

OUR ACHIEVEMENTS



LEGISLATIVE CHANGES IN 2019-20

Overview

The department has continued with its legislative reform program during 2019-20. Of particular note is the passage and commencement of the new *Environment Protection Act 2019* and associated regulations, replacing the former *Environmental Assessment Act 1982*.

Water Act 1992

Water Legislation Miscellaneous Amendments Bill 2019

Commenced 25 September 2019.

The Water Legislation Miscellaneous Amendments Bill 2019 introduced into the Legislative Assembly in March 2019, provided for amendments to the *Water Act 1992* and *Water Regulations 1992*. It addressed technical irregularities and administrative inefficiencies, including unintended impediments to trading identified in administration of the water legislation.

Water Further Amendment Bill 2019

The Water Further Amendment Bill 2019 was introduced into the Legislative Assembly in August 2019 to provide for amendments to the *Water Act* to support the Strategic Aboriginal Water Reserves Policy Framework approved by Government in October 2017. The Bill was passed in the Legislative Assembly on 16 October 2019 and commenced post reporting date.

Marine Pollution Act 1999

Marine Pollution Legislation Amendment Bill 2019

Commenced 10 March 2020

The Marine Pollution Legislation Amendment Bill 2019 introduced into the Legislative Assembly in October 2019, provided for amendments to the *Marine Pollution Act 1999* to address identified deficiencies in the legislation to enable Government to pursue offences against ships suspected of causing marine pollution in Territory coastal waters and protect the Territory's marine environment.

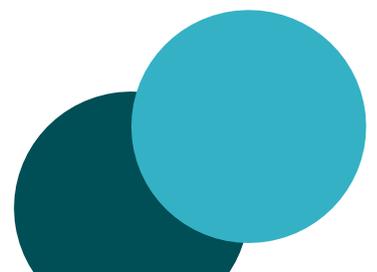
Environment Protection Act 2019

Commenced 28 June 2020.

The Environment Protection Bill 2019 introduced into the Legislative Assembly in May 2019, established an Act to protect the environment of the Northern Territory. It aimed to promote sustainable development by establishing a contemporary environmental impact assessment and approval system, based on best practice principles. The Act is supported by the new Environment Protection Regulations 2020.

The new legislation:

- establishes a new environmental impact assessment process for proposed actions that have the potential for a significant impact on the environment
- introduces a new environmental approval system requiring an environmental approval issued by the Environment Minister.
- establishes clear pathways for proposed activities to enter the environmental impact assessment process
- increases transparency and public scrutiny on decision making and promotes early engagement with potentially affected communities to ensure social licence for development
- introduces judicial review of decisions made by the NT EPA and by the Environment Minister in relation to environmental approvals
- provides enforcement and compliance tools and clearly articulates offences



DIVISIONAL ACHIEVEMENTS

Flora and Fauna

Provides scientific assessment and monitoring of the Territory's native flora and fauna, and delivery of policy advice and support for 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 land owners to manage the threat 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	2016-17 ACTUAL	2017-18 ACTUAL	2018-19 ACTUAL	2019-20 BUDGET	2019-20 ACTUAL
Spatial biodiversity records	2.45m	2.9m	2.89m	2.9m	3.8m
Biodiversity information requests met	2,400	2,400	2,150	2,200	2,235
Active inventory, monitoring and applied research programs	34	34	30	28	28
Management programs in place for sustainable wildlife management	6	8	8	9	9

Variance analysis actual vs original budget

Spatial biodiversity records:

- The number of spatial biodiversity records for the Territory is much larger than budgeted, as we were able to capture a large number of additional NT records from other information sources, such as the Atlas of Living Australia, as well as adding significant plant and animal records from recent work undertaken by the division.

Performance achievements in 2019-20

Completed

- Developed the SREBA Framework, a detailed guide for undertaking a Strategic Regional Environmental and Baseline Assessment (SREBA) in the Northern Territory, in line with the recommendations of the Final Report of the Scientific Inquiry into Hydraulic Fracturing. Published an account of Aboriginal biocultural knowledge of flora and fauna, for the Marrithiyel, Marri Dan and Marramaninjsji country between the Daly and Moyle Rivers in the western Top End.
- Revised the Management Program for Magpie Geese, in collaboration with hunters and other stakeholders. The revised plan incorporates new scientific data and harvest models, provides greater certainty to hunters about future season conditions and supports a growing interest in commercial harvest of magpie geese.
- Completed the annual aerial survey of magpie goose population and nesting rate to inform the conditions for the 2020-21 waterfowl hunting season, in accordance with the new management program.
- Undertook the annual survey of the saltwater crocodile population in the Top End's major rivers, to support the ongoing sustainable harvest of eggs that are the foundation for the Territory's crocodile industry.
- Completed an assessment of the terrestrial and marine biodiversity values of the Gunn Point Peninsula area, which contributed to the publication of the integrated assessment under the Mapping the Future program.
- Completed projects to monitor dolphin populations in Darwin Harbour and adjacent coastal waters, and monitored dugong populations around the Territory coastline, as part of the Ichthys Project Voluntary Offsets Agreement.

- Published two important scientific papers analysing factors underlying patterns of small mammal richness in monsoonal northern Australia. These are the culmination of a large research program and provide important insights into land management methods to address small mammal decline.
- Prepared a gap analysis of environmental information for the Middle Arm Peninsula in Darwin Harbour, and undertook a number of field studies to clarify the occurrence and distribution of threatened species and other important biodiversity values of Middle Arm.
- Partnered with Charles Darwin University, with funding from the National Environmental Science Program (NESP), to successfully develop a method to use environmental DNA (eDNA) to detect and monitor the threatened Gouldian Finch.
- Refining innovative methods for detecting and monitoring wildlife, including the use of motion-detecting cameras, songmeters for frogs and birds, nightvision cameras for bats, and environmental DNA.
- Curating the Northern Territory herbaria (Darwin and Alice Springs) as the authoritative collection of Territory plant specimens, providing plant identification services, and maintaining and updating the FloraNT web portal.
- Delivery of flora and fauna data to national data repositories such as the Atlas of Living Australia and the Australasian Virtual Herbarium.
- Expansion of the collection capacity (10 yr growth), reference collection and identification facility in the Darwin Herbarium.
- Developing proactive conservation strategies for threatened species such as *Typhonium* where there are frequent conflicts with proposed developments.

