Progress Report SP 2018-102

Geocrinia frog breed and rear for release program

Perth Zoo Science

Project Core Team

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Project status as of Jan. 17, 2022, 2:33 p.m.

Update requested

Document endorsements and approvals as of Jan. 17, 2022, 2:33 p.m.

Project Team	granted
Program Leader	granted
Directorate	required

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Context

There are two species of *Geocrinia* frogs, white-bellied frogs (*Geocrinia alba)* and orange-bellied frogs (*G. vitellina)*, that have a restricted distribution in south-west Western Australia and are listed as critically endangered and vulnerable. Whilst these frogs lay large clutches of eggs, the survival rate to adult frogs is low. Captive rearing of eggs to metamorphs is an effective means of overcoming this constraint and providing supplementation of animals into the populations. Egg clutches of both species are collected from the wild at the request of the Recovery Team and metamorphs are raised and subsequently released to the wild. There is ongoing research and husbandry management to achieve regular and reliable captive breeding in both species.

Aims

- Breed and rear white-bellied and orange-bellied frogs for release to sites approved by the *Geocrinia* Frog Recovery Team to maintain or increase the current extent and viability of populations of these species.

Progress

- A captive breeding colony of *G. alba* and *G. vitellina* was maintained. Egg clutches of both species were collected from the wild and metamorphs were raised to 11 months of age, at which point they were released to the wild.
- 103 *G. alba* and 754 *G. vitellina* juveniles were each released into sites in conservation estate east of Margaret River.
- Evaluation of desiccation and thermal tolerance involving eggs and embryos of both *Geocrinia* species was finalised and published in *Conservation Physiology*.

Management implications

- Captive-bred and reared frogs have provided the best, and in most cases, the only means of increasing the number of individuals in a sub-population, and bolstering the genetics of isolated populations.
- Knowing the upper thermal limits for successful larval development in the two *Geocrinia* species allows informed decisions about which field sites are chosen for the release of juvenile frogs to augment existing, or create new populations and which sites to avoid and abandon.

Future directions

- Continue production of metamorphs for *G. alba* and *G. vitellina*.