GEOCRINIA RECOVERY TEAM

ANNUAL REPORT

1996

by

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on behalf of the
GEOCRINIA RECOVERY TEAM

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Summary
1996 marks the completion of number of major actions identified in the plan, including publication of the Recovery Plan and Landholders Recovery Kit and commencement of a new 3 year research program into determining the population viability of existing sites. This will assist the team to evaluate of the viability and likely outcomes prior to undertaking a translocation program. In the interim period the team has entered a monitoring, refinement and review phase with the aim of ensuring the continuance of the existing populations.

Major goals for 1997 will be:
1) Where landholders are supportive and funds permit, expand the conservation fencing program.
2) Continue the population and fire ecology monitoring programs.
3) Review the captive breeding program.
4) Review the communications plan and commence implementation of the next phase.
5) Maintain an effective pig control program.

Introduction

With the forthcoming completion of the contractual funding arrangements with ANCA in Jan 1997, considerable effort has been put into budgeting and planning of works programming to ensure a continuation of the teams work over the next few years until further funding can be obtained.

A contract between the University of WA and CALM for a three year period has been established. This will enable the population viability analysis work to be undertaken by Phd student, Simon Conroy. Provision has been made to cover the team's operating expenses and undertake further conservation fencing work although at a reduced capacity.

As reported in the 1995 Annual Report, the major goals for 1996 were to be:

1) - the continuance of the conservation fencing program for *Geocrinia alba*,
2) - the maintenance of a monitoring program within the fenced areas,
3) - updating of database and GIS systems to facilitate the rapid reporting of dramatic population fluctuations or habitat declines in the field,
4) - and the maintenance of an effective pig control program to protect the G.vitellina sites.

I am pleased to report that items 2, 3 and 4 were achieved during the year and changes in ownership of some of the properties will provide opportunities to achieve item 1 in the coming year.

Team Membership

Three changes have occurred in the composition of the team since December 1995; Councillor Eric Noakes from the Augusta Margaret River Shire has resigned from council and Councillor Justine Boow has been nominated as his replacement.

Jean-Paul Orsini representing the Threatened Species Network no longer holds the position of Coordinator and has left the team. Lyn Serventy representing the Leeuwin Conservation Group will fill the community role formerly undertaken by Jean-Paul Orsini.

Grant Wardell-Johnson, one of the co-discoverers of both species has resigned from CALM. His position on the team will not be filled at present.

Team Membership as at December 1996 comprised of:

Roger Banks	District Manager	CALM - Busselton District
Justine Boow	Councillor	Augusta/Marg River Shire
Andrew Burbidge	Director WATSCU	CALM - Nature Conservation Division
Simon Conroy	PhD Student	UWA - Zoology Dept.
Don Driscoll	PhD Student	UWA - Zoology Dept.
Ian Noakes	Landholder	Lower Blackwood LCDC
Dale Roberts	Zoologist	UWA - Zoology Dept.
Jack Stannard	Shire Ranger	Augusta/Marg River Shire
Lyn Serventy	Community Representative	Leeuwin Conservation Group
Sally Stephens	Endangered Species Unit	Environment Australia - Canberra
Greg Voigt	Dist. Nature Conservation Officer	CALM - District Office
Ian Wheeler	Technical Officer	CALM - SID
Kim Williams (Chair)	Rgnl. Nature Conservation Officer	CALM - Regional Office

Recovery Plan - Progress in 1996

Geocrinia vitellina

3.1.6 Population Monitoring

(See also: attached Research Report)
All *Geocrinia vitellina* sites were monitored during the year using both presence/absence and transect counts. All populations were present, although a number of populations have moved along the creeklines away from the locations of the transects established as monitoring sites at the beginning of the project. Approximately half of *Geocrinia alba* sites monitored for presence/absence during the year were found to have frogs present. Other sites were checked towards the end of season and had either stopped or substantially reduced calling intensities so were not be included with this years data set with any confidence.

A review of monitoring procedures, protocols and aims for both species will be undertaken prior to next breeding season with the aim of rationalising the number, type and frequency of monitoring required.

Databasing of the monitoring data was completed and a GIS system established during the year. Accurate locational data via GPS was gathered for all of the Geocrinia vitellina sites and approximately 10 of the G. alba sites. Further GPS data will be gathered prior and into next breeding season.

Training of district and region staff in population monitoring techniques was undertaken during the year. This will enable the responsibility for the monitoring program to be handed over from Science and Information Division to operations staff of the local region/district and for the task to become a regular item in their budget and works programs.

Fire Experiments

Provision has been made for the continued monitoring of the *G. rosea* and *G. lutea* fire research plots located in State forest within the Walpole District. The forest area containing the control sites was scheduled for hazard reduction burning in Spring and the team has been successful in negotiating the establishment of fire exclusion zones and buffers totalling approximately 800 ha around these research plots. This will enable monitoring to continue over the next 3 years to record population recruitment patterns following the burning of the other half of the sites in Spring 1992.

3.1.8 Translocations

refer to this heading for *G.alba*

Geocrinia alba

3.2.4 Habitat Protection, Conservation Fencing

Unsuccessful negotiations with a number of landholders have resulted in no additional fencing being undertaken in 1996. Changes in ownership on two properties (one with a large population

of frogs) within the last month will provide an opportunity to approach the new owners about fencing.

An inspection of the condition of the current fences will be undertaken over the summer months and any repairs completed.

Consideration will be given to fencing properties which do not currently support frog populations but which over time may become suitable as potential release sites for a translocation program.

