



Western Australian Auditor General's Report

Rich and Rare: Conservation of Threatened Species

Report 5 – June 2009





**THE PRESIDENT
LEGISLATIVE COUNCIL**

**THE SPEAKER
LEGISLATIVE ASSEMBLY**

PERFORMANCE EXAMINATION – RICH AND RARE: CONSERVATION OF THREATENED SPECIES

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

Performance Examinations are an integral part of the overall performance auditing program and seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities thereby identifying opportunities for improved performance.

The information provided through this approach will, I am sure, assist Parliament in better evaluating agency performance and enhance parliamentary decision-making to the benefit of all Western Australians.

A handwritten signature in black ink, appearing to read 'C. Murphy'.

COLIN MURPHY
AUDITOR GENERAL
10 June 2009

Contents

Auditor General's Overview	4
Executive Summary	5
Agency Response	8
DEC is responsible for conserving Western Australia's globally significant biodiversity	9
The majority of DEC's threatened species conservation activities are not supported by legislation	13
An increasing number of species in Western Australia are threatened with extinction and few are improving	17
Recovery action is not occurring for most of Western Australia's listed threatened species	22
Multi-species approaches are an effective response to the increasing number of threatened species	27
DEC cannot demonstrate that all of its threatened species conservation activities are effective	36

Auditor General's Overview

Western Australia (WA) is internationally recognised for its biodiversity, much of which occurs nowhere else in the world. WA has also grown rapidly, and the state has to balance the needs of our environment with those of development to ensure future generations can enjoy our state's richness. The people of WA are increasingly interested in our biodiversity, and thousands of community volunteers help the government to conserve our native species.

The Department of Environment and Conservation's (DEC's) approach to conserving our threatened species is under significant strain as the number of threatened species continues to grow. The difficulty in conserving so many threatened species is recognised across Australia, though WA in particular faces serious challenges given its size and the fact that it contains eight of Australia's 15 biodiversity hotspots.

In this context, maintaining the right balance between programs that benefit large numbers of species at once with those that target individual species will be essential. DEC can demonstrate that some programs have been successful and improved the status of a number of species, but it is important that the effectiveness of all threatened species activities is understood.

Significant changes to species occur over long timeframes and it may take decades before we see the effect of today's conservation actions. While DEC is primarily responsible for our threatened species, successful conservation is also dependent on the long-term support of other agencies, corporations and the community.

Executive Summary

Introduction

Western Australia (WA) is internationally significant for its biodiversity, of both flora (plants) and fauna (animals). WA has over half of Australia's biodiversity hotspots and the South West is internationally recognised for its biodiversity.

The Department of Environment and Conservation (DEC) is the primary agency responsible for conserving this biodiversity. One of DEC's key objectives is "to protect, conserve and, where necessary and possible, restore Western Australia's biodiversity." DEC estimates that in 2007-08, it spent \$8.2 million on activities directly related to threatened species. These funds were spent on evaluating the conservation status of species, developing and implementing recovery plans, monitoring species and managing data.

DEC has other areas of activity which influence the conservation of threatened species. For example, creating reserves protects threatened species habitat, and biodiversity inventory and assessment improves knowledge of existing and new threatened species. DEC's nature conservation programs can also address processes that pose risks to threatened species. DEC's programs to manage dieback and salinity are an example of this. These programs are not targeted at threatened species directly, but contribute to their conservation.

We focused on whether DEC is effectively protecting and recovering threatened species, whether it has clear strategies, plans, policies and procedures in place to support conservation activities, and whether those activities are conducted in line with relevant legislation, plans, policies and procedures. We included terrestrial threatened species and excluded marine species.

Conclusion

In many areas DEC is not effectively protecting and recovering threatened species. The number of threatened species is rising and only a few species are improving. Recovery action is not happening for most threatened species. The majority of resources and effort are allocated to critically endangered species, placing vulnerable and endangered species at risk of further decline.

DEC has some successful programs to address broad scale threats to multiple species, but in other areas that underpin conservation, such as habitat protection, DEC is facing significant challenges.

Many of DEC's threatened species activities are not enabled by existing legislation and DEC has created policies to cover these gaps. The *Wildlife Conservation Act 1950* does not establish a process for listing and recovering threatened species and does not provide species with adequate protection.

DEC cannot demonstrate the overall effectiveness of its threatened species conservation activities. This limits assurance that it has effective management and conservation processes and programs to ensure the protection and recovery of WA's threatened species.

Key findings

- *Since 1987 DEC and its predecessor agencies have sought to replace the 1950 Wildlife Conservation Act with new legislation that would provide greater support for conserving biodiversity.*
- *Current legislation does not include a process for listing species as threatened and for recovering those species. Instead, threatened species are identified and recovered using DEC's internal processes, but these processes lack the transparency and accountability of legislated processes.*
- *601 species in WA are listed as threatened with extinction and this number is increasing. Only a handful of species are improving.*
- *Lack of information and a time consuming process mean species are not protected as quickly as possible; DEC does not coordinate species survey work to meet information requirements for listing species as threatened.*
- *Only one in five threatened fauna and less than half of threatened flora have a recovery plan, while full implementation of the plans that are in place often does not occur. Without a recovery plan, the needs of threatened species may not be identified and addressed.*
- *DEC prioritises recovery plans and actions towards critically endangered species. However, this leaves vulnerable and endangered species at increased risk of decline.*
- *Multi-species approaches to conservation are an effective response to the growing number of threatened species. DEC has a number of multi-species programs.*

- *Creating reserves is a key habitat conservation mechanism, but less than half the amount of land agreed under the national target has been reserved in WA. On average, it takes a decade for acquired land to become a reserve.*
- *State and Commonwealth threatened species lists are not aligned and 190 WA species do not receive all available protection. DEC is awaiting the Commonwealth's review of information supporting the inclusion of state threatened species on the Commonwealth list.*
- *DEC has not identified habitat critical to the survival of all threatened species. Without this information, DEC's capacity to protect land of high conservation value is restricted.*
- *DEC cannot demonstrate the effectiveness of its threatened species conservation activities for all threatened species.*
- *Information on many threatened species is not current and reliable and information systems are not integrated.*

Recommendations

DEC should:

- continue its efforts to replace the *Wildlife Conservation Act 1950* with a new Biodiversity Conservation Act
- develop and implement strategies to get the information needed to determine the status of the growing number of priority species
- identify opportunities to reduce the time required to nominate and list species as threatened
- consider changing how it prioritises species for conservation attention to ensure existing resources are used to maximum long-term effect
- consider the use of 'conservation advices' or similar immediate action statements to ensure conservation action can begin more quickly
- continue to identify and acquire land of conservation value and work with other agencies to achieve reservation more quickly

- **develop a system to identify and manage habitat critical to threatened species survival**
- **develop and implement a database to record all threatened species recovery actions and monitor progress against recovery plans**
- **implement an evaluation framework and supporting systems to assist in measuring threatened species conservation effectiveness**
- **ensure information systems contain reliable and comprehensive data on threatened species and their progress.**

Agency response

Western Australia is a huge, sparsely populated state, with rich and diverse wildlife facing threatening pressures that are often complex and interacting. Remedies often require extensive scientific research and decades of effort.

