

NATIVE FAUNA OF THE GREATER BLUE MOUNTAINS WORLD HERITAGE AREA

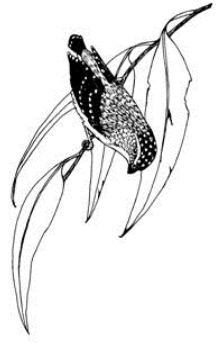


FROGS

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NATIVE FAUNA OF THE GREATER BLUE MOUNTAINS WORLD HERITAGE AREA

FROGS

Version 3

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Cover illustration of Blue Mountains Tree Frog by Kate Smith katesmithart@gmail.com

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Introduction

The Greater Blue Mountains World Heritage Area comprises eight reserves: Blue Mountains, Gardens of Stone, Kanangra-Boyd, Nattai, Thirlmere Lakes, Wollemi and Yengo National Parks, and Jenolan Karst Conservation Reserve. The area was inscribed on the World Heritage List in 2000 because its natural values, including the diversity of its fauna, were considered to be outstanding at international level.

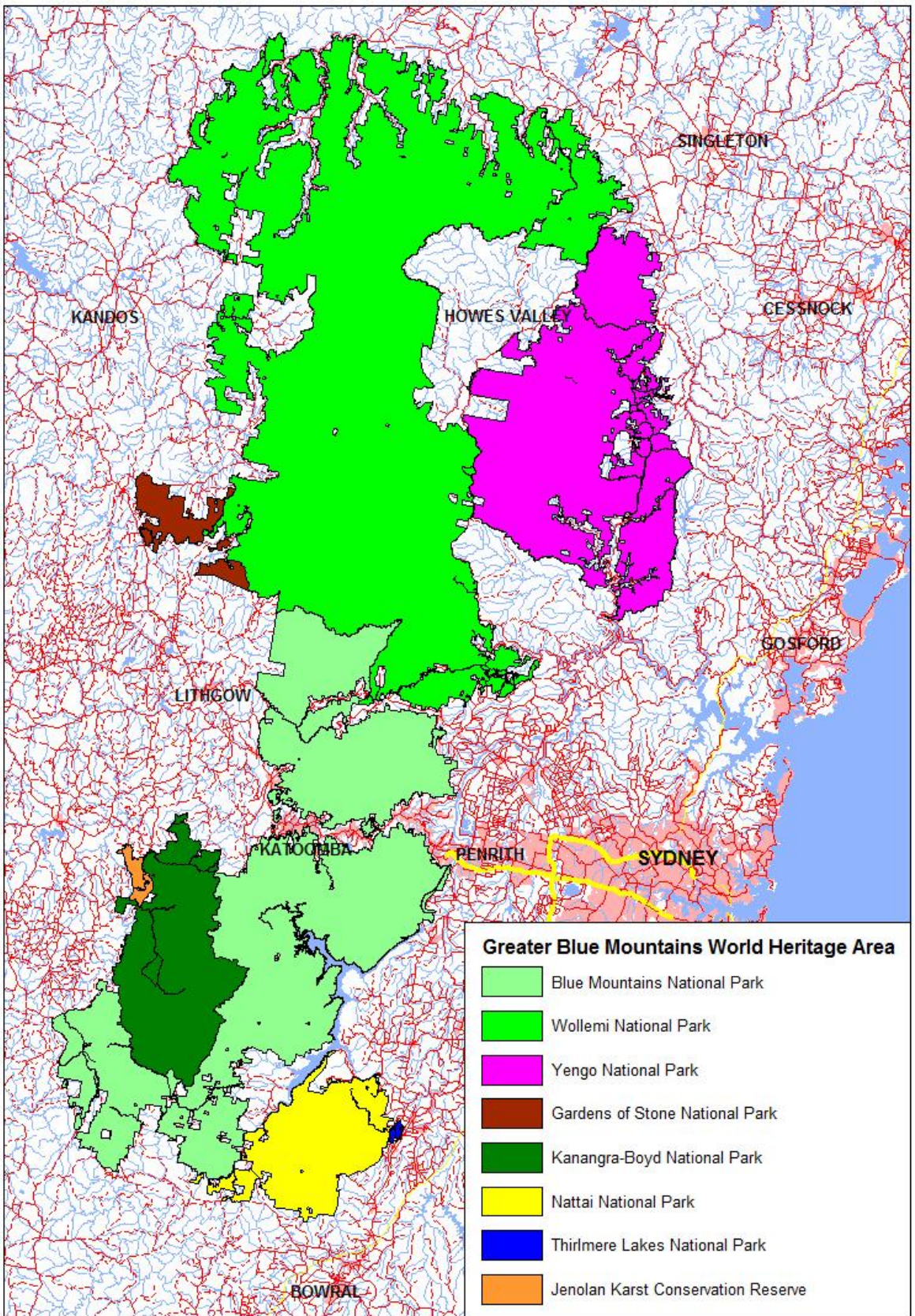
In 1998, when the nomination of the Greater Blue Mountains Area for inscription on the World Heritage List was prepared for the Australian Government, it was well known that the area provided habitat for a wide variety of mammals, birds, reptiles and amphibians. However, details of the vertebrate fauna were sketchy. The nomination indicated that about 400 native terrestrial vertebrate fauna species had been recorded in the area, including 52 mammal, 265 bird, 63 reptile and more than 30 frog species. The diverse bird fauna included 25 species of honeyeaters, about one third of the Australian total.

