

Application for a



# Section 91 Licence

under the *Threatened Species Conservation Act 1995* to harm or pick a threatened species, population or ecological community\* or damage habitat.

1. Applicant's Name ^: (if additional persons require authorisation by this licence, please attach details of names and addresses)	Russell Pigg, General Manager Shoalhaven City Council	
2. Australian Business Number (ABN):	59 855 182 344	
3. Organisation name and position of applicant ^: (if applicable)	Shoalhaven City Council Russell Pigg – General Manager Rodney Wallace – Contract Project Manager	
4. Postal address ^:	P O Box 42 NOWRA NSW 2541	Telephone ^: B.H. (02) 44 293 135 A.H. [REDACTED]
5. Location of the action (including grid reference and local government area and delineated on a map).	Shoalhaven City Council area  NE - 34° 54' 13" Latitude 150° 37' 51" Longitude SE - 34° 54' 18" Latitude 150° 37' 50" Longitude SW - 34° 54' 17" Latitude 150° 37' 41" Longitude SE - 34° 54' 12" Latitude 150° 37' 42" Longitude  For map see Figure 1 in attached EPBC Referral	

\* A threatened species, population or ecological community means a species, population or ecological community identified in Schedule 1, 1A or Schedule 2 of the *Threatened Species Conservation Act 1995*.

^The personal details of all Section 91 licences will be displayed in the register of Section 91 licences required under Section 104 of the *Threatened Species Conservation Act 1995*. See notes

<p>6. Full description of the action and its purpose (e.g. environmental assessment, development, etc.)</p>	<p>SCC is proposing to improve stormwater drainage in the environs of the intersection of Worrigee Road and Isa Road, Worrigee. The proposal includes a detention pond to retain runoff from sustained heavy downpours for a period before slowly releasing downstream. This proposed work is intended to reduce the impact of flooding downstream.</p> <p>The detention basin is to have incorporated within it a permanent pondage which has been specifically designed, and will be landscaped appropriately with selected plants, for it to be ideally suited as a Green and Golden Bellfrog Habitat Pond.</p>			
<p>7. Details of the area to be affected by the action (in hectares).</p>	<p>The overall area of the site on which the work is to take place is 6.34 hectares. However, only about 2/3 of this area (4.42ha) is to be disturbed by the proposal.</p> <p>The area was clear felled in (about) 1997, and now supports re-growth Tickbush shrubland, a few Spotted Gums and Snow-in-Summer.</p> <p>There is an existing open drainage network in place, but the existing flooding overflow is directed to the east where it causes nuisance flooding. This proposal, which to a large extent is simply improving the existing drainage, creation of the detention pond and the Green and Golden Bell Frog Habitat Pond, is intending to detain floodwaters and release them more slowly to the south.</p>			
<p>8. Duration and timing of the action (including staging, if any).</p>	<p>The work is expected to take 12 weeks to complete. It is hoped that the work will be commenced in Spring of 2010, but if not allowed at this time, then March/April 2011 commencement would be second preference.</p>			
<p>9. Is the action to occur on land declared as critical habitat? (tick appropriate box)</p>	<p><input type="checkbox"/> No</p>			
<p>10. Threatened species, populations or</p>	<p><u>Scientific name</u></p>	<p><u>Common name</u> (if known)</p>	<p><u>Conservation status</u></p>	<p><u>Details of no. of individual</u></p>

\* Critical habitat means habitat declared as critical habitat under Part 3 of the *Threatened Species Conservation Act 1995*

ecological communities to be harmed or picked.			(i.e. critically endangered, endangered or vulnerable)	animals, or proportion and type of plant material (e.g. fertile branchlets for herbarium specimens or whole plants or plant parts)
Green and Golden Bell Frog	<u>Litoria aurea</u>	<u>Green and Golden Bell Frog</u>	Vulnerable (although some authorities believe that the February 2010 birthing was a 1 in 20 year occurrence)	(say) 20 GGBF maximum

