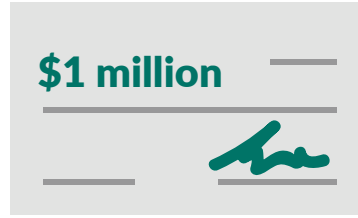
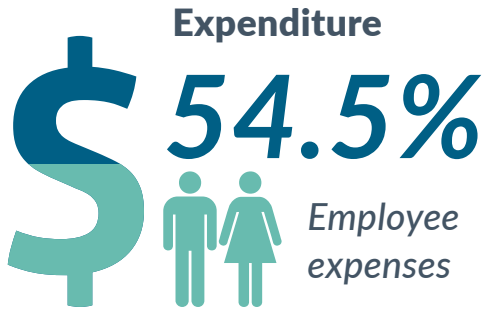


OUR ACHIEVEMENTS



\$1 million environmental grants to promote ecologically sustainable practices



2.45M

spatial biodiversity records for the Territory



Legislative changes

Bushfires Management Act

Water Act

Environmental Protections (Beverage Containers and Plastic Bags) Legislation Amendment Act

679

soil profile sites described and tested for and suitability assessment and mapping

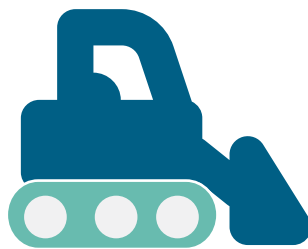


363

container deposit scheme approvals

33

land clearing applications assessed



491

wildfire incidents attended by staff and/or volunteers



4 Water assessment projects completed



Photo: Sagittaria team - (L-R) Michelle Franklin, Roni Opden and Tom Price

OUR ACHIEVEMENTS

This section reports on the department's performance in delivering outputs by business lines. It covers our achievements in key projects and our performance against the priorities identified in last year's annual report.

Our performance against the output key deliverables published in Budget Paper No. 3 is reported in the performance measure tables. Where actual performance differs from the budget, an explanation is provided.

FINANCIAL SNAPSHOT

Income

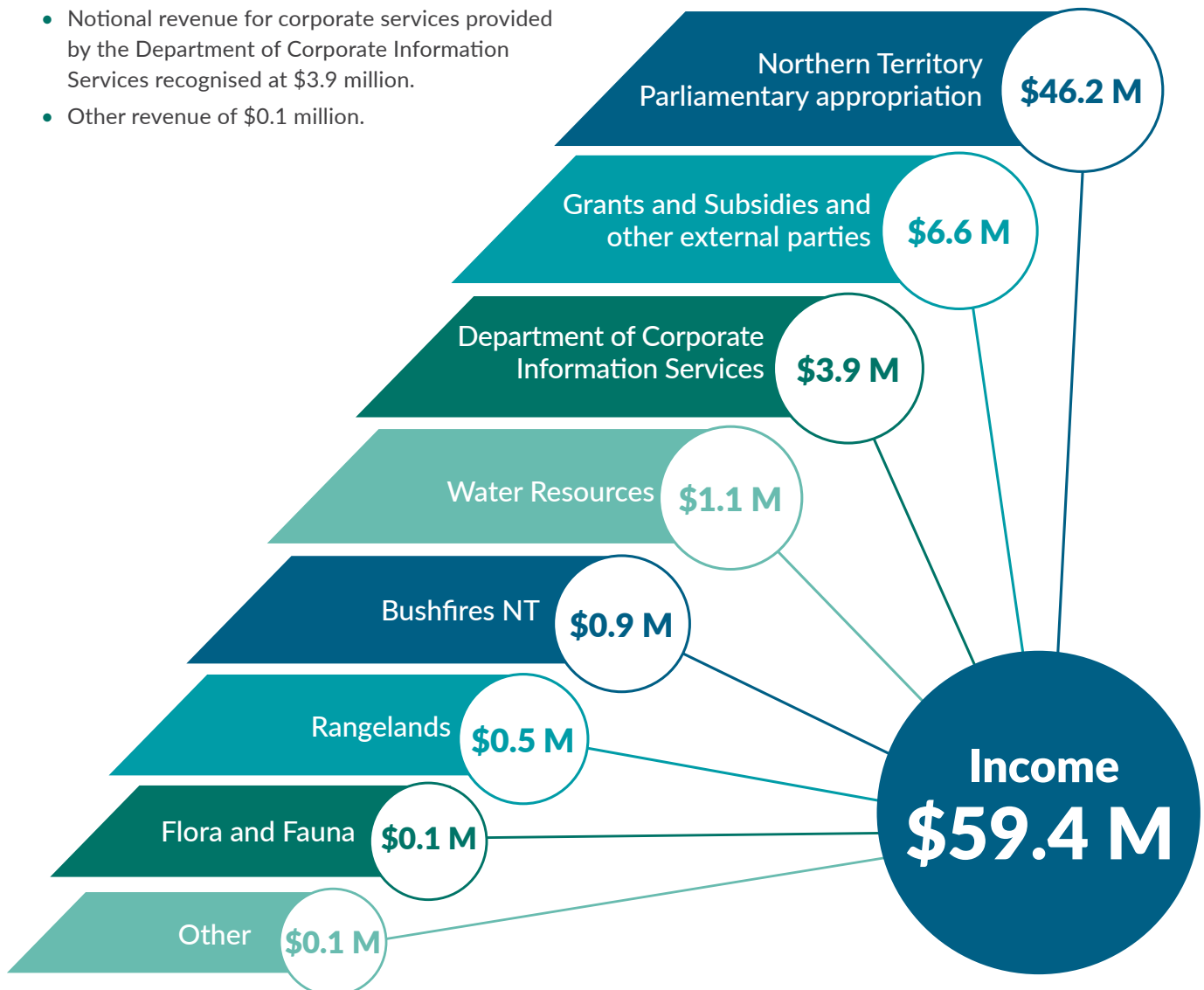
In 2016-17, the department received income of \$59.4 million against a budget of \$59.9 million noting:

- \$46.2 million in Northern Territory parliamentary appropriation being the main source of income.
- Goods and services income dropped due to service level arrangements ceasing with three other departments and a government business division for the provision of corporate services as a result of the Administrative Arrangements Order of 12 September 2016.
- Other goods and services revenue consisted of works performed by the department's Water Resources (\$1.1 million); Bushfires NT (\$0.9 million); Rangelands (\$0.5 million); and Flora and Fauna (\$0.1 million) divisions.
- Grants and subsidies received from the Australian Government and other external parties totalled \$6.6 million.
- Notional revenue for corporate services provided by the Department of Corporate Information Services recognised at \$3.9 million.
- Other revenue of \$0.1 million.

Expenditure

In 2016-17, the department's expenditure totalled \$60.3 million against a budget of \$61.7 million for:

- Employee expenses that represented 54.5 percent of the total expenditure or \$32.9 million.
- Goods and services expenditure of \$15.3 million.
- Repairs and maintenance of assets of \$1.8 million including \$1.4 million spent on the Mary River Saltwater Intrusion Program.
- Grants and subsidies payments totalling \$5.3 million including \$1.2 million to support Bushfire Brigades and \$1.3 million for the West Arnhem Fire Management Agreement.
- Non-cash expenses totalling \$5 million including depreciation charged on the department's asset portfolio and the matching notional expenses charged by the Department of Corporate Information Services.



LEGISLATIVE CHANGES IN 2016–17

Bushfires Management Act

Bushfire is a natural part of the Northern Territory landscape and environment, and like most natural events, it must be managed to prevent impacts on property, industry and, in extreme cases, human life.

The *Bushfires Management Act* received assent on 7 June 2016 and commenced on 1 November 2016. The Bushfires Management (Volunteer Bushfire Brigades) Regulations commenced on the same day. These Regulations provide the model constitution that must be adopted by each volunteer bushfire brigade.

The Bushfires Management (General) Regulations were signed by the Administrator of the Northern Territory on 15 May 2017 and appeared in the Government Gazette on 24 May 2017. These Regulations provide for an offence against the Act to be dealt with by the issuing of an infringement notice.

Public consultation on the new act and regulations generated submissions from a wide range of stakeholders. The main underlying principle of the previous legislation was retained: landowners are responsible for managing bushfires on their land. However, some significant changes did occur. The *Bushfires Management Act* now:

- clarifies the role of Bushfires NT
- provides greater protection and recognition of volunteer fire fighters
- establishes a new planning framework for bushfire management based on bushfire risk and the preparation of regional bushfire management plans in consultation with land-owners and other stakeholders
- continues to focus on fire management rather than fire exclusion
- clearly defines the roles of various stakeholders, including government, in bushfire management and strengthens the relationship between government and volunteer bushfire brigades
- retains the Bushfires Council and Regional Bushfires Committees and clarifies their roles through provision of terms of reference
- establishes a new capacity to prescribe bushfire management arrangements for an individual property where a bushfire risk assessment identifies that conditions on that property present a bushfire risk to neighbouring properties.

Water Act

On 6 July 2016, a new Declaration of Exemptions under the *Water Act* was introduced. The new declaration revoked the exemption from licensing requirements under the Act, for bores pumping 15 litres per second or less in the Darwin Rural Water Control District.

