



Lutregala Marsh Reserve

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# Management Plan 2016-2021



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# Management Plan

2016 – 2021

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Front Image: Oyster catcher eggs © Matt Newton

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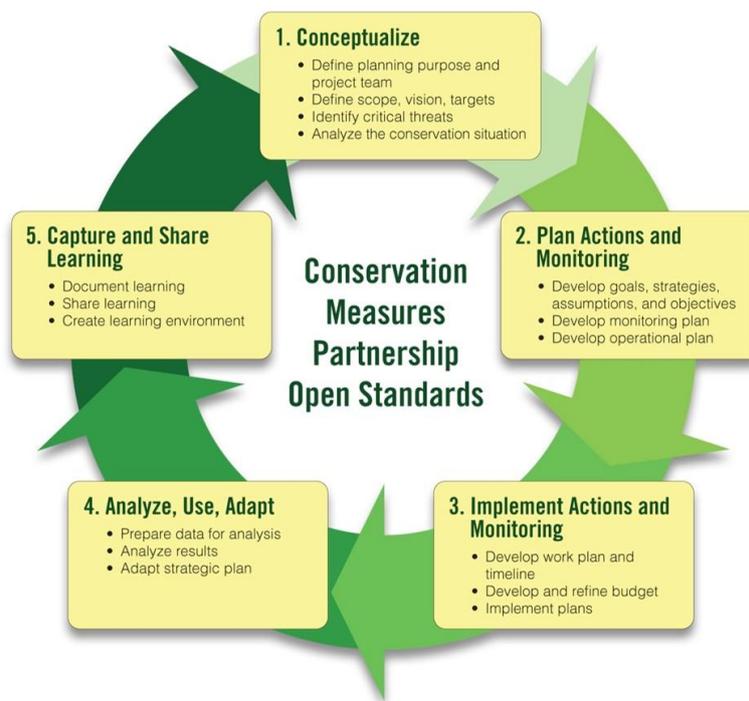
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# Reserve Management Framework

## Adaptive Management

The TLC aims to demonstrate excellence in adaptive management for nature conservation and has adopted the *Open Standards for the Practice of Conservation*, which is an international system of adaptive management developed by the Conservation Measures Partnership (<http://cmp-openstandards.org>). The *Open Standards* provides a guide to planning and implementing conservation actions and incorporates a model of adaptive management as shown in Figure 1.



**Figure 1 Open Standards adaptive management model**

This management plan represents the outcomes of the first and second stages of the *Open Standards* adaptive management model (Figure 1). Conservation targets have been selected that describe broad ecosystem classes or habitat types, often with nested targets that are dependent upon the protection of the primary target. Ecological indicators are selected for each target and used to monitor changes in their condition. Threats to each of the targets are identified, along with the factors that contribute to the threats, and these are prioritised depending on the extent, severity and irreversibility of the impact of these threats to the conservation targets.

## Implementation of Management Strategies

Strategies to mitigate the threats to conservation targets are assessed for their potential impact on the threat/target combination and the feasibility (time, staffing, finances, ethical) of implementing the strategy.

One and five-year work plans are developed to implement the management strategies and to record the specific activities to be undertaken, their timing and the resources required. Work plans also allocate budgets, allowing the TLC to plan ahead to ensure appropriate capacity to deliver reserve management activities.

Ecological parameters are also considered when scheduling works, to ensure that projects are undertaken when they are most likely to succeed. Progress against activities in the work plan is reviewed annually and used to amend the ensuing year's work plan as necessary.

## Monitoring and Evaluation

The TLC implements a monitoring and evaluation strategy across all of its permanent reserves. Monitoring of specific ecological indicators enables the collection of scientifically robust information on the status and trends of the conservation targets. Measuring the success of management actions is also critical for ensuring successful long-term management of the targets. Four types of monitoring are conducted at intervals from 1 to 5 years:

- **Long-term ecological monitoring** establishes measures that indicate the ecological viability, condition or health of the targets. The first pass establishes baseline, then subsequent passes provide trend data that may provide early warning of deleterious changes to the health of the conservation targets. The results of this monitoring allow reserve managers to develop mitigation measures and reduce future costs of remedial management.
- **Annual reserve assessments** are undertaken once per year by TLC reserve management staff across all permanent reserves to identify any new or emerging threats that have the potential to reduce the viability of the targets. Early identification of threats allows early management interventions to mitigate a threat.
- **Management effectiveness evaluation** provides land managers with information that is essential to determine the adequacy of management efforts. Data are collected on management inputs and biodiversity outputs, using indicators specific to measuring the success of management strategies. This information is then used by TLC reserve managers to make more-informed decisions on land management, measure progress towards performance objectives and determine the effectiveness of management strategies.
- **Change detection analysis** using remote sensing GIS data, is undertaken to assess the impact of management strategies on vegetation cover and changes in surrounding land cover that could indicate any 'leakage' – shifting of threatening process from a reserve to surrounding areas. Where this is identified, the TLC works with neighbouring landholders to develop local or regional mitigation strategies.

