3. Management for nature conservation

3.3 Condition of park ecosystems

Indicators

- Condition of terrestrial ecosystems
- Condition of marine ecosystems
- Condition of freshwater ecosystems
- Condition of significant and threatened flora and fauna
- Management outcomes for nature conservation

Context

Victoria's parks network includes an extremely diverse range of ecosystems from alpine to mallee, grasslands, wet forests and rainforests, dry forests and woodlands, heathlands, wetlands and marine and coastal systems. Park condition is a broadly defined term that includes factors such as the expected structure, composition and ecological processes of park ecosystems. These factors are influenced by a range of drivers, threats and disturbances including climate, past land use, park shape, and impact of invasive species, fragmentation, fire and water regimes and human impacts. Park condition can be influenced external factors such as climate, by direct management interventions to reduce the impact of key threats as well as indirect management through community education. The overall goal for management of natural assets in the parks network is to ensure that ecological integrity and ecological processes are maintained and/or restored for their long-term viability and resilience.

In seeking to meet the goals of maintaining or improving the biodiversity and resilience of natural assets and their ability to deliver ecosystem services in the face of climate change and other stressors, Parks Victoria must allocate its finite resources in the most effective and efficient way. With such a diverse and complex parks network, management effort is directed to those parks with highest conservation significance at the greatest threat. Effective park stewardship includes having clear measurable plans in place, good governance, programs that respond to biodiversity conservation priorities and strong partnerships with the other land managers and community.

Condition of terrestrial ecosystems

Park managers reported that of the 298 parks assessed, approximately 60% of terrestrial parks (38% by area of the parks network) were in overall excellent or good condition, with 34% in overall fair condition (57% by area). The condition of terrestrial parks varied from 70% of national parks being in excellent or good condition to around 50% of metropolitan and regional parks. Slightly more parks had improved in overall condition than declined since 2010. Seventeen percent of parks (32% by area of the parks network) reported improved condition since 2010 with 14% (17% by area) declining in condition. Several large parks were in a recovery phase after large fires over the previous decade and several areas of the state had improved environmental conditions following the breaking of the Millenium drought. Appendix 3.17 shows the overall ecosystem condition index of parks since 2010.

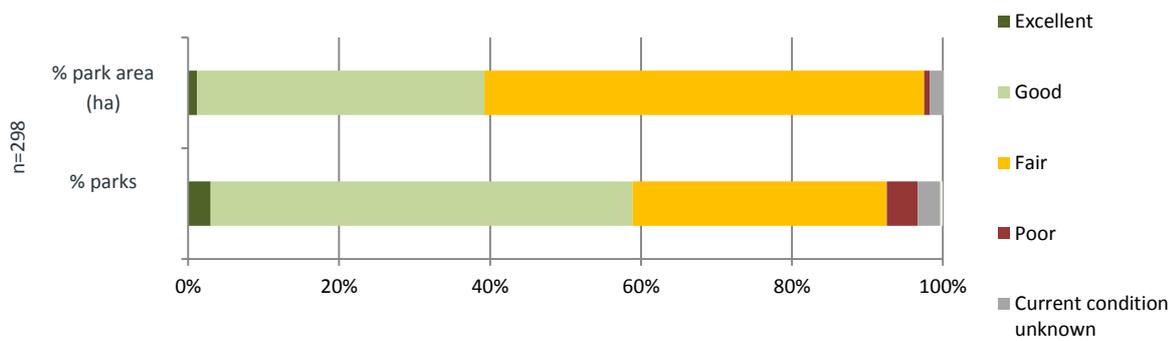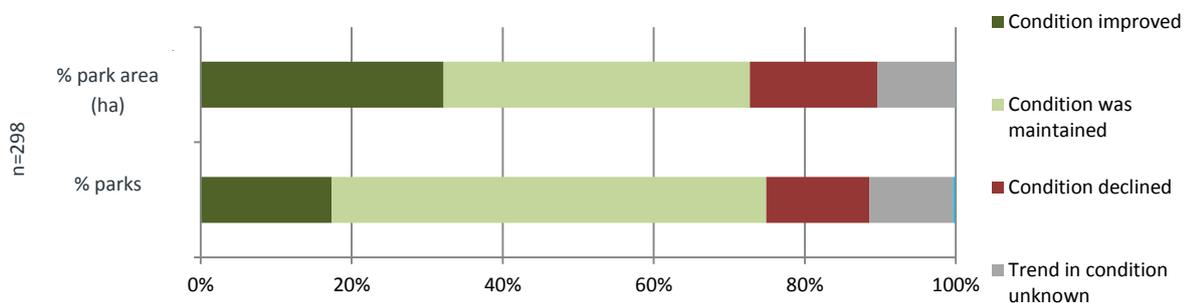**Figure 3.3.1 Current condition of natural values in terrestrial parks**

