

# Annual Reserve Report

## Lutregala Marsh Reserve 2016-17



## INTRODUCTION

The Tasmanian Land Conservancy (TLC) protects important natural areas as permanent reserves and aims to demonstrate excellence in reserve management for biodiversity conservation. The TLC has adopted an adaptive management framework – the Open Standards for the Practice of Conservation which comprises 5 key steps – planning, implementing, monitoring, reporting, review/adaptation and communication.

Lutregala Marsh Reserve was acquired by the TLC in 2005 and protects 41.9 hectares of saltmarsh and coastal forest on Bruny Island in southeast Tasmania. The Reserve adjoins the Neck Game Reserve and forms part of a large block of native vegetation that straddles the Bruny Island Isthmus. The management of the Reserve is guided by the Lutregala Marsh Reserve Management Plan. The plan is implemented by TLC staff through an Annual Work Plan and Monitoring Plan. Details of ecological monitoring methods can be found in TLC's Ecological Monitoring Procedures Manual on [www.tasland.org.au](http://www.tasland.org.au).

This report describes progress made towards delivery of the management plan in 2016-17, and is divided into three sections:

1. Reserve Scorecard – a table summarising the results of management effectiveness and ecological monitoring to date;
2. Management Effectiveness Summary – providing details of the implementation of key management strategies and making recommendations for plan improvement;
3. Ecological Monitoring Summary – providing details of the status of conservation targets and trends of key ecological indicators

The recommendations made in this report are used to adapt and improve management of the Reserve, update the management plan, and revise work and monitoring plans for the coming year. Key findings of this report are communicated to TLC Board, supporters and other stakeholders.

Cover image: Fallow deer captured on TLC's monitoring camera at Lutregala Reserve Sep 2016: Photo TLC

## LUTREGALA MARSH RESERVE SCORECARD 2016-17

<b>Monitoring</b>			
<b>Target</b>	<b>Indicator</b>	<b>Status 2014-15</b>	<b>Trend</b>
Saltmarsh	Floristic diversity	7 species / site	Baseline data collected this year.
	Structural complexity	3 strata / site	
Coastal forest	Floristic diversity	10 species / site	Repeat data collection scheduled for 2018
	Structural complexity	3.75 strata / site	
	Canopy recruitment	1.5 cohorts / site	
	Vertebrate fauna diversity	12.6 species / site 23 species in total	
<b>Management Effectiveness</b>			
<b>Strategy</b>	<b>Indicator</b>	<b>Status 2016-17</b>	<b>Trend</b>
Weed management	Weed extent	<1 ha	Improving
	Treatment extent (hectares)	90%	Improving
	Weed density	Sparse	Improving
Stock exclusion	Instances of stock access	0	Flat
Feral animal management	Cat detections	31 detections / 100% occupancy - 2015 14 detections / 50% occupancy - 2016	Decreasing
	Fallow deer detections	0 detections / 0% occupancy – 2015 19 detections / 63% occupancy - 2016	Increasing
Woodland restoration	% native tree cover	<5%	Flat
Fire management	No of unplanned fires	0	Flat
Community engagement	# events at the Reserve	3 events	Increase
	# of volunteer activities	4 activities	Increase
	# of research and education projects	4 projects	Increase
	# of visitors to the Reserve	80+ visitors	Increase