Over the last year, in an attempt to gain a clearer understanding of the vertebrate fauna, we have prepared four annotated checklists, one each for the native mammals, birds, reptiles and frogs in the Greater Blue Mountains World Heritage Area. The four checklists indicate the species we consider to have been reliably recorded in each of the eight constituent reserves since the time of European settlement. Details of the conservation status at national and state level, and habitat, distribution and relative abundance in the World Heritage Area are provided for each species.

The checklists indicate that at least 423 native terrestrial vertebrate fauna species have been recorded in the Greater Blue Mountains World Heritage Area. This number includes 35 frog species, one of which is represented by two subspecies. Seven are threatened species. At least five species have shown marked declines in the WHA in recent times. One factor in the decline is a global epidemic of a frog disease caused by a chytrid fungus (NSW Scientific Committee 2003).

There are still many gaps in our knowledge of the fauna of the Greater Blue Mountains World Heritage Area. Updating the checklists is an on-going process. If you have additional records or other information, your feedback would be very welcome.

Judy and Peter Smith



Native frog species recorded in the Greater Blue Mountains World Heritage Area

Status in NSW and Commonwealth legislation: E = endangered, V = vulnerable

GBMWA reserves: BMNP = Blue Mountains National Park, GOSNP = Gardens of Stone National Park, JKCR = Jenolan Karst Conservation Reserve, KBNP = Kanangra-Boyd National Park, NNP = Nattai National Park, TLNP = Thirlmere Lakes National Park, WNP = Wollemi National Park, YNP = Yengo National Park

Species nomenclature follows Cogger (2014). 'Recent' records are 2000 or later, otherwise the date of the last record is specified.