## **Reporting and Adapting**

The results obtained from the monitoring program are used to adapt and direct on-ground works programs and update annual work plans and reserve management plans. The status of conservation targets, trends in ecological indicators and outcomes of reserve management activities are communicated to the TLC Board and the TLC's Science and Planning Council, stakeholders and the community through a range of regular communication channels including an annual report.

# Lutregala Marsh Reserve Management overview

<b>VISION</b>	Manage Lutregala Marsh Reserve for the values that most depend on it and ensure these values benefit the community and the surrounding environment, both now and in the future.
<b>CONSERVATION TARGETS</b>	<b>GOALS</b>
Saltmarsh	Maintain Saltmarsh in very good condition
Coastal Forest	Enhance the condition of the forest by reducing the impact of cats and weeds by 2021
<b>SOCIAL TARGETS</b>	<b>GOALS</b>
Community connection with the landscape	Community connection with the reserve and region is maintained or enhanced
<b>STRATEGIES</b>	<b>OBJECTIVES</b>
Build Resilience to Climate Change	Build resilience and monitor changes due to climate change
Annual reserve assessment	All potential threats are assessed and reported annually
Feral Animal Control	Minimise the impact of cats on wildlife on the Reserve. Support eradication of Fallow deer from the Island
Reserve infrastructure	Access by domestic stock is prevented (ongoing)
Weed management	Existing infestations of blackberry are reduced in extent and density in the Reserve by 2017
TLC pathogen policy	Prevent further spread of weeds and pathogens in the reserve
Fire management	No unauthorised fires occur on the reserve (ongoing)
Revegetation	Native plant species will be the dominant cover class in the revegetation zone by 2020
Community engagement	Enhanced community appreciation of the values of the reserve and region
<b>KEY ACTIONS</b>	<b>MONITORING ACTIVITIES</b>
<ul style="list-style-type: none"> <li>• Annual reserve assessment</li> <li>• Continue partnering in a cat management strategy for Bruny Island</li> <li>• Follow-up weed control efforts</li> <li>• Revegetation of cleared land</li> <li>• Continue community engagement</li> <li>• Adhere to TLC pathogen policy</li> </ul>	<ul style="list-style-type: none"> <li>• (Standard) long term ecological vegetation and fauna monitoring</li> <li>• Saltmarsh extent, seaward edges of saltmarsh and coastal forest</li> <li>• Swift parrot, forty-spotted pardalote and swamp harrier nesting sighting in breeding season</li> <li>• Weed extent and density</li> <li>• Install and score baited camera traps for feral and native animals</li> <li>• Longterm ecological monitoring and annual reserve assessments</li> </ul>

# Introduction

This management plan is supported by a comprehensive background document about the reserve, its acquisition and its special values (Tasmanian Land Conservancy 2015).

Lutregala Marsh Reserve is a low-lying area of 41.9 ha situated at the mouth of Simpsons Creek on the southern shore of Isthmus Bay on Bruny Island. Isthmus Bay lies on the westerly side of the narrow isthmus (The Neck) that connects North and South Bruny Island. The Reserve is about 7 km north of the township of Adventure Bay. It adjoins Simpsons Bay Conservation Area and Bruny Island Neck Game Reserve, plus its western and southern boundaries abuts private land.

