

FAUNA SPECIES LIST FOR GIBRALTAR ROCK, DUBBO, NSW.

Species underlined in bold are those recorded from other sources [Dubbo Field Naturalist Society, Alice Warren *pers. comm.*]

SPECIES	NEST/YOUNG	STATUS
AMPHIBIANS:		
Painted Burrowing Frog (<i>Neobatrachus sudelli</i>)		R
Brown Toadlet (<i>Pseudophryne bibronii</i>)		R
Barking Marsh Frog (<i>Limnodynastes fletcheri</i>)	Y	R
Spotted Marsh Frog (<i>Limnodynastes tasmaniensis</i>)		U
Common Froglet (<i>Crinia signifera</i>)		R
REPTILES:		
Tree Skink (<i>Egernia striolata</i>)	Y	U
White's Skink (<i>Egernia whitii</i>)		R
Carnaby's Skink (<i>Cryptoblepharus carnabyi</i>)		R
<u>Striped Skink (<i>Ctenotus robustus</i>)</u>		-
Tree Dtella (<i>Gehrya variegata</i>)		R
Central Bearded Dragon (<i>Pogona vitticeps</i>)	Y	R
<u>Carpet Python (<i>Morelia spilota ssp. variegata</i>)</u>		-
MAMMALS:		
Eastern Grey Kangaroo (<i>Macropus giganteus</i>)		U
Common Wallaroo (<i>Macropus robustus</i>)	Y	U
Swamp Wallaby (<i>Wallabia bicolor</i>)		U
Red-necked Wallaby (<i>Wallabia rufogriseus</i>)		U
Narrow-nosed Planigale (<i>Planigale tenuirostris</i>)		R
Goulds Wattled Bat (<i>Chalinolobus gouldii</i>)		U
Chocolate Wattled Bat (<i>Chalinolobus morio</i>)		R

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Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>)#		R
Common Bent-wing Bat (<i>Miniopterus schreibersii</i>)#		R
Southern Freetail Bat (<i>Mormopterus planiceps- large penis form</i>)		R
Inland Broad-nosed Bat (<i>Scotorepens balstoni</i>)		R
Little Forest Bat (<i>Vespadelus vulturnis</i>)		U
Lesser Long-eared Bat (<i>Nyctophilus geoffroyi</i>)		U
Feral Goat (<i>Capra hircus</i>)		U
Feral Pig (<i>Sus scrofa</i>)		R
European Fox (<i>Vulpes vulpes</i>)*		U
European Hare (<i>Lepus capensis</i>)*		R
Rabbit (<i>Oryctolagus cuniculus</i>)*		R
House Mouse (<i>Mus musculus</i>)*	Y	A
BIRDS:		
Black-shouldered Kite (<i>Elanus axillaris</i>)		R
Collared Sparrowhawk (<i>Accipiter cirrhocephalus</i>)		-
Little Eagle (<i>Hieraaetus morphnoides</i>)		R
Wedge-tailed Eagle (<i>Aquila audax</i>)		-
Australian Kestrel (<i>Falco cenchroides</i>)		U
Common Bronzewing (<i>Phaps chalcoptera</i>)		R
Crested Pigeon (<i>Ocyphaps lophotes</i>)		U
Galah (<i>Cacatua roseicapilla</i>)		U
White Cockatoo (<i>Cacatua galerita</i>)		R
Superb Parrot (<i>Polytelis swainsonii</i>)#		-
Eastern Rosella (<i>Platycercus eximus</i>)		U
Red-rumped Parrot (<i>Psephotus haematonotus</i>)		U
Southern Boobook (<i>Ninox novaeseelandiae</i>)		R
Barn Owl (<i>Tyto alba</i>)		R
Laughing Kookaburra (<i>Dacelo novaeguineae</i>)		U

