

SPECIES MANAGEMENT PROFILE

Litoria raniformis Green and Gold Frog

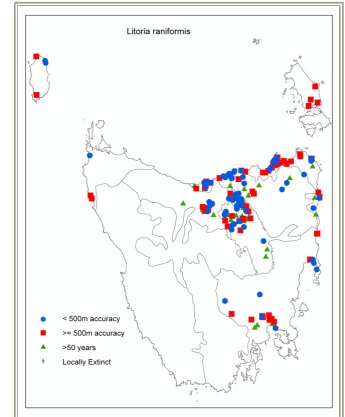
Group: Chordata (vertebrates), Amphibia (amphibians), Anura (frogs, toads), Hylidae (tree frogs)

Status: *Threatened Species Protection Act 1995*: vulnerable
Environment Protection and Biodiversity Conservation Act 1999: Vulnerable

Endemic Status: Found in Tasmania and elsewhere



The Green and Gold Frog (*Litoria raniformis*) is a large frog (up to 80 mm long) which occurs in Tasmania and south-eastern mainland Australia. Despite the name, its coloration varies considerably, but all adults have a pale green stripe down the middle of the back and turquoise thighs. In Tasmania, the species occurs in lowland areas in the south-east and north, breeding in permanent freshwater lagoons, generally with emergent vegetation. The mating call is a very distinctive series of grunts and growls. This is the only Tasmanian frog which can be seen 'basking' out of water, amongst vegetation or on rocks and logs. It has declined significantly (over 20%) in range and abundance over the last 10 years, having disappeared from the Midlands, Derwent Valley, much of the Hobart region and parts of the north-west coast. The main threats to the Green and Gold Frog are clearing and draining of wetland and lagoon habitat for agriculture and housing, degradation of habitat through trampling by stock, chytrid fungus disease, and drought.



Key Points

- **Important:** Is this species in your area? Do you need a permit? Ensure you've covered all the issues by checking the Planning Ahead page.
- **Important:** Different threatened species may have different requirements. For any activity you are considering, read the Activity Advice pages for background information and important advice about managing around the needs of multiple threatened species.

Habitat

- 'Habitat' refers to both known habitat for the species (i.e. in or near habitat where the species has been recorded) and potential habitat (i.e. areas of habitat with appropriate characteristics for the species and within the species potential range which have not yet been adequately surveyed).
- If in doubt about whether a site represents potential habitat for this species, contact the Threatened Species Section for further advice.
- The known range of the Green and Gold Frog includes coastal areas of south-eastern and northern Tasmania including King Island and Flinders Island, and inland around the Deloraine-Longford-Launceston region; historically the species was also common in the Midlands region but is now absent from this area (see distribution map, above). The potential range for the Green and Gold Frog is unlikely to extend far outside the currently known range.
- Breeding habitat for the Green and Gold Frog includes the following elements: still or slow-moving water bodies (lagoons, lakes, farm dams, ponds, irrigation channels, swamps, and slow-moving sections of rivers and streams); the species prefers the shallow part of lagoons (to approx. 1.5m) with a complex vegetation structure, often containing vegetation communities dominated by emergent plants such as water ribbons (*Triglochin*) and spikerush (*Eleocharis*), and submerged plants such as watermilfoil (*Myriophyllum*), marsh-flower (*Villarsia*), and pondweed (*Potamogeton*); however, other plant communities can also form suitable breeding habitat.
- Note that the Green and Gold Frog can tolerate a degree of poor water quality, and the species has been known to breed in swimming pools, pools in cropland, disused quarry holes, and in farm dams.
- In addition to breeding habitat, woodlands and forest habitat (including logs, rocks and other ground features) adjacent to the breeding site can be important for feeding and hibernation, and as habitat corridors allowing movement between breeding sites.

What to avoid

- Drainage of wetlands/natural lagoons and conversion to pasture, plantation or housing
- Degradation of wetlands through trampling by stock
- Drying out of 'permanent' water bodies during extended dry periods
- Spread of chytrid fungus

Surveying

Key	Survey reliability more info
M	Peak survey period
M	Potential survey period
M	Non-survey period

To ensure you follow the law - check whether your survey requires a permit. Always report any new records to the Natural Values Atlas, or send the information direct to the Threatened Species Section. Refer to the Activity Advice: Surveying page for background information.

