

Western Australian Auditor General's Report



Rich and Rare: Conservation of Threatened Species Follow-up Audit



Report 16: September 2017

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Cover picture:
Baudin's cockatoo, an endangered species found in southwestern WA.
Source: DBCA

**Rich and Rare: Conservation of Threatened
Species Follow-up Audit**



**THE PRESIDENT
LEGISLATIVE COUNCIL**

**THE SPEAKER
LEGISLATIVE ASSEMBLY**

RICH AND RARE: CONSERVATION OF THREATENED SPECIES FOLLOW-UP AUDIT

This report has been prepared for submission to Parliament under the provisions of section 25 of the *Auditor General Act 2006*.

Performance audits are an integral part of the overall audit program. They seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, and identify opportunities for improved performance.

This follow-up audit assessed whether the Department of Parks and Wildlife, now the Department of Biodiversity, Conservation and Attractions, had implemented changes to address the concerns identified in my 2009 report.

I wish to acknowledge the staff at the Department who were involved in this audit.

COLIN MURPHY
AUDITOR GENERAL
6 September 2017

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Auditor General's overview

The remarkable biodiversity of Western Australia and the sheer size of our State make conserving our threatened species a very important, but very challenging task. Since I last reported on this area in 2009, the size of the task has increased, with the number of species listed as threatened up 12%, and those possibly threatened up 29%.



The passage of new legislation in 2016 was an important milestone. It provides opportunities for the Department of Biodiversity, Conservation and Attractions (DBCA) to work in new and different ways. However, taking advantage of this legislation, while managing a growing task with constrained resources, makes it critical to prioritise conservation activities and know if they are working.

In that context, my 2009 recommendations to improve how the Department uses its information to prioritise and evaluate its conservation efforts are more relevant than ever. But progress has been disappointing and DBCA still has considerable work to do to put both the information, and the systems to use it, in place.

I have made further recommendations that reflect the ongoing need for change. Without it, DBCA will continue to struggle to show Parliament and the public that scarce resources are being effectively targeted to conserve our world renowned biodiversity.

Executive summary

Introduction

This performance audit follows-up our 2009 report, *Rich and Rare: Conservation of Threatened Species*. We assessed whether the Department of Parks and Wildlife (DPaW), now the Department of Biodiversity, Conservation and Attractions (DBCA), had implemented changes to address the concerns identified in our 2009 report. Our fieldwork included visits to the Wheatbelt and South West regions.

Our 2009 report concluded that in many areas threatened species were not being effectively protected and recovered and that the number of threatened species was rising with only a few species improving.



Source: DBCA

Figure 1: The Eastern Stirling Range Montane Heath and Thicket, a threatened ecological community in WA's Great Southern region

Background and developments since 2009

Western Australia (WA) is nationally and internationally significant for its biodiversity. It has 8 of Australia's 15 biodiversity hotspots as measured by the Commonwealth Department of Environment and Energy. The South West is one of 36 internationally recognised biodiversity hotspots and one of a few in a developed country.

WA covers 253 million hectares, of which 29 million hectares are national parks, marine parks and other reserves managed by DBCA. DBCA is responsible for protecting and conserving the State's natural environment. It is also responsible for protecting and recovering threatened species on reserved, private, commercial, local government and other landholdings.

We addressed the recommendations in our 2009 report to the Department of Environment and Conservation (DEC), which was then the responsible agency. Following a restructure in 2013, DPaW was formed and assumed conservation responsibility. On 1 July 2017, DBCA took on this function.

In 2009, we made 10 recommendations to DEC covering legislation, listing processes, prioritisation and evaluation of conservation activity, and information management and reporting (Appendix 1).

Threatened species are covered by the *Wildlife Conservation Act 1950* (WC Act), which is currently being replaced by the *Biodiversity Conservation Act 2016* (BC Act). Native plants and animals are formally recognised as threatened species when listed under the WC Act (and will be under the BC Act). Listing provides a legal framework for their protection and management. They can also be listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Ecological communities are naturally occurring groups of native plants, animals and other organisms that interact in a unique habitat. They can be formally recognised under the EPBC Act and will be recognised under the BC Act.

A Commonwealth Threatened Species Commissioner was appointed in 2014 and leads the national Threatened Species Strategy 2015 to 2020. DBCA contributes to this strategy through:

- inclusion of several WA species as key targets for recovery action and for recovery funding
- participation in a joint national and state cooperation program to develop common processes and practices to nominate and recover threatened species.

Audit conclusion

The scale of the task facing DBCA has increased since we reported in 2009. The number of threatened species has increased by 12%, in part due to greater knowledge of biodiversity drawn from DBCA's continuing research.

A major positive change since our last audit has been the passing of the BC Act. This was a significant milestone, replacing outdated legislation and bringing WA into line with current conservation practice. When fully enacted it is expected to support DBCA to better manage threatened species, their habitats and threats.

DBCA has also made progress in increasing its commitment to broad-scale conservation and improving its processes for listing threatened species. The new legislation provides more ways to tackle the growing task, but DBCA still has much work to do to address our 2009 findings about reporting, knowledge management and prioritising of its recovery effort.

