

**A Coastcare funded project**



# **Guidelines for Works in areas of Little Penguin Habitat**



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**The Biodiversity Conservation Branch (Department of Primary Industries, Water and the Environment) and the North West District of the Parks & Wildlife Service (Department of Tourism, Parks, Heritage and the Arts) have endorsed these guidelines.**

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## Introduction

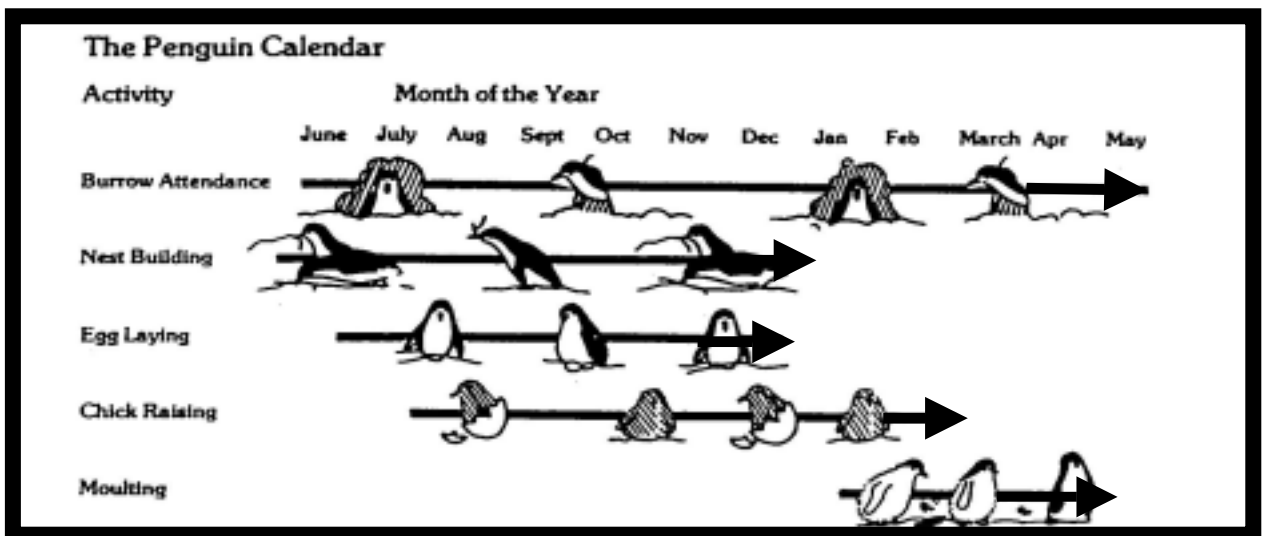
Little Penguins (*Eudyptula minor*) can be found mainly along the North West, North, East and South coasts of Tasmania. Colonies can vary in size from a few birds to over a thousand. Nests may vary from a scrape under vegetation, amongst rocks and even under buildings. There are also large breeding colonies on the offshore islands of Tasmania.

These guidelines have been produced to help local land managers and community groups to adopt best practice for managing works in areas of Little Penguin habitat.

A brief outline of the life cycle of these birds is included as it is necessary to understand the birds and their habits so that there is minimal disturbance during the breeding and moulting seasons when Little Penguins are most vulnerable.

# Life Cycle of Little Penguins

- ❖ Male penguins return to either renovate old burrows or to dig new ones between May and August depending on the food availability and other factors of the season.
- ❖ Noisy male courting displays greet arriving female penguins. Although only one mate is chosen, they may not be their sole partner for life.
- ❖ Birds breed annually, but in eastern Australia the usual clutch of two eggs may be laid as early as May or as late as November.
- ❖ In successful years, two clutches might be reared in one season, which is unusual among penguins. The penguin pair share incubation shifts of usually 1- 2 days and hatching takes place within 33 - 37 days. About 60% of the eggs successfully hatch.
- ❖ When 5 weeks old, the chicks are left unguarded by parents and at night can be seen outside burrows waiting to be fed by both parents.
- ❖ Within another 2 or 3 weeks they are ready to move to the sea, where they will grow to maturity. These young birds may return to their original colonies to breed when they are about 2 years old.
- ❖ Once chick rearing is complete adult birds return to the sea to feed for about 15 – 21 days before returning to commence moulting.
- ❖ Penguins usually moult between February and April. Moulting can take up to 15 days when old feathers are shed and new feathers are grown. During this time birds remain their entire time on land in their burrows living off their food reserves.