In progress

- Coordinating of the baseline studies making up a SREBA in the Beetaloo Sub-basin. Baseline studies will be undertaken in the six domains of water; terrestrial ecosystems; aquatic ecosystems; greenhouse gas; environmental health; and social, cultural & economic issues.
- Delivering the fourth round of the Aboriginal Ranger Grants Program, including \$1.43M for 16 new land management projects. The full \$12.1M available under the four year funding program (2017-18 to 2020-21) has now been expended or committed.
- Developing a regional ecosystem map for the Beetaloo Basin and undertaking a targeted survey for selected threatened species in this region, which is contributing to the Australian Government's Geological and Bioregional Assessment program.
- Analysing and reporting the biodiversity values of the Western Davenport region, and continuing field studies of the biodiversity values of the Katherine region, as part of the Mapping the Future program.
- Reviewing the conservation status of plant and animal species listed as threatened under the *Territory Parks and Wildlife Conservation Act 1976*, including collaborating with other Australian jurisdictions to align national threatened species lists.
- Working alongside Aboriginal elders and communities to document and preserve their biocultural knowledge, with work focusing on the Roper/Gulf region.
- Monitoring the status of a number of threatened species in the Northern Territory, and advising and assisting land managers with development of threatened species monitoring in a number of National Parks and Indigenous Protected Areas.
- Working with Traditional Owners, Aboriginal rangers and pastoral managers to restore important Central Australian waterholes for ecological and cultural outcomes.
- Providing authoritative advice on the NT's biodiversity to the Northern Territory Government, land managers, industry, developers and consultants, other stakeholders and the community.
- Undertaking an independent review of the Aboriginal Ranger Grants Program to support and refine an ongoing grants program.
- Evaluating current knowledge and uncertainties about the impacts of savanna burning methodologies and current practices on biodiversity.
- Ongoing research into the patterns of population density and impact of feral cats, working with various Indigenous Protected Areas, National Parks and Darwin City Council.

Future priorities

- Undertaking baseline studies of terrestrial and aquatic ecosystems in the Beetaloo Basin as part of a Strategic Regional Environment and Baseline Assessment (SREBA), in response to recommendations of the Scientific Inquiry into Hydraulic Fracturing.
- Supporting the implementation of the Darwin Harbour Strategy.
- Continuous improvement in making comprehensive data on the Northern Territory's biodiversity readily accessible to external stakeholders.
- Developing suitable guidance material for regulators, industry and land managers, and providing strategic advice regarding biodiversity-related matters, particularly in relation to the implementation of the new Environment Protection Act.
- Revision of the NT Saltwater Crocodile Management Program.
- Engage with the National Environmental Science Program to secure important environmental research within the Northern Territory.
- Delivery of the next phase of the Aboriginal Ranger Grants Program over 2021-2025.

WILDLIFE MANAGEMENT PROGRAM FOR MAGPIE GOOSE IN THE NT 2020-30

Waterfowl hunting in the Northern Territory (NT) is managed in accordance with the Management Program for the Magpie Goose in the Northern Territory of Australia. The Management Program was last revised in 2009. On the basis of recent dramatic declines in the size of the magpie goose population, as well as the emergence of a commercial take for the species, in 2018 the department decided a review of the Management Program with the goal of having a new Program in place in early 2020.

The development of the new Management Program involved extensive consultation with key stakeholders and was informed by a re-examination of the scientific basis for managing the goose population, incorporating the results of population estimates from aerial surveys over the past decade since the previous Program.

A consultation draft Management Program was developed and released for public comment in October 2019, with the new Management Program released in April 2020.

The 5 principal objectives of the Management Program are to:

1. Conserve and protect Magpie Goose in the NT in its natural habitat.
2. Promote sound management of important areas of habitat to address impacts of current and future threats including climate change.
3. Ensure and support the sustainable use of Magpie Goose populations, including ethical recreational hunting and commercial offtake in accordance with objectives 1 and 2 and the inalienable right of traditional hunting.
4. Minimise economic loss to commercial fruit growers caused by Magpie Goose without adversely impacting on the conservation of the species.
5. Enable ongoing refinement of Magpie Goose management through timely evaluation of management prescriptions and performance with opportunities for stakeholder input.

The new Management Program seeks to minimise future controversy associated with the annual waterfowl hunting season by establishing a fixed length for the season, and setting bag limits linked to transparent thresholds for population size.

The Wildlife Management Program for Magpie Goose is available at:
denr.nt.gov.au/programs-and-strategies/magpie-goose-management



Rangelands

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

This output is responsible for:

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

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

KEY DELIVERABLES	2016-17 ACTUAL	2017-18 ACTUAL	2018-19 ACTUAL	2019-20 BUDGET	2019-20 ACTUAL
Percentage of pastoral estate monitored in the year	24%	27%	22%	20%	15%
Land clearing applications assessed	33	11	18	12	27
Area of land receiving weed extension services (000 km ²)	250	205	200	220	220
Land development proposals assessed	685	677	618	600	536
Soil profile sites described and tested to develop new soil and land resource mapping	679	610	390	425	248

Variance analysis actual vs original budget

Land clearing applications assessed:

- Actual land clearing applications assessed, which are dependent on applications submitted, were 15 higher than original budget.

Land development proposals assessed:

- Land development proposals assessed are dependent on applications submitted.

Soil profile sites described and tested to develop new soil and land resources mapping:

- A decrease in soil profiles tested was due to COVID-19 field work restrictions in place between April and June 2020.

Performance achievements in 2019-20

Completed

- Under Mapping the Future publish remnant vegetation mapping and soil and land suitability mapping in the Gunn Point area.
- Published two soil and land suitability mapping projects covering the lower Keep River and Weaber Plain.
- Updated land use mapping across the Northern Territory providing a contemporary assessment of how the Territory's land resource is being utilised.
- Review and upgrade 1,550 soil profile data points in the Roper River Catchment and input into the Northern Territory Soil and Land Information system (SALInfo).
- Worked with INPEX to publish a series of scientific reports that will underpin the development of an ongoing mangrove monitoring program for Darwin Harbour as part of the Ichthys Project Voluntary Offsets Agreement (IPVOA).
- Applied treatment, for the fourth time, of the quarantine area of Lok Landji Billabong for cabomba in Darwin River.
- Revised the statutory weed management plans for prickly acacia and mesquite.
- Convened the Weed Risk Technical Committee to assess spigelia.
- Formed a statutory Gamba Grass Weed Advisory Committee to develop a draft Gamba Grass Weed Management Plan.
- Raised public awareness through presentations at the TNRM Annual Conference, publication

of the 'Weed All About It' newsletter and 'Weed Patch' in Katherine and launch of a Siam weed media campaign.

