and two females were collected and transferred to captivity in February–March 2019, and acclimated in 2019–2020. An extensive manuscript about acclimation, husbandry and breeding was submitted in 2022, potentially facilitating future conservation breeding projects. Reproductive data will be incorporated in a broad manuscript on reproduction in *C. boulengeri*, and data on growth will be published when sufficient data will have accumulated. See also [chapter 6](#).

To manage the studbook population, all individuals have been entered in a studbook. From this annual report onward, its progress will be reported in [chapter 3](#).

2. PLANS FOR 2023 AND THEREAFTER

The table below lists results anticipated for 2023 and thereafter, with progress indicated:

Result	Due	Current status
Manuscripts submitted on:		
• tick infestation in a European indoor dwarf tortoise collection;	31-12-2023	Manuscript in preparation
• female aggression in <i>C. boulengeri</i> ;	31-12-2023	Data available
• diet of wild <i>C. boulengeri</i> ;	31-12-2023	Data available
• body condition and reproduction in wild and captive <i>C. boulengeri</i> ;	31-12-2024	Data partly available
• growth in captive <i>C. boulengeri</i> .	31-12-2026	Data not yet available
Presentations held on:		
• decline in wild <i>C. boulengeri</i> (Herp. Association of Africa);	18-01-2023	Presentation available
• field research, husbandry and breeding of <i>C. boulengeri</i> (DGHT AG Schildkröten)	25-03-2023	Presentation available
Husbandry guidelines for <i>C. boulengeri</i> , <i>C. signatus</i> , <i>H. areolatus</i> and <i>H. femoralis</i> prepared following format of the Dutch-Belgian Turtle and Tortoise Society	31-05-2023	In process
Meeting held to discuss the future of the <i>C. signatus</i> studbook with participants	09/10-09-2023	In preparation
Studbook management plan <i>C. signatus</i> updated	31-12-2023	Not yet started
Studbook management plan <i>H. areolatus</i> updated	31-12-2025	Not yet started

3. STUDBOOK SUMMARIES AND REPRODUCTION IN 2022

To keep the studbook registrations up to date, it is vital that all studbook participants keep the coordinator informed of any changes. In the studbooks on *C. boulengeri*, *C. signatus* and *H. femoralis*, each participant has accepted this obligation in a formal agreement between participant and Dwarf Tortoise Conservation. Regardless of the agreements, participants are generally motivated and inform the coordinator spontaneously when changes occur throughout the year. However, sometimes participants remain silent for an entire year or longer, despite repeated requests from the studbook coordinator. In order to keep track of where these communication flaws occur, the [annual reports](#) include a list of unresponsive participants. This will make it easier for the reader to assess the validity of studbook information per participant and will facilitate the coordinator when approaching a silent participant. In 2022, all participants responded.

3.1. *Chersobius boulengeri*

Live specimens on 1 January 2022:

15 (no specimens lost to follow-up)

Number of participants on 1 January 2022:

2 (2 countries)

New registrations:

0

Births:

6, at 1 participant

Deaths:

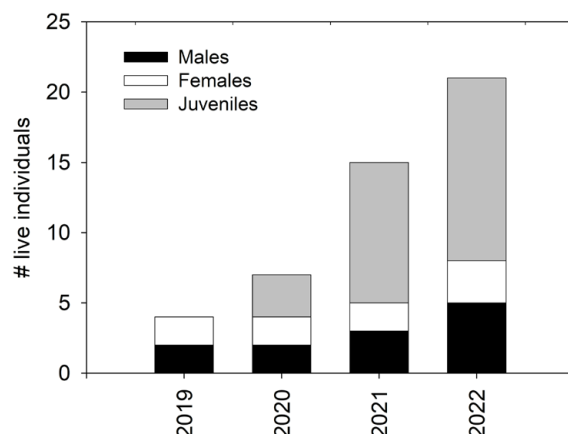
0

Live specimens on 31 December 2022:

21 (no specimens lost to follow-up)

Live inbred specimens on 31 December 2022:

0



Number of participants on 31 December 2022:

4 (4 countries, including 2 zoos)

The studbook population continued to grow, due to births and lack of mortality. Offspring was distributed among several participants to spread risks and to increase sample size for recordings of growth and reproduction for future publication. Because the donor population is collapsing (see [paragraph 1.5](#)), communication with the South African authorities was initiated about a possible conservation aim of the studbook population.

3.2. *Chersobius signatus*

Live specimens on 1 January 2022:

84 (excluding 21 specimens lost to follow-up)

Number of participants on 1 January 2022:

36 (11 countries, including 5 zoos)

New registrations:

0

Births:

10, at 6 participants

Deaths:

7 (all captive-bred), at 6 participants

Live specimens on 31 December 2022:

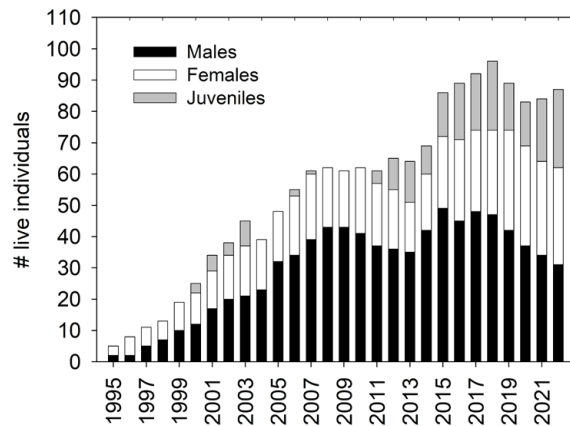
87 (excluding 21 specimens lost to follow-up)

Live inbred specimens on 31 December 2022:

2 (72 and 215; ancestry uncertain, possibly inbred)

Number of participants on 31 December 2022:

35 (11 countries, including 5 zoos)



The studbook population grew slightly, and the sex ratio finally equalised after it had become severely skewed towards males between 1995 and 2017. One 24-year old captive-bred male died despite specialistic veterinary care after it had developed a penis prolapse. All other deaths were captive-bred individuals age 0–11 years. A young female died after it had stopped growing for over a year. Specific causes of death were unknown for all individuals except the male, despite several post-mortems.

Reproduction remained at the relatively high level that was reached in 2021, although most available breeding couples failed to produce offspring. Two offspring originated from a founder couple that had produced few young until now. The other hatchlings were second generation. Two originated from an adult couple that should not have reproduced, as their genes were already over-represented in the studbook population. Additional eggs were laid at other participants', but failed to hatch. Currently, 60% of all participants (21 of 35, three more than in 2021) are keeping genetically unrelated couples.

[Paragraph 1.3](#) interprets the 2022 results in light of the goal for the studbook described in the [studbook management plan for *C. signatus*](#), and recommends that participants should adhere to the [husbandry recommendations](#) drawn up for *C. signatus*. Moreover, [paragraph 1.3](#) substantiates reproduction quota, to avoid unbalanced representation of founder genes in the population. These quota are based on the following simple starting points, following the studbook management plan:

- Each founder couple should produce at least 11 reproducing offspring. To mitigate husbandry and breeding issues, a slightly larger number is acceptable. When sufficient offspring is available, reproduction ceases until offspring dies and requires replacement.
- Couples in subsequent generations should produce at least 2 reproducing offspring, starting when a couple in the previous generation becomes unavailable (i.e., an individual dies and cannot be replaced). To mitigate husbandry and breeding issues, 4 is acceptable. When sufficient offspring is available, reproduction ceases until offspring dies and requires replacement.
- Offspring should have an equal sex ratio.
- Participants with breeding couples that would not need to reproduce may breed 1 offspring to develop breeding experience.