<p>11. Species impact: (please tick appropriate box)</p> <p>a) For action proposed on land declared as critical habitat;</p> <p>or</p> <p>b) For action proposed on land <u>not</u> declared as critical habitat.</p>	<p>an SIS is attached      N/A</p> <p>Items 12 to 25 have been addressed      <input checked="" type="checkbox"/> Yes</p>
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*N.B. Provision of a species impact statement is a statutory requirement of a licence application if the action is proposed on critical habitat*

*The provision of information addressing items 12 to 17 is a statutory requirement of a licence application if the action proposed is not on land that is critical habitat. Information addressing any of the questions below must be attached to the application.*

12 Describe the type and condition of habitats in and adjacent to the land to be affected by the action.	<p>The region to the east of Worrigee Road, including primarily Brundee Swamp primarily and the Crookhaven River Floodplain generally, is known to support an important population of GGBF. This affected area is scavenging habitat only. The soils are not suitable for winter hibernation of the GGBF. There is an area to the south in Worrigee Nature Reserve in which soils may be currently suitable for winter hibernation and/or breeding</p> <p>This project site is to the west of (and, perhaps, north of) a potentially suitable and connected habitat. Given the existing urban area to the northwest, northeast and north of the project site, the site is not considered to provide a connectivity function within the landscape for the species. The area to the immediate east of Worrigee Road is settled as a rural residential environment</p>
13. Provide details of any known records of a threatened species in	Gaia Research Pty Ltd (Gaia 2008): Review of Environmental Factors Pt 5 Assessment for the improvement of Drainage, Worrigee/Isa Roads, Worrigee

the same or similar known habitats in the locality <i>(include reference sources)</i> .	Gaia Research Pty Ltd (Gaia 2010): Supplementary Impacts of the proposed works to modify the drainage at the intersection of Worrigee/Isa Roads, Worrigee
14. Provide details of any known or potential habitat for a threatened species on the land to be affected by the action <i>(include reference sources)</i> .	<p>None presently</p> <p>The project does propose to construct a permanent pondage with appropriate soils and landscaping to assimilate ideal Green and Golden Bell Frog breeding and hibernation habitat.</p>
15. Provide details of the amount of such habitat to be affected by the action proposed in relation to the known distribution of the species and its habitat in the locality	<p>No existing breeding or hibernation habitat is to be affected by the works</p> <p>Approximately 1/3 of the site of the work is scavenging habitat only.</p>
16. Provide an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species.	Nil
17. Provide details of possible measures to avoid or ameliorate the effect of the action.	It is proposed to scavenge/brush sweep the affected area prior to starting works. If GGBF are detected they will be herded from the affected area, and the area brush swept each morning before starting work until no GGBF are detected for 2 consecutive

	<p>mornings</p> <p>This practice will be repeated if work is halted because of wet weather</p>
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*N B: The Director-General must determine whether the action proposed is likely to significantly affect threatened species, populations or ecological communities, or their habitats. To enable this assessment the Applicant is required to address items 18 to 24. Any additional information referred to in addressing these items must be attached to the application*

<p>18 In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	<p>The breeding event following ideal conditions in February 2010 was considered to be a 1 in 20 year event. It is considered that the nearby colony has been populated quite prolifically and, even if isolated GGBF are randomly located, the effect on the local population is not expected to be significant.</p> <p>Again it is stated that the soils in the project site are not ideal for winter hibernation.</p>
<p>19 In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction</p>	<p>The action is not proposed to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction</p> <p>The action is also proposing to construct a suitable GGBF habitat pondage within the detention basin.</p>
<p>20 In the case of an endangered ecological community or critically endangered ecological</p>	<p>The action</p> <ul style="list-style-type: none"> <li>(i) Will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, and</li> <li>(ii) Will not substantially and adversely modify the composition</li> </ul>