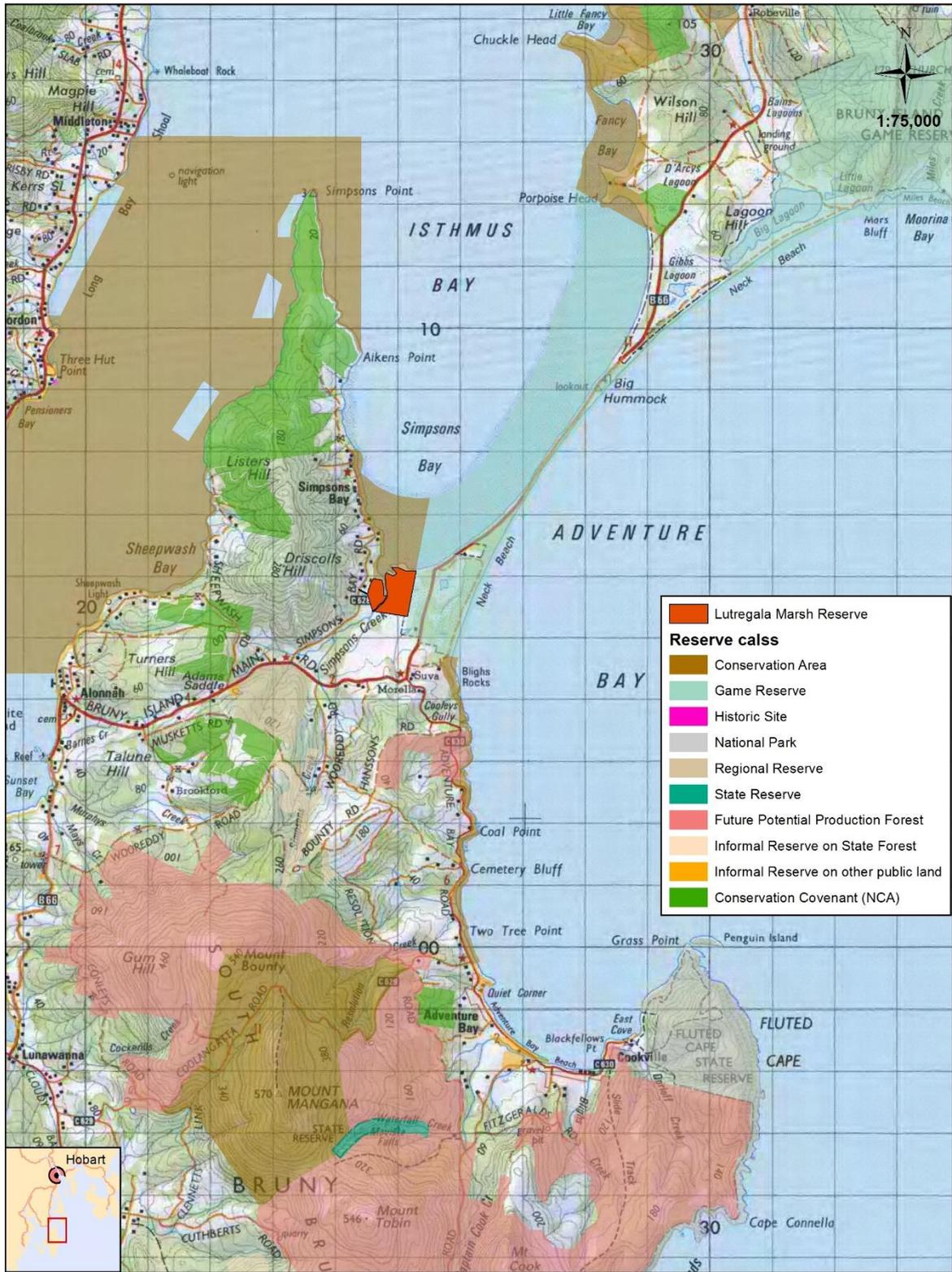
The location is on the margins of a low energy marine environment subject to few oceanic swells. The foreshore around the marsh receives energy from relatively short fetch waves generated in Isthmus Bay and the D'Entrecasteaux Channel by westerly and north westerly winds. The wide inter-tidal zone, low dune ridges and back swamps of the region are typical of such coastal environments throughout Tasmania and elsewhere.

Lutregala Marsh supports an extensive saltmarsh with areas of coastal forest in the higher, better drained land. Saltmarsh vegetation occurs on the marshy flats of the Simpsons Creek delta and estuary. Saltmarsh vegetation typically occurs on low energy coasts, such as Isthmus Bay, where large volumes of sediment are able to build up over long periods of time. Saltmarsh ecosystems are highly productive and play an important role in nutrient cycling. They also provide habitat for coastal and migratory bird species, and may provide nursery habitat for a variety of fish species. Saltmarsh vegetation at Lutregala Marsh is controlled by environmental conditions such as salinity and frequency of inundation. Coastal black peppermint (*Eucalyptus amygdalina*) forest occurs on a narrow dune system where there are better drained soils. Around the margins of this forest patch where the soils remain somewhat waterlogged, the forest canopy is dominated by black gum (*Eucalyptus ovata*).

**Table 1 Vegetation communities on Lutregala Marsh**

Vegetation community	TasVeg 3.0	Area (ha)	Conservation status#
<b>Saline sedgeland/rushland</b>	ARS	24.5	V
<b>Succulent saline herbland</b>	ASS	9.1	V
<b>E. amygdalina dry coastal forest</b>	DAC	2.8	
<b>E. ovata dry woodland and forest</b>	DOV	4.5	e
<b>Cleared land</b>	FRG	0.7	

# listed on Tasmania's Nature Conservation Act 2002 (NCA) as e endangered or the Commonwealth Environmental Protection and Biodiversity Conservation Act (EPBCA) as V Vulnerable.