The analysis leads to the following reproduction quota for 2023 and beyond. In subsequent annual reports, the table will be updated based on mortality and (re)combination of breeding couples.

Breeding couple	Maximum number of offspring	Sexes
11x79	4	2 males and 2 females
35x181	4	2 males and 2 females
37x77	3	3 females
41x166	4	2 males and 2 females
74x96	0	-
99x110	1	female
100x9	2	2 males
113x118	4	2 males and 2 females
115x168	4	2 males and 2 females
119x163	0	-
123x179	4	2 males and 2 females
126x174	4	2 males and 2 females
137x136	4	1 male and 3 females
147x200	4	2 males and 2 females
148x171	4	2 males and 2 females
150x156	>11	5 males and 6 females
152x157	>10	6 males and 4 females
154x161	>12	6 males and 6 females
182x177	4	2 males and 2 females
188x169	4	2 males and 2 females
106x207 (sex 207 to be confirmed)	4	2 males and 2 females
88x107 (to be formed in 2023)	4	2 males and 2 females
71x142 (to be formed in 2023)	4	2 males and 2 females
132x195 (to be formed in 2023)	4	

In order to breed males and females according to the table above, the following incubation instructions should be used:

Incubation for females

- Day 1–29: diurnal temperature cycle of 33°C and 28°C
- Day 30–50: constant temperature of 33°C
- Day 51–hatching: diurnal temperature cycle of 33°C and 28°C

Incubation for males

- Day 1–29: diurnal temperature cycle of 33°C and 28°C
- Day 30–50: constant temperature of 30°C
- Day 51–hatching: diurnal temperature cycle of 33°C and 28°C

All temperatures should be measured with a calibrated thermometer at the incubation spot(s).

3.3. *Homopus areolatus*

Live specimens on 1 January 2022:

118 (excluding 120 specimens lost to follow-up)

Number of participants on 1 January 2022:

22 (9 countries, including 1 zoo)

New registrations:

7, at 2 participants

Births:

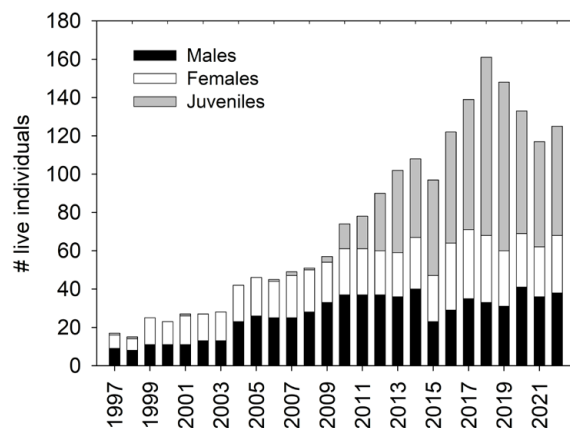
12, at 4 participants

Deaths:

13, at 6 participants (all captive-bred)

Live specimens on 31 December 2022:

124 (excluding 124 specimens lost to follow-up)



Live inbred specimens on 31 December 2022:

≥7 (studbook numbers 328, 329, 336, 350, 351, 352, and possibly 346), at 4 locations

Number of participants on 31 December 2022:

22 (10 countries, including 2 zoos)

The shrinking of the studbook population in the past years reversed, due to the addition of tortoises from outside the studbook. Reproduction was similar to mortality. In addition, several eggs broke during oviposition or failed to develop. Mortality was higher than in other years. The majority of deceased individuals (9) were only 1–2 year old. Four of these (all inbred individuals), housed together, died from bacterial pneumonia (post-mortems conducted), despite appropriate treatment. Future hatchlings will be kept separately. For the remaining deceased tortoises, the causes of death remain unknown.

[Paragraph 1.4](#) interprets population changes in light of the [studbook management plan for *H. areolatus*](#), and contains recommendations for participants.

3.4. *Homopus femoralis*

Live specimens on 1 January 2022:

15 (including 2 specimens lost to follow-up)

Number of participants on 1 January 2022:

6 (5 countries)

New registrations:

0

Births:

0

Deaths:

1

Live specimens on 31 December 2022:

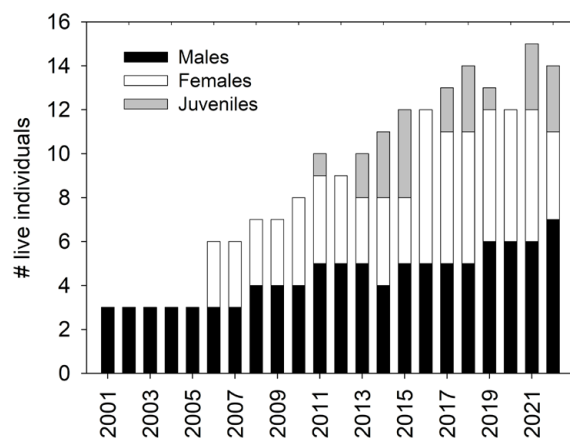
14 (excluding 2 specimens lost to follow-up)

Live inbred specimens on 31 December 2022:

3 (studbook numbers 22, 23 and 24), at 3 participants

Number of participants on 31 December 2022:

7 (6 countries, including 1 zoo)



Besides several transfers and the death of one female (captive-bred in 2015; cause of death unknown), the studbook population remained unchanged. Four breeding couples are remaining, just reaching maturity. At two participants', males and females were placed in single enclosures in 2022. Reproduction is anticipated for the next years, providing good perspectives for the accumulation of reproductive and growth data for future publication.

4. ACTUAL STUDBOOK OVERVIEWS

The tables below give an overview of all live tortoises that are available in the studbooks on *C. boulengeri*, *C. signatus*, *H. areolatus* and *H. femoralis*. The tables do not include dead tortoises and tortoises lost for the studbook. Full overviews of all tortoises registered in the studbooks may be [downloaded from the website](#).

Chersobius boulengeri: live and available studbook population.

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
Basel Zoo	13	Unknown	3	1	22-02-2022	Transfer	Basel Zoo	11554
					25-05-2021	Hatch - birth	1392	11554
	14	Male	4	2	22-02-2022	Transfer	Basel Zoo	11554
					20-06-2021	Hatch - birth	1392	11554
	15	Unknown	4	2	22-02-2022	Transfer	Basel Zoo	11554
					14-08-2021	Hatch - birth	1392	11554
Crocodile Zoo Prague	5	Male	4	2 7	05-09-2022	Transfer	Crocodile Zoo Prague	11554
					01-08-2020	Hatch - birth	1392	11554
	9	Female	4	2	05-09-2022	Transfer	Crocodile Zoo Prague	11554
					02-01-2021	Hatch - birth	1392	11554
	16	Unknown	3	1	05-09-2022	Transfer	Crocodile Zoo Prague	11554
					15-12-2021	Hatch - birth	1392	11554
	17	Unknown	3	1	05-09-2022	Transfer	Crocodile Zoo Prague	11554
					15-01-2022	Hatch - birth	1392	11554
14121	6	Unknown	4	2 7	17-07-2021	Transfer	14121	11554
					19-08-2020	Hatch - birth	1392	11554
	8	Unknown	3	1	17-07-2021	Transfer	14121	11554
					11-12-2020	Hatch - birth	1392	11554
	10	Male	3	1	18-07-2022	Transfer	14121	11554
					09-01-2021	Hatch - birth	1392	11554
	11	Unknown	4	2	17-07-2021	Transfer	14121	11554
					08-02-2021	Hatch - birth	1392	11554
	12	Unknown	3	1	17-07-2021	Transfer	14121	11554
					15-02-2021	Hatch - birth	1392	11554
	19	Unknown	4	2	18-07-2022	Transfer	14121	11554
					30-04-2022	Hatch - birth	1392	11554
1392	1	Male			23-03-2019	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	2	Male			23-03-2019	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	3	Female			23-03-2019	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	4	Female			23-03-2019	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	18	Unknown	4	2	08-02-2022	Hatch - birth	1392	11554
	20	Unknown	3	1	22-07-2022	Hatch - birth	1392	11554
	21	Unknown	3	1	19-08-2022	Hatch - birth	1392	11554
	22	Unknown	3	1	31-12-2022	Hatch - birth	1392	11554

Chersobius signatus: live and available studbook population.

