Northern Territory

INTEGRATED NATURAL RESOURCE MANAGEMENT

Plan review

2010-2015

Territory Natural Resource Management

VISION

‘Territorians working together to manage our environment’s natural, cultural and economic values for the benefit of all.’

FOR MORE INFORMATION

This is a summary report of information provided in a 2010-2015 Northern Territory Integrated Natural Resource Management Plan – Plan Review document. This publication is available on request through contacting info@territorynrm.org.au

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Territory Natural Resource Management

Australian Government

FOREWORDS

During my 6 years as the Chair of TNRM there have been many achievements in natural resource management in the NT. In relation to planning we are improving our capacity in many ways - through training in participatory planning, working even more widely with people, building GIS mapping and spatial analysis, improving prioritisation of actions, and developing four regional action plans.

This planning review is an opportunity to reflect on progress, to learn and improve – Are our priorities right? Do we need new approaches? What has changed? Nationally we must also be able to understand trends in resource condition. This determines whether we are on track and justifies public investment. Regional NRM bodies have also been working at a national level to create a process for a set of National Environmental Accounts. Australia wide NRM is constantly improving.

Kate Andrews

Outgoing Chair

I am very pleased to be appointed the new Chair of TNRM and to present this review of the INRM plan for the NT. The plan is for all Territorians and this review is a snapshot of where we are up to at this point in time. Our natural assets are the envy of many around the world, however, our future depends on the actions we implement now to deal with the challenges and opportunities in managing these natural resources.

We must utilise our growing knowledge and skills in NRM through the promotion of participatory approaches to planning. By engaging multiple sectors we can promote a shared vision for the management of natural resources. We must prioritise our resources through a clear plan for action that builds upon our past achievements. We must also be innovative and attract new and diverse investment into the NRM sector in the NT.

Clare Martin

Incoming Chair

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PURPOSE OF REVIEW

This review measures progress against management actions from the 2010-2015 INRM Plan. In that Plan, a set of long-term outcomes (called Long-Term Targets) was identified. In addition, it laid out a series of short-term strategies necessary to contribute towards these targets. These long-term outcomes are ultimately about minimising pressure on or promoting sustainable use of natural resources, so that we maintain or enhance the things we care about – our key assets.

Now it is time to review and refresh that Plan. Development of the new INRM Plan is part of a desirable cycle whereby we measure progress against targets and test whether actions are helping improve or maintain our key assets. Such reviews help reveal where investment into management is leading to improvements, and in turn can link to regional and national resource condition monitoring and reporting. The review should test whether management actions are effectively prioritised according to their ability to help achieve the short-term strategies and ultimately the desired long-term outcomes.

How was the review carried out?

The review draws upon updates gathered from small workshops and interviews with experts and organisational representatives to assess the targets in the Plan. The INRM Plan takes a broad approach, and TNRM understands that its role is to help the many organisations and stakeholders who actually create all of the achievements sought by that Plan. Each of these organisations has its own assessment processes, and our review may not necessarily have captured all such analysis.

It is intended that the new INRM Plan will be developed through forums for reflection on progress towards the original short-term and long-term outcomes, and for re-assessment of priorities. We anticipate that this process will have additional benefits in expediting collaboration between stakeholders, in wider understanding of the significance of regional targets, and in adaptive management to ensure efficient and targeted use of money for NRM.

PLANNING LOGIC USED FOR REVIEW

Because the 2010-2015 Plan was in a different format, this review has reorganised the information to align with this new format.

Management Actions

Management Actions contribute to achieving the *strategies* in the life of the Plan.

EXAMPLE

MA-19 – Reduce impact of horses and donkeys in the Victoria River District

Strategies

Strategies are to be achieved in the life of the Plan that move us towards achieving long-term *outcomes*.

By 2015, feral animals are being strategically managed at the landscape scale, with effective sharing of information and resources.

Outcomes

Outcomes are long-term targets that manage *pressures/uses* on natural resources.

By 2030, Territorians are working together to manage feral animals, based on knowledge of cultural, biodiversity and production values, threats and the best management options.

Pressures/Uses

Pressures/Uses are managed to reduce pressure and to improve sustainable use to maintain or enhance *assets*.

Feral animal management reduces pressure of problem species and enhances uses of primary industries, water and harvesting of natural resources.

Assets

Assets are the priority things we want to see in good condition to achieve our *vision* for the NT. Changes in asset health indicate our achievements.

Feral animal management improves the status of freshwater systems, coastal and marine areas, important sites and biodiversity.

KEY ASSETS AND PRESSURES/USES

ASSETS

Coastal and marine
Includes mangroves, estuaries, coastal floodplains, intertidal areas, seagrass and coral reef habitat.

