



# Annual Reserve Report

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## The Big Punchbowl Reserve 2015-16



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## INTRODUCTION

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

The Big Punchbowl Reserve was acquired by the TLC in 2015 and protects 244 hectares of ephemeral wetlands, coastal forest and saltmarsh at Freycinet Peninsula on the east coast of Tasmania. The Reserve adjoins Moulting Lagoon, which is a Ramsar listed wetland. The management of the Reserve is guided by The Big Punchbowl 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.

This report describes progress made towards delivery of the management plan in 2015-16, 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: Dawn at the Big Punchbowl Reserve. Photo: Kip Nunn


## THE BIG PUNCHBOWL RESERVE SCORECARD


<b>Monitoring</b>			
<b>Target</b>	<b>Indicator</b>	<b>Status 2014-15</b>	<b>Trend</b>
Coastal woodland	Floristic diversity	7.4 species/site	Baseline data collected in 2014 Repeat data collection planned 2019
	Structural complexity	3.9 strata/site	
	Canopy recruitment	1.6 cohorts per site	
	Vertebrate fauna diversity	5.25 species / site 9 species total	
	Eagle nest productivity	1 sea-eagle chick fledged	
Moultng Lagoon Ramsar Site	Annual Moulting Lagoon Bird Count (PWS Freycinet)	<b>February 2016</b> No counted in Zone 3 – 2,153 birds Total counted – 11,747 birds Species diversity in Zone 3 – 40 species Total species diversity – 71 species Total waterfowl counted – 8,094 / 8 species Total waders counted – 740 birds / 9 species	Trend to be determined with Feb 2017 count data
Wetland complex	Floristic diversity	5.4 species/site	
	Structural complexity	2.8 strata/site	
	Vertebrate fauna diversity	7.6 species / site 14 species total	
	<b>Indicator</b>	<b>Status 2015-16</b>	<b>Trend</b>
Community connection to landscape	# volunteer days on the Reserve	8	Decrease
	# visitors to the Reserve	9 visitors	Decrease
	# research/education projects	3	Flat
<b>Management Effectiveness</b>			
<b>Strategy</b>	<b>Indicator</b>	<b>Status</b>	<b>Trend</b>
Weed management	Weed extent	< 200 m2	Decrease
	Treatment extent	150 m2	Flat
Stock exclusion	Stock access	Yes	Flat
Feral animal control	Cat abundance	22 observations 56% occupancy	Unknown
	Rabbit abundance	38 observations 33% of sites	Unknown
	Deer abundance	3 records 22% of sites	Unknown
Fire management	Number of unplanned fires	0	Flat
Visitor management	# events at the Reserve	0 events	Decrease
	# of volunteer activities at the Reserve	4 volunteer activities	Increase

## MONITORING SUMMARY


<b>Wetlands Complex</b>		<b>Status: Very Good</b>	
<b>Goal</b> The 2014 condition of the wetlands and their threatened species are maintained or improved		<b>Outcome: On Track</b>	
<b>Description</b> The Big Punchbowl wetland, Barney Ward's Lagoon and several smaller wetlands on the reserve are important ecologically and form part of the more extensive Moulting Lagoon wetland complex. Many of these wetlands are ephemeral and their values can change seasonally or on a long term basis due to environmental conditions. Fauna such as Australasian bittern, green and gold bell frog and a host of waterfowl and aquatic invertebrates are known to occur there on a seasonal or intermittent basis.		 <p>The Big Punchbowl wetland, filled with water. Photo: Kip Nunn.</p>	
<b>Ecological indicator</b>	<b>Current status</b>	<b>Trend</b>	
Floristic diversity	5.4 species/site	Unknown	
Structural complexity	2.8 strata/site	Unknown	
Vertebrate fauna diversity	7.6 species / site 14 species total	Unknown	
<b>Key findings</b> <ul style="list-style-type: none"> <li>• Rain in January 2016 filled The Big Punchbowl. Frogs and waterbirds have returned to the wetland in large numbers.</li> <li>• Monitoring is next scheduled for 2019</li> </ul>			
<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Continue monitoring, including feral species</li> <li>• Continue extension surveys for species such as Australasian bittern and green and gold frog</li> </ul>			