Courtesy Phillip Island Nature Park

## Planning

*It is important to ensure that there is minimal disturbance to the birds at all times, especially during the breeding and moulting seasons.*

Contact your local Coastcare or NRM Facilitator, local Coastcare group, Penguin Monitoring Group (NW), Biodiversity Conservation Branch (DPIWE) or the Parks & Wildlife Service (DTPH&A) if you are unsure whether penguins are present in the area of proposed works. In 2000 a Coastcare funded project identified penguin colonies from Wynyard to Point Sorell along the North and North West coasts of Tasmania. North West Councils and local North West Coastcare groups have this information to assist them with management in these areas:

- Planning in coastal areas is very important prior to the commencement of any works.
- The objective of this process is to identify the problems and prioritise the solutions so that they can be carried out in a systematic and strategic way to ensure the protection of the penguins.

## Matters to Consider

- **Presence or Absence of Little Penguins**
- **Timing of Works**
- **Identifying Vegetation Types used in Little Penguin Habitat**
  - **Native coastal species**
  - **Introduced species**
  - **Vegetation types where penguin habitat generally occurs**
- **Revegetation**
- **Use of Chemicals**
- **Installation of Artificial Burrows or Igloos**
- **Penguin Fencing**
- **Public Works and Maintenance**
- **Mowing and Slashing**
- **Overnight Parking of Campervans and Caravans in Little Penguin Habitat**

*Develop a plan of action and incorporate best management practice to ensure sufficient habitat protection for Little Penguins is available at all times.*

- **Presence or Absence of Little Penguins**

The telltale signs of the presence of Little Penguins are well-worn runways, evidence of scats (white faecal matter in 3cm – 5cm streaks), footprints, and the calls they make at night. Feathers can be seen around the entrance of burrows or resting spots during the moulting time. Many times penguins can be smelt (a fishy odour) before they are found. Depending on the time of the year, checks should be carried out more than once, just in case an absence of birds on first inspection may be falsely taken as no presence of birds in the area.

- **Timing of Works**

There is a very small window of opportunity to undertake works such as revegetation, weeding and construction.

- ❖ **The best months for works are from May to July. Works can be undertaken as long as the birds have finished raising chicks and have completed their moult.**
- ❖ **Avoid working in and around a penguin colony during breeding & moulting times of the year as this causes disturbance to the birds.**

Recent survey results have found that not all birds leave the coast during the months of May - July and there are always some birds present for a variety of reasons. As a general rule the more mature birds can start breeding at the beginning of June and can produce two clutches. This is totally dependent on seasons and the available food supply. Birds have been found to be still raising chicks as late as April in some breeding seasons. Breeding is asynchronous throughout the colony and can be quite variable.

Consequently before the commencement of any type of works in an area it is important that a Parks and Wildlife Ranger or a Biologist from the Biodiversity Conservation Branch checks the site. Checks identify if birds are present and also the activity stage of the penguin's breeding. Recommendations are made and planned works can then be approved or modified accordingly.

- **Identifying Vegetation Types used in Little Penguin Habitat**

- **Native coastal species**

It is highly recommended that indigenous coastal species be used from seed collected in the local area for revegetation. Species should reflect native species growing in the area.