Key findings

The number of threatened and priority species has increased

Since our 2009 report, the number of threatened species has increased by 12% to 672, while the number of listed threatened ecological communities has remained stable at 66. DBCA also maintains a register of 'priority species' that are possibly threatened but which need more knowledge. WA is the only State to maintain such a register. At January 2017, there were 3,352 priority species, up from 2,604 in 2009. There were also 389 priority ecological communities, up from 255 in 2009. In part this increase is due to DBCA's continuing research providing increased knowledge of the State's biodiversity.

DBCA has less resources for managing threatened species conservation activities

DBCA conservation services including those aimed at threatened species are operating with fewer resources than in 2009. Both expenditure and staffing are below 2009 levels while the conservation task has grown as more species are listed as threatened.

New legislation has been passed to better support conservation activities

In 2009, we recommended that the Department continue to press for legislative change, as it and its predecessor agencies had since 1992. The BC Act received Royal Assent on 21 September 2016 and is being proclaimed incrementally. DBCA does not expect the new related regulations to be finalised until 2018 but is implementing new provisions as they come into force.

The new Act replaces the WC Act, which did not recognise modern conservation categories, ecological communities, or critical habitat. The BC Act provides penalties of up to \$500,000 for individuals and \$2.5 million for corporations, compared to a maximum of \$10,000 under the WC Act.

DBCA delivers broad-scale conservation activity for threatened species, ecological communities and habitats, in line with current practice and the new legislation

Current conservation and protection practice requires action at many levels. These include individual species, local 'patches' and broad geographic areas, or 'landscapes'. The BC Act also gives legal standing to this range of activity. DBCA has been developing a more broad-scale approach focusing on environments while also maintaining key species level actions.

Western Shield is a long-standing broad-scale program that received a Premier's Award in 2016, and aims to reduce the numbers of introduced predators, particularly foxes and feral cats. DBCA has also released the 2011 Kimberley Science and Conservation Strategy, the 2016 Pilbara Conservation Strategy and the 2010 Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands, part of the Goldfields. These involve broad biodiversity and threat management, and have led to changes in regional resourcing.

In addition, DBCA has increased its use of islands and mainland enclosures to protect key animals. It has also created flora 'seed banks' and established new populations in secure locations.

Most threatened species now have recovery plans or interim recovery plans, but these plans are not always resourced, so do not guarantee activity or improved outcomes

There has been an increase in the number of threatened species with recovery plans or interim recovery plans since 2009. At January 2017, 91% of critically endangered species and ecological communities and 55% of all threatened species and ecological communities had a recovery plan or interim recovery plans.

These plans have long been key to DBCA actions to help threatened species or ecological communities survive and recover. However, these plans are not always activated because funding for action does not automatically or systematically follow when they are created.

There has been little progress since 2009 in reserving land for conservation

In 2009, we recommended that the Department improve its approach to reserving land for conservation purposes. This has long been a key departmental objective to protect biodiversity and social values. While there has been some movement in the types and categories of land DBCA manages, we found minimal planning documentation around objectives, identification of reservation targets and processes or procedures.

At June 2016, DBCA managed 29 million hectares of land and water, an increase of 2 million hectares from 2007-08. DBCA can purchase available private land and is the agency that identifies land and initiates the process for reservation. However, this relies on support from other agencies and Ministers. At least 23 instances since 2012 did not receive this support and were therefore not reserved.

Nomination and listing processes have improved

Since 2009, DBCA has improved its process for listing threatened species. This new process has been largely adopted by the national working group as the preferred nomination method for all states, territories and the Commonwealth. Quicker listing reduces the risk of inaction for threatened species.

There are still gaps in the evaluation and reporting of outcomes of activity to conserve threatened species

Knowing outcomes and reporting on results is key for a large, regionally dispersed organisation like DBCA managing complex issues. In 2009, we recommended the Department develop comprehensive reporting frameworks for threatened species.

While there was some good reporting for particular programs we found no coordinated approach to evaluating outcomes, little output reporting, weaknesses in species-level reporting and minimal reporting to senior management. This decreases visibility to senior management and accountability for management of threatened species.

DBCA does not make the best use of its substantial information about threatened species

Seven DBCA divisions deliver 8 interrelated services through 9 geographic regions. This decentralised management structure increases the need for information. However, DBCA has vast amounts of information on threatened species held in multiple locations and in separate systems, some of which are managed locally, making it inefficient to manage. DBCA has recognised the need to improve this approach. It expects to begin implementing new systems and processes by June 2018.

Because DBCA has not documented its prioritisation process, it cannot demonstrate that it is being applied or that resources are directed to highest priorities

Our 2009 report recommended that the Department consider changing how it prioritises species for conservation to ensure existing resources are used to maximum long-term effect. While we acknowledge the difficulty of allocating priorities to elements of complex biological systems, we expected to find a management-approved structured approach to this important activity. However, this was not evident.

DBCA has several levels of administrative, conservation and organisational policies and strategies that identify key principles for regions to plan for conservation, including the need to prioritise action effectively. However, there is no clear articulation or documentation of how this prioritising should be, or is being, done.