Changes to the conservation status of a species don't necessarily mean that the situation has deteriorated – sometimes we just know more. For example, the gazetted list of presumed extinct flora has dropped from 53 species in 1991, to 13 species today. Surveys have rediscovered most of those species once thought to be extinct, but these and other discoveries have increased numbers on the threatened species lists. The Department of Environment and Conservation (DEC) acknowledges that improvements could be made to its response to the massive challenge of threatened species conservation.

DEC welcomes the findings that reinforce the need for modern biodiversity conservation legislation, the need to improve the conservation reserve system and the trend to multi-species approaches in the conservation of threatened species.

DEC is responsible for conserving Western Australia's globally significant biodiversity

Western Australia has over half of Australia's biodiversity hotspots, and Australia is one of only 17 'megadiverse' countries in the world

Western Australia (WA) is internationally significant for its biodiversity, of both flora (plants) and fauna (animals). WA has eight of Australia's 15 biodiversity hotspots and the South West is one of the world's 34 recognised biodiversity hotspots. The number of species in WA is enormous by international comparison; for example, there are more species of flowering plant in the Fitzgerald River National Park than in the whole of the United Kingdom.

Australia is home to between 600 000 and 700 000 species, many of which are found nowhere else in the world. About 84 per cent of plants, 83 per cent of mammals, and 45 per cent of birds are endemic. Australia is also one of 17 countries described as being 'megadiverse'. This group of countries has less than 10 per cent of the earth's surface, but supports more than 70 per cent of its biological diversity.

Australia is one of the only 'megadiverse' countries in a position to study and conserve its biodiversity effectively. The Australian Academy of Science notes that the other countries unfortunately do not have the degree of development, specialist knowledge and national wealth needed to be able to study and conserve their biodiversity.

Threatened species activities are part of DEC's broader nature conservation programs to conserve WA's biodiversity

DEC is responsible for conserving Western Australia's biodiversity; DEC was appropriated \$82 million of state funding for nature conservation in 2007-08

DEC is the primary agency responsible for protecting and conserving the state's environment. One of DEC's key objectives is "to protect, conserve and, where necessary and possible, restore Western Australia's biodiversity".

DEC was appropriated \$82 million in 2007-08 for its Nature Conservation service. These funds were provided to develop and implement programs for the conservation of biodiversity, including threatened species and ecological communities. In addition, DEC received over \$27 million in grants for nature conservation, mostly from the Commonwealth Government.

DEC spent \$8 million on direct threatened species activities in 2007-08

DEC estimates that in 2007-08, it spent \$8.2 million on activities directly related to threatened species. These funds were spent on evaluating the conservation status of species, developing and implementing recovery plans, monitoring species and managing data. Most of these activities occurred at a regional level, with DEC's regional offices spending \$4.3 million on threatened species conservation.

Much of the \$8.2 million was derived from state funding under the 'Saving our Species' program. This two-year \$15 million program commenced in 2006-07 and targeted key biodiversity conservation issues where significant long-term results could be achieved from short-term strategic action. When funding for the program ceased in 2007-08, DEC reallocated funds internally to continue to directly support threatened species. However, DEC advised that it will be unable to fund the program in 2009-10.

Broader nature conservation activities have a significant impact on threatened species

DEC's Nature Conservation service aims to successfully recover threatened species and communities, while also preventing more species or communities from becoming threatened, or any species becoming extinct as a result of human action or inaction. Within the Nature Conservation service, the Species and Communities branch is responsible for coordinating threatened species activities. The branch works closely with DEC's Science and Regional Services divisions.

The Nature Conservation service of DEC has five key focus areas:

- biodiversity inventory and conservation assessment
- terrestrial and marine reserve systems
- off-reserve biodiversity conservation and sustainable use
- recovery of threatened species and communities
- partnerships, public appreciation, compliance and support.

Activities in all five areas influence the conservation of threatened species (Figure 1). For example, threatened species may live on reserves and biodiversity inventory and assessment contributes to the knowledge of threatened species.

DEC’s nature conservation programs can also address processes that put threatened species survival at risk. For instance, DEC has programs in place to manage and mitigate dieback and address salinity. These programs are not targeted specifically at threatened species recovery, but contribute to the conservation of biodiversity.

