Department for Environment and Heritage

Pygmy Bluetongue Lizards

Report

Best Practice Management Guidelines for Landholders

Government of South Australia

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Government of South Australia

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South Australian Murray-Darling Basin
Natural Resources Management Board

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The Pygmy Bluetongue Lizard (*Tiliqua adelaidensis*) is now only found in the Mid North of South Australia. This nationally critically endangered species has been found at only 22 native grassland sites, all of which are on private land. The role of private landholders is paramount in ensuring its conservation.

A number of steps can be taken to preserve the grassland habitat of the Pygmy Bluetongue Lizard and increase the size and area of each lizard population. Fortunately, most recommended conservation actions are compatible with productive land management. Many of the suggestions in this document will not only help preserve the Pygmy Bluetongue Lizard's habitat but may also increase the capacity of native grasslands for primary production.

You can help conserve the Pygmy Bluetongue Lizard by:

- adopting a moderate grazing regime, ensuring the long-term productivity of your property and the continued existence of lizard populations
- supporting research, monitoring and recovery projects carried out on your property by allowing access
- working with the Recovery Team to establish a habitat corridor if the lizard population on your property is close to another population, thereby linking the two populations.

Caution is needed when performing the following activities:

- using insecticides/herbicides, as these can kill the lizards and their insect food, and sprays may also cause long-term reproductive problems for the lizards
- ploughing and small scale ripping for water pipelines or revegetation, as these can directly kill the lizards and destroy their burrows
- conducting controlled grassland burning, which should be avoided in spring and early autumn when lizards are likely to be active above ground.

You can assist in maintaining Pygmy Bluetongue Lizard habitat by considering the following:

- Ploughing and ripping for plantings, such as saltbush, can directly kill the lizards, destroy their burrows and disturb their grassland habitat.
- A change in land use may put your lizard population at risk. If in doubt, the Recovery Team will be pleased to provide you with advice prior to the proposed change in land use.
- Lizards occur only in native grasslands and appear to avoid areas under trees. Trees and large shrubs are naturally rare in native grassland habitats of this region. Therefore, tree plantings should be avoided in areas where the lizards are known to occur, as they introduce a tree or shrub canopy incompatible with lizard habitat.
- Developing a site for housing or other infrastructure may destroy lizard burrows and/or habitat.

1 Introduction

1.1 Purpose of the document

These Best Practice Management Guidelines are designed to provide landholders with land management recommendations for the conservation of the Pygmy Bluetongue Lizard. The guidelines are based on the most up-to-date information on the biology of the Pygmy Bluetongue Lizard.

The ultimate goal of the Pygmy Bluetongue Lizard Recovery Program is to ensure the continued existence of the lizard, whilst maintaining the productive capacity of their grassland habitats. We hope to achieve this by maintaining existing populations, enhancing the lizard's habitat and ultimately increasing the number of lizards in the Mid North of South Australia. By following the recommended guidelines you will be significantly contributing to the successful recovery of this critically endangered species.

This document will be updated periodically as new information becomes available. If you sell or lease land that supports a population of Pygmy Bluetongue Lizards, please pass on these guidelines to the new landholders. This will assist them to manage for Pygmy Bluetongue Lizards and help ensure the future survival of the species. If you wish to do even more to protect the Pygmy Bluetongue Lizard you may want to consider adopting either a State Government Sanctuary or Heritage Agreement for the areas of your land that support the lizards.

1.2 How to use this guide

A list of the most important recommendations is presented in the Executive summary. Details on specific issues and management recommendations are provided in the remainder of the guide. Relevant contacts are provided in Appendix 2.

1.3 Recovery Team contact details

Any queries regarding these guidelines or the actions recommended within may be initially directed to the Pygmy Bluetongue Lizard Recovery Team. The Recovery Team will be able to answer most queries or can direct you to the relevant agency.