<i>Litoria raniformis</i>	Spring	Summer	Autumn	Winter
Green and Gold Frog	S S O O N N	D D J J F	F M M A A M M	J J J J A A

- Green and Gold 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 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 under torchlight, they can be approached with relative ease.
- Formal survey techniques that can be used to detect Green and Gold Frogs include: call detection (walking through a site and hearing adult mating calls), call playback (broadcasting a recorded call using a megaphone or other amplification device in order to instigate a 'reply' call), visual encounter surveys (typically conducted at night using a spotlight), and tadpole traps and dipnets.
- The mating call of the Green and Gold Frog is a very distinctive and complex series of grunts and growls.
- Calling activity in this species can be erratic and unpredictable. The probability of detecting the presence of the Green and Gold Frog by call is heavily dependent on breeding season and the time of day and conditions. Also, breeding season may vary across regions. Results will therefore be more reliable if surveys are carried out on several nights, at different times of day, spread across more than one month.
- The breeding season in Tasmania spans September to January. Ideal survey times and conditions are considered to be after sunset and under warm and windless conditions. In Tasmania, these conditions generally occur between late November and early February.

Helping the species

- In order to recognise the species, learn to identify the mating call of the Green and Gold Frog and learn what the frog looks like. If in doubt, seek expert assistance with identification.
- If you live or work in the area where the species occurs (see distribution map, above), look out for and record any observations of the species. All records of this species can provide important information on distribution and abundance.
- Note that the Green and Gold Frog has recently disappeared from large areas of southern Tasmania, particularly from around much of the Hobart area, and is seldom recorded on King Island and Flinders Island. As a result, any records from these areas are of particular importance.
- If you are interested in knowing for certain whether the species occurs on your land, organise a formal survey. You may need to employ an ecological consultant to do this. Your local Bushcare or Field Naturalist club may be able to assist you with a survey.
- Important! Always report any observations of the species to the DPIWE Natural Values Atlas, or else provide the data direct to the Threatened Species Section. Records stored on the NVA are a permanent record and are accessible to other people interested in this species.
- Consider the needs of the whole habitat. Preserving a threatened species' habitat is the best way to manage both the species and the environment in which it lives.
- Fence off natural wetlands to exclude stock and provide alternative stock watering places.
- For long-term protection of populations on private land – consider protection of habitat through a vegetation management agreement or conservation covenant. See the DPIWE Private Land Conservation Program for more details.

Cutting or clearing trees or vegetation

- Drainage and clearance of wetlands and natural lagoons (breeding habitat) is the major threat to the Green and Gold Frog.
- To protect breeding habitat - avoid draining wetlands and natural lagoons.
- Woodland and forest habitat adjacent to a breeding site can be important for feeding and hibernation, and as habitat corridors allowing movement between breeding sites.
 - To retain feeding/hibernation sites and movement corridors - avoid clearing woodlands and forests (including logs, rocks and other ground features) adjacent to breeding sites, and retain continuous habitat corridors between breeding sites.

Agriculture

- The majority of the range of the Green and Gold Frog occurs in agricultural districts, and the drainage and clearance of wetlands and natural lagoons and conversion (e.g. to pasture, cropland or plantation) is a major cause of permanent habitat loss for this species.
- To protect breeding habitat - avoid draining of wetlands and natural lagoons and conversion to pasture, cropland or plantation.
- Woodland and forest habitat adjacent to a breeding site can be important for feeding and hibernation, and as habitat corridors allowing movement between breeding sites.
 - To retain feeding/hibernation sites and movement corridors - avoid clearing woodlands and forests (including logs, rocks and other ground features) adjacent to breeding sites, and retain continuous habitat corridors between breeding sites.
 - Chytrid is a fungal disease which can decimate frog populations. Chytrid can be spread in soil and mud on dirty vehicles

and earthmoving equipment.

- To avoid the spread of chytrid into uninfected areas - wash and dry vehicles, earthmoving and other agricultural equipment before use in areas which have previously been largely free of human disturbance.
- For more information on good hygiene measures, see the DPIPWE Washdown Guidelines.

Stock

- Stocking of sheep and cattle in and around wetlands can be a threat to breeding habitat as well as posing a direct threat to individual animals by trampling.
- To protect breeding habitat - fence off natural wetlands to exclude stock and provide alternative stock watering places.

