

## 3 Appendices

Appendix A – Portfolio Budget Statements reporting – 2009–10

Appendix B – Glossary and shortened forms

# Appendix A: Portfolio Budget Statement Reporting – 2009–10

## Key Result Area 1 – Natural Heritage Management

### PBS Target – Viable populations of selected significant species maintained

- Park managers have nominated 35 species across the six terrestrial reserves to determine whether viable populations of selected significant species have been maintained in those reserves. Of the selected species, the populations of 5 species are increasing; 13 species are remaining steady; 8 species are decreasing; 1 species may be extinct; and for 8 species population data are deficient.

### Booderee National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Eastern bristlebird <i>Dasyornis brachypterus</i>	Endangered	Monitoring program for distribution and abundance in place since 2004.	Controlling fox populations and preserving suitable bristlebird habitat.	Numbers have been steadily increasing since the last major wildfire in 2003.	↑ Numbers rising
Sooty oystercatcher <i>Haematopus fuliginosus</i>	No	Monitoring program for distribution and abundance in place since 2004.	Controlling fox populations and protecting Bowen Island nesting sites. Public education programs.	Numbers have been stable for the life of the monitoring program. Ongoing nesting activity has been observed.	→ Numbers steady
Pied oystercatcher <i>Haematopus longirostris</i>	No	Monitoring program for distribution and abundance in place since 2004.	Controlling fox populations. Working with other land management agencies to control threats posed by vehicles. Public education programs.	Numbers have been stable for the life of the monitoring program.	→ Numbers steady
Little penguin <i>Eudyptula minor</i>	Marine	Irregular counts of beach landings. Irregular monitoring of chick mortality.	Maintained native plantings to re-establish penguin nesting habitat on Bowen Island.	This is a stable and very healthy population displaying exceptionally high breeding success.	→ Numbers steady
Long-nosed bandicoot <i>Perameles nasuta</i>	No	Monitoring program for bandicoots and primary food source (invertebrates) in place since 2003.	Controlling fox populations.	Populations peaked in 2005–2006 before declining in 2008–2009. Numbers have increased in 2010. This is considered to be representative of trends in recovering bandicoot populations.	→ Numbers steady
Green and golden bell frog <i>Litoria aurea</i>	Vulnerable	Call back monitoring of breeding sites since 1996. PhD research project of all frogs has been underway since 2007.	Fire management to minimise impact of frog habitat	Not detected in the Park for five years and is likely to be locally extinct, despite little change to habitat or hydrology.	↓ Numbers falling
Giant burrowing frog <i>Heleioporus australiacus</i>	Vulnerable	Call back monitoring of breeding sites since 1996. PhD research project of all frogs has been underway since 2007.	Fire management to minimise impact of frog habitat	Numbers have been stable for the life of the monitoring program.	→ Numbers steady

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Common brushtail possum <i>Trichosurus vulpecula</i>	No	Monitoring programs for distribution and abundance in place since 2003,	Controlling fox populations	Populations have increase slowly since intensive fox baiting started,	↑ Numbers rising
Hooded plover <i>Thinornis rubricollis</i>	Marine	Monitoring program in place since 2004	Controlling fox populations. Working with other land management agencies to control threats posed by vehicles. Public education programs.	Numbers have been stable for the life of the monitoring program.	→ Numbers steady