Freshwater systems
Includes tropical rivers, wetlands, lakes, swamps, aquifers and aquatic refugia.

Productive soils
Includes soil fertility, structure, health and productivity.

Community knowledge
Includes Indigenous and non-Indigenous knowledge and skills, and scientific knowledge.

PRESSURES/USES

Pollution
Mining effluent, urban waste water, agriculture (nutrients), garbage and solid waste, atmospheric pollution, toxic and hazardous substances.

Climate change and severe weather
Drought, cyclones/storms, flooding, temperature extremes and long-term climatic changes causing habitat shifting and alteration.

Harvesting of natural resources
Includes non-sustainable fishing and harvesting aquatic resources, inappropriate hunting, collecting plants and harvesting timber.

Residential and commercial development
Urban areas, suburbs, towns, commercial and industrial areas, tourism and recreation sites.

Primary industries
Includes effects of inappropriate pastoralism, horticulture, agriculture, marine and freshwater aquaculture, and forestry, and their expansion and intensification when non-sustainable.

KEY ASSETS AND PRESSURE/USES

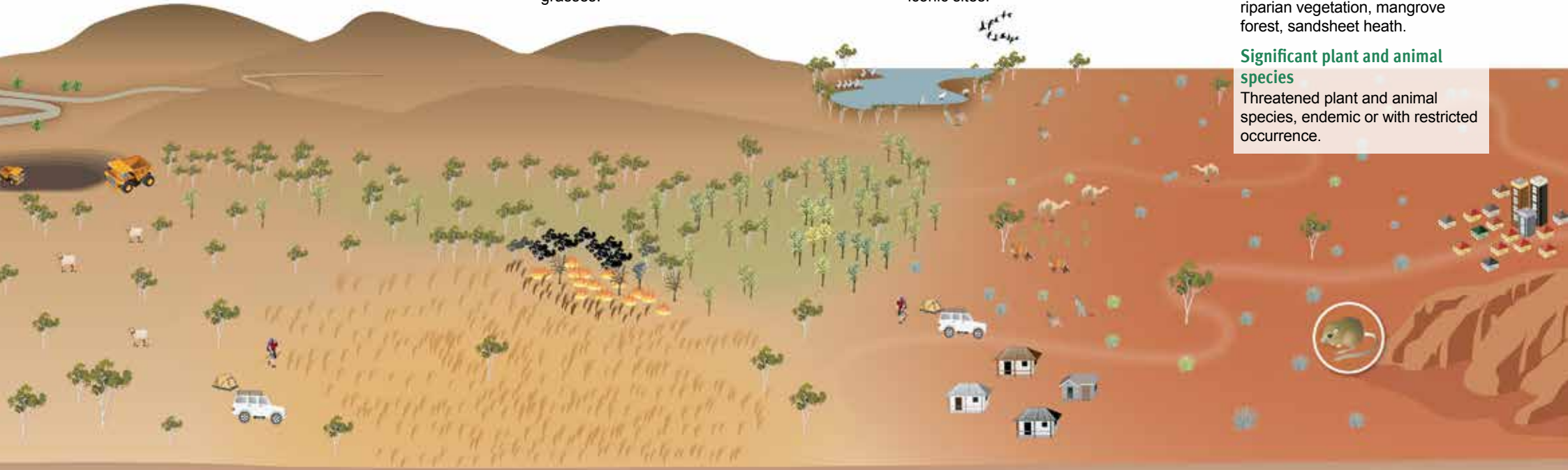
Ranges
For example, West MacDonnell Ranges, Arnhem Land Plateau, Davenport and Murchison Ranges.

Grasslands
Includes tropical savanna grasslands, tussock grasses, spinifex grasslands and introduced pasture grasses.

Important sites
Includes Aboriginal sacred sites, heritage places, sites of conservation significance and iconic sites.

Biodiversity
Key ecosystems, landscapes and habitat
Includes monsoon rainforest, riparian vegetation, mangrove forest, sandsheet heath.

Significant plant and animal species
Threatened plant and animal species, endemic or with restricted occurrence.



Water use
Groundwater and surface water extraction, changing water flow patterns, dam construction.

Mining and energy production
Includes impacts of inappropriate oil and gas drilling, mining exploration, quarries, seabed mining, energy production infrastructure, legacy mines and mining operations.

Fire
Inappropriate fire management, suppression of or increase in fire frequency

Recreation and other activities
Impacts of people in natural environments, including four-wheel drive vehicles, camping, and other recreation. Includes military training activities.

Problem species
Invasive species including feral animals and weeds, introduced genetic material. Can also include over abundant native species.

HOW TO READ THE REVIEW

Management Actions

The 90 Management Actions in the INRM Plan were rated:

