



THREATENED SPECIES LISTING STATEMENT

Green and Golden Frog, *Litoria raniformis*

..... Keferstein 1867

Status

Tasmanian *Threatened Species Protection Act 1995*

..... Vulnerable

Commonwealth *Environment Protection and Biodiversity*

Conservation Act 1999 Vulnerable

frog to exhibit this behaviour. They have keen eyesight in daylight and as they are approached they will jump into the water with a distinctive 'plop'. This is often the only way to know they are there. At night, however, under torchlight, they can be approached with relative ease.

The breeding season in Tasmania spans September to January when males can be heard calling. The mating call of the Green and Golden Frog is a very distinctive and complex series of grunts and growls.

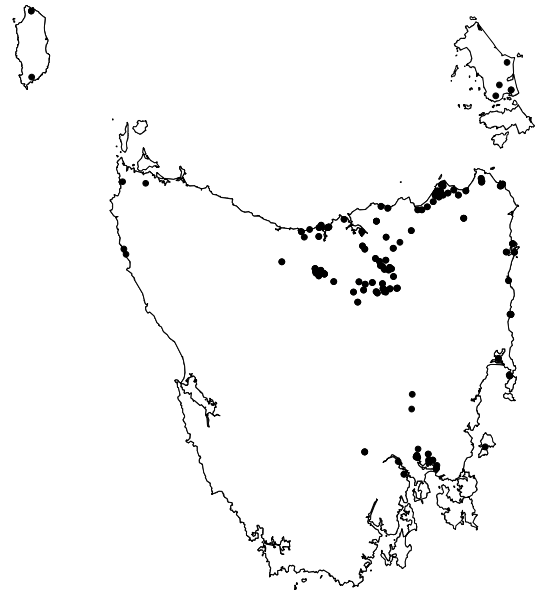


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Description

The Green and Golden Frog *Litoria raniformis* is a large aquatic frog commonly reaching a maximum length of up to 80mm and weighing up to 40g. Despite its name, its dorsal (back) colouration can vary considerably from almost totally green, through green and gold mottling, to very dark brown and black patterning. However, all colour types have a pale green stripe down the middle of the back and turquoise thigh colouration in adults.

Green and Golden Frogs are active during both day and night throughout the warmer months and can sometimes be seen 'basking' out of water amongst vegetation or on rocks and logs, the only Tasmanian



Calling activity can be erratic, often being restricted to warm calm days and evenings. Choruses (many males calling) can reach peaks mid morning and early evening. In breeding condition, the male frog exhibits a mottled black throat and develops black nuptial pads (hard calluses) on the back of each thumb with which he grasps the female when mating.

Green and Golden Frogs hunt and take refuge in dense patches of vegetation, rarely venturing into open water. They have a varied diet, which includes insects, lizards, and other frogs.

Distribution and Habitat

The Green and Golden Frog is dependent upon permanent freshwater lagoons for breeding. Ideal breeding habitat is the shallow part of lagoons (to approx 1.5m) where there is generally a complex vegetation structure. Breeding sites often contain vegetation communities dominated by emergent plants such as water ribbons (*Triglochin*) and spike-

rush (*Eleocharis*), and submerged plants such as watermilfoil (*Myriophyllum*), marsh-flower (*Villarsia*), and pondweed (*Potamogeton*). However, other plant communities can form equally suitable habitat.

The range of the Green and Golden Frog is restricted to lowland areas, mainly in coastal zones with the exception of the Deloraine-Longford-Launceston region, and historically it was common in the Midlands region. The Green and Golden Frog was once common on King Island and Flinders Island but is now rare on these islands.

Important Locations

Table 1 Important locations for the Green and Golden Frog in Tasmania

Breeding Site	Locality	Reservation Status
Narawantapu National Park	North Coast	National Park
Mt William National Park	NE Tasmania	National Park
Hazards Lagoon	Freycinet Peninsula	National Park
Moriarty Lagoon	St Helens	Conservation Area
Blackmans Lagoon	Waterhouse	Conservation Area
Tamar Conservation Area	Launceston	Conservation Area
Seymour Swamp	Seymour	Conservation Area
Bowlers Lagoon	Boobyalla	Private / Conservation Area
Woodstock Lagoon	Longford	Private Sanctuary
Bowthorpe	Longford	Private
Woolnorth	Woolnorth	Private
Townsend's Lagoon	Lewisham	Private
Launceston Airport	Evandale	Private
Falmouth	Falmouth	Private
Weegenah	Weegenah	Private
Winnaleah	Winnaleah	Private
Mosquito Creek	St Helens	Private
Prospect House	Richmond	Private
Orielton Creek	Sorell	Private

Threats, Limiting Factors and Management Issues

The major threats so far identified are:

- drainage of wetlands and conversion to agriculture, housing, and other purposes
- degradation of wetlands and water quality through stock damage
- modification of river systems
- application of agricultural chemicals, including fertilisers
- fragmentation of habitat

- drought

Drainage and clearance of wetlands is the major threat to the Green and Golden Frog. Greater protection for wetlands through legislation and voluntary agreements including covenants and management agreements will assist in preventing the loss of natural lagoons, which form the bulk of suitable breeding sites.

Stocking of sheep and cattle in and around wetlands is a serious threat to the integrity of habitat as well as posing a direct threat to the species by trampling. Fencing off natural wetlands to exclude stock is important and alternative stock watering should be provided.

Increased ultraviolet light because of ozone layer thinning may pose a threat to basking frogs such as the Green and Golden Frog.