## Christmas Island National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Christmas Island pipistrelle <i>Pipistrellus murrayi</i>	Critically Endangered	Monitoring of Pipistrelle call activity. Monitoring of roost trees to determine potential predators.	Expert Working Group assessment of threats to the Island's biodiversity, including the pipistrelle. Captive breeding program attempted in 2009 but no bats were caught.	The pipistrelle may now be extinct.	↓ May be extinct
Native reptiles (blue-tailed skink <i>Cryptoblepharus egeriae</i> , Lister's gecko <i>Lepidodactylus listeri</i> , and forest skink <i>Emoia nativitatis</i> )	No (except for Lister's Gecko which is listed as Vulnerable)	Ongoing survey of native reptile fauna conducted as well as commencement of threatening species monitoring.	Captive breeding program for native reptiles commenced. Assessment of threatening processes, including disease factors commenced.	Reptile species appear to be undergoing a rapid population decline. Lister's gecko ( <i>Lepidodactylus listeri</i> ) was rediscovered during the year.	↓ Numbers falling
Red crab <i>Gecarcoidea natalis</i>	No	Biennial biodiversity survey of burrow counts to determine density. Survey has used consistent methodology since 2001. Last survey occurred in 2009.	Continued crazy ant management program, including aerial baiting and commencement of an indirect biological control research project. Continued red crab management program including traffic management, road infrastructure development and education.	Population numbers appear to have remained steady from 2001 to 2007.	→ Numbers steady
Abbott's booby <i>Papasula abbotti</i>	Endangered; Marine; Migratory	Aerial nest count survey last conducted in 2009 but the results are inconclusive. External researcher currently investigating some aspects of population ecology.	Continuation of the Christmas Island Mine-site to Forest Rehabilitation Programme (CIMFR) which focuses on the rehabilitation of Abbott's booby nesting habitat.	Trend is currently unknown.	Data deficient

## Kakadu National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Northern quoll <i>Dasyurus hallucatus</i>	Endangered	Biodiversity Hotspot Surveys and targeted monitoring at the East Alligator Ranger Station. Incidental sighting database records any sightings or road kills. Intermittent records are being received indicating there are a few areas where this species is persisting albeit in low numbers.	Landscape unit-based fire management to improve habitat quality. Off-shore species relocation program conducted in conjunction with NT Govt.	Population decline was evident following arrival of cane toad. Population levels are at low levels and stable.	→ Numbers steady
Northern brown bandicoot <i>Isodon macrourus</i>	No	Biodiversity Hotspot Surveys. Incidental sighting database records any sightings or road kills.	Landscape unit-based fire management to improve habitat quality.	Population declining consistent with pattern of small mammal decline across Northern Australia.	↓ Numbers falling
Northern brush tail possum <i>Trichosurus arnhemensis</i>	No	Biodiversity Hotspot Surveys. Incidental sighting database records any sightings or road kills.	Landscape unit-based fire management to improve habitat quality.	Population declining consistent with pattern of small mammal decline across Northern Australia.	↓ Numbers falling
Brush-tailed rabbit-rat <i>Conilurus penicillatus</i>	Vulnerable	Biodiversity Hotspot Surveys and targeted monitoring at the Mardugal Campground. Incidental sighting database records any sightings or road kills.	Landscape unit-based fire management to improve habitat quality.	Population declining consistent with pattern of small mammal decline across Northern Australia.	↓ Numbers falling
Black-footed tree-rat <i>Mesembriomys gouldii</i>	No	Biodiversity Hotspot Surveys. Incidental sighting database records any sightings or road kills.	Landscape unit-based fire management to improve habitat quality.	Population declining consistent with pattern of small mammal decline across Northern Australia.	↓ Numbers falling
Pale field rat <i>Rattus tunnneyi</i>	No	Biodiversity Hotspot Surveys. Incidental sighting database records any sightings or road kills.	Landscape unit-based fire management to improve habitat quality.	Population declining consistent with pattern of small mammal decline across Northern Australia.	↓ Numbers falling
Flatback turtle <i>Natator depressus</i>	Vulnerable; Marine; Migratory	Continuation of 15 year survey and capture program (annual survey).	–	Monitoring shows population is steady.	→ Numbers steady
Estuarine crocodile <i>Crocodylus porosus</i>	Marine; Migratory	Continuation of 15 year survey and capture program. Satellite tracking project has underway for 5 years.	–	Crocodile populations in East Alligator River and South Alligator River are healthy and beginning to plateau. Crocodile population in West Alligator River is still increasing. Further information is required to determine population dynamics in the Wildman River.	→ Numbers steady

