

Pseudemoia rawlinsoni

glossy grass skink



Image © Alexander Dudley

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Common name: Glossy grass skink

Scientific name: *Pseudemoia rawlinsoni* (Hutchinson & Donnellan, 1988)

Group: Vertebrate animal, lizard, family Scincidae

Name history: *Leiopisma rawlinsoni* Hutchinson & Donnellan, 1988

Status: *Threatened Species Protection Act 1995:* rare

Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

IUCN Red List: **Not listed**

Distribution: Endemic status: **Not endemic**

Tasmanian NRM Regions: **South, North, Cradle Coast**

Tasmanian IBRA Regions: **Northern Midlands, Central Highlands, Ben Lomond, Flinders, South East**

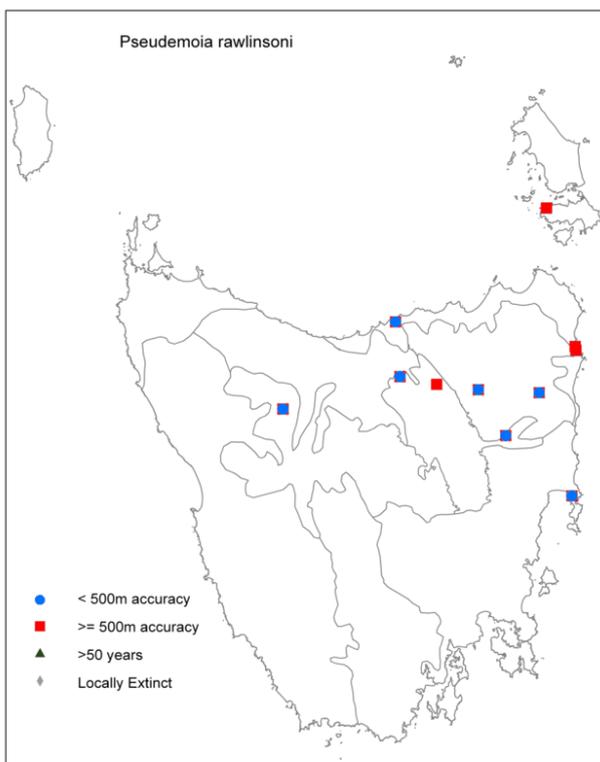


Figure 1. The Tasmanian distribution of the glossy grass skink, showing IBRA regions



Plate 1. Glossy grass skink
(Image © Alexander Dudley – reproduced with permission)

SUMMARY: In Tasmania, the glossy grass skink (*Pseudemoia rawlinsoni*) occurs in swampy and wetland sites. It is a ground-dwelling lizard that has a widespread but scattered distribution in Tasmania, known from locations on the east coast, north coast, inland near Cradle Mountain and the eastern Bass Strait islands.

The main threats to the species include: clearing and drainage of swampy habitats for agriculture, urban encroachment, forestry operations, and alterations to flow regimes and water quality. The species has probably suffered a historical decline in range.

Protection of known sites and potential habitat from threatening activities is the key management requirement for the species.

IDENTIFICATION AND ECOLOGY

Skinks in the genus *Pseudemoia* are small lizards (approximately 120 mm long, with tail) that live on the ground in dense vegetation. Members of this genus in Tasmania have a large transparent disc in the lower eyelid allowing the eye to be visible when the lid is closed; as well as paired frontoparietal shields (head scales) (Hutchinson et al. 2001).

Pseudemoia rawlinsoni (glossy grass skink) is a moderately sized, smooth-scaled skink, having a snout-vent length of about 62 mm. (Hutchinson et al. 2001). Other common names for the species include the swampland cool-skink or Rawlinson's window-eyed skink.

The body is olive-green to medium-brown above, with highly glossy and keeled scales. The body is patterned by very well-defined longitudinal lines, including a black vertebral dark-edged white dorsolateral (on scale row 3) and midlaterals, enclosing a tan to dark-brown upper lateral zone. There is never any trace of dorsal or lateral speckling. The underside of the body is white to straw-yellow without any red pigmentation. There are 24 to 28 midbody scale rows (Hutchinson et al. 2001).

The degree to which the legs of Tasmanian skinks can make contact or overlap when pressed to the body is an important diagnostic characteristic.