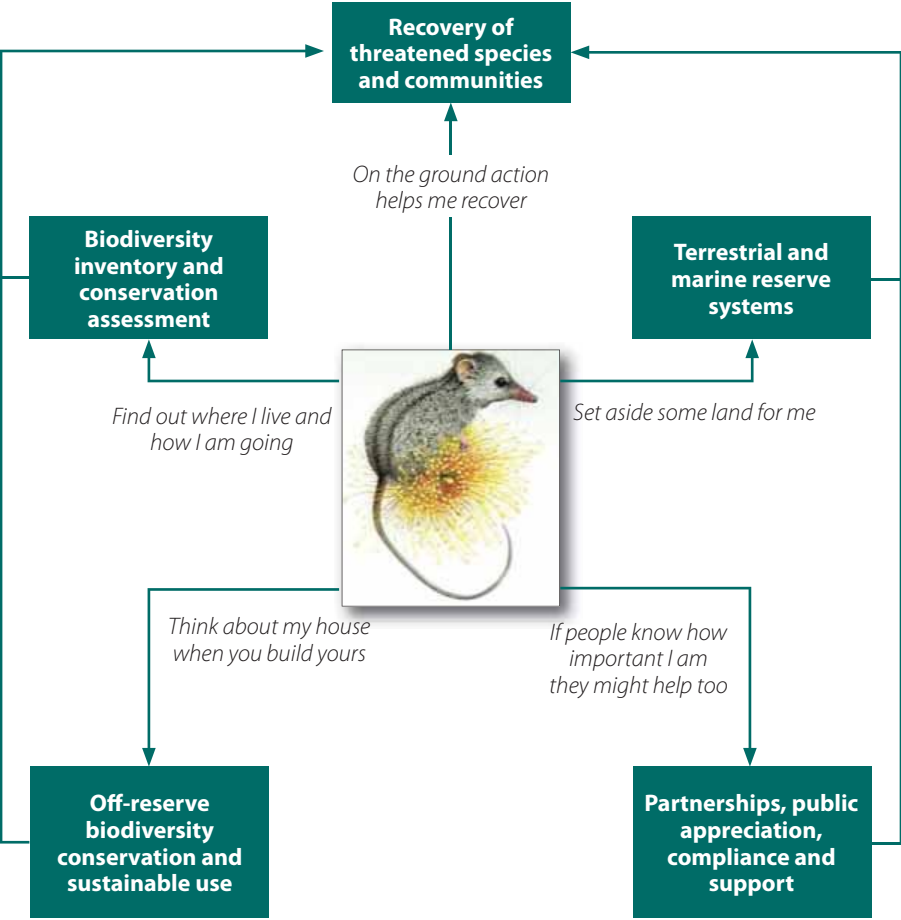


Figure 1: Impact of DEC’s nature conservation activities on species conservation

Broad nature conservation activities significantly affect threatened species.

Source: OAG

Examination focus and approach

The focus of this examination was on whether DEC has effective management and conservation processes and programs to ensure the protection and recovery of WA's threatened species. In particular, we focused on three criteria:

- Does DEC have clear strategies, plans, policies and procedures in place to support threatened species conservation activities?
- Does DEC undertake threatened species conservation activities in line with relevant legislation, plans, policies and procedures?
- Is DEC effectively protecting and recovering threatened species?

The scope of the examination included the identification, protection and recovery of threatened species. While we did not examine the Department's Nature Conservation service as a whole, we have reviewed aspects of nature conservation activities to the extent to which they directly affect threatened species.

In conducting the performance examination we reviewed information for the five year period from 2004-08. We:

- interviewed key agency staff and stakeholders
- visited a sample of DEC's regional offices and viewed examples of its conservation activities
- conducted file, data and document review and analysis.

The scope of the examination included terrestrial threatened species and excluded marine species.

The examination was conducted with regard to the Australian Standard on Assurance Engagements (ASAE 3500 Performance Engagements).

The majority of DEC's threatened species conservation activities are not supported by legislation

Findings

- *Since 1987 DEC and its predecessor agencies have sought to replace the 1950 Wildlife Conservation Act with new legislation that would provide greater support for conserving biodiversity.*
- *Current legislation does not include a process for listing species as threatened and for recovering those species. Instead, threatened species are identified and recovered using DEC's internal processes, but these processes lack the transparency and accountability of legislated processes.*

Recommendations

DEC should:

- **continue its efforts to replace the *Wildlife Conservation Act 1950* with a new *Biodiversity Conservation Act*.**

The *Wildlife Conservation Act 1950* is outdated and restricts DEC's ability to effectively conserve threatened species

The *Wildlife Conservation Act 1950* (the Act) is the primary Western Australian legislation for the conservation of threatened species. The Act is nearly 60 years old and does not support the majority of DEC's threatened species conservation activities. In particular, the Act does not establish a process for listing and recovering threatened species and does not provide species with adequate protection.

DEC has developed policies and processes to support its activities where legislation does not. However, the use of internal processes is less transparent and accountable than legislated processes.

DEC has taken steps to update the Act; a replacement Act was first released as a green bill in 1992

DEC has taken steps to have the Act replaced and was given approval to amend the Act in 1987. This culminated in the release of a *Wildlife Conservation Bill* for public comment in November 1992. This bill did not progress. In June 1999, approval was granted to draft a *Biodiversity Conservation Bill*. Although public consultation occurred and DEC has developed drafting instructions, a Bill was not presented to Parliament prior to the change of government in September 2008.

Our review of DEC's threatened species conservation activities identified many processes not supported by legislation

We examined DEC's key threatened species activities against the Act to identify areas where DEC is not supported. Where gaps exist in the Act we have acknowledged other legislation and/or DEC policy that supports DEC's current conservation approach.

WA does not have a legislated process for listing species as threatened and recovering those species

The Act does not support DEC's current process for identifying and listing threatened species (Figure 2). It also does not require DEC to take action to recover these species once they are listed. The Act only provides that the Minister for the Environment may declare species to be specially protected. These species are then formally listed as threatened.

DEC's policies establish the Western Australian Threatened Species Scientific Committee to review nominated species and recommend listings to the Minister.



Figure 2: Identification and listing process

DEC's identification and listing process is not supported by existing legislation.

Source: OAG

DEC policy also sets out processes for threatened species recovery including the development of recovery plans and programs to address threats. None of these are covered by the existing legislation (Figure 3).



Figure 3: Recovery process

DEC's recovery activities are not supported by legislation.

Source: OAG

The Act does not provide adequate protection to threatened species

Once a species is declared specially protected and listed, the Act outlines measures to protect that species. However, these are largely inadequate, placing threatened species at risk. In the case of declared rare flora, the Act protects the plants and their immediate habitat. In the case of fauna, the maximum penalty for illegally taking the fauna increases from \$4 000 to \$10 000. There is no penalty under the Act for the destruction of fauna habitat.

In addition to the Act, DEC also administers the *Conservation and Land Management Act 1984* and the *Environmental Protection Act 1986*. These acts can provide additional protection for threatened species (Figure 4).

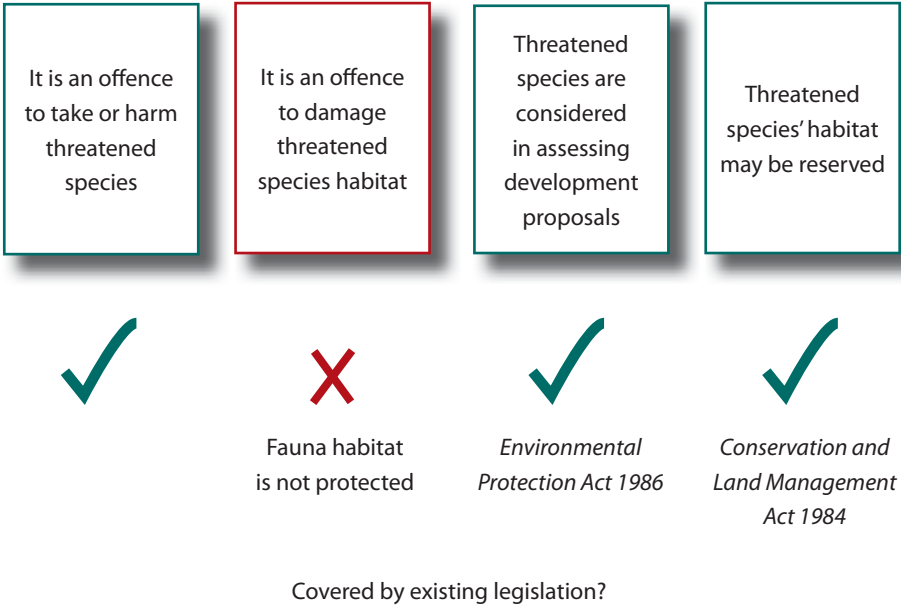


Figure 4: Protection mechanisms
Threatened species may be protected through other legislation.