Figure 3.3.2 Trend in condition of natural values in terrestrial parks

Condition of marine ecosystems

Victoria's marine parks network includes a variety of marine habitats from sub-tidal and intertidal reefs to mangrove, saltmarsh, seagrass and soft sediment habitats. Park managers reported that 96% of marine parks and sanctuaries were in excellent or good condition and 89% were reported as being in improved or stable condition since 2010, with no parks declining in condition.

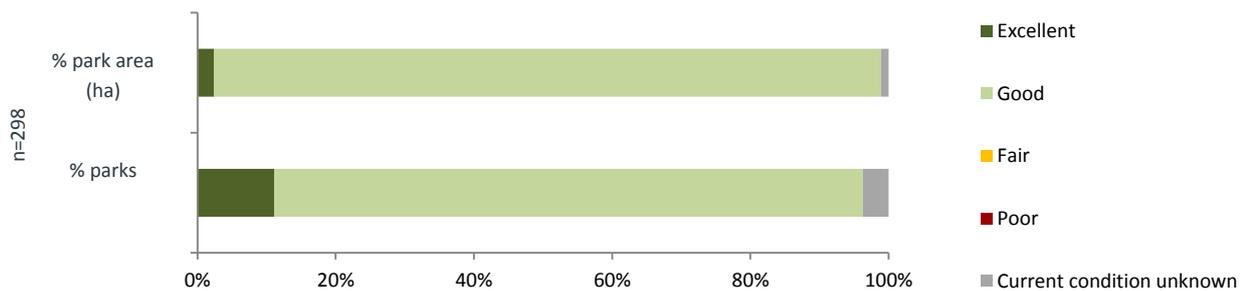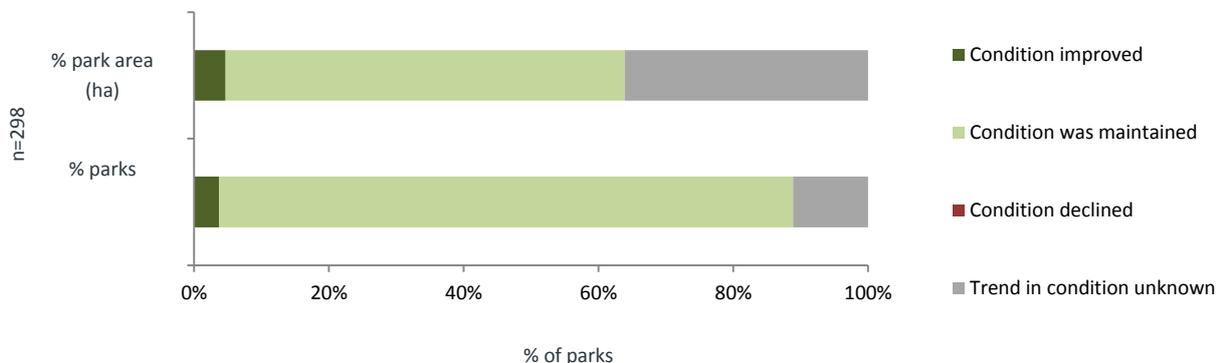**Figure 3.3.3 Condition of natural values in marine parks**

Figure 3.3.4 Trend in condition of natural values in marine parks

Condition of freshwater ecosystems

The parks network contains diverse freshwater ecosystems including wetlands and rivers. The assessment of condition is based on the Index of Wetland Condition and the Index of Stream Condition, both developed and implemented by the Department of Environment, Land, Water and Planning. In some cases there is a cross over between terrestrial and freshwater ecosystems (e.g. the Red Gum forests of Barmah and Gunbower national parks).

Wetland and stream condition

The table below summarises the average condition of wetlands and rivers for each of the IUCN categories across the parks network.