## Norfolk Island National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Green parrot <i>Cyanoramphus cookii</i>	Endangered; Migratory	Annual monitoring of assisted breeding nesting sites throughout breeding season (October to June). Monitoring commenced in the 198's and birthrate data collected since 1986.	Active management of 50 green parrot nesting sites. Active feral animal control (rats, cats, crimson rosellas).	Current population estimate of 200 individuals. 300% increase over the past decade (approx).	↑ Numbers rising
Norfolk Island morepork (boobook) owl <i>Ninox novaeseelandiae undulata</i>	Endangered; Migratory	Artificial nesting boxes are monitored annually to record breeding activity (October to January).	Installation of 4 new owl nesting boxes bringing total available nesting boxes to 32.	Current population estimate of 40 individuals. No change over past year. Although not well documented, there has been an increase over the past decade. First introduced from NZ in mid 1980s. Steady population numbers may indicate that carrying capacity of existing habitat has been reached.	→ Numbers steady
Golden whistler <i>Pachycephala pectoralis xanthoprocta</i>	Vulnerable	No monitoring program at present. 2010 estimate of 2,200 birds.	Weed and feral animal control.	Unable to determine. No trends at present.	Data deficient (Numbers may rising but difficult to compare previous survey numbers)
Pacific robin <i>Petroica multicolor multicolor</i>	Vulnerable	No monitoring program at present.	Weed and feral animal control.	Unable to determine. No trends at present.	Data deficient
Wedge-tailed shearwater <i>Puffinus pacificus</i>	Marine; Migratory	No monitoring program at present.	Weed and feral animal control.	Unable to determine. No trends at present.	Data deficient

## Pulu Keeling National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
Red-footed booby <i>Sula sula</i>	Marine; Migratory	Annual fauna survey conducted on North Keeling Island since 1985.	Continued monitoring program. Community education and compliance activities	Analysis of data indicates population remain steady at around 30,000 breeding pairs.	→ Numbers steady
Cocos buff-banded rail <i>Gallirallus philippensis andrewsi</i>	Endangered	Monitoring commenced in late 1999. Monitoring continued opportunistically when staff visit the park.	Undertook feasibility to re-introduce and establish a second viable population outside the park (southern atoll). Collaborative work with the Cocos Islands Shire and scientists	In 2005, monitoring data was analysed and found that the current population is stable at 1,000 individuals.	Data deficient

## Uluru–Kata Tjuṯa National Park

Species	EPBC Act status	Monitoring	Actions	Trend	Flag
<i>Tjakuṯa</i> – great desert skink <i>Egernia kintorei</i>	Vulnerable	13th annual <i>Tjakuṯa</i> survey (Feb–Mar 2010) identified 234 active burrows (95 containing juveniles and 65 containing sub adults).	Continued fire management to improve habitat quality. Continue predator monitoring. Finalise feral strategy concentrating on the borefields area of habitat.	Highest number of active burrows since inception of monitoring (13 years).	↑ Numbers rising
Mala – rufous hare wallaby <i>Lagorchestes hirsutus</i>	Endangered	6th annual mala survey (April 2009) captured 47 individuals (14 tagged).	Continued active management within predator proof enclosure such as mosaic burning (20% regeneration to 80% mature spinifex) and supplementary feeding within enclosure.	24 individuals were released in September 2005. In latest survey (June 2010) 52 individuals were caught including 23 new animals.	↑ Numbers rising
Murtja – mulgara <i>Dasyercus cristicauda</i>	Vulnerable	Trapping for mulgara captured eight animals over two trapping sessions. New methodology introduced this year found widespread mulgara signs throughout the 20 survey areas.	Continued fire management to improve habitat quality. Collared feral cats to determine whether they are main predator.	Activity level is higher this year due to trapping across a wider area however still unable to determine trends. Further surveys to be conducted in 2010–11 will help to estimate population trend. Habitat still recovering from 2002 wildfires that burnt 50% of the park.	Data deficient
Southern marsupial mole <i>Notoryctes typhlops</i>	Endangered	Monthly monitoring across 8 different areas of Spinifex habitat.	Currently determining habitat preferences and distribution across the park.	Marsupial mole sign (tracks/pop holes) found in all 8 spinifex habitat types- surface habitat preferences apparent. No baseline data so unable yet to establish trends.	Data deficient
Striated grasswren <i>Amytornis striatus</i>	No	Initial survey occurred in 1992. Monitoring recommenced in August 2009 and 1 individual was found.	Repeat survey September 2010 to establish size of populations still living within the park and habitat preferences to inform fire strategy. Continue active fire management to reduce large scale habitat loss from wildfire.	Decreased between 1992 and 2009 with birds only found in 1 location compared to several locations in 1992.	↓ Numbers falling
Common wallaroo or euro <i>Macropus robustus</i>	No	Initial survey began in May 2010.	Currently determining habitat preferences and visitor influences on existing populations.	No baseline data or trends to date.	Data deficient
Rare plant survey	No	Annual monitoring of 15 priority species.	Individual management actions for each species- include fire management regimes, erosion control and camel control.	Numbers stable.	→ Numbers steady