Pygmy Bluetongue Lizard Recovery Team
Threatened Fauna Ecologist
Northern and Yorke Region
Department for Environment and Heritage
6/17 Lennon Street
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2 The Pygmy Bluetongue Lizard and native grasslands

Pygmy Bluetongue Lizards are now found only in the Mid North of South Australia and depend entirely on native grasslands for their survival. As recently as 1959, the distribution of the Pygmy Bluetongue Lizard was known to extend as far south as the suburb of Marion in Adelaide. This critically endangered species has been found at only 22 native grassland sites and it is estimated that these sites support a total population of 5000 lizards.

An adult Pygmy Bluetongue Lizard. Photo: Mark Hutchinson

The Pygmy Bluetongue Lizard is a small brown skink about ten centimetres long. The males are shorter and stockier than the females. The head of the Pygmy Bluetongue Lizard is quite large and has scales that make its head appear armour-plated. Surprisingly, these lizards do not have blue tongues, instead their tongues are rose pink in colour.

Following the first European settlement of the Mid North in the mid-1800s, the Pygmy Bluetongue Lizard's grassland habitat has been modified through grazing and fragmented through clearing and cropping. Over 99% of open native grassy ecosystems in south-eastern Australia have been destroyed or significantly altered since European settlement (Barlow 1999). Native grasslands and the Pygmy Bluetongue Lizards they support provide a rare example of a once widespread native ecosystem, and so have historical as well as ecological value.

Native grasslands are known for their high biological diversity, of which the Pygmy Bluetongue Lizard is one very important component. Such relatively intact native communities also provide benefits for soil and water conservation. Being deep rooted, native grasses and other grassland plants help to prevent soil erosion. Native grasslands also have greater capacity for water infiltration and help improve surface and groundwater quality.

The Pygmy Bluetongue Lizard lives in burrows constructed by Wolf and Trapdoor spiders. The lizards are present in their greatest densities on the lower slopes of hillsides where the soil and consequently the spider burrows are deepest. The lizards spend most of their time in or very close to their burrow entrances, basking and waiting to ambush their insect prey. Due to this secretive behaviour they are rarely seen.

An adult Pygmy Bluetongue Lizard in its spider hole. Photo: T. Milne

Pygmy Bluetongue Lizards mate in spring, when the males search for females and remove them from their holes for mating. Juveniles are born in late summer and early autumn. The lizards go into torpor (a type of hibernation) over winter and many burrows become covered by debris, until the lizards become active again in spring.

The Pygmy Bluetongue Lizard has significant scientific value as it is now one of South Australia's best known and most easily studied small vertebrates, providing a model system for endangered species management. As well as having intrinsic value, fauna and flora are potential sources of natural products. The Pygmy Bluetongue Lizard itself may one day provide novel antivenin compounds, as they have been observed to be at least partially resistant to Brown Snake venom.

By conserving your native grasslands to provide both current and potential habitat for the Pygmy Bluetongue Lizard, you are also preserving a wide variety of native plants and animals, and improving the long-term viability of your property. In addition, native grasslands provide a useful grazing resource. Most native grasses are perennial, growing and flowering later in the season than introduced annuals. Native grasses respond to summer rain, providing feed for grazing animals when the introduced annuals have all died. In this way they provide the 'capital base' for secure, drought-resistant, clean pastures and summer supplementary feeding of stock.

Figure 1. Known locations of Pygmy Bluetongue Lizards in South Australia

3 Recommended grazing regime

The majority of sites that support populations of Pygmy Bluetongue Lizards are currently grazed, most commonly by sheep. Continuing with this practice at moderate rates should not pose a threat to the survival of the Pygmy Bluetongue Lizard. Sites that are currently grazed should continue to be stocked.

However, if stocking rates are high, it is recommended that grazing be reduced to moderate levels. This can actually be of benefit to the lizards, as moderate grazing allows the reduction of plant matter which enables the lizards to more easily hunt for insects. Though, if a site is not currently grazed and lizard populations appear stable, the establishment of grazing may not be necessary.

Very heavy grazing is not recommended as the hard hooves of sheep and cattle may break up the soil, both in summer when dry and winter when wet. This will cause lizard holes to collapse, depriving the lizards of their homes.