<b>Moulting Lagoon Ramsar Site</b>		<b>Status: Good</b>
<b>Goal:</b> Maintain or improve 2014 conservation values of Moulting Lagoon		<b>Outcome: On Track</b>
<p><b>Target description:</b> Moulting Lagoon Game Reserve is one of ten Ramsar sites (wetlands of international significance) listed in Tasmania, satisfying five of nine listing criteria and supporting a large number of waterbirds at key stages of their life cycles and several shorebird species listed on The Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA). The estuaries and coastal wetlands have long been recognised as essential nursery areas for a myriad of marine species.</p>		 <p>Succulent saline herbfield. Photo: Kip Nunn.</p>
<b>Ecological indicator</b>	<b>Current status: Feb 2016</b>	<b>Trend</b>
Annual Moulting Lagoon Bird Count (PWS Freycinet)	No counted in Zone 3 – 2,153 birds Total counted – 11,747 birds Species diversity in Zone 3 – 40 species Total species diversity – 71 species Total waterfowl counted – 8,094 / 8 species Total waders counted – 740 birds / 9 species	Trend to be determined with Feb 2017 count data
<p><b>Key findings</b></p> <ul style="list-style-type: none"> <li>• Illegal shooting of aquatic bird species such as swans has been occurring along the Lagoon foreshore which is public land</li> <li>• Monitoring is next scheduled for 2019</li> </ul>		
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Participate in the annual bird count coordinated by PWS</li> </ul>		


<b>Coastal Woodland</b>		<b>Status: Fair</b>
<b>Goals</b> The condition of the woodland flora and fauna community is improved from 2014.		<b>Outcome: Minor issues</b>
<p><b>Target description:</b> The coastal woodlands of The Big Punchbowl Reserve contain threatened vegetation communities dominated by black peppermint and black sheoak, plus areas with Oyster Bay pine and grasstrees <i>Xanthorrhoea australis</i>. Threatened flora such as <i>Lasiopetalum micranthum</i> and <i>Acacia ulicifolia</i> are scattered throughout. <i>Phytophthora cinnamomi</i> disease is widespread in coastal forests on the Reserve and is likely to have caused local extinction of many susceptible understorey species. Two eagle nests have been recorded on the Reserve including an active nest in 2014-15.</p>		 <p>Coastal woodland. Photo: Matt Newton.</p>
<b>Ecological indicator</b>	<b>Current status</b>	<b>Trend</b>
Floristic diversity (species/site)	7.4	Unknown
Structural complexity (strata/site)	3.9	Unknown
Canopy recruitment (cohorts/site)	1.6 5 out of 11 sites with only one cohort	Unknown
Vertebrate fauna diversity -species/site - total species	5.25 9	Unknown
Eagle nest productivity	No nest activity this season	Flat
<p><b>Key findings</b></p> <ul style="list-style-type: none"> <li>• <i>Phytophthora cinnamomi</i> is widespread and has had a major impact on understorey plant diversity.</li> <li>• Stands of Oyster Bay pine contain trees that are at least 300 years old. This species is sensitive to fire and an inappropriate fire regime will cause localised extinction</li> <li>• Black sheoak forms dense stands across the property, and are sensitive to fire. The prevalence of fire sensitive species may be due to the buffering effect of Moulting Lagoon to the northwest.</li> <li>• Some very old stands of Banksia and grasstrees were identified.</li> <li>• Two eagle nests occur on the reserve. One nest was occupied by a breeding pair of white-bellied sea eagles in 2013 that successfully fledged a chick in 2014. The two nests were checked in 2015 and found to be intact but had no new signs of breeding activity.</li> <li>• There are a large number of sites with no recruitment of canopy species.</li> </ul>		
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Develop an ecological burn plan for the Reserve to promote recruitment and protect sensitive species such as <i>Callitris rhomboidea</i> and <i>Allocasuarina littoralis</i>.</li> <li>• Develop protocols to ensure phytophthora is not spread locally and to other areas off-site.</li> <li>• Continue monitoring – next repeat is scheduled for 2019.</li> </ul>		