## PBS Target – No net increase in distribution/abundance of significant invasive species

- Park managers have nominated 20 significant invasive species across the six terrestrial reserves to identify changes in overall distribution and abundance. Of the selected species, the populations of 5 species are increasing; 3 species are remaining steady; 4 species are decreasing; and for 8 species population data are deficient.

### Booderee National Park

Species	Monitoring	Actions	Trend	Flag
European red fox <i>Vulpes vulpes</i>	Utilising fauna surveillance cameras, fox bait take and sand plot monitoring to monitor residual fox populations.	Continue to undertake fox control activities with an emphasis on removing residual, bait-shy individual foxes and introducing alternative fox control methods.	Fox numbers very low and alternative fox control techniques are proving effective for controlling residual foxes.	→ Numbers steady
Bitou bush <i>Chrysanthemoides monilifera</i>	Aerial survey undertaken. Density and distribution mapped and recorded on GIS. Annual aerial spray efficacy mapped and recorded on GIS. Post treatment exclosure trials to assess vegetation recovery.	500ha of bitou bush sprayed in June 2010.	90% reduction in the area of high density infestation and 75% reduction in the area of medium density infestation since 2004. Post treatment recovery slow due to high levels of preferential grazing by native species.	↓ Numbers falling

### Christmas Island National Park

Species	Monitoring	Actions	Trend	Flag
Yellow crazy ant <i>Anoplolepis gracilipes</i>	Biennial biodiversity survey to determine supercolony density. Survey has used consistent methodology since 2001. Last survey occurred in 2007.	90 hectares of yellow crazy ant supercolonies treated.	Significant decline in supercolony numbers occurred in 2002 after successful aerial baiting program. Since 2002 supercolonies have slowly increased.  Aerial baiting program conducted in 2009, 784 ha supercolonies baited. Ongoing monitoring indicates aerial baiting has been successful in reducing ant numbers in former supercolonies.	↓ Numbers falling
False curry bush <i>Clausena excavata</i>	Initial survey to be conducted as part of 2009 island wide survey.	Weed eradication project undertaken.	No baseline data to date so no trend can be detected. Increasing numbers and distribution under intact rainforest canopy is of significant concern.	Data deficient
Feral cat <i>Felis catus</i>	Determining feral cat numbers is extremely difficult. Still investigating approaches to monitor effectively.	Island wide cat management plan developed to undertake collaborative approach to cat and rat management. Shire of Christmas Island has proposed new by-laws to control cats in settled areas and conducts a de-sexing program in collaboration with Director of National Parks and Christmas Island Phosphates.  Trial conducted to test effectiveness of a new cat bait and toxin with delivery system appropriate to Christmas Island was successful.	No baseline data to date so no trend can be detected. Anecdotal evidence suggests that numbers appear to be rising.	Data deficient

## Kakadu National Park

Species	Monitoring	Actions	Trend	Flag
Mimosa <i>Mimosa pigra</i>	Mimosa stands have been mapped and there is an annual monitoring program.	Integrated eradication program conducted.	Under control, virtually absent from the park	→ Numbers steady
Para grass <i>Brachiaria mutica</i>	Ongoing monitoring as part of integrated weed program. Species is subject to several current research projects.	Opportunistic control.	The range of this species is increasing.	↑ Numbers rising
Salvinia <i>Salvinia molesta</i>	Ongoing monitoring as part of integrated weed program.	Introduction of biological control agent and minor mechanical and chemical control in key sites.	Extent of infestations varies greatly between locations and over time.	→ Numbers steady
Water buffalo <i>Bubalus bubalus</i>	Major survey conducted in 2008–09.	A major control exercise was conducted in 2008–09 -opportunistic control measures were conducted in 2009–10.	Buffalo numbers increasing.	↑ Numbers rising
Feral pig <i>Sus scrofa</i>	Major survey conducted in 2008–09.	A major control exercise was conducted in 2008–09 -opportunistic control measures were conducted in 2009–10.	Feral pig numbers are increasing.	↑ Numbers rising