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
18267	210	Unknown	107	14	10-06-2022	Transfer	18267	11554
					06-06-2021	Hatch - birth	14133	11554
18169	196	Unknown	96	74	17-10-2021	Transfer	18169	11554
					24-04-2019	Hatch - birth	14222	11554
17258	121	Male	36	35	16-12-2019	Transfer	17258	11554
					19-03-2019	Transfer	14229	11554
					19-01-2016	Transfer	14218	11554
					18-11-2011	Transfer	14205	11554
					23-09-2011	Hatch - birth	14120	11554
18121	197	Unknown	96	74	11-07-2021	Transfer	18121	11554
					01-09-2019	Hatch - birth	14222	11554
	203	Unknown	96	74	04-06-2022	Transfer	18121	11554
					16-09-2020	Hatch - birth	14222	11554
18167	145	Male	36	35	09-05-2022	Transfer	18167	11554

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
18294	106	Male	36	35	10-09-2016	Transfer	14143	11554
					20-06-2015	Hatch - birth	14121	11554
					22-06-2022	Transfer	18294	11554
					09-10-2018	Transfer	14153	11554
					19-01-2016	Transfer	14218	11554
					13-03-2010	Transfer	14205	11554
18245	207	Unknown	107	14	20-05-2009	Hatch - birth	14120	11554
					17-04-2022	Transfer	18245	11554
					13-05-2021	Hatch - birth	14133	11554
Amsterdam Zoo	11	Male	3	1	25-02-2022	Transfer	Amsterdam Zoo	11554
					23-10-2016	Transfer	14204	11554
					14-03-2015	Transfer	14221	11554
					16-09-2000	Transfer	14161	11554
					05-07-2000	Transfer	14120	11554
					22-11-1998	Transfer	14119	11554
	79	Female	38	37	10-11-1997	Hatch - birth	1392	11554
					03-02-2022	Transfer	Amsterdam Zoo	11554
					17-05-2016	Transfer	14217	11554
					05-11-2009	Transfer	14195	11554
					09-08-2006	Hatch - birth	1392	11554
	194	Unknown	149	11	25-02-2022	Transfer	Amsterdam Zoo	11554
					25-07-2019	Hatch - birth	14204	11554
14159	212	Unknown	107	14	10-06-2022	Transfer	14159	11554
					17-07-2021	Hatch - birth	14133	11554
Crocodile Zoo Prague	195	Female	9	100	07-09-2020	Transfer	Crocodile Zoo Prague	11554
					13-10-2019	Hatch - birth	14206	11554
14116	115	Male	9	37	24-10-2019	Transfer	14116	11554
					06-11-2012	Transfer	Amsterdam Zoo	11554
					06-07-2011	Hatch - birth	1392	11554
	168	Female	36	35	20-04-2018	Transfer	14116	11554
					18-09-2016	Hatch - birth	14121	11554
					16-05-2022	Hatch - birth	14116	11554
	217	Unknown	168	115				
14195	154	Male	Wild	Wild	30-03-2018	Transfer	14195	11554
					22-09-2015	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	161	Female	159	205	05-07-2019	Transfer	14195	11554
					26-01-2016	Hatch - birth	1392	11554
14214	9	Female	2	1	06-09-2020	Transfer	14214	11554
					15-05-2014	Transfer	14206	11554
					30-11-1996	Hatch - birth	1392	11554
	100	Male	38	37	06-09-2020	Transfer	14214	11554
					05-06-2010	Transfer	14206	11554
					24-06-2008	Hatch - birth	1392	11554
	138	Female	36	35	22-08-2020	Transfer	14214	11554
					15-04-2016	Transfer	14127	11554
					22-08-2014	Hatch - birth	14121	11554
14121	178	Female	158	153	11-11-2017	Hatch - birth	14121	11554
	190	Female	158	153	06-06-2018	Hatch - birth	14121	11554
	191	Female	158	153	21-08-2018	Hatch - birth	14121	11554
14134	99	Male	38	37	14-09-2019	Transfer	14134	11554
					05-06-2010	Transfer	14206	11554
					21-05-2008	Hatch - birth	1392	11554
	110	Female	7	44	03-05-2015	Transfer	14134	11554
					22-02-2012	Transfer	14219	11554
					22-01-2012	Transfer	14121	11554
					10-11-2011	Transfer	14196	11554
					23-03-2010	Hatch - birth	14121	11554
					01-09-2021	Hatch - birth	14134	11554
	214	Unknown	110	99	22-05-2022	Hatch - birth	14134	11554
	218	Unknown	110	99	07-11-2022	Hatch - birth	14134	11554
	224	Unknown	110	99				
14217	35	Male	Wild	Wild	25-07-2021	Transfer	14217	11554
					16-07-2016	Transfer	14191	11554
					26-10-2012	Transfer	14121	11554
					16-12-2001	Transfer	14120	11554
					06-10-2001	Transfer	1392	11554
	181	Female	79	10	~01-01-1900	Hatch - birth	Wild	Wild
					01-05-2018	Hatch - birth	14217	11554
					28-10-2018	Hatch - birth	14217	11554