Source: OAG

An increasing number of species in Western Australia are threatened with extinction and few are improving

Findings

- *601 species in WA are listed as threatened with extinction and this number is increasing. Only a handful of species are improving.*
- *Lack of information and a time consuming process mean species are not protected as quickly as possible; DEC does not coordinate species survey work to meet information requirements for listing species as threatened.*

Recommendations

DEC should:

- **develop and implement strategies to get the information needed to determine the status of the growing number of priority species**
- **identify opportunities to reduce the time required to nominate and list species as threatened.**

In WA, 601 species are listed as threatened, a high proportion of which are critically endangered

In 2008, there were 601 listed threatened species in WA. DEC categorises threatened species according to internationally recognised criteria based on the level of threat the species faces. Critically endangered species are at extremely high risk, endangered at very high risk, and vulnerable at high risk of extinction in the wild.

Thirty per cent of WA's threatened species are critically endangered, 26 per cent are endangered and 44 per cent are vulnerable. This distribution of threatened species does not align with the international situation; WA has a much higher proportion of critically endangered species (Figure 5).

At an international level, the proportion of threatened species in each category of threat reduces as the level of threat increases. Over time, conservation activities should result in a strengthening of this distribution, as species recover.

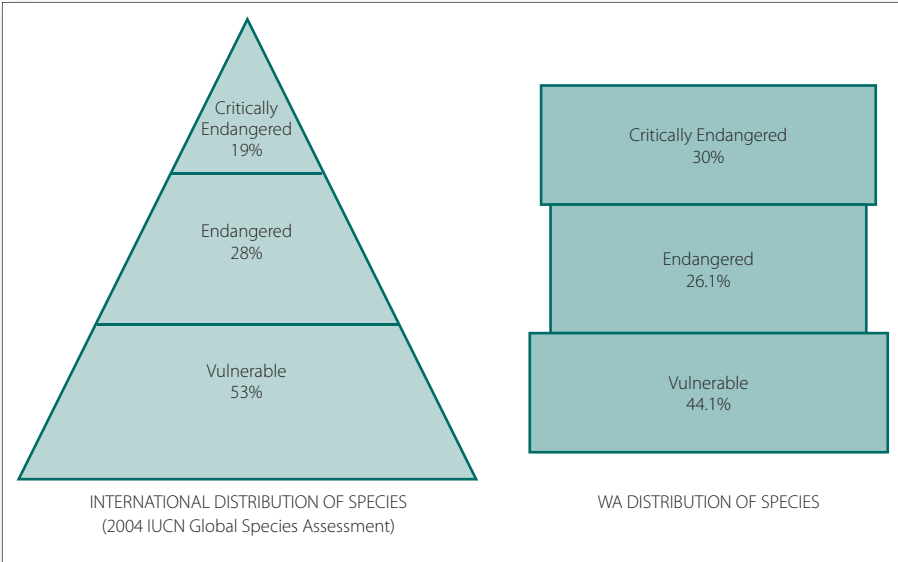


Figure 5: Western Australia's threatened species distribution

Western Australia's distribution of threatened species does not align with the international situation.

Source: OAG

The number of threatened species is increasing and few species are improving

The number of listed threatened species increased by nine per cent between 2004 and 2008 (Figure 6). There is little evident improvement in the condition of individual threatened species, although no new species have been added to the 'presumed extinct' list since 2004.

In 2007-08 DEC reported that only four threatened species (0.07 per cent) were moved to a lower risk category (for example, from endangered to vulnerable). Since 2004, one species was removed from the presumed extinct list as new populations were discovered. Currently, 32 species are listed as presumed extinct.

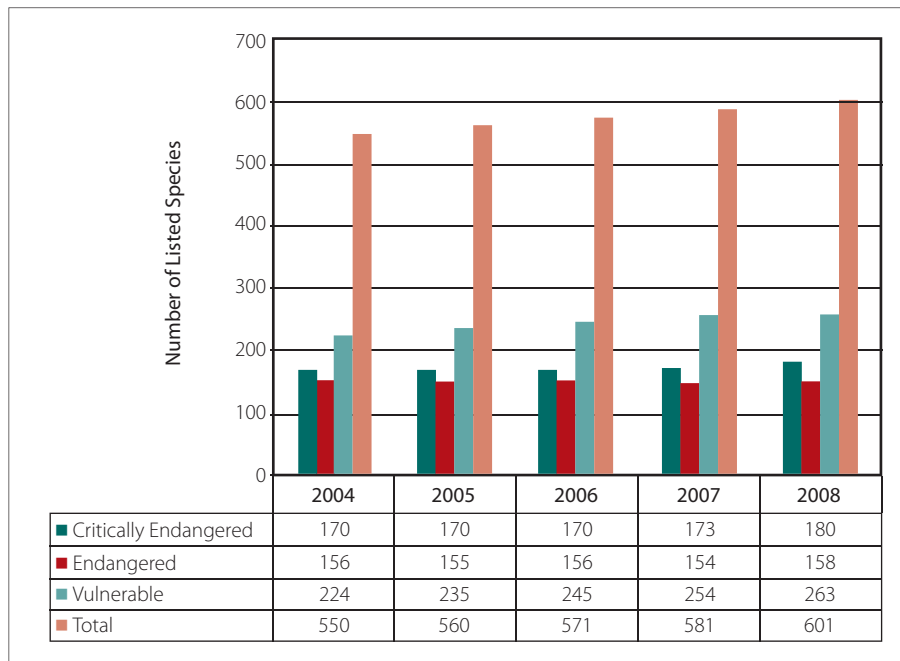


Figure 6: The number of listed threatened species by threat category 2004-08

The number of listed threatened species has increased by over nine per cent in the five years to 2008.

Source: OAG

The number of threatened species is thought to be significantly understated

The 2007 State of the Environment report concluded that there is insufficient knowledge about biodiversity in WA and that the listing process is incomplete and under-represents the true number of threatened species.

At 30 June 2008, DEC had identified 2 604 species that it classed as priority for further research to understand their status. In the last five years, 351 species have been added to the list of priority species. A large proportion of priority species are likely to be classed as threatened once sufficient information is gathered.