Recommendations

DBCA should:

1. As soon as possible, finalise regulations and associated processes and procedures to take full advantage of the powers and intent of the BC Act.
2. By June 2018, complete and begin implementing core responses to its current data management review, which includes:
 - a. all new requirements of the BC Act
 - b. integration of databases
 - c. regional office needs
 - d. management reporting
 - e. recovery plan management
 - f. all relevant information sources.
3. By June 2018, develop and begin implementing reporting and evaluation guidelines to enable effectiveness to be assessed and inform planning for:
 - a. nature conservation plans including regional outputs and outcomes
 - b. recovery plans and recovery actions.
4. Set and communicate clear expectations for regional leaders when prioritising conservation and recovery activities for threatened species, ecological communities, critical habitats and threatening processes.



Source: DBCA

Figure 2: Banksia cuneata, one of the many threatened flora species endemic to WA

Response from the Department of Biodiversity, Conservation and Attractions

Western Australia has a rich and diverse flora and fauna, with a global biodiversity hotspot and eight national biodiversity hotspots. The high diversity, natural fragmentation patterns, extensive spatial scale and considerable development pressures makes the task of managing threatened species and communities substantial, involving complex biological systems and interacting threats. The Department considers that its management of threatened species and communities is effective given the large number of species and communities involved, the complexity of the task and the resources available.

The Department achieved a key outcome in 2016 with the proclamation of the Biodiversity Conservation Act 2016 that provides a modern legislative basis for management of threatened species and communities. It is continuing to work with the State Government to finalise the regulations and other supporting documents, such as Ministerial Guidelines, that will support the management of threatened species and communities and formalise processes for listing of threatened species and communities, critical habitat and threatening processes.

The Department acknowledges there is scope for an increased level of reporting in some situations and seeks continual improvement in this regard, although the Department does not consider that the current level of reporting is a limiting factor in effective threatened species management. Effective prioritisation across all aspects of threatened species management is challenging, and the Department considers that recent development of corporate frameworks and policies provide appropriate guidance for prioritisation of management actions at a range of scales. The Department is continuing to refine and document its processes to support effective decision making regarding conservation actions.

The Department recognises its data management processes reflect a dispersed organisational structure yet considers that the relevant information is available to staff as required. The Department acknowledges that it can take advantage of advances in database design to develop a centralised database containing a range of information on threatened species and has already scoped the development of such a system that will be implemented in a modular fashion as priorities and resources allow.

Audit focus and scope

This follow-up audit assessed progress in the conservation of threatened species in Western Australia since our 2009 report *Rich and Rare: Conservation of Threatened Species*. We followed one line of inquiry:

1. Has the Department of Biodiversity, Conservation and Attractions implemented changes that effectively address the concerns identified in the Rich and Rare Report?

In this audit, we focused on threatened species as listed on the State register of threatened flora and fauna. We also included Threatened Ecological Communities, which were not legislatively recognised at the time of the last audit, but will be once the relevant provisions of the BC Act are enacted. While marine species were excluded in the first audit, we included them in this audit to the extent that processes are common to marine and terrestrial species.

We audited the Department of Parks and Wildlife (now the Department of Biodiversity, Conservation and Attractions). We also met with the Conservation and Parks Commission and WWF – Australia.

We assessed changes in the overall status of Western Australia's biodiversity, legislation, population of listed species and ecological communities, conservation methodologies, implementation of conservation activities and the assessment of the effectiveness of those activities as compared to our findings in 2009.

This was a follow-up performance audit, conducted under section 18 of the *Auditor General Act 2006* and in accordance with Australian Auditing and Assurance Standards. Performance audits primarily focus on the effective management and operation of agency programs and activities. The approximate cost of tabling this report was \$327,537.