Environment Protection (Beverage Containers and Plastic Bags) Legislation Amendment Act

The *Environment Protection (Beverage Containers and Plastic Bags) Legislation Amendment Act 2014* introduced amendments to improve and streamline the operation of the container deposit scheme. Following a period of implementation, the final amendments to the scheme commenced on 1 January 2017.

GAMBA GRASS ASSISTANCE PROGRAM 2016–17

Gamba grass (*Andropogon gayanus*) was introduced to the Northern Territory in the 1930s as a pasture grass. It has since proven to create high fuel loads that can lead to hot, intense fires that can put people and property at risk. Under the *Weeds Management Act*, property owners and occupiers are now required to manage or eradicate gamba grass on their property according to their property's location. The weed management plan for gamba grass explains what property owners are required to do to manage it.

Gamba grass was declared a weed in the Northern Territory in November 2008, and the first statutory weed management plan was gazetted in 2010. Under legislation, all landholders must meet management obligations.

The government's Gamba Grass Assistance Program started in 2010. It provides free herbicide and spray equipment loans to help private landholders comply with the legislation, reduce fuel loads and limit further spread of gamba grass.

In 2016, the program was rebranded as the Gamba Action Program (GAP) putting a greater emphasis on 'action' rather than 'assistance'. Many people spotted "GAV", the gamba action vehicle, out and about in Darwin and Katherine spreading the message 'Your gamba, your property, your risk'. The program was very successful in engaging landholders, with participant numbers rising to a record 2 202 during the 2016–17 control season.

To support the efforts of participating landowners, in 2016–17 the Weed Management Branch also rolled out a compliance and enforcement program that focusses on the highest-risk, non-compliant areas. More than 60 properties had compliance attention, and

final inspections were being completed at year end.

Landowners can be issued with an order to control their gamba grass. They are given time to comply with the requirements to avoid being fined. In those six weeks, they can access free herbicide, equipment and management advice through the GAP.

Issuing infringement notices or starting legal proceedings is government's last resort. The process is about taking the threat of gamba grass seriously and protecting the community, especially those who are already investing in gamba grass control and management.

Gamba grass is best treated when it is actively growing between November and April.

When gamba grass is not managed by landowners, increased loads of dry and highly flammable material remain the following dry season. All rural residents affected by gamba grass, including NT Government employees, were invited to access free herbicide and equipment through the GAP.

With this year's big improvements in the compliance target areas, Weeds Officers will be expanding compliance and enforcement activities in the 2017-18 wet season.



Photo: Gamba grass in the rural area.



Photo: The Gamba Action Vehicle (GAV).



Photo: A demonstration showing the correct life stage to spray gamba grass.



Photo: (L-R) Roni Opden, Michelle Franklin, Weeds Management Branch.

FUTURE LEGISLATIVE PRIORITIES

Pastoral Land Act

Review of the *Pastoral Land Act* and Regulations with proposed amendments to:

- promote diversification through subleasing for horticulture, agriculture, aquaculture or forestry purposes
- provide a new methodology for calculating pastoral lease rents based on a new baseline of the capacity of the land to support livestock (carrying capacity) as opposed to the current method, which relies on unimproved capital value.

Environmental regulatory reform

The NT Government has committed to improving the environmental regulatory framework and has established an environmental reform program to achieve this.

The program will:

- deliver comprehensive reforms to the environmental regulatory system
- reform the *Environmental Assessment Act*
- create a fully functioning *Environment Protection Act* building on the *Waste Management and Pollution Control Act* and including environmental provisions from other acts such as the *Mining Management Act*
- amend the *Northern Territory Environment Protection Authority Act* to clarify the role, functions and powers of the NT Environment Protection Authority

(NT EPA) and to improve its accountability to government and the community.

The program will be delivered in two stages:

- Stage 1 will reform the environmental impact assessment process and introduce a new environmental approval, which will be issued for those projects that have undergone impact assessment
- Stage 2 will address the development of a fully functioning *Environment Protection Act* building on the *Waste Management and Pollution Control Act* and including environmental provisions from other Acts such as the *Mining Management Act*.

In May 2017, a discussion paper was released that consolidated information received by stakeholders and outlined how government intends to approach the development of its new environmental assessment and approval framework. The paper also sought feedback on a number of areas to further inform the reform program. Feedback on the paper was requested by 28 June 2017.

Water Act

Amendment of the *Water Act* to implement the NT Government's decision to ensure mining and petroleum activities are subject to the *Water Act* including the requirement to obtain water licences and permits in water control districts.



Photo: Attendees of the February 2017 annual business planning.

BUSHFIRES NT – PREPARING FOR THE 2017 SEASON

The early wet season in 2016 and record rainfalls across the Territory provided an opportunity for all Bushfires NT staff to come together in Palmerston for two days in February 2017 for their annual business planning and to prepare for the fire season ahead.

For some staff, it was the first opportunity to put faces to names and build a cohesive team in readiness for a busy season with high fuel loads across the Territory.

STRATEGIC PLAN 2013–2017 REPORT CARD FOR 2016–17

STRATEGIC PLAN GOAL 1

The capacity and capability of the Northern Territory's natural resource assets are assessed and outcomes of use and management monitored.

Strategy	Achievements
<p><i>Increase the knowledge and understanding of ground and surface water systems, land resources and native flora and fauna.</i></p>	<p>Finalised broad scale land type mapping across 210 000 km² of pastoral and Aboriginal land in the Barkly, Tennant Creek and Sturt Plateau pastoral districts.</p> <p>Developed a water resource model for the Western Davenport region that recognises physical land characteristics and incorporates water monitoring and climatic data. The model will improve knowledge of natural recharge processes, groundwater flow systems and predict the effect of pumping scenarios across the region.</p> <p>Completed a major project (funded through the Ichthys Project Voluntary Offsets Agreement) which assessed the conservation status of all species of coastal dolphins in NT waters and identified critical marine habitat areas.</p> <p>Completed a draft, fine-scale vegetation map for Groote Eylandt.</p> <p>Completed surveys of threatened animal and plant species on Koolpinyah Station.</p> <p>Undertook flora surveys in the Bradshaw Field Training Area and at Kiwirrkurra, as part of the national Bush Blitz program.</p>
<p><i>Implement robust monitoring systems to track the health of the Territory's biodiversity.</i></p>	<p>Continued research into fish movement in the Roper River.</p> <p>Commenced research on pig-nosed turtle environmental flow requirements in the Daly River as part of a collaborative National Environmental Science Program project.</p> <p>Reviewed and redesigned (in conjunction with University of Melbourne) the 'Top End Ecological Monitoring Program' to incorporate new remote camera technology, increase sampling power for rare mammals and include more Top End parks.</p> <p>Undertook systematic biodiversity monitoring in Northern Territory parks to inform their Integrated Conservation Strategies, including Finke, Nitmiluk, Judbarra (Gregory) and Garig Gunak Barlu (Cobourg Peninsula) National Parks.</p> <p>Continued monitoring dolphin populations in Darwin Harbour and adjacent waters.</p> <p>Continued monitoring programs for high priority threatened species, such as the red cabbage palm and central rock-rat.</p>

Strategy	Achievements
Address the decline of small mammals.	<p>Continued to implement research projects to clarify the factors causing small mammal decline, particularly the role of feral cats and unfavorable fire regimes, and management actions to address these. This included:</p> <ul style="list-style-type: none"> • Monitoring fenced areas where predators were excluded in Kakadu National Park • Implementing trial aerial baiting for feral cats in selected areas of the most rugged parts of the West MacDonnell Ranges • Surveys for threatened mammals and feral cats on Groote Eylandt, as well as a study of the potential risk from cat bats to native fauna • Working with Kakadu National Park to test the biodiversity benefits of enhanced fire and feral animal management • Undertaken systematic surveys of native mammals and feral cats (and other feral mammals) using robust camera trapping in conjunction with conventional trapping methods, at around 300 sites in the Top End • Devised robust methods for estimating feral cat density and have undertaken this at several locations across the Top End.
Work with Aboriginal elders and custodians to conserve biocultural knowledge of the Territory's flora and fauna and promote its application in natural resource management.	<p>Continued to work with Aboriginal elders and communities to document and preserve their biocultural knowledge in the Elliott, Roper/Gulf, and Daly regions.</p>
Monitor and report on the health of Darwin Harbour and inland waterways as part of their continued or expanded use.	<p>Published the 2016 Darwin Harbour Report Card. Re-established the Darwin Harbour Advisory Committee. Expanded water quality monitoring in Darwin Harbour through the Ichthys Project Voluntary Offsets Agreement. Monitored dolphin populations in Darwin Harbour, Shoal Bay and Bynoe Harbour through the Ichthys Project Voluntary Offsets Agreement. Released the findings of the 2016 groundwater quality survey for the Darwin region. Published a report on water quality of the Roper River. Continued collection of water quality monitoring data in water allocation plan areas. Commenced collaboration with Roper River Land Care Aboriginal ranger group to improve water quality monitoring frequency. Continued extensive groundwater and surface water monitoring programs in water control districts.</p>
Monitor condition of the Territory's rangelands.	<p>Conducted an on-ground rangeland monitoring program on 53 pastoral leases, with 324 monitoring sites assessed for the Pastoral Land Board under the <i>Pastoral Land Act</i>. Provided the Pastoral Land Board with improved information about the condition of the Northern Territory's pastoral estate facilitating its 2015-16 Annual Report reporting to the Minister on the condition and use of pastoral land.</p>

STRATEGIC PLAN GOAL 2

Enable economic growth through the allocation of natural resource assets for best and sustainable use.