The Pygmy Bluetongue Lizard Recovery Team is currently researching the compatibility of rotational (cell-grazing) management practices in relation to the needs of the Pygmy Bluetongue Lizard. If you would like more information on suitable grazing regimes or the progress of this research, please contact the Recovery Team.

4 Monitoring options

You can contact the Pygmy Bluetongue Lizard Recovery Team if you are interested in monitoring the population(s) on your property. The Recovery Team can work with you to develop a suitable monitoring project for your land and provide advice on how to carry it out.

A Department for Environment and Heritage monitoring program is conducted at nine established sites at the end of summer each year. The monitoring program provides an estimate of the number of juvenile and adult lizards in each population. This is an ongoing project necessary to measure the health of the populations and provide further information on the ecology of the lizards. If you have questions about the monitoring program please contact the Recovery Team.

Volunteers searching for Pygmy Bluetongue Lizards at a monitoring site. Photo: C. Robinson

5 How you can help conserve the Pygmy Bluetongue Lizard

All known Pygmy Bluetongue Lizard sites are located on private land. Therefore, the role of landholders in conserving this species through sensitive land management regimes is very important. As a land manager, your efforts to help the Pygmy Bluetongue Lizard can be as involved as you wish. The Recovery Team relies on landholders for access to Pygmy Bluetongue Lizard sites and by supporting their activities you will be contributing towards conservation of this species. If you wish to become more involved you may want to explore the merits of working with the Recovery Team to establish a healthy Pygmy Bluetongue Lizard population or adopting either a State Government Sanctuary or Heritage Agreement.

Having your land surveyed, if this has not previously been done, is another way to help preserve the Pygmy Bluetongue Lizard. These lizards are very secretive and difficult to find and there may be more undiscovered sites in the region.

The preservation of all Pygmy Bluetongue Lizard sites is critical for the survival of the species. To manage these sites well, it is important to understand the threats this species may face. The primary threats to the survival of the Pygmy Bluetongue Lizard are outlined in Section 6.

5.1 Adding artificial burrows

Artificial burrows have proven to make very good homes for Pygmy Bluetongue Lizards. The Recovery Team has used two methods: long-lasting wooden burrows; and less permanent hammered holes. Pygmy Bluetongue Lizards are equally at home in both types and have been seen to use them for a number of years and to give birth in them. If the density of a population is low at a site because of a lack of suitable spider burrows, the addition of artificial burrows may help to increase Pygmy Bluetongue Lizard numbers. If you are interested in establishing artificial burrows on your property, contact the Pygmy Bluetongue Lizard Recovery Team for further information and support.

5.2 Establishing new populations

It is likely that the current distribution of Pygmy Bluetongue Lizards reflects only a small portion of their historical distribution. In the past, many small populations that were isolated due to land clearance for cropping were lost.

It may be possible to reintroduce Pygmy Bluetongue Lizards at some sites. The success of this will depend on a wide range of factors including soil type, habitat quality, habitat size, current and historical land management practices and the availability of lizards to establish new populations. If you are interested in establishing populations on your property, contact the Pygmy Bluetongue Lizard Recovery Team. You should not attempt to establish populations without assistance from the Recovery Team. Movement of lizards by private individuals would contravene the *National Parks and Wildlife Act 1972*.

A typical Pygmy Bluetongue Lizard habitat

6 Threats to the Pygmy Bluetongue Lizard

6.1 Soil disturbance

Ploughing is the greatest threat to any Pygmy Bluetongue Lizard population. It will directly kill and displace both lizards and spiders through the destruction of their burrows and disturbing the grassland habitat. Ploughing will also break up the soil making any burrows subsequently dug by spiders (which are likely to be few) unstable and unsuitable for lizards. Even if a paddock is only ploughed once and left to regenerate naturally, the original lizard population will be lost.

Soil disturbance in native grassland.

With only 22 known populations of the Pygmy Bluetongue Lizard, the loss of even one population will have significant implications for the species' survival. Under the South Australian *Native Vegetation Act 1991*, native grasslands are protected from major changes in land use such as clearance through ploughing, increased stocking rates or fertiliser application. The Pygmy Bluetongue Lizard is protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the South Australian *National Parks and Wildlife Act 1972*.