- **Introduced species**

Penguins nest under introduced species especially types that offer cover and protection such as Cape ivy, Boxthorn, Boneseed, Blackberry, and Mirror Bush

▪ **Vegetation types where penguin habitat generally occurs:**

<b>Native</b>	
True boobialla	<i>Myoporum insulare</i>
Ice plant	<i>Tetragonia tetragonoides + T.implexicoma</i>
Climbing saltbush	<i>Einadia nutans ssp. Nutans</i>
Coastal saltbush	<i>Rhagodia candolleana</i> <i>Candolleana</i> (less common)
Sagg	<i>Lomandra longifolia</i>
Native fuchsia	<i>Correa alba &amp; Correa backhouseana</i>
Native currant bush	<i>Leucopogon parviflorus, L.australis</i> (tall bushes) <i>L.ericoides</i>
False boobialla or Coast wattle	<i>Acacia longifolia ssp sophorae</i>
Tussock grass	<i>Poa labillardierei</i>
Coastal tussock grass	<i>Poa poiformis</i>
Tasmanian flax - lily	<i>Dianella tasmanica</i>
<b>Introduced</b>	
Cape ivy	<i>Delairea odorata</i>
Boxthorn	<i>Lycium ferocissimum</i>
Blackberry	<i>Rubus fruticosus sp</i>
Mirror bush	<i>Coprosma repens</i>

• **Revegetation**

Weed removal must be **gradual** and needs to be undertaken simultaneously with revegetation to ensure sufficient nesting habitat is provided at all times. Plan your revegetation from May to July, again depending on the absence or presence of penguins.

If the majority of vegetation providing habitat for penguins' colony is introduced species then careful long term planning must be undertaken.

Where Boxthorn is present and penguins use this for nesting, gradually remove large bushes by cutting and painting with herbicide leaving the dead skeleton *in situ* wherever possible (See appendix 1). This retains the root system and the branches, which continues to provide valuable habitat for the penguins and maintains soil stability. *Tetragonia* can be planted to grow over the dead Boxthorn to provide further cover. Remove small plants promptly.

For further information on weeds and native plants, refer to regional booklets available from Councils, Coastcare and NRM.

- **Coastal Weeds of the Cradle Coast Region (NW Tasmania)**
- **Coastal Weeds of Tasmania –Statewide**
- **Environmental Weeds on Tasmania’s East Coast**
- **Environmental Weeds in the Tamar Region**
- **Grow Local – a guide to native plants in the Cradle Coast Region**
- **Gardening for Native Biodiversity**

## • **Use of chemicals**

Checks need to be made that no penguins are present prior to spraying weeds. Chemicals that are used should be flora or weed specific with minimal harm to the general environment and any other fauna present such as frogs.

## • **Installation of artificial burrows or igloos**

These can be used as a last resort where there is insufficient natural nesting habitat, or if the habitat is under some negative impact such as coastal erosion. They should be camouflaged where possible with native creepers such as *Tetragonia*. Consult your local Coastcare Facilitator, the Biodiversity Conservation Branch (DPIWE) Parks and Wildlife Service Officers (DTPH&A) for information on these alternatives. (See appendix 2)

## • **Penguin Fencing**

One of the major causes of deaths of Little Penguins has been cars and trains running them over. This is because many colonies along the North West coast are alongside the Bass Highway and other major arterial roads. Effective barriers to penguins can be constructed with fences made from 25 mm chicken mesh fastened to fencing wire with ring fasteners and strained tightly between star pickets. Strain the fence back to a picket stay. Safety caps must be placed on top of star pickets to protect people. (See appendix 3)

The fence should be built with 600 mm high mesh that is buried 100 mm into the ground. If the ground is too hard to allow burial, turn the lower 100 mm in toward the seaside of the fence and weigh or pin it down very securely. The fence should end at some structure or natural feature that the birds cannot get past, or angle the last section of the fence back to towards the coast well past the nesting area. Brace the corners of the fence, and where it changes direction – with short sections of star picket and pegs secured by wiring. To deal with unevenly sloping ground, insert a post at each change of slope, cut the mesh at the post and attach another piece of mesh. Pedestrian openings should ideally be away from penguin areas but if this is not possible, fit a small gate (constructed by a local metal fabricator).