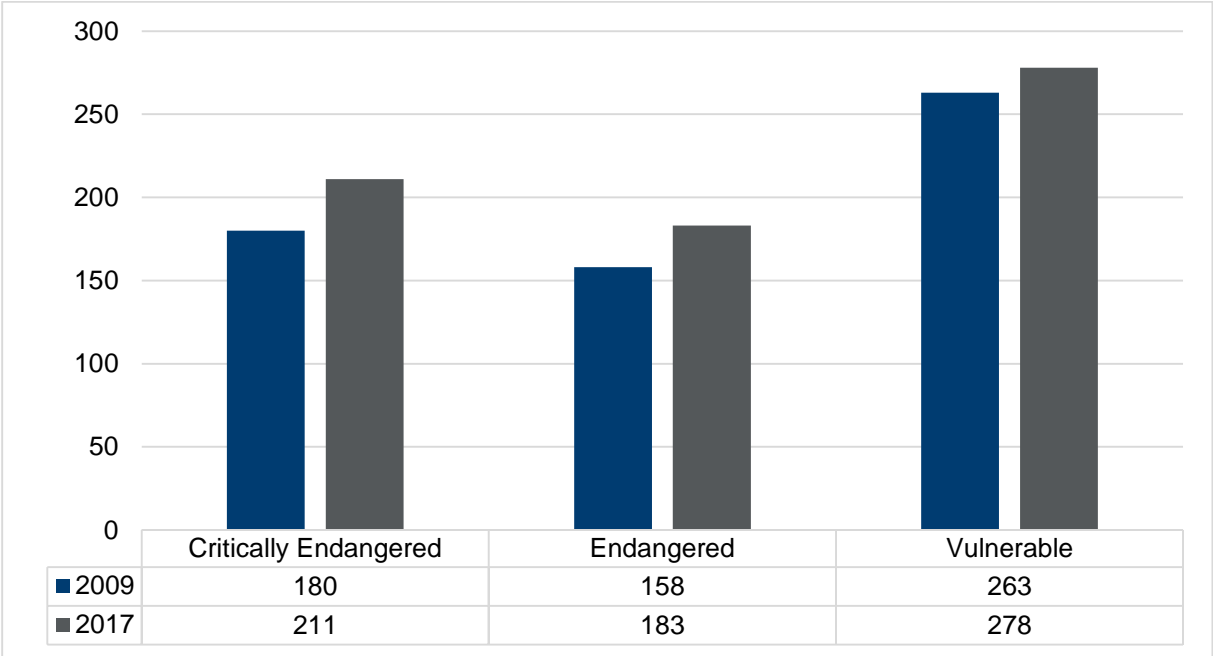
Audit findings

The scale of the task to manage threatened and priority species and ecological communities is large and growing

The number of species listed as threatened has increased

Since our 2009 report, the number of species listed as threatened has increased by 12% to 672. Listed threatened ecological communities has remained stable at 66. DBCA also maintains a register of ‘priority species’ that are possibly threatened but where more information is needed. At January 2017, there were 3,352 priority species up from 2,604 in 2009. There are also 389 priority ecological communities, up from 255 in 2009.

Research and survey work continues to clarify species’ status, registering new ones as well as removing others. DBCA does not have a view on whether there is an overall increase in extinction risk for threatened species. While it has resolved the status of some species, it has added more, resulting in a net increase.



Data: DBCA

Figure 3: Threatened flora and fauna species in 2009 and 2017

DBCA has reduced resources for managing threatened species and conservation activities

DBCA conservation services including those for threatened species, are operating with fewer resources than in 2009, like several areas of public sector activity. Both expenditure and staffing are below 2009 levels while the conservation task has grown as more species and communities are listed as threatened.

DBCA estimated that \$7.7 million was spent on dedicated threatened species activities in 2015-16, however DBCA’s cost coding and time recording methods do not provide a reliable expenditure figure. The same methodology was used in 2007-08 to identify dedicated nominal expenditure of \$8.2 million.

Science and Conservation Division and regional conservation staff numbers have decreased. Staffing has dropped in most regions, but there have been significant increases in the Kimberley and Pilbara, matching an increased statewide policy focus on these regions (Table 1).

Division or region	2009 FTE	2016 FTE	Change FTE #	Change %
Science and Conservation	279	175	-104	-37%
Goldfields	5	5	0	0%
Mid West	37.9	19.9	-18	-47%
Kimberley	15.0	32.7	17.7	118%
Pilbara	20.4	31.2	10.8	53%
South Coast	21.0	16.0	-5	-24%
South West	21.8	18.4	-3.4	-16%
Swan	40.8	30.6	-10.2	-25%
Warren	15.6	13.3	-2.3	-15%
Wheatbelt	42.2	16.1	-26.1	-62%
Total	498.7	358.2	-140.5	-28%

Data: DBCA

Table 1: Division and region staff numbers in 2009 and 2016

Overall, around \$66 million was appropriated for the broad task of conserving habitat, species and ecological communities in 2015-16. Organisational changes since our last report make direct comparisons problematic, but \$82 million was appropriated for the same task in 2007-08. Commonwealth funding to DBCA for nature conservation decreased from \$8 million to \$1 million over the same time.

DBCA does conservation work in line with the new legislation

New legislation has been passed to better support conservation activity

In 2009 we recommended that the Department continue to press for legislative change, which it and its predecessor agencies had done since 1992. The BC Act is therefore a significant development for which DBCA can take some credit. The Act received Royal Assent on 21 September 2016 and is being proclaimed incrementally.

The new Act replaces the WC Act, which did not recognise modern conservation categories, ecological communities, or critical habitat. The new Act provides penalties of up to \$500,000 for individuals and \$2.5 million for corporations, compared to a maximum of \$10,000 under the WC Act.

DBCA does not expect the new related regulations to be finalised until 2018 but is acting under the provisions of the new legislation as they come into effect. Until then, some provisions of the WC Act will apply. Finalising the new regulations and subordinate processes will be important to enable DBCA to make the most of the new Act.

DBCA delivers broad-scale conservation activity for threatened species, ecological communities and habitats, in line with current practice and the new legislation

Current conservation and protection practice requires action on many levels. These include acting for individual species, on local 'patches' and over broad regional or geographic approaches. Further, the new BC Act gives legal standing to this range of activity.

DBCA has been developing a more broad-scale conservation approach focusing on environments while also acting on single species. These broad strategies are primarily driven by a greater understanding of threats and developing ways to manage them. But they also help DBCA cope better with fewer resources. Threats like salinity, weeds, feral animals, and fragmented landscapes are all managed more efficiently at the landscape scale.

DBCA has developed two major regional documents, the 2011 Kimberley Science and Conservation Strategy and the 2016 Pilbara Conservation Strategy. In 2010 it also produced a Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands. These strategies are managed at the regional level and incorporate landscape level biodiversity and threat management plans.

