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GEOCRINIA RECOVERY TEAM

ANNUAL REPORT 1995

by

K. WILLIAMS

for

THE GEOCRINIA RECOVERY TEAM

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ervation and Land Management
1 Boyanup Road
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DEPARTMENT OF ENVIRONMENT AND CONSERVATION

SUMMARY

Implementation of the Recovery Plan for the Orange-bellied and White-bellied Frogs has been proceeding for four years and through the efforts of the Recovery Team a number of actions identified in the plan have been completed and others are progressing well.

Improvements to our understanding of the ecology and biology of these frogs was achieved during the year and this will be further enhanced by the commencement of a new three year PhD research project to apply PVA techniques to both fenced and unfenced populations. The determination of the impacts of fire on frogs populations will continued to encompass the generation cycle of these species.

The most significant achievement during 1995 was the continuation of the Conservation Fencing Program and which has so far resulted in the fencing of 7 km of creeklines containing populations of *G. alba* on private property.

The completion of the Recovery Kit, Frog Calls of the South-Western Australia (audio tape) and Wildlife Aware Signage are expected to significantly raise the awareness and support amongst the local community during the coming year.

Continued expansion of the fencing program for *G. alba*, the maintenance of an effective pig control program for *G. vitellina* sites and the maintenance of a monitoring program within the fenced areas will be the major goals in 1996.

INTRODUCTION

During 1995, the fourth year the team has been in operation the Geocrinia Recovery Team met on 23rd June and 29th November. Sub-Teams comprising of various team members and non-team specialists were formed to resolve and report on specific issues or actions identified by the Recovery Team, and in particular: Communications, Fencing, Fire, Captive Breeding & Translocations, Monitoring & Further Research,

As at December 1995 membership of the team consisted of:

Grant Wardell-Johnson	Research Scientist	CALM - Science & Information Division
Ian Wheeler	Technical Officer	CALM - Science & Information Division
Andrew Burbidge	Director WATSCU	CALM - Nature Conservation Division
Kim Williams	Rgnl. Nature Conservation Officer	CALM - Central Forest Regional Office
Roger Banks	District Manager	CALM - Busselton District Office
Greg Voigt	Dist. Nature Conservation Officer	CALM - Busselton District Office
Dale Roberts	Zoologist	UWA - Zoology Dept.
Don Driscoll	PhD Student	UWA - Zoology Dept.
Simon Conroy	PhD Student	UWA - Zoology Dept.
Ian Noakes	Landholder	Lower Blackwood LCDC
Jack Stannard	Shire Ranger	Augusta/Margaret River Shire
Eric Noakes	Councillor	Augusta/Margaret River Shire
Sally Stephens		ANCA, Endangered Species Unit, Canberra
Jean-Paul Orsini		National Threatened Species Network
Lyn Serventy	Community Representative	Leeuwin Conservation Group

During the course of the year there were three changes in team membership:

- 1) Lyn Serventy, representing the Leeuwin Conservation Group, was invited to join the team and will be able to assist the team with its community involvement aims.
- 2) Simon Conroy joins the team as a researcher to investigate the use of Population Viability Analysis techniques to extend the field research work commenced by Don Driscoll.
- 3) Jean-Paul Orsini has left the Team.

RECOVERY PLAN STATUS

The draft Recovery Plan was revised and updated to reflect current research findings and received approval from CALM's Corporate Executive, the National Parks and Nature Conservation Authority and the Lands and Forest Commission. The document is currently with the Minister for the Environment awaiting endorsement and official release.

Recovery Criteria were revised in line with our better understanding of the ecology of the two species. The criteria are:

- 2 years. Accurate knowledge of the number of naturally occurring populations.
- 7 years. Habitat conservation for all Orange-bellied Frog site and at least 75% (41) of the currently known White-bellied Frog populations to ensure effective genetic and geographic spread.
- 10 years. Management and monitoring to ensure sustainability of all populations.

BUDGET

The plan identifies a funding requirement for \$270 100 for *G. alba* and \$52 900 for *G. vitellina* over 10 years. ANCA support for the Recovery Plan has continued during the current year.

RECOVERY PLAN - PROGRESS REPORT

Actions undertaken in 1995

NB: (reference numbers refer to the relevant sections in the revised Recovery Plan)

Geocrinia vitellina

3.1.1) Survey of Riparian Habitat

This phase of the plan was completed in 1993 and was not undertaken during 1995. The total number of *G. vitellina* sites remains at six.

3.1.2) Land Tenure Changes

This item, as it pertains to CALM managed lands, was dealt with/resolved in 1994 and no action was required in 1995.

3.1.3) Fire Management and Research

Two closely related species; *G. rosea* and *G. lutea* are being used to determine the likely impact of fire regimes on *G. vitellina* and *G. alba*. Six paired transects, established in 1992 prior to burning in spring were surveyed on three occasions in 1993, 1994 and once in 1995. The results from this experiment indicate that fire has an immediate impact on the number of calling males with upto 30% being killed. Egg and larval survivorship in burned sites was not significantly different to control sites and it was not possible to quantify the impact of fire on females.

There are implications for a number of the *G. alba* populations which because of their discrete distribution and small size have limited recruitment potential following a fire.