A species can remain on the priority list for up to 10 years before sufficient information is collected to enable its status to be determined. This information is gathered through survey work undertaken by conservation officers, volunteers and external researchers.

Information gathering for species could be better coordinated to ensure species are nominated for listing and protected quickly

There is no coordinated state-wide survey strategy to ensure the status of threatened and priority species is understood

Priority species are the next wave of threatened species for DEC to conserve. They cannot be protected under the Act until they are listed as threatened, and are not listed until DEC has the required information (in urgent situations the Minister can list a species while DEC gathers further information).

DEC needs to undertake survey work to support the listing of a species as threatened, or any changes between threat categories. However, DEC does not have a research strategy to drive survey work for threatened and priority species. Currently, DEC does not direct regional offices to undertake specific survey work. In addition, although DEC ensures it receives copies of external research reports, it does not direct researchers to areas of need. By using this approach, DEC is reactive to the information it receives and cannot prioritise survey work.

DEC's Science Division has developed a Strategic Plan for Biodiversity Conservation Research 2008-17 which identifies future directions and priorities. A key action in the plan is to undertake the research needed to resolve the conservation status of listed threatened and priority species by December 2012.

Species are not nominated for protection as soon as sufficient information is gathered; nominations are reactive and driven by urgent threats

DEC does not regularly review its existing survey work for adequacy and nominate species accordingly. DEC advised that unlisted species are reviewed when there is an urgent threat, such as a proposed development. Nominations may be developed if sufficient information is provided in the development assessments. Unless listed as threatened, species are not afforded special protection under the Act. Listing also results in extra protection under other legislation.

Sometimes adequate survey work had occurred to nominate a species, but there were insufficient resources to develop the nomination. The time taken to develop a nomination for listing a species as threatened is not routinely recorded. DEC advised that the nominations process is time consuming and requires significant review and consolidation of survey work. While it is important that the integrity of the list is maintained, the process for listing should ensure threatened species are protected as soon as possible.

Recovery action is not occurring for most of Western Australia's listed threatened species

Findings

- *Only one in five threatened fauna and less than half of threatened flora have a recovery plan, while full implementation of the plans that are in place often does not occur. Without a recovery plan, the needs of threatened species may not be identified and addressed.*
- *DEC prioritises recovery plans and actions towards critically endangered species. However, this leaves vulnerable and endangered species at increased risk of decline.*
- *Effective prioritisation of species for plan development is increasingly important because less funding is likely to be available in future for recovery planning.*
- *Other agencies are not obligated to consider recovery plans.*

Recommendations

DEC should:

- **consider changing how it prioritises species for conservation attention to ensure existing resources are used to maximum long-term effect**
- **consider the use of 'conservation advices' or similar immediate action statements to ensure conservation action can begin more quickly.**

Planning and implementation of recovery activities is inadequate and recovery plans are less likely to be funded in future

Most threatened species do not have a recovery plan

In January 2009 only 226 (37 per cent) of listed threatened species had a recovery plan, with one in five threatened fauna and less than half of threatened flora having a plan (Figure 7). Under DEC's current approach, without a recovery plan a threatened species' conservation needs may not be identified and addressed.

Recovery plans are developed to enable the ongoing conservation of threatened species and set out the management actions necessary to maximise a species' chances of long-term survival.

Recovery plans can be full or interim. Approximately 94 per cent of existing recovery plans are interim. DEC advised that interim recovery plans are developed when threatened species require recovery action in the short-term but DEC is lacking information to prepare a full plan. One recovery plan can also cover multiple species. For example, 21 species of snail are addressed in a single plan.

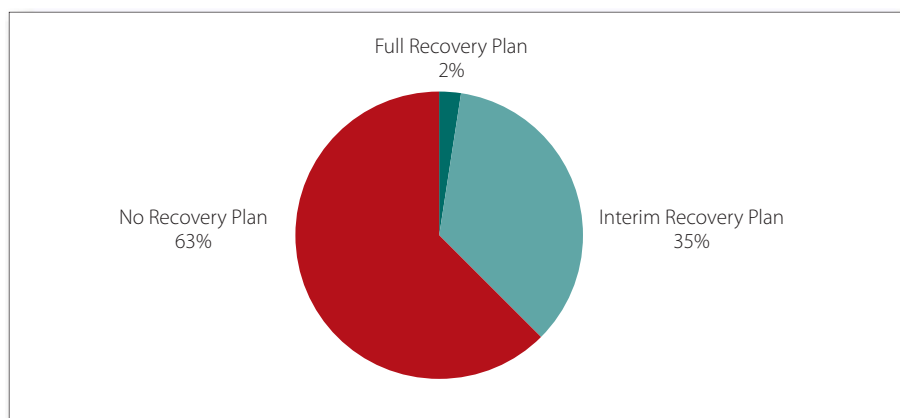


Figure 7: Percentage of listed species with recovery plans

The majority of threatened species do not have a recovery plan.

Source: OAG

Recovery plans are often not implemented

DEC is unable to determine the extent to which recovery plans have been implemented, as its records are decentralised and not easily analysed. DEC advised that not all threatened species have recovery work undertaken each year and the majority of recovery plans are only partly implemented.

Actions for implementation within plans are decided by DEC's regional offices. High priority actions are included in each region's yearly plan. DEC funds regional plans based on state-wide priorities. Factors for deciding which actions are implemented include:

- the threat category of the species (critically endangered have priority)
- the urgency of existing threats
- availability of funding
- availability of DEC staff.

DEC spent \$8 million on threatened species activities in 2007-08 but implementing existing recovery plans would cost \$15 million

DEC has estimated it would cost \$15 million to implement existing recovery plans. However, DEC also estimated that in 2007-08, it spent \$8.2 million in total on all threatened species activities. DEC writes recovery plans before funding is secured for implementation, usually because it receives Commonwealth funds to write the plan.

The Commonwealth funding model has changed and funds are less likely to be available for recovery plans

The Commonwealth has recently changed its funding model for threatened species conservation (from the 'Natural Heritage Trust' to 'Caring for our Country'). In 2007-08, DEC received over a million dollars of Commonwealth funding specifically for recovery plan implementation. Under the new funding arrangements, the Commonwealth is focusing on multi-species activities and not individual species recovery.

DEC plans to cut programs in other areas of nature conservation so that urgent recovery action can continue and are also moving towards multi-species activities.