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
	198	Unknown	79	10	21-04-2019	Hatch - birth	14217	11554
	202	Unknown	79	10	13-06-2020	Hatch - birth	14217	11554
1103	132	Male	36	35	11-04-2015	Transfer	1103	11554
					~23-10-2013	Hatch - birth	14121	11554
	208	Male	162	150	04-08-2022	Transfer	1103	11554
					15-06-2021	Hatch - birth	1392	11554
14125	94	Male	7	44	08-03-2014	Transfer	14125	11554
					18-03-2013	Transfer	14229	11554
					10-03-2012	Transfer	14220	11554
					27-08-2007	Hatch - birth	14121	11554
	177	Female	158	153	14-12-2019	Transfer	14125	11554
					18-08-2017	Hatch - birth	14121	11554
	182	Male	156	151	14-12-2019	Transfer	14125	11554
					12-04-2018	Hatch - birth	1276	11554
14201	37	Male	Wild	Wild	17-04-2016	Transfer	14201	11554
					12-06-2004	Transfer	1392	11554
					06-10-2001	Transfer	Wild0	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	77	Female	7	44	08-03-2022	Transfer	14201	11554
					02-05-2014	Transfer	Amsterdam Zoo	11554
					14-08-2010	Transfer	14201	11554
					13-07-2006	Hatch - birth	14121	11554
14231	88	Male	60	25	11-03-2017	Transfer	14231	11554
					17-03-2014	Transfer	14201	11554
					24-11-2011	Transfer	14180	11554
					30-08-2010	Transfer	14207	11554
					~15-11-2005	Hatch - birth	14178	11554
	226	Unknown	139	88	22-03-2022	Hatch - birth	14231	11554
14228	123	Male	38	37	13-12-2014	Transfer	14228	11554
					24-06-2012	Hatch - birth	1392	11554
	179	Female	107	14	19-09-2021	Transfer	14228	11554
					15-12-2017	Hatch - birth	14133	11554
14154	148	Male	36	35	03-04-2018	Transfer	14154	11554
					16-09-2015	Hatch - birth	14121	11554
	171	Female	42	73	14-09-2019	Transfer	14154	11554
					01-08-2017	Hatch - birth	14139	11554
14222	74	Male	3	1	12-03-2016	Transfer	14222	11554
					24-03-2007	Transfer	1276	11554
					31-07-2005	Hatch - birth	14170	11554
	96	Female	36	35	12-03-2016	Transfer	14222	11554
					12-09-2009	Transfer	1276	11554
					10-05-2009	Transfer	14202	11554
					13-04-2008	Transfer	14190	11554
					30-07-2007	Hatch - birth	14120	11554
	213	Unknown	96	74	23-05-2021	Hatch - birth	14222	11554
	221	Unknown	96	74	02-06-2022	Hatch - birth	14222	11554
	223	Unknown	96	74	03-11-2022	Hatch - birth	14222	11554
14137	124	Male	9	37	12-09-2015	Transfer	14137	11554
					30-06-2012	Hatch - birth	1392	11554
14139	125	Male	96	74	31-01-2016	Transfer	14139	11554
					25-08-2015	Transfer	1276	11554
					01-03-2013	Transfer	1199	11554
					07-07-2012	Hatch - birth	1276	11554
	169	Female	36	35	30-10-2021	Transfer	14139	11554
					~27-04-2021	Transfer	14121	11554
					20-04-2018	Transfer	14152	11554
					07-09-2016	Hatch - birth	14121	11554
	188	Male	42	73	16-10-2018	Hatch - birth	14139	11554
14183	41	Male	3	1	22-01-2010	Transfer	14183	11554
					12-10-2009	Transfer	14198	11554
					19-04-2003	Transfer	1277	11554
					25-07-2002	Hatch - birth	1392	11554
	166	Female	36	35	01-04-2018	Transfer	14183	11554
					07-06-2016	Hatch - birth	14121	11554
Plzen Zoo	136	Female	9	37	27-09-2016	Transfer	Plzen Zoo	11554
					02-09-2014	Hatch - birth	1392	11554
	137	Male	36	35	25-12-2020	Transfer	Plzen Zoo	11554
					08-04-2016	Transfer	1268	11554

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
					21-06-2014	Hatch - birth	14121	11554
	219	Unknown	136	137	03-05-2022	Hatch - birth	Plzen Zoo	11554
	225	Unknown	136	137	02-06-2022	Hatch - birth	Plzen Zoo	11554
14133	107	Female	36	35	11-03-2017	Transfer	14133	11554
					12-03-2016	Transfer	14231	11554
					08-03-2014	Transfer	14197	11554
					13-03-2010	Transfer	14205	11554
					21-07-2009	Hatch - birth	14120	11554
	186	Female	107	14	12-08-2018	Hatch - birth	14133	11554
	209	Unknown	107	14	02-07-2021	Hatch - birth	14133	11554
14216	71	Male	7	44	10-03-2012	Transfer	14216	11554
					22-01-2012	Transfer	14121	11554
					06-05-2008	Transfer	14196	11554
					25-06-2005	Hatch - birth	14121	11554
	170	Female	158	153	08-09-2019	Transfer	14216	11554
					21-09-2016	Hatch - birth	14121	11554
14203	142	Female	38	37	19-01-2018	Transfer	14203	11554
					15-05-2015	Hatch - birth	1392	11554
1776	147	Male	36	35	10-09-2016	Transfer	1776	11554
					28-08-2015	Hatch - birth	14121	11554
	200	Female	9	100	12-09-2020	Transfer	1776	11554
					01-08-2020	Hatch - birth	14206	11554
14197	152	Male	Wild	Wild	23-09-2015	Transfer	14197	11554
					22-09-2015	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	157	Female	Wild	Wild	23-09-2015	Transfer	14197	11554
					22-09-2015	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	172	Female	157	152	01-08-2017	Hatch - birth	14197	11554
	183	Female	157	152	30-06-2018	Hatch - birth	14197	11554
	201	Unknown	157	152	31-08-2020	Hatch - birth	14197	11554
1392	150	Male	Wild	Wild	30-03-2018	Transfer	1392	11554
					23-09-2015	Transfer	14195	11554
					22-09-2015	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	156	Female	Wild	Wild	09-06-2020	Transfer	1392	11554
					23-09-2015	Transfer	1276	11554
					22-09-2015	Transfer	1392	11554
					~01-01-1900	Hatch - birth	Wild	Wild
	220	Unknown	156	150	05-06-2022	Hatch - birth	1392	11554
	222	Unknown	156	150	17-07-2022	Hatch - birth	1392	11554
Wroclaw Zoo	119	Male	7	44	19-05-2018	Transfer	Wroclaw Zoo	11554
					08-09-2012	Transfer	14222	11554
					~20-04-2011	Hatch - birth	14121	11554
	126	Male	9	37	12-08-2022	Transfer	Wroclaw Zoo	11554
					13-06-2015	Transfer	14136	11554
					16-08-2012	Hatch - birth	1392	11554
	163	Female	96	74	30-06-2022	Transfer	Wroclaw Zoo	11554
					10-08-2016	Hatch - birth	14222	11554
	174	Female	36	35	14-07-2022	Transfer	Wroclaw Zoo	11554
					31-08-2017	Hatch - birth	14191	11554
Wuppertal Zoo	72	Male	9 38	13 37	03-09-2018	Transfer	Wuppertal Zoo	11554
					17-10-2009	Transfer	14203	11554
					24-07-2005	Hatch - birth	1392	11554
	113	Male	38	37	~01-07-2022	Transfer	Wuppertal Zoo	11554
					03-12-2011	Transfer	14197	11554
					16-06-2010	Hatch - birth	1392	11554
	118	Female	7	44	06-05-2018	Transfer	Wuppertal Zoo	11554
					22-02-2012	Transfer	14217	11554
					22-01-2012	Transfer	14121	11554
					10-11-2011	Transfer	14196	11554
					01-05-2010	Hatch - birth	14121	11554
	215	Unknown	118	72	02-09-2021	Hatch - birth	Wuppertal Zoo	11554

Homopus areolatus: live and available studbook population.