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Sacred Kingfisher (<i>Halcyon sancta</i>)		R
Black-faced Cuckoo-shrike (<i>Coracina novaehollandiae</i>)		R
White-winged Triller (<i>Lalage suerii</i>)		-
Red-capped Robin (<i>Petroica goodenovii</i>)		R
Eastern Yellow Robin (<i>Eopsaltria australis</i>)		U
Jacky Winter (<i>Microeca leucophaea</i>)		R
Rufous Whistler (<i>Pachycephala rufiventris</i>)		U
Grey Shrike-thrush (<i>Colluricincla harmonica</i>)		R
Grey Fantail (<i>Rhipidura leucophrys</i>)		U
Willie Wagtail (<i>Rhipidura leucophrys</i>)		U
Grey-crowned Babbler (<i>Pomatostomus temporalis</i>)		-
Superb Fairy-wren (<i>Malurus cyaneus</i>)		U
Speckled Warbler (<i>Chthonicola sagittata</i>)		U
Weebill (<i>Smicrornis brevirostris</i>)		U
Western Gerygone (<i>Gerygone fusca</i>)		U
Inland Thornbill (<i>Acanthiza apicalis</i>)		U
Chestnut-rumped Thornbill (<i>Acanthiza uropyialis</i>)		R
Yellow-rumped Thornbill (<i>Acanthiza chrysorrhoa</i>)		U
Yellow (Little) Thornbill (<i>Acanthiza nana</i>)		U
Brown Treecreeper (<i>Climacteris picumnus</i>)		U
White-throated Treecreeper (<i>Cormobates leucophaeus</i>)		U
Red Wattlebird (<i>Anthochaera carunculata</i>)		R
Noisy Friarbird (<i>Philemon corniculatus</i>)		U
Little Friarbird (<i>Philemon citreogularis</i>)		U
Noisy Miner (<i>Manorina melanocephala</i>)		R
White-plumed Honeyeater (<i>Lichenostomus penicillatus</i>)		R
Striated Pardalote (<i>Pardalotus striatus</i>)		-
Mistletoebird (<i>Dicaeum hirundinaceum</i>)		R
Diamond Firetail (<i>Stagonopleura guttata</i>)		U

Rufous Songlark (<i>Cinchorhamphus mathewsi</i>)		-
Silvereye (<i>Zosterops lateralis</i>)		U
Common Starling (<i>Sturnus vulgaris</i>)*		U
White-wing Chough (<i>Corcorax melanorhamphos</i>)		C
Apostlebird (<i>Struthidea cinerea</i>)		U
Grey Butcherbird (<i>Cracticus torquatus</i>)		U
Pied Butcherbird (<i>Cracticus nigrogularis</i>)		R
Australian Magpie (<i>Gymnorhina tibicen</i>)		U
Pied Currawong (<i>Strepera graculina</i>)		U
Australian Raven (<i>Corvus coronoides</i>)		U

* = introduced species.

= Species listed under the Threatened Species Act (1995)

VEGETATION TYPE: Eulomogo 1: 25 000 topographic mapsheet no. 8633 Currawang Shrubland surrounded by box / pine woodlands

REFERENCE SITE LOCATION: centre Gibraltar Rock survey area easting: 545350 northing: 6420700

STATUS	NEST/YOUNG
R = rare [1-2 records noted over the survey period]	N = nesting
U = uncommon [3-15 records noted over the survey period]	Y = young
C = common [16-25 records noted over the survey period]	
A = abundant [more than 25 records noted over the survey period]	

REPORT ON THE FAUNA SURVEY OF GIBRALTAR ROCK.

SURVEY PERIODS: 21 -25 March 2000 [general fauna survey]; 31 March - 1 April 2000 [bat survey]

Conducted by Darren Shelly and Renee Shepherd [DLWC - Central West Region].

VEGETATION:

The majority of the land surrounding Gibraltar Rock is cleared for agriculture. The main portion of native vegetation in the local district is the survey area consisting of the Gibraltar Rock Trig. Reserve, the crown reserve and the adjacent wooded footslopes which are on freehold land. A second block of vegetation of

similar size is located 500m north of the survey area. These two remnants are isolated from nearby areas of vegetation by agricultural land.

