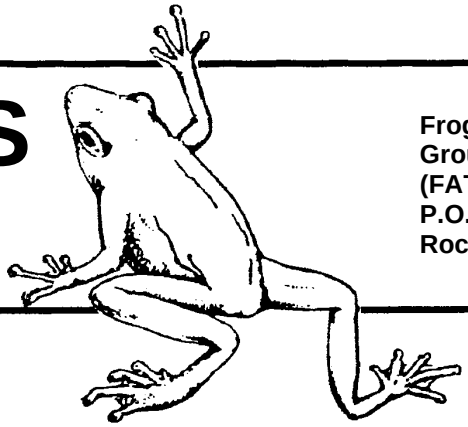
FROGFACTS No.7



Frog and Tadpole Study Group of NSW Inc.
(FATS Group)
P.O. Box 296
Rockdale 2216

FROGS OF THE SYDNEY REGION

Summary

This sheet lists the 26 frog species that occur in the Sydney region. It gives a brief description of some of the most common species, as well as of the four species that are listed as threatened or endangered. It also provides an insight into why some of these species live in their specific areas.

Limits of the Sydney Region

For the purposes of this information sheet, the Sydney region is defined as the area bounded by the Hawkesbury River to the north, the Nepean River to the west and 0'Hares Creek to the south.

Characteristics of the Sydney Region

This region is dominated by the broad, fairly flat Cumberland Plain that extends from Ashfield to Penrith. Sandstone plateau areas are prominent in the north (Hornsby plateau) and the south (Woronora plateau). The Cumberland Plain is a large sedimentary area that is mainly comprised of shales and clay soils; the plateau areas are sandstone and are deeply eroded to form steep gullies, rocky escarpments and ledges. Because the plateau areas are elevated the streams that cross them are usually small, confined to narrow gullies. Streams crossing the Cumberland Plain are broader and shallower and meander as they travel across the plain. The sandstone areas also suffer weathering that creates deep sand beds lying atop more impervious layers. This creates perched swamps and wetlands. Water seeping from these wetlands may travel below ground before emerging as seepage areas where the sandstone reaches the surface. The clay and shale areas of the plain are highly water absorbent and can hold surface water for longer periods of time than the sandstone areas. The creeks on the plain often hold water for many months after rain until the creeks stop flowing and isolated pools remain along the watercourses.

Life for a Frog in the Sydney Region

In general, few frogs are able to live in both plateau and plain habitats. Each habitat has its own particular demands. The frogs that live in the sandstone areas need to be able to cope with the acid run-off water from the sandstone, be able to exploit the subterranean water held in the weathered sandstone and to survive in the absence of surface water. Frogs that live on the plain need to be able to cope with the variable water levels, low dissolved oxygen levels in stagnant pools, large fluctuations in the water temperatures, and be able to escape when flooding occurs.

For frogs in the Sydney region the biggest hazards to their survival are the result of human-made impacts on their habitats. These impacts include land clearing and habitat destruction, water contamination from industrial and urban run-off, predation and competition by introduced animals. In addition, new diseases that kill frogs have been detected in the Sydney region.

The Goalposts Keep Moving

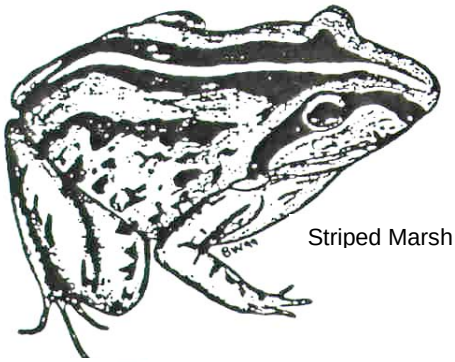
The distribution and abundance of frogs in the Sydney region is constantly changing. Frogs are displaced as land uses change and some frogs turn up in areas where they were not previously known. in some cases, our knowledge of the distribution of the frogs in this region has been inadequate; two recent examples of this include the discovery at Kurnell in 1995 of Wallum Froglets *(Crinia tinnula),* a threatened frog species (this species had never been recorded in the Sydney region prior to this discovery); and the discovery of Giant Burrowing Frogs *(Heleioporous australiacus), a*nother threatened species, at Wedderburn in Sydney's south. These areas have been surveyed at various times throughout Sydney's history and these frogs were not detected.