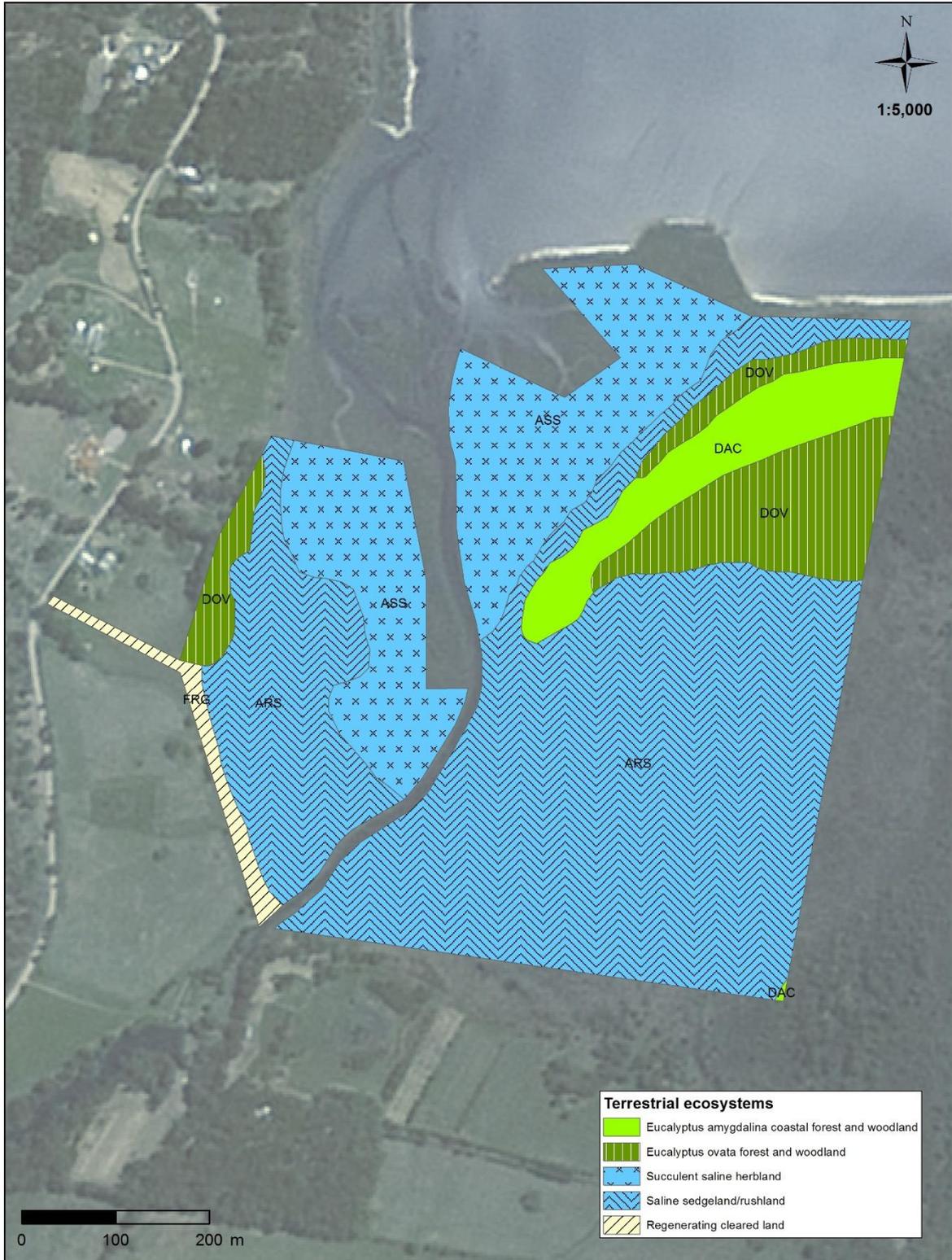


0 1.5 3 km

Lutregala Marsh - Landscape Context

TASMANIAN LAND CONSERVANCY  
Map produced by the Tasmanian Land Conservancy 2016

Figure 2 Location of Lutregala Marsh Reserve on Bruny Island



Lutregala Marsh - Terrestrial ecosystems

Map produced by the Tasmanian Land Conservancy - 25/05/2012

Figure 3 Terrestrial ecosystems of the Lutregala Marsh Reserve

# Conservation Targets

Based on the biophysical investigation presented in the Background Report, the following conservation targets have been selected.

## Saltmarsh

Priority – high

**Goal: Maintain or enhance the 2016 condition of the saltmarsh**

### Description

Saltmarsh vegetation occupies the low marshland in and around the delta and estuary of Lutregala Creek. Two vegetation types are recognised in this area under TASVEG classification. These are saline grassland (ARS) and succulent saline herbland (ASS). The vegetation in this area is dominated by *Poa poiformis* and *Juncus kraussii* in areas of saline grassland, and by *Sarcocornia quinqueflora* and *Tecticornia arbuscula* in areas of succulent saline herbland.

Temperate saltmarshes are listed as Vulnerable on the EPBCA (1999).

Past attempts to drain some areas of saltmarsh and establish pasture have been unsuccessful and disturbed areas have largely regenerated to a natural condition. Nested targets within the saltmarsh include nesting habitat for the Swamp harrier and foraging habitat for Brown falcon and Brown goshawk. Although not presently seen, it is possible that The State-listed (rare) Sea lavender (*Limonium australe*) also grows in the saltmarsh. The saltmarsh also provides a barrier to slow and mediate erosion as sea levels rise.