## Norfolk Island National Park

Species	Monitoring	Actions	Trend	Flag
Black rat <i>Rattus rattus</i>	Monthly survey of presence/absence of rats. Trapping and baiting program provides an indication of presence/absence.	Commenced upgrade of rat stations to modern bait/trap boxes. 1,100kg of bait taken by rodents. Over 250 rats caught in traps.	Numbers of rodents trapped and bait take similar over many years indicating stable population despite program.	Data deficient
Feral cat <i>Felis catus</i>	Trapping program provides a presence/absence indication. Continued gut analysis to determine prey composition (eg native birds, rats).	17 wild cats controlled in the park.	Unable to quantify population size. Uncertain whether rodent control program on park is impacting on feral cat numbers in the park.	Data deficient
Red guava <i>Psidium cattleianum</i>	No monitoring program at present.	Completed weed control in 6 of the 19 coups identified in the rehabilitation strategy. 6 ha weeds controlled.	Unable to determine. No trends at present.	Data deficient
African olive <i>Olea europaea africana</i>	No monitoring program at present.	Completed weed control in 6 of the 19 coups identified in the rehabilitation strategy. 6 ha weeds controlled.	Unable to determine. No trends at present.	Data deficient



## Pulu Keeling National Park

Species	Monitoring	Actions	Trend	Flag
Yellow crazy ant <i>Anoplolepis gracilipes</i>	Island wide survey conducted in June 2008. Survey methodology will be updated to include detection of 'scale insects'	Continued monitoring program. Planning for control programs using chemical. Successful funding application to undertake major invasive species management programs from 2009–11.	Colonies fairly widespread, with some sites recorded at 'supercolony' density.	↑ Numbers rising
Coral berry <i>Rivina humilis</i>	Ongoing mapping activities since 2008.	Successful funding application to undertake major invasive species management programs from 2009–11.	Increased distribution and density observed in western part of the park.	↑ Numbers rising

## Uluru–Kata Tjuṯa National Park

Species	Monitoring	Actions	Trend	Flag
Buffel grass <i>Cenchrus ciliaris</i>	Monitoring of native biodiversity following buffel removal around Uluru.	Prioritised buffel grass control activities including the Uluru base and areas of high conservation value.	Distribution throughout the park decreased due to an increase in control activities.	↓ Numbers falling
Feral cat <i>Felis catus</i>	10 satellite tracking collars (lasting 8 months) have been fitted to determine range, microhabitat use and potential prey risk. Currently trialling roadside monitoring of feral cat tracks.	Continued feral cat trapping program.	Unable to establish trend with current monitoring approach.	Data deficient
European wild rabbit <i>Oryctolagus cuniculus</i>	Annual monitoring of active burrows has been undertaken since 1989.	Calicivirus released around resilient burrows.	Active burrows have reduced significantly since 1989. 93% decrease in active burrows over 18 years.	↓ Numbers falling
European red fox <i>Vulpes vulpes</i>	Monthly vertebrate pest monitoring in borefields area of Park commenced Sept 2008	Completing vertebrate pest strategy for the park which documents new control techniques for foxes. Trials will begin early in 2011.	Baseline data only. No trends at present.	Data deficient.

## Key Result Area 2 – Cultural Heritage Management

### PBS Target – 100 per cent of key sites, as agreed with traditional owners, inspected and treated as required (Jointly managed parks only)

- All key sites at Kakadu and Uluru–Kata Tjuta National Parks were inspected as agreed with traditional owners with various treatments undertaken as required. An inspection and treatment program is not yet in place at Booderee National Park.