Scientific name	Common name	Family	Status		Records in Greater Blue Mountains World Heritage Area reserves								Total WHA	
			NSW	Com	BMNP	GOSNP	JKCR	KBNP	NNP	TLNP	WNP	YNP		
<i>Adelotus brevis</i>	Tusked Frog	Limnodynastidae			1977							recent		recent
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Limnodynastidae	V	V	recent				1959			recent	recent	recent
<i>Lechriodus fletcheri</i>	Fletcher's Frog	Limnodynastidae										1997		1997
<i>Limnodynastes dumerilii</i> subspecies <i>dumerilii</i> subspecies <i>grayi</i>	Eastern Banjo Frog	Limnodynastidae			recent recent	recent		recent		recent	1997	recent recent	recent recent	recent recent
<i>Limnodynastes peronii</i>	Brown-striped Frog	Limnodynastidae			recent		recent		1997	recent	recent	recent	recent	recent
<i>Limnodynastes tasmaniensis</i>	Spotted Grass Frog	Limnodynastidae			recent	recent	recent		recent			recent		recent
<i>Neobatrachus sudelli</i>	Sudell's Frog	Limnodynastidae										recent		recent
<i>Platyplectrum ornatum</i>	Ornate Burrowing Frog	Limnodynastidae										recent	recent	recent
<i>Crinia signifera</i>	Common Eastern Froglet	Myobatrachidae			recent	recent	recent		recent	recent	recent	recent	recent	recent
<i>Mixophyes balbus</i>	Stuttering Frog	Myobatrachidae	E	V	recent		1974					recent		recent
<i>Mixophyes fasciolatus</i>	Great Barred Frog	Myobatrachidae										recent	recent	recent
<i>Mixophyes iteratus</i>	Giant Barred Frog	Myobatrachidae	E	E	1967							recent		recent
<i>Paracrinia haswelli</i>	Haswell's Froglet	Myobatrachidae									1997			1997
<i>Pseudophryne australis</i>	Red-crowned Toadlet	Myobatrachidae	V		recent					recent	recent	recent	recent	recent
<i>Pseudophryne bibronii</i>	Brown Toadlet	Myobatrachidae			recent	recent	1979		recent	recent	1997	recent	recent	recent
<i>Uperoleia fusca</i>	Dusky Toadlet	Myobatrachidae			recent							recent	recent	recent
<i>Uperoleia laevigata</i>	Smooth Toadlet	Myobatrachidae			recent		pre 1950		1997	recent		recent	recent	recent
<i>Uperoleia tyleri</i>	Tyler's Toadlet	Myobatrachidae									undated			undated
<i>Litoria aurea</i>	Green and Golden Bell Frog	Hylidae	E	V									1963	1963
<i>Litoria booroolongensis</i>	Booroolong Frog	Hylidae	E	E					1998				1980	1980
<i>Litoria caerulea</i>	Green Tree Frog	Hylidae				recent						recent	recent	recent
<i>Litoria chloris</i>	Red-eyed Tree Frog	Hylidae										recent	recent	recent
<i>Litoria citropa</i>	Blue Mountains Tree Frog	Hylidae			recent		pre 2000		recent	recent	1969	recent		recent

Scientific name	Common name	Family	Status		Records in Greater Blue Mountains World Heritage Area reserves								Total WHA
			NSW	Com	BMNP	GOSNP	JKCR	KBNP	NNP	TLNP	WNP	YNP	
<i>Litoria dentata</i>	Bleating Tree Frog	Hylidae			recent	recent		recent	recent	recent	recent	recent	recent
<i>Litoria ewingii</i>	Brown Tree Frog	Hylidae			recent								recent
<i>Litoria fallax</i>	Eastern Dwarf Tree Frog	Hylidae			recent				recent	recent	recent	recent	recent
<i>Litoria latopalmata</i>	Broad-palmed Frog	Hylidae			recent	recent					recent	recent	recent
<i>Litoria lesueuri sens. str.</i>	Lesueur's Frog	Hylidae			recent	recent					recent	recent	recent
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	Hylidae	V	V	recent			pre 2000			recent		recent
<i>Litoria nudidigita</i>	Leaf Green River Tree Frog	Hylidae			recent			recent					recent
<i>Litoria peronii</i>	Peron's Tree Frog	Hylidae			recent	recent		recent	recent	recent	recent	recent	recent
<i>Litoria phyllochroa sens .str.</i>	Leaf Green Tree Frog	Hylidae			recent	recent	recent	recent	recent		recent	recent	recent
<i>Litoria tyleri</i>	Tyler's Tree Frog	Hylidae			recent						recent	recent	recent
<i>Litoria verreauxii verreauxii</i>	Verreaux's Tree Frog	Hylidae			recent	recent	recent	recent	recent	recent	recent		recent
<i>Litoria wilcoxi</i>	Wilcox's Frog	Hylidae			recent	recent	recent	recent	recent		recent	recent	recent

Native Frog Species Recorded in the Greater Blue Mountains World Heritage Area

The Greater Blue Mountains World Heritage Area comprises Blue Mountains (BM), Gardens of Stone (GOS), Kanangra-Boyd (KB), Nattai (N), Thirlmere Lakes (TL), Wollemi (W) and Yengo (Y) National Parks and Jenolan (J) Karst Conservation Reserve.