Although generally undertaken at a smaller scale, ripping (and revegetation) projects can also destroy lizards and their burrows in the direct path of the ripping lines. Taller plants, which are often planted after ripping has occurred, may block the sunlight needed for basking and alter the soil structure and vegetation in the grasslands. These changes could also affect the resident insect population (i.e. the lizard's food supply). For these reasons, large scale ripping is not recommended in, or directly adjacent to, any area of native grassland.

Smaller scale ripping, such as burying water pipelines, may also destroy lizards and their habitat and caution is needed when laying such pipelines. Ripping for new watering points may become more prevalent with the advent of paddock reconfiguration for rotational grazing. If possible, pipelines should be confined to the upper slopes of hills. Before laying pipelines in the vicinity of a known lizard population it is best to contact the Recovery Team who can survey the path of the pipeline and work with you to determine the best route and, where necessary, relocate any lizards found to be at risk. The placement of watering points on or near the lizard populations is not recommended because stock traffic will impact on the soil and may cause erosion or burrow collapse.

6.2 Grazing

Prior to European settlement, the open structure of native grasslands was maintained by Aboriginal burning practices and grazing by native animals. In the absence of a regular fire regime, Pygmy Bluetongue Lizard sites probably need a moderate level of grazing to keep the spaces between grass tussocks open. Heavy grazing is strongly discouraged because the hard hooves of stock may break up the soil, filling in burrows in the dry season and collapsing burrows when the ground is wet. The protection of suitable burrows is critical to the recovery of this species.

The majority of Pygmy Bluetongue Lizard sites have been grazed by sheep for many years. Pygmy Bluetongue Lizards appear to be able to survive under moderate levels of grazing. Moderate grazing helps to maintain an open structure to the grasslands, providing space between grass tussocks for spiders to dig their holes and for Pygmy Bluetongue Lizards to use them.

The alteration or total cessation of grazing practices is not recommended without careful consideration. If the grassland habitat is in good condition, current moderate grazing practices should be maintained. The Recovery Team is investigating the compatibility of rotational grazing practices in relation to the needs of the Pygmy Bluetongue Lizard.

If a site has not been grazed for some time and the lizards are still thriving, then perhaps even moderate grazing is not needed. The Mid North Grasslands Working Group (MNGWG) may be able to help you design a suitable grazing regime that benefits both the lizard and stock production.

6.3 Insecticides

Caution is needed when applying insecticide near Pygmy Bluetongue Lizard sites. Insecticides can cause illness or death in some reptiles, but at present there is no firm evidence that insecticide/pesticide use to control grasshoppers and locusts causes direct harm to Pygmy Bluetongue Lizards. However, insects (the lizard's main food source) are affected by insecticides. While the amount of insecticide applied to an area may be too low to directly affect lizards, if they eat poisoned insects they will take in a dose of insecticide with each item. As a result, the insecticide will accumulate in the lizards, thus concentrating the dose they receive. If the lizards starve or lose condition as a consequence of lack of insect prey or from eating poisoned prey, it may affect the fertility of the lizards and the long-term viability of the population.

During locust plagues, Primary Industries and Resources South Australia (PIRSA) adopts an aerial locust spraying buffer zone around Pygmy Bluetongue Lizard populations. As such, it is still possible to apply chemicals for the control of locusts near Pygmy Bluetongue Lizard populations. The current recommendations for aerial spraying near threatened species populations are to allow a downwind buffer zone of one kilometre from the threatened population or an upwind buffer zone of three to five kilometres. If you undertake boom or backpack spraying it should not occur closer than 500 m to the threatened species population. If a contractor is applying insecticide to your land ensure that they are aware of and adhere to the above guidelines.

A PIRSA hotline will be available to assist you should a locust outbreak occur. For further information on the effects of locust spraying on Pygmy Bluetongue Lizards please contact the Department for Environment and Heritage Northern and Yorke Regional Office (08) 8841 3403.