## MONITORING SUMMARY

<b>Saltmarsh</b>		<b>Status: Very Good</b>
<b>Goal</b> The condition of saltmarsh is maintained		<b>Outcome: On Track</b>
<p><b>Description</b> Saltmarsh vegetation occupies the low marsh land around the estuary of Lutregala Creek. Saltmarsh is a vegetation type of national conservation significance and is threatened by sea-level rise. The saltmarsh at Lutregala forms a complex mosaic dominated alternately by sedges shrubs or succulent herbs depending on the frequency of inundation by salt water.</p>		
Monitoring bordering saltmarsh and Lutregala Creek. Photo: S Bryant		
<b>Ecological indicator</b>	<b>Status 2014</b>	<b>Trend</b>
Floristic diversity	7 species / site	Unknown- resample in 2018
Structural complexity	3 strata / site	Unknown – resample in 2018
<p><b>Key findings</b></p> <ul style="list-style-type: none"> <li>• Fallow deer grazing during 2016-17 may have impacted saltmarsh health and condition</li> <li>• Saltmarsh vegetation is diverse and in excellent condition.</li> <li>• Wetland birds are abundant and a pair of swamp-harrier regularly nest on the Reserve.</li> </ul>		
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Continue to monitor saltmarsh vegetation. Particular attention should be paid to the dominant species at each site, where a change may indicate that inundation is becoming more frequent.</li> <li>• Continue to promote removal of fallow deer from Bruny Island</li> <li>• Explore the possibility of conserving more land at higher elevations to the south of the Reserve to provide an avenue for dispersion of saltmarsh species in anticipation of sea level rise.</li> </ul>		

<b>Coastal woodland</b>		<b>Status: Very Good</b>
<b>Goal</b> The condition of coastal woodland is maintained		<b>Outcome: On track</b>
<p><b>Description</b></p> <p>Coastal Forest occupies a relict dune system where a ridge of sandy soil has provided sufficient drainage for trees to establish. Forest dominated by black peppermint occupies the eastern side of the Reserve. The vegetation in this area is floristically diverse and in good condition. Forest dominated by black gum occupies the western side of the Reserve. This area has been partially cleared for agriculture and is in poor condition, with a modified understorey, a high proportion of exotic species and significant infestations of blackberries. The diversity of vertebrate fauna on the Reserve is high, despite a high density of feral cats.</p>		
Coastal forest monitoring site. Credit: TLC		
<b>Ecological indicator</b>	<b>Current status</b>	<b>Trend</b>
Floristic diversity	10 species / site	Unknown – resample in 2018
Structural complexity	3.75 strata / site	
Canopy recruitment	1.5 cohorts / site	
Vertebrate fauna diversity	12.6 fauna species / site 23 fauna species in total	
<p><b>Key findings</b></p> <ul style="list-style-type: none"> <li>• Fallow deer grazing during 2016-17 is likely to have impacted woodland health and condition</li> <li>• The floristic diversity of coastal forests at Lutregala Marsh is relatively high, despite some sites having been partially cleared for agriculture in the past.</li> <li>• Weeds such as blackberry, scotch thistle and pasture grasses are present at disturbed sites</li> <li>• Recruitment of canopy species is only evident at 50% of monitoring sites</li> <li>• Fauna richness is high despite a high number of feral cats</li> </ul>		
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Develop an ecological burn plan to encourage recruitment of canopy species and increase richness of understorey plants</li> <li>• Continue to control weeds in disturbed areas</li> <li>• Continue cat control and to promote removal of fallow deer from Bruny Island</li> </ul>		

## MANAGEMENT EFFECTIVENESS SUMMARY

<b>Weed management</b>		
<b>Key objective(s)</b> <ul style="list-style-type: none"> <li>All areas of weeds have been treated by 2017</li> <li>Weeds are eradicated by 2020</li> </ul>		<b>Status 2016-17</b> <b>On-track</b>
<b>Strategy description</b> Blackberry ( <i>Rubus fruticosus</i> ) occurs in areas of regenerating cleared land on the western boundary of the property, along with several other weed species. Control of this infestation of weeds is a management priority, as directed by the Lutregala Marsh Weed Strategy. The TLC has been undertaking annual weed control since 2012. Follow-up weed control will occur for five years following initial treatment. The annual reserve assessment will include weed monitoring to ensure that any new infestations of blackberry or other weeds are identified and controlled.		Volunteers Viv Muller slashing blackberries. Photo: Arwen Dyer 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
Weed extent	<1 ha	Improving
Treatment extent	90%	Flat
Weed density	Sparse	Improving
<b>Progress in 2016-17</b> <ul style="list-style-type: none"> <li>TLC staff and volunteers continued to undertake weeding activities, including cut-and-paint of blackberries in forest area along western boundary, and brush cutting large blackberry clumps in open areas along western boundary and near dam. Other weed species treated included sweet pittosporum (including hybrids with the native <i>Pittosporum bicolor</i>), watsonia, cotoneaster and ragwort.</li> </ul>		
<b>Key recommendations for future management</b> <ul style="list-style-type: none"> <li>Continue weed control program</li> <li>Complete follow up mapping</li> <li>Continue to promote removal of fallow deer to reduce spread of weed species</li> </ul>		