Strategy	Achievements
<i>Develop a Northern Territory strategy to address the use, allocation and management of water.</i>	<p>Established, re-established or expansion of water advisory committees for Howard; Ooloo; Katherine; Mataranka-Daly Waters; Ti Tree; Alice Springs and Rapid Creek.</p> <p>Throughout the year the Minister declared the Berry Springs Water Allocation Plan and the department progressed the development of the Ooloo; Howard; and Western Davenport water allocation plans.</p>
<i>Manage competing demands for water and land resources for sustainable development.</i>	<p>Assessed 33 native vegetation clearing proposals to support sustainable development under the <i>Pastoral Land Act</i> and <i>Planning Act</i>.</p> <p>Provided written advice on 685 development proposals for various Northern Territory Government agencies and authorities.</p> <p>Finalised the Berry Springs Water Allocation Plan and significantly progressed three draft plans. Development of these plans includes detailed resource assessment and broad stakeholder engagement to ensure the goal of sustainable regional development is supported.</p> <p>Implemented strategies designed to protect existing water users in the Darwin rural area and the sustainability of the resource, including promoting awareness through the Groundwater Watch education campaign; introducing limitations on new bore construction permits and monitoring and regulating use through new water extraction licensing arrangements.</p>
<i>Determine potential for agricultural development through the collection and assessment of land, soil, vegetation and water information.</i>	<p>Finalised soil and land suitability assessments for irrigated agriculture in the Ali Curung, Ti Tree, Gunn Point, Tennant Creek west and Wildman River areas, and on Kurnturlpara and part of Warumungu Aboriginal land trusts in the Barkly region. These studies identified 118 576 hectares of arable land on Aboriginal, pastoral and Crown land.</p> <p>Completed agricultural land suitability fieldwork on pastoral and Aboriginal land at Orange Creek, Dunmarra and Wadeye.</p> <p>Commenced planning or undertook integrated or agricultural land suitability fieldwork in the Roper River Valley, East Arnhem, lower Keep River Plain, central Barkly and northern Victoria River regions.</p> <p>Undertook a groundwater assessment in the Tennant Creek north region to evaluate the viability of resources for horticultural development.</p> <p>Conducted a water resource assessment of the Wildman River region to inform the nature and distribution of groundwater resources and the interaction with surface water features such as springs and creek systems. This provides a basis for assessing the impact of future irrigated horticulture in this region.</p>

Strategy	Achievements
Ensure that impacts on the natural resources are within acceptable limits in the allocation and use of land for development purposes.	Undertook a study of the impact of agricultural development on the underlying groundwater system in the Rocky Hill area (south east of Alice Springs). This work has quantified the drainage characteristics of the upper soil profile to enable the prediction of the longer-term effects of irrigation drainage.
Identify and promote economic opportunities through the sustainable use of wildlife.	Revised the five-year Management Program for the Saltwater Crocodile (<i>Crocodylus porosus</i>) in the Northern Territory of Australia, 2016-2020, which was approved by the Administrator on 29 June 2017.
Support the pastoral estate through contemporary pastoral legislation to drive economic growth.	<p>Facilitated 21 ownership transfers of pastoral leases under the <i>Pastoral Land Act</i>, supporting the economic development of the Northern Territory pastoral estate and northern Australia. This number of sales of pastoral leases continues a trend over the last three years that has seen a significant increase in sales, indicating continued investment and confidence in the Northern Territory pastoral industry.</p> <p>Provided support to the Pastoral Land Board, which approved two non-pastoral use applications under the <i>Pastoral Land Act</i>. This included permits for tourism in the Darwin and Katherine pastoral district.</p> <p>Developed proposed amendments to the <i>Pastoral Land Act</i> and Regulations for consideration by government including to contemporise sections of the legislation, including enabling sub-leases for non-pastoral purposes to support diversification and investment in the pastoral estate.</p>

NATIONALLY THREATENED BRUSH-TAILED RABBIT-RAT THRIVING ON GROOTE

In April and August 2016, the Flora and Fauna team launched a project to understand the distribution of threatened mammals on Groote Eylandt in the Gulf of Carpentaria.

Groote Eylandt is a stronghold for native fauna because it is free from many of the threats that contribute to the decline of species on the mainland, including frequent fire, cane toads, large exotic herbivores and pigs. To better understand the distribution of small mammals on Groote Eylandt, the department's team deployed motion-sensor cameras at 112 sites across the island.

After the arduous task of processing 500 000 camera trap photos, they were rewarded with the discovery of a new local population of the

nationally threatened brush-tailed rabbit-rat *Conilurus penicillatus*. It is a small native rodent that was once found across large areas of northern Australia but is now almost extinct on the mainland.

Historically, this species was considered to have a very limited distribution on Groote Eylandt, having been recorded at only seven sites in the last 50 years. Our team detected this species at an extra 19 sites, making Groote Eylandt home to one of the largest populations of the brush-tailed rabbit-rat.



Photo: brush-tailed rabbit-rat *Conilurus penicillatus*.

As a step towards developing effective management strategies, the team is now determining what drives the species distribution and identifying the potential threats posed to this species on Groote Eylandt.

STRATEGIC PLAN GOAL 3

Threats to natural resources and regional communities are managed through shared responsibilities and partnerships.

Strategy	Achievements
<p><i>Provide extension services to assist landholders in the sustainable use of the natural resources.</i></p>	<p>Provided extension services to landholders for native vegetation clearing applications.</p> <p>Provided assessment on erosion sediment control plans within 14 days of receipt. Increased the number of site visits undertaken in the Northern Territory, resulting in a decrease in the number of complaints received from developers on sediment runoff from civil and building sites.</p> <p>Provided weed management extension services through visits to Crown, pastoral, Aboriginal and freehold land managers responsible for 250 000 square kilometres of country.</p> <p>Implemented the 'Groundwater Watch' education campaign to promote awareness of groundwater risks arising from poor wet seasons in the Darwin rural area and promoting more careful water use and longer term management actions.</p> <p>In collaboration with Department of Infrastructure, Planning and Logistics and the Alice Springs Flood Mitigation Advisory Committee, produced the Alice Springs Flood Mitigation Report. This documents the overarching strategy for the mitigation of flood risk and the impact of flood events in the Alice Springs region.</p>
<p><i>Facilitate greater industry capacity and action to mitigate impacts at development sites.</i></p>	<p>Completed the delivery of \$1.4M repairs and maintenance works on engineered designed barrages around the Mary River Shady Camp area that will assist to slow the natural progression of salt water into the freshwater systems of the river and its floodplains.</p> <p>Continued to work with industry to promote the adoption of consistent standards for erosion and sediment control planning and management across the Northern Territory.</p> <p>Continued to work with proponents and environmental consultants to improve data quality and risk assessment for significant fauna and flora.</p> <p>Provided technical and strategic input into the draft Uniform Subdivision Guidelines to clarify erosion and sediment control planning and implementation requirements for subdivisions in the Northern Territory.</p>

Strategy	Achievements
Manage the impacts of feral animals and weeds on productive and natural systems.	<p>In collaboration with the Department of Infrastructure, Planning and Logistics commenced a project to provide a robust evidence base to support the development of best practice guidelines for assessing and managing the impacts of wild dogs across the Northern Territory.</p> <p>Supported the Central Land Council with continued aerial culling of feral camels and horses on Aboriginal land in Central Australia.</p>
Build community capacity to mitigate the negative impacts of wildfire, weeds and feral animals.	<p>Delivered the Gamba Action Program in the Top End for the seventh consecutive year, with 2 002 individual landholders participating and 24 190 litres of herbicide and spray equipment provided for gamba grass control across the Top End.</p> <p>Established a Territory-wide whole-of-community fire management network.</p> <p>Collaborated with other jurisdictions and the Australasian Fire and Emergency Service Authorities Council in sharing processes and products.</p> <p>Increased the number of pre- and post-season planning forums across the Northern Territory to increase community resilience through improving capacity to plan and implement fire mitigation strategies.</p> <p>Completed Northern Territory Action Plans for priority threatened species, which outline management actions and provide targets for the next 10 years, to assist Territory land managers to reduce key threats to these species.</p> <p>Commenced the implementation of the Aboriginal Ranger Grants Program, including the development of comprehensive Guidelines to support the first call for applications in August 2017.</p>
Progress a strategic approach to manage the increased risk of bushfire in the rural urban interface caused by the proliferation of grassy weeds.	<p>Continued facilitation of strategic, cross tenure approaches to gamba grass management in Class B core infestation areas to mitigate fire risk and prevent further weed spread.</p> <p>Weeds Management Branch participated on joint property inspections with Bushfires NT.</p> <p>Established a Bushfire Management Planning Framework , which included:</p> <ul style="list-style-type: none"> • developing multi-scale planning templates (regional and property plans) • implementing extensive mitigation measures, including fuel reduction, both ground and aerial, construction and maintenance of strategic fire access trails, and property-level fire planning with landowners, to improve land management outcomes and reduce bushfire risk.
Promote partnerships between government agencies to develop threat management plans.	<p>Liaised with the Department of Infrastructure, Planning and Logistics to discuss ongoing contract performance and monitoring for weed and fire management on Crown land.</p> <p>Collaborated with Department of Infrastructure, Planning and Logistics Transport Services to develop road reserve planned burn plans across the Vernon/Arafura, Savannas and Alice Springs Fire Control Region with on ground burning completed by Volunteer Bushfire Brigades.</p> <p>Worked with government, industry, science, environment and community stakeholders to progress the Northern Territory's Coastal and Marine Management Strategy.</p>
Provision of flood advice in consultation with other agencies for major 'at risk' communities.	<p>Undertook flood monitoring in major river systems for identified at-risk communities resulting in 76 minor, 12 moderate and three major flood warnings being generated by the Bureau of Meteorology.</p> <p>Undertook monitoring and provided 31 river level alerts to Department of Infrastructure, Planning and Logistics related to at-risk infrastructure.</p> <p>In collaboration with Department of Infrastructure, Planning and Logistics, produced storm surge and flood mapping for nine remote towns and communities along the Northern Territory west coast, Tiwi Islands and Arnhem Coast.</p>

STRATEGIC PLAN GOAL 4

An organisation with the capacity and capability to deliver effective services.