The glossy grass skink has well-developed, short legs that either fail to meet when adpressed (adult females) or make contact when adpressed (males and juveniles) (Hutchinson et al. 2001).

The glossy grass skink is poorly known, secretive, and seldom-encountered because it is a ground-dwelling skink found in dense, swampy habitats. It forages and basks within this habitat e.g. on logs amongst dense grass. It shelters in dense vegetation, such as within the base of grass and rush tussocks, and in rotting logs. A specimen has also been found inside a rotting fencepost lying in overgrown introduced grasses alongside a road (Rounsevell et al. 1996). This preference for dense vegetation probably explains the relative rarity of the species in collections (Hutchinson & Donnellan 1988).

A predator of the glossy grass skink is the lowland copperhead snake (*Austrelaps superbus*), which occurs in the same areas as the skink (S. Fearn pers. comm.). The glossy grass skink has also been caught by domestic cats in the Perth area (S. Fearn pers. comm.) and kookaburras are also assumed to be predators of this species.

The glossy grass skink gives birth to between 4 to 8 live young. Mating occurs in autumn (Hutchinson et al. 2001). Females with oviducal eggs or developing young have been collected as early as 15 October and as late as 28 January (Hutchinson & Donnellan 1988). Males show a peak in testicular size during late summer-autumn, and females ovulate in mid spring, so that overwintering of sperm by the female must occur (Hutchinson & Donnellan 1988).

Survey techniques

All collections of the glossy grass skink from Tasmania have been opportunistic, often as part of other fauna/reptile surveys (S. Fearn pers. comm.). The dense vegetation preferred by the species does not lend itself to targeted or stratified surveys. Specialist confirmation is recommended for any specimens suspected to be the glossy grass skink. Hutchinson et al. (2001) provide general information on the collection of skinks.

Taxonomic issues

The glossy grass skink was previously described as *Leiolopisma rawlinsoni* (Hutchinson & Donnellan 1988) but was later placed into *Pseudemoia* on the basis of electrophoretic, karyotypic and morphological data (Hutchinson & Donnellan 1992).

Confusing species

Specimens of *Pseudemoia* can be difficult to identify. Within Tasmania, the genus is distinguished by the combination of divided frontoparietal head scales, a large clear window in the lower eyelid and normally developed limbs (Rounsevell et al. 1996). The glossy grass skink is differentiated from the similar *Pseudemoia entrecasteauxii* and *Pseudemoia pagenstecheri* by the presence of a pale dorsolateral stripe on scale row 3, and highly glossy and strongly triple-keeled dorsal scales. Rounsevell et al. (1996) and Hutchinson et al. (2001) provide a key to the three species of *Pseudemoia* in Tasmania.

DISTRIBUTION AND HABITAT

The glossy grass skink is restricted to southeastern Australia, occurring in several disjunct areas including Tasmania, southeastern South Australia, southwestern Victoria, south-central Victoria, alpine areas of northwestern Victoria, through the Snowy Mountains of New South Wales to the Brindabella Ranges on the New South Wales–Australian Capital Territory border (Hutchinson & Donnellan 1988).

In Tasmania, the glossy grass skink is known from sites on the east/northeast coast (including a small offshore island and Cape Barren Island), the Fingal and Tamar valleys, the low-lying parts of the Central North, and the Cradle Mountain area (Figure 1, Table 1).

The habitat in Tasmania is consistent with that on the mainland, where it occurs in sites characterised by very humid micro-habitats (Hutchinson & Donnellan 1988), including saltmarshes, boggy creek valleys, margins of permanent lakes and swamps in wet heathland, fens and sphagnum bogs.

In Tasmanian, glossy grass skinks generally live amongst rushy grasses, sand, and low dense vegetation in moist areas along the margins of swamps and watercourses. An extreme form of this habitat is the dense swards of *Phragmites australis* amongst remnants of *Melaleuca ericifolia* swamp forests in the Tamar Island Wetlands area (where the species now utilises the artificial boardwalk for basking). The species has also been found where dry sclerophyll forest meets wet heathland that is subject to frequent flooding.

In Tasmania, the species usually occurs in lowland areas including the near-coastal areas on the east and north coasts, and the broad valley floors of the Midlands, Fingal and Tamar valleys. However, recent collections of the species from the Cradle Mountain area have extended the elevational range of the species to about 800 m, where it occurs in habitats such as grassland and marsupial lawn (A. Dudley, pers. comm.).