Figure 3.3.5 Condition of wetlands and rivers in parks

| Ecosystem assets	Wetlands		Rivers	
	2014	**2011**	**2011**	
Assets measures	Extent (Ha)	Ave Condition Index of wetland condition#[1]	Extent Hectares with river	Ave Condition Index of stream condition[2]
Protected Areas (IUCN PA Categories)				
IA Nature Conservation Reserves	16,009	7	2,911	29
IB Wilderness Parks	22	1	1,000	41
II National and State Parks	68,681	7	31,874	32
III Natural Features Reserves	1,788	7	4,026	28
IV Bushland Reserves	1,821	6	512	27
V Protected landscape		-		
VI Wildlife Reserves	112,867	6	1,926	25
Non-protected areas				
Conservation reserve	61,854	6	2,600	29
Port and coastal asset	194	-	-	-
Urban, regional and other parks	11,598	7	3,056	25
Parks total	**274,834**	**7**	**47,905**	**29**

[#] The index of wetland condition is a hierarchical index on a 10-point score scale based on six key characteristics that define wetlands, namely wetland catchment, physical form, hydrology, soils, water properties and biota (DSE, 2005). Large wetland areas in parks are unassessed in the most recent dataset.
[##] The index of stream condition is based on a 50-point score scale and is made up of five sub-indices describing the condition of a river reach, namely hydrology, streamside zone, physical form, water quality and aquatic life (DEPI 2012).

Stream condition

Based on the Index of Stream Condition data, parks in the east of the state have a higher proportion of streams in excellent and good condition with parks in the north having a higher proportion of steams in poor condition.

Figure 3.3.6 Index of stream condition in parks by landscape
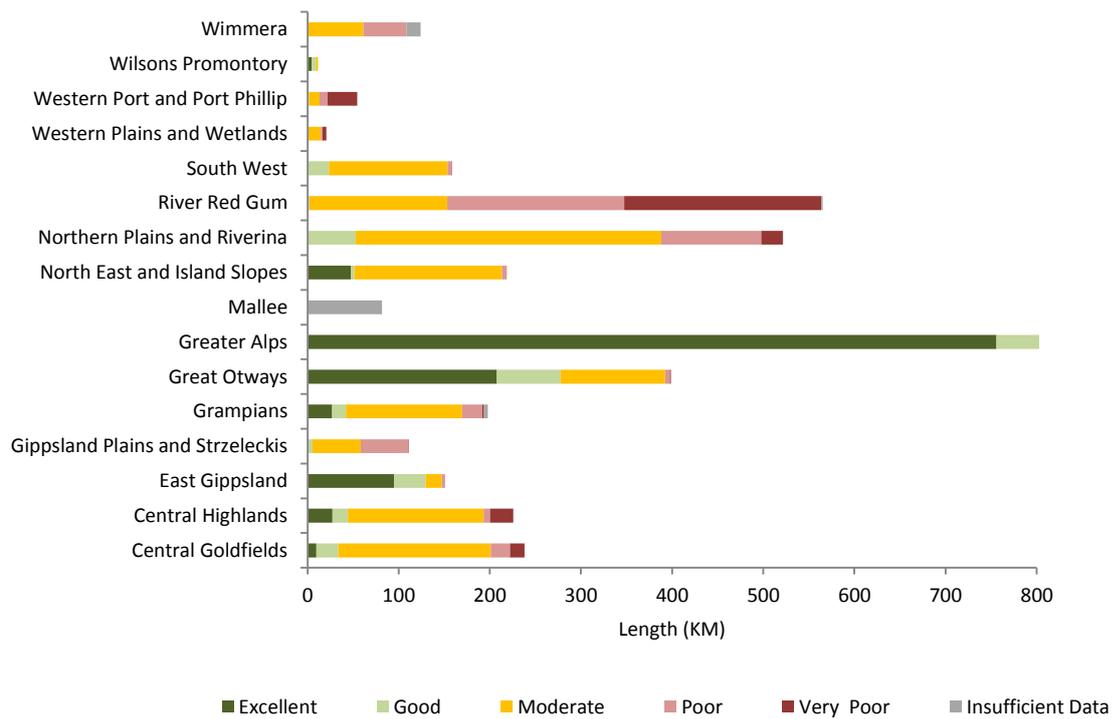
Wetland condition

Based on the index of wetland condition assessments of 2009-10 and 20010/11, the wetlands of East Gippsland, Alpine, Grampians, Otways and south west Victoria were in the best condition. Across almost all landscapes, the wetland condition scores in park was higher the wetland condition scores outside parks. Appendix 3.18 shows the status of wetland condition in parks across the state.

