# *GEOCRINIA* RECOVERY TEAM

# ANNUAL REPORT
# 2004

**BY**

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**Summary**

During 2004 the focus of the *Geocrinia* Recovery Team continued to monitor for change in the larger *alba* populations, post fire survival of McCleod Creek populations and double checking sites recorded as absent for 3 or more years. A secondary objective enabled by the filling of long standing vacancies in the Blackwood District nature conservation team was to increase the number and skill levels of staff available to participate in recovery program.

This seasons population monitoring resulted in 70 of the 110? sites being monitored with 53 sites recorded as having calling males present. Seventeen sites checked yielded no calls. Of note, calling was recorded at 3 sites without calling in 2003; of these, site GA-TAN-A-98 had not registered calls since 1998. No new sub-populations were found this season

The two translocation sites (GV7a and GV7b) established in 2000 in Adelaide Creek were monitored on multiple occasions during the year. It was with disappointment that we did not observe any activity at GV7a where for the preceding three years a single male has been calling from same location (within a metre of previous records).

Site GV7b first recorded in 2003 with 5 calling males across the area where egg mass were placed had reduce to 3. This was also disappointing as it was hoped that additional frogs from the translocation would have reached sexual maturity and began to call. The loss of two individuals would not normally be of concern but the implications for the success of this population are compounded by having such a small founding number. Further translocations are required if this population is to become sustainable. This work will be undertaken in 2005. Despite these results the technical success of the egg mass methodolgy provides the impetus for using the process to attempt to re-establish some of the *G.alba* sites that have declined over the past 10 years.

Monitoring continued at the Feb 2002 McCleod Creek private property wildfire site adjacent to the Leeuwin Naturaliste NP. Four monitoring subpopulations were burnt in the fire (GA24b, 24c, 24d and GA55a). The impact of the fire has been consistent with the outcomes of other fire events – a dramatic decline in the season immediately following the event followed by recovery. The rate of recovery is extremely variable both between years and between sites even within a creek system. For example site GA24d, one of the larger subpopulations in this part of McCloud Creek with average calling male count of 50+ in 1998 plummeted to 0 in 2002 after the fire , 1 in 2003 and 2 in 2004 – ie a significant impact which at the current rate of recruitment will take another 5 – 10 years to recover. However some 380m upstream site, a small site GA24b with 11 calling animals in 1999, dropped to 1 in 2002, 3 in 2003 and 4 in 2004. It is expected that this site will be at its preburn levels in the coming season. These observations raise many questions about what factors influence the rate of recovery and how they operate across small and micro scale catchments.

A feature of 2004 and in marked contrast to the past 7 years, was the absence of major disturbances (wildfires, flooding, soil disturbance) at any of the Geocrinia sites. However a potentially greater threat looms in the Water Corporations proposal to annually abstract 45 GL water from the Southern Yarragadee groundwater area near the Blackwood River approximately 10 km NE of *G.vittellina* sites. Team members have participated in various discussion sessions and meetings to provide advice to the proponents. One of the key recommendations with regard to *Geocrinia* management has been the establishment of monitoring bores close to the frog and other high value groundwater dependent ecosystems to determine the connection between ground water and surface aquifers and the implications of abstraction.

Team membership has declined during the 2001-2004 period with a number of significant changes. There is no longer representation from the Shire Council, Shire Officers, Community Conservation groups, Landholders or Science Division. During 2005 approaches will be made to

the Augusta Margaret River Shire concerning renewing their participation in the team. Similarly the team recognises that the absence of landholder representation is a weakness and attempts will be made to address the situation. Consideration will be given to how the team can better coordinate with and inform the local subregional Natural Resource Management organisations such as Cape to Cape Catchments Group on Geocrinia matters.

**Introduction**
During 2004 the focus of the *Geocrinia* Recovery Team was monitoring for change in the larger *alba* populations, checking persistence of the translocated vitellina populations and confirming extinction. Time was also committed to providing input into the strategic fire management and land use change and development proposals.

Major Goals for 2004 were:
1) Monitor the yr 2000 *vitellina* translocation.
2) Undertake a trial translocation of *G.alba*.
3) Continue the population and fire ecology monitoring programs utilising the lineal marking technique developed in 1999.
4) Have the population extents of at least 50% of *alba* sites captured and plotted to DGPS standards.
5) Supplement the Adelaide Creek introduction sites with further egg mass translocations
6) Review and update the *Geocrinia* Recovery Plan
7) Rebuild the membership of the Recovery Team with appropriately skilled people to guide the next 5 years of conservation actions and in light of changing nature of community based NRM involvement.
8) Commence the process of evaluating climate change and other impacts on the long term survival of *Geocrinia* species.

Item 1 was completed with some disappointing results
Item 2 & 5 did not proceed due to insufficient numbers of staff in the NC program
Item 3 was achieved, though new arrangements will need to devised for monitoring the Walpole based fire ecology plots due to staff turnover.
Item 4 was progressed but have not yet achieved the 50% target.
Item 6 was subject to a funding application with the Department of Environment and Heritage. This was successful with funds arriving in April 2005. The process will commence shortly after this.
Item 7 no change re: team membership but considerable progress on building contacts with the community based NRM groups.
Item 8 no progress.

Goals for 2005
1. Supplement the founding population of the yr 2000 *vitellina* translocation particularly at site GV7b.
2. Evaluate suitable sites and commence a trial translocation of *G.alba*
3. Continue the population and fire ecology monitoring programs utilising the lineal marking technique developed in 1999. Establish new arrangements with Warren Region NC staff to undertake annual monitoring of fire sites.
4. Continue to map the population extents of at least 50% of *alba* sites and plotted to DGPS standards.
5. Rebuild the membership of the Recovery Team with appropriately skilled people to guide the next 5 years of conservation actions and in light of changing nature of community based NRM involvement. Target new environmental officers in the LGA
6. Complete review of, and update, the *Geocrinia* Recovery Plan
7. Commence the process of evaluating climate change and other impacts on the long term survival of *Geocrinia* species.

**Team Membership**
Team membership has declined during the 2001-2004 period with a number of significant changes both in departmental and community membership. These have included the retirement of Andrew Burbidge from the WATSCU position, Blackwood district were without a district

manager for approximately 18 months, Adrian Wayne the science representative has been undertaking further studies and absent from the department. Jack Stannard Augusta Margaret River Shire Ranger retired from the shire, there has been no community conservation group attendance for a number of years and Shire Councillor representation has also fallen by the wayside, associated with a number of political upheavals within that organisation.

During 2004 the team was comprised of:

| | | |
|---|---|---|
| John Blyth | A/Manager WATSCU | CALM – Nat Cons Div |
| Kim Williams | Rgnl. Ldr Nature Conservation | CALM – SW Region |
| Absent | District Manager | CALM – Blwd District |
| Absent | Dist. NC Officer | CALM – Blwd District |
| Absent | Forest Ecologist | CALM -CALMScience |
| Dale Roberts | Zoologist | UWA - Zoology Dept. |

A significant turnover in district staff including district manager and the majority of nature conservation staff has left the team with a number of positions vacant. Replacement staff have now begun to fill positions and new appointments to the team will be made shortly.

Similarly it is noted that John Blyth will be relinquishing his membership in July following his retirement from the department. The team thanks John for his participation and valuable contributions over the last 3 years and wishes him well in his retirement.

During 2005 approaches will be made to the Augusta Margaret River Shire concerning renewing their participation in the team. Similarly the team recognises that the absence of landholder representation is a weakness and attempts will be made to address the situation. Consideration will be given to how the team can better coordinate with and inform the local subregional Natural Resource Management groups of *Geocrinia* matters.

**Recovery Plan - Annual Report on Action Items**

***Geocrinia vitellina***

**3.1.1 Survey of Riparian Habitat**

No further survey was undertaken this year.

**3.1.2 Land Mangement and Tenure**

Implementation of the governments “Old Growth Forest Policy” continued with the Blackwood River National Park being gazetted during the year. Note: this park encompasses all of the *G.vitellina* sites

**3.1.3 Fire Management and Research**

No *vitellina* populations were impacted upon or threatened by fire during the year, though the potential for a fire in these areas is high with a notable increase in public use of the boundary tracks and firebreaks in the Spearwood Creek/Geocrinia Creek area. The popularity of informal camp sites along the Blackwood River is likely to increase as the national park proposals are implemented and additional recreation facilites constructed. The attempt to close three tracks either side of Spearwood Creek and a linking track from Adelaide Road during 2002 has met with mixed success. At all sites gates are still in place but illegal “push-arounds” have been constructed at two sites and vehicles continue to access these areas. The gazettal of the park now provides backing for enforcement and compliance actions to be implemented in these areas.

### 3.1.4 Habitat Protection

**Pig Control**

During 2004 the pig control program using selected volunteers was substantially reduced and a more formal program implemented by departmental staff has been implemented. There have been no further loss of monitoring sites to pig damage since that reported in 1999 though GV6 contained some fresh pig diggings during the October monitoring sessions. Anecdotally and through field observation there appears to have been no significant increase in pig activity over the last two seasons. Under the New Parks program 10 additional pig traps have been established in and around the *G.vitellina* sites.

**Ground Water Abstraction**

The Water Corporation proposal to extract 45 GL of water from the south west portions of the yarragadee aquifer have generated quite a bit of work for the chair. Concerns were raised about potential linkages between the yarragadee and shallow surface aquifers, leading to draw down of the surface systems. It is these surface systems which feed the creek systems occupied by *Geocrinia's*, Spearwood Creek in particular.