The glossy grass skink thrives in anthropogenic habitats, such as marshy drainage lines amongst paddocks, in several locations in Tasmania, especially through much of the low-lying central north (S. Fearn pers. comm.).

HISTORICAL DISTRIBUTION

There is no evidence of a decline in the extent of occurrence of the glossy grass skink in Tasmania, although the historic and continuing loss and modification of extensive tracts of potential habitat has been suggested as a reason for the disjunct distribution of the species in the State (Hutchinson et al. 2001).

POPULATION PARAMETERS

The extent of occurrence of the glossy grass skink is approximately 200,000 km² (although this covers some areas of sea between islands), its linear extent is about 225 km, and its area of occupancy is approximately 60 km².

Table 1. Population summary for the glossy grass skink
(Natural Values Atlas, DPIPWE)

	Location	Tenure	NRM region*	1:25 000 mapsheet	Years seen	Extent of subpopulation (ha)	Number of records
1	Cape Barren Island	Private property	North	Unknown	1967	Unknown	1 (♂)
2	Aerodrome Road (near Low Head)	Private property	North	Low Head	2007	Unknown	Unknown
3	Perth	Private property	North	Longford	2002	Unknown	“Several specimens”
4	Bishopsbourne (Woodstock Lagoon)	Private sanctuary	North	Longford	2000	Unknown	1 (♀)
5	Tamar Island Wetland	Tamar Conservation Area	North	Launceston	2002	“Widespread”	“Common”
6	Tamar River (Ti Tree Bend)	Crown land (Council)	North	Launceston	2021 2020	~10 ha	1 (♀) 2 (unknown)
7	Tamar River (West Tamar Walking Track)	Crown land (Council)	North	Launceston	2020	Unknown	Unknown
8	North Esk River (Hoblers Bridge walking track / Killfaddy abattoir)	Tamar Conservation Area	North	Launceston	2002 1988	Unknown	1 (♀) “Common”
9	North Esk River (near Upper Blessington)	Private property	North	Giblin	1994	Unknown	1 (♀)
10	Mathinna (Barnes Rd)	Crown land (State forest)	North	Dublin Town	2008	Unknown	Unknown
11	Near Sloop Lagoon (600 m N Seaton Road)	Bay of Fires Conservation Area	North	Binalong	1978	Unknown	Unknown
12	Round Hill area (behind Swimcart Beach)	Bay of Fires Conservation Area	North	Binalong	1950 1978	Unknown	1 (♀)
13	South Esk River (NE Avoca)	Private property	North	St Pauls Dome	2007	Unknown	Unknown
14	Picnic Island (Coles Bay)	Private property	South	Coles Bay	2008	Unknown	Unknown
15	Selbourne (Four Springs Lake)	Four Springs State Recreation Area	North	Bridgenorth	2009	Unknown	“Large population”
16	Montana	Private property	North	Montana	2002	Unknown	1 (♀)
17	Bracknell (Oaks Road)	Private property	North	Cluan	1992	Unknown	1 (♀)
18	Cradle Mountain area (Pencil Pine Creek bridge / Cradle Mountain Lodge)	Cradle Mountain-Lake St Clair National Park / Private property	Cradle Coast	Pencil Pine	2010	Unknown	2 specimens

*NRM region = Natural Resource Management region.

The distribution of the glossy grass skink is disjunct but this may be an artefact of both historical events, such as widespread clearing of lowland swampy areas, and the challenges in finding and identifying the species.

It is difficult to estimate the population of the glossy grass skink as there has been no formal sampling of population densities. Additionally, many of the sites have not been visited recently to verify their status. The species is known from 17 sites and about the same number of individuals in formal collections. However, anecdotal evidence suggests that some populations are locally abundant e.g. Four Springs Creek, Tamar Island Wetlands (S. Fearn pers. comm.; Fearn et al 2003).

The collecting history suggests that additional individuals will be detected, probably resulting in range extensions and infillings.