Species nomenclature follows Cogger (2014). 'Recent' records are 2000 or later. If there are no recent records for a reserve, the date of the last record is indicated. Status refers to listing of species under NSW and Commonwealth legislation.

Family LIMNODYNASTIDAE

Tusked Frog *Adelotus brevis*

Reserves: BM (1977), W

Rare resident. At southern edge of range. Typically associated with permanent or semi-permanent ponds and watercourses in wet sclerophyll forest and rainforest. Has declined greatly in recent years at higher elevations in northern NSW (Anstis 2013).

Recent records (2007) and older ones (1977-78) from south-eastern Wollemi NP between Angorawa Creek and Culoul Range (DECC 2008b and Australian Museum specimens). No recent records from Blue Mountains NP, but previously recorded from Euroka Clearing (1977 BioNet Atlas record) and in or near the park at Springwood (Moore 1961).

Giant Burrowing Frog *Heleioporus australiacus*

Status: vulnerable (NSW and Commonwealth)

Reserves: BM, KB (1959), W, Y

Uncommon resident with a localised distribution. More common at lower elevations and most frequently recorded in north-east of WHA. Reaches western and northern limits of distribution at western escarpment of Blue Mountains and southern escarpment of Hunter Valley. A burrowing frog that in the Sydney Basin is typically associated with streams in sandstone forests, but may also occur in upland swamps. More common in the past in the Sydney Basin (Anstis 2013).

Recent records include vicinity of Linden Creek and Donnas Track (Blue Mountains NP); Hayes Creek, Reubens Fire Trail, Tootie Creek, Angorawa Creek, Grassy Hill Track, Mt Coricudgy, Myrtle Creek, Cottage Creek, Numietta Creek, Gospers Creek, and between Little Tootie and Bowen Hill (Wollemi NP), and Old Bulga Road and Partridge Creek (Yengo NP). Older records in or near Blue Mountains NP include Burrellow Creek, Murphys Glen, Williams Ridge, Hazelbrook, Lawson and Leura (Smith and Smith 1990). Only record from Kanangra-Boyd NP an Australian Museum specimen collected at Kanangra Walls in 1959.

Fletcher's Frog *Lechriodus fletcheri*

Reserves: W (1997)

Rare resident. At southern edge of range. Usually associated with wet sclerophyll forest and rainforest, breeding in small temporary ponds and still pools in small creeks.

Recorded in 1997 in the vicinity of Hunter Main Trail about 1.5 km east of Three Ways in north-eastern Wollemi NP (DEC 2005a). This population may be disjunct from main distribution, with closest known populations at Barrington Tops and Mount Royal (90 km to north-east) and Watagans (70 km to south-east).

Eastern Banjo Frog *Limnodynastes dumerilii dumerilii* and *L. dumerilii grayi*

Reserves: BM, GOS, J, KB, N, TL (1997), W, Y

Common, widespread resident recorded from every WHA reserve. Most frequently recorded in Wollemi, Blue Mountains and Yengo NPs. May be found in various habitats, including farmland, breeding in permanent or semi-permanent ponds and stream pools.

Recent records include vicinity of Coco and Airly Creeks, major tributaries of Wolgan River such as Carne Creek and ridgeline near Glow Worm Tunnel Road (Gardens of Stone NP); Angorawa Creek, Bylong Creek, Blackwater Creek, Lee Creek and Ganguddy Creek (Wollemi NP); Old Bulga Road, Putty Road, Darkey Creek and Partridge Creek (Yengo NP).

Two subspecies, *dumerilii* and *grayi*, have been recorded within the WHA, but there is some uncertainty about their relative distributions and abundance. Both subspecies have been reported widely in the WHA, from south to north and at both lower and higher elevations (e.g. DEC 2005a, DEC 2005b, DEC 2007, DECC 2008a, OEH 2012a, OEH 2012b). In some cases, both subspecies have been recorded at the same location, e.g. Ganguddy Creek in Wollemi NP (DEC 2007) and Old Bulga Road in Yengo NP (DEC 2005b). Subspecies *grayi* is at the western limit of its distribution.