Lots of Frogs

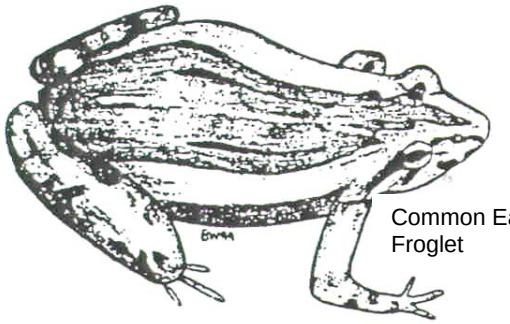
The Sydney region is home to 26 species of frogs: 14 species of tree frogs (Hylidae) and 12 species of ground frogs (Myobatrachidae). Only four or five species are likely to be encountered by people in the more urbanised parts of Sydney. The four most-widespread species are:

Striped Marsh Frog *Limnodynastes peronii*

This frog is up to 7 cm in length and is dark brown with brown stripes running lengthways along the back. It makes a characteristic "pock" noise (which is why it is sometimes called the tennis ball frog). This species will readily move into backyard frog ponds.



Striped Marsh Frog



Common Eastern Froglet

Common Eastern Froglet *Crinia signifera*

These small frogs are only 2 to 3 cm long. They are rarely seen but are heard in all parts of Sydney. They make a "creek-creek" noise and occur anywhere where there is very shallow water and somewhere to hide.

Peron's Tree Frog *Litoria peronii*

This dappled brown tree frog occurs around larger ponds and dams. It makes a "maniacal cackle" rather like a silly laughing sound. Although it is a tree frog it will live in tree-less areas (as long as there are some bushes nearby).

Spotted Grass Frog *Limnodynastes tasmaniensis*

This grey frog is between 3 and *5* cm long and has darker large spots on its back. It makes a rapid "ack-ack-ack" noise. Like other *Limnodynastes* it makes a frothy spawn mass that is concealed in flooded grass or pondside vegetation.

If you want more detailed information about each species, read Martyn Robinson's *A Field Guide to Frogs of South-eastern Australia.*

Sydney's Threatened Frogs

There are four listed threatened or endangered frogs in the Sydney Region. These are:

Green and Golden Bell Frog *Litoria aurea*

This brilliantly coloured frog has declined dramatically in New South Wales since the early 1960s. Strangely enough, it has found refuge areas in Sydney, in old industrial sites and disused mining pits and quarries. In Sydney, Green and Golden Bell Frogs are mainly found in the Homebush Bay area (near the Olympic site) and at Kurnell. Occasionally Bell Frogs are seen at Greenacre, at St Marys and at Rosebery.

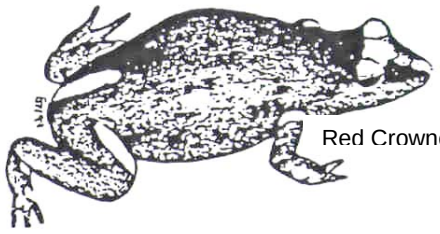
Several programs are underway to protect the remaining Bell Frog population around Sydney. Many of these programs involve the creation or restoration of habitat areas for the frogs. In 1998, the ponds on the Long Reef Golf Course were modified to make them frog-friendly. Bell Frog tadpoles were translocated to the sites and now there are adult Bell Frogs on the golf course. Bell Frog ponds were specifically built at Arncliffe to provide habitat for Bell Frogs dislocated by the construction of the M5 East motorway. For more information see *FrogFacts 5.*

Red-crowned Toadlet *Pseudophryne australis*

Red-crowned Toadlets are small ground frogs. They only occur around the Sydney region, on areas of Hawkesbury sandstone. They spend most of their lives under the cover of leaf-litter or under shallow soils and rocks. They feed on the tiny insects and invertebrates that live in the leaf-litter. Red-crowned Toadlets do not need free water in which to lay their eggs; they can lay on damp ground as their eggs are encapsulated. The developing tadpoles can go through most of their development inside the eggs. After heavy rain, the sodden eggs split and the tadpoles or young frogs are released.