- Successfully introduced a Siam weed biocontrol agent - a gall fly developed to treat the established infestation in Queensland.
- Maintained 10 active permits to use weeds under conditions for (research, grazing, disposal, and education).
- Launched the NT WeedMate app which collects weed data points to assist in weed mapping.
- Completed the annual review of the Weeds Branch Compliance Policy.
- Assessed 17 applications to clear native vegetation on unzoned land lodged under the *Planning Act 1999*.
- Assessed 10 applications to clear native vegetation lodged under the *Pastoral Land Act 1992*, including applications to vary existing permits.
- Assessed two non-pastoral use permits lodged under the Pastoral Land Act for purposes including horticulture and agriculture.
- Carried out rangeland monitoring activities across 31 pastoral leases to assess land condition.
- Amalgamated two historical stock routes into adjoining pastoral stations.
- Assessed and approved eight subleases under the Pastoral Land Act for various purposes including gas infrastructure and aquaculture.
- Assessed and approved six Energy Supply Easements under the *North East Gas Interconnector Pipeline (Special Provisions) Act 2015* for gas purposes.
- Assessed and approved 22 pastoral lease transfers under the Pastoral Land Act.
- Assessed and approved one pastoral lease term extended under the Pastoral Land Act.
- Assessed and approved three lease conversions under the Pastoral Land Act.
- Provided written advice on 536 development proposals for Northern Territory Government agencies and authorities, and private entities.
- Reviewed the Northern Territory Pastoral Land Clearing Guidelines to provide enhanced clarity on when the clearing of native vegetation requires formal assessment to obtain approval from the Pastoral Land Board to clear.
- A comprehensive process was administered to support pastoral lessees experiencing serious hardship due to extreme climatic circumstances by waiving the requirement to pay pastoral lease rent.



IN MEMORIAM - PAUL ZLOTKOWSKI

Paul Zlotkowski served on the Pastoral Land Board from 2016 to 2019. Paul was an influential and progressive chair who was committed to sustainable development. Sadly Paul died in late 2019.

Paul was born in Yeppoon in the 1930s. He grew up on his parents' sheep and cattle property near Longreach working stock and riding horses from a young age. Paul moved to Sydney to attend school, after which he gained employment at Goolgumbula Station then Buttabone Stud Park in New South Wales (NSW).

Paul was appointed as manager of the family's three properties in the mid-fifties. During the 15 years spent managing these properties, Paul was continually on the move buying cattle in the northern NSW region and walking them south to sell.

In 1967 he bought Yelvertoft Station in Queensland (QLD) and a year later Wollogorang Station in the Territory. Paul moved to Wollogorang permanently in 1979, later buying adjoining Wentworth Station then Amungee Mungee Station in 2003 to develop a live export depot for Wollogorang cattle. Here he spent five years building infrastructure such as lanes and waters to handle about 10,000 head. As an avid sailor, Paul retired in 2015 to live permanently on his boat in Cullen Bay.

Paul committed his life to the pastoral industry, experiencing an array of issues including droughts, floods, cyclones and the 1980s BTEC program. In doing so he contributed to the development of the Northern Territory's pastoral estate for some 55 years. Ultimately, he brought his experience to the Pastoral Land Board where he served as chairman from 26 June 2016 to 25 June 2019. Paul was well respected across the pastoral industry and will be greatly missed.

In progress

- Implementation of the strategies to support the management of gamba grass including mapping, planning and tracing of gamba grass; establishment of the Gamba Army; delivery of the Gamba Action Program and Fire Mitigation Assistance Program and finalisation of the Gamba Grass Weed Management Plan 2020.
- Under Mapping the Future Program progress an extensive field survey program to develop soil and land suitability mapping in the Katherine vicinity.
- Soil and land suitability mapping across part of the Roper River valley is currently being finalised.
- Under Mapping the Future Program refine and expand soil mapping in the Western Davenport region.
- Secure approximately 15,000 legacy vegetation descriptions across the Territory into the Northern Territory Vegetation Site Database (NTVSD)
- Implementation of the statutory weed management plan for athel pine. This includes ongoing collaboration with affected landholders in the upper Class A zone of the Finke River catchment, removal of amenity plantings along with the development of a compliance plan.
- Commencement of vegetation mapping of Limmen National Park.
- Revision of the statutory weed management plans for neem, chinee apple, grader grass and cabomba.
- Continuing to implement management requirements of the Lhere Mparntwe Management Strategy 2019, including buffel grass control.
- Continuing sagittaria detection and eradication measures.
- Continuing emergency rapid responses to incursions of parthenium weed, rubber vine and spigeli, as well as Siam weed (commenced in 2019-20).
- Revision of regional weed management plans/

strategies for Darwin, Katherine, Tennant Creek and Alice Springs.

- Undertaking trials into the use of the granular herbicide Tebuthiuron for the control of rubber bush in the Alice Springs and Tennant Creek region.
- Undertaking trials into the use of soil active residual products for the control of gamba grass around Darwin, as well as aerial trials in the Coomalie region.

Future priorities

- Control and containment of the Siam weed infestation west of Litchfield National Park, working towards future eradication from the NT.
- Work towards the eradication of prickly acacia from the Barkly Tableland through assisting landholders with strategic control works, remote sensing and cost benefit decisions.
- Finalise soil and land suitability mapping across parts of the central Barkly Tableland.
- Under Mapping the Future Program undertake a soil and land suitability investigation in the Deep Well area.
- Continue to expand broad scale land resource information across the rangelands, including parts of the Barkly and Southern Alice Springs Pastoral Districts.
- Continue to implement and develop long term mangrove health remote sensing monitoring programs in Darwin Harbour.
- Develop a draft framework and associated policy for compliance with the Pastoral Land Act for consideration by the Pastoral Land Board.
- Support the Pastoral Land Board to develop and trial a new process for recovery planning which will be collaboratively developed with pastoral lessees who have legacy issues or declining land condition. Recovery Planning will build upon, then replace former requirements for Voluntary Management Plans.



GAMBA ACTION SERVICE SWITCH PROGRAM

The Gamba Action Program (GAP) is a seasonal program for landholders to get free herbicide and free equipment loans to enable them to better manage their gamba grass. The GAP runs from December to April, the best time for the treatment of gamba grass and before it produces seed.

Due to COVID-19 in March, there was a requirement to re-think the way the GAP was delivered and find a creative way of delivering the program. Meet the Gamba Action Service Switch Program 2019-20 (GASSP-19).

The program adapted an appropriate response during a time of increased stress and uncertainty in the community. The adapted approach remained focussed on providing options for land managers to prepare for the bushfire season.