### Current status

Saltmarsh vegetation at Lutregala Marsh Reserve is in very good condition. Little management intervention is required to maintain the target in its present condition.

The Goal to maintain and enhance the 2016 condition of the saltmarsh has several viability indicators (Table 2) to assess trends in the health/condition of the target over time.

**Table 2 Viability and health indicators for Saltmarsh target on Lutregala Marsh**

Key Environmental Attribute	Indicator
Key bird habitat	Swamp harriers nesting in the marsh
Vegetation condition	Floristic diversity (saltmarsh)
	Structural complexity (saltmarsh)
Vegetation extent	Patch size (saltmarsh)

## Coastal Forest

### Priority – low

#### Goal: Enhance the condition of the forest by reducing the impact of cats and weeds by 2021

#### Description

Coastal forest occupies a relict dune system where a ridge of sandy soil has provided sufficient drainage for trees to establish. Two vegetation types are recognised in this area under the TASVEG classification. These are *Eucalyptus amygdalina* coastal forest (DAC) and *Eucalyptus ovata* forest (DOV). DOV is listed as endangered under the Nature Conservation Act 2002. The understorey vegetation in areas of coastal forest is dominated by tall shrubs such as *Acacia verticillata*, *Banksia marginata*, *Melaleuca squarrosa* and *Monotoca elliptica*. The ground layer is dominated by sedges and bracken.

The coastal forest at Lutregala Marsh Reserve provides nesting and foraging habitat for the endangered Swift parrot (*Lathamus discolor*) and is considered a nested target. *Eucalyptus ovata* provides a food source and there are numerous large trees with hollows that provide suitable nesting habitat for the species.

Similarly, there are some White gums in the forest that could support a small Forty-spotted pardalote (*Pardalotus quadragintus*) colony, thus they are nested targets.

A variety of other animals utilise the dense understorey of the coastal forest including the Tasmanian scrubwren (*Sericornis humilis*), Bassian thrush (*Zoothera lunulata*), Painted button-quail (*Turnix varius*), Eastern quoll (*Dasyurus viverrinus*), Potoroo (*Potorus tridactylus*) and Ringtail possum (*Pseudocheirus peregrinus*). The density of cats in the area ascertained from baseline monitoring in 2016 suggests that some of these animals may have reduced breeding success.

An area of approximately 2 ha along the western boundary of Lutregala Marsh Reserve is currently pasture grasses with a dense blackberry infestation. This area was likely to have been Black gum forest prior to clearing for pasture, and is being regenerated back into a diverse forest community.

### ***Viability and current status***

Coastal Forest is predominantly in good condition at present. Some management intervention is required to enhance the condition of the target: weed control, the cleared area needs some revegetation, and eventually fire management, and ground or near ground dwelling/nesting nested targets require management of cats.

The Goal to enhance the 2016 condition of the forest has several viability indicators (Table 3) to assess trends in the health/condition of the target over time.

**Table 3 Viability and health indicators for Coastal forest target on Lutregala Marsh**

<b>Key Environmental Attribute</b>	<b>Indicator</b>
Key bird habitat	Swift parrots, or Forty-spotted pardalotes seen in the breeding season
Vegetation condition	Floristic diversity
	Structural complexity
	Canopy recruitment
	Weed extent

### **Threats and management**

**Livestock** – Livestock are grazed on the neighbouring properties. There is a high likelihood that if fences are not maintained then stock would access Lutregala Marsh Reserve, resulting in degradation of vegetation in the coastal forests and the margins of the saltmarsh.

**Weeds** – Blackberry occurs at high densities in areas of regenerating cleared land at the western and southern boundary of the property, and sporadically throughout the remaining areas of coastal forest and saline grasslands. Other weeds also occur in isolated populations, including *Watsonia*, Sweet pittosporum, Spanish heath, Californian and Spear thistle, Briar rose and Cotoneaster. Many have the potential to spread if left unmanaged.

**Cats** – Cats are very efficient hunters and pose a threat to shorebirds, ground nesting birds and other wildlife. A local source of semi-wild cats exists immediately to the west of the Reserve.

**Deer** - Fallow deer have been identified on the property in 2016 and are likely to be the escapees from Satellite Island. They are a well-documented invasive species that have the potential to multiply.

**Phytophthora** – *Phytophthora cinnamomi* is a soil borne pathogen that effects native vegetation and particularly heath. The heathy understorey vegetation of the coastal forest at Lutregala Marsh is highly susceptible to *Phytophthora*. Species of the families *Epacridaceae*, *Fabaceae* and *Proteaceae* are particularly susceptible.