Strategy	Achievements
<i>Inspire and support a workplace culture that is collaborative, respectful and accountable.</i>	<p>Employed and developed an environmental undergraduate through the Northern Territory Government's 12-month Graduate Development program.</p> <p>Continued to support Information and Communications Technology (ICT) governance and build capability and capacity across the agency for ICT project management.</p> <p>Implemented a corporate training calendar outlining upcoming training available. The corporate training calendar included specifically requested training as well as training needs identified from the People Matters Survey.</p> <p>Continued to build capacity and capability across the department through the delivery of training such as the Combat Bullying program, change management workshops and cross-cultural training.</p> <p>Managed the recognition of employees through the department's recognition and reward scheme.</p> <p>In 2016-17 the department developed, implemented and completed the internal and external audit program with a focus on Official Travel, Cabinet Information Security Measures, ICT purchases and Repetitive Tier 1 purchases.</p> <p>Following the NTPS People Matters Survey, met with staff across all divisions and regions of the department to present the results of the NTPS People Matters Survey in more detail and to give staff an opportunity to provide feedback on how to improve the identified areas for their specific division and region.</p>
<i>Build and enhance our strategic leadership across the agency.</i>	<p>Provided expert corporate advice and guidance to support the development and delivery of government initiatives and priorities.</p> <p>Coordinated a two day Senior Leaders Forum in 2017. The forum focussed on the theme of 'unity and partnerships' and presented an opportunity for staff AO7 and above from all regions to collaborate and share their achievements and to focus on the challenges for the year ahead.</p> <p>Developed the new Strategic Plan 2017-2020. The Strategic Plan sets the department's strategic priorities, aligned with government priorities, policy, strategic issues and the agency highlights reported in the budget papers.</p>
<i>Deliver an effective shared corporate service.</i>	<p>Delivered quality shared services in line with agreements and transitioned successfully through machinery of government change.</p>
<i>Provide a safe working environment and use of safe practices in both office and field operations.</i>	<p>Provided a safe working environment for staff through the identification and assessment of workplace hazards and ensuring necessary actions are undertaken to control exposure to injury, loss or damage and ensure that the department is managed in accordance with relevant Work Health and Safety legislation.</p> <p>Revised and implemented the Operational Firearms Policy to define the obligations and responsibilities of employees and the department in the proper issue, use, acquisition, maintenance and storage of firearms to ensure the safe work environment for employees.</p> <p>Implemented the Field Operations Policy to provide direction for field based staff of the Rangelands Division in regard to the implementation of measures to minimise the range of risks inherent in field work operations across the Northern Territory.</p>

Strategy	Achievements
<i>Continue to improve business processes and streamline key internal systems.</i>	<p>Continued implementing the Rangeland Monitoring System to manage ground-based data from monitoring sites, remote sensing and existing Tier 1 data and site information.</p> <p>Developed a business systems catalogue and a knowledge management portfolio, which were identified as key outcomes of the department's ICT Strategic Plan.</p> <p>Established an Application, Support and Maintenance Agreement for effective management and improved reporting on key agency business applications.</p> <p>Held a two day staff forum with all regional Bushfires NT staff in February 2017 to undertake strategic planning and develop a shared understanding of changes to new legislation.</p> <p>In 2016-17 the department developed, implemented and completed the internal audit program to improve travel practices that provide staff with a clear process.</p> <p>Implemented the electronic <i>Water Act</i> Licensing and Permit System (WALAPS), which tracks workflow relating to water licences, bore permits and driller licence applications through the approvals process.</p> <p>Commenced planning for the new Bushfires Emergency Management System to be developed during 2017.</p>
<i>Develop an integrated NT Natural Resource Management information system that is accessible to internal and external clients.</i>	<p>Developed the online Water Licence Decision Portal, a government election commitment to make water licensing information more accessible and licence decisions more transparent.</p> <p>Completed the web-based Groundwater Watch tool to show past, current and predicted groundwater levels in the Darwin rural area.</p> <p>Established the department's Web Map Service (WMS) for access to natural resource spatial layers.</p> <p>Developed a prototype ArcGIS Online version of NR Maps to assess potential as a future department web mapping system.</p> <p>Developed a Sensitive Species Policy to manage public access to sensitive flora and fauna location data.</p>
<i>Ensure legislation and policy is contemporary and adequate to deal with the challenges of delivering sustainable development.</i>	<p>Conducted public consultation and commenced review of the gamba grass, mimosa and bellyache bush management plans.</p> <p>Revoked the exemption from licensing under the <i>Water Act</i> that applied to bores pumping 15 litres per second or less in the Darwin Rural Water Control District. Groundwater extraction for uses other than rural stock and domestic purposes now require a licence and metering, which will assist in sustainable management of groundwater resources in the region.</p> <p>Granted government approval to amend the <i>Water Act</i> so that required permits for mining and petroleum activities, including surface water extraction and storage, groundwater extraction and water bore drilling, are accommodated under the <i>Water Act</i> from 2018.</p> <p>Commenced the <i>Bushfires Management Act</i> and associated Regulations. By June 2017, more than 300 volunteers and fire wardens had been authorised under the new arrangements. Volunteers now have the protection from liability for fire management actions undertaken in good faith.</p> <p>Established a new Bushfires Council and five regional committees were selected and appointed. All members received training in governance and an overview of the new <i>Bushfires Management Act</i>.</p>

WHAT WE ACHIEVED BY OUTPUT

Under the Northern Territory's Financial Management Framework, each government department is funded by output, as stated in the annual Budget Papers.

The department's outputs and performance achievements against each output are detailed below.

NT Government Election Commitments are highlighted with the symbol ✳.

OUTPUT: FLORA AND FAUNA

Provides scientific assessment and monitoring of the Territory's native flora and fauna and delivery of policy advice and support relating to the conservation and sustainable use of wildlife and management of feral animals.

This output is responsible for:

- assessing and monitoring the Territory's native flora and fauna
- assisting landowners to manage the threats to our unique flora and fauna
- supporting and managing the sustainable use of wildlife
- providing robust, evidence-based advice to government, industry and the community relating to the biodiversity of the Northern Territory.

Services are provided from Darwin and Alice Springs.

Key deliverables	2015-16 Actual	2016-17 Budget	2016-17 Actual	2017-18 Budget
Number of spatial biodiversity records for the Territory ¹	1.89M	2.01M	2.45M	2.6M
Number of biodiversity information requests met	2 400	2 400	2 400	2 400
Number of active inventory, monitoring and applied research programs	34	34	34	34
Number of management programs in place for sustainable wildlife use	6	7	6	8

¹ The increase reflects higher external activity and new biodiversity assessment and monitoring projects.

Performance achievements in 2016-17

Completed

- ✳ Provided \$200,000 to Charles Darwin University for urgent research on mangrove dieback in the Gulf of Carpentaria.
- ✳ Established an Aboriginal Land Management Advisory Group to assist with the implementation of the Aboriginal Ranger Grants program.
- ✳ Established a Coastal and Marine Management Partnership Group, to provide external stakeholder input into the development of the Coastal and Marine Management Strategy.
- Revised the 5-year Management Program for the Saltwater Crocodile (*Crocodylus porosus*) in the Northern Territory of Australia, 2016-2020, which was approved by the Administrator on 29 June 2017.
- Provided advice on biodiversity values and risks associated with around 400 development proposals and applications, including working with proponents and environmental consultants to improve data quality and risk assessment for significant fauna and flora.

FERAL CAT CONTROL IN CENTRAL AUSTRALIA



Photo: A feral cat with fat-tailed antechinus (*Pseudantechinus macdonnellensis*) in Tjoritja National Park.

During the year, Flora and Fauna Division staff in Alice Springs worked to achieve a first for Central Australia: effective landscape-scale control of feral cats.

The MacDonnell Ranges west of Alice Springs are a hotspot for rare and threatened mammals, including the endangered central rock-rat. The distribution of this species has shrunk by more than 95 percent since European colonisation, and feral cats are the key threat. Based on our cat diet research, we know that a single cat is likely to eat up to 150 central rock-rats in a year.