Further work is required to determine the long term impact of fire on frog populations, particularly whether or not populations recover between burning cycles. It is proposed to continue monitoring the transects established in this experiment for another 3 years.

3.1.4) Habitat Protection/Introduced Threats

A pig monitoring and control program was maintained on a weekly basis (43 trips) in 1995 with the use of a registered volunteer pig hunter from the local community. Additional pig traps were purchased by the team and resulted in the capture of 6 pigs close to the *G. vitellina* sites and a further 12 in the general area.

The use of volunteer hunters has enabled a more intensive and very effective program to be implemented at minimal cost. It is intended to continue the program in 1996.

3.1.5) Wider community participation

Refer to *G. alba*.

3.1.6) Population Monitoring

All six existing *G. vitellina* sites were monitored by permanent transects during 1995. All populations were found to be extant, though one transect recorded a decrease in the number of calling males from 10 (1992), and 2 (1994) to 0 (1995). The reason for this decline is unknown though it is thought to be related to a combination of local movement of animals further up the creek and the timing of this year's censusing which was towards the end of the breeding season.

3.1.7) Genetic Studies

Refer to *G. alba*.

3.1.8) Translocations

refer to this heading for *G. alba*.

Geocrinia alba

3.2.1) Survey of Riparian Habitat

No new populations were discovered during 1995.

The total number of *G. alba* sites remains at 54

3.2.2) Land Tenure Changes

Refer to *G. vitellina*.

3.2.3) Fire Management and Research

Refer to *G. vitellina*.

3.2.4) Habitat Protection: Conservation Fencing

The Recovery Plan identifies the need to fence areas on private property containing *G. alba* to protect them from degradation by grazing stock.

During 1995 construction of the fences arranged for in the 1994 tender was completed. An additional 850 m of fencing was also completed during the year bringing to a total 7 km of fences on 5 properties. The populations on these properties were considered to have been the most vulnerable or the most significant and their protection via the fencing is regarded as a substantial achievement by the team.

Other landholders have been approached and it is expected a new fencing contract for approximately 2.6 km over five properties will be called for in the early part of 1996.

3.2.5) Wider community participation

Communications Plan

The "Frog Recovery Kit" has been completed. The audio tape; "Frog Calls of the Southwest" has been completed and 200 copies have been produced. Production of the "Wildlife Aware" signs were completed. These items will be officially launched and circulated to landholders with frogs on their properties early in 1996.

A newsletter reporting on activities of the team and implementation of the plan is currently being produced for distribution to a wider audience, including farmers, local schools, community conservation groups, media and any interested parties. The team will also be assisting a local community conservation group to produce a display about *Geocrinia alba* and *vitellina* for use in a interpretation centre being constructed in the Margaret River area.

Publicity

Team members were contacted during the year to comment on a number of issues relating to frogs in general. A particularly important issue concerned the use of glyphosphate herbicides near wetlands and the impact on tadpole and adult frog survival. This issue surfaced following the publishing of a report by the WA Environmental Protection Authority, which indicated high frog mortality in laboratory experiments. The team wrote to landholders with advice on the use of herbicides near frog habitat on their properties.

A number of media articles in local papers and reports in community newsletters were initiated. Assistance was given to reporters from *The Australian* with an article on the *Geocrinia* Recovery Team for inclusion in a special summer feature due for release in January 1996.

3.2.6) Population Monitoring.

All known populations of *G. alba* were surveyed for presence/absence and found to be extant with the exception of three. Site GA20 had one calling male in 1993 but no calling males have been recorded since. Site GA28 had one calling male in 1994 but none in 1995.

The apparent decline in the latter two sites may be because those sites were surveyed towards the end of the breeding season and the frogs may have finished calling before being surveyed.

All sites will be monitored for 4 years after the last record of occurrence before we can confidently say the population is extinct.

3.2.7) Genetic Studies

Analysis of the genetic data was completed in 1995. The results support the preliminary findings reported in the last annual report: that there is a high degree of genetic subdivision but there is no clear pattern in the geographic distribution of the two major genetic groups identified in the analysis. Rather there is a continuum of genetic change throughout the *G. alba* populations. Thus maintaining existing populations is of utmost importance to ensure conservation of their genetic diversity.

Translocation programs will need to consider these genetic characteristics and plan to avoid reducing overall diversity and potentially masking evolutionary patterns before being implemented.

3.2.8) Translocations

Captive Breeding

Following on from the establishment of a captive breeding program at Melbourne Zoo last year further animals were sent during 1995.

Three adult males, 4 juveniles and approximately 40 eggs were collected and sent in Spring. Of these all of the juvenile animals and approximately 12 of the eggs did not survive. The remaining eggs have grown to 10-12mm: about half adult size. These animals are not expected to mature until age three.

CONCLUSIONS

The workings of the team and implementation of the plan is proceeding well with a number of the recovery actions having been achieved and others actively being pursued.

Highlights for the year were:

- the completion of the first phase of the conservation fencing program which targeted the most vulnerable or significant populations,
- the production of the Farmers Kit, Frog Calls of South Western Australia audio tape and the Wildlife Aware community recognition signs,
- and the commencement of a new 3 year PhD research project to apply PVA techniques to both fenced and unfenced populations.

The major goals for 1996 will be:

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