**Table 4 Summary of threats directly affecting targets and the strategies that TLC will implement to manage the threats**

Threats \ Targets	Saltmarsh	Coastal forest	Management strategy	Priority
Livestock	Low	Low	Stock exclusion	Low
Cats and deer	Low	Low	Feral animal control	Medium
Sea level rise/Climate change	Medium	Low	Build resilience	Low
<i>Phytophthora cinnamomi</i>		Medium	TLC pathogens policy	Low
Potential threats			Annual reserve management/ Good neighbours strategy	Low
Weeds		Low	Weed management	Medium

Each year, an annual reserve assessment will be undertaken by TLC Reserve Management Staff to assess the currency of identified threats and to scout for any new threats. This will form part of the yearly management cycle and will usually be conducted as part of other management activities. If no other management activities are required in any given year, then this monitoring action will need to be conducted independently.

Threats to look out for at Lutregala Marsh Reserve include:

1. Weeds - blackberry, gorse and Spanish heath are widespread in the local area
2. Livestock from the neighbouring property
3. Cats from neighbouring properties
4. Any impact by Fallow deer
5. Signs of increasing erosion on the edges of the saltmarsh

# Social Targets

## People's connection to nature

### Priority – medium

**Goal: People’s connection to TLC’s reserves and natural areas is maintained or enhanced.**

The TLC encourages connection to nature as an end in itself, and to ensure that reserve networks and the environment generally are valued and supported in the community. Indeed, this underpins much of the TLC’s work. Community connection is considered to embrace the entire landscape, not just one single reserve, thus the TLC will assess the viability of this target across its reserve estate, rather than on any one single reserve.

The local Bruny Island Environment Network takes particular pride in the Lutregala Marsh Reserve, having played a role in initiating the reserve and in promoting the cause of private land conservation on the island. It has been used many times by the group as an icon of private conservation efforts, of connection to nature and it is hoped that this will continue into the future.

Bruny Island holds particular significance to the Tasmanian Aboriginal community as well. Where ever possible, TLC will work with the Aboriginal community to honour this significance and provide opportunities for them to practice their culture.

The Reserve is easy to access, has a variety of easily interpreted values and with good management and interpretation, it may over time develop better potential to attract attention. Generally, the TLC seeks to provide nature experience and activities that promote livelihoods based in, and sympathetic to nature.

Providing opportunities for interested parties to remain engaged or to contribute will help protect the reserve and well as the wider landscape.

### *Viability*

Key Attribute	Indicator
Community involvement (across all TLC reserves)	Number of events Number of people

### *Threats and management*

There are no real threats to people’s connection to the landscape apart from the lack and loss of knowledge and inability of the community to access this knowledge, either in person or via remote means.

# Management Strategies

Strategies seek to:

- manage and reduce threats, and/or
- protect and enhance the targets

Implementing strategies should lead directly to improvement of targets, or to a reduction of threat(s), which in turn will improve the condition of target(s). Outcomes of actions and strategies will be monitored, and will be used to adjust the strategy if the expected outcomes are not being achieved.

Strategy priority rankings are:

- Very high – is feasible and cheap, works for a high ranked target and against a highly impacting threat. These instances are rare.
- High – is feasible, but could be costly or difficult to implement, works for a medium ranked target and against a highly impacting threat. These instances are quite uncommon.
- Medium- is feasible, but could be costly or difficult to implement, works for a low-medium ranked target and against a medium impacting threat. These instances are not uncommon and are typically the result of lower ranked threats and targets, rather than feasibility issues.
- Low – is likely to be a product of low ranked threats on low ranked targets with medium – low feasibility stemming from costs or sometimes technical difficulties. Many strategies are likely to fall in this category and may be considered routine actions: necessary, but with long-term benefits that are difficult to discern in the short term.
- Abandon – has problems with feasibility and should not be pursued.

## Build Resilience to Climate Change

### Priority: Medium

#### Objective: Build resilience and monitor changes due to climate change

Our aim in addressing climate change is to help conservation targets become more resilient to threats. Climate change is pervasive, global in impacts and unmanageable at a local level. The TLC recognises its responsibility to address climate change and takes several general approaches to this as it:

- Seeks to enhance the carbon carrying capacity of its reserves
- Participates in carbon markets and seeks to develop more options for payment for ecosystem services
- Seeks to develop resilience in reserve's ecosystems and species
- Seeks to identify and aid adaption pathways for ecological targets.

Key actions to implement most of these approaches lies outside of each reserve, however implementation of other reserve strategies such as fire, weed, and disease management will help increase the resilience of conservation targets to threats.

On Lutregala Marsh, the most obvious impact of climate change will be sea level rise and erosion of the saltmarsh communities. It may also cause inland and altitudinal retreat of the dry land communities. These can both be monitored relatively easily and cheaply, but enhancing resilience to this threat is expensive and probably ecologically indefensible.

Long-term monitoring of the conservation targets may identify any change in extent or condition of conservation targets and where/when remedial recovery actions can be deployed.