Red-crowned Toadlets have suffered badly as a result of urban development around Sydney. They were once widespread throughout the upper and lower north shore but have almost totally disappeared from the lower north shore. The reason that residential developments affect them so badly appears to be related to several factors; being ground frogs they are dependent on ground water content, but the construction of roads, buildings, squares and other concreted or sealed areas radically alters the flow and volume of ground water. Changes in ground water then alter the nature of ground shelter and feeding areas, and many of the soil invertebrates are also displaced, leaving the toadlets with little food.

At present, Red-crowned Toadlets are most common in areas on or around the Hornsby plateau and Woronora plateau. In some cases populations occur in reserves such as Ku-ring-gai



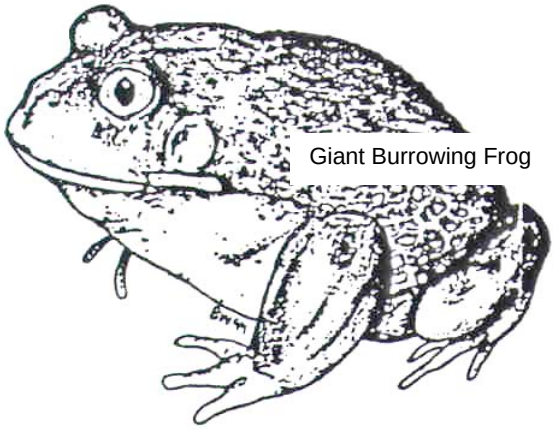
Red Crowned Toadlet

Chase, Muramura, the Royal and Heathcote National Parks.

Giant Burrowing Frog *Heleioporus australiacus*

Giant Burrowing Frogs are the size of an orange but are rarely seen by people. They spend most of their lives in burrows below ground. They often only emerge after heavy summer rains when frogs will move from ridge-top shelter sites to wetter breeding areas. In the breeding areas, they again construct a burrow, and the males will often call from the burrow. They make a soft but rapid 'who-who-who-who" noise (for this reason they are sometimes called the Eastern Owl Frog).

Giant Burrowing Frogs only occur on deeply weathered sandstone areas. They seem to need deep, moist sand beds as burrowing sites. Often these areas are overgrown by wet heath. Giant Burrowing Frogs are not common and it is not known how badly affected they have been by urbanisation, as many of their known habitat areas are unsuitable for residential or agricultural use. No Giant Burrowing Frogs occur in highly urbanised areas.



Giant Burrowing Frog

Wallum Froglet., *Crinia tinnula*

The first Sydney sighting of this species was in 1995, on the Kurnell peninsula. There are two reasons why sightings were not recorded prior to this date. Firstly, Wallum Froglets are superficially similar to the Common Eastern Froglet and may have been mistaken for this species. Secondly, Wallum Froglets are winter breeders, and so were missed by frog-lovers who didn't maintain their frogging activities during the colder months.

Wallum Froglets only occur in very distinctive habitats on the peninsula: the Juncus-dominated swamps, close the coast. Many of these swamps have a high salt content and the water is very acidic.

The Complete Frog List

Tree Frogs:

Green and Golden Bell Frog *Litoria aurea*	Homebush Bay to Parramatta, Kurnell, Arncliffe, Long Reef, St Marys
Green Tree Frog *Litoria coerulea*	Mainly in western Sydney, Richmond, Windsor, Penrith, Engadine, Warragamba
Blue Mountains Tree Frog *Litoria citropa*	Helensburg, Darkes Forest
Dwarf Tree Frog *Litoria fallax*	Western Sydney from Liverpool to Penrith, Engadine, Heathcote, Lane Cove, Hornsby, Glenorie, Windsor
Peron's Tree Frog *Litoria peronii*	All parts of the Sydney region
Tyler's Tree Frog *Litoria tyleri*	Kurnell, Voyager Point, Holsworthy. Picnic Point.
Jervis Bay Tree Frog *Litoria jervisiensis*	Kurnell, Centennial Park, Darkes Forest
Orange-bellied Tree Frog *Litoria littlejohni*	Darkes Forest
Bleating Tree Frog *Litoria dentata*	Warragamba, Penrith, Windsor, Baulkham Hills, Hornsby, Manly Dam, Kurnell, Darkes Forest, Helensburg, Wedderburn
Broad-palmed Frog *Litoria latopalmata*	Penrith, Warragamba, Windsor, Cherrybrook, Horsely Park, Prospect, Engadine, Helensburg
Lesueur's Frog *Litoria lesueuri*	Warragamba, Penrith, Windsor, Richmond, Audley, Helensburg Holsworthy.
Leaf-green Tree Frog *Litoria phyllochroa*	Lane Cove, Killara, Hornsby, Engadine, Audley, Heathcote, Darkes Forest
Freycinet's Frog *Litoria freycineti*	La Perouse, Bundeena, Helensburg, Darkes Forest, Menai, Holsworthy
Verreaux's Frog *Litoria verreauxii*	Penrith, Richmond, Warragamba, Baulkham Hills, Hornsby, Kurnell, Helensburg, Darkes Forest

