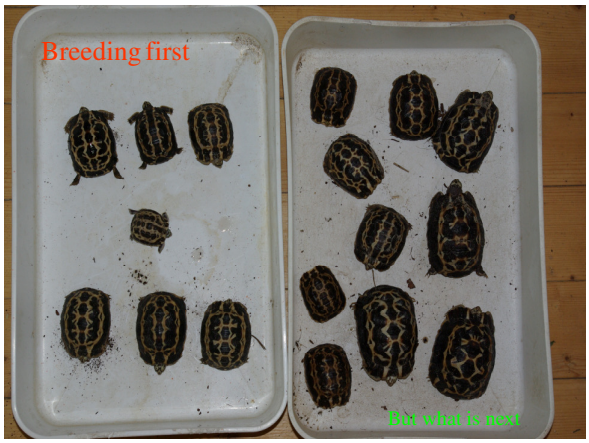

Long term management of Studbooks

Genetically based future perspectives

Basic steps in long term studbookmanagement

- Determining optimal studbook size
- Long term planning
- What about breeding a surplus

Determining studbook size

- For determining the size of the studbook I advise to take a sliding 5 year period.
- This period is about the longest foreseeable period possible, and it is long enough to plan ahead.

Determining studbook size 2

- Basically the size of a studbook determined by 3 factors;
- 1 Availability of animals
- 2 Manageability of the population
- 3 Availability of housing

Availability of animals

- In a well breeding population the availability of animals will soon outstrip the demand.
- So this factor is only important for species with poor breeding results and or a high infant mortality

Manageability of the population

- This refers to the number of animals you as a studbookkeeper are willing/ able to manage.
- We think that a number of 100 –150 transfers per year should still be acceptable.
- Normally this is not a determining factor.

Availability of housing

- Basically this is the determining factor in the size of the studbook.
- This means that every studbookkeeper should have an idea how many animals could be placed with existing keepers and how many potential new keepers are available.
- This survey should be updated every year.

Hints on studbook size

- If possible the size of the studbook should be about 50-100 animals per generation.
- For a species with a life expectancy of 5 generations this would mean a maximum size of 500 animals.
- This number can be reduced by increasing the generation time or decreasing the max. breeding age.

Long term planning

- Goals to achieve

1. Avoid inbreeding
2. Avoid gene loss

Aspects of inbreeding

- Inbreeding is breeding with closely related animals.
- Inbreeding dramatically decreases the genetic base of an individual animal.
- Inbreeding can have negative health aspects in the case of negative recessive genes

Aspects of gene loss

- Gene loss means the loss of a specific gene out of the population or gene pool.
- Gene loss is even more serious than inbreeding because gene loss affects the survival of the population were inbreeding only affects the individual

Aspects of gene loss

- The effects of gene loss are usually invisible; it only affects the adaptability of the population; so in captivity when animals are taken very good care of this will not surface.
- Gene loss could mean losing the possibility of re-introduction

Managing a studbook

- After the studbook size decision the number of bloodlines available must be evaluated.
- The simple division of the desired studbook size divided by the number of bloodlines gives the optimal offspring per bloodline.
- Try to reach this number in as little generations as possible

Managing a studbook population

- To avoid inbreeding and gene loss it is important to have an even distribution of bloodlines.
- This is best achieved when rare bloodlines are coupled with rare bloodlines and abundant ones with other abundant lines

Breeding a surplus

- Definition (for this lecture);
- Breeding a surplus means breeding more animals than you can or want to incorporate in the studbook.

Breeding a surplus

- Breeding is part of the fun of reptile keeping and and it will be hard to motivate a keeper to stop breeding.
- But; Breeding a surplus with a well breeding species is practically unavoidable; with live bearing species this is very clear, but even with egg laying species one should breed a small surplus in order to compensate for calamity's .

Mechanisms to avoid a surplus

- **Euthanizing** healthy animals in order to avoid a surplus is considered not to be acceptable.
- **Exclude animals from breeding** (by keeping them apart, not give the proper stimuli etc) could lead to permanent infertility of the animal and is considered not acceptable.
- Last option; **destroying the eggs**. For egg laying species this is a good option. For live bearers there are basically no acceptable options to avoid surplus breeding.

Options with a surplus

- Place animals for re-introduction or educative purposes
- Place surplus animals with non-breeders
- Commercially sell the surplus

Selling animals

- Of course selling here means every action to place life animals outside the control of the studbook.
- Acceptability of this point will be a highlight in the coming discussion, but from a genetic point of view I would like to make some comments.

Selling animals

- When animals are placed outside of studbook registration great care should be taken to avoid unknowingly re-entering those animals in the studbook.

End

Thanks for listening and please start asking questions