## Key Result Area 3 – Joint Management And Working With Indigenous Communities

### PBS Target – Five per cent increase in numbers of Indigenous staff and/or contractors directly or indirectly providing park services (Jointly managed parks only)

- Overall the number of directly employed Indigenous staff throughout the year remained steady in the jointly managed parks.
- The number of Indigenous staff (including intermittent and irregular employees) and contractors indirectly engaged to provide services at Kakadu and Uluru–Kata Tjuta National Parks increased by 33 per cent. The increase at Uluru–Kata Tjuta was partly due to the engagement of two workforce development coordinators (funded by the Department of Education, Employment and Workplace Relations). Ninety-seven Indigenous workers were employed under a memorandum of understanding with the Mutitjulu Community Aboriginal Corporation.
- Wreck Bay Enterprises Ltd (the enterprise arm of the Wreck Bay Aboriginal Community Council) provided \$1.9 million of cleaning, road maintenance and entry station services to Booderee National Park.
- The Director and Wreck Bay Enterprises Ltd completed the agreement on the second round of outsourcing at Booderee, including management of the visitor centre, grounds maintenance and building services. Both parties agreed to delay final implementation until restructures were completed.

## Key Result Area 4 – Use And Appreciation Of Protected Areas

### PBS Target – Greater than 80% of comments received from park users about their visit are positive

- Visitor surveys were undertaken in Kakadu, Uluru–Kata Tjuta and Norfolk Island National Parks. All reserves recorded satisfaction from greater than 80% of park users (Uluru – 96%, Kakadu – 94%; Norfolk Island – 97%).

## Key Result Area 5 – Stakeholders And Partnerships

### PBS Target – Stakeholders and partners are actively involved during the year

- Stakeholders and partners were actively involved and contributed effectively to park management activities. Key stakeholder included national and regional tourism organisations (including the Transport and Tourism Forum and Tourism Australia), industry groups, universities, non-government organisations and community groups.
- Research partnerships continued with a range of organisations such as the Northern Territory Parks and Wildlife Service, CSIRO, Australian Institute of Marine Science, James Cook University, Australian National University, University of Canberra, Charles Darwin University and the Tasmanian Aquaculture and Fisheries Institute.
- Constructive partnerships in managing Commonwealth reserves continued with: local government including Councils, state government parks agencies and other relevant agencies including schools and educational institutions and conservation and land management agencies, and Commonwealth agencies including the Department of Defence, the Attorney-General's Department, the Department of Agriculture, Fisheries and Forestry, and the Australian Customs and Border Protection Service.
- The ANBG and the Centre for Plant Biodiversity Research continued their support for, and involvement, with the Council of Heads of Australian Botanic Gardens and the Council of Heads of Australian Herbaria.

## Key Result Area 6 – Business Management

### PBS Target – Reduction in number of risks identified in Risk Watch Lists as 'extreme', 'very high' or 'high'

- There has been a net reduction in the number of extreme and high risks in risk watch lists of 1% over 2009–10.

### PBS Target – Eight management plans and four implementation schedules in place

- Four terrestrial reserve management plans are in place (Norfolk Island National Park and Norfolk Island Botanic Gardens are two reserves covered by one management plan). Draft management plans are being finalised for Booderee and Christmas Island National Parks and the Australian National Botanic Gardens.
- Four terrestrial reserve implementation schedules are in place. Implementation schedules are not in place for the reserves with expired management plans.

### PBS Target – Number of major injuries to staff, contractors, volunteers and visitors relating to an undertaking of the Director of National Parks

- Five major injuries sustained by parks staff (lacerations and fractures). Two park visitors died (one in Kakadu National Park and one undertaking the Uluru climb) and there were 15 major injuries to visitors (caused by road accidents, heat stress, dehydration and fractures).

### PBS Target – 80 per cent of management prescriptions in management plans subject to technical audits are completed (applies ONLY to those plans that have received a technical audit)

- A technical audit conducted on the implementation of the Australian National Botanic Gardens Management Plan found that 65% of management prescriptions were fully completed during the life of the plan, 23% were partially completed and 12% were not commenced.