Brown-striped Frog *Limnodynastes peronii*

Reserves: BM, J, KB (1997), N, TL, W, Y

Common, widespread resident, recorded from all WHA reserves except Gardens of Stone NP. Found within the WHA in association with permanent and temporary ponds, still stream pools and former farm dams. Also commonly found around human habitation on the fringes of the WHA.

Spotted Grass Frog *Limnodynastes tasmaniensis*

Reserves: BM, GOS, J, KB, W

Uncommon resident, more common in western part of WHA. Typically associated with open grassy habitats, natural or cleared, breeding in permanent or temporary ponds and marshy areas.

Sudell's Frog *Neobatrachus sudelli*

Reserves: W

Rare resident. A species of western NSW that is at the eastern edge of its range. A burrowing frog associated with drier, grassier forest, woodland and shrubland, breeding in marshy areas and in permanent and temporary ponds.

Recorded in 2004 on the boundary of Wollemi NP in the Doyles Creek valley following heavy rain (DEC 2005a).

Ornate Burrowing Frog *Platyplectrum ornatum*

Reserves: W, Y

Uncommon resident. At southern edge of range in coastal NSW (occurs further south on western side of Great Dividing Range). A burrowing frog found in a variety of habitats, both natural and disturbed, breeding in permanent and temporary puddles, ponds and marshy areas. Recorded from various locations in Wollemi and Yengo NPs.

Family MYOBATRACHIDAE

Common Eastern Froglet *Crinia signifera*

Reserves: BM, GOS, J, KB, N, TL, W, Y

Common resident. Easily the most abundant frog across the WHA, recorded in all reserves. Found in most habitats, breeding in temporary to semi-permanent puddles, ponds, marshy areas and stream pools. Calls throughout the year.

Stuttering Frog *Mixophyes balbus*

Status: endangered (NSW); vulnerable (Commonwealth)

Reserves: BM, J (1974), W

Rare resident. At western edge of range, including a site (Mt Werong Creek) west of the Great Dividing Range. Associated with flowing streams, typically in wet sclerophyll forest or rainforest. The southern form (south from Barrington Tops), which may be a separate species, has declined greatly in recent times, while the northern form (north from Barrington Tops) has been more stable (Anstis 2013).

Recent records (2006) include Ruby Creek (eastern flowing creek) and Mt Werong Creek (western flowing) in Blue Mountains NP (DECC 2007b). Sighted at Victoria Falls (Blue Mountains NP) in 2002 but subsequent surveys have failed to relocate the species at that location (DECC 2008a). Other recent records (2005) in vicinity of Wollemi Creek and Blackwater Creek in Wollemi NP (DEC 2007). The Mt Werong, Ruby Creek and Blackwater Creek populations are the only known extant high elevation populations (between 690 and 1080 asl) south of the Hunter Valley.

The species was formerly more common and widespread in the WHA region and appears to have been lost from Jenolan KCR (last record a 1974 Australian Museum specimen). Smith and Smith (1990) listed the distribution as including Kurrajong Heights, Blue Gum Swamp Creek, Faulconbridge, Linden, upper Grose River, Mount Irvine, Mount Wilson, Newnes Plateau and the Coxs River Valley. Few recent records and the species may now be on the verge of local extinction.

Great Barred Frog *Mixophyes fasciolatus*

Reserves: W, Y

Rare resident. At western edge of range. Associated with riparian rainforest and wet sclerophyll forest, breeding in stream pools and occasional permanent ponds.

Recorded in 2005 in Parsons Creek at the junction of Wollemi and Yengo NPs (DEC 2005a), and in Darkey Creek in Yengo NP (DEC 2005b).

Giant Barred Frog *Mixophyes iteratus*

Status: endangered (NSW and Commonwealth)

Reserves: BM (1967), W

Rare resident. At southern edge of range. Associated with riparian rainforest and wet sclerophyll forest, breeding in permanent or semi-permanent stream pools.