Monitoring	Indicators
Extent of saltmarsh	Install and maintain markers of the seaward extent of saltmarsh communities Time series remote imagery of the extent of saltmarsh
Extent of coastal forest	Photopoint monitoring of the seaward edges of coastal forest

## Feral Animal Control

**Priority: Medium**

### Objectives

- 1. Minimise the impact of cats on wildlife on the Reserve**
- 2. Support eradication of Fallow deer on Bruny Island**

Eradication of a feral animal species is usually impossible to achieve. However, a variety of control methods can effectively reduce populations and consequent impacts to an acceptable level. Standard methods available for feral animal control include shooting, trapping, baiting and fencing, with varying degrees of feasibility for each method for any given species in any given location.

At Lutregala Marsh, however, there is a specific issue that needs to be addressed. A neighbour to the west has numerous cats whose movements are not controlled. A very specific strategy, developed in conjunction with them, needs to be resolved. It would be couched within a broader cat management strategy that is being developed across Bruny Island, in conjunction with Kingborough Council and other partners. This brings considerable scope for effective control and even potentially eradication of feral cats. The TLC is partnering in a cooperative and comprehensive cat management strategy for Bruny Island.

There have also been Fallow deer recorded on the property. The TLC will cooperate, encourage and lead if needed, a Fallow deer eradication strategy for Bruny Island.

Monitoring	Indicators
Camera traps	# trap nights and individuals trapped

## Weed management

**Priority: Medium**

### Objectives

- 1. Prevent further introduction and/or establishment of weed species from 2016.**
- 2. Existing infestations of blackberry are reduced in extent and density by 2017.**

A detailed weed management strategy has been developed for the Reserve that identifies priority actions. Blackberry (*Rubus fruticosus*) occurs in areas of regenerating cleared land on the western and southern boundary of the property and control of this infestation is the weed management priority. Primary weed control commenced in 2014 and follow up will continue. The annual reserve assessment will include weed monitoring to ensure that any new infestations of blackberry and other weeds are identified.

Monitoring	Indicators
Weed extent	extent - # of patches and areas density – estimates only

## TLC pathogen policy

### Priority: Medium

Native ecosystems are under threat from pathogens including *Phytophthora cinnamomi*, with some species in the coastal forest being particularly susceptible. At present there are no visible signs of *Phytophthora* at Lutregala Marsh Reserve. To minimise the chance that this pathogen is introduced to the reserve then all visitors will comply with the TLC Freshwater and Soil Borne Pathogens Operational Policy and Procedures 2010.

Weeds and pathogens are spread to new areas when contaminated water, mud, gravel, soil and plant material or infected animals are moved between sites. Contaminated materials are commonly transported on boots, equipment and vehicles. The infection status of an area is never fully known and distribution will change over time, so it is crucial that strict hygiene practices are implemented at by visitors to TLC reserves. Once a pathogen is present in an area it is usually impossible to eradicate.

Key actions	Details
Adhere to TLC pathogen policy	All visitors and staff must adhere to the TLC Freshwater and Soil Borne Pathogens Operational Policy and Procedures 2010, which essentially means ensuring cleaning boots and equipment prior to visiting the reserve.

## Reserve Infrastructure

**Priority: Low**

### Objectives

- 1. Visitors keep to existing tracks**
- 2. Access by domestic stock is prevented (ongoing)**

On Lutregala Marsh, visitors need to keep to the established track to avoid spreading *phytophthora* and avoid access via the beach to avoid disturbance of nesting birds. The local environment network is interested in erecting low impact infrastructure for bird viewing. This will be assessed as plans firm.

Livestock are grazed on neighbouring properties to the west and south of Lutregala Marsh Reserve. Livestock have the potential to reduce vegetation condition, particularly in saltmarsh areas of the reserve. Fences prevent stock from accessing the reserve. Fence condition will be checked during the annual reserve assessment and repaired as necessary, in cooperation with neighbouring land owners.

Monitoring	Indicator
Annual reserve assessment	Health of phytophthora susceptible species Condition of fences and evidence of trampling/disturbance

## Fire Management

**Priority: Low**

**Objective: No unauthorised fires occur on the reserve (ongoing)**

While fire can be a natural process, the TLC recognises the threat posed by unplanned fires to human life, property and the environment. The two primary objectives of fire management on TLC land are to protect human life and property from fire and to maintain or enhance the natural diversity of species and communities through appropriate fire regimes, in so far as this is consistent with the first objective. We achieve these objectives by reducing fuel loads around infrastructure; maintaining access tracks for the purpose of firefighting where these are required; co-operating with neighbours, local councils, Parks and Wildlife Service and the Tasmania Fire Service to prevent the spread of bushfires; and working closely with relevant experts, including the Tasmania Fire Service, fire ecologists, botanists and zoologists, to determine the fire regime prescriptions for hazard reduction and ecological maintenance.

At Lutregala Marsh Reserve, camp fires are not permitted and ecological burns will only be undertaken and after an ecological burn plan has been developed.

Monitoring	Indicator
Fire incidents	# of unplanned fires Extent of fires

## Revegetation

### Priority: Low

#### Objective: Native plant species will be the dominant cover class in the revegetation zone by 2020

Revegetate an area of degraded pasture that forms a narrow band between an area of improved pasture on neighbouring land and the wetlands of Lutregala Marsh. Native plant species will be planted from locally collected seed. *Eucalyptus ovata*, *E. viminalis* and *E. globulus* plus understorey plants mimicking the local vegetation communities will be planted. These will provide further habitat for the local fauna.