Western Shield is a long-standing broad scale program that received a Premier's Award in 2016. It includes research, relocating native species and baiting of introduced predators, particularly foxes and feral cats. After an internal review in 2014, DBCA set new reporting requirements and a new outcomes-based strategy in February 2017. In 2015-16 Western Shield treated 3.8 million hectares of conservation reserve and state forest with 1.1 million baits at a cost of \$2.7 million.



Source: DBCA

Figure 4: DBCA has improved monitoring and recovery of the iconic but endangered numbat

DBCA has made greater use of enclosures to protect key animals with 5 enclosures (up from 2 in 2009) fencing in 3,100 hectares of land. DBCA also uses Dirk Hartog Island, Bald Island, Gunton Island and the Montebello Islands group, covering around 65,000 hectares, as natural enclosures. These are part of a broader recovery program of introducing or reintroducing a species into an area.

Another broad approach to conservation and protection is to create 'seed banks'. The Threatened Flora Seed Centre holds samples for 79% of threatened plants (up 11% from 2009). DBCA figures show that in 2015-16 it spent \$1.3 million on translocating threatened fauna, flora and seeds. This accounted for about 17% of funds for threatened species.

Most threatened species now have recovery plans or interim recovery plans, but these do not guarantee activity or improved outcomes

There has been a significant increase in the number of threatened species with recovery plans since the 37% in 2009. At 6 January 2017, 91% of critically endangered species and ecological communities and 55% of all threatened species and ecological communities were covered by a recovery plan (Table 2). This reflects DBCA's intent to prioritise critically endangered species.

These plans have long been key to how DBCA sets actions to help threatened species or ecological communities survive and 'recover' to a healthy level. The absence of a recovery plan or interim recovery plan for 45% of threatened species and ecological communities does not preclude conservation action, particularly landscape scale activities.

DBCA uses 'interim recovery plans' when species or communities need action, but where there is insufficient information to create a full 'recovery plan'. Sixty-one percent of listed threatened flora have recovery plans or interim recovery plans. Of these, 233 are interim plans.

DBCA has written single-species, multi-species and ecological community recovery plans. These guide specific actions and recovery teams. DBCA's corporate policies and guidelines, regional 'nature conservation plans', and regional work plans also contribute to species and ecological community recovery.

Species/type	# Threatened	# With recovery plan	% With recovery plan
Flora	424	258	61%
Fauna	248	107	43%
Threatened Ecological Communities	66	41	62%
Total	738	406	55%

Data: DBCA

Table 2: Recovery plan or interim recovery plan coverage 2017

While recovery plans have been an important part of DBCA's work, there is no clear link between having a plan and any expenditure or improved results, in part because the existence of a plan does not automatically trigger funding for conservation activity. A recent Biodiversity Audit showed similar outcomes for species with plans and those without plans.

DBCA reserves land and marine areas as a primary conservation tool, although there has been little progress since 2009

Conserving land and marine territory has long been a key departmental objective to protect biodiversity. In 2009 we recommended that the Department improve its approach to reserving land for conservation purposes.

In 2007-08, DPaW managed 27 million hectares of land and waters which increased to 29 million in 2015-16. About half the increase came from new marine parks. Since 2009, DPaW also acquired 69 parcels of land covering 91,000 hectares at a cost of \$49 million, mainly through offsets from the EPBC Act. Of these, 45 parcels covering 25,000 hectares were purchased to protect Carnaby's cockatoos, at a cost of \$44.7 million.

While there have been some movements in the types of land and waters managed by DBCA, we found minimal departmental documentation, outside of the Kimberley and Pilbara, addressing reserving objectives, identification of reservation targets and processes or procedures. DBCA has an informal goal of meeting the International Convention on Biological Diversity target of reserving 17 percent of land; currently the figure is around 11 percent, although this varies across regions. WA offset funds of \$8 million are currently held by the Department of Water and Environmental Regulation for land purchases.

In 2009 we reported that approximately 6 million hectares, now 6.6 million hectares, of former pastoral leases of conservation value were awaiting reservation. Reservation is conditional on more than one Minister approving or agreeing to the action. We saw at least 23 cases since 2012 where DBCA efforts to reserve land did not receive support from those other Ministers.

Nomination and listing processes have improved

In 2009 we recommended improvements in the process for listing threatened species. DBCA has expanded and clarified the information it requires for nominations, adding specific assessment of geographic range, population size and quantitative analysis indicating

probability of extinction in the wild in line with International Union for Conservation of Nature (IUCN) criteria.

The new approach enables more efficient assessment and timely approval once a species is nominated for threatened species status. A national working group to develop a common nomination and listing method for all states, territories and the Commonwealth has supported and substantially adopted DBCA's new process.

DBCA needs to improve reporting, information management and prioritising of threatened species activity

There are still gaps in the evaluation and reporting of outcomes of activity to conserve threatened species

In 2009 we recommended the implementation of an evaluation framework and systems to assist in measuring the effectiveness of threatened species conservation. While we recognise it is difficult to prove cause and effect in conservation, we note that NSW has developed a program-wide framework to monitor and report on threatened species. Until recently DBCA has made little progress in this area, but is currently part of a National Environmental Science Program research project looking at options to develop a threatened species index.