<p>community, whether the action proposed:</p> <p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p> <p>(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction</p>	<p>of the ecological community such that its local occurrence is likely to be placed at risk of extinction.</p>
<p>21. In relation to the habitat of a threatened species, population or ecological community:</p> <p>(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and</p> <p>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</p> <p>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.</p>	<p>(i) No habitat is to be removed. The habitat will be modified in that it is proposed to design and construct a pondage especially targeting creation of GGBF habitat, and</p> <p>(ii) The area of habitat is not likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</p> <p>(iii) The modified GGBF pondage is expected to become very important to the long-term survival of the GGBF species, population or ecological community which may err west of Worrigee Road in the future</p>
<p>22. Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)</p>	<p>No</p>

23. Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.	Yes
24. Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process	No

## Important information for the applicant

### Processing times and fees

The *Threatened Species Conservation Act 1995* provides that the Director-General must make a decision on the licence application within 120 days where a species impact statement (SIS) has been received. No timeframes have been set for those applications which do not require a SIS. The Director-General will assess your application as soon as possible. You can assist this process by providing clear and concise information in your application.

Applicants may be charged a processing fee. The Director-General is required to advise prospective applicants of the maximum fee payable before the licence application is lodged. Therefore, prospective applicants should contact the Department of Environment, Climate Change and Water NSW (DECCW) prior to submitting a licence application.

A \$30 licence application fee must accompany a licence application.

### Protected fauna and protected native plants\*

\* Protected fauna means fauna of a species not named in Schedule 11 of the *National Parks and Wildlife Act 1974*.

Protected native plant means a native plant of a species named in Schedule 13 of the *National Parks and Wildlife Service 1974*.

Licensing provisions for protected fauna and protected native plants are contained within the *National Parks and Wildlife Act 1974*. However, a Section 91 Licence may be extended to include protected fauna and protected native plants when these will be affected by the action.

If you are applying for a licence to cover both threatened and protected species please provide the information requested in Item 10 *as well as* a list of protected species and details of the number of individuals animals or proportion and type of plant material which are likely to be harmed or picked.

### **Request for additional information**

The Director-General may, after receiving the application, request additional information necessary for the determination of the licence application.

### **Species impact statement**

Where the application is not accompanied by a SIS, the Director-General may decide, following an initial assessment of your application, that the action proposed is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats. In such cases, the *Threatened Species Conservation Act 1995* requires that the applicant submit a SIS. Following initial review of the application, the Director-General will advise the applicant of the need to prepare a SIS.

### **Director-General's requirements for a SIS**

Prior to the preparation of a SIS, a request for Director-General's requirements must be forwarded to the relevant DECCW Office. The SIS must be prepared in accordance with section 109 and 110 of the TSC Act and must comply with any requirements notified by the Director-General of DECCW.

### **Disclosure of Personal Information in the Public Register of s91 Licences**

The Public Register provides a list of licence applications and licences granted. A person about whom personal information is contained in a public register may request that the information is removed or not placed on the register as publicly available.

Copies of all applications and licences issued under section 91 and certificates issued under section 95 of the Act are available on the DECCW website at [www.environment.nsw.gov.au/threatenedspecies/S91TSCaRegisterByDate.htm](http://www.environment.nsw.gov.au/threatenedspecies/S91TSCaRegisterByDate.htm) or in hardcopy form from The Librarian, DECC, 59 Goulburn St, Sydney.

### **Certificates**


If the Director-General decides, following an assessment of your application, that the proposed action is not likely to significantly affect threatened species, populations or ecological communities, or their habitats, a Section 91 Licence is not required and the Director-General must, as soon as practicable after making the determination, issue the applicant with a certificate to that effect.

*N B: An action that is not required to be licensed under the Threatened Species Conservation Act 1995, may require licensing under the National Parks and Wildlife Act 1974, if it is likely to affect protected fauna or protected native plants.*

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I confirm that the information contained in this application is correct. I hereby apply for a licence under the provisions of Section 91 of the *Threatened Species Conservation Act 1995*.