The GASSP-19 included Rangelands divisional staff, unable to undertake their usual roles, being remobilised to assist weed management officers to provide:

- contactless home delivery service of herbicide to landholders
- spraying of gamba grass for at risk, physically impaired or elderly landowners, or absentee lands and town camps that posed significant gamba fire threat to neighbouring blocks

Over five weeks, seven weed management branch officers and Rangelands divisional staff:

- sprayed 30,300L of mixed herbicide on 28 properties, including Riding for the Disabled and Kulaluk
- sprayed 62 hectares of gamba grass, including 10ha on Kulaluk
- brought the majority of the treated properties, which totalled 1,782 hectares in area, into compliance with the statutory Weed Management Plan for Gamba Grass (*Andropogon gayanus*)

This portion of the program carried the informal tagline “Give the Top End a Spray!”

Additionally, the weed management branch averaged 25 phone calls per day for assistance in April, with over 240 landholders receiving contactless home delivery of herbicide.

The GASSP-19 was very well received by the community and the reduced fire load means Territorians were better prepared for the bushfire season.



Water Resources

Scientific monitoring, assessment, allocation, licencing and regulation for sustainable use of the Territory's water resources, and the delivery of flood forecasting services for infrastructure protection and community safety.

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 while also supporting development
- water licencing and regulatory activities in compliance with the Water Act and Regulations
- natural resource mapping and spatial data information services

Services are provided from Darwin, Katherine and Alice Springs.

KEY DELIVERABLES	2016-17 ¹ ACTUAL	2017-18 ACTUAL	2018-19 ACTUAL	2019-20 BUDGET	2019-20 ACTUAL
Water allocation plans in effect	-	4	4	8	6
Technical and scientific reports completed and publically available	-	5	22	21	12
Flood warning stations providing alerts to relevant authorities	-	63	70	66	67
Water extraction licences granted	-	70	269	130	141
Bore construction permits issued	-	198	209	145	181
Onsite compliance inspections completed	-	453	881	678	159

Variance analysis actual vs original budget

Water allocation plans in effect:

- The lower number of water allocation plans in effect was due to 2 draft water allocation plans not being finalised by 30 June 2020.

Technical and scientific reports completed and publically available:

- The lower than budgeted number of publicly released scientific and technical reports reflected staffing movements and finalisation of reports taking longer than expected. A further six technical reports were completed but not publically available.

Flood warning stations providing alerts to relevant authorities:

- The higher number of flood warning stations reflected flood warning functions being added to an existing water monitoring site.

Water extraction licenses granted:

- The increase of water extraction licences granted by 8% against budget reflected the reassignment of staffing resources to the licensing team when COVID-19 travel restrictions were in place. A further 25 applications did not result in a licence being granted due to the applicant withdrawing the application or the licence application being refused.

Bore construction permits issued:

- The increase in bore construction permits (now bore work permits) granted by 25% above budget was due to reduced groundwater levels in the Katherine region contributing to an increase in demand for bore work approvals.

Onsite compliance inspections completed:

- The significantly lower than budgeted number of onsite compliance inspections was due to a focus on non-compliant licensees, a reduction in staffing levels and COVID-19 physical distancing requirements impacting on scheduled inspections.

Performance achievements in 2019-20

Completed

- Developed and reviewed policies to ensure efficient administration of the water legislation, specifically policies to address trading and recovery of unused water; and finalised policies for mining and petroleum activity licensing and processing water extraction licence applications, for NT Government approval.
- Finalised and published the department's water legislation compliance and enforcement priorities for the 2020 water accounting year.
- Undertook further studies to identify groundwater dependent ecosystems in the arid zone to inform water allocation planning and water extraction licence assessments.
- Continued the 'Help Stop the Drop' community engagement and information campaign on groundwater in the Darwin Rural area. This campaign was extended to the Katherine region in 2019-20.
- Developed the 2020 'Know Your Bore' tool for Darwin Rural area and Katherine rural stock and domestic water users to enable assessments of bores at risk of water supply difficulties.
- Completed the issuing of 272 water extraction licences in the Darwin Rural area following the removal of the exemption from water licensing on bores pumping less than 15L per second in 2016.
- Determined and published annual announced allocation (AAA) decisions relevant to Top End licences with an AAA condition.
- Issued new 30-year licences for public water supply to Power and Water Corporation to provide greater certainty for ongoing, reliable public water supply for a number of remote communities across the Northern Territory.
- Issued 141 water extraction licences and 181 bore work permits.
- Completed an Assessment of Feasibility of Irrigated Agriculture on the Keep River Plains as required under the Project Agreement for the National Water Infrastructure Development Fund.
- Finalised a hydrogeological study of the Mereenie aquifer to improve knowledge of the resource including potential yield.
- Prepared mapping products to improve flood preparedness for Rapid Creek detention basin, Adelaide River, Katherine, Daguragu and Kalkarindji townships.
- Published spatial information products for Gunn Point under the Mapping the Future Program.
- Undertook investigation drilling in the areas of Gunn Point, Palmerston and Western Davenport.
- Finalised the new Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024, declared on 16 August 2019.
- Finalised the Ooloo Dolostone Aquifer Water Allocation Plan 2019-2029, declared on 13 November 2019.
- Finalised the Ti Tree Water Allocation Plan 2020- 2030, declared on 19 February 2020.
- Conducted bore testing and sampling programs in the Western Davenport region.
- Rehabilitated and replaced key bores in the Darwin and Katherine groundwater monitoring networks.
- Published the Darwin Harbour Region Report Card 2019.

In progress

- Continuing to undertake the feasibility study for Ord Stage 3, Land and Water Investigation, funded by the Australian Government through the National Water Infrastructure Development Fund.
- Working with the Rapid Creek Water Advisory Committee on a water management plan for the Rapid Creek catchment.
- Updating environmental flow requirements of the pig-nosed turtle in the Daly River, with partner organisations, as part of the National Environmental Science Program.
- Working collaboratively with Rangers in the Roper River community to monitor river water quality.
- Contributing to the development and implementation of Mapping the Future, including undertaking water assessments in potential new development areas.
- Undertaking the Southern Stuart Corridor, Exploring for the Future Project in collaboration with Geoscience Australia.
- Complete drafting of the Mataranka Tindall Limestone Aquifer, and Howard water allocation plans for key stakeholder and community consultation towards declaration of new water allocation plans.
- Constructing and commissioning new gauging stations on the Armstrong and Wilton Rivers to provide flood alerting for the Buntine and Central Arnhem Highways for the Northern Territory Department of Infrastructure, Planning and Logistics.