A number of species of snails are known agricultural pests in the Northern and Yorke region including the introduced White Snail (*Cernuella virgata*) that is found at a number of Pygmy Bluetongue Lizard sites and can form a significant part of the lizard's diet. Snail control is often achieved through the use of pelletised snail baits. These types of baits are known to be very toxic to reptiles. The use of poisoned pellets could be a potential threat to the Pygmy Bluetongues.

If snail control is required, non-toxic methods are encouraged. These methods may include stubble burning or summer grazing, keeping in mind the requirements for grazing set out in Section 6.2. Both techniques directly kill the snails or reduce their ability to find resting places above the hot ground. If you choose to burn stubble it is important to avoid burning in spring and early autumn when the lizards are most active above ground.

6.4 Weeds

Tall and dense growth of wild oats and other weeds may make it difficult for Pygmy Bluetongue Lizards to bask, catch insects and find mates. One method for controlling weed growth is to use a moderate level of grazing. Rotational grazing may be even more effective. Other methods that have been trialled include slashing or the application of specific herbicides at certain times of year. Herbicides have not been adequately tested for their side effects on reptiles, so their use should be avoided if possible.

Weed control is a concern in all areas of native grassland. The adoption of a conservative grazing regime will help to prevent grassland degradation and minimise the risk of weed infestation. Minimal disturbance weeding techniques should be used wherever possible.

6.5 Herbicides

As with insecticide use, there is no direct evidence that herbicide use will harm Pygmy Bluetongue Lizard populations. However, herbicides are known to cause fertility problems for small vertebrates and should only be used with caution.

If herbicide use cannot be avoided, make sure you read and adhere to the guidelines and recommended quantities found on the label of the herbicide container. Application should occur on a calm day to minimise drift and wherever possible herbicide should be spot sprayed directly on the target species. Broadscale application of herbicides over native grasslands is not recommended. Many native plants are susceptible to herbicides and application may kill off the native grasses and ultimately degrade or alter the composition of the grassland. Spot spraying of targeted weeds is encouraged. If a contractor is applying herbicide to your land ensure that they are fully aware of and adhere to the above guidelines. Further information about the correct application of herbicides can be sought from Agricultural Chemical Retailers or PIRSA.

6.6 Fire

The long-term effects of fire on the Pygmy Bluetongue Lizard populations are unknown. It is likely, given the high incidence of fire in the Australian landscape and the rapid spread of a grassland fire, that the lizard's habit of living in deep burrows provides them with a level of protection from fire. However, wildfire is likely to pose some threat to the lizard's survival, as lizards caught out of their burrows may be killed (particularly males in the spring and dispersing juveniles in late summer/early autumn).

Burning may also reduce food availability, which can affect an individual's survival or its ability to breed. Fire causes destruction of grassland vegetation, leaving the lizards more vulnerable to predation. The burning of native grasslands is discouraged when lizards are active above ground in spring and early autumn.

6.7 Change of land use

Changing the use of the area inhabited by Pygmy Bluetongue Lizards may adversely affect the lizard population. Caution should be used if you are considering doing any of the following:

- increasing, decreasing or removing grazing pressure
- changing from sheep to cattle grazing
- changing from grazing to crops or infrastructure
- changing the use of fertiliser or herbicides.

Native grasslands are protected in South Australia by the *Native Vegetation Act 1991*. Consideration should be given to how such a change may affect the lizards before the change is implemented. The Recovery Team is happy to provide advice on these issues.

6.8 Urban or industrial development

Some of the lizard populations may be subject to increased urban or industrial development pressure in the future, especially those close to Burra. This may include the building of infrastructure such as houses, sheds, factories and roads. Such development would disturb the native grassland and may directly destroy lizard burrows and the lizards themselves. In the case of proposed small-scale developments, it may be possible to alter the design to minimise harm to the Pygmy Bluetongue Lizards, or where no alternative exists, to relocate lizards.