Tjoritja (West MacDonnell) National Park supports the larger of the two remaining central rock-rat populations. With funding from the Australian Government, department scientists and wildlife rangers carried out the first of two poison bait drops in the park in August 2016.

The baits, known as 'Eradicat', are poison-laced meat sausages, manufactured to smell and taste appealing to cats. Using a helicopter, the department's team dropped 3 500 baits over an 80-square kilometre area of the park, centred on central rock-rat habitat.

They left an equivalent nearby area unbaited as a 'control' site to help measure baiting effectiveness and off-target impacts. Early results were promising: our motion-detecting camera traps showed that cat numbers were down across the study area after baiting.

Before the next baiting program in early 2017–18, we will return to the site to check on both the central rock-rat and cat populations. While baiting feral cats will never lead to complete eradication, hopefully it buys these threatened species time as more effective control strategies are developed.

- Completed the Marine Megafauna Strategic Plan 2017-21, which identifies the threats impacting marine megafauna, and management principles and actions to mitigate these threats.
- Completed a major project (funded through the Ichthys Project Voluntary Offsets Agreement) which assessed the conservation status of all species of coastal dolphins in Northern Territory waters and identified critical marine habitat areas. A workshop with Aboriginal sea ranger groups was held to share the results from this project.
- Reviewed and redesigned (in conjunction with University of Melbourne) the 'Top End Ecological Monitoring Program' to incorporate new remote camera technology, increase sampling power for rare mammals and include more Top End parks.
- Undertook systematic biodiversity monitoring in Northern Territory parks to inform their Integrated Conservation Strategies, including Finke, Nitmiluk, Judbarra (Gregory) and Garig Gunak Barlu (Cobourg Peninsula) National Parks.
- Completed surveys for threatened mammals and feral cats on Groote Eylandt, as well as a study of the potential risk from cat bats to native fauna.
- Undertook flora surveys in the Bradshaw Field Training Area and at Kiwirrkurra, as part of the national Bush Blitz program.
- Completed Northern Territory action plans for priority threatened species, which outline management actions and provide targets for the next 10 years, to assist Territory land managers to protect these species.
- Completed the *Marri Amu and Marri Tjevin plants and animals* book. This book contains the Marri Amu and Marri Tjevin names and uses of 686 plants and animals. It was jointly published with Wadeye Aboriginal Languages Centre and Batchelor Institute Press. It involved our scientists undertaking cross-cultural research with 32 Aboriginal elders over a 13 year period.

In Progress

- ✳ Worked with government, industry, science, environment and community stakeholders to develop an initial draft of the Northern Territory's Coastal and Marine Management Strategy. After further development this will be released for public comment in late 2017, and delivered in 2018.
- ✳ Commenced the implementation of the Aboriginal Ranger Grants Program, including the development of comprehensive Guidelines to support the first call for applications in August 2017.
- Undertook a comprehensive aerial survey of magpie geese and nest numbers across Top End floodplains in May 2017, in order to develop recommendations to the Minister about sustainable harvest levels for the 2017 hunting season and pest mitigation permits.
- Continued major projects (funded through the Ichthys Project Voluntary Offsets Agreement), to map marine habitats in Darwin and Bynoe Harbours; monitor dolphin populations in Darwin Harbour and adjacent coastal waters; and monitor dugong populations around the Territory coastline.
- Commenced a review of the conservation status of plant and animal species listed as threatened under the *Territory Parks and Wildlife Conservation Act*. Following an agreement between Australian jurisdictions to apply a common assessment method, the focus of the review will be species endemic to the Territory and to align the conservation status under Territory and Commonwealth legislation.
- Completed a draft, fine-scale vegetation map for Groote Eylandt (with funding from the Anindilyakwa Land Council), which will be finalised following additional field validation in 2017-18.
- Continued to work with Aboriginal elders and communities to document and preserve their biocultural knowledge, with work in 2016-17 in the Elliott, Roper/Gulf, and Daly regions.
- In collaboration with Department of Primary Industry and Resources, commenced a project to provide a robust evidence base to support the development of best practice guidelines for assessing and managing the impacts of wild dogs across the Northern Territory.
- Continued to work with traditional owners and Aboriginal rangers to restore important central Australian waterholes for ecological and cultural outcomes. Work at Ilpili Springs has seen increased water flows, resprouting of vegetation and return of some animal species.
- Implemented aerial baiting for feral cats in selected areas of the most rugged parts of the West MacDonnell Ranges to improve their value as refuges for central rock-rat and other threatened mammals. Ongoing monitoring of native mammal and cat populations will test whether this has been successful.
- Continued a set of projects to clarify the factors causing small mammal decline, particularly the role of feral cats and unfavorable fire regimes, and management actions to address these.

Ongoing

- Curating the Northern Territory herbaria (Darwin and Alice Springs) as the authoritative collection of Northern Territory plant specimens, providing plant identification services and maintaining and updating the FloraNT web portal, which provides public access to the collection and associated databases.

- Managing the very large biodiversity datasets collated by the division. The datasets are the primary information resource about the distribution and status of flora and fauna in the Northern Territory. Work is ongoing to improve data management standards and make all data publicly discoverable, including through NR Maps NT, and the Atlas of Living Australia.
- Undertaking systematic annual surveys of wildlife populations as required by formal Management Programs, including for saltwater crocodiles and magpie geese.

Future priorities

- ✳ Complete the Northern Territory's Coastal and Marine Management Strategy.
- ✳ Roll out the Aboriginal Ranger Grant program, including capital grants for Aboriginal ranger groups to assist with the purchase of essential items and projects under the Land Management and Conservation Fund to improve conservation practices on Aboriginal lands and seas.
- Contribute to the development and implementation of the Mapping the Future Program, including assessing biodiversity values and environmental risks in potential new development areas.
- Progress a strategic and proactive approach to assessing and managing risks to biodiversity in the greater Darwin region.
- Complete a Threatened Species Management Plan for Groote Eylandt, and assisting the Land Council and Rangers to implement the plan.
- Initiate a new project (with funding from the Australian Department of Agriculture and Water Resources) to develop and trial a technique to control foxes that does not also harm dogs/dingoes.

NT Government Election Commitments are highlighted with the symbol ✳.



Photo: bottlenose dolphins at Caledon Bay.



Photo: Darwin Harbour dolphins.

SEA RANGER WORKSHOP

In March 2017, Crab Claw Island hosted the Territory's first ever Sea Ranger Workshop, coordinated by the department.

The two-day workshop was the final part of the Conservation Status of Coastal Dolphins in the Northern Territory project.

The project is part of an offset program developed by the Northern Territory Government through the department's Flora and Fauna Division, with funding from the Ichthys LNG project.

The workshop brought together 13 sea ranger groups, senior traditional owners, Parks and Wildlife Commission rangers and several department staff from across the Territory.



Photo: (L-R) Dr Carol Palmer with dolphin observer and data collector Emma Withers at Nhulunbuy airport.

The department's marine mammals senior scientist, Dr Carol Palmer, said the workshop plan was to present cultural and scientific information on marine megafauna—dolphins, sea turtles and dugongs—and identify issues and priorities and plan how to best work towards managing marine animals in the Territory.

'The Territory has some of the most unique and pristine marine environments in the world, inhabited by majestic dolphins, dugongs and sea turtles.

'It's vital we protect these magnificent megafauna from

human-induced threats such as fishing lines, ghost nets, rubbish and boats', she said.

'This workshop brought together many Territorians with an interest and who are stakeholders in managing our marine environments to be enjoyed by present and future generations.

'It is important to combine science with cultural information and to communicate song lines and language names to promote a better understanding of management practices and issues faced by each stakeholder.'

WHAT WE ACHIEVED BY OUTPUT

OUTPUT: RANGELANDS

Provides scientific assessment and monitoring of the Territory's land and delivery of extension services, policy advice and regulation of use and threats to the land resource.

This output is responsible for:

- assessing and monitoring the Territory's land resource
- assisting landholders in managing the threat and impact of weeds.

Services are provided from Darwin, Katherine, Tennant Creek and Alice Springs.

Key deliverables	2015-16 Actual	2016-17 Budget	2016-17 Actual	2017-18 Budget
Percentage of pastoral estate monitored in the year	24	24%	24%	25%
Land clearing applications assessed ¹	26	20	33	20
Area of land receiving weed extension services ('000 km ²) ²	400	400	250	250
Land development proposals assessed ³	846	900	685	550
Soil profile sites described and tested for and suitability assessment and mapping ⁴	953	500	679	600

¹ The variation in 2016-17 reflects strong growth and investment in the agricultural and horticultural industries.

² The decrease mainly reflects changed resourcing and training arrangements that will service multiple stations.

³ The decrease reflects historical trends, industry knowledge, and number of development proposals received.

⁴ The increase is due to additional funding.