Ground Frogs:

Tusked Frog *Adelotus brevis*	Darkes Forest, Terrey Hills
Giant Burrowing Frog *Heleioporus australiacus*	Riverstone, Canoelands, Glenorie, West Head, Mona Vale, Menai, Waterfall, Wedderburn
Common Eastern Froglet *Crinia signifera*	All parts of Sydney
Wallum Froglet *Crinia tinnula*	Kurnell
Red-crowned Toadlet *Pseudophryne australis*	Canoelands, Glenorie, Baulkham Hills, Hornsby Heights, Mt Kuring-gai, Berowra, Killara, North Head, Bradleys Head, Garie, Audley, Heathcote, Waterfall, Helensburg, Darkes Forest, Holsworthy
Bibron's Toadlet *Pseudophryne bibroni*	Hornsby Heights, Arcadia, Beacon Hill
Striped Marsh Frog *Limnodynastes peronii*	Found throughout Sydney
Spotted Grass Frog *Limnodynastes tasmaniensis*	Penrith, Windsor, Annangrove, Kellyville, Parramatta, Homebush, Mt Ku-ring-gai, Horsely Park, Prairiewood, Prospect, Liverpool, Holsworthy, Menai.
Eastern Pobblebonk *Limnodynastes dumerilii*	Kurnell, Darkes Forest, Heathcote, Helensburg, Malabar, Voyager Point, Sandy Point, Chipping Norton, Lugarno, Berowra, Hornsby
Haswell's Frog *Paracrinia haswelli*	Darkes Forest, Helensburg, Jibbon Lagoon
Red-groined Toadlet *Uperoleia laevigata*	Windsor, Penrith, Warragamba, Vineyards, Riverstone, Baulkham Hills, Vision Valley, Cherrybrook, Mona Vale, Terrey Hills, Darkes Forest, Helensburg, Heathcote, Menai, Holsworthy, Wedderburn

The Future of Frogs in Sydney

In general, most frogs have suffered as a result of urbanisation in the Sydney region, although a few species, such as the Striped Marsh Frog, have actually benefited and increased in numbers.

The protection of frog habitats and wetlands is now a pressing issue if we are to keep our frogs. Many people are helping by putting frog ponds in their back yards. You can help by keeping pressure on your local council and storm water authorities to continue to put in mechanisms (such as basins landscaped with wetlands plants) that will help improve storm water quality, and by helping to conserve local wetlands and to help educate your local community about the value of maintaining native animals in the local area.

Recommended Reading

Anstis, M. (2002) Tadpoles of South Eastern Australia. New Holland Publishing, Frenchs Forest, NSW. (84 species)

Ehmann, H. (ed.) (1997). Threatened Frogs of New South Wales: Habitats, Status and Conservation. FATS Group, Sydney.

Robinson, M (1994). *A Field Guide to Frogs of Australia — from Port Augusta to Fraser Island, including Tasmania.* Australian Museum/Reed Books, Sydney.

White, A. (1995). The Green and Golden Bell Frog. *FrogFacts 5:1-4.* FATS Group, Sydney.

Further information

The postal address of the FATS Group is: P.O. Box 296, Rockdale NSW 2216. When requesting *FrogFacts*, please send a small donation for photocopying and postage.

FATS Group meetings: Every first Friday of every even month, 7 pm for a 7:30 start, at Newington Armoury, Bldg. 22, northern end of Jamieson St., Homebush Bay. Parking at boom gate. Visitors welcome.

Frogwatch Helpline: 0419 249 728
(02) 9599 1161
(02)9371 9129

FATS Group Web site (with links to other frog groups):
www.fats.org.au

Author: Arthur White

Reviewed by: Martyn Robinson (Australian Museum)
Lothar Voigt (FATS)

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