

Australian Capital Territory

# Nature Conservation (Green and Golden Bell Frog) Conservation Advice 2019

Notifiable instrument NI2019–243

made under the

Nature Conservation Act 2014, s 90C (Conservation advice)

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## 1 Name of instrument

This instrument is the *Nature Conservation (Green and Golden Bell Frog) Conservation Advice 2019*.

## 2 Commencement

This instrument commences on the day after its notification day.

## 3 Conservation advice for the Green and Golden Bell Frog

Schedule 1 sets out the conservation advice for the Green and Golden Bell Frog (*Litoria aurea*).

Arthur Georges  
Chair, Scientific Committee  
1 May 2019

# Schedule 1

(see s 3)

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**ACT**  
Government

Environment, Planning and  
Sustainable Development



ACT Scientific  
Committee

# CONSERVATION ADVICE

## GREEN AND GOLDEN BELL FROG

### *Litoria aurea*

#### CONSERVATION STATUS

The Green and Golden Bell Frog *Litoria aurea* (Lesson, 1829) is recognised as threatened in the following jurisdictions:

International	<b>Vulnerable</b> , International Union for the Conservation of Nature (IUCN).
National	<b>Vulnerable</b> , <i>Environment Protection and Biodiversity Conservation Act 1999</i>
ACT	<b>Vulnerable</b> , <i>Nature Conservation Act 2014</i>
NSW	<b>Endangered</b> , <i>Biodiversity Conservation Act 2016</i>
VIC	<b>Vulnerable</b> , Advisory List of Threatened Vertebrate Fauna in Victoria

#### ELIGIBILITY

The Green and Golden Bell Frog is listed as Vulnerable in the ACT Threatened Native Species List as it is listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) (Department of Environment 2014). The Green and Golden Bell Frog is listed on the IUCN Red List as Vulnerable because of a population decline, estimated to be more than 30% over the last ten years (to 2004), based on an observed reduction in the number of mature individuals, area of occupancy, number of locations, the extent and quality of its habitats, and the effects of amphibian chytrid fungus and introduced predators (Hero et al. 2004).

#### DESCRIPTION AND ECOLOGY

The Green and Golden Bell Frog, family Hylidae, is a large, dull olive to bright emerald-green frog that grows to 85 mm in length (Cogger 2000). The dorsum (back) of the frog has large irregular blotches ranging from brown to rich golden-bronze. It has a cream or yellow dorso-lateral skin fold (stripe) running from behind the eye to the lower back that is bordered by a black stripe that can extend through the eye to the nostrils. The hind toes of the frog are almost fully webbed, but the fingers of the front feet lack webbing. The frog also has a distinct tympanum (ear membrane) (Cogger 2000). The Green and Golden Bell Frog is active by day and usually breeds in summer when conditions are warm and wet (OEH 2017).



Green and Golden Bell Frog (David Hunter – NSW OEH)

## DISTRIBUTION AND HABITAT

The Green and Golden Bell Frog occurs on coastal lowlands between Yuraygir National Park in New South Wales (NSW) and Lake Tyers in Victoria (ALA 2018) and was introduced to New Zealand, New Caledonia and New Hebrides (Tyler 1979).

Prior to the 1980s the Green and Golden Bell Frog was extremely common along the coast of NSW and more widespread in the coastal hinterlands, southern highlands, central tablelands and southern tablelands (White and Pyke 1996; DEC 2005). In NSW, it is now considered absent from at least 90% of its former distribution having declined in extent of distribution, the number of sites where it occurs and the number of individuals in some populations (White and Pyke 2008).

Green and Golden Bell Frog records from the ACT region exist from the early 1960s to the mid-1980s in the general areas of Uriarra, Murrumbidgee River and Ginninderra Creek (Figure 1) (ALA 2018). The species was previously widely distributed in the ACT, Southern Highlands and Monaro and is now regarded as locally extinct in the ACT and only known from two populations in nearby NSW (Osborne et al. 1996; Canberra.naturemap.org 2018). The species does not appear to occur above 800m asl in the Southern Tablelands (Osborne et al. 1996).