Pig Control

The pig control program using volunteer pig hunters was maintained during the year. Through a combination of trapping and hunting 23 pigs were destroyed from the Blackwood River near the general locality of the *G. vitellina* sites, though no pig disturbance was recorded at the actual sites. Fresh pig activity was noted in the Forest Grove area near one of the *G. alba* sites and control operations were directed there. Todate no pigs have been captured from this site.

3.2.5 Public Information and Land-owner participation

A number of actions were completed during the year:

The Geocrinia Recovery Plan and the Farmers Kit were printed and circulated at the November Meeting of the team.

A new information sheet "Fire and Frogs" has been drafted for inclusion in kit following discussion on the fire issue at the november meeting. This information sheet will also form the basis of a future media article on fire and frogs and as background material for liaison with the Bush Fires Board and local volunteer brigades with the aim of having these organisations implement "frog friendly" fire regimes on the lands under their responsibility.

The first edition of a Geocrinia Team Newsletter has been produced and will be circulated to landholders, local community groups and schools in the new year.

With the production of the Recovery Plan and Farmers Kit completed the communications plan will need to be reviewed in preparation for implementation of the next phase.

A number of landholders accompanied team members during the monitoring of the *G. alba* populations on their properties.

3.2.6 Population Monitoring

refer to this heading for *G. vitellina*

3.2.8 Translocations

Though work continued at the Melbourne Zoo on the captive breeding program and determination of the viability of using egg masses as the translocation medium, this program has suffered a number of setbacks during the year. In February 1996 the zoo reported they were holding 3 adult

G. rosea (2 male, 1 female), 16 sub-adults and an unknown number of other sub-adults in three separate tanks. Body weights and Snout-Vent lengths were supplied for 19 animals (3 + 16).

To date stock sent to the zoo has been 6 adults, 6 subadults and over 100 tadpoles/eggs.

In late November 1996 they reported that the holding tanks had been infested with ants and they were unsure how many animals survived. The team has written to the zoo seeking a detailed report on the status of the project in preparation for a review of this aspect of the plan.

1996 Geocrinia Research Annual Report
Simon Conroy

1996 has been a successful year and the work should provide an excellent basis upon which to expand in 1997. The 1996 breeding season was the first I have been able to work right through. The main components of my work have been an assessment of the factors influencing survival during development through to metamorphosis, the characterisation of the microhabitats of nest, and the combination of the capture-recapture studies started by Don Driscoll. The details of these and other areas are outlined below.

A major breakthrough during 1996 was the discovery of a reliable method for sexing adult frogs based upon morphology. In addition, a reasonable number of female frogs have been captured - thus the database on females is growing quickly.

Capture-recapture
During 1996 more than 700 captures were recorded at five sites (*G. alba*: Forest Grove South, Boathaugh B, Bruce Road; *G. vitellina*: Spearwood South and Spearwood North). Recaptured animals comprised 62% of t e captures (439), some of which may have been captured on two or three occasions during 1996. As a result of some problems with the compatibility of Driscoll's and my databases, which have yet to be ironed out, I have not yet calculated the number of individuals captured. However, there were 229 new recruits to the breeding program.

G. alba
Population numbers in the recapture site at Bruce Road continued to decrease after crashing precipitously in the past few years. At Forest Grove South population numbers were also down considerably. The cause was most probably a controlled burn during the latter part of the 1995 breeding season which cleared much of the vegetation from a significant area of the swamp. At Boathaugh B population numbers were stable.

G. vitellina
Population numbers at Spearwood South may have been down very slightly however until the data is analysed this cannot be verified. Population numbers at Spearwood North are stable.

Egg census
Egg censuses were carried out at one *G. vitellina* site, Geo Creek, and at three *G. alba* sites, Junction, Reynolds West, and Bruce Road West. The three *G. alba* sites represent large (approx. 50 calling males), medium (approx. 25 calling males}, and small (approx.8 calling males) breeding populations respectively.

The positions of calling males were marked without disturbing the males. As long as the males remained in position they were not disturbed. However, as soon as the male moved the area was searched for either a nest or an empty burrow. Using this method I have been able to locate 163 nests.

Each nest has been regularly censused, with the number of live and dead embryos recorded, as well as any information which may indicate cause of death. This work is continuing and at this stage about 40 of the nests have metamorphosed. Metamorphs are collected and marked using both toe clips and tetracyclines prior to being released.

Nest transplant experiment
A nest transplant experiment designed to determine whether nesting requirements are limiting is currently being carried out. Sixty nests from Geo Creek have been used in five treatments - control (after being found nests are not disturbed), sham control (nests are dug out of the ground

but replaced in the same position), moved within site {nests are dug out of the ground and moved to a position within 1 metre of the original position), and 2 treatments of moved out of site (nests are dug out of the ground and moved to a position several hundred metres downstream at a place where there are no calling males).

The experiment is ongoing and no results have been obtained yet.

Characterisation of nest microhabitats

Microhabitat characters are being recorded for each of the nests found during the study. These characters include total canopy cover, vegetation structure at different levels, litter cover and type , soil water potential and soil type. In addition, temperatures within nests are being recorded using dataloggers, and will be compared to temperatures at various positions within the swamp.

Pitfall trapping

In theory geocrinias may leave the swamp during the non-breeding season. In an attempt to catch frogs outside the swamp I put 52 pitfall traps along 200 metres of drift fence beside the swamp at Forest Grove South. I didn't capture any *G. alba*, however I now have a reasonable knowledge of the frog and small lizard fauna of the area,