<b>Stock exclusion</b>		
<b>Key objective(s)</b>		<b>Status 2016-17</b> <b>On-track</b>
<ul style="list-style-type: none"> <li>Access by neighbouring stock is prevented (ongoing)</li> </ul>		
<b>Strategy description</b>		
<p>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. Existing fences prevent stock from accessing the reserve. Fence condition will be checked during the annual reserve assessment and fences will be repaired as necessary.</p>		
Boundary fencing for stock exclusion. Photo: Matthew Taylor		
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
No stock access the reserve	0 stock accessed the reserve	Flat
<b>Progress in 2016-17</b>		
<ul style="list-style-type: none"> <li>Boundary fences were checked and are intact. No stock are currently kept on the neighbouring paddocks but fallow deer have the potential to damage fences.</li> </ul>		
<b>Key recommendations for future management</b>		
<ul style="list-style-type: none"> <li>Continue to monitor fences and repair fences when necessary in consultation with adjoining neighbours.</li> </ul>		

<b>Community engagement</b>		
<b>Key objective(s)</b>		<b>Status 2016-17</b>
<ul style="list-style-type: none"> <li>TLC provides opportunities for the community to experience or benefit from the Reserve</li> </ul>		<b>On-track</b>
<b>Strategy description</b>	<p>Volunteer deploying monitoring cameras Aug 2016 Photo S Bryant</p> 	
<p>The TLC provides opportunities for the community and individuals to achieve conservation. The local community, volunteers, the indigenous community and other stakeholders are encouraged to participate in planning and land management activities. TLC Reserves provide excellent opportunities for education and scientific research. Sustainable economic development may be supported at some reserves where appropriate.</p>		
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
# events at the Reserve	3 events	Increase
# of volunteer activities at the Reserve	4 activities	Increase
# of research and education projects	4 projects	Increase
# of visitors to the Reserve	80+ visitors	Increase
<b>Progress in 2016-17</b>		
<ul style="list-style-type: none"> <li>The Australian Saltmarsh Conference visited Lutregala Marsh Reserve as a field trip site, with over 80 people attending.</li> <li>Volunteers helped deploy monitoring cameras in August 2016.</li> <li>Three research projects have been based at Lutregala Marsh – sediment coring (Patrick Moss, University of Queensland), a University of Tasmania Hons project used Lutregala Marsh Reserve to monitor for cats, and a University of Tasmania PhD project is comparing saltmarsh invertebrates at different saltmarshes across the state (John Aalders).</li> <li>Supporter trip held for C&amp;G Grubb, March 2017</li> <li>TLC actively participated in Kingborough Council's Bruny Island cat management project, which was successful in securing funding to further investigate the potential for eradicating cats from Bruny Island and uses Lutregala as a cat eradication site.</li> <li>A team of eight International Student Volunteers worked on weed control and planted seedlings for three days.</li> </ul>		
<b>Key recommendations for future management</b>		
<ul style="list-style-type: none"> <li>Continue to provide opportunities for people, to connect with the Reserve.</li> <li>Finalise visitor guide.</li> </ul>		