The Green and Golden Bell Frog inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha spp.*) or spikerushes (*Eleocharis spp.*). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available (OEH 2017).

## THREATS

The main identified threats to the Green and Golden Bell Frog in the Commonwealth *Conservation Advice* (DoE 2014) are:

- habitat destruction, degradation and fragmentation
- changes to the structure and diversity of aquatic vegetation
- predation of eggs and tadpoles by plague minnow (*Gambusia holbrooki*) (Morgan & Buttemer, 2006) and, to a lesser extent, European Carp (*Cyprinus carpio*), Goldfish (*Carassius auratus*), Brown Trout (*Salmo trutta*) and Rainbow Trout (*Oncorhynchus mykiss*).
- infection with amphibian chytrid fungus (*Batrachochytrium dendrobatidis*)
- changes to hydrology, including inappropriate opening of coastal lagoon estuaries and changes to flow/flooding regimes of streams and wetlands
- changes to water quality
- intensification of public access to habitat.

Other potential threats identified in the Commonwealth Conservation Advice (DoE 2014) include: predation of adults by European Red Foxes (*Vulpes vulpes*), cats (*Felis catus*), dogs (*Canis lupus familiaris*), rats (*Rattus spp.*) and natural predators; road mortality; interaction with Cane Toads (*Rhinella marina*); grazing and trampling of habitat and inappropriate fire regimes.

## MAJOR CONSERVATION OBJECTIVES

The species is considered to be locally extinct. The priority management objective in the ACT is to reduce the broad landscape threats that contributed to its local extinction. Reintroductions are not currently proposed but could be considered if broad-scale threats are managed and there is a need to re-establish wild populations in historical ranges.

## CONSERVATION ISSUES AND PROPOSED MANAGEMENT ACTIONS

Should the species be re-introduced into (or found in) the ACT, the following actions would be relevant (OEH 2018):

- maintain captive bred populations for future possible re-introduction programs
- initiate community awareness programs that highlight the presence of populations and catchment management approaches to improving stormwater quality, habitat retention and management
- develop measures to control or eradicate the introduced plague minnow (*Gambusia holbrooki*)
- establish protocols for the handling of frogs and educational strategies to minimise the inadvertent spread of fungal pathogens from site to site
- develop strategies to provide for the development or enhancement of frog habitat to improve reproductive success and recruitment at known sites
- develop site specific plans of management to improve conservation outcomes for targeted populations
- develop strategies to provide disease-free and fish-free breeding habitat.

## OTHER RELEVANT ADVICE, PLANS OR PRESCRIPTIONS

- Commonwealth Conservation Advice — Green and Golden Bell Frog (DoE 2014)
- NSW Recovery Plan — Green and Golden Bell Frog (DEC 2005)

## LISTING BACKGROUND

The Green and Golden Bell Frog was initially listed as Vulnerable on 19 January 2000 under the *Endangered Species Protection Act 1992* (Cwlth) and eligibility for listing carried over to the *Environment Protection and Biodiversity and Conservation Act 1999* (EPBC Act) on 16 July 2000. In 2019, under the *Nature Conservation Act 2014*, the ACT Scientific Committee recommended that the Green and Golden Bell Frog be listed in the Vulnerable category in the ACT Threatened Native Species List to align with the EPBC Act listing and be annotated as locally extinct in the ACT.

## REFERENCES

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- White AW and Pyke GH 2008. Green and Golden Bell Frogs in New South Wales: current status and future prospects. *Australian Zoologist* 34(3): 319–333.

## FURTHER INFORMATION

Further information on this or other threatened species and ecological communities can be obtained from the Environment, Planning and Sustainable Development Directorate (EPSDD).  
Phone: (02) 132281, EPSDD Website: <http://www.environment.act.gov.au/cpr>