Recorded in 2014 at the Colo River in Wollemi NP (Matt McCaffery). There is also a series of specimens at the Australian Museum collected in 1967 in the Explorers Range area of Blue Mountains NP. Anstis (2013) mentions Warrimoo as the southern limit of the species.

Haswell's Frog *Paracrinia haswelli*

Reserves: TL (1997)

Only known in WHA from records in 1997 at Thirlmere Lakes NP during a CRA fauna survey (NPWS 1998). At western edge of range. Associated with swamps and ponds in heathland, shrubland and woodland, usually close to the coast.

Red-crowned Toadlet *Pseudophryne australis*

Status: vulnerable (NSW)

Reserves: BM, N, TL, W, Y

Common resident, recorded widely in sandstone areas of WHA. The species has a restricted distribution, confined to the Sydney Basin. Reaches western and northern limits of distribution at western escarpment of Blue Mountains and southern escarpment of Hunter Valley. Forms small colonies in temporary watercourses and soaks on sandstone ridges and slopes, and in the headwaters of creeks. Found on both Hawkesbury and Narrabeen sandstones. In Wollemi NP it has been recorded in seepage areas at the base of pagoda

formations. Has also been found occasionally on soils derived from volcanic diatremes, deep sandy alluvium and in rainforest.

Brown Toadlet *Pseudophryne bibronii*

Reserves: BM, GOS, J (1979), KB, N, TL (1997), W, Y

Moderately common resident, recorded in every WHA reserve. Highland form of species appears to be stable but lowland form appears to be declining. Associated with areas of higher soil fertility, breeding beside permanent or temporary ponds, soaks and creeks. Rarely found in sandstone habitats.

The highland form is common in Kanangra-Boyd NP, while the Burragorang and Nattai Valleys provide refuges for the lowland form (DECC 2007b). Other recent localities include Crown Creek and Glow Worm Tunnel Road (Gardens of Stone NP); Gibba Swamp, Culoul Range, Gaspers Creek (Wollemi NP); Pierces Hole, Mount Yengo, Wallabadah Valley (Yengo NP); and Murrain Range (Blue Mountains NP). Specimens were collected in Jenolan KCR in the past (Australian Museum specimens 1969-79) but no recent records.

Dusky Toadlet *Uperoleia fusca*

Reserves: BM, W, Y

Rare resident. At southern limit of distribution. Appears to favour wetter forests, breeding in marshy areas and permanent and temporary ponds. Restricted to north-eastern part of WHA, where it has been recorded from scattered locations. One recent location at the southern end of its distribution is Vale of Avoca (Blue Mountains NP close to adjacent farmland).

***Uperoleia laevigata* Smooth Toadlet**

Reserves: BM, J (pre 1950), KB (1997), N, W, Y

Uncommon, widespread resident. Appears to favour drier forest and woodland, breeding mostly in permanent ponds. Sometimes common in former farm dams within the WHA. Only known in Jenolan KCR from an undated Australian Museum specimen collected before 1950, probably many years before.

Tyler's Toadlet *Uperoleia tyleri*

Reserves: TL (undated)

Only known within the WHA from an undated Australian Museum specimen collected at Thirlmere Lakes. At western limit of distribution. Associated with permanent or temporary ponds and swamps.

Family HYLIDAE

Green and Golden Bellfrog *Litoria aurea*

Status: endangered (NSW); vulnerable (Commonwealth)

Reserves: Y (1963)

Likely to be extinct in WHA. Only record is two specimens at the Queensland Museum collected in 1963 about 35 km north of Wisemans Ferry in what is now Yengo NP. Once a common frog in the Sydney region, typically found in permanent wetlands, now only isolated populations remain (White and Pyke 1996). The species has declined dramatically throughout its range (Anstis 2013).

Booroolong Frog *Litoria booroolongensis*

Status: endangered (NSW and Commonwealth)

Reserves: KB (1976), W (1980)

Found along rocky watercourses, particularly to west of Great Dividing Range, following declines in east-flowing streams. At eastern edge of range. There have been drastic declines in northern NSW since the 1980s and the species also appears to be declining in southern parts of its range (Anstis 2013).