As a result of these discussions additional monitoring bores have been established by the Water Corporation at Adelaide, Spearwood and other non-*Geocrinia* Creeks.

### 3.1.6 Population Monitoring

All *Geocrinia vitellina* sites were monitored during the year using both point and transect counts. GPS data relating to population extents was also collected for 2 sites.

All populations were present but again frogs were not recorded on the GV3a transect but were present elsewhere in the swamp. GV3b maintained its productivity with 27 calling frogs recorded (17 in 2001, 28 in 2002, 26 in 2003), GV1d and GV6 which experienced rapid increases post the 1997 fire now appear to be levelling out. Fresh pig damage was noted at GV6. GV5 continues to show recovery after the pig disturbance and "faunal thouroghfare" reported in 2000 (0 in 2001 & 2000, 3 in 2002, 8 in 2003 and 7 in 2004).

### 3.1.8 Translocations

The two translocation sites (GV7a and GV7b) established in 2000 in Adelaide Creek, were again monitored on multiple occasions during the year. It was with disappointment that we did not observe any activity at GV7a where for the preceding three years in a single male has been calling from same location (within a metre of previous records

At GV7b 3 calling males were recorded from within the area that egg masses and burrows were translocated in 2000. This is a decline on the 5 from the previous year and is also disappointing as it was hoped that additional frogs from the translocation would have now reached sexual maturity and began to call. The reasons for decline are not known but may reflect natural mortality. The loss of two individuals would not normally be of concern but the implications for the success of this population are compounded by having such a small founding number. Further translocations are required if this population is to become sustainable. This work will be undertaken in 2005.

## ***Geocrinia alba***

### 3.2.2 Land Tenure and Management

Changes to tenure of frogs lands as proposed in the 'New Parks" program were completed during the year with the gazettal of the Forest Grove NP. The Capes Parks Management Planning team continued with development of a draft plan which includes the Leeuwin Naturaliste, Forest Grove, Loc 83 and Witchcliffe frog sites. Threatened species management

and hydrology issues will feature strongly in this plan.

### 3.2.3 Fire Management and Research

The *Geocrinia lutea* fire impact sites in Walpole district were not monitored this year by Science Division staff in Manjimup. A change in duties and other project commitments prevented this work from being undertaken. Arrangements will be been made for SW region and Warren region NC staff to undertake this task next season if Science Div staff are not available.

Provision of advice on conservation values and management requirements in the development of annual departmental prescribed fire programs has assumed a much greater role in the last few years. *Geocrinia* considerations have also featured prominently in the last 3 burn seasons with boundaries being changed, lighting patterns altered or season of burn modified to minimise impact upon known sites.
Discussions are also underway re: the use of fire to stimulate riparian vegetation in Forest Grove NP at a site formerly known to contain *Geocrinia's*.

No fires occurred on any *G.alba* sites during 2004.

### 3.2.5 Public Information and Land-owner participation

Responses to a number of media enquiries and distribution of *Geocrinia* populations in relation to land clearing proposals were made during the year. A number of properties containing *Geocrinia* populations have changed hands over the last 2 years. Invariably the new owners have expectations of changing the land use usually to more intensive activities. Comment and advice was provided for 6 land use change proposals, principally conversion of grazing land to viticulture on properties in the general locality of a number of frog sites.

### 3.2.6 Population Monitoring

In 2004 the focus was again on monitoring the larger populations and confirming the presence or absence of sites recorded as absent over the last 3 or more years.

Seventy sites were monitored during 2004 with 17 recorded as having an absence of calling frogs. 53 sites recorded as present. No new sub-populations were found this season. Of note 3 sites absent in 2003 were present in 2004. Of these site GA-TAN-A-98 with 1 calling animal, the first positive record since 1998. Overall numbers of calling males recorded was similar or just below the 2003 results.

Linear monitoring was repeated on 10 sites, principally in the Loc 83 zone. As in previous years there was considerable variation within each site across monitoring seasons. (See Table 1)