<b>Feral animal control</b>		
<b>Key objective(s)</b>		<b>Status 2016-17</b> <b>On-track</b>
<ul style="list-style-type: none"> <li>Help implement the Bruny Island Cat Management Plan</li> </ul>		
<b>Strategy description</b>		
<p>Feral cats pose a significant threat to wildlife on the Reserve and in particular to nesting shore birds. A feral cat management plan has been prepared by Kingborough Council and Bruny Island Environment Network. TLC will help implement the plan on our Reserve. Fallow deer have also been detected on Lutregala Marsh Reserve in 2016 and more widely across Bruny Island. Their removal is a high priority for conservation.</p>		<p>Fallow deer on Lutregala Marsh Reserve Sep 2016. Photo: TLC.</p> 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
Cat detections	31 detections / 100% occupancy - 2015 14 detections / 50% occupancy - 2016	Decreasing
Fallow deer detections	0 detections / 0% occupancy – 2015 19 detections / 63% occupancy - 2016	Increasing
<b>Progress in 2016-17</b>		
<ul style="list-style-type: none"> <li>In 2016 TLC produced a report on Mammal Monitoring for Lutregala Marsh containing data for feral cats and fallow deer. This report is on the web.</li> <li>TLC supported a major federal grant to undertake cat control on Bruny Island. TLC is on the steering committee as a key stakeholder and Lutregala Marsh Reserve is a cat control and monitoring site for the program</li> </ul>		
<b>Key recommendations for future management</b>		
<ul style="list-style-type: none"> <li>Manage cats in accordance with the Bruny Island Cat Management Plan, and in partnership with other stakeholders</li> <li>Continue to progress cat control projects in partnership with Bruny Island Environment Network and Kingborough Council.</li> <li>Collaborate with stakeholder regarding management of other feral animals.</li> </ul>		

<b>Fire management</b>		
<b>Key objective(s)</b>		<b>Status 2016-17</b> <b>On-track</b>
<ul style="list-style-type: none"> <li>No unauthorised fires occur on the reserve (ongoing).</li> </ul>		
<b>Strategy description</b>		<p>At Lutregala Marsh Reserve fire sensitive wetlands occur alongside fire adapted coastal forest vegetation communities. Fire management will only be undertaken after an ecological burn plan has been developed.</p>
		<p>Fire sensitive wetland vegetation communities on Lutregala Marsh. Photo: S Bryant</p> 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
No. of unplanned fires	0 unplanned fires	Flat
<b>Progress in 2016-17</b>		
<ul style="list-style-type: none"> <li>There were no unauthorised fires on the Reserve in 2016-17</li> <li>A fire risk assessment was completed for all TLC reserves.</li> <li>A fire management policy for all TLC Reserves is being implemented.</li> <li>A fuel stove only policy is also being implemented.</li> <li>The use of fire to manage blackberry infestations was abandoned in favour of slashing and spraying, due to continuous high fuel loads between blackberries and saline grasslands.</li> <li>A whole-of-TLC fire management strategy is being developed to ensure all TLC properties are effectively managed from threats relating to fire, and that fire is used appropriately as a tool to manage the values of TLC properties.</li> </ul>		
<b>Key recommendations for future management</b>		
<ul style="list-style-type: none"> <li>Continue to implement a fuel stove only policy for the Reserve.</li> <li>Conduct an annual fire risk assessment for all TLC reserves.</li> <li>Continue to develop the whole-of-TLC fire management strategy.</li> </ul>		

<b>Woodland restoration</b>		
<b>Key objective(s)</b> <ul style="list-style-type: none"> <li>Native plant species will be the dominant cover class in the revegetation zone by 2020</li> </ul>		<b>Status 2016-17</b> <b>On-track</b>
<b>Strategy description</b> An area of regenerating cleared land on the western margin of the property is scheduled for restoration to coastal Eucalypt woodland. Ongoing weed control works in this area will make more land available for restoration, and TLC intends to establish a diverse planting of local provenance species.		Regenerating cleared land being revegetation Photo: S Bryant 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
% native tree cover	<5%	Flat
<b>Progress in 2016-17</b> <ul style="list-style-type: none"> <li>100 seedlings of canopy tree species (<i>Eucalyptus globulus</i>, <i>Eucalyptus ovata</i> and <i>Acacia melanoxylon</i>) were planted in an area along the western boundary that was previously dominated by blackberries, with the intention of restoring the coastal woodland.</li> </ul>		
<b>Key recommendations for future management</b> <ul style="list-style-type: none"> <li>Maintain planted seedlings.</li> <li>Continue weed control.</li> <li>Include <i>E. viminalis</i> in restoration plantings</li> </ul>		