The Recovery Team can provide advice on these issues. Both the Pygmy Bluetongue Lizard and *Lomandra* grassland habitats are protected under the South Australian *Development Act 1993*. Any proposed developments associated with Pygmy Bluetongue Lizard populations will require proponents to seek approval for their proposal under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

6.9 Habitat fragmentation

Large tracts of cultivated land separate most of the lizard sites. Pygmy Bluetongue Lizards are small and rely on their burrows for protection from predators and temperature extremes. Because of this, they are unlikely to move or disperse across cultivated land. Small isolated populations can suffer from inbreeding. This may mean that populations are more susceptible to genetic illness and the eventual extinction of the population. Due to the extent of habitat fragmentation across the Mid North, there is little potential for lizards to recolonise sites and the loss of a population from such areas would be final.

A spider hole used as a burrow by Pygmy Bluetongue Lizards

To provide linkage between populations, corridors of suitable habitat can be established. Habitat corridors will allow for movement of individuals between populations, as well as increasing overall population size. Such corridors could be enhanced by the installation of artificial burrows. The Recovery Team would welcome the opportunity to work with any landholders interested in establishing linking corridors on their lands.

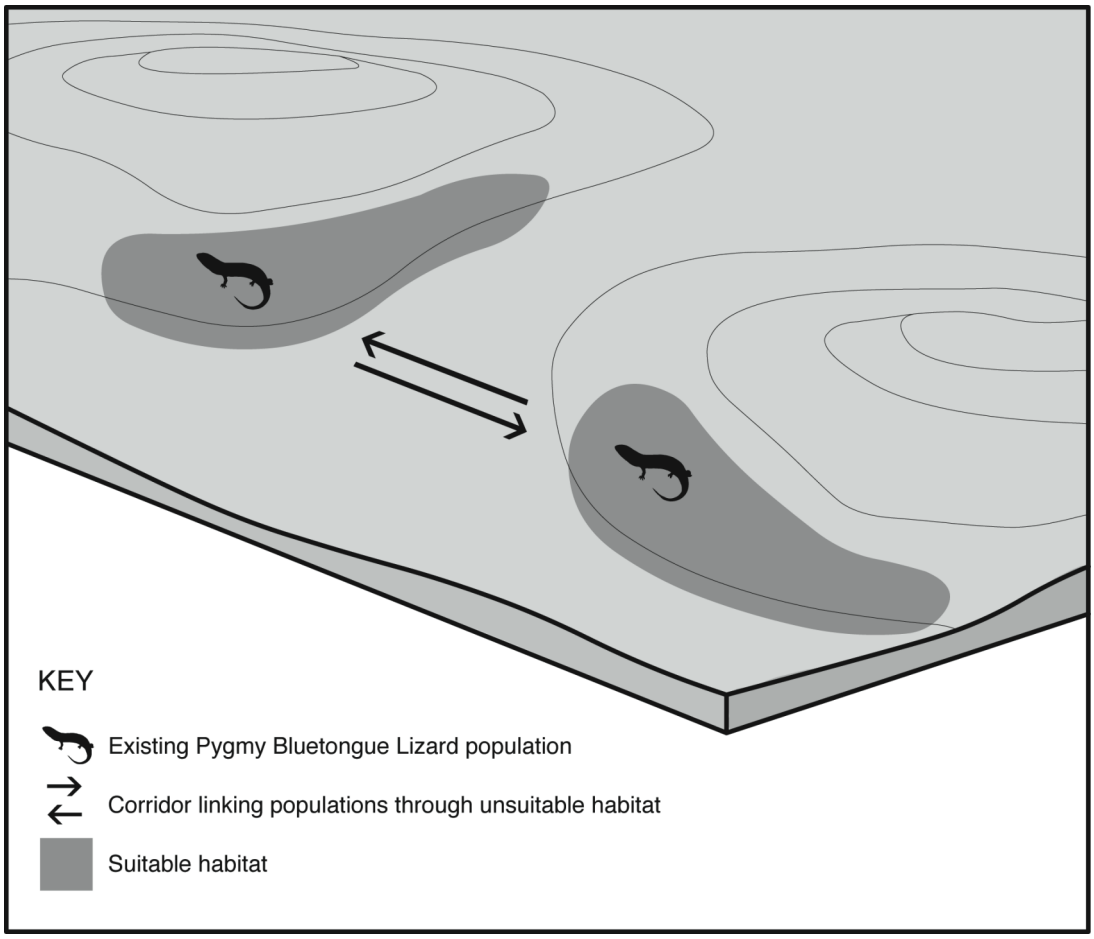

Figure 2. An example of a potential corridor linking two lizard populations through unsuitable habitat