Figure 3.3.7 Index of Wetland condition

Average Index of Wetland Condition score (2009-11)
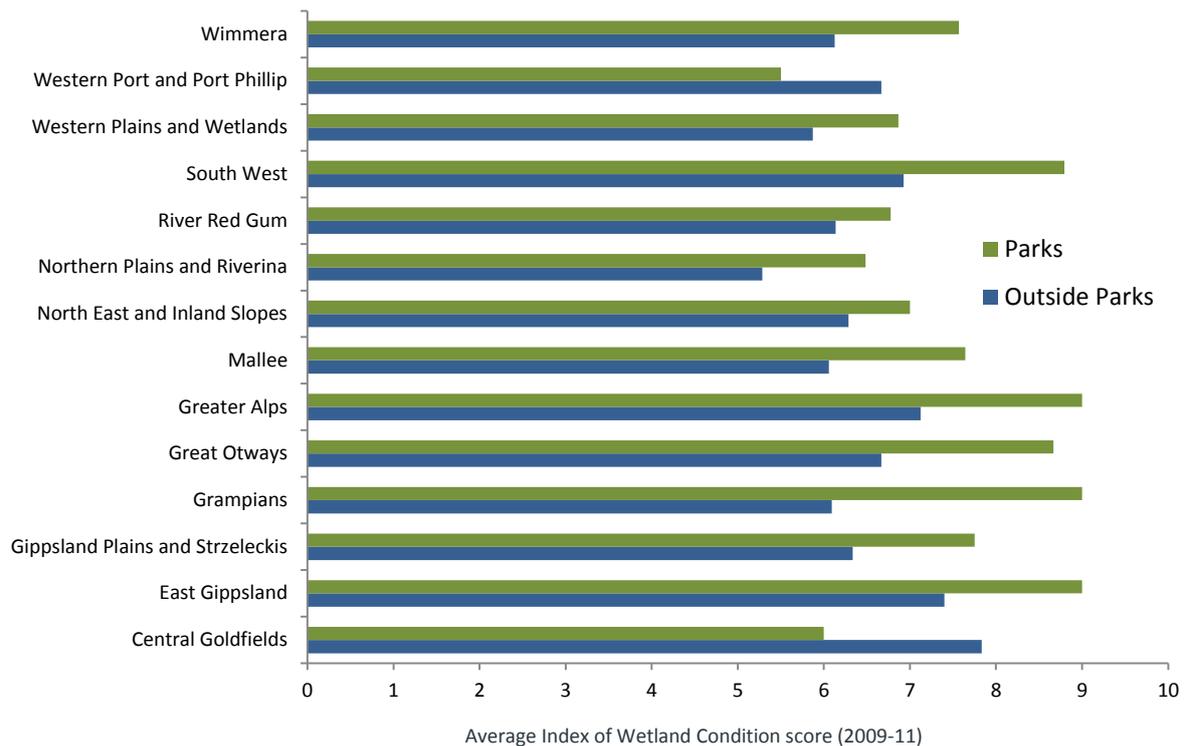
Condition of significant and threatened flora and fauna

The Actions for Biodiversity (ABC) program managed by the Department of Environment, Land, Water and Planning prioritises actions to conserve the States' most threatened species. Around half of the assessed parks reported that the habitat condition for these threatened fauna and flora was in excellent or good condition, with 40% reporting that habitats for threatened communities were in good or excellent condition. The majority of parks reported that habitat condition for threatened flora and fauna was stable while more parks reported that habitat condition for listed threatened communities had declined than improved since 2010.