- Completing preparation of amendments to the Water Act 1992 to improve administrative efficiency and to capture the Strategic Aboriginal Water Reserve Policy Framework.
- Working with partner agencies to deliver the Strategic Regional Environmental and Baseline assessment as recommended in the Final Report of the Scientific Inquiry into Hydraulic Fracturing.
- Develop and implement a monitoring program and sustainable water extraction model for the Palmerston Dolostone Aquifer in consultation with partner agencies and major water users, to inform a sustainable water use plan.
- Complete the Palmerston Groundwater Study and publish report.
- Undertake a long-term monitoring program for stream health in Rapid Creek.
- Undertake river health monitoring for the Lake Eyre Basin River assessment program.
- Maintain flood warning stations, providing alerting services to Northern Territory Emergency Services, the Bureau of Meteorology and other relevant authorities.
- Provide support to the independent Darwin Harbour Advisory Committee, including supporting the Darwin Harbour Integrated Report Card project.
- Continue the long-term water quality monitoring program for the annual Darwin Harbour Region Report Card.
- Complete pilot projects for long-term monitoring programs for anthropogenic pressures and sediment quality in Darwin Harbour in conjunction with the Integrated Marine Monitoring and Research Program (IMMRP).
- Upgrading the water information database and development of a new Water Data Portal.
- Continued groundwater and surface water monitoring programs in support of water resource assessments and water allocation plans.

Future priorities

- Progress development of new water allocation plans for the Beetaloo North and Beetaloo South water allocation planning areas as per recommendation 7.7 in the Final Report of the Scientific Inquiry into Hydraulic Fracturing.
- Finalise water assessment studies and publish reports for the Bonaparte Plains East, and Orange Creek.
- Finalise a surface water flood harvesting guidance policy for the assessment of surface water extraction licence applications.
- Prepare mapping products to improve flood preparedness for Adelaide River township and the Rapid Creek detention basin.
- Develop and deliver long-term systematic monitoring programs for Darwin Harbour's water, sediment quality and anthropogenic pressures.



Development potential of the Gunn Point Area

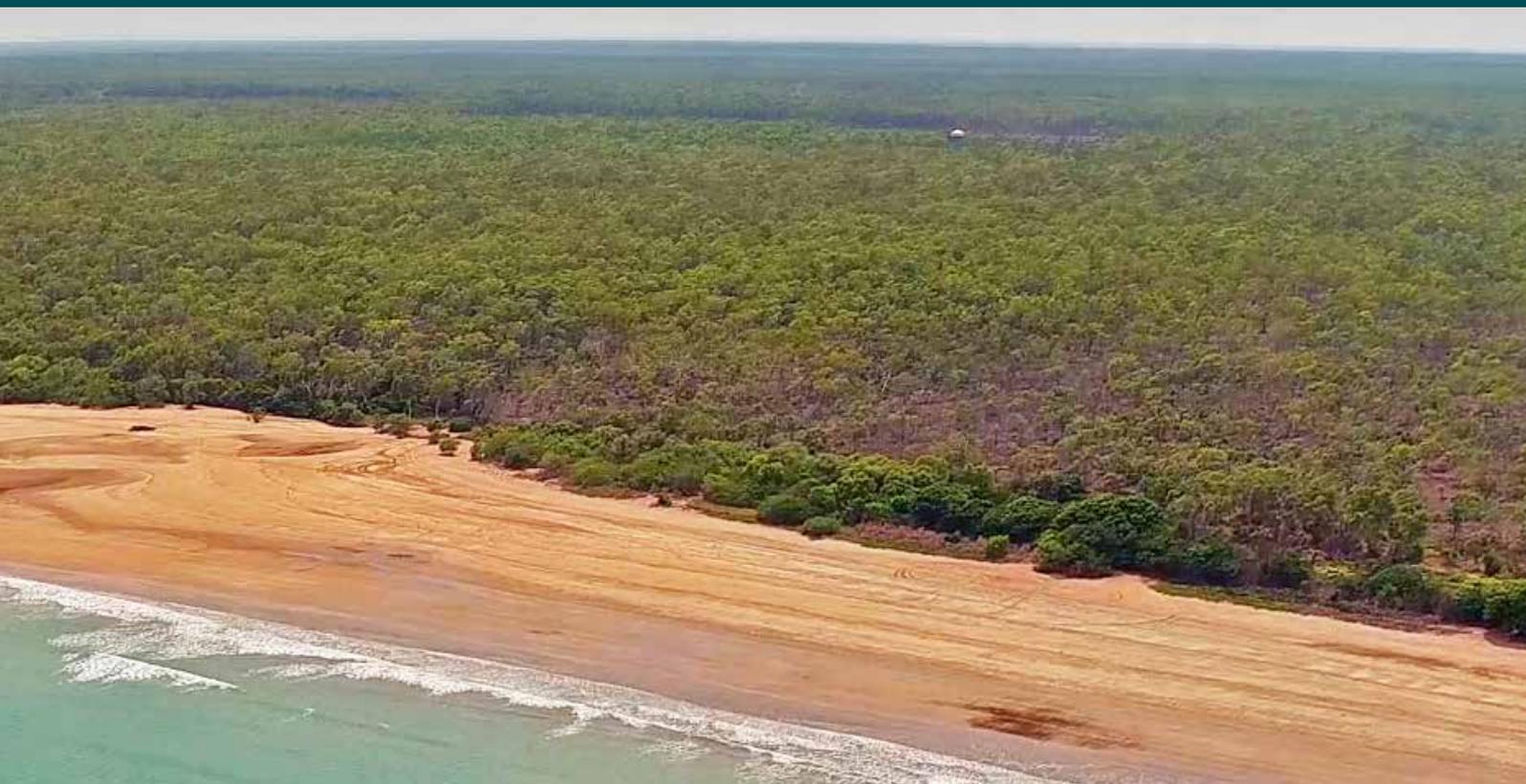
During the year, the Department of Environment and Natural Resources completed the most comprehensive biophysical resource assessment undertaken in the Northern Territory to date. At Gunn Point peninsula, on the outskirts of Greater Darwin, over 71,000 ha was surveyed and mapped to determine land capability, water availability and biodiversity resources. The area surveyed was nearly three times the size of Darwin and Palmerston combined.

The project provided confidence about the biophysical resources and a baseline of information to inform investment decisions and effective regulatory decisions. Mapping of resource availability and constraints will enable government to progress from conceptual to detailed planning for the Gunn Point peninsula, an area recognized as having significant potential for a broad range of development opportunities.

- 33,000 ha of land has high to moderate potential for general development, suitable for dryland or rain-fed agriculture, forestry, rural residential living or industrial purposes.
- Nearly 20,000 ha of this land has access to a productive aquifer.
- Approximately 37,000 ha is not recommended for development due to physical or environmental land use constraints.
- Sufficient groundwater is available to sustainably support a modest horticultural precinct, potentially increasing the land under irrigate agriculture in the Litchfield municipality by 10-15%.
- In 2015, an NT Farmers Economics Profile estimated the Litchfield horticultural industry contributed \$122 million annually to the local economy.
- Irrigable land is likely to be suitable for growing a range of tropical and sub-tropical fruits, citrus, cucurbits, fruiting, leafy and root vegetables, commercial flowers and forestry.