Applicant's name	<b>Russell Pigg</b>
Applicant's Position & Organisation	<b>General Manager Shoalhaven City Council</b>
Applicant's signature	
Date	<b>30-7-10</b>

For more information or to lodge this form, contact the nearest branch of DECCW's Environment Protection and Regulation Group:

Metropolitan Branch P: 02 9995 6851 F: 02 9995 6900 PO Box 668 Parramatta NSW 2124	Metropolitan Branch P: 02 4225 1455 F: 02 4225 3545 PO Box 5436 Wollongong NSW 2515	North East Branch P: 02 6640 2500 F: 02 6642 7743 PO Box 498 Grafton NSW 2460	North East Branch P: 02 4908 6800 F: 02 4908 6810 PO Box 488G, Newcastle NSW 2300
North West Branch P: 02 6883 5330 F: 02 6884 9382 PO Box 2111 Dubbo NSW 2830	South Branch South East Region P: 02 6122 3100 F: 02 6299 3525 PO Box 622 Queanbeyan NSW 2620	South Branch South West Region P: 02 6022 0600 PO Box 544 Albury NSW 2640	

Department of Environment, Climate Change and Water (NSW)  
PO Box A290, Sydney South NSW 1232  
Phone: 131 555 (Environment Line) Fax: 9995 5999  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)

**Supplementary assessment of the impacts of the proposed works to modify  
the drainage at the intersection of Worrigee Road and Isa Road, Worrigee on  
the Green and Golden Bell Frog**



Prepared by

**Gaia Research Pty Ltd**

**April 2010**

### Proposal

Shoalhaven City Council (SCC) wishes to improve the drainage at the intersection of Worrigee Road and Isa Road, Worrigee to protect assets and reduce the risk of localised flooding. The proposed works include the construction of a large detention basin and re-diverting water from Isa Road into this basin (**Figure 1**). The basin will cater for a volume of 5000 cubic metres of water and the over flow will drain to the south beside Worrigee Road. The overall proposal is to enlarge the capacity of the existing stormwater system to cater for large volumes of water so that in times of heavy or prolonged periods of rain the area does not flood. As part of this proposal a settling pond upstream from the basin is to be filled in, a section of the storm water gutter is to be piped and another section provided with a concrete base.

Currently water drains at the rear (southern side) of dwellings located on the south of Isa Road and this is directed into a fenced settling pond and thereafter an open drain into the subject area. The current proposal will alter this open drainage line so that it is wider and shallower. The detention basin will be excavated and fill placed on the edges to form gently sloping swales to retain the water. The maximum capacity of the basin will be in the order of 5000 cubic metres and 1.5 metres in depth. Water captured within the basin will also be discharged into the discharge channel via a 600 mm dia. pipe. Any water in excess of this capacity will overtop the wall of the detention basin in an area of the discharge pipe and into the dedicated open discharge channel that flows south beside Worrigee Road.

The design caters for the retention of large volumes of water during times of flood then discharges the receiving water so that the basin would drain over a period of a few days to a maximum depth of approximately 600 mm near the discharge pipe. The intention is to retain a volume of water within the basin so that suspended material can precipitate and to cater for the Green and Golden Bell Frog *Litoria aurea*, an endangered species that has been detected on the site (G. Daly pers. comm.).

### Assessment of impact

Section 5A of the Environmental Planning and Assessment (EP and A) Act (1979), as amended by the *Threatened Species Conservation Act 1995* (amended 2002) sets out the factors to be considered in deciding whether there is likely to be a significant effect on threatened species, populations or communities and or their habitat.

An assessment of the threatened species and endangered ecological communities within the locality (i.e. five kilometre radius of the site) is given in **Table 1**. Based on habitat and distribution of nominated species a previous assessment by the author in 2008 indicted that a detailed assessment was necessary for the Green and Golden Bell Frog *Litoria aurea*, Pouched Greenhood Orchid *Pterostylis gibbosa* and Nowra Heath Myrtle *Triplarina nowraensis*. Although the endangered ecological community, Swamp Oak Floodplain Forest has been mapped as occurring on site field inspection revealed that the vegetation was primarily regrowth Tickbush *Kunzea ambigua* and small occurrences of Snow-in-summer *Melaleuca linariifolia* and Red Bloodwood *Corymbia gummifera*.