Prioritising critically endangered species is leaving vulnerable and endangered species at increased risk of decline

Vulnerable and endangered species are at increased risk because often their needs are not identified and addressed

While over half of critically endangered fauna are covered by a recovery plan, less than one in 10 vulnerable fauna have a plan. For flora, almost 80 per cent of critically endangered species are covered by a recovery plan, compared with just 22 per cent of vulnerable flora (Figure 8). Without a recovery plan, species conservation needs may not be identified and managed, and there is increased likelihood that these species will decline.

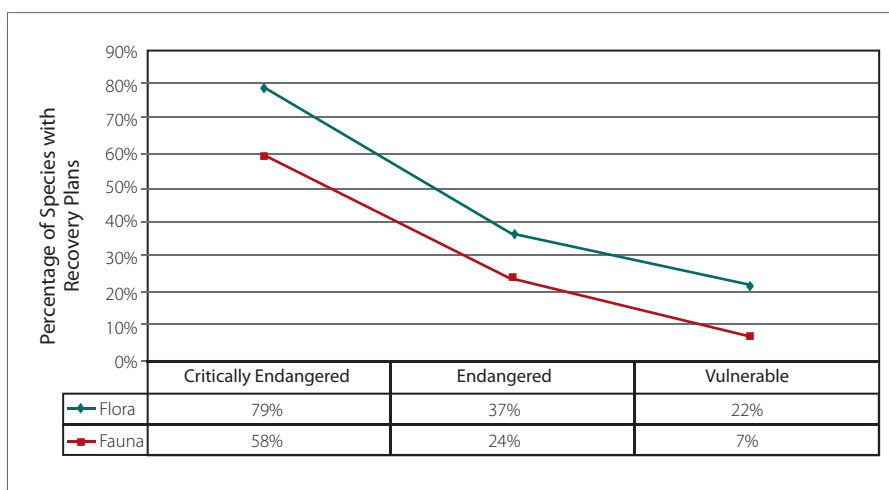


Figure 8: Percentage of species with plans by threat category

Most vulnerable and endangered species do not have their needs identified and addressed through recovery plans.

Source: OAG

Taking other factors into account may be a more efficient and effective way of prioritising recovery plan development

DEC's traditional approach to prioritisation has focused on the most at risk species, those critically endangered, and uses accepted protocols in doing so. While prioritising these species may meet DEC's obligation under the Act, to ensure no species becomes extinct, it can lead to growing numbers of critically endangered species and just-in-time conservation responses. International research has found that prioritising critically endangered species is an inefficient conservation approach.

Other jurisdictions use different approaches. For example, the Commonwealth Government has modified its recovery planning process and no longer develops plans for all listed species. Instead, when a species is listed as threatened a 'conservation advice' is developed to assist its recovery. This approach does not prevent the development of recovery plans for critically endangered species but ensures that all species' needs are assessed. In addition, fewer resources may be required as individual recovery plans are only developed for species with complex conservation issues in need of special intervention.

Conservation advices are required at the time of listing, and provide guidance on immediate recovery and threat abatement activities. The Commonwealth Minister can still choose to develop a recovery plan at any time.

Other agencies do not have to take recovery plans into account

In the absence of legislative backing, recovery plans have no legal status and their existence cannot prevent actions that would undermine recovery efforts. This lack of legislative recognition is unlike that of other jurisdictions. For example, the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* specifies that, "a Commonwealth agency must not take any action that contravenes a recovery plan".

Multi-species approaches are an effective response to the increasing number of threatened species

Findings

- *Multi-species approaches to conservation are an effective response to the growing number of threatened species. DEC has a number of multi-species programs.*
- *The Wildlife Conservation Act 1950 does not recognise threatening processes, such as habitat loss and feral predators, and does not enable threat abatement plans to be developed.*
- *Habitat destruction undermines DEC's recovery activities; habitat protection is essential to maximising species' chances of survival.*
- *Creating reserves is a key habitat conservation mechanism, but less than half the amount of land agreed under the national target has been reserved in WA. On average, it takes a decade for acquired land to become a reserve.*
- *DEC has few powers on private land and relies on cooperation from landowners. DEC cannot always implement necessary recovery actions.*
- *State and Commonwealth threatened species lists are not aligned and 190 WA species do not receive all available protection. DEC is awaiting the Commonwealth's review of information supporting the inclusion of state threatened species on the Commonwealth list.*
- *DEC has not identified habitat critical to the survival of all threatened species. Without this information, DEC is limited in its capacity to protect land of high conservation value.*

Recommendations

DEC should:

- continue to identify and acquire land of conservation value and work with other agencies to achieve reservation more quickly
- continue to work with the Commonwealth to align state and federal threatened species lists
- develop a system to identify and manage habitat critical to threatened species survival.

Multi-species approaches to conservation are an effective means of addressing threats common to many species

Identifying and addressing common threats benefits large numbers of threatened species

Identifying common threats and actions that affect multiple species focuses recovery action and increases conservation effectiveness. Our review of 30 recovery plans identified that 93 per cent of species are threatened by habitat loss. DEC agreed that habitat loss contributes to the decline of almost all threatened species. DEC further identified fire, feral predators and weeds as major threatening processes.

While these threats affect the vast majority of species, they do not always pose the greatest risk. In cases where a species' needs are complex or unique, a recovery plan may be required to ensure appropriate action is taken. However, almost all threatened species would benefit from the conservation of their habitat, and a reduction in the number of feral predators or weeds.

The *Wildlife Conservation Act 1950* does not recognise common threats

DEC cannot list common threats under the Act and is not obligated to develop plans to address these threats. Conservation legislation at a Commonwealth level and in other states define processes that threaten species' survival and describe ways in which they should be managed. This can include statutory threat abatement plans which are taken into account by other agencies.

DEC has implemented a number of programs to address threats that affect multiple species

In addition to broader nature conservation activities that contribute to threatened species conservation, DEC has implemented some specific programs to address threats affecting multiple species.

In 1996, DEC introduced the Western Shield program to control foxes and feral cats to recover many species of native fauna. The Western Shield program covers nearly 3.9 million hectares of land in the South West. An independent review of Western Shield found it had improved the status of a number of native mammals. Three fauna were also officially changed to improved categories of threat.



DEC also identifies and manages Threatened Ecological Communities (TECs). The Act does not recognise the existence of TECs. However, DEC has established a TEC scientific committee and the Minister can endorse recommended TECs. At September 2008, DEC was managing 202 TECs but is unable to formally list them for protection.

An ecological community consists of all the interacting species living in one habitat. DEC conserves these species as part of their communities rather than attempting to manage them on a species-by-species basis.



Habitat destruction undermines DEC's recovery activities

Damage to species' habitat can undermine DEC's recovery actions. Habitat protection also underpins DEC's preferred approach, of conserving species in their natural habitats. Protecting habitat also helps to ensure species can move in response to threats.

Conserving species' habitat is significantly more cost-effective than spending money to rehabilitate areas where habitat has been lost, though estimates of the cost savings vary widely. An independent Commonwealth report found habitat conservation could be up to 100 times cheaper than rehabilitation.

DEC's primary means of conserving species habitat is the creation of reserves, but less than half the amount of land agreed under the national target has been reserved in WA

Reserving habitat provides the best opportunity for DEC to implement recovery action

Reserving land is an effective means of protecting habitat and aiding the recovery of species. Where DEC manages land it is able to implement recovery actions to benefit multiple species. For example, DEC can fence reserves to keep out predators, remove weeds, and conduct research and survey work.

The majority of conservation reserves are managed by DEC under the *Conservation and Land Management Act 1984*. Reserved land is vested in the Conservation Commission and is afforded formal protection under this Act for the purpose of conserving biodiversity.

CASE STUDY:

WESTERN SWAMP TORTOISE

Following the rediscovery of the Western Swamp Tortoise, the state government created two reserves to protect the tortoises' remaining habitat. Protection and recovery measures implemented on the reserves also protect a threatened ecological community and threatened flora populations.

DEC, with the support of volunteers, has erected fencing, to keep predators out and tortoises in, and regularly weeds the reserve. DEC has also focused on rehabilitating some land to be added to the reserve.

All wild populations of the Western Swamp Tortoise are within these reserves.



Seven per cent of Western Australia is reserved; less than half that agreed under the national target

DEC manages around seven per cent (17.5 million hectares) of WA's land area as conservation reserves (national parks, nature reserves and conservation parks). This is less than half of the nationally agreed target of 15 per cent reservation for Australian bioregions¹. It is also less than that agreed in the international Convention on Biodiversity, which set a target of 10 per cent of land to be protected by 2010. WA is also unlikely to meet this target.

¹ 1997 nationally agreed criteria for the establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia.

It can take over a decade for acquired land to be reserved

DEC has acquired almost six million hectares of land of conservation value which is yet to be reserved. Until reserved, the land does not have formal protection.

Although Cabinet may agree to create a reserve, it takes an average of 10, and up to 40 years for a reserve to be established. DEC cite difficulties in reaching agreement with the Office of Native Title and the Department of Mines and Petroleum as the key reasons for this delay.

The Conservation Commission considers that at least part of the reason for the limited progress is a lack of collaboration between different government agencies. The Commission recently reported that since 2004 it has been difficult to create new conservation reserves. The Commission has said that it will investigate this issue and report to the Minister for Environment by the end of this year.

Unlawful human activities on reserves reduce the resources available for recovery activities

A large portion of DEC staff and volunteer time is spent mending fencing, replacing signs and removing rubbish from within reserves, rather than on recovery activities. For example, one DEC region estimates that the cost of cleaning and repairing damage ranges from \$20 000 to \$30 000 each year. Regional offices emphasised that fencing and access control provided the greatest protection to species on DEC land.

Penalties for offences affecting threatened species could enhance deterrence. Under Commonwealth legislation, a person is guilty of an offence if their actions result in a significant impact on a threatened species or community. The penalty for such an offence is imprisonment for up to seven years, a fine of up to \$46 000, or both.

DEC has limited legislative powers on private land and has to rely on landowner cooperation

A large number of threatened species live on private land. However, the Act does not provide DEC with the power to access threatened species on private land in order to implement conservation action. DEC needs landowners' consent.

When a threatened species is found on private property, DEC delivers a notice to the landowner and discusses the species' needs. To assist landowners with threatened species, DEC has established the 'Land for Wildlife' program. Land for Wildlife is voluntary and not supported by legislation. The program does not change the legal status of the property. However, a landowner can legally protect their property by applying for a conservation covenant.

CASE STUDY:

SWAN COASTAL PLAIN QUOKKAS

For several years DEC suspected that the last surviving quokkas on the Swan Coastal Plain were on private land north of Busselton. However, the owner of the land would not allow DEC access to confirm the existence of the quokkas.

DEC recently confirmed that quokkas are on the property through the use of motion-sensing cameras on neighbouring DEC land.

Despite confirmation of the quokkas' presence, neighbouring landowners have cleared land and set fires, damaging the quokkas' habitat.

DEC is pursuing the landowners for illegal land clearing and fires, but is unable to take action in relation to the destruction of quokka habitat.



Because state and Commonwealth threatened species lists are not aligned, species' habitats in WA are not afforded maximum legislative protection

Unless a species is listed as threatened by the state and Commonwealth it may not receive full protection. At present, approximately 190 species are listed under state but not Commonwealth legislation.

The Act does not protect the habitat that a species occupies. Although in WA threatened species' habitat is considered under the *Environmental Protection Act 1986*, the state may still approve the destruction of species' habitat for development. There have been instances where state approved development proposals were rejected by the Commonwealth because of their impact on threatened species' habitat. However, the Commonwealth Government can only become involved if affected threatened species are listed under the *Environment Protection and Biodiversity Conservation Act 1999*.

CASE STUDY:

CARNABY'S BLACK COCKATOO

In October 2007 the WA Environmental Protection Authority recommended approval for a proposal to clear 25 hectares of woodland. The proposed site is key habitat for Carnaby's Black Cockatoos. The Commonwealth Government rejected the proposal.

Carnaby's Black Cockatoos are listed under the state and Commonwealth Acts. The Commonwealth found that there is a limited amount of habitat remaining in the Perth metropolitan area for Carnaby's Black Cockatoos and that the proposed development would contribute to a cumulative loss of this habitat.



Photograph courtesy of DEC

In 2004-05 the Commonwealth Government and DEC reached agreement on a process for aligning their threatened species lists. The agreement requires DEC to prepare information sheets to nominate changes to the Commonwealth.

DEC has prepared 188 information sheets for the Commonwealth. Of these, the Commonwealth has completed action for 63. DEC advised that it is no longer preparing information sheets and is waiting for the Commonwealth to review those already submitted. DEC believes that if it continues to develop new sheets they are likely to contain out of date information when eventually considered by the Commonwealth.

DEC has not identified habitat critical to the survival of all threatened species

DEC does not routinely identify habitat that is critical for threatened species survival. Without this information, DEC may be unable to give advice on the conservation value of land at a specific site. This is particularly important in assessing the impact of development proposals on threatened species. While DEC is able to determine critical habitat for threatened flora populations, it does not always know if a proposed development site is critical habitat for fauna.

In some recovery plans, DEC has identified habitat that is critical to species survival. DEC is also undertaking programs to identify critical habitat for specific fauna species, such as the Western Ringtail Possum. If DEC consolidated and reviewed its existing information, some areas of critical habitat would be identified. However, DEC does not have a system to consolidate and manage this information.



A recent review of the Environmental Impact Assessment process found that there are opportunities to deliver better environmental protection. A key outcome from the review will be the increased use of strategic environmental assessment. To maximise the opportunities presented by this change, DEC will need to identify critical habitat to inform the land use planning process.

DEC cannot demonstrate that all of its threatened species conservation activities are effective

Findings

- *DEC cannot demonstrate the effectiveness of its threatened species conservation activities for all threatened species.*
- *Information on many threatened species is not current and reliable and information systems are not integrated.*

Recommendations

DEC should:

- **develop and implement a database to record all threatened species recovery actions and monitor progress against recovery plans**
- **implement an evaluation framework and supporting systems to assist in measuring threatened species conservation effectiveness**
- **ensure information systems contain reliable and comprehensive data on threatened species and their progress.**

A lack of effectiveness measures and evaluation frameworks mean DEC cannot demonstrate that all of its threatened species work is effective

Progress against recovery actions is not centrally recorded and their effectiveness is not assessed

DEC does not have a central system to record recovery actions, and is unable to determine progress against recovery plans. DEC also cannot determine whether the actions it has implemented are making positive changes to the status of threatened species. DEC advised that the Commonwealth Government is developing a national database to enable the recording of recovery actions. DEC is working with the Commonwealth and is supportive of the project.

DEC policy specifies that recovery teams will prepare reports on recovery plan progress each year. However, only five of the 30 recovery plans we sampled had been reported on in 2007-08. In the five recovery plan reports, no formal assessment was made of the effectiveness of the recovery actions. Some reference was made to the progress of a further 11 species in annual regional reports.

DEC's recovery plans are normally 10 years in duration. While DEC advised that little change in species status may be achieved in this timeframe, we would expect that more formal reviews of progress and effectiveness would be undertaken as part of the annual reporting process.

No framework is in place to measure and report on threatened species conservation effectiveness for all species

Government cannot be assured that funds allocated for threatened species conservation have achieved intended outcomes. DEC's current reporting framework focuses on measuring inputs and outputs rather than outcomes. DEC tends to rely on particular case examples to demonstrate its effectiveness, rather than a robust evaluation framework in place across all programs. In many cases, the recovery of threatened species may take many years and even decades to achieve.

DEC recognises that the ability to measure conservation outcomes is critical to demonstrate that funds are being spent effectively and that the agency is making a positive difference. To this end, DEC has developed a proposal for a 'Western Australia Biodiversity Conservation Appraisal System.' The proposal sets out a system for DEC to report on biodiversity outcomes and effectiveness. However, this is not yet in place, and there is no timetable for its implementation.

The size of many species populations and how they have changed over time is not accurately known

Regular monitoring of all threatened species populations does not occur. DEC's monitoring is prioritised towards critically endangered species. Small changes are more significant for critically endangered populations and can happen quickly. One region advised that critically endangered populations may be visited once or twice a year and vulnerable species only every two to three years.

With regard to fauna, DEC only monitors species at specific sites and observes local population trends. DEC extrapolates these trends to estimate the species status.

DEC's population data may also not be completely reliable. DEC relies on forms completed by conservation officers and volunteers. Although DEC has a standard reporting form, different staff will monitor and record populations to different degrees, resulting in variations. For example, we were advised that a conservation officer may count all of the plants in an area, or just note that plants are still present.



DEC records whether its monitoring is full or partial. DEC considers that data from its systems must be analysed over large timeframes to account for any variations between reporting levels and to observe real population changes.

Information management systems for threatened species conservation are inefficient

DEC has three separate databases containing threatened flora information (Figure 9), and another three databases containing threatened fauna information. None of the six databases is individually able to give a complete overview of a species; such as where the species is located, if it has a recovery plan, the species' status, and when key decisions were made. DEC staff need to access several databases and review hard copy files to find this information.

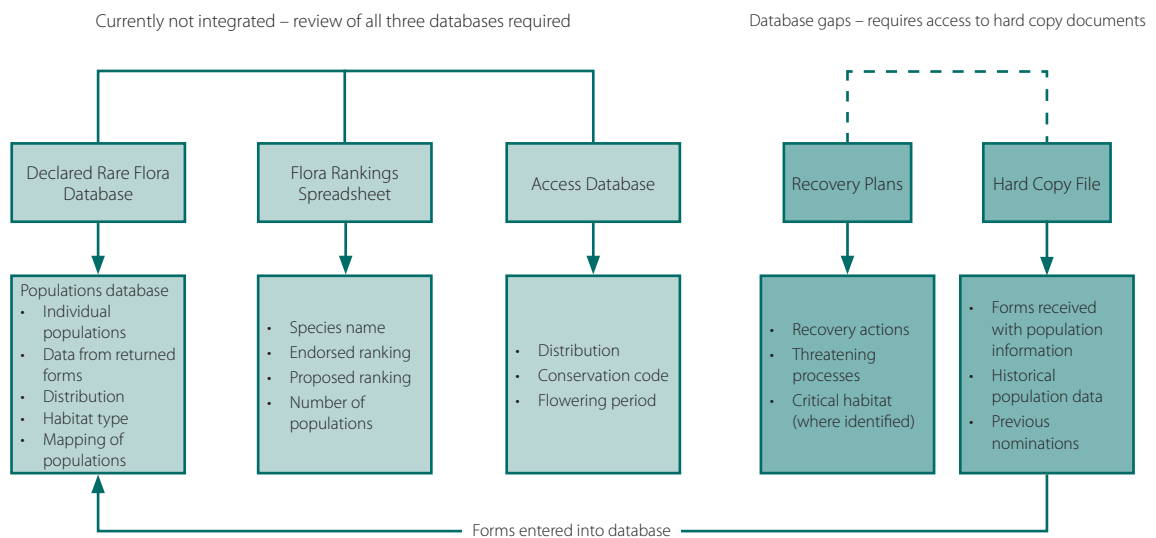


Figure 9: Map of DEC's flora information

DEC's information management systems are not integrated.

Source: OAG

Reports of the Auditor General

2009

Coming, Ready or Not: Preparing for Large-scale Emergencies	20 May 2009
Audit Results Report – 31 December 2008 Assurance Audits and other audits completed since 3 November 2008	6 May 2009
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Public Sector Performance Report 2009	1 April 2009
– Management of Water Resources in Western Australia – Follow-up	
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2008

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