Vegetation on the survey area consists of a mixture of two alliances. The majority of the rock outcrop (and hence the survey area) is covered by Currawang Shrubland which merges into box/pine woodland on the surrounding footslopes.

Due to the relatively small size of the survey area (45 ha) and its isolation from other large areas of vegetation, the fauna are assumed to be utilising all the vegetation around Gibraltar Rock and not differentiating between small, often mixed patches of the two vegetation alliances. Therefore, for the purposes of this fauna survey, the entire remnant is considered as one habitat type. A description of the site typical of the box/pine woodland around the footslopes is given below.

1. **Box / pine woodland**

This vegetation alliance occupies the flats and footslopes that surround the rock outcrop. Of the canopy trees (12-14m height) the most abundant is White Box (*Eucalyptus albens*) with Grey Box (*Eucalyptus microcarpa*) and White Cypress Pine (*Callitris glaucophylla*) occurring either as scattered individual trees or in small patches. The tree canopy cover is estimated at up to 25%. White Box is the dominant species on the southern end of the remnant, changing to a dominance of Grey Box on the northern end. There is a well defined understorey layer (15% cover) with large patches of White Cypress Pine (*Callitris glaucophylla*) occurring throughout. In places where the cypress is not the dominant understorey, regeneration White Box, Tumbledown Gum (*Eucalyptus dealbata*) and Currawang (*Acacia doratoxylon*) occur.

The shrub layer is patchy in distribution (8% layer cover) and consists mainly of small White Cypress Pine, Currawang, Western Golden Wattle (*Acacia decora*) and Narrow-leaf Hopbush (*Dodonaea attenuata*).

The groundcover is patchy to dense with a typical vegetative cover of 40% and leaf litter cover of 55%. The most abundant groundcover species are Wiregrass (*Aristida sp.*), Fuzzweed (*Vittadinia sp.*), Rockfern (*Cheilanthes tenuifolia*) and a species of Wallaby Grass (*Danthonia sp.*).

With regard to vegetation disturbance, there is evidence of historical ringbarking of mature box trees and the logging of the larger cypress. Burned stumps and charred tree trunks are indicative of the effects of a bushfire that burned over much of the survey area in December 1984 (M. Spilsbury *pers. comm.*). The intensity of the fire altered the existing vegetation alliance in favour of quick regenerators such as Currawang as well as removing a high percentage of large, hollow-bearing trees on the footslopes. This is indicated in the actual site for habitat description having no trees with diameters over 40 centimetres. Around the footslopes up to six trees per hectare were estimated to contain hollows and two dead trees per hectare also contained hollows for potential wildlife utilisation. Hollow logs are common on the ground, especially around the southern end of the survey area.

Overall, the vegetation condition (with regard to fauna habitat) of the survey area is considered moderate with evidence of vegetation disturbance by fire and ringbarking and minor weed invasion of the footslope areas. On the positive side, the area does, however, show significant regeneration of the eucalypt species and there is no evidence of tree dieback.

There main watercourse adjacent to the survey area is Gibraltar Creek which runs in a northerly direction approximately 750m to the west. Several flowlines drain runoff from the northern and western portions into the creek. A flowline drains runoff from the eastern side of Gibraltar Rock into the Macqarie River some 6.5 km to the east. Three dams form the major permanent water supply to both stock and wildlife on the adjacent paddocks. All of these are situated within 500m of the survey area.

WEATHER:

Unseasonal, continual rain periods characterised the entire survey period. Allied with this was cool temperatures and gusty winds. The two days of bat survey were conducted in fine, warm weather but rainfall returned after this to force a cancellation in survey length.

SURVEY RESULTS.