**Table 1. Threatened species and endangered ecological communities found within five kilometres of the subject site.**

Species	Habitat	Assessment
Green and Golden Bell Frog	Coastal wetlands, dams and drainage lines	Yes
Freckled Duck	Large wetlands and dams.	No
Australasian Bittern	Large freshwater wetlands with abundant emergent aquatic vegetation.	No
Black Bittern	Dense stands of Swamp Oak beside rivers.	No
Square-tailed Kite	Coastal woodland and open forest.	No
Bush Stone-curlew	Open Spotted Gum forests, beside creeklines or coastal headlands.	No
Hooded Plover	Beaches and sandy inlets.	No
Gang-gang Cockatoo	Various eucalypt forests on the coast and ranges.	No
Glossy Black Cockatoo	Coastal woodland and open forest with an abundance of Black Oak.	No
Turquoise Parrot	Woodlands with open grassland.	No
Powerful Owl	Tall open forests with an abundance of arboreal mammals.	No
Regent Honeyeater	River oak forest, Blackbutt forest and coastal woodlands.	No
Yellow-bellied Glider	Grey Gum – Red Bloodwood and Spotted Gum forests on the coastal plain.	No
Grey-headed Flying Fox	Coastal rainforests and open forests	No
Yellow-bellied Sheath-tail Bat	Coastal and escarpment tall open forests.	No
Eastern Bentwing-bat	Coastal and escarpment tall open forests.	No
Greater Broad-nosed Bat	Coastal tall open forests.	No
Syzygium paniculata	Coastal rainforests.	No
Triplarina nowraensis	Isolated occurrences near Nowra	No
Pterostylis gibbosa	Open Spotted Gum forest in Worrigee NR, thin poorly drained clayey soils derived from Wandrawandian Siltstone.	No
Swamp Sclerophyll forest		No

### Recent events regarding the Green and Golden Bell Frog

The author conducted a survey at Brundee Swamp Nature Reserve during the day on the 5 February 2010. At that time one site previously surveyed was dry but four adult GGBF were observed some 300m to the north at a pond and approximately 50 at another shallow expanse of water near a drainage channel.

Searches on the night of 5 February 2010 detected eleven amplexing pairs of GGBF at the site near the drainage channel. Subsequent searches at Brundee Swamp NR on the 24 March 2010 revealed a large number of metamorphling GGBF at the site that had previously been dry. This area now supported shallow pools and GGBF tadpoles were found. These observations indicate that the wetland had filled with water considerably after the 5 February and subsequent breeding of GGBF had occurred. During a search lasting for only approximately 15 minutes thousands of metamorphling Bleating Tree Frogs *Litoria dentata* and about 20 metamorphling GGBF were observed. The number of animals was impressive as ten to 20 frogs hopped away from the observer at each step.

On the 25 March 2010 searches near Terara Swamp revealed a large number (approximately 100 GGBF observed in 30 minutes) of metamorphling GGBF. Based on the area of wetland at Brundee and Terara and density of frogs it is estimated that there were tens of thousands of metamorphling GGBF at these sites. A search of the Subject Site (Isa /Worrigee Rd) on 12 April 2010 revealed

approximately twenty metamorphling GGBF. This search covered about 50 m of the drainage line and basin, hence the total number of GGBF at the site would have been considerable higher.

- a) *in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*

This factor relates to those species listed on Part 1 and Part 4 of Schedule 1 and Part 1 of Schedule 1A and Part 1 of Schedule 2 of the TSC Act, and Part 1 and Part 4 of Schedule 4 of the Fisheries Management (FM) Act 1994. No species listed on Part 1 and Part 4 of Schedule 1 of the TSC Act were detected during the current assessment. However the site is suitable for the Green and Golden Bell Frog (GGBF).