With all weather road access, close proximity to transport hubs, workforce and planned provision for utilities and trunk services, the Gunn Point peninsula offers considerable opportunity for strategic industry, primary production, and rural and residential development.

Further information is available at: denr.nt.gov.au/developmentopportunities/projects/gunn-point



BUSHFIRES NT HEADQUARTERS OPEN FOR BUSINESS

Construction of the new \$6.8m Bushfires NT headquarters at Acacia Hills was completed and handed over to Bushfires NT on 29 May 2020.

Bushfires NT staff have relocated from Winnellie and Batchelor to the facility to provide support to the community and volunteers in the rural area.

The new headquarters will support 35 ongoing Bushfires NT staff and around 350 volunteers, making it easier for staff to better coordinate planning and response to the fire season.

Our Bushfires NT staff and volunteers do a fantastic job to keep our community safe.



Bushfires NT

Provides fire management support to rural stakeholders and volunteer bushfire brigades across the Territory, including fire management planning, training and mitigation, and suppression activities to ensure best fire management practices.

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 and support are provided across the Territory with offices located in Darwin (Acacia Hills), Batchelor, Katherine, and Alice Springs.

KEY DELIVERABLES	2016-17 ACTUAL	2017-18 ACTUAL	2018-19 ACTUAL	2019-20 BUDGET	2019-20 ACTUAL
Permits to burn issued	-	-	1,347	1,280	2,482
Planned burns attended by Bushfires NT or authorised volunteers	-	-	876	340	250
Formal fire management planning meetings with stakeholders	-	172	184	158	202
Compliance inspections under the <i>Bushfires Management Act 2016</i>	-	3,632	4,438	3,600	5,923
Number of stakeholders trained	226	318	241	400	90
Number of authorised bushfire volunteers and volunteer fire wardens	316	408	457	520	526

Variance analysis actual vs original budget

Permits to burn issued:

- The 93% increase in the actual number of permits to burn against budget was reflective of more volunteers and staff using the Bushfires Emergency Management System (BEMS) which allowed for more efficient issue of permits.

Planned burns attended by Bushfires NT or authorised volunteers:

- The decrease of 26% in planned burns was a result of less planned burns in central Australia due to low fuel loads.

Formal fire management planning meetings with stakeholders:

- Due to COVID-19 restrictions, the number of fire management face to face meetings had been decreasing. This allowed staff to hold telephone meetings with a 27% increase in meetings.

Compliance inspections under the Bushfires Management Act:

- The number of compliance inspections estimate saw a 64% increase during the year due to additional staff availability from Bushfires NT and the Weed Management Branch during COVID-19, the extra resources gave us the flexibility to work on firebreak inspections.

Number of stakeholders trained:

- Actual trained stakeholders decreased by 77% on the original budget due to early COVID-19 restrictions. Training was reinstated in June 2020 with one course offered prior to the declaration of the Top End fire season.

Number of authorised bushfire volunteers and volunteer fire wardens:

- As a result of the recent training course in June 2020, the number of authorised volunteers and fire wardens has seen a small increase over the budget estimate.

Performance achievements in 2019-20

Completed

- Construction completed on the new Bushfires NT headquarters in Acacia Hills, which supports 35 Bushfires NT staff and 350 volunteers.
- Developed and launched the Bushfires NT Volunteer Strategy 2019-2022.
- Improvements to training for volunteer and Bushfires NT staff including the introduction of nationally accredited training at advanced levels in key operational areas.

In progress

- Reviewing and designing new grass firefighting units to meet safety and functional requirements for staff and volunteers.
- Review and improvement of volunteer fleet management arrangements to ensure volunteer brigades are provided with best possible quality vehicles and equipment.
- Undertake an externally funded project, Identifying and Reducing Wildfire Risk in remote communities.
- Improvements in quality and replacement rate of personal protective equipment provided for volunteer fire fighters.
- Responding to requests of the Royal Commission for National Natural Disaster Arrangements.
- Develop an online training portal for accredited training to staff and volunteers across the Territory.
- Improving capacity and safety in responding to wildfires with a new NT Aviation Capability Officer to meet national standards.
- Continue to develop and implement effective fire management plans in collaboration with landholders.
- Develop a communication pathways to ensure transparency and understanding goals with staff and volunteers.
- Develop and maintain a sustainable network of volunteers across the Territory.





CHIEF MINISTER'S AWARDS

This year has been one of the busiest for Bushfires NT and one of its most successful, with the division being awarded the Chief Minister's award in November 2019.

The team won the "Strengthening Government Integrity and Public Administration Award" following the launch of its Bushfires Emergency Management System (BEMS) in March 2019.

BEMS is a web application that provides the platform for Bushfires NT and volunteer brigades to digitise permits, planned burns and fire incidents.

This great achievement is deserved recognition for the wonderful staff at Bushfires NT whose devotion to improving public safety is unwavering.

Environment

Provides assessment and monitoring to ensure the environment is protected through identifying, managing and mitigating potential impacts and 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 impact of waste and pollution on the Territory environment
- developing and implementing strategic policy to ensure environmentally sustainable practices and behaviour
- services are provided from Darwin and Alice Springs
- advising government on NT EPA assessment reports
- administering licences and approvals to protect the environment from the impacts of waste and pollution on the Territory's environment
- regulation of onshore petroleum activities in the Northern Territory

KEY DELIVERABLES	2016-17 ACTUAL	2017-18 ACTUAL	2018-19 ACTUAL	2019-20 BUDGET	2019-20 ACTUAL
Environmental assessment reports provided to the minister	3	4	4	4	3
Decision on whether environmental impact assessment required	26	17	17	33	25
Waste and pollution approvals and licences	171	217	233	233	236
Container deposit scheme approvals	363	1,138	1,271	1,163	1,128
Compliance audits conducted	102	115	194	120	127
Responses to pollution incidents	879	907	909	1,100	992
Onshore petroleum environment management plans assessed	-	-	-	15	8
Percentage of grant funds paid to promote ecologically sustainable practices ¹	-	-	-	100%	100%
NT Environment Protection Authority satisfaction	-	4	5	≥ 5	5

Variance analysis actual vs original budget

Environmental assessment reports provided to the Minister:

- The number of Assessment Reports delivered to the Minister reflects the broader economic landscape and the number and type of developments proponents wish to pursue. The actual number of Assessment Reports delivered was one less than the original budget of 4 reports.