Performance achievements in 2016-17

Completed

- Processed 21 requests for consent to transfer pastoral leases continuing a trend over the last three years that has seen a significant increase in sales and indicating continued investment and confidence in the Northern Territory pastoral industry.
- Assessed 10 native vegetation clearing proposals to support sustainable development under the *Pastoral Land Act*.
- Assessed 23 applications to clear native vegetation that were lodged under the *Planning Act*.
- Commenced proposed amendments to the *Pastoral Land Act* and Regulations for consideration by government to contemporise sections of the legislation, including enabling subleases for non-pastoral purposes to support diversification and investment in the pastoral estate.
- Published soil and land suitability mapping, including technical reports for the Ali Curung, Ti Tree, Gunn Point, Tennant Creek west and Wildman River areas, and on Kurnturlpara and part of Warumungu Aboriginal land trusts in the Barkly region. These studies identified 118 576 ha of arable land on Aboriginal, pastoral and Crown land. Water resource assessments or water allocation planning reviews are underway in a number of these study areas.
- Published broadscale land type mapping across 210 000 km² of pastoral and Aboriginal land in the Barkly, Tennant Creek and Sturt Plateau pastoral districts.
- Carried out rangeland monitoring activities on 53 pastoral leases; in total 324 monitoring sites established were assessed under the provisions of the *Pastoral Land Act*.
- Provided written advice on 685 development proposals for various Northern Territory Government agencies and authorities.

- Co-ordinated \$1.4M of repairs and maintenance works to engineer designed barrages in the vicinity of Shady Camp barrage on the Mary River. The works are designed to slow the natural progression of salt water into the freshwater systems of the river and its floodplains.
- Obtained approval from the Australian Pesticides and Veterinary Medicines Authority to apply Shark™ Aquatic Herbicide to treat cabomba in a flowing water body. This was the first time in Australia that this herbicide has been approved for use in a relatively large flowing water body. Since the first application of Shark™ in October 2016, intensive monitoring carried out post-treatment has not detected or identified any adverse environmental impacts in the immediate vicinity or downstream of the treated area.
- Entered into a partnership and memorandum of understanding with Territory Natural Resource Management and Aboriginal rangers for delivery of the 'Working Towards the Eradication of Prickly Acacia in the Barkly' program, which is providing assistance with on-property management of prickly acacia.
- The athel pine and grader grass weed management plans were finalised and declared.

In progress

- Completed aerial survey of gamba grass over 3 500 km² in the Katherine and Edith Farms rural areas and Jawoyn land. The data acquired has provided essential information for understanding gamba grass distribution in the Katherine region to inform planning and compliance activity.
- Issued infringement notices under the *Weeds Management Act* for: selling a declared weed (*sagittaria*); failing to comply with an order to control gamba grass; and a breach of the cabomba quarantine area, amongst other offences.
- To progress the gamba management program, 490 roadside assessments were undertaken in the Darwin rural gamba grass hot-spot area. This resulted in 84 on-site inspections and 38 orders being issued to control gamba grass. Two infringement notices were issued to landowners who failed to meet the requirements of the orders.

Ongoing

- A framework has been developed to ensure weeds are managed to a standard that ensures compliance with legislative obligations at a national and local level.
- Compliance plans to be developed for athel pine, mesquite and prickly acacia.
- A five-year compliance plan focussed on high-priority weed species in the Katherine region has been formulated.
- Revised statutory management plans for gamba grass, bellyache bush and mimosa are nearing finalisation.

Future priorities

- Continue to reduce red tape for pastoral lessees through improving systems to streamline processes for lodging applications online for land clearing, non-pastoral use, subdivision and pastoral lease transfers.
- Continue to support development of northern Australia through facilitating the economic development of the pastoral estate and the provision of administration services to the Pastoral Land Board.
- Finalise agricultural soil and land suitability investigations across a part of Orange Creek Station and Wadeye, Dunmarra, central Barkly and the Roper River valley regions.
- Undertake agricultural soil and land suitability fieldwork on the Keep River Plain and East Arnhem regions.
- Publish soil and vegetation mapping for Auvergne Station in the northern Victoria River District.
- Further develop and refine the rangeland monitoring program across the pastoral estate using on-ground and remote sensing methodologies.
- Contribute to the development and implementation of the Mapping the Future Program, including undertaking soil assessment studies in potential new development areas.

UNEARTHING RICHES FOR REGIONS

In February 2017, the department released two new reports in a series that identifies soils suitable for agriculture across the Territory.

The department's Land Assessment Branch Director, Jason Hill, said the two reports—covering the Tennant Creek West and Ali Curung areas—identified more than 90 000 hectares of land suitable for agricultural development on Aboriginal and pastoral land in those areas.

The release followed extensive field work in 2015 and 2016, in parallel with the department's Water Resources Division.

'Between both soil and land suitability projects, 682 soils were cored, described, laboratory tested and mapped in detail', he said.

'Working closely with local landholders and Centrefarm of the Central Land Council, the Ali Curung project investigated 47 610 hectares and identified more than 43 840 hectares of land suitable for a range of irrigated agricultural crops.

'With agriculture already established in the Ali Curung area, this new information will support the expansion of this fledging precinct.

'The Tennant Creek project investigated 57 855 hectares — 30 to 65 kilometres west of Tennant Creek - with 54 520 hectares found suitable for irrigated agriculture.

'Watermelons, hay, chia, grapes, citrus, mangoes, stone fruit, asparagus, garlic, onions and potatoes are among the many types of irrigated crops that could be grown in these soils in both study areas', he said.



Photo: department soil scientists Nick McGrath, Jon Burgess and Kaitlyn Andrews describe and sample a soil under irrigation in the Ali Curung area.

The department worked closely with the Central Land Council and Centrefarm, Aboriginal Areas Protection Authority, NT Farmers, the Department of Primary Industry and Resources and landholders and land managers to make the studies possible.

The identification of an additional 90 000 hectares of suitable land comes on top of the 40 000

hectares already identified in the Larrimah, Wildman, Barkly and Bathurst Island vicinities. This total will increase significantly given similar projects are currently being finalised for Wadeye, Gunn Point, Ti Tree, Dunmarra and Orange Creek.

Planning is also underway for investigations in the western Barkly, East Arnhem, Roper Valley and Keep River Plains.

OUTPUT: WATER RESOURCES

Provides scientific monitoring and assessment of the Territory's water resources, allocation of these resources for sustainable use and delivery of flood forecasting services.

This output is responsible for:

- Monitoring and assessing the Territory's water resources
- Water planning and policy functions to meet the requirements of the environment whilst also supporting water based development
- Water licensing and regulatory activities in compliance with the *Water Act* and regulations
- Bore drilling services
- Natural resource mapping and spatial data information services.

Services are provided from Darwin, Katherine and Alice Springs.

Key deliverables	2015-16 Actual	2016-17 Budget	2016-17 Actual	2017-18 Budget
Number of water assessment projects completed	3	4	4	4
Proportion of water allocation plans covered by annual water monitoring programs	100%	85%	100%	100%
River, coastal regions and communities covered by flood risk mapping ¹	28	39	35	40
Annual report cards on aquatic health of Darwin Harbour published	Yes	Yes	Yes	Yes

*Four delayed and expected to be released in 2017-18

WATER LICENCE DECISION PORTAL

The Northern Territory Government is improving the transparency of water licence allocations and decisions by making licence information available to the public on a **Water Licence Decision Portal**.

The department's Water Resources Division developed the online portal to allow public access to water licensing decisions for all current water allocation licences.

The Water Licence Decision Portal:

- is accessible from the department's website and from nt.gov.au
- includes spatial navigation tools that display the location of licences in relation to water control districts, water allocation plan boundaries and management zones
- displays the volume of water allocated and categorises water users within water allocation plan areas
- provides access to all documentation relevant to the issuing of any granted licence



- contains links to information on nt.gov.au relating to water management principles, water allocation planning and water advisory committees, licensing processes and the licence appeal process.

The portal allows users to access all relevant legislative and administrative information, assessment investigations, planning information, current licence details and documentation in relation to each current and advertised water extraction licence.

The public can also comment on and appeal licence applications as prescribed in the *Water Act* through the portal.

Performance achievements in 2016–17

Completed

- ✳ Resumed a consultative approach to water planning and water advisory committees through the establishment, re-establishment or expansion of water advisory committees for Howard; Ooloo; Katherine; Mataranka-Daly Waters; Ti Tree; Alice Springs and Rapid Creek.
- ✳ Re-established the Darwin Harbour Water Advisory Committee.
- Re-established the Drillers Qualification Advisory Committee.
- Declared the Berry Springs Water Allocation Plan.
- Continued implementation of the Katherine Tindall and Alice Springs water allocation plans.
- ✳ Improved transparency of water licence allocations and decisions via an online Water Licence Decision Portal.
- Revoked the exemption from licensing under the *Water Act* that applied to bores pumping 15-litres per second or less in the Darwin Rural Water Control District.
- Facilitated an information campaign to landholders in the Darwin rural area about their bores, the groundwater resource and longer-term management actions including: delivering public meetings in Berry Springs and Humpty Doo; roadside signage; regular ground water level reporting in the local newspaper and online; and the expansion of Bore Central to provide property specific advice on water risks and bore characteristics. Over 200 people visited Bore Central between July and December 2016.
- Published the 2016 Darwin Harbour Region Report Card.
- Expanded water quality monitoring in Darwin Harbour through the Ichthys Project Voluntary Offsets Agreement.
- Coordinated the implementation of the Darwin Harbour Aboriginal Marine Ranger program in collaboration with Larrakia Nation.
- Released the findings of the 2016 groundwater quality survey for the Darwin region.
- Published a report on water quality of the Roper River.
- Conducted flood modelling and mapping to assist land planning decisions and disaster management planning.
- Undertook a study of the impact of agricultural development on the underlying groundwater system in the Rocky Hill area to enable the prediction of the longer-term effects of irrigation drainage.
- Developed the Alice Springs Flood Mitigation Report in collaboration with the Department of Infrastructure, Planning and Logistics and the Alice Springs Flood Mitigation Advisory Committee.
- Completed the interactive web application Darwin Rural Area Groundwater Watch to provide an overview of historical, current and predicted groundwater levels.
- Contributed to the independent review of licences by; responding to 43 individual requests for information, facilitating access to all electronic records and business directories, preparing and providing file records for 57 individual licence decisions (resulting in the collation of over 4000 pages of documentation) and participating in an initial week of face to face interviews with the review team and subsequent follow-up meetings required for further clarification.
- In collaboration with Department of Infrastructure, Planning and Logistics, produced storm surge and flood mapping for nine remote towns and communities along the Northern Territory West Coast, Tiwi Islands and Arnhem Coast.