A total of 85 species were recorded for the survey area, incorporating 5 amphibians, 7 reptiles, 19 mammals and 54 birds. The list includes species recorded in this survey plus additional records from a prior field trip of the Dubbo Field Naturalist Society on the 20/9/1998 and a record of a Carpet Python by Alice Warren during a geological survey. The full species list is given in Table 1.

SURVEY EFFORT.

Techniques used included:

1. Elliott small mammal traps [30 traps for 4 nights; 10 for 4 nights = 160 trapnights]
2. Pitfall trapping [6 traplines of 3 pits/line per night for 5 nights = 90 trapnights]
3. Bird observation [average 1 hour morning and afternoon / person; additional times on two days = 28 hours]
4. Ground searches [done during bird observations]
5. Bat trapping/detection :
 - a) Anabat call recording - one hour call recording on Anabat detector from a dam on the northern end of the survey area.
 - b) Harp trapping - 5 harp traps set for two nights – three on footslopes at northern end; two at southern end [one in drainage line]: total harp trapping effort = 10 trap/nights.]
6. Nocturnal call recordings [total 2 hours of frog / nocturnal bird call recordings / spotlighting]

TRAPPING SUCCESS.

Elliott traps: House Mouse (111).

Pitfall traps: House Mouse (12), Central Bearded Dragon (1), Spotted Grass Frog (4), Barking Marsh Frog (2), Painted Burrowing Frog (1), Brown Toadlet (1).

Harp traps: Lesser Long-eared Bat (5), Little Forest Bat (3), Gould's Wattled Bat (3), Inland Broad-nosed Bat (2), Southern Freetail Bat (2), Chocolate Wattled Bat (1).

Anabat bat call analysis: Goulds Wattled Bat, Large-eared Pied Bat, Common Bent-wing Bat, Inland Broad-nosed Bat, Inland Freetail Bat, Little Forest Bat, unidentified Forest Bat (*Vespadelus sp.*) and unidentified Long-eared Bat (*Nyctophilus sp.*). [note: the unidentified genres cannot be separated into individual species by call analysis].

Scat analysis: no scats obtained.

LIMITATIONS OF THE SURVEY.

1. In order to compile a comprehensive list of the fauna species present you would need to survey for several days over each of the seasons in order to catch the migratory and seasonally nomadic species.
2. Continual rain and cool temperatures over the entire survey period greatly lessened the possibility of recording reptiles and small mammals as well as limiting access and the time spent surveying.
3. At the time of survey there were very few tree species in flower. Isolated individuals of Grey Box were flowering and these were surveyed for the presence of honeyeaters and other nectivorous birds when encountered. Large areas of flowering trees would attract both insects and fauna that prey on them as well as many honeyeaters. The presence of flowering mistletoe would have a similar effect. No mistletoe species were

recorded as present in this survey. Fauna surveying at flowering time would be regarded as optimal for bird species presence as well as gliders, possums and bats.

4. The introduced House Mouse was in large numbers over the survey area. With such a high abundance of mice present it became a survey limitation in that almost every small mammal trap was filled with mice each night, leaving few to no traps available to catch any native mammals. House mice are more adventurous than most species and hence are easily trapped compared to the less abundant natives. Trapping conducted outside mice plague periods would have greatly increased the chances of capturing other small mammal species.

NOTES FROM THE SURVEY.

1. The vegetation within the survey area has had some degree of modification in the past. Historical ringbarking of mature eucalypts has removed a large percentage of the hollow-bearing trees leaving scattered dead stags and numerous large hollow logs on the ground where they have fallen. This was done some time ago as the regenerating trees are now approaching the size where small tree hollows begin to form to allow for some wildlife utilisation.

2. There is evidence of previous fire such as blackened trunks, burned hollow logs and ash piles etc. Hence, fire effect on the vegetation condition is regarded as significant.

3. Obvious weed invasion of the woodland portions is regarded as minor. Weeds were most abundant on the footslopes adjacent to existing agricultural paddocks but are not regarded as excessive in occurrence. A high degree of groundcover in the form of leaf litter is present due to the low level of grazing intensity on the area under survey.