DBCA publishes only 1 performance indicator: the proportion of critically endangered and endangered species that have recovery plans. This indicator, agreed with the Department of Treasury, is published in its annual report. While there are some examples of good reporting for particular conservation projects, we found no coordinated approach to evaluation of outcomes, weaknesses in species-level reporting, little output reporting and minimal reporting to senior management.

Understanding outputs and outcomes, and reporting on these results is vital in a large, regionally dispersed organisation like DBCA dealing with complex issues. Western Australians also have a legitimate interest in actions to conserve WA's biodiversity as it is a major public asset.

We reviewed a sample of 37 recovery plans, which generally included success criteria and annual reporting, but no review processes, performance indicators or reporting requirements. Without these, effectiveness is hard to assess and future improvements to planning rely to a large extent on personal knowledge and subjective impression rather than organisational knowledge.

Of the 36 plans which required reporting, 7 had not reported in the last 12 months. Departmental practice is to only report against success criteria when plans are reviewed, normally after 5 or 10 years. We note that 10 plans written in 1999-2000 have not been revised. Further, we found no evidence that 18 of the 32 active recovery teams had met in the last 12 months.

There were similar issues with regional nature conservation plans. These are the key guides to conservation activity. Until recently there was no expectation of regular reporting against these plans, although 2 regions reported formally when renewing them in 2014. DBCA has recognised this issue, and is currently working on a process for annual reporting against regional plans, which it expects to be in place by June 2018.

We also found that out of 9 nature conservation plans, 5 had not been approved at the regional level and none were approved by the departmental executive. We expected that these plans would be appropriately approved and routinely reported on.

There are some examples of good output and outcome reporting from particular programs:

- The Western Shield program reported on its outcomes, activities and costs in 2016. This built on a Strategic Review in 2013-14 that identified the need to develop good outcome and activity reporting.
- The North-Kimberley Landscape Conservation Initiative includes a broad landscape system of measuring and reporting progress. This was developed following an internal 2013-14 report that identified the need for improved recording of outputs and outcomes, review, analysis and reporting.

DBCA also produces an annual compendium report for all science projects under way. This includes information about work done for some threatened species, but is more about project progress than species status or outcomes.

In 2015, DBCA completed a Biodiversity Audit of the status of threatened species and communities (after a similar audit in 2002). One hundred and twenty people were involved in 96 workshops over 16 months to collate the information. The audit produced significant species-level information to support regional nature conservation plans.

The Biodiversity Audit included 616 species, and has much information that could be analysed for trend information, although DBCA has not done this systematically.

We did some high level analysis which showed that:

- for 3% of species, DBCA's recovery efforts had exceeded external threats and the number of populations had increased
- for 9%, threats had exceeded DBCA's recovery efforts and the number of populations had fallen
- the top 5 threats to flora were cropping/horticulture, roads and rail, weeds, invasive herbivores and fire
- the top 5 fauna threats were fire, competition from invasive animals, recreational disturbance, invasive predators and mining
- the top 5 threatened ecological community threats were mining, pastoralism, water abstraction, weeds and climate change.



Source: DBCA

Figure 5: The hinged dragon orchid
(*Caladenia drakeoides*)

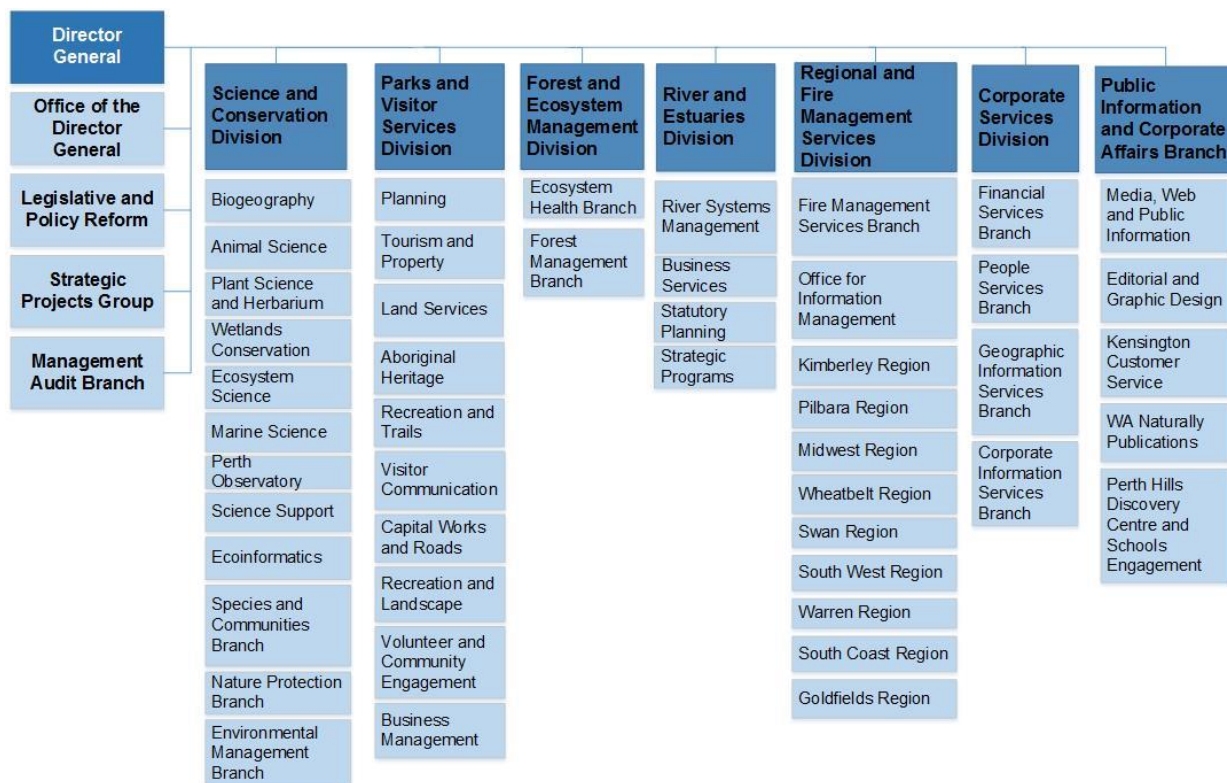
A critically endangered Central Wheatbelt species, one of 61% of threatened flora with a recovery plan or interim recovery plan