NT Government Election Commitments are highlighted with the symbol ✳.

In progress

- Undertake innovative imagery analyses to identify potential Groundwater Dependent Ecosystems in the Western Davenport Water plan area, this methodology will also be used for planning in Ti Tree.
- Provide extensive technical and scientific advice to the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory.
- Progressing changes to the *Water Act* to ensure mining and petroleum activities are considered in the same way as other activities, including the requirement to obtain a water licence.
- Work with the Rapid Creek Water Advisory Committee on the development of a Water Management Plan for the Rapid Creek catchment.
- Five water allocation plans in development/under review: Mataranka Daly Waters, Ooloo Dolostone Aquifer, Howard, Ti Tree and Western Davenport.
- Continue research into fish movement in the Roper River.
- Continue research on pig-nosed turtle environmental flow requirements in the Daly River.
- Develop Strategic Aboriginal (Water) Reserves policy to give Aboriginal landowners increased opportunity to access water resources for economic development.
- Progress the Northern Territory Irrigation Feasibility Study for Managed Aquifer Recharge in key sites of the Northern Territory.
- Publish detailed water assessment work undertaken by the department including the reports on the Georgina Basin Groundwater Assessment - Daly Waters to Tennant Creek and the Preliminary Investigation on Surface Water Flooding and Water Resources Issues within Beetaloo Catchment.

Ongoing

- Establish the department's Web Map Service (WMS) for web-serving natural resources spatial layers on compatible mobile, desktop and web applications.
- Develop an ArcGIS Online prototype of NR Maps to be considered as an option for upgrading the department's web mapping system.
- Undertake a groundwater assessment in the Tennant Creek north region to evaluate the viability of resources for horticultural development.
- Conduct a water resource assessment of the Wildman River region to provide a basis for assessing the impact of any irrigated horticulture in this region.
- Water advisory committees continue to advise on the development of water allocation plans within a defined plan area.

Future priorities

- Progress and deliver community engagement work, particularly in relation to Darwin rural area groundwater use.
- Undertake the feasibility study for Ord Stage 3 – Land and Water Investigation, funded by the Australian Government through the National Water Infrastructure Development Fund – Feasibility Component.
- Progress new policies on Water Allocations; Management of Unused Water Entitlements; and Trade in Water Allocation Plan areas.
- Contribute to the development and implementation of the Mapping the Future Program, including undertaking water assessments in potential new development areas.
- Declaration of a new a water control district for Adelaide River.

OUTPUT: BUSHFIRES NT

Provides support to landholders in the management and mitigation of wildfire and assists volunteer brigades in fire management and suppression outside the Territory's urban centres.

This output is responsible for:

- supporting landholders in the management and mitigation of wildfire
- providing support and training to volunteer bushfire brigades across the Territory.

Services are provided from Darwin, Katherine, Tennant Creek, Alice Springs and Batchelor.

Key deliverables	2015-16 Actual	2016-17 Budget	2016-17 Actual	2017-18 Budget
Number of wildfire incidents attended by staff and/or volunteers ¹	405	300	491	400
Number of extension visits to properties	266	150	174	200
Number of stakeholders trained ²	372	400	226	400
Number of Authorised Bushfire Volunteers and volunteer Fire Wardens ³	574	550	316	550
Number of enforcement actions relating to the <i>Bushfires Management Act</i> and associated regulations, including firebreak compliance inspections ⁴	1 422	5 000	2 950	5 000

¹ Number of wildfire incidents attended by staff and / or volunteers increased to the budget due to higher than expected fuel loads, weather conditions, and incidents of arson.

² This includes all NTG staff members, Bushfires NT volunteers and other stakeholders who participated in bushfire management training delivered by Bushfires NT. The criteria for this category have changed as it previously included participation in training provided by external training providers.

³ This category has changed to reflect changes in volunteer arrangements under the new Bushfires Management Act which commenced in November 2016. Previously the category included all volunteers who had undertaken fire fighting training, and it included many who were no longer actively involved. The new legislation requires volunteers to be formally authorised, and includes a requirement for periodic review of that authorisation. The category now reflects an accurate count of volunteers trained and available for fire fighting operations.

⁴ The 2016-17 actual enforcement actions were affected as the wet season had near record rainfalls over the Territory which meant in many areas it was too wet for landowners to install or maintain fire breaks until late May or early June.

Performance achievements in 2016-17

Completed

- Commenced the *Bushfires Management Act* and associated Regulations. By June 2017, more than 300 authorised volunteers and fire wardens had been authorised under the new arrangements. Volunteers now have the protection from liability for fire management actions undertaken in good faith.
- In February 2017, all Bushfires NT staff from across the Territory undertook a two-day planning forum to prepare for the upcoming bushfire season.
- Following the passing of the new Act, a new Bushfires Council and five regional committees were selected and appointed. All members received training in governance and an overview of the new Act.
- Established a Bushfire Management Planning Framework.
- Developed multi-scale planning templates (regional and property plans).
- Established a Territory-wide, whole-of-community fire management network.
- Collaborated with other jurisdictions and Australasian Fire and Emergency Service Authorities Council (AFAC) in sharing processes and products.
- Increased the number of pre and post-season planning forums across the NT to increase community resilience through improving capacity to plan and implement mitigation.
- Implemented extensive mitigation measures, including fuel reduction, to improve land management outcomes and reduce bushfire risk.
- Mitigation measures included fuel reduction (both ground and aerial), construction and maintenance of strategic fire access trails, and property-level fire planning with landowners.

NT Government Election Commitments are highlighted with the symbol ✨.

In progress

- Regional bushfire plans for the five regional bushfire committees will be finalised during 2017–18.
- Commenced the Kenbi Fire Resilience Project – a partnership between Bushfires NT the Northern Land Council and traditional owners to develop the Kenbi Area Bushfire Management Plan on the Kenbi Aboriginal Land Trust.

Ongoing

- The number of authorised bushfire volunteers has steadily increased since January 2017 as volunteer brigades and Bushfires NT implement changes from the new *Bushfires Management Act*. This work will continue as new volunteers join and apply for an Authorised Bushfire Volunteer status.
- Work commenced in early 2017 with the Bushfires Council and regional committees on moving to risk-based decision processes, such as identifying land use, scale, risk and mitigation measures.

Future priorities

- ✳ Bushfires NT will establish an Aboriginal Carbon Unit to support the development of carbon abatement projects and associated economic development on Aboriginal land.
- ✳ Development of an Aboriginal Carbon Strategy.
- A new Bushfires Emergency Management System will be developed during 2017, with the first phase of the project being trialled by Bushfires NT staff across the Territory. The second phase of the project is to develop and trial the system with the volunteer brigades. The benefits of moving from a manual reporting system will provide greater oversight and management of incidents and improved efficiency and reporting capability.
- Complete the trial of the new Northern Territory Bushfires Management Planning Framework, which will include the:
 - development of multi-scale fire management plans
 - development and incorporation of fire planning information into spatial systems.
- Increase the level of consultation, engagement and recognition of volunteer brigades and volunteers.

NEW BUSHFIRES MANAGEMENT ACT COMMENCED IN NOVEMBER 2016



Photo: Aerial burning demonstration.

Bushfires NT celebrated the launch of the new *Bushfires Management Act* in November 2016.

Changes to land use and fire management methods and the significant expansion of rural residential development have increased the risk of bushfire.

The new legislation recognises that fire is best managed through planning and mitigation and that it is easier, safer and less expensive to prevent a fire than it is to fight it.

Regional bushfire management plans will be prepared in consultation with landowners and other stakeholders. The new legislation also recognises the crucial contribution of volunteer firefighters to successful fire management.



Photo: Controlled burning operations at Hidden Valley.

OUTPUT: ENVIRONMENT

The environment is protected through identification, management and mitigation of risks from human activities.

This output is responsible for:

- providing services that support the Northern Territory Environment Protection Authority (NT EPA)
- advising government on NT EPA assessment reports
- managing the regulatory framework to reduce the impacts of waste and pollution on the Territory's environment
- developing and implementing strategic policy to ensure environmentally sustainable practices and behavior.

Services are provided from Darwin.