6.10 Planting trees and shrubs

It is uncertain whether the open native grasslands in the Mid North had a tree layer prior to European settlement, or if they have always been predominantly treeless. The most accepted scenario suggests that a few scattered she-oaks and eucalypts existed along the watercourses. Trees and shrubs alter the characteristics of the soil and litter underneath their canopy.

There are no records of Pygmy Bluetongue Lizards living under trees or shrubs, even when adjacent to open grassland areas. Experiments have shown that artificial burrows made under trees quickly fill with soil and debris. The lizards may not get enough sunlight if there is a dense canopy of tree cover. Moving away from the burrow to bask would increase the risk of predation from perching birds watching the burrows and introducing trees would also increase the availability of perching sites for birds.

Tree planting should not be undertaken at sites where Pygmy Bluetongue Lizard populations are known to exist. 'Revegetation' of grasslands by planting trees or shrubs is discouraged and advice on revegetation should be sought. If undertaken with appropriate species, revegetation should be conducted with caution and using minimal disturbance techniques to reduce the adverse impacts on the grassland flora and fauna.

6.11 Predators

Native predators of the Pygmy Bluetongue Lizard include Brown Snakes and birds of prey such as the Brown Falcon. These predators do not need to be managed for conservation purposes of the lizard. The main introduced predators of the lizards are thought to be foxes and cats. Foxes can be controlled through baiting programs. For further information contact SA Murray-Darling Basin Natural Resources Management Board. Rangelands on 8892 3033 or Northern Plant and Animal Control Board on 8664 1479.

6.12 Fertilisers

The application of fertilisers is not recommended, as they can degrade the quality of native grasslands (by introducing incompatible nutrients and nutrient levels) and encourage weed growth. Weeds reduce the open structure of grasslands and limit the lizard's ability to find food and burrows. Contact the Mid North Grasslands Working Group (MNGWG) for further information on grassland management (see Appendix 2 for contact details).

6.13 Trafficking

Despite the large fine or jail term associated with trafficking endangered species, there is a risk that traffickers could target the Pygmy Bluetongue Lizards due to the demand for Australian reptiles. Exact locations of the populations should only be revealed to government agencies and to known and trusted individuals. Suspicious behaviour at lizard sites such as digging by unknown people should be reported to the District Ranger for the National Parks Burra District Office on (08) 8892 3025.

7 Agreements and Incentives

If you wish to do more to protect the Pygmy Bluetongue Lizard you can apply for incentives to assist you in conservation activities, as outlined below.

7.1 Native Grassland Conservation Incentive Scheme

Funding is available through the Mid North Grasslands Working Group to conserve and manage native grasslands for the dual purposes of production and conservation. In order to be eligible you must have good quality native grasslands in the Mid North or Northern Agricultural Districts. Funding is available for activities such as fence construction and repositioning of stock watering points.

For further information contact the Mid North Grasslands Working Group (details in Appendix 2).

7.2 Sanctuary Scheme Agreement

Under the Sanctuary Scheme, an agreement can be signed by the landholder and the State Minister for the Environment. It is not attached to the title of the property. It recognises the conservation value of the land and the landholder's commitment to managing the land for conservation. The agreement may be revoked by the landholder by writing to the Minister. The holder of a Sanctuary Agreement may be more likely to receive funds from various funding bodies, to help manage the protected areas of the property (for example establishing new watering points away from lizard populations).

7.3 Heritage Agreement

This is an agreement attached to the land title between the owner of the land and the Minister for the Environment. Subsequent owners are also bound by the agreement. It applies to a designated area of land within a property that has been assessed as having a particular level of heritage value. The Minister may vary or terminate the agreement, by agreement with the owner and the Native Vegetation Council.