4. Significant portions of the rocky outcrop are dominated by dense Currawang shrubland with no mature trees. This vegetation, while natural in occurrence as a regeneration after fire, has limited habitat value to arboreal fauna or those adapted to utilising eucalypts. However, such fauna can reside in the woodlands on the footslopes and exploit the acacia shrublands on the rocks due to the closeness of the vegetation types.

5. The vegetation in the woodland portions contain a high degree of fauna habitat components. There is a large amount of leaf litter, fallen timber and hollow logs.

6. There was a low abundance of reptiles recorded, primarily due to the inclement weather during the survey period. Given the suitability of reptile habitat available (ie. rock shelves, cracks, leaf litter/bark, fallen timber, stumps) it is expected that species diversity is much greater than that recorded. For instance, no snakes were encountered and/or trapped when several species are known to be present in the district.

7. The bat fauna abundance and diversity was low to moderate. Six species of bat were harp trapped and an additional three species was identified by the call tape analysis (from eight species recorded). A single Lesser Long-eared Bat was caught under loose bark on a mature White Cypress Pine. The continued poor weather conditions limited the duration of the bat survey to only two nights. Surveys of five nights duration are regarded as providing an adequate survey of the bat fauna at a particular location. Therefore, additional surveys of bats is required to fully assess the diversity that may be present around Gibraltar Rock.

SPECIES AT OR NEAR THE LIMITS OF THEIR DISTRIBUTION.

Literature review of the species recorded show two species are at the known limits of their distribution. White's Skink (*Egernia whitii*) is at the western limit of its distribution in the Dubbo district. It has been recorded to the north in the Pilliga area as well as further south in Goobang National Park on the Harvey Ranges. These areas are in a north-south line that runs through the Dubbo district.

The body of a Narrow-nosed Planigale (*Planigale tenuirostris*) was found on the western side of Gibraltar Rock. Being intact it was assumed that the animal perished due to cold wet weather rather than being brought in from outside the survey area and dropped by a predator. This record from the Dubbo district is at the eastern

limits of the range of this species.

SPECIES OF CONSERVATION SIGNIFICANCE.

A single Brown Toadlet (*Pseudophryne bibroni*) was pit trapped at the south-eastern corner of the survey area. Literature searches show that this species has a wide distribution over NSW, only being absent from the far west. However, occurrences of this species west of the dividing range are well scattered and usually of only one or two individuals. Correspondence with recognised frog experts in regard to this species indicates that very little survey work has been conducted on the Brown Toadlet away from the northern and southern tablelands and that known populations are in decline except for the coastal regions (M. Mahony; W. Osborne *pers. comm.*). Both experts suggest that this record in the Dubbo area is significant. Enquiries to the NPWS Western Zone revealed that this is a new record for the district and that the nearest records to Gibraltar Rock are in the Pilliga and Dubbo State Forests and the Warrumbungle National Park (D. Ayers *pers. comm.*).

In summary, the presence of the Brown Toadlet at Gibraltar Rock is a record of a species that has conservation concern at a regional scale.

THREATENED SPECIES RECORDED FROM HABITAT WITHIN GIBRALTAR ROCK.

Three species listed under the Threatened Species Conservation Act (1995) has been recorded from the survey area.

1. Superb Parrot (*Polytelis swainsonii*)

One threatened species, the Superb Parrot, was recorded from the survey area by the Dubbo Field Naturalist Society on a field trip on 20/9/1998. This bird is a common inhabitant of the open woodlands and riverine forests in inland NSW. They are a migratory species which are known to breed along the Murray-Riverina area and in the South-west slopes in spring/summer. Migration north generally occurs in the cooler months. The Superb Parrot is noted to feed on fruits, blossoms and seeds of acacias, eucalypts and mistletoes; in grain crops, stubble and pastures and seeds of various grasses. Feed resources are therefore abundant in and around the survey area.