Subdivision

- Drainage and clearance of wetlands and natural lagoons (breeding habitat) for housing developments is a major cause of habitat loss for the Green and Gold Frog.
- To protect breeding habitat - avoid draining wetlands and natural lagoons for the purposes of subdivision.
- Subdivisions can also have significant impacts on Green and Gold Frog habitat surrounding the footprint of the subdivision, through changes to drainage patterns, input of domestic and industrial chemicals into waterways, and increases in sedimentation through erosion and runoff.
- To protect breeding habitat in the vicinity of housing developments - consider the flow on effects of the subdivision to wetland habitat in the vicinity of the subdivision footprint.
- Chytrid is a fungal disease which can decimate frog populations. Chytrid can be spread in soil and mud on dirty vehicles and earthmoving equipment.
- To avoid the spread of chytrid into uninfected areas - wash and dry vehicles and earthmoving equipment before use in areas which have previously been largely free of human disturbance.
- For more information on good hygiene measures, see the DPIPWE Washdown Guidelines.

Earthworks

- Effects on water quality within breeding habitat is a major threat to the Green and Golden Frog.
- Water quality can be degraded as a result of earthworks at some distance from wetland and lagoon habitat through an increased input of sediment via runoff.
- To protect breeding habitat - avoid soil disturbance and earthworks in and around wetlands and natural lagoons which can impact on water quality.
- Chytrid is a fungal disease which can decimate frog populations. Chytrid can be spread in soil and mud on dirty vehicles and earthmoving equipment.
- To avoid the spread of chytrid into uninfected areas - wash and dry vehicles and earthmoving equipment before use in areas which have previously been largely free of human disturbance.
- For more information on good hygiene measures, see the DPIPWE Washdown Guidelines.

Changing water flow / quality

- The Green and Golden Frog can tolerate a degree of poor water quality, and the species has been known to breed in swimming pools, pools in rice fields and other cropland, disused quarry holes, and in farm dams.
- However, extreme degradation of water quality through trampling by stock, input of chemicals (including fertilisers, herbicides and domestic and industrial chemicals), and increased sedimentation from erosion and runoff, may destroy breeding habitat.
- To protect breeding habitat - avoid impacts on water quality in and around wetlands and natural lagoons.

Collecting tadpoles and moving water

- All reptiles and frogs are protected in Tasmania under the *Nature Conservation Act 2002*, and some (including the Green and Gold Frog) are also protected under the *Threatened Species Protection Act 1995*.
- However, collecting tadpoles is a common pastime, particularly among children, and the following may be collected or kept in captivity without a permit: up to six specimens each of the Common Froglet and Brown Tree Frog, and any frog eggs and tadpoles.
- However, a tadpole becomes a frog when its tail is absorbed. If you find you have collected species other than the Common Froglet and Brown Tree Frog, the metamorphosed frogs should be immediately returned to their water body of origin.
- Do not move frogs, tadpoles or water from their habitat to new locations. If releasing captive frogs or tadpoles, always return them to their water body of origin.
- When disposing of small or large volumes of water within a natural environment, ensure you are as far away as possible from creeks, rivers, ponds and lakes. Preferably choose a dry stony location for disposal.

Use of chemicals

- Effects on water quality through input of chemicals into wetland and lagoon breeding habitat is a potential threat to the Green and Gold Frog.
- Chemicals which can effect water quality include the application of fertilisers in agricultural areas around wetland habitat, the entry of herbicides and pesticides into waterways, and input of household chemicals into waterways.
- To protect breeding habitat - avoid the application of fertiliser in and around wetlands and natural lagoons.
- To protect breeding habitat - ensure appropriate use of herbicides and pesticides when conducting weed or pest control operations in the vicinity of wetland habitat to prevent input of chemicals in waterways.

Further information

Check also for listing statement or notesheet pdf above (below the species image).

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Contact details: Threatened Species Section, Department of Primary Industries, Parks, Water and Environment, GPO Box 44, Hobart, Tasmania, Australia, 7001. Phone (1300 368 550).

Permit: A permit is required under the Tasmanian *Threatened Species Protection Act 1995* to 'take' (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen or products of a listed species. Additional permits may also be required under other Acts or regulations to take, disturb or interfere with any form of wildlife or its products, (e.g. dens, nests, bones). This may also depend on the tenure of the land and other agreements relating to its management.