### PBS Target – Six parks with climate change strategies in place

- Climate change strategies were completed for Kakadu and Booderee National Parks and the Australian National Botanic Gardens. Draft strategies were also prepared during the year for Uluru–Kata Tjuta and Norfolk Island National Parks. Policies and related to climate change monitoring, mitigation and adaptation are also being incorporated into management plans as they are being drafted.
- Climate change strategies for each park identify actions to address five key objectives:
  - Understanding the implications of climate change
  - Implementing adaptation measures to maximise the resilience of our reserves
  - Reducing our carbon footprint
  - Working with communities, industries and stakeholders to mitigate and adapt to climate change
  - Communicating the implications of climate change and our management response.

### PBS Target – Three actions implemented which reduce greenhouse gas emissions

- Greenhouse gas emissions associated with stationary and transport energy use over the year were estimated to be 5,150 tonnes of carbon dioxide. This is a reduction of around 12% compared with the average emissions over the past three years. Improvements in energy efficiency were largely related to stationary sources, including the installation of solar panels at Kakadu, Norfolk Island and Booderee National Parks. The solar panels at Booderee National Park have generated 4,088 kilowatt hours since November 2009. The closure of a glasshouse at the Australian National Botanic Gardens for renovations also impacted on energy use.
- Developing accurate measurements of greenhouse emissions related to waste remains challenging and estimates were not available for all reserves. Both the Australian National Botanic Gardens and Booderee National Parks have improved their recycling capacity through measures to minimise contamination of recyclable waste.

## Key Result Area 7 – Biodiversity Knowledge Management

### PBS Target – Five per cent increase in website unique users and publications accessed

- The Parks Australia websites ([environment.gov.au/parks](http://environment.gov.au/parks) and [kakadu.com.au](http://kakadu.com.au)) received an increase in visitation by 25% from the previous year with 540,877 'unique' visits for the year (an average of 1,481 'unique' visitors per day). There was also an increase in the number of online publications accessed with 105,181 'unique' views (an average of 288 'unique' views per day).
- Estimates of hits to the Australian National Botanic Gardens website ([www.anbg.gov.au](http://www.anbg.gov.au)) indicate an increase in the use of the site of around 20% over 2009–10.

## Appendix B: Glossary and shortened forms

<b>Anangu</b>	Western Desert Aboriginal person or people (generally those Aboriginal people with traditional affiliations to the Uluru–Kata Tjuta National Park)
<b>ANAO</b>	Australian National Audit Office
<b>ANBG</b>	Australian National Botanic Gardens
<b>Benthic</b>	Marine organisms that live on, in or near the ocean floor
<b>Bininj</b>	Traditional owners of Aboriginal land and traditional owners of other land in Kakadu National Park, and other Aboriginals entitled to enter upon or use or occupy the park in accordance with Aboriginal tradition governing the rights of that Aboriginal or group of Aboriginals with respect to the Park
<b>CAC Act</b>	<i>Commonwealth Authorities and Companies Act 1997</i>
<b>Cetaceans</b>	Whales, porpoises and dolphins
<b>China–Australia Migratory Birds Agreement (CAMBA)</b>	Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>EEZ</b>	Exclusive Economic Zone
<b>Endemic</b>	(Of a taxonomic group) confined to a given region
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
<b>FOI Act</b>	<i>Freedom of Information Act 1982</i>
<b>GIS</b>	Geographic information system
<b>GPS</b>	Global positioning system
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IMCRA</b>	Integrated Marine and Coastal Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature
<b>Japan–Australia Migratory Birds Agreement (JAMBA)</b>	Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment
<b>KRA</b>	Key result area
<b>Migratory Species (Bonn) Convention</b>	Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979)
<b>MoU Box area</b>	An area within Australian waters covered by a Memorandum of Understanding with Indonesia that includes Ashmore Reef and Cartier Island and is open to traditional Indonesian fishers
<b>Pelagic</b>	Species or activities that normally live or occur near the ocean surface or the water column
<b>Korea–Australia Migratory Birds Agreement (ROKAMBA)</b>	Agreement between the Government of Australia and the Government of the Republic of Korea for the Protection of Migratory Birds
<b>Seamounts</b>	Large cone-shaped remnants of extinct volcanoes rising from the ocean floor
<b>Terrestrial</b>	Relating to the land or land-dwelling
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>Wetlands (Ramsar) Convention</b>	Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, 1971)
<b>World Heritage Convention</b>	Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972)

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