Decision on whether environmental impact assessment required:

- The number of decisions made on environmental assessments is dependent on the broader economic landscape and the number and type of developments proponents wish to pursue. The budget was increased substantially from previous years due to the new inclusion of all onshore petroleum actions. There were eight less decisions than budgeted, reflecting fewer development proposals and a slowing in proposed petroleum activity due to COVID-19.

Waste and pollution approvals and licences:

- The number of waste and pollution approvals and licenses administered in 2019-20 was consistent with the numbers predicted to be administered in 2019-20 with a slight increase (1% variation) in licences administered which largely correlated to an increase in surrenders, transfers or amendment of licences surrendering licences.

¹ New measure from 2019-20

Compliance audits conducted:

- The number of compliance audits conducted in 2019-20 was slightly greater than budgeted. The number of compliance audits undertaken reflects the targeting of audits on more serious issues and incidents requiring significant actions in the shorter term.

Responses to pollution incidents:

- The number of responses to pollution incidents was 10% less than budgeted. This reflects, in part, a decrease in referrals from some other regulators (particularly local government) and a reduction in pollution reports received since the onset of COVID-19.

Onshore petroleum environment management plans assessed

- The number of onshore petroleum Environment Management Plans assessed was less than budgeted. This is due to a slowing of onshore petroleum exploration activity, largely due to COVID-19.

Performance achievements in 2019-20

Completed

- Provided high quality advice and administrative support to the NT EPA to complete environmental impact assessment of major projects.
- Introduced the Environment Protection Act 2019 and Environment Protection Regulations 2020 to substantially reform the Northern Territory's environmental impact assessment system.
- Provided services to the NT EPA through the administration of 181 licences and approvals under the Waste Management and Pollution Control Act 1998 and 1203 Container Deposit Scheme (CDS) supply approvals, 21 depot approvals and 4 coordinator approvals under the Environment Protection (Beverage Containers and Plastic Bags) Act 2011.
- Administered 55 Waste Discharge Licences under the Water Act 1992 on behalf of the Controller of Water Resources.
- The transfer of the activities of the Onshore Gas Reform Unit into the Environment Division.
- Provided high quality advice to the Minister for Environment and Natural Resources to support approval decision on eight Environment Management Plans under the Petroleum (Environment) Regulations.
- Established compliance and enforcement processes under the Petroleum (Environment) Regulations including undertaking six onsite compliance inspection for seismic, civils, drilling and hydraulic fracturing activities approved during 2019-20.
- Completed an audit of 825 waste transport certificates under the Movement of Controlled Movement of Waste National Environment Protection Measure (NEPM) to determine the total volume of hazardous waste materials generated, stored, transported and disposed of within the NT and interstate over the 2019-20 financial year.
- Administered the Container Deposit Scheme (CDS), which saw 100 million containers redeemed at Northern Territory (NT) collection depots during 2019-20.
- Completed auditing and compliance of more than 2260 CDS records checked and verified for accuracy and validity. This is in line with recommendations from the independent review of the CDS that a greater focus on compliance with the scheme is required
- Provided services to the NT EPA in responding to 992 pollution incident reports.
- Responded to the impacts of COVID-19 on business and industry by taking a constructive, flexible and risk-based approach to licensing and compliance activities while maintaining appropriate environmental outcomes.
- Amended the Marine Pollution Act 1999 to address practical deficiencies that limited the Territory's ability to take enforcement action against foreign owned ships that may cause pollution in the Territory's marine waters.
- Administered the Environment Grants program which provided almost \$1 million in funding to not for profit organisations, schools and community groups to encourage greater community engagement in environment protection and enhance waste reduction, reuse and recycling.
- Supported the NT EPA in the development of a 'Statement of Intent 2020-2022' to fulfil its obligations under the Northern Territory Environment Protection Authority Act 2012.

In progress

- Developing a comprehensive suite of guidance material to communicate the requirements of the new environmental impact assessment and

approvals process, and increase transparency and certainty.

- Continuing policy research and development and stakeholder engagement to inform the further development of the Environment Protection Act 2019 to improve the Territory's management of wastes, pollution, land clearing and the environmental impacts of mining activities.
- Developing the 'Northern Territory Climate Change Response: Towards 2050' and supporting 'Three Year Action Plan' to deliver emissions reduction initiatives and assist the Northern Territory to adapt and respond to the impacts of climate change.
- Developing a framework and supporting policies and guidance to introduce an environmental offsets regime in the Northern Territory.
- Implementing a robust, contemporary online system for waste tracking to facilitate improved traceability and reporting of hazardous waste movements in the NT.
- Developing operational policy and technical guidance material to support the Petroleum (Environment) Regulations, including guidance on the requirements of an environment management plan under the Regulations.
- Reviewing the efficiency and effectiveness of the onshore petroleum environment management plan assessment and approval process undertaken during 2019 under the Water Act 1992 and Petroleum (Environment) Regulations 2016.
- Supporting the NT EPA to provide strategic advice to inform the future of seabed mining in the Northern Territory.
- Implementing the recommendations from the 5 year review of the CDS in line with government's commitments.
- Providing information, advice and alerts on air quality and related impacts in the Darwin region.

- Providing regulatory advice on the assessment and management of contaminated sites including regulatory oversight of the NT's response to per- and poly-fluoroalkyl substances (PFAS).

Future Priorities

- Advise Government on reforms to the Environment Protection Act 2019 to improve the management of environmental impacts of mining activities to support improved environmental outcomes and investor certainty.
- Deliver the actions of the Northern Territory Climate Change Response 'Three Year Action Plan'.
- Finalise the Northern Territory's Offsets Framework and Principles and delivering a Biodiversity Offset Policy for the Northern Territory.
- Finalise amendments to the Petroleum (Environment) Regulations 2016 to support the introduction of statutory land access arrangements under the Petroleum Act 1984.
- Implement further recommendations of the Final Report of the Scientific Inquiry into Hydraulic Fracturing, including amending the Petroleum (Environment) Regulations 2016 to establish legislative requirements for environmental securities for onshore petroleum activities.
- Develop and implement the Environment Division Compliance and Enforcement Plan to establish a risk based compliance program for licensed and unlicensed activities and ensure transparency to the regulated community.
- Further develop the Northern Territory's waste strategy to respond to the ban on export of waste tyres, glass, plastics and paper, and implementation of the National Waste Policy Action Plan in the Northern Territory.
- Facilitate ecologically sustainable development of Darwin Harbour through focused studies on the cumulative impacts of development on the Harbour and Darwin region airshed.
- Advise Government on reforms to the Environment Protection Act 2019 to improve the management of the impacts of waste, pollution and litter.