Within the Shoalhaven Local Government Area several “key” populations (as defined by DEC 2005) of GGBF exist. The Crookhaven floodplain key population includes the Brundee Swamp/ Terara Swamp area. The author prepared a Recovery Plans for this key population (DECC 2007a) and continues to study the habitat utilisation and population dynamics at Brundee Swamp and environs. As previously stated breeding was recorded at Brundee Swamp on the 5 February 2010. As a result it is estimated that tens of thousands of metamorphling GGBF have been dispersing from this site since April 2010 and at least twenty metamorphlings were observed on the subject site on 12 April 2010. This finding validates comments in the previous report that the site may provide refuge habitat for GGBF.

The modification of approximately 5000 square metres of regrowth Tickbush shrubland is not considered to put the GGBF population in the Culburra/Crookhaven River floodplain at risk of extinction. Currently there are tens of thousands of metamorphling GGBF in the broader Worrigea and Terara area as a result of recent breeding events. The site provides refuge but not breeding habitat for the GGBF. The proposal would “take” GGBF but the impact would not put the population at risk of extinction as there are many frogs over the locality.

The proposals to ameliorate the potential impacts are detailed in the conclusions. If these recommendations are adhered then the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

- b) *in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,*

No endangered populations listed on Part 2 of Schedule 1 of the TSC Act and Part 2 of Schedule 4 of the FM Act, were found on site.

- c) *in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:*

- (i) *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
- (ii) *is likely to substantially and adversely modify the composition of the ecological community such that its occurrence is likely to be placed at risk of extinction,*

No endangered ecological communities exist on the subject site.



- d) *in relation to the habitat of a threatened species, population or ecological community:*
- (i) *the extent to which habitat is likely to be removed or modified as a result of the action proposed, and*
  - (ii) *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and*
  - (iii) *the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,*

i) The proposal shall modify approximately 5000 square metres of depauperate Tickbush shrubland and some regrowth Spotted Gums and Snow-in-summer. The action is not permanent and the shrubland will regenerate,

ii) The action shall remove/modify the existing habitat but will not cause isolation of the vegetation community to other areas of native vegetation in Worrigee Nature Reserve.

iii) The habitat to be removed is not of critical importance to the survival of the GGBF in the locality. The proposal will impact on native vegetation that is approximately five years of age. After the works are completed the native vegetation will regenerate. Apart from the removal of silt at the discharge pipe there is no proposal to further interfere with the native vegetation on the site. The proposal represents is a short term disturbance.

- e) *whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),*

The DECC website was searched for critical habitat listed in the Register of Critical Habitat kept by the Director General of Department of Environment and Climate Change. Currently (October 2007) critical habitat has been declared for Little Penguin population at Sydney's North Harbour, Mitchell's rainforest snail in Scotts Island Nature Reserve, Wollemi Pine and Gould's Petrel.

- f) *whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,*

The proposal is not consistent with the objectives or actions of the draft GGBF recovery plan or draft recovery plan for the Nowra Heath Myrtle. The removal or disturbance of habitat or potential habitat is not consistent with the recovery of the species because loss or disturbance of habitat reduces the area that a population has to occupy. The loss of habitat leads to a reduction in the size of a population and hence the viability of that population to persist.

- g) *whether the action proposed constitutes or is of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.*

The clearing of native vegetation is listed as a key threatening process under Schedule 3 of the TSC Act. The final decision of the Scientific Committee on this determination is given at <http://www.environment.nsw.gov.au/determinations/ClearingNativeVegKTPListing.htm>.

The main findings of the Scientific Committee were:

- Clearing of any area of native vegetation, including areas less than 2 hectares in extent, may have significant impacts on biological diversity.
- Land Clearance is listed as a Key Threatening Process under the Commonwealth's Environment Protection and Biodiversity Act, 1999.

## 7 Part Test – Assessment of Significance

for threatened species, populations  
or ecological communities,  
or their habitats.