DBCA also does not routinely report to senior management on the costs of its recovery or conservation efforts for threatened species. There is a 'bottom-up' cost coding system at the local and regional level which could be used to review costs, but this is not reported to the Science and Conservation Division management. Such information would help choose which actions to pursue and what to budget for.

DBCA does not make the best use of its substantial information about threatened species

At 30 June 2017, seven DPaW divisions deliver 8 interrelated services through 9 geographic regions (Figure 6). Science and Conservation sets high level threatened species strategy, policy and research, and also carries out some conservation activity. Most on-ground management and recovery activity is undertaken at the regional level, although recovery teams also provide input to inform decisions.

To ensure appropriate accountability, this decentralised management structure needs effective information architecture to support it. In 2009 we made several recommendations about improving data collection and use. However, while DBCA has improved some aspects of its information/database management, and is currently scoping a redevelopment of its threatened species management system, considerable risks remain.



Source: DBCA

Figure 6: Departmental organisational structure 30 June 2017

DBCA holds extensive information relevant to threatened species on 9 organisational databases or datasets, of which 3 are core flora, fauna and ecological community databases. We expected that information about each threatened species would be readily accessible to staff, including:

- taxonomic detail
- locations, both geographic and by administrative region/s
- list of key threats
- history of surveys and other monitoring
- recovery plan details, including links to the plan
- recovery team contact details, meeting minutes and annual reports
- recovery activity including outcomes
- planned future activity and timeframes
- links to relevant research papers and requests for future research
- trend information and expert opinion

- references to departmental files (often multiple files in different sites)
- flagging system to enable concerns to be recorded and escalated.

DBCA's current review of information systems is expected to include all these factors.

While DBCA has most of this information in some form, we were concerned that the approach to managing it was problematic. Our observations in the regions confirmed these concerns.

Threatened species information is scattered across the organisation, and depends on staff knowing who to contact to collect it. We asked at one region for details about 3 threatened species and where this information was held. Information on populations, locations, status, trends, recovery plan details, recovery actions and future management and research requirements was sourced from local files, reports and expert knowledge.

These staff considered central databases were not up to date and lacked sufficient information. Another regional visit confirmed the reliance on local databases rather than the central system. Staff had developed local databases for recording flora and fauna monitoring and management activities.

The reliance on paper files, local networks and local hard drives has resulted in replicated effort and inefficiencies. Incomplete information increases the risk of inappropriate management action. Further, several key personnel with decades of organisational experience are nearing retirement, increasing the risk of losing important knowledge.

DBCA has recognised these issues and in late 2016 it began an exercise to identify the information needs for threatened species and communities. It is scoping a modular system which it expects to begin implementing by June 2018 and expand as resources permit.

DBCA has not made important information about threatened species easily accessible. There is no way for stakeholders to simply search for all threatened species, or what activity has been carried out to protect or conserve them or which species have recovery plans (although these are all available online). This limits transparency for Parliament and the public.

We note that other jurisdictions have considerable online public information, which is often searchable and includes activity and outcome reporting. New South Wales has a series of online outcomes and status reports, while Queensland has online information about individual species. Victoria has an internet-based system for information on the management of threatened species and communities, and has published various action statements online.

Because DBCA has not documented its prioritisation process, it cannot demonstrate that it is being applied or that resources are directed to highest priorities

Our 2009 report recommended that DBCA consider changing how it prioritises species for conservation to ensure existing resources are used to maximum long-term effect. While we acknowledge the difficulty of allocating priorities to elements of complex biological systems, we expected to find a structured management-approved approach for this important activity. However, this was not evident.

DBCA has a strong framework for assessing species and communities. It uses the IUCN Red List Categories and Criteria to assess which species warrant listing. This list and process were developed to improve objectivity and transparency in assessing the conservation status of species.

Several levels of administrative, conservation and organisational policies and strategies identify the need to prioritise conservation activity. They also provide a basis for this to occur at regional level, where conservation activity is undertaken. However, there has not been

strong guidance on how this should be done. Better articulating how DBCA expects this to be done, and documenting the process, will support regional leaders more effectively, and improve accountability and reporting.