RESERVATION STATUS

The glossy grass skink is reserved in the Bay of Fires Conservation Area (two sites), Cradle Mountain-Lake St Clair National Park (one site), Tamar Conservation Area (two-three sites), and Four Springs State Recreation Area (one large population) (S. Fearn pers. comm.). All other sites occur on private property (one of which is covered by a private sanctuary under the Tasmanian *Nature Conservation Act 2002*).

CONSERVATION STATUS

The glossy grass skink is listed as rare on Schedules of the Tasmanian *Threatened Species Protection Act 1995*, meeting criterion B (total population small or restricted and at risk).

THREATS, LIMITING FACTORS & MANAGEMENT ISSUES

The key threat to the glossy grass skink is loss and degradation of its wetland and swampy habitat.

Modification of habitat: Historically, significant areas of habitat of the glossy grass skink, such as wetlands and low-lying native vegetation, have been cleared or substantially modified, mainly through agricultural, forestry and urban activities. Unregulated stock grazing and fire in potential habitat of the glossy grass skink has the potential to further degrade habitat.

The impact may be exacerbated during periods of drought. The degree to which habitat modification/clearing, grazing and fire regime may have affected sites or habitat of the glossy grass skink is unknown. The species appears to do well in anthropogenic landscapes, including in quite degraded habitats, but whether these sites represent relict or typical populations is not known.

Water management (altered flow regimes, dams, water quality): Wetlands and similar swampy habitats have been historically subject to significant degradation (DPIPWE 2004), mainly from primary production activities. More recently, threats to flow regimes and water quality are also occurring due to activities such as urban expansion, construction and maintenance of an increasing road network and other industries in low-lying areas. Construction of instream dams and dams in low-lying, poorly drained terrain is a historical and ongoing threat to potential habitat of the glossy grass skink.

Inappropriate fire regime: The densely vegetated habitat of the glossy grass skink would be naturally subject to infrequent fire events. Uncontrolled fires or poorly planned fuel reduction burns are often hot, high intensity fires that may result in the removal of vegetation cover from swampy habitats. This has the potential to deleteriously affect the quality of habitat for the glossy grass skink. The degree to which inappropriate fire regimes may have affected sites or habitat of the glossy grass skink is unknown.

Inappropriate recreational activities: Wetlands can suffer serious impacts from a wide range of recreational pursuits if these are not carefully regulated, such as damage from off-road vehicles, escaped campfires, and general degradation from rubbish and human waste. At least three subpopulations of the glossy grass skink are close to frequent human activities (i.e. subpopulations close to camping grounds in the Bay of Fires Conservation Area, and those close to the Cradle Mountain Lodge tourist development). The degree to which such activities may have affected sites or habitat of the glossy grass skink is unknown.

Climate change: A warmer climate and longer periods of drought may result in a shift to a drier microclimate and an increase in the frequency and intensity of fire events, which may deleteriously impact the wetland and swampy habitat supporting the glossy grass skink.

Stochastic risk: The glossy grass skink may be at risk of stochastic extinction due to its low abundance and the small number of known sites.

MANAGEMENT STRATEGY

Management objectives

The main objective for the management of the glossy grass skink is to maintain and protect existing populations.

What has been done?

Targeted surveys & monitoring: Knowledge of the glossy grass skink has resulted from opportunistic detection of the species rather than targeted surveys.

Management prescriptions: Management prescriptions for the glossy grass skink are included in the *Threatened Fauna Adviser*, a decision-support system used by the forest industry to take account of threatened fauna in wood production forests managed under the *Tasmanian Forest Practices Code* (FPA 2020, 2014).

What is needed?

- To better understand the distribution and habitat requirements – undertake extension surveys in potential habitat near known sites;
- To better manage known sites – perform surveys at known sites to monitor abundance and detect and manage threats;
- To minimise risk of population decline – protect known sites and associated habitat from disturbance, in consultation with owners/managers of private property, and inclusion of the species in relevant management plans on public land;
- To ensure protection of sites and potential habitat – provide information and extension support to relevant Natural Resource Management organisations, local councils, government agencies, the local community and development proponents on the locality, significance and management of known subpopulations and potential habitat of the glossy grass skink.

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View:

<http://www.dpipwe.tas.gov.au/threatenedspecieslists>

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Permit: A permit is required under the *Tasmanian Threatened Species Protection Act 1995* to knowingly “take” (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen of a listed species.