SEEKING REGULATORY EFFICIENCIES IN THE ENVIRONMENTAL ASSESSMENT AND APPROVAL PROCESS FOR ONSHORE PETROLEUM ACTIVITIES

In February 2019 responsibility for environmental regulation of the onshore petroleum industry was transferred to the Minister for Environment and Natural Resources. Petroleum operators must have an approved environment management plan (EMP) before they commence activities in the Northern Territory, with the decisions on whether to approve an EMP or not resting with the Minister. DENR supports the Minister by assessing EMPs and providing advice to the Minister to inform approval decisions.

Reforms to the Water Act now require petroleum operators to hold a water extraction licence to extract groundwater for onshore petroleum activities. Licensing decisions by the Controller of Water Resources are supported by the establishment of the Daly Roper Beetaloo water control district, which the existing water control district footprint to include the Beetaloo Sub-basin.

In early 2020, the Petroleum Operation team conducted a retrospective review of the performance and effectiveness of the petroleum assessment and approval processes during 2019. The review aimed to identify improvements in the assessment and approval processes under the Petroleum (Environment) Regulations 2016 and Water Act.

The review was informed by consultation with industry, Northern Territory Government agencies, the Northern Territory Environment Protection Authority and the Environmental Defenders Office NT. A number of workshops were held to generate discussion and feedback on administration of the EMP and water extraction licensing assessment and approvals processes.

The review identified learnings and opportunities to improve the effectiveness and efficiency of the EMP and water extraction licensing assessment and approvals processes, which have been addressed in a number of recommendations.



Communications and engagement

The department undertook a range of community engagement activities during 2019-20.

- Expanded the “Know Your Bore” online tool beyond the Darwin rural area to include Palmerston and Katherine. The tool helps residents determine if they might be faced with groundwater shortages towards the end of the dry season.
- Worked in partnership with the Alice Springs community, Aboriginal Areas Protection Authority, Arid Edge Environmental Services and other key government agencies to protect the iconic Todd River red gums, ironwood and corkwood trees as part of the Lhere Mparntwe Management Strategy.
- Accepted an invitation from the Li-Anthawirriyarr Sea Rangers in Borroloola to give advice on their weed management plan.
- Consulted Territorians about:
 - The Wildlife Management Program for the Magpie Goose
 - The Northern Territory Coastal and Marine Management Strategy 2019-2029
 - The Darwin Harbour Strategy 2019-2024
 - Bushfires NT Volunteer Strategy 2019-22
 - NT Offsets Policy
- Sponsored the Territory Natural Resources Management (TNRM) Conference and its associated awards held in Darwin in November 2019.
- Attended the Alice Springs Ecofair to promote the “Bin it Don’t Spread it” initiative, urging local residents to place declared cactus in their kerbside wheelie bins at the local waste management facility.
- Supported the community to manage gamba grass and provide free gamba herbicide and equipment loans through the Gamba Action

Program (GAP). In its 10th consecutive year, the program was modified in March 2020 due to COVID-19 restrictions and renamed the Gamba Action Service Switch Program (GASSP-19).

The program ran for 5 weeks and resulted in 1782 hectares across multiple properties being sprayed with glyphosate.

- Sponsored the Society of Environment, Toxicology and Chemistry (SETAC) conference in Darwin. The department also hosted two sessions about managing environmental quality for onshore oil and gas operations, and managing environmental quality for marine oil and gas operations.
- The department’s onshore gas reform team joined the Department of Chief Minister (DCM) and other agencies to work at the whole of government display during the Katherine Show. Coffee mugs creating awareness about the noxious parthenium weed were very popular.
- Supported the 2019 Northern Australia Fire Managers Forum held in Darwin. The Forum was held at the Northern Australia Development Office and hosted by Bushfires NT, with support of the Bushfire and Natural Hazards CRC. Topics of interest included the Indigenous carbon industry and participants enjoyed a field trip to the Tiwi Islands.
- Held several Water Advisory Committee meetings to develop water management plans across the Northern Territory.
- Engaged with key stakeholders at the following industry conferences:
 - South East Asia Australia Onshore and Offshore Conference (SEAAOC) 2019
 - Northern Territory Resources Week 2019
 - Ecological Society of Australia Conference 2019





BUSHFIRES NT DEPLOYMENTS TO QUEENSLAND AND NEW SOUTH WALES

Given the devastating 2019-20 bushfires experienced interstate Bushfires NT staff and volunteers were part of a Northern Territory response to provide assistance to fire fighters in NSW to combat that state's bushfire crisis. This was the first time since 2007 that Bushfires NT members have been deployed in an on ground firefighting capacity.

In January 2020 a total of 30 Bushfires NT staff and volunteers from three strike teams joined their NTFRS counterparts in the Shoalhaven/Nowra and Bega/Bermagui areas. The teams comprised of Strike Team leaders, crew leaders, firefighters and a National Large Air Tanker Liaison Officer. In addition we deployed a Jurisdictional Liaison Officer to oversee our staff and volunteers.

This deployment was in addition to 3 Bushfires NT staff that travelled to Queensland to assist in the Boonah Incident Control Centre in south-east Queensland in November 2019 during Queensland's declared State of Emergency.

This support was greatly appreciated by our interstate colleagues.



WATER PLANNING FOR THE TERRITORY

In 2019-20, the department finalised the Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024, the Ooloo Dolostone Aquifer Water Allocation Plan 2019-2029 and the Ti Tree Water Allocation Plan 2020-2030, to complement the suite of existing water allocation plans.

The Katherine Tindall and the Ooloo plans guide water allocation decisions in their respective aquifers within the Daly Roper Beetaloo Water Control District. These regions play a vital economic role for industries such as agribusiness and tourism, which are reliant on secure water supplies to support their business operations and need to be sustainably managed into the future.

The Ti Tree Plan applies to all surface and groundwater within the Ti Tree Water Control District. It provides clear guidance on the water that is available for allocation under a licence for development in the area and the water that is required to maintain key environmental and cultural assets that are equally important to the region and those communities that depend on it.

A significant outcome of these plans is the establishment of a Strategic Aboriginal Water Reserve, which provides for future Aboriginal economic development. The plans also make trading of licensed entitlements possible and establishes specific trading guidelines.

Our regionally-focussed water allocation plans ensure water supplies are sustainably managed into the future. Water allocation plans aim to protect the environment and equitably share the available water between users, to ensure the long term sustainability of the water resource. Plans are developed in regions where there are competing demands for water or there is risk from water use on significant environmental or cultural values.