Revegetation of cleared or degraded land increases the area of habitat available to native species. It may also improve hydrology and ecosystem functions such as nutrient retention and cycling. Revegetation may also limit the establishment of weeds and can reduce the vigour of weeds in areas where they already occur.

Key activities	Detail
Planting	Planting of additional eucalypt species and understorey species following weed control.

## Good Neighbour policy

### Priority: Low

The aim of this strategy is to ensure that threats from neighbouring properties don't impact on the values of the Reserve, and vice versa.

Uncontrolled cats are the biggest threat to (nested) targets on the Reserve and the TLC will need to negotiate in good faith to address this threat. Straying livestock, weed incursion and fire are other issues mediated by neighbours - private landowners and the PWS.

Key actions	Details
Reduce impact of cats	Negotiate with neighbour regarding uncontrolled cats

## Community engagement across the TLC reserve estate

### Priority: Medium

#### Objective: Enhanced community appreciation of the values of the reserve and region

The TLC encourages visitation to its reserves and recognises the importance of natural places to human wellbeing. The Community engagement strategy applies across the TLC reserve estate, and indicators of success are similarly measured across the reserve estate. Each reserve, however, does have different attributes in terms of community engagement, and the strategy's implementation and intent varies between reserves.

Regulation of reserve visitation ensures that the natural values are protected. Introduction of weeds and phytophthora are particular threats at Lutregala Marsh Reserve. Visitors must keep to existing tracks and avoid access via the beach..

Science and research activities are encouraged on the Lutregala Marsh Reserve.

Recreational activities such as bushwalking and bird-watching are generally compatible with the natural values of Lutregala Marsh. Infrastructure such as tracks and bird viewing platforms may be provided at some time in the future to enhance visitor appreciation and minimise their impacts. Activities that pose a threat to the natural values are prohibited, such as four-wheel driving, hunting and lighting campfires. All visitors are asked to take measures to ensure that weeds and pathogens such as phytophthora are not introduced, so visitors need to be aware of

- reserve entry conditions,
- biosecurity protocols including awareness of dirt carrying disease such as Phytophthora, weed seeds
- not to transfer soil or water across the reserve
- conditions such as no pets, no disturbance to flora or fauna or cultural objects.

This information may be provided via a reserve specific brochure, entry signs and via other TLC communication channels.

Monitoring	Indicators
Community connection	Number of events Number of people

# Management Plan Process

## *Management Plan Status*

The final draft of the Lutregala Marsh Reserve Management Plan was reviewed by the TLC's Science Council before being submitted to the TLC Board for approval. As part of the Open Standards adaptive management process, information on progress on management strategies, threat abatement and management effectiveness will be kept current and inform annual work plans and review of the management plan.

## *Management Responsibilities*

TLC's staff are responsible for undertaking the management of the reserve. This includes the co-ordination of contractors, consultants and volunteers where they are required to implement the activities outlined in this Management Plan. Relevant experts from the TLC Board and Science Council may also be requested to provide advice and guidance where needed. Wherever possible, the TLC works with neighbours to manage cross-tenure threats. The TLC will endeavour to act as a good neighbour to all parties and, where possible, undertake co-operative or complementary management where both parties seek a similar outcome (e.g. weed control and fire management). The TLC will undertake every endeavour to ensure that management of this reserve does not have a detrimental impact on the surrounding area.

Long-term management costs will be met through the TLC Foundation, an endowment fund that seeks to use compounding interest to pay for the costs of the organisation, and by ongoing fundraising or through relevant partnerships and grant opportunities as they become available.

## *Stakeholder Involvement*

The major land management stakeholders for the Lutregala Marsh Reserve are private landholders and the Parks and Wildlife Service and a. These major stakeholders will be informed about management strategies addressing cross-tenure threats and the outcomes of monitoring. The Private Land Conservation Program will monitor the status of the conservation values identified in the covenant.

## *Management Plan Review*

This document will guide on-ground management of the reserve over the coming years and be the basis to develop annual work plans and budgets. The plan identifies a range of conservation targets, threats, strategies and actions based on our best current knowledge but these may change over time as our information increases and monitoring can better inform our activities. In implementing the adaptive management process identified by the TLC's Reserve Management Policy, progress will be reviewed annually and may lead to amendments to the plan.

A full review of the plan will occur at a time no earlier than five years and no later than ten years from the date of adoption of this plan.

## References

Tasmanian Land Conservancy (2015). Lutregala Marsh Reserve Background Report. Tasmanian Land Conservancy, Tasmania Australia 7005.

## Acronyms and Abbreviations

PWS Parks and Wildlife Service, Tasmania

TLC Tasmanian Land Conservancy