Australian Museum specimens collected from Wollemi Creek and Simpson Gorge (Wollemi NP) in 1979-80 and Morong Falls (Kanangra-Boyd NP) in 1976. No recent records within WHA but recorded from Beefsteak Creek and Little River in Kanangra-Boyd NP in 1998 (DEC 2004a). Formerly considered moderately common in the Coxs River Valley, including Kanimbla and Megalong Valleys (Smith and Smith 1990).

Green Tree Frog *Litoria caerulea*

Reserves: GOS, W, Y

Rare resident in the three northernmost reserves of WHA. Declining in the Greater Southern Sydney region, where it is now extremely rare and a species of high conservation priority (DECC 2007b). Found in a variety of habitats, including built structures, breeding in still water bodies, large or small, permanent or temporary, natural or artificial.

Recent locations include Coco Creek, Crown Creek and Halfway Hollow (Gardens of Stone NP), and Gibba Swamp and New Blue Gum Creek (Wollemi NP).

Red-eyed Tree Frog *Litoria chloris*

Reserves: W, Y

Rare resident. At southern edge of range. Typically associated with wet sclerophyll forest and rainforest, living in trees and coming down to breed in temporary or permanent ponds and stream pools.

Recorded from north-eastern corner of Wollemi NP in 1997 (Raspberry Junction) and 2005 (Hayes Creek) (DEC 2005a). Also recorded in Yengo NP in 2016 (George Madani).

Blue Mountains Tree Frog *Litoria citropa*

Reserves: BM, J (pre 2000), KB, N, TL (1969), W

Moderately common resident. At northern edge of range. Found at scattered locations near permanent bodies of either still or flowing water, often in sandstone geology.

Recent locations include Blackwater, Ovens and Numietta Creeks (Wollemi NP) and Galong and Sliprail Creeks (Blue Mountains NP). Australian Museum specimens are the only records for Jenolan KCR (two undated specimens collected before 2000) and Thirlmere Lakes NP (1969 specimen).

Bleating Tree Frog *Litoria dentata*

Reserves: BM, GOS, KB, N, TL, W, Y

Moderately common, widespread resident recorded from every reserve except Jenolan KCR. More common at lower elevations. Found beside permanent or temporary ponds, streams and swamps, and also in trees well away from water.

Brown Tree Frog *Litoria ewingii*

Reserves: BM

Rare resident. At northern edge of range. Found in a variety of habitats, often well away from water, but breeding in temporary or permanent ponds and stream pools.

Recorded from Bindook Creek area in the higher parts of southern Blue Mountains NP in 2003-04 (DECC 2007a).

Eastern Dwarf Tree Frog *Litoria fallax*

Reserves: BM, N, TL, W, Y

Moderately common resident. At western edge of range. Associated with permanent or semi-permanent ponds and swamps. Typically found in lower elevation sites on eastern side of WHA, such as Burrellow Swamp and Euroka Clearing (Blue Mountains NP), and Wheeny Creek (Wollemi NP), but also occurs in the Wolgan and Capertee Valleys on the western side of Wollemi NP.

Broad-palmed Frog *Litoria latopalmata*

Reserves: BM, GOS, W, Y

Moderately common resident in northern half of WHA. At southern edge of range in coastal NSW (occurs further south on western side of Great Dividing Range). Associated with permanent or semi-permanent ponds, swamps and watercourses, and may also be found well away from water.

Lesueur's Frog *Litoria lesueuri sens. str.*

Reserves: BM, GOS, W, Y

Moderately common resident. At northern edge of range. Typically found along rocky, shady watercourses.

Litoria lesueuri has recently been split into two species, *L. lesueuri sens.str.* and *L. wilcoxi* (Donnellan and Mahony 2004). *L. lesueuri sens.str.* has a more southerly distribution and *L. wilcoxi* a more northerly distribution. The two species overlap in the WHA and have been recorded together, for example, at McDonald River in Yengo NP. However, there is uncertainty about their relative distributions since older *L. lesueuri* records include *L. wilcoxi*. There is also uncertainty about how reliably the two species can be distinguished on morphological features. *L. lesueuri sens.str.* has been identified genetically from Glenbrook Creek in Blue Mountains NP (Donnellan and Mahony 2004), and morphologically from three other WHA reserves.