- In New South Wales since 1788 at least 61% of the original native vegetation has been cleared, thinned or substantially or significantly disturbed (Environment Protection Authority 1997). The proportion of area cleared varies between region and community type (Native Vegetation Advisory Council 1999) and in some cases has exceeded 90%.
- Clearing has been identified as a threat to a number of species, communities and populations listed under the Threatened Species Conservation Act (Appendix 1) and could cause species, populations or ecological communities that are not threatened to become threatened (Appendix 2). The determination applies to clearing as a process, regardless of the species, populations and ecological communities affected in a particular instance.

### EPBC Act (1999)

Under Part 9 of the Commonwealth EPBC Act (1999), any action that has, or is likely to have, a significant impact on a matter of National Environmental Significance (NES), is subject to a referral and assessment process and may progress only with the approval of the Commonwealth Minister for Environment. An action is defined as a project, development, undertaking, activity (or series of activities), or alterations to any of these. The EPBC Act currently identifies seven matters of national environmental significance:

- World Heritage properties;
- National Heritage places;
- Ramsar wetlands of international importance;
- listed threatened species and ecological communities;
- listed migratory species;
- Commonwealth marine areas and
- nuclear actions.

Nationally threatened species and ecological communities EPBC Act policy statement 3.19 states that the removal or degradation of aquatic or ephemeral habitat where GGBF has been recorded since 1995 is considered a significant impact. By applying the Commonwealth's criteria for significance the proposed development needs to be referred to the Commonwealth Minister for the Environment.

### DISCUSSION

The proposal will remove approximately 5000 square meters of refuge and dispersal habitat for the GGBF. Application of the seven-part test under the TSC Act (1995) indicates the disturbance and modification of 5000 square meters of refuge habitat will not lead to the extinction of the local population. Based on the area to be modified and the number of frogs currently in the population an SIS is not required. The proposed impact is relatively short term.

### CONCLUSIONS

The GGBF now occupies the Subject Site. The loss of a relatively few animals and modification of 500 sq m of refuge habitat is not sufficient to trigger a Species Impact Statement. However, by applying the Commonwealth's criteria for significance the proposed development needs to be referred to the Commonwealth Minister for the Environment.

There are several actions that must be adhered to ameliorate the impacts of the proposal. The following are provided to reduce impacts on the GGBF but also to enhance the existing landscape:

- No work is to commence on the site until Spring/Summer to allow the GGBF time to complete aestivation and disperse from the site. This will give the GGBF time to disperse from the site (back to Brundee Swamp) and reduce the potential of "harm" animals. Harm as defined under the TSC Act (1995) includes injure or kill an animal. If work was to commence at the current time then animals would certainly be harmed;
- A suitable qualified specialist must be on site during any clearing of vegetation;
- Prior to earthworks the specialist shall capture all frogs within the area to be developed;
- Frogs shall be removed from the area directly affected and placed within another portion of the subject site that shall not be disturbed;

- The specialist must monitor earthworks as they proceed and call a halt if and when any additional frogs are observed. No earthworks are to be conducted unless the specialist/s are on site to monitor earthworks;
- Shoalhaven City Council and DECCW must be informed on the number and age of all frogs found and removed from the disturbed area;
- The work is to be done in stages. This will include the clearing and mulching of vegetation, stripping and stockpiling of topsoil, excavation and reshaping to create the detention basin, placement of over flow pipe and then topdressing the swales and floor of the basin with topsoil and finally mulch. The seed and propagules from the stockpile should facilitate natural regeneration;
- Where possible shallow wide open drains are preferable to piped drains. Open systems allow native vegetation to recolonise the drains and provide habitat for amphibians and
- A Referral to the Department of Environment and Heritage (DEH) is required.

### Acknowledgement

We thank Shoalhaven City Council for the use of **Figure 1**. Cover image – metamorphosing GGBF detected on Subject site by G. Daly.

### REFERENCES

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