2. Large-eared Pied Bat (*Chalinolobus dwyeri*)

Calls identified as to the Large-eared Pied Bat (*Chalinolobus dwyeri*) were recorded by the Anabat detector placed a dam at the northern end of the survey area. It is considered to be primarily a cave dwelling species but will also utilise abandoned mines. It is regarded as one of the rare bat species in NSW with most records coming from areas of rock outcrop within the Pilliga forests. The Large-eared Pied Bat has been recorded from Geurie Hill which is only 26 kilometres east of Gibraltar Rock. Little is known about the life-cycle of this species so it is uncertain if the bat would utilise any rock caves/crevices as either transient roost sites, maternity sites or both. Regardless of this, the presence of this species represents a record at the western limit of its known distribution.

3. Common Bent-wing Bat (*Miniopterus schreibersii*)

Possible calls identified as to the Large Bent-wing Bat (*Miniopterus schreibersii*) were recorded by the Anabat detector placed a dam at the northern end of the survey area. This species is typically found in well-timbered valleys but is thought to mainly roost in caves and old mine tunnels. Colonies have been found in caves at Wellington and Molong in addition to Geurie Hill. The latter is only 26 kilometres east of Gibraltar Rock. Different size caves can be occupied at varying times of the year as roost caves are used by transient bats until large nest caves are used for breeding in colonies. During the survey no large caves were found but several small caves/cracks were found on the steeper rock faces. It is possible that the bent-wing bats utilise these small caves as seasonal roosting sites on their way to the larger maternity caves. Therefore, Gibraltar Rock will have conservation importance to this species. It is recommended that further survey of bat fauna be undertaken to positively identify this species as being present.

POTENTIAL THREATENED SPECIES THAT COULD HAVE HABITAT ON GIBRALTAR ROCK.

Based on an assessment of the vegetation types and habitat elements present over the entire survey area, the following species listed in the Threatened Species Conservation Act (1995) would have the potential to occur.

1. Little Pied Bat (*Chalinolobus picatus*) - roosts in tree hollows and is also thought to use caves and rock outcrops. All these habitats are present on Gibraltar Rock.
2. Yellow-bellied Sheath-tail Bat (*Saccolaimus flaviventris*) - roosts in tree hollows which can be found in eucalypts and dead trees around the footslopes of Gibraltar Rock. Feeds high above tree canopy and can travel out into open fields to feed.
3. Greater Long-eared Bat (*Nyctophilus timoriensis*) - roosts in tree hollows which can be found in eucalypts and dead trees around the footslopes of Gibraltar Rock.
4. Painted Honeyeater (*Grantiella picta*) - while generally associated with mistletoe infestations (little mistletoe present) this species is also known to utilise eucalypt blossom.
5. Regent Honeyeater (*Xanthomyza phrygia*) - while generally associated with ironbark woodlands (which are not present) this species is also known to utilise White Box blossom.
6. Turquoise Parrot (*Neophema pulchella*) - favours the edges of eucalypt woodland where it has access to grassy areas. Currawang (*Acacia doratoxylon*), which is dominant over most of the survey area, is a favoured food tree for this species.
7. Barking Owl (*Ninox connivens*) - potential roost/nest sites in the hollow-bearing trees around footslopes. Can range out into agricultural land to hunt as well as to nearby vegetated areas.
8. Square-tailed Kite (*Lophoictinia isura*) - likely to be attracted to the large rock outcrop for roosting and thermalling in their search for prey. Dubbo district not regarded as breeding areas for this species.
9. Grey Falcon (*Falco hypoleucos*) - likely to be attracted to the large rock outcrop for roosting and thermalling in their search for prey. Dubbo district not regarded as breeding areas for this species.
10. Black-breasted Buzzard (*Hamirostra melanosternon*) - likely to be attracted to the large rock outcrop for roosting and thermalling in their search for prey. Dubbo district not regarded as breeding areas for this species.

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