<b>Community Connection to the Landscape</b>		<b>Status: Good</b>
<b>Goal:</b> The community has opportunities to connect with the landscape through research, volunteering, education and recreation (ongoing)		<b>Outcome: On Track</b>
<p><b>Target Description:</b> 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>		 <p>TLC volunteers and staff check remote cameras. Photo: Heath Holden.</p>
<b>Community indicator</b>	<b>Current status</b>	<b>Trend</b>
Volunteer days	8	Decrease
Visitors	9 visitors	Decrease
Research and education	3 projects	Increase
<p><b>Key findings</b></p> <ul style="list-style-type: none"> <li>• An ongoing research project is investigating the ecological history of the region using sediment cores taken from The Big Punchbowl</li> <li>• TLC organised four activities with volunteers assisting (aerial photography, reserve management (fencing, track maintenance, weeding), a butterfly survey and an eagle nest check)</li> <li>• TLC hosted one supporter trip and assisted three other self-guided trips by supporters</li> </ul>		
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Continue to encourage community connections to the reserve by providing opportunities for research, education, recreation and volunteering</li> <li>• Develop and implement a system for reporting all visitors to TLC Permanent Reserves</li> <li>• Continue to maintain relationships with neighbours</li> <li>• Consider removing this target from individual reserve management plans and reporting all relevant TLC activities across Tasmania in a separate report. This approach will be easier to report, more reflective of changes over time, and is a goal of TLC's Strategic Plan.</li> </ul>		

## MANAGEMENT EFFECTIVENESS SUMMARY

<b>Weed management</b>		
<b>Key objective(s)</b> <ul style="list-style-type: none"> <li>All areas of gorse have received primary treatment by 2016</li> <li>Gorse and other weeds are functionally eradicated from the Reserve by 2020</li> </ul>		<b>Status 2015-16</b> <b>On-track</b>
<b>Strategy description</b> Scattered infestations of gorse and thistles (several species) occur across the reserve, mostly at the edges of forest around Moulting Lagoon. Weeds have the potential to become much more widespread on the Reserve, as has happened on TLC's neighbouring reserve at Long Point. Weed control is therefore a management priority.		Gorse re-sprouting from a treated plant. Photo: Denna Kingdom 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
Weed extent	<200m <sup>2</sup>	Improving
Weed density	Sparse	Improving
<b>Progress in 2015-16</b> <ul style="list-style-type: none"> <li>All known areas of gorse at the Reserve received primary treatment in 2014-15. Follow up work was undertaken in December 2015.</li> <li>Machinery used for road maintenance was cleaned prior to bringing out to the Reserve, ensuring no new weeds were brought into the Reserve.</li> </ul>		
<b>Key recommendations for future management</b> <ul style="list-style-type: none"> <li>Continue follow-up weed control at known infestations, including spraying infestation near Barney Wards Lagoon where structure of plants prevents cut-and-paint.</li> <li>Monitor known weed infestations for germinating seedlings.</li> <li>Record and treat any new weed infestations.</li> </ul>		



<b>Stock exclusion</b>		
<b>Key objective(s)</b> <ul style="list-style-type: none"> <li>Access by neighbouring stock is prevented (ongoing)</li> </ul>		<b>Status 2015-16</b> <b>Minor issues</b>
<b>Strategy description</b> <p>The property to the south of the Reserve is grazed by sheep. Sheep grazing impacts on the condition of the wetlands and coastal woodland vegetation communities. The southern boundary of TLC's land is fenced, but sheep occasionally access the Reserve along the shore of Moulting Lagoon via unfenced land managed by the Parks and Wildlife Service. The condition of these fences range from excellent to moderate. Additional fencing is required on the PWS boundary to ensure stock are excluded from The Big Punchbowl Reserve.</p>		<p>Sheep accessing The Big Punchbowl Reserve via the saltmarsh. Photo: TLC</p> 
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
No stock access the reserve	Minor issues due to stock access along the shoreline.	Flat
<b>Progress in 2015-16</b> <ul style="list-style-type: none"> <li>A fence along the southern boundary of the Reserve was installed in 2014-15. In 2015-16, this fence was checked and cleared of fallen branches; no stock had accessed the Reserve through this fence line.</li> <li>Sheep are still accessing the Reserve along the shore of Moulting Lagoon, via PWS managed land</li> </ul>		
<b>Key recommendations for future management</b> <ul style="list-style-type: none"> <li>Liaise with PWS to construct a new stock proof fence along the shore of Moulting Lagoon.</li> <li>Continue to monitor fences and repair fences when necessary.</li> </ul>		

**Feral animal control**

**Key objective(s)**

- Baseline data collected and threat assessment completed by Dec 2016.

**Status 2015-16**

**Minor issues**

**Strategy description**

Three feral pests of most importance on the Reserve are cats, fallow deer and rabbits. TLC is working across all of our reserves to monitor and understand the population dynamics of feral pest species.

A feral deer strategy is being developed in collaboration with other stakeholders on the Freycinet Peninsula - Parks and Wildlife Service, Bush Heritage Australia, conservation landholders – with a view to regional eradication.

