



# Blue Mountains Water Skink

*Eulamprus leuraensis* (Wells and Wellington, 1984)

**Other common name(s):** Leura Skink, Blue Mountains Swamp Skink

The following information is provided to assist authors of Species Impact Statements, development and activity proponents, and determining and consent authorities, who are required to prepare or review assessments of likely impacts on threatened species pursuant to the provisions of the *Environmental Planning and Assessment Act 1979*. These guidelines should be read in conjunction with the NPWS *Information Circular No. 2: Threatened Species Assessment under the EP&A Act: The '8 Part Test' of Significance* (November 1996).

## Survey

Current knowledge suggests Blue Mountains sedge swamps and Newnes Plateau shrub swamps as described and mapped in Keith and Benson (1988), Benson and Keith (1990) and Benson (1992) make up the bulk of the habitat for the species.

These swamps occur primarily between Newnes Plateau in the north and west and Hazelbrook in the south and east. However, scattered habitat occurs beyond these areas (LeBreton, 1996).

Boyd Plateau Bogs and Cox's River swamps are other, less likely, but potential habitat.

Characteristic plant species in these swamps are *Gymnoschoenus sphaerocephalus* (Button Grass), *Baeckea linifolia*, *Hakea teretifolia* (Dagger Hakea), *Grevillea acanthifolia*, *Tetrarrhena turfosa*, *Xyris ustulata*, *Empodisma minus* and *Lepidosperma limicola* (Blade Grass) (Keith and Benson 1988; LeBreton, 1996) although not all swamps contain all of these species.

The Blue Mountains Water Skink can be distinguished from the other species of *Eulamprus* found in the Blue Mountains by its much darker body and the yellow/bronze to white contrasting markings. In particular, it has the appearance of a distinctive dark dorsal stripe bordered by yellow lines.

Surveys should be carried out in suitable habitat when skinks are most likely to be active on warm sunny days between September and late April. Surveys should be conducted in cognisance of factors affecting activity, particularly weather conditions. Blue Mountains Water Skinks have been successfully surveyed using pitfall traps (LeBreton, 1996).

## Life cycle of the species

Little is known about the biology and ecology of the Blue Mountains Water Skink. As a result limited information is available on key resources required for different activities including breeding, foraging, basking, shelter, hibernation and dispersal.

Soil moisture and leaf litter depth appear to be important determinants of skink abundance, with skinks preferring areas with wetter soils and deeper leaf litter (LeBreton, 1996).

As with most reptiles, the Blue Mountains Water Skink is thought to bruminate during the winter. Shea and Peterson (1985) collected two inactive specimens on the edge of the swamp at Wentworth Falls Lake following winter rains. This may suggest that some individuals move out of the waterlogged areas of swamp into surrounding vegetation in the winter to take advantage of cover when available.

No specific information is currently available about the habitat requirements of the Blue Mountains Water Skink when

breeding. Basking sites are likely to be important to elevate body temperatures, especially for breeding females.

The Blue Mountains Water Skink has been known to use burrows constructed by yabbies (Shea and Peterson, 1985), and possibly Giant Burrowing Frogs (M. LeBreton pers. comm., 1999). Nothing is known of how (or even if) this species disperses between swamps. Dispersal may take place along creeklines (R. Wells pers. comm., 1999).

### **Threatening processes**

The *Threatened Species Conservation Act 1995* lists a number of key threatening processes relevant to the Blue Mountains Water Skink. These include:

- Fox Predation,
- High Frequency Fire, and
- Cat Predation.

Processes generally accepted as adversely affecting the species are discussed below.

Habitat loss and alteration caused by urban development. Associated threats includes weed invasion, access related disturbances, pollution and sedimentation, alterations to hydrological regimes, predation by cats and altered fire regimes. Maintenance of service corridors and easements for utilities, and associated alterations to habitat may pose a significant threat at swamps that are crossed by such easements.

Grazing, firewood collection, native forest harvesting and inappropriate fire regimes are other processes that disturb the habitat of the Blue Mountains Water Skink and may pose a threat to populations.

### **Viable local populations**

The viability of local populations is likely to be threatened by those processes mentioned above. Populations should be considered viable if resources are available for populations to continue to carry out lifecycle processes (ie young are successfully recruited into the adult population and commence breeding).

Consideration also needs to be given to the ability of individuals to disperse between populations. LeBreton (1996) found that distances between swamps with skinks were important determinants  
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of whether skinks occupied potential habitat. This may indicate that maintenance of connectivity between populations is very important for the long-term viability of local populations.

### **A significant area of habitat**

Given that the Blue Mountains Water Skink is known from only 27 locations within a highly restricted and fragmented distribution, any loss of habitat should be considered significant. This includes direct loss, as well as alteration to habitat.

Accordingly, protection not just of known sites but also potential habitat is very important. Even if skinks do not appear to presently use a site, it may become an important refuge when other sites are degraded or when climatic conditions alter the suitability of swamps in other areas.

### **Isolation & fragmentation**

The distribution of the Blue Mountains Water Skink is highly fragmented. At present there is limited information on how skinks use areas outside the swamp itself or the extent of movement of individuals between populations.

However maintenance of contiguous habitat, and protection of streams between populations should be considered important, as should the prevention of activities that alter the existing hydrological regimes of swamps.

### **Regional distribution**

The TSC Act defines region as the regions defined in the Interim Biogeographic Regionalisation of Australia. The known distribution of the Blue Mountains Water Skink is confined to the South Eastern Highlands region.

### **Limit of known distribution**

The known distribution of the Blue Mountains Water Skink occurs within the Blue Mountains (middle and upper) between Newnes Plateau in the north and west and Hazelbrook in the south and east.

Further survey of potential habitat may identify additional populations and range extensions.

## **Representation in conservation reserves**

The species appears reasonably well represented in conservation reserves. Of the 27 known locations, 15 occur primarily in the Blue Mountains National Park. A further seven populations occur within State forest and are protected from harvesting activities by riparian buffers. The majority of other swamps containing populations are zoned Environment Protection. Further potential habitat also occurs within National park and this may contain additional populations of the Blue Mountains Water Skink.

However, it is not known whether the species' genetic variation is adequately reserved. Individual populations are likely to vary genetically as a result of the isolation of habitat and apparently limited scope for dispersal between populations.

## **Critical habitat**

There is currently no critical habitat declared for the Blue Mountains Water Skink.

## **For Further Information contact**

Threatened Species Unit Conservation Programs and Planning Division, Central Directorate NSW NPWS PO Box 1967, Hurstville NSW 2220 Phone 02 9585 6678.  
[www.npws.nsw.gov.au](http://www.npws.nsw.gov.au)

## **References**

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