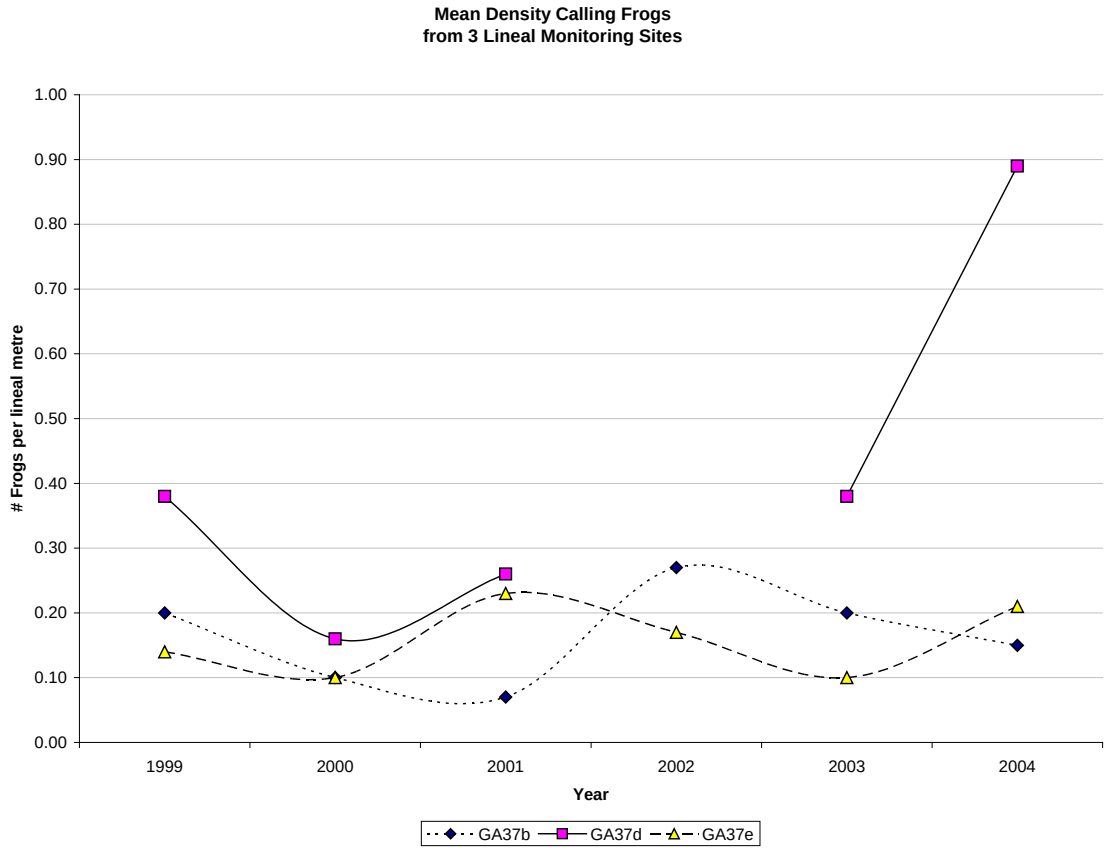
Table 1
*Population extents (m) of three populations in Location 83. (ie the distance between the first and last calling frog where less than 50m separates any calling frogs.*

| **Site** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** |
|---|---|---|---|---|---|---|
| GA37b | 220 | 218 | 188 | 205 | 208 | 199 |
| Ga37d | 97 | 102 | 62 | 83 | | 45 |
| Ga37e | 114 | 48 | 56 | 95 | 110 | 82 |

Finding a plausible explanation for these results is difficult. The distribution of frogs within site 37b appears to have remained stable over the last 6 years despite being burnt in1999, whereas 37e (also burnt in 1999) suffered a dramatic reduction (over 50%) for 2 years immediately following the fire, but has shown recovery in the last 2. Site 37d was unburnt and though initially stable has shown the greatest variability between years. The reasons for this variation is unknown.

This trend is not reflected in the results for mean calling density (see chart 1). All sites initially declined but have now recovered to pre-burn levels. Factors other than the impact of fire are obviously acting on these populations. Future monitoring may help develop an understanding re: the ecology of these sites.

Chart 1:
*Mean densities of calling frogs 1999-2004 from 3 sites in Location 83.*




### 3.2.8 Translocations

Again because of critical staff shortages and other commitments the decision was made not to commence a translocation of *G. alba* in 2004. However I am pleased to report that as at March 2005 the district staffing has improved and when combined with the gazettal of the "new parks" sites and confirmation of continuing funding, there should be no impediment to progressing with a translocation in 2005. To this end preliminary site selection has commenced and ethics committee and translocation proposals are being developed.

**Conclusion**
2004 was a routine year for the *Geocrinia* Recovery Team, with no significant new achievements. Despite this, there were a number of progressive advancements which contributed to improving our understanding of the ecology of the species or securing the long term protection of habitat. Specifically the gazettal of the new National Parks, the absence of major disturbance events and the input into the fire planning program are considered as desirable outcomes for the year.

The results of the *G.vitellina* translocation were however disappointing. What started with promise and optimism last year have been tempered by the 2004 observations. It is hoped actions to enhance the founding population will help overcome this decline.

A new line of consideration for the team will need to be the potential impacts of climate change, declining rainfall and proposals to extract greater volumes of ground water from the south west area.