Feral cats are considered more difficult to deal with, and presently no effective eradication or even control techniques are known for regions without physical barriers (i.e. small islands). This is particularly true for areas with a human population where cats are kept as pets. As such, the TLC’s current strategy is to monitor cats using camera traps, and monitor control strategies and efforts from other stakeholders nationally and internationally to be in the best position to act when control techniques become more effective.

Rabbit captured by remote camera. Photo: TLC.




Indicator	Current status	Trend
Cat abundance	22 observations 56% occupancy	Unknown
Rabbit abundance	38 observations 33% of sites	Unknown
Deer abundance	3 records 22% of sites	Unknown

**Progress in 2015-16**

- Baseline data on deer, rabbit and cat abundance was collected in 2014-15. Deer are present in low numbers; cats and rabbits are present in moderate numbers.
- Feral animal control (especially deer and cats) has been identified as a priority.
- TLC has registered The Big Punchbowl Reserve as a potential Tasmanian release site for a new strain of rabbit calicivirus, through the Invasive Species CRC.

**Key recommendations for future management**

- Continue to monitor feral animal species.
- Investigate options for effective feral animal control.
- If Long Point is selected as a Tasmanian release site for the new strain of rabbit calicivirus, implement methodology and monitoring requirements.

<b>Fire management</b>		
<b>Key objective(s)</b>		<b>Status 2015-16</b>
<ul style="list-style-type: none"> <li>No unauthorised fires occur on the reserve (ongoing).</li> </ul>		<b>On-track</b>
<b>Strategy description</b>		Fire adapted Xanthorrhoea grow at Big Punchbowl Reserve. Photo: Matt Newton.
<p>An inappropriate fire regime will reduce the condition of the natural values of the Big Punchbowl Reserve. The impact of fire on local communities also needs to be considered. The vegetation at The Big Punchbowl Reserve is an unusual mixture of fire sensitive and fire tolerant species, and fire management at the Reserve is therefore a balancing act. Species such as Oyster Bay Pine and Black Sheoak are fire sensitive. These species are found amongst pockets of coastal heath, which are well adapted to fire, with frequent burning promoting increased diversity of plant species. A fire risk assessment has determined that the Reserve is a low risk to local communities due to the distance from nearby built assets and residences.</p>		
<b>Indicator</b>	<b>Current status</b>	<b>Trend</b>
No. of unplanned fires	0 unplanned fires	Flat
<b>Progress in 2015-16</b>		
<ul style="list-style-type: none"> <li>There were no unauthorised fires on the Reserve in 2015-16</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>The Reserve is fuel stove only.</li> <li>An ecological fire management plan for the Reserve is being planned.</li> </ul>		
<b>Key recommendations for future management</b>		
<ul style="list-style-type: none"> <li>Develop an ecological burn strategy to maintain the natural values of the Reserve.</li> <li>Continue to implement a fuel stove only policy for the Reserve.</li> </ul>		

**Visitor management**

**Key objective(s)**

- Visitation and infrastructure is managed to protect the natural values of the Reserve (ongoing).

**Status 2015-16**

**On-track**

**Strategy description**

Visitation to The Big Punchbowl Reserve is important for the community to connect with the TLC's values however unmanaged visitation and visitor infrastructure can impact on the values of the Reserve. *Phytophthora cinnamomi* is already widespread across the Reserve and movement of people and vehicles can exacerbate this or transport it to areas beyond the Reserve that are currently *Phytophthora* free. Visitor infrastructure, including signs, roads, walking tracks and gates need to be maintained to support visitor management.



Visitors clean dirt from boots. Photo: Matt Newton.

Indicator	Current status	Trend
# events at the Reserve	0 events	Slight decrease
# of volunteer activities at the Reserve	4 volunteer activities	Slight increase

**Progress in 2015-16**

- Visitation infrastructure was maintained and visitors were supported to visit the Reserve.
- Hygiene protocols were provided to and implemented by visitors.
- Road maintenance was undertaken to prevent erosion and ensure visitors could access the Reserve.
- Signs were installed at three entrance points to the Reserve.
- A brochure to guide visitors to the Reserve was drafted by a volunteer.
- Old rubbish was removed from the Reserve.

**Key recommendations for future management**

- Finalise visitor brochure to support self-guided visitors.
- Continue to maintain visitor infrastructure.
- Consider removing the community engagement of this strategy and reporting all relevant TLC activities across Tasmania in a separate report. This approach will be easier to report, more reflective of changes over time, and is a goal of TLC's Strategic Plan.
- Install a permanent hygiene and boot cleaning station at the Reserve entry point.