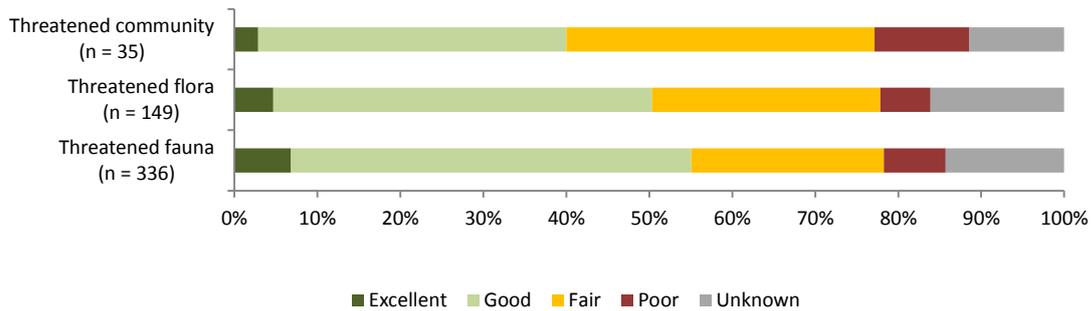**Figure 3.3.8 Condition of habitat for threatened communities, fauna and flora in parks**
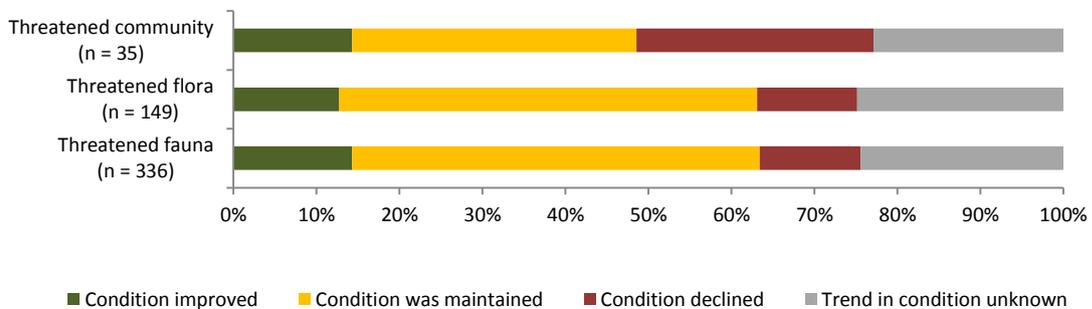

Figure 3.3.9 Trend in condition of habitat for threatened communities, fauna and flora in parks

Information about the condition of significant and threatened species is based on a variety of sources including on-ground monitoring and modelling based on expert opinion and other expert opinion.

Appendix 3.19 summarises the modelled condition of selected high priority threatened species populations from parks. Not surprisingly for many of these species, their condition is ranked as poor.

Extent management objectives met for nature conservation

The extent that management objectives are met for nature conservation is influenced by a range of factors including past and surrounding land use, direct management interventions, external drivers such as climate and available resources. Park managers reported that 48% of terrestrial parks (56% of the area of the parks network) fully or substantially met management objectives for nature conservation. Forty-five per cent of marine parks were reported as meeting fully or substantially meeting conservation objectives. A large proportion of parks were reported as partially meeting management objectives. Appendix 3.20 shows the extent management objectives were met for natural values across parks.

Slightly more conservation reserves were reported as meeting conservation objectives than terrestrial national parks which is consistent with other results that reported that the scale of threats was larger for terrestrial national parks. Parks that were better resourced and better planned performed moderately better than other parks in meeting conservation management objectives.

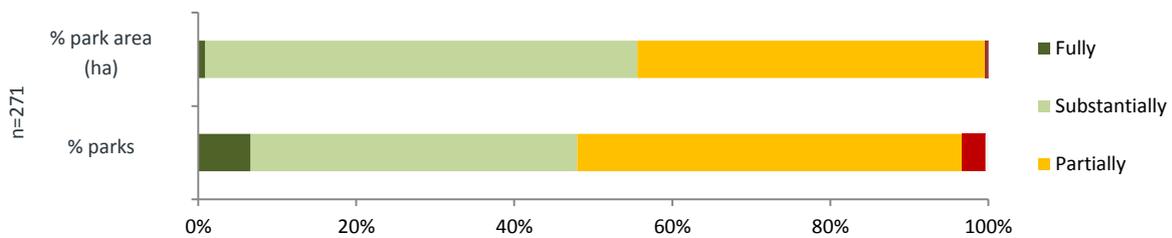**Fig 3.3.10 Extent objectives met for nature conservation in terrestrial parks**