Keep the fence clear of vegetation or objects that the birds can use as platforms to hop over the fence – penguins are quite athletic. To avoid birds getting stuck behind the wrong side of the fence, a ramp of rocks or boards should be provided so that they can escape.



- **Public Works and Maintenance**

When Councils need to undertake works eg: stormwater drains on beaches, or Hydro or TASRAIL need to carry out maintenance on infrastructure, due care must be taken if penguins are nesting nearby. The Parks & Wildlife Service must be contacted so that the area can be investigated for the presence of Little Penguins and management advice provided.

- **Mowing and Slashing**

There are significant areas of lawn and grass covering coastal habitats that are maintained by Councils. The areas that are close to bushes or rocky areas need to be checked for the presence or absence of penguins before works such as mowing and slashing are commenced. This will avoid harm to penguins that may be nesting in the area. If grass is high the entire area should be checked for signs of the presence of penguins.

- **Overnight Parking of Campervans and Caravans in Little Penguin Habitat**

It is recommended that campervans and holiday homes be kept away from overnight stops in Little Penguin colonies as quite often penguins nightly activities, such as feeding chicks are interrupted.

## **Contact details for further information**

### **Biodiversity Conservation Branch:**

Marine Unit Biodiversity Conservation Branch Phone: 03 6233 6556

### **Parks and Wildlife Service**

Hobart Office	Phone: 1300 135 513
Launceston office	Phone: 03 6336 5312
<b>North West District Office</b>	Phone: 03 6429 8719

### **Coastcare**

Coastcare Coordinator	Phone: 03 6233 3849
Coastcare Facilitator (NW)	Phone: 03 6430 5782
Coastcare Facilitator (NE)	Phone: 03 6383 6355
Coastcare Facilitator (Sth)	Phone: 03 6233 2185

**Coastcare is a program of the Australian Government's Natural Heritage Trust working with State / Territory and Local Governments.**

## Appendix 1

### METHODS TO TREAT WOODY WEEDS WITH HERBICIDES

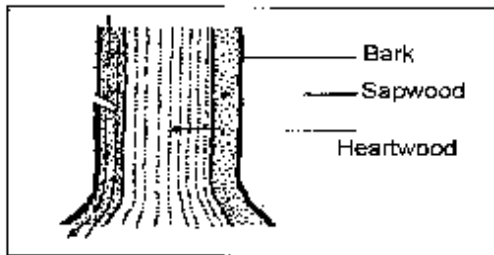


Figure 4: Herbicide being applied directly to stumps or stems must be directed to the sapwood to maximise effectiveness.

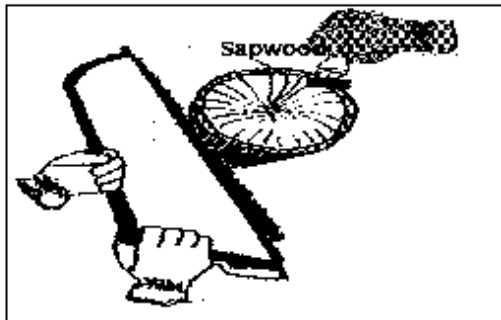


Figure 5: Cut and paint herbicide application technique. For maximum effectiveness, herbicide must be applied to the sapwood within 10 seconds of the cut being made.

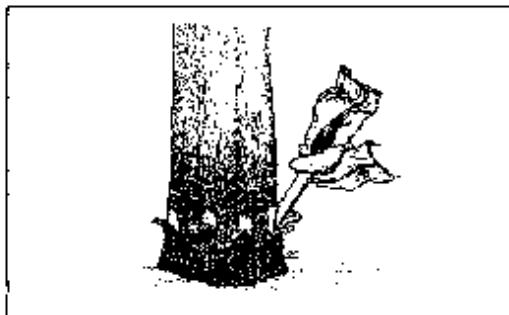


Figure 6: Filling method of herbicide application. For maximum effectiveness, herbicide must be applied to the sapwood within 10 seconds of the cut being made.



Figure 7: Drill and poison herbicide application technique. For maximum effectiveness, herbicide must be applied to the sapwood within 10 seconds of the hole being made.

Small to large specimens of coastal weeds such as Box Thorn, Mirror Bush etc can be treated using the illustrated methods.

Gloves should be worn when applying herbicides, refer to the herbicide container label regarding the safe use of the herbicide.

Herbicide-*Glyphosate 360 g/l* (Brand names *Roundup* or *Zero*)

**1-Refer to Figure 5**

- 2-Cut with a bowsaw or loppers.
- 3-Use a paint brush to apply 100% Roundup to the cut stump.
- 4-A red dye should be added to the herbicide this enables the user to identify which stumps have been treated.

**1-Refer to Figure 6**

- 2-Use a wood chisel to make incisions into the sapwood at about 10 cm spacings, depending on the diameter of the stem.
- 3-Inject 100% Roundup using an eye dropper.

**1-Refer to Figure 7**

- 2-Drill holes into the sapwood using a battery pack drill at about 10 cm spacings, depending on the diameter of the stem
- 3-Inject 100% Roundup using an eye dropper.

**Figures 4-7 sourced from:**

- National Park of Australia (NSW). (1999). *The National Trust Bush Regeneration Handbook*
- Clark, M. (1995). *Field Sheet for Herbicide Control Techniques in Queensland Areas. Bushcare Tasmania*
- Muhl, A. (2001). *Bush Care of South-East Australia*. R.G. and F.J. Richardson, Victoria.

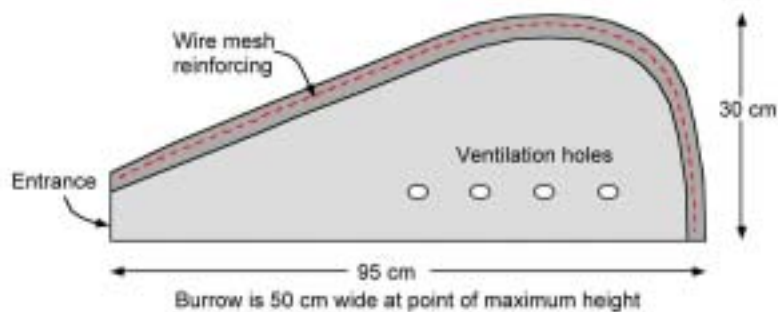
For more detailed information refer to Coastal Weeds of the Cradle Coast Region (NW Tasmania)

## Appendix 2

### ARTIFICIAL PENGUIN BURROWS



Cross section through burrow



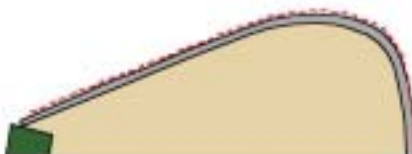
Stages in making a penguin burrow



1. Make mound of sand about 90 cm long, 25 cm high and 40 cm wide (at its highest point) tapering to the entrance and place a 150mm plastic flower pot at the entrance.



2. Place a 2 cm layer of tufa\* over the sand.



3. Shape mesh reinforcing (50 mm chicken wire) to fit over the layer of tufa.



3. Place a second 2 cm layer of tufa over the reinforcing ensuring that it bonds with the first layer and covers the reinforcing.

4. Trowel some ochre over the surface for camouflage.

5. Allow 20 minutes for the mixture to stiffen slightly and then poke a sharpened 25 cm dowell through the sides several times to form ventilation holes.

6. After two days remove the burrow from the sand and clean up the edges.

7. Allow to cure for at least a week (preferably two) before transportation. Can be stacked 3 to 4 high.

\* "Tufa" or "Hypertufa" is made by using a cement mixer to combine:

1 part bricklayers' sand (fat sand)

1 part cement

2 parts screened pinebark or peat

Sufficient water to make a creamy consistency

Notes and illustrations by David Ralph and Nick Mooney

Note: Some Coastcare groups prefer to make a heavier burrow and only use one part pine bark. This is to deter people from lifting the burrow and disturbing nesting penguins.

# Appendix 3

## Fencing