The introduction of chytrid fungus into Tasmania, which has had a serious impact on mainland frog populations, could present a major threat to the species.

Conservation Assessment

In Tasmania declines have been reported from all areas in the last 15 years. Populations have been lost from areas in the Midlands, Derwent Valley and the north-west coast.

The Green and Golden Frog has declined significantly in population and range on the mainland. It was formerly widespread in south-eastern South Australia and the Murray Valley, most of Victoria and the Australian Capital Territory, and south-western New South Wales. The current distribution is unclear but it has disappeared from the Australian Capital Territory and the southern tablelands of New South Wales and has only patchy distribution in Victoria and South Australia.

Population Estimate

Table 1 presents the best known locations for the Green and Golden Frog in Tasmania. The largest populations are at Blackmans Lagoon in the Waterhouse area, and Bowlers Lagoon at the mouth of the Ringarooma River where many hundreds of frogs are estimated to breed. Smaller populations at other lagoons and wet areas in the vicinity of these lagoons indicate that healthy populations occupy those areas. However, population estimates at the other sites are relatively small, the sites being generally isolated from other colonies. For example, the populations at Orielson Creek, Mosquito Creek, and Bowthorpe number in the tens at best. These sites are more peripheral habitat than core habitat.

An estimate of population numbers is problematic if all breeding sites are not known. A further complicating factor is that frog populations vary considerably in abundance from year to year. This is compounded by the fact that, during recent years, much of Tasmania has been in drought, which has led to the drying out of breeding habitat, and therefore frog activity has declined significantly.

The population of the Green and Golden Frog in Tasmania is estimated to be in the region of 5,000 - 10,000 adults.

Reservation Status

The Green and Golden Frog has populations in nine formal reserves:

- Maria Island National Park
- Freycinet National Park
- Mount William National Park
- Narawantapu National Park
- Waterhouse Conservation Area
- Musselroe Bay Conservation Area
- Tamar Conservation Area
- Seymour Conservation Area
- St Helens Conservation Area

Assessment Criteria

The Green and Golden Frog meets the criteria for listing as Vulnerable in the Tasmanian *Threatened Species Protection Act 1995*, according to the guidelines applied by the Scientific Advisory Committee, because:

- (A1) there has been an observed reduction of the population in the form of a decline in area of occupancy of at least 20% over the last ten years and a decline in the quality of habitat
- (C1, C2) the population is estimated to number less than 10,000 mature individuals and is expected to continue to decline by at least 10% within ten years, and no population is estimated to be larger than 1,000 mature individuals

Recovery Program

Objectives

The recovery of threatened species relies on the preservation of viable populations throughout the species' geographic range in order to:

- i) preserve genetically differentiated populations, and
- ii) guard against catastrophic events eliminating the entire population

This can be achieved by:

- preventing the loss or degradation of known populations
- increasing the number of known populations through survey

Existing Management

No statewide management practices have been established for the species to date. A Natural Heritage Trust project 'Leap Frog' has been funded to rehabilitate some selected wetlands that have, or formerly had, populations of the Green and Golden Frog.

A Natural Heritage Trust project at Seymour Lagoon on the east coast was funded specifically to secure this habitat for the Green and Golden Frog. Fencing was erected to exclude stock and native vegetation regeneration. Rubbish and weeds were removed, and interpretive signs erected.

Actions Needed

- prevent further loss of natural wetlands
- prevent continuing degradation of habitat
- survey for unrecorded populations, particularly on the Bass Strait Islands
- develop a community-based frog conservation network
- establish a database of records which includes population and habitat data
- provide advice to land managers for wetland conservation
- ensure that appropriate quarantine measures are in place to prevent the introduction of chytrid fungus

Information Needed

- area of occupancy and population numbers
- threats to specific populations
- data on population structure and dynamics
- data on fecundity and recruitment

Management Advice

Management on Crown Land

Protect all known habitat on Crown Land. Any newly discovered populations and their habitat should be protected. The dynamics of populations in reserves is unknown and requires survey.

For the land owner/ land manager

The following actions are recommended for management of the Green and Golden Frog:

- fence around suitable habitats to exclude all livestock

- provide alternative feed and watering troughs for livestock
- leave a buffer zone of native vegetation around wetlands
- leave riparian zones in a natural state
- avoid 'tidying up' (clearing rocks and fallen logs) around wetlands
- prevent chemicals/fertilisers etc. entering wetlands
- rehabilitate degraded wetlands
- connect isolated breeding sites with permanent vegetation cover

For everyone

- learn what a Green and Golden Frog mating call sounds like - a recording of frog calls is available from the Deloraine Field Naturalist Group (see source materials)
- search for Green and Golden Frogs from September to January when the males are calling
- obtain the Frogs of Tasmania poster, showing all of Tasmania's frog species, from Service Tasmania
- help us to monitor populations by recording your observations e.g. date, map location, how many frogs, and send in your records to the Nature Conservation Branch

Further Information

Contact details: Threatened Species Unit, Department of Primary Industries, Water and Environment, GPO Box 44, Hobart, Tasmania 7001. Ph (03) 6233 6556, fax (03) 6233 3477.

Specialist Advice: Peter Brown, Threatened Species Unit, Department of Primary Industries, Water and Environment.

Source Material

References

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Review and Other Material

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Prepared by: John Ashworth

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Further Information: Threatened Species Unit, Department of Primary Industries, Water and Environment, GPO Box 44, Hobart, Tasmania 7001.

http://www.parks.tas.gov.au/esl/listing_statements

Permit: It is an offence to collect, possess or disturb this species unless under permit.