Littlejohn's Tree Frog *Litoria littlejohni*

Status: vulnerable (NSW and Commonwealth)

Reserves: BM, KB (pre 2000), W

Rare resident. At western edge of range. Found in upland swamps, temporary or permanent ponds, and along watercourses.

Recent localities include a tributary of Bowen Creek in Wollemi NP (DECC 2008b), and Ingar Swamp in Blue Mountains NP (DECC 2007b). Specimens were collected between Bell and Mount Tomah (Blue Mountains NP) in 1962 (Queensland Museum) and 1972 (Australian Museum), and there are old, undated specimens from Kanangra-Boyd NP (Australian Museum). Recorded recently just west of Blue Mountains NP near Dargan (Grant Webster).

Leaf Green River Tree Frog *Litoria nudidigita*

Reserves: BM, KB

Rare resident at higher elevations at southern end of WHA. At northern edge of range. Associated with flowing streams, mostly in forested areas.

Only recently recognised as a separate species; formerly included in *L. phyllochroa* (Donnellan *et al.* 1999). Recorded in 2003-04 from Morong Creek and Spring Creek in Kanangra-Boyd NP (DEC 2004a), and from Mt Werong Creek and Abercrombie River in south-western corner of Blue Mountains NP (DECC 2007a).

Peron's Tree Frog *Litoria peronii*

Reserves: BM, GOS, KB, N, TL, W, Y

Common, widespread resident, recorded from every WHA reserve except Jenolan KCR. More common at lower elevations. Breeds in permanent or semi-permanent ponds and

stream pools. Often shelters and calls from tree hollows well away from water. Also common in adjacent urban and rural areas, breeding in farm dams and garden ponds.

Leaf Green Tree Frog *Litoria phyllochroa sens. str.*

Reserves: BM, GOS, J, KB, N, W, Y

Common, widespread resident, recorded from every WHA reserve except Thirlmere Lakes NP. At southern edge of range. Associated with flowing streams, mostly in shady, forested areas.

The northern and southern call forms of *Litoria phyllochroa* were separated into two species in 1999: *L. phyllochroa sens.str.* (northern form) and *L. nudidigita* (southern form). The two species overlap in the WHA and earlier records of *L. phyllochroa* may include *L. nudidigita*. Subsequent records suggest that *L. phyllochroa sens.str.* is much more common and widespread in the WHA than *L. nudidigita*.

Tyler's Tree Frog *Litoria tyleri*

Reserves: BM, W, Y

Uncommon resident in eastern part of WHA. At western edge of range. Usually found near permanent or semi-permanent ponds, swamps and watercourses.

Verreaux's Tree Frog *Litoria verreauxii verreauxii*

Reserves: BM, GOS, J, KB, N, TL, W

Common, widespread resident recorded from every WHA reserve except Yengo NP. Associated with permanent or semi-permanent ponds, swamps and watercourses in a variety of vegetation types. One of the few frog species to call in winter, even at higher elevations.

Wilcox's Frog *Litoria wilcoxi*

Reserves: BM, GOS, J, KB, N, W, Y

Moderately common resident. At southern edge of range. Typically breed along rocky watercourses, but tend to move away from watercourses in winter

Litoria wilcoxi has only recently been distinguished as a separate species from *L. lesueuri* (Donnellan and Mahony 2004). Recent records, distinguishing between the two species morphologically, suggest that *L. wilcoxi* is the more common, more widespread species in the WHA, but there is uncertainty about how reliably they can be distinguished on morphological features, especially in the WHA, where the two species overlap (Donnellan and Mahony 2004).

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- NSW BioNet (Atlas of NSW Wildlife). <http://www.bionet.nsw.gov.au> Also includes records from Australian Bird and Bat Banding Scheme. Data extracted 8 February 2016.
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