The advantages for you under the Heritage Agreement Scheme are:

- The Native Vegetation Council is able to provide funding for the cost of fencing of Heritage Agreement areas to protect them from degrading activities.
- Annual grants of up to $2000 are available for Heritage Agreements to assist in implementing management activities.
- Heritage Agreement land is not subject to local government rates.
- Trained volunteer labour may be available to assist in managing Heritage Agreements through a joint Native Vegetation Council and Trees For Life program.
- Technical advice on native vegetation and wildlife management is available to Heritage Agreement owners through the regional Bush Management Adviser or other Department for Environment and Heritage staff.

Heritage Agreements do not usually allow any form of production on the protected area of the land, as they aim to preserve native vegetation and any associated fauna. However, specific clauses can be written in, for example if grazing significantly increases the biodiversity value of the native grasslands, then a certain level of grazing may be permitted.

Holders of Heritage Agreements can apply to the Native Vegetation Council for funding to help manage the protected land under the agreement, to enhance the native vegetation or to conduct research on the native vegetation or native animals on the land. The holder of a Heritage Agreement may be more likely to receive funds to help manage the property, and can attract the highest rate of fencing reimbursement from other funding bodies.

7.4 Sales incentives

A range of new incentives is being made available to landholders who donate or sell their land at a discounted sale price to be reserved for conservation purposes. These incentives are still being developed, but as grasslands are very poorly represented in South Australia's reserve system and there are no Pygmy Bluetongue Lizards in reserves, it is likely that any donation or sale of grasslands in this way will be viewed favourably.

For information on both Sanctuary and Heritage Agreements please contact the Northern and Yorke Regional Office of the Department for Environment and Heritage (see Appendix 2 for contact details).

A Pygmy Bluetongue Lizard emerging from its burrow

8 Bibliography

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Appendix 1: Information about the Recovery Team

Members of the Recovery Team

The Recovery Team consists of around 10 members from many different backgrounds and institutions. Current Recovery Team members include representatives of:

- South Australian Museum
- Flinders University of SA
- local landholders
- Department for Environment and Heritage
- Threatened Species Network (SA)
- Flinders Univeristy undergraduate and postgraduate researchers
- Adelaide Zoo
- Regional Council of Goyder
- community members.

Past achievements

Since the formation of the Recovery Team in 1992, achievements have included:

- Twenty-two populations of Pygmy Bluetongues have been located.
- Four Pygmy Bluetongue populations are on sites with current Sanctuary Scheme Agreements and one site has entered into a Heritage Agreement.
- Adelaide Zoo hosts a public display of the Pygmy Bluetongue Lizards and is learning much about its behaviour through its attempted captive breeding program. As yet there have been no successful births.
- Basic information on the biology and ecology of the Pygmy Bluetongue Lizard has been collected.
- A field study has been established to undertake research on the microhabitat and macrohabitat factors limiting the lizard's distribution.
- Nine permanent annual monitoring sites have been established with the agreement of landholders. These sites have been set up to monitor changes in populations over time.
- The Pygmy Bluetongue Lizard, grassland habitats, the contribution of landholders to their recovery and the conservation significance of the region have received considerable local, statewide and at times international attention.

Appendix 2: Relevant contacts

Department for Environment and Heritage (DEH)
Northern and Yorke Region
6/17 Lennon Street
Clare SA 5453
Phone: (08) 8841 3403
Web site:
http://www.environment.sa.gov.au/biodiversity/bcp/index.html

Primary Industries and Resources South Australia (PIRSA)
GPO Box 1671
Adelaide SA 5001
Phone: (08) 8226 0222
Web site: http://www.pir.sa.gov.au

Environment Australia
GPO Box 787
Canberra ACT 2601
Phone: 1800 803 772
Web site: http://www.environment.gov.au

Threatened Species Network (SA)
SA Conservation Centre
120 Wakefield Street
Adelaide SA 5000
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