The strategic framework includes high-level goals and principles, and Regional Nature Conservation Plans set further targets and actions. Each region must decide which conservation activity to undertake, in which locations and for which species or ecological communities. Similarly, the Science and Conservation division must decide which plans to write, what research is needed and which surveying to carry out on priority species.

Each region and scientific area makes these prioritisation decisions in different ways. While a number of regions have developed particular prioritisation tools, there is inconsistency across the department. We also noted that prioritisation does not necessarily consider all threatened species and threatened ecological communities and that the reasons for this were not documented.

The South West Nature Conservation Plan refers to significant knowledge gaps causing it to be ineffective in prioritising effort and resources. Similarly, the Western Shield Strategic Review 2013-14 found that Western Shield was operating without a State strategic framework for fauna conservation. It recommended developing a State fauna conservation strategy to set ecological targets for species recovery, priorities and show the project's net benefit to fauna conservation.



Source: DBCA

Figure 7: The arid bronze azure (*Ogyris subterrestris petrina*), a critically endangered Goldfields and Wheatbelt butterfly

Appendix 1: Summary of performance against recommendations from *Rich and Rare: Conservation of Threatened Species*

Recommendations that DEC (DBCA) should:	Progress	Implemented
1. Continue its efforts to replace the <i>Wildlife Conservation Act 1950</i> with a new Biodiversity Conservation Act	The <i>Biodiversity Conservation Act 2016</i> received Royal Assent on 21 September 2016 and is being proclaimed incrementally. DBCA does not expect the new related regulations to be finalised until 2018 but is implementing new provisions as they come into force.	Yes
2. Develop and implement strategies to get the information needed to determine the status of the growing number of priority species	DBCA continues to gather information to determine the status of priority species. The number of priority species has continued to grow as more species are recognised as requiring evaluation, although many have been removed as more information is obtained.	Yes
3. Identify opportunities to reduce the time required to nominate and list species as threatened	DBCA has revised the State nomination form, which has been largely adopted by the other states and the Australian Government. DBCA has also introduced an abridged form for aligning WA and Commonwealth lists.	Yes
4. Consider changing how it prioritises species for conservation attention to ensure existing resources are used to maximum long-term effect	Strategy and policy documents set principles for planning, management and activity. These include the need to prioritise for effective and efficient use of resources. The Department recognises the need to improve the way these expectations are shared with regional leaders. We note that NSW has developed a program-wide framework for monitoring and reporting on the outcomes of projects and actions for threatened species.	Partly
5. Consider the use of 'conservation advices' or similar immediate action statements to ensure conservation action can begin more quickly	Recovery plans remain DBCA's preferred method of threatened species conservation planning, but they consider that Interim Recovery Plans take the role of 'conservation advices' to provide more immediate recovery activity.	Yes
6. Continue to identify and acquire land of conservation value and work with other agencies to achieve reservation more quickly	The Department has continued to identify and acquire land mainly as a result of environmental offsets. There are 6.6 million hectares of former pastoral leases that have been acquired but are unreserved. Reservation of lands requires agreement across government and this has prevented the reservation of some land for conservation.	Partly
7. Develop a system to identify and manage habitat critical to threatened species survival	Critical habitat is identified in recovery planning, although it currently has no legislative basis. These processes will be developed for proclamation of this part of the BC Act.	No

8. Develop and implement a database to record all threatened species recovery actions and monitor progress against recovery plans	DBCA does not have a central system to record recovery actions, but does have substantial information about threatened species and is reviewing its information needs.	No
9. Implement an evaluation framework and supporting systems to assist in measuring threatened species conservation effectiveness	An evaluation framework for measuring biodiversity outcomes for a landscape scale program has been developed and implemented in the North Kimberley, but not elsewhere. Reporting against recovery plans is inconsistent and the standard of reporting variable. There is a lack of management level reporting of outcomes.	Partly
10. Ensure information systems contain reliable and comprehensive data on threatened species and their progress.	DBCA has made improvements to its information system since 2009 and is currently rescoping its information databases to provide a more effective management system.	Partly

Auditor General's reports

Report number	2017 reports	Date tabled
15	Opinion on Ministerial Notification	6 September 2017
14	Non-Clinical Services at Fiona Stanley Hospital	16 August 2017
13	Audit of Journal Entries and Property, Plant and Equipment Using Data Analytic Procedures	19 July 2017
12	Information Systems Audit Report	29 June 2017
11	Opinion on Ministerial Notification	29 June 2017
10	Timely Payment of Suppliers	21 June 2017
9	Opinion on Ministerial Notification	8 June 2017
8	Management of Medical Equipment	25 May 2017
7	Audit Results Report – Annual 2016 Financial Audits – Universities and TAFEs – Other audits completed since 1 November 2016	11 May 2017
6	Opinions on Ministerial Notifications	13 April 2017
5	Accuracy of WA Health's Activity Based Funding Data	11 April 2017
4	Controls Over Purchasing Cards	11 April 2017
3	Tender Processes and Contract Extensions	11 April 2017
2	Opinion on Ministerial Notification	6 April 2017
1	Opinion on Ministerial Notification	30 March 2017

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