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
17255	242	Male	59 60	58	14-12-2019	Transfer	17255	17255
					12-12-2019	Transfer	14236	14236
					27-01-2018	Hatch - birth	14187	14187
	243	Male	59 60	58	14-12-2019	Transfer	17255	17255
					12-12-2019	Transfer	14236	14236
					28-01-2018	Hatch - birth	14187	14187
18015	141	Male	59 60	58	12-06-2021	Transfer	18015	18015
					~19-03-2017	Transfer	14122	14122
					~01-09-2016	Transfer	14236	14187
					~17-02-2013	Hatch - birth	14187	14187
	203	Female	59 60	58	15-10-2022	Transfer	18015	18015
					15-12-2019	Transfer	17355	17355
					12-12-2019	Transfer	14236	14236
					21-02-2016	Hatch - birth	14187	14187
	275	Female	129	234	15-10-2022	Transfer	18015	18015
					15-12-2019	Transfer	17355	17355
					05-06-2019	Hatch - birth	14236	14236
	278	Female	59 60	58	15-10-2022	Transfer	18015	18015
					15-12-2019	Transfer	17355	17355
					12-12-2019	Transfer	14236	14236
					01-02-2019	Hatch - birth	14187	14187
	309	Male	145	174	12-06-2021	Transfer	18015	18015
					24-02-2021	Hatch - birth	14122	14122
18159	96	Male	59 60	58	12-06-2021	Transfer	18159	18159
					~13-07-2013	Transfer	14122	14122
					~01-06-2012	Transfer	14194	14187
					~18-01-2010	Hatch - birth	14187	14187
18167	138	Male	59 60	58	31-05-2021	Transfer	18167	18167
					19-03-2017	Transfer	14122	14122
					~01-09-2016	Transfer	14236	14187
					~27-01-2013	Hatch - birth	14187	14187
18321	292	Unknown	128	234	11-06-2022	Transfer	18321	18321
					12-06-2021	Transfer	18015	18015
					22-07-2019	Hatch - birth	14159	14159
18270	225	Male	62	94	10-07-2022	Transfer	18270	11554
					12-06-2022	Transfer	1103	11554
					25-02-2022	Transfer	14116	11554
					04-05-2017	Hatch - birth	14121	11554
	330	Female			17-12-2022	Hatch - birth	18270	18270
	340	Male	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
	341	Male	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
	342	Female	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
	343	Female	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
	344	Female	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
	345	Female	349	348	17-12-2022	Transfer	18270	18270
					~01-01-2017	Hatch - birth	1343	1343
14187	58	Male	Wild	Wild	09-09-1997	Transfer	14187	14187
					~01-01-1900	Hatch - birth	Wild	Wild
	59	Female	Wild	Wild	09-09-1997	Transfer	14187	14187
					~01-01-1900	Hatch - birth	Wild	Wild
	60	Female	Wild	Wild	25-03-1999	Transfer	14187	14187
					~01-01-1900	Hatch - birth	Wild	Wild
	277	Unknown	59 60	58	01-02-2019	Hatch - birth	14187	14187
	279	Unknown	59 60	58	01-02-2019	Hatch - birth	14187	14187
	280	Unknown	59 60	58	01-02-2019	Hatch - birth	14187	14187
	302	Unknown	59 60	58	14-01-2021	Hatch - birth	14187	14187
	303	Unknown	59 60	58	20-01-2021	Hatch - birth	14187	14187
	304	Unknown	59 60	58	22-01-2021	Hatch - birth	14187	14187
	305	Unknown	59 60	58	25-01-2021	Hatch - birth	14187	14187
	306	Unknown	59 60	58	25-01-2021	Hatch - birth	14187	14187
	307	Unknown	59 60	58	13-02-2021	Hatch - birth	14187	14187

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
	308	Unknown	59 60	58	13-01-2021	Hatch - birth	14187	14187
	331	Unknown	59 60	58	09-02-2022	Hatch - birth	14187	14187
	332	Unknown	59 60	58	21-02-2022	Hatch - birth	14187	14187
	333	Unknown	59 60	58	21-02-2022	Hatch - birth	14187	14187
	334	Unknown	59 60	58	22-02-2022	Hatch - birth	14187	14187
	335	Unknown	59 60	58	09-03-2022	Hatch - birth	14187	14187
1268	317	Unknown	62	94	06-12-2020	Transfer	1268	1268
					30-07-2020	Hatch - birth	14121	14121
14159	128	Female	59 60	58	09-03-2019	Transfer	14159	14159
					01-09-2016	Transfer	14236	14187
					03-02-2012	Hatch - birth	14187	14187
	175	Female	24	22	03-10-2020	Transfer	14159	14159
					24-09-2016	Transfer	14225	14225
					15-01-2015	Hatch - birth	14178	14178
	228	Male	62	94	13-06-2021	Transfer	14159	14159
					08-09-2018	Transfer	14122	14122
					13-07-2017	Hatch - birth	14121	14121
	269	Male	17	16	23-01-2019	Transfer	14159	14159
					~01-01-1900	Hatch - birth	14161	14161
	301	Female	300	299	03-10-2020	Transfer	14159	14159
					~16-03-2014	Transfer	14225	14225
					15-03-2014	Hatch - birth	14224	14224
	337	Unknown	128	228	26-02-2022	Hatch - birth	14159	14159
	338	Unknown	128	228	10-04-2022	Hatch - birth	14159	14159
	339	Unknown	128	228	10-04-2022	Hatch - birth	14159	14159
Crocodile Zoo Prague	273	Male	128	234	11-08-2020	Transfer	Crocodile Zoo Prague	Crocodile Zoo Prague
					20-06-2020	Transfer	17691	17691
					31-08-2019	Transfer	14145	14145
					02-06-2019	Hatch - birth	14236	14236
	274	Male	129	234	20-08-2020	Transfer	Crocodile Zoo Prague	Crocodile Zoo Prague
					20-06-2020	Transfer	17691	17691
					31-08-2019	Transfer	14145	14145
					05-06-2019	Hatch - birth	14236	14236
14155	253	Female	129	234	21-10-2018	Transfer	14155	14155
					21-08-2018	Hatch - birth	14236	14236
	254	Female	129	234	21-10-2018	Transfer	14155	14155
					22-08-2018	Hatch - birth	14236	14236
14121	40	Male	Wild	Wild	25-02-2022	Transfer	14121	11554
					06-02-2018	Transfer	14204	11554
					18-01-2018	Transfer	14242	11554
					28-03-1991	Transfer	14242	14242
					~01-01-1900	Hatch - birth	Wild	Wild
	62	Female	4	5	25-07-2014	Transfer	14121	11554
					27-03-2011	Transfer	14185	11554
					~25-11-2007	Hatch - birth	14121	11554
	94	Male	17	16	~25-07-2014	Transfer	14121	14121
					05-06-2010	Transfer	14185	14185
					07-07-2009	Hatch - birth	14161	14161
	186	Female	62	94	15-09-2015	Hatch - birth	14121	14121
	223	Female	Wild	Wild	~11-10-2017	Transfer	14121	1177
					01-01-1900	Hatch - birth	Wild	Wild
	229	Unknown	62	94	15-07-2017	Hatch - birth	14121	14121
	256	Unknown	62	94	11-06-2018	Hatch - birth	14121	14121
	257	Unknown	62	94	18-06-2018	Hatch - birth	14121	11554
	259	Unknown	62	94	17-08-2018	Hatch - birth	14121	11554
	261	Unknown	62	94	01-10-2018	Hatch - birth	14121	14121
	262	Unknown	62	94	28-08-2018	Hatch - birth	14121	14121
	290	Unknown	62	94	06-06-2019	Hatch - birth	14121	11554
	291	Unknown	62	94	06-06-2019	Hatch - birth	14121	14121
	320	Unknown	62	94	14-06-2021	Hatch - birth	14121	14121
	321	Unknown	62	94	14-06-2021	Hatch - birth	14121	11554
	322	Unknown	186 201	126	29-05-2021	Hatch - birth	14121	14121
	325	Unknown	186 201	126	18-07-2021	Hatch - birth	14121	14121
	327	Unknown	186 201	126	19-08-2021	Hatch - birth	14121	14121
14145	136	Female	59 60	58	01-10-2017	Transfer	14145	14145
					01-09-2016	Transfer	14236	14187
					~18-01-2013	Hatch - birth	14187	14187
	162	Male	59 60	58	09-09-2018	Transfer	14145	14145

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
					11-06-2018	Transfer	14236	14187
					29-01-2014	Hatch - birth	14187	14187
	164	Male	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					20-02-2014	Hatch - birth	14187	14187
	165	Female	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					20-02-2014	Hatch - birth	14187	14187
	169	Female	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					13-02-2015	Hatch - birth	14187	14187
	170	Female	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					20-02-2015	Hatch - birth	14187	14187
	171	Unknown	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					20-03-2015	Hatch - birth	14187	14187
	197	Male	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					04-02-2016	Hatch - birth	14187	14187
	199	Unknown	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					04-02-2016	Hatch - birth	14187	14187
	202	Female	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					20-02-2016	Hatch - birth	14187	14187
	204	Male	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					22-02-2016	Hatch - birth	14187	14187
	205	Male	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					03-03-2016	Hatch - birth	14187	14187
	206	Male	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					04-03-2016	Hatch - birth	14187	14187
	221	Unknown	59 60	58	09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
					02-02-2017	Hatch - birth	14187	14187
	235	Unknown	129	234	09-09-2017	Transfer	14145	14145
					05-09-2017	Hatch - birth	14236	14236
	239	Unknown	128	234	24-06-2018	Transfer	14145	14145
					16-03-2018	Hatch - birth	14236	14236
	240	Male	123	234	08-12-2018	Transfer	14145	14145
					27-03-2018	Hatch - birth	14236	14236
	241	Unknown	128	234	09-09-2018	Transfer	14145	14145
					26-04-2018	Hatch - birth	14236	14236
	245	Male	128	234	24-06-2018	Transfer	14145	14145
					16-03-2018	Hatch - birth	14236	14236
	247	Unknown	129	234	09-09-2018	Transfer	14145	14145
					25-05-2018	Hatch - birth	14236	14236
	248	Unknown	129	234	09-09-2018	Transfer	14145	14145
					26-05-2018	Hatch - birth	14236	14236
	249	Male	123	234	09-09-2018	Transfer	14145	14145
					29-05-2018	Hatch - birth	14236	14236
	251	Unknown	129	234	09-09-2018	Transfer	14145	14145
					20-06-2018	Hatch - birth	14236	14236
	266	Male	17	16	~01-06-2019	Transfer	14145	14145
					23-01-2019	Transfer	14159	14159
					~01-01-1900	Hatch - birth	14161	14161
	267	Male	17	16	~01-06-2019	Transfer	14145	14145
					23-01-2019	Transfer	14159	14159
					~01-01-1900	Hatch - birth	14161	14161
	270	Unknown	128	234	31-05-2019	Transfer	14145	14145
					06-05-2019	Hatch - birth	14236	14236
	271	Unknown	128	234	31-05-2019	Transfer	14145	14145
					26-04-2019	Hatch - birth	14236	14236
1368	167	Male	59 60	58	04-09-2021	Transfer	1368	1368
					09-09-2018	Transfer	14145	14145

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
	220	Male	59 60	58	11-06-2018	Transfer	14236	14187
					27-02-2014	Hatch - birth	14187	14187
					04-09-2021	Transfer	1368	1368
					09-09-2018	Transfer	14145	14145
					11-06-2018	Transfer	14236	14187
	323	Unknown	186 201	126	18-10-2017	Hatch - birth	14187	14187
					20-12-2021	Transfer	1368	1368
					26-06-2021	Hatch - birth	14121	14121
	347	Unknown	346	266	04-09-2021	Transfer	1368	1368
					11-01-2021	Hatch - birth	14145	14145
14122	145	Female	59 60	58	14-11-2017	Transfer	14122	14122
					~01-09-2016	Transfer	14236	14187
					~26-03-2013	Hatch - birth	14187	14187
					24-09-2016	Transfer	14122	14122
	173	Male	24	22	12-01-2014	Hatch - birth	Wild8	Wild8
					24-09-2016	Transfer	14122	14122
	174	Male	24	22	15-08-2014	Hatch - birth	14178	14178
					08-09-2018	Transfer	14122	14122
14231	185	Unknown	62	94	11-05-2017	Hatch - birth	14121	14121
					12-09-2016	Transfer	14231	11554
					12-09-2015	Hatch - birth	14121	11554
	316	Unknown	62	94	06-12-2020	Transfer	14231	11554
					09-07-2020	Hatch - birth	14121	11554
	319	Unknown	62	94	06-12-2020	Transfer	14231	14231
14236	234	Male	64	63	03-09-2020	Hatch - birth	14121	14121
					~25-04-2014	Transfer	14236	14236
14211	69	Male	59 60	58	~01-11-2012	Hatch - birth	14224	14224
					19-06-2010	Transfer	14211	14211
					~21-05-2006	Transfer	14194	14187
					~22-04-2004	Hatch - birth	14187	14187
					19-06-2010	Transfer	14211	14211
					~21-05-2006	Transfer	14194	14187
	71	Female	59 60	58	~06-03-2004	Hatch - birth	14187	14187
					05-04-2019	Transfer	14211	14211
					16-03-2012	Hatch - birth	14185	14185
	130	Female	62	94	05-04-2019	Transfer	14211	14211
					18-07-2012	Hatch - birth	14185	14185
	132	Male	62	94	05-04-2019	Transfer	14211	11554
					13-08-2012	Hatch - birth	14185	11554
	133	Female	62	94	05-04-2019	Transfer	14211	11554
					27-04-2013	Hatch - birth	14185	11554
	149	Male	62	94	01-03-2022	Hatch - birth	14211	14211
					05-04-2019	Transfer	14211	11554
	336	Unknown	130	132	05-04-2019	Transfer	14211	11554
					27-04-2013	Hatch - birth	14185	11554
14213	313	Unknown	128	234	06-02-2021	Hatch - birth	14159	14159
					~01-08-2021	Transfer	14213	14213
	314	Unknown	128	234	06-02-2021	Hatch - birth	14159	14159
					~01-08-2021	Transfer	14213	14213
Turtle Conservancy	207	Female	11	10	11-04-2016	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	209	Male	11	10	15-05-2016	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	236	Male	11	10	04-04-2017	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	328	Unknown	207	209	20-08-2021	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	350	Unknown	207	209	20-08-2022	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	351	Unknown	207	209	20-08-2022	Hatch - birth	Turtle Conservancy	Turtle Conservancy
	352	Unknown	207	209	20-08-2022	Hatch - birth	Turtle Conservancy	Turtle Conservancy
14215	84	Male	59 60	58	02-06-2011	Transfer	14215	14215
					~07-02-2008	Hatch - birth	14187	14187
	85	Male	59 60	58	02-06-2011	Transfer	14215	14215
					~07-02-2008	Hatch - birth	14187	14187
14197	187	Female	62	94	12-09-2016	Transfer	14197	11554
					17-09-2015	Hatch - birth	14121	11554

Homopus femoralis: live and available studbook population.

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
14131	17	Female	4	3	25-07-2019	Transfer	14131	11554
					26-06-2017	Hatch - birth	1392	11554
	18	Male	4	3	25-07-2019	Transfer	14131	11554
					08-07-2017	Hatch - birth	1392	11554

Participant	Studbook number	Sex	Mother	Father	Date	Event	Keeper	Owner
Crocodile Zoo Prague	19	Male	4	3	25-07-2019	Transfer	14131	11554
					26-06-2018	Hatch - birth	1392	11554
	22	Unknown	15	2	05-09-2022	Transfer	Crocodile Zoo Prague	11554
					01-06-2021	Hatch - birth	14121	11554
	24	Unknown	15	2	05-09-2022	Transfer	17756	11554
14116					05-07-2021	Hatch - birth	14121	11554
	10	Male	4	3	23-04-2022	Transfer	14116	11554
					27-06-2015	Transfer	1276	11554
					28-05-2011	Hatch - birth	1392	11554
	23	Unknown	15	2	10-09-2022	Transfer	14116	11554
14121					04-06-2021	Hatch - birth	14121	11554
	2	Male	21	20	06-07-2006	Transfer	14121	11554
					23-12-2001	Transfer	1277	11554
					~01-01-2001	Transfer	14172	14172
					~01-01-1900	Hatch - birth	Wild	Wild
	15	Female	4	3	09-03-2019	Transfer	14121	11554
					10-09-2016	Transfer	14222	11554
					19-06-2014	Hatch - birth	1392	11554
	14191	Male	21	20	30-05-2019	Transfer	14191	11554
					23-12-2001	Transfer	1392	11554
14222					01-01-2001	Transfer	14172	14172
					~01-01-1900	Hatch - birth	Wild	Wild
	8	Male	4	3	~27-08-2022	Transfer	14222	11554
					23-04-2022	Transfer	14116	11554
					26-06-2014	Transfer	1276	11554
					30-06-2010	Hatch - birth	1392	11554
	14	Female	4	3	10-09-2016	Transfer	14222	11554
					18-06-2014	Hatch - birth	1392	11554
	14197	Male	4	3	02-08-2015	Transfer	14197	11554
					12-07-2013	Hatch - birth	1392	11554
	13	Female	4	3	10-09-2016	Transfer	14197	11554
					15-06-2014	Hatch - birth	1392	11554

5. SPECIFIC INFORMATION FROM STUDBOOK PARTICIPANTS

Participant 1392

A female *C. signatus* with slight, yet chronic breathing difficulties (no other symptoms) was tested for Herpesvirus and Mycoplasma. Both tests were negative.

Between 2019 and 2022, adult male *C. boulengeri* were combined with females in winter and early spring, when intersexual aggression was minimal yet copulations were observed. In spring, sexes had to be separated to avoid damage to females. However, fertility rate of eggs appeared to decline. Consequently, males and females will now be combined in August–September (late summer mating season in the wild), but only for one day at a time to avoid aggression and damage.

Participant 14134

A male, female and juveniles of *C. signatus* are housed in separate terrariums:



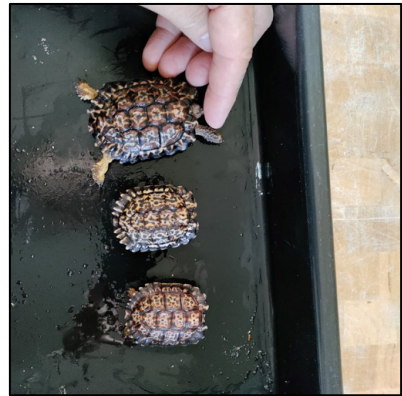
Male enclosure (130 x 60 x 60 cm, led tube 18W 4000K, spot 35W Reptiles Expert GmbH).



Female enclosure (130 x 60 x 60 cm, led tube 18W 4000K, spot 35W Reptiles Expert GmbH).



Juvenile enclosure (70 x 60 x 40 cm, led tube 12W 4000K, small model spot 35W Reptiles Expert GmbH).



Participant 14187

Existing outdoor enclosures (Namibia) were expanded with a new one for juvenile *Chersobius* and *Homopus* spp. The new enclosure has a roof, shade net and is planted with succulents.



Participant 14195

A female *C. signatus* laid an egg, but unfortunately it did not develop. Mating attempts have never been observed, so the egg may have been infertile.



Participant 14204

All keeping of *C. signatus* and *H. areolatus* was ended. See appendix 1.

Participant 14222

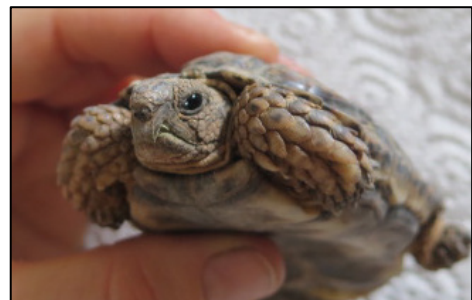
Two *C. signatus* hatched, on 2 June and on 3 November. The second hatchling was found in the adult enclosure where an egg must have been overlooked, and had just hatched based on the presence of a small residue of the yolk sack.



A male and female *H. femoralis* were combined for the first time (enclosure above). The male showed interest in the female, but the female responded very aggressively and tried to bite, after which the tortoises were separated. Several days later, the female was introduced to the male's enclosure, and no biting occurred.

Participant 14228

A male *C. signatus* developed an overgrown beak, possibly due to selection of soft food items by the tortoise. The tortoise did not lose body weight.



Basel Zoo

A tank used to raise *C. boulengeri* is depicted below. At another location in the zoo, a breeding station for several adult couples *C. boulengeri* is in preparation.



Plzen Zoo

The first offspring *C. signatus* was born. Three eggs were produced, one with a cracked shell. The two undamaged eggs hatched. Hatchlings are kept in a small, simple enclosure according to Dwarf Tortoise Conservation's recommendations.



Turtle Conservancy

This is a second-generation female *H. areolatus* laying eggs.



6. NEW PUBLICATIONS

The following overview summarises all manuscripts and articles that were submitted, accepted, published, or under review in 2022. A full list of publications authored or co-authored by Dwarf Tortoise Conservation is available [at the website](#).

In 2022, a previous Dwarf Tortoise Conservation publication (Van Loon, F.H.A. 2018. *Homopus signatus* Gmelin, 1789, two-egg clutching. African Herp News 67: 25–26) was used as reference in a publication about Nama dwarf tortoises (Schleicher, E.A.M. 2022. *Chersobius solus* Branch, 2007, Nama dwarf tortoise, two-egg clutching. African Herp News 79: 32–34), demonstrating the value of data generated in the studbooks.

Subject	Submitted	Accepted	Published	Journal
Structure and projected decline of a Karoo dwarf tortoise population	2021	2021	2022	Journal of Wildlife Management (English)
Witnessing a population collapse: field research in South Africa reveals the perils closing in on the only documented population of endangered Karoo dwarf tortoises	2022	2022	2022	The Tortoise (English)
Shell dimensions in a population of Karoo dwarf tortoises, <i>Chersobius boulengeri</i>	2021	2022		Chelonian Conservation and Biology (English)
Acclimation, husbandry and breeding of wild-caught Karoo dwarf tortoises, <i>Chersobius boulengeri</i> (Duerden, 1906)	2022	2022		Radiata (English and German)
Testudinidae, <i>Chersobius boulengeri</i> (Duerden, 1906), Karoo padloper, severe population decline	2022	2022		African Herp News (English)
<i>Chersobius signatus</i> (speckled dwarf tortoise): annual survival	2022			Herpetological Review (English)
Habitat use by the rock-dwelling Karoo dwarf tortoise, <i>Chersobius boulengeri</i>	2022			Ichthyology and Herpetology (English)

7. FINANCIAL REPORT

Funds were received from two organisations and a private individual. Most expenses were for fieldwork to assess if wild *Chersobius boulengeri* females can produce eggs in autumn (simultaneously generating important information about the population's decline). International travelling, car rental and accommodation (total ~ € 2000) was privately funded by field personnel. Ongoing collaboration with the Endangered Wildlife Trust (South Africa) required scent tubes, which were loaded with scents of captive *C. boulengeri* and *C. signatus* to train a sniffer dog in South Africa. This dog will be used in future field surveys.

Revenues		Expenses	
Net amount	Item	Amount	Item
€		€	
Projects		Projects	
2,842	Remaining funds from 2021	449	Fuel
500	Donation Crocodile Zoo Prague (CZ)	62	Various field equipment
255	Donation Kleintier- und Vogelpraxis Baden-Daetwil (CH)	12	Permits
500	Donation private individual	p.m.	International travelling, car rental and accommodation
		2,574	Reservation publication costs
		Conservation of <i>C. boulengeri</i> and <i>C. signatus</i>	
		298	<i>C. boulengeri</i> and <i>C. signatus</i> scents to train sniffer dog
		702	Reservation conservation costs
4,098	Subtotal	4,098	Subtotal
Other		Other	
151	Donation private individual to cover overhead costs	151	Annual costs bank account
151	Subtotal	151	Subtotal
4,248	Total	4,248	Total

Remaining funds were allocated to cover publication costs for future scientific articles. Unfortunately, publication costs are increasing and scheduled papers on diet, body condition and reproduction of *C. boulengeri* will require considerable funds. Nevertheless, some funds were allocated to future *in situ* conservation work on *C. boulengeri* and *C. signatus*.

All non-project expenses were covered by a private donation by the board of Dwarf Tortoise Conservation.

8. PERMIT OVERVIEW

The activities reported in this annual report would not have been possible without the following permits issued by the South African and Namibian authorities:

Collecting and exporting of C. boulengeri

- Collecting permit FAUNA 0952/2018 (Northern Cape Department of Environment and Nature Conservation, South Africa)
- CITES exporting permit 217387 (Northern Cape Department of Environment and Nature Conservation, South Africa)
- Health declaration 10814 (Department of Agriculture, South Africa)

Collecting and exporting of C. signatus

- Collecting permit 331/95 (Western Cape Nature Conservation Board, South Africa)
- Collecting permit 28/2001 (Northern Cape Nature Conservation, South Africa)
- Collecting permit 053/2015 (Northern Cape Department of Environment and Nature Conservation)
- CITES exporting permits 16579 and 281/95C (Department of Environmental Affairs and Tourism, South Africa)
- CITES exporting permit 148487 (Northern Cape Department of Environment and Nature Conservation)
- Permit to move animals/animal products 2001/10/3/A (Department of Agriculture, South Africa)
- Health declarations dated 03-10-01 and 19-09-15 (Department of Agriculture, South Africa)

Collecting and exporting of H. femoralis

- Collecting permit AAA004-00010-0035 (CapeNature, South Africa)
- CITES exporting permit 58679 (Department of Environmental Affairs and Tourism, South Africa)
- Health declaration dated 17-03-06 (Department of Agriculture, South Africa)

Exporting of H. areolatus

- Exporting permit 49683 (Ministry of Environment and Tourism, Namibia)
- CITES exporting permit 8830 (Ministry of Environment and Tourism, Namibia)
- CITES exporting permit 3558 (Ministry of Environment and Tourism, South Africa)
- Health certificate 13\1\4\2\ 09/2- 1676/04 (Ministry of Agriculture, Water and Rural Development, Namibia)
- Various additional permits issued to individual studbook participants (Namibia)

Field study and surveys on C. boulengeri

- Research permits 755/05, 43/2005 and 35/2005 (Northern Cape Nature Conservation, South Africa)
- Research permits 245/2/2015, FAUNA 0950/2017, FAUNA 0180/2022 and FAUNA 0181/2022 (Northern Cape Department of Environment and Nature Conservation, South Africa)
- Research permits FLORA 0066/2017 and FLORA 0067/2017 (Northern Cape Department of Environment and Nature Conservation, South Africa)
- Plant export permission NNO 1/10/3/6/ 39738

Field studies on C. signatus

- Research permits 137/99, 84/99, 019/2001, 010/2001, 46/2003, 26/2003, 8/2003, 168/2003, 43/2003, 158/2003, 633/2003, 25/2003, 158/2004 and 633/2004 (Northern Cape Nature Conservation, South Africa)

- Research permits 428/2002 and 41/2002 (Western Cape Nature Conservation Board, South Africa)
- Research permits 152/2012, 153/2012, 460/2013 and 052/2015 (Northern Cape Department of Environment and Nature Conservation, South Africa)

Field study on H. femoralis

- Research permits AAA-004-000185-0035, AAA-004-00020-0028, AAA-004-000392-0035, and AAA-004-00027-0028 (CapeNature, South Africa)

Appendix 1

Reports from participant 14204.

Letzter Haltebericht

Homopus areolatus und Chersobius signatus

Februar 2022 von Partizipant 14204

Seit September 2009 Pfl egten und Dokumentierten wir die Homopus areolatus vom Zuchtbuch und im Oktober 2016 kamen noch Chersobius signatus dazu.

Die Arbeit mit den Schildkröten, sowie die Halteberichte machten uns immer sehr viel Spass. Der Erfahrungsaustausch mit anderen Teilnehmern war für uns immer wichtig.



Homopus areolatus male Nr. 79



vorne Nr. 81 female und Nr. 40 male



Chersobius signatus male Nr. 40



Nr. 194 juvenil

Ende 2021 war ich aber der Meinung, dass es durch mein Alter und einige Krankheiten Zeit wird, die Tiere schweren Herzens abzugeben. Victor Loehr teilte ich daher meine Absichten mit, für die chersobius hatte er bereits einen geeigneten Platz.

Also forderten wir die Ausfuhrpapiere in Bern an, diese trafen wie immer innert einer Woche bei uns ein. Auch mit den Einfuhrpapieren aus Holland gab es keine Probleme.

Die ärztliche Untersuchung bei Dr. Peter Sandmeier erfolgte ohne besonderen Befund, somit konnte das Zeugnis durch das Veterinäramt des Kantons Aargau gestempelt und unterzeichnet werden. Nun fehlte nur noch das TRACES, von dem wir noch nie etwas gehört hatten.

Innert zwei Tagen durch den Einsatz des Kantonalen Veterinäramtes Solothurn konnten wir das TRACES vor Abreise am Mittwoch, den 23. Februar in der Tierarztpraxis Gretzenbach abholen.

Wir möchten uns an dieser Stelle bei Allen, die uns für diesen Transport geholfen haben herzliche bedanken.

Zuerst verpackte ich die Schildkröten einzeln in einem Säckchen, wo sie nach Art getrennt in eine Styroporbox platziert wurden.



Nun ging die Reise nach Basel los, leider ohne mich, meine Hüfte schmerzte zu sehr. Diesen Part übernahm Lydia mit ihrer Schwester Vreni. Trotz Navi fanden sie den Weg zum Hotel IBIS nicht sofort, aber um 10.05 Uhr trafen sie doch dort ein und konnten die Schildkröten mit den nötigen Papieren Victor Loehr und Frank Van Loon übergeben.



Die Nachricht von Victor, dass der Transport über die Grenze und die Reise reibungslos funktionierte, freute uns sehr.

Einen Dank gilt auch dem Zuchtbuch, dass wir so seltene Schildkröten pflegen durften.