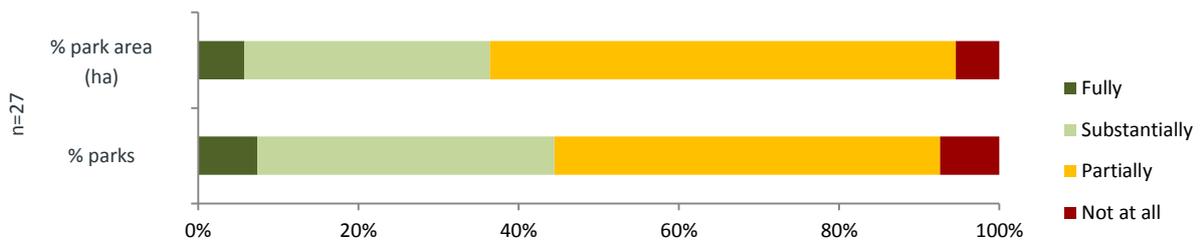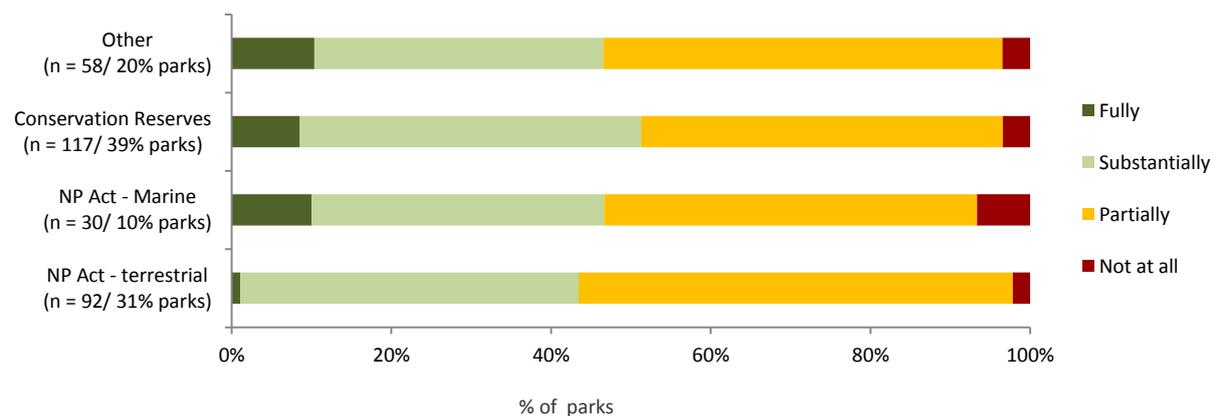**Figure 3.3.11 Extent objective met for nature conservation marine parks and sanctuaries**

Figure 3.3.12 Extent management objectives met for nature conservation by park type.

Key factors influencing management for nature conservation

Improved management actions

Since the last State of the Parks report was released, a number of improvements have been introduced to better manage the natural assets of Victoria's parks. These have included:

- Improved partnerships for weed, pest and threatened species initiatives with Catchment Management Authorities, Conservation Volunteers Australia, Friends groups and other volunteers, government and non-government agencies, Australian Deer Association and Sporting Shooters Association of Australia.
- Implementation and further evolution of weed and pest initiative programs such as the Alps Intensive Management program, Southern, Glenelg, Central Highlands and Grampians Ark fox control programs, and the Otway, Glenelg and Central Highlands Eden weed control programs.
- Improved landscape connectivity and revegetation partnerships with Greenfleet, Greening Australia, Trust for Nature, Catchment Management Authorities and other organisations.
- Improved strategies and clearer conservation objectives for a number of priority landscapes such as the Alps, Grampians, Great Otways and Wilsons Promontory.
- Improved knowledge partnerships through Parks Victoria's Research Partners Program.
- New and well-designed scientific monitoring programs as part of Parks Victoria's Signs of Healthy Parks strategy.
- Increased knowledge of fire ecology requirements in partnership with DELWP and research partners.

Future actions and challenges

- A large number of parks reported a moderate level of effects from key threats, highlighting the need to contain these effects before they become too costly to control.
- In addition to maintaining effort on current threats, there is a need to plan for and respond to emerging threats that have been identified as increasing. This includes effects of non-compliance and other visitor impacts, some overabundant native species, emerging pest species such as deer and Phytophthora dieback.
- Key threats such as inappropriate fire frequency and severity and inappropriate water regime are strongly climate driven. Conservation planning that recognises drier and warmer climate will be required.
- Continue to build partnerships to cooperatively implement large scale cross tenure weed and pest programs to benefit multiple species.
- Further roll-out conservation plans for priority landscapes to prioritise and set clear and measurable objectives for the conservation of priority values and reduction or containment of their threats, including recognition of emerging climate change driven changes.
- Build staff capacity and partnerships for well-designed monitoring and data analysis programs to assess the status and trend of ecosystems and species condition and to improve park management.
- A large number of parks reported that the trends in effects from pest animals were unknown, highlighting the need for improved surveillance and monitoring in these areas.