Key deliverables	2015-16 Actual	2016-17 Budget	2016-17 Actual	2017-18 Budget
Environmental assessment reports provided to the Minister	2	5	3	6
Environment protection approvals and licences issued	26	30	25	
Decision on whether Environmental Impact Assessment required ¹		30	26	30
Assessment terms of reference and assessment reports issued within statutory or agreed timeframes ¹		100%	100%	100%
Waste and pollution approvals and licences ¹		180	171	200
Container deposit scheme approvals ¹		255	363	270
Compliance audits conducted ¹		85	102	110
Responses to pollution incidents ^{1,2}		950	879	1100
Environment grants to promote ecologically sustainable practices ¹		\$1M	\$1M	\$1M

¹ New Measure - 2016-17 published estimate used for comparison.

² Responses to pollution incidents decrease due to less incident reports being received.

³ Increased number of applications as a result of promotion of the scheme.

Performance achievements in 2016-17

Completed

- ✳ Signed five-year funding agreements with the Arid Lands Environment Centre, Environment Centre Northern Territory and the Environmental Defenders Office. The Arid Lands Environment Centre and the Environment Centre Northern Territory have received the first year payment of \$100 000. The Environmental Defenders Office has received \$50 000.
- Supported the NT EPA in its environmental impact assessment of major development projects in the Northern Territory by managing the environmental impact assessment process and preparing draft assessment reports for the Jemena Northern Gas Pipeline project, the Project Sea Dragon Stage 1 Legume Grow-out Facility and the Project Sea Dragon Core Breeding Centre and Broodstock Maturation Centre.
- Supported the NT EPA in issuing 25 environment protection approvals and environment protection licences under the *Waste Management and Pollution Control Act*.
- Issued 31 licences for the discharge of waste water under the *Water Act*.
- Supported the NT EPA in implementing reforms to the container deposit scheme to streamline processes for collection depot operators.
- Coordinated and prepared briefings for seven meetings of the NT EPA and provided 73 out-of-session briefing papers to the NT EPA.
- Investigated the illegal disposal of waste that led to the NT EPA successfully prosecuting Breakthrough Pty Ltd for offences under the *Waste Management and Pollution Control Act*.

NT Government Election Commitments are highlighted with the symbol ✳.

- Established a new air quality monitoring station in the Darwin central business district with financial support from INPEX.
- Administered the 2016–17 round of the Environment Grants program that provided \$992 169 to organisations for projects that reduce environmental harm and promote sustainable behaviour.
- Responded to the NT EPA's Roadmap for a Modern Environmental Regulatory Framework for the Northern Territory.
- ✳ Released the Environmental Reform Discussion Paper.

In progress

- ✳ Reform of environmental legislation that will strengthen the protection of the environment including a new environmental assessment act is under way.
- ✳ Implement administrative reforms to the environmental assessment process under the direction of the NT EPA, including increasing the transparency of decision-making by making all NT EPA decisions on notices of intent available to the public.
- ✳ Restructure the Environment Division to provide a clearer separation between operational activities, including regulatory support to the NT EPA and the Controller of Water Resources, and the policy and regulatory reform activities of government.

Ongoing

- Lead the Northern Territory response to per-and poly-fluorinated alkyl substances (PFAS) contamination by co-chairing the NT PFAS Interagency Working Group on behalf of the NT EPA.
- Contribute to the Northern Territory's environmental protection by responding to pollution incidents and other environmental concerns reported through the pollution hotline and online reporting.

Future priorities

- ✳ Continue to develop regulatory reform proposals to improve the Northern Territory's environmental protection and management framework in consultation with industry, community and government stakeholders.
- Continue to support the NT EPA in assessing the potential environmental impacts of development proposals and regulating activities under the *Waste Management and Pollution Control Act*, including an environment protection licence for the operation of the Ichthys Liquefied Natural Gas plant at Bladin Point.
- Further advance process improvements for environmental assessment of development proposals and develop regulatory guidance under direction of the NT EPA, including finalising the NT EPA's Recommended Land Use Separation Distances Guideline and Noise Guideline.
- Prepare a draft Seabed Mining Report for the NT EPA that provides advice on the potential impacts of seabed mining in the Northern Territory and how those impacts can be managed.
- Review the Northern Territory container deposit scheme as required by the *Environment Protection (Beverage Containers and Plastic Bags) Act*.
- Maintain a key role in leading the Northern Territory response to PFAS contamination.

OUTPUT: CORPORATE AND GOVERNANCE

Provides executive leadership and management to the Department of Environment and Natural Resources.

This output is responsible for:

- providing a wide range of corporate support services.

Services are provided from Darwin.

Performance achievements in 2016–17

Completed

- Launched the department's 2017–2022 procurement plan.
- Coordinated a two day Senior Leaders Forum in 2017. The forum focussed on the theme of 'unity and partnerships' and presented an opportunity for staff AO7 and above from all regions to collaborate and share their achievements and to focus on the challenges for the year ahead.
- Organised 12 People Matters Workshops with staff across all divisions and regions of the department to go through the results of the NTPS People Matters Survey in more detail and to give staff an opportunity to provide feedback on how to improve the identified areas for their specific division and region.
- Delivered quality shared services in line with agreements and transitioned successfully through machinery of government change. Launched the department's social media accounts for the department and Bushfires NT. The department's social media presence allows sharing of information or updates on department initiatives and programs. It also promotes community consultation and distributes important messages about weed alerts and bushfire management.

- Implemented a corporate training calendar outlining upcoming training available. The corporate training calendar included specifically requested training as well as training needs identified from the People Matters Survey.
- In 2016-17 the department developed, implemented and completed the internal and external audit program with a focus on Official Travel, Cabinet Information Security Measures, ICT purchases and Repetitive Tier 1 purchases.

In progress

- Initiated the Business Application System server migration project to move applications and data currently held on department owned equipment to a fully hosted environment offsite. This project will meet the changing demands on department information and services and support business operations across the department.
- Development of a Grants framework.
- Review of the performance management process for staff to move to a paper based system. The department will commence the review cycle in September to accommodate peak operational periods and training will be rolled out across the department including a coaching model for performance discussions.
- Commenced the DENR intranet usability and refresh project.

- Review of accounting and property manual.
- A new position, Executive Officer – Committees was created to centrally coordinate and drive outcomes for a number of existing committees which report through different divisions of the department.

Ongoing

- Development and implementation of the business planning toolkit and management and tracking of the quarterly reporting framework.
- Quarterly financial reporting.
- ICT intranet and mailbox usage and trend reporting.
- Review and amendment of policies and procedures.
- Defining the 2017–18 Audit Program.

Future priorities

- Improve internal communication and internal processes through the development of a new intranet incorporating online forms, knowledge bases and staff contacts.
- Implementing new performance management system.
- Implement business planning toolkit and quarterly reporting framework.
- Implement a Fraud and Corruption Control Policy and other related procedures.

RESPONSE TO SAGITTARIA



Photo: Roni Opden cleaning a pond of sagittaria.

The Weeds Management Branch was very busy in the early part of 2017 surveying properties in Darwin’s rural area as part of its sagittaria emergency response.

The department was aiming to stop the invasive water weed Sagittaria from establishing in the Territory. Twenty-eight plants were wrongly identified, labelled and sold as melon sword by Northern Territory sellers in 2016.

A publicity campaign to assist the recovery of sagittaria was launched in September 2016. The campaign resulted in multiple radio and television interviews and news items, newspaper articles and social media publicity.

Thanks to a significant public recall, fewer than 10 plants remained unaccounted for as at 30 June 2017.

As part of the response, two historical pond plantings of sagittaria were found because of the recall, both of which were successfully treated.



Photo: Sagittaria (*sagittaria platyphylla*).

WEED ALERT

Have you seen this plant on your property?

Sagittaria has been found in the Darwin rural area
 Sagittaria is declared a Class A (to be eradicated) aquatic weed under the Weeds Management Act and is also a Weed of National Significance (WoNS) because of its invasiveness, potential for spread and economic and environmental impacts.

Report immediately if found - 8999 4567

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Photo: Sagittaria flyer.



Photo: (L-R) Water Resources Drillers Ben Hoffman-Spence, Jesse Fox, Greg Stephens and Jesse McPhillips.

WILDMAN RIVER WATER RESOURCE INVESTIGATION

The NT Government has long recognised the potential of the Wildman River region for development. Water resource investigations began in the 1980s, concentrating on an area near the Twin Sisters Lagoons. Substantial groundwater and interconnected surface water resources identified the area as having crop-growing potential.

During 2016–17, the department's Water Resources Division investigated a wider area to define the full extent of the aquifers. The work involves mapping of springs, measuring stream baseflows to establish the connectivity with the underlying groundwater system and a substantial groundwater investigation program.

The Northern and Southern Region drilling teams worked together to ensure the drilling program was completed before the wet season.

Important findings were that there are two major aquifers: the Koolpinyah Dolostone and a younger

sand aquifer that overlies it. The dolostone is similar to the aquifer in the Darwin rural area but is less extensive. Several springs in the Mary River National Park and adjacent area are fed by discharge from this aquifer.

The sand aquifer is at the base of a system of buried valleys (palaeovalleys) that flowed eastwards. Thick clay layers between the two aquifers limit the connection between them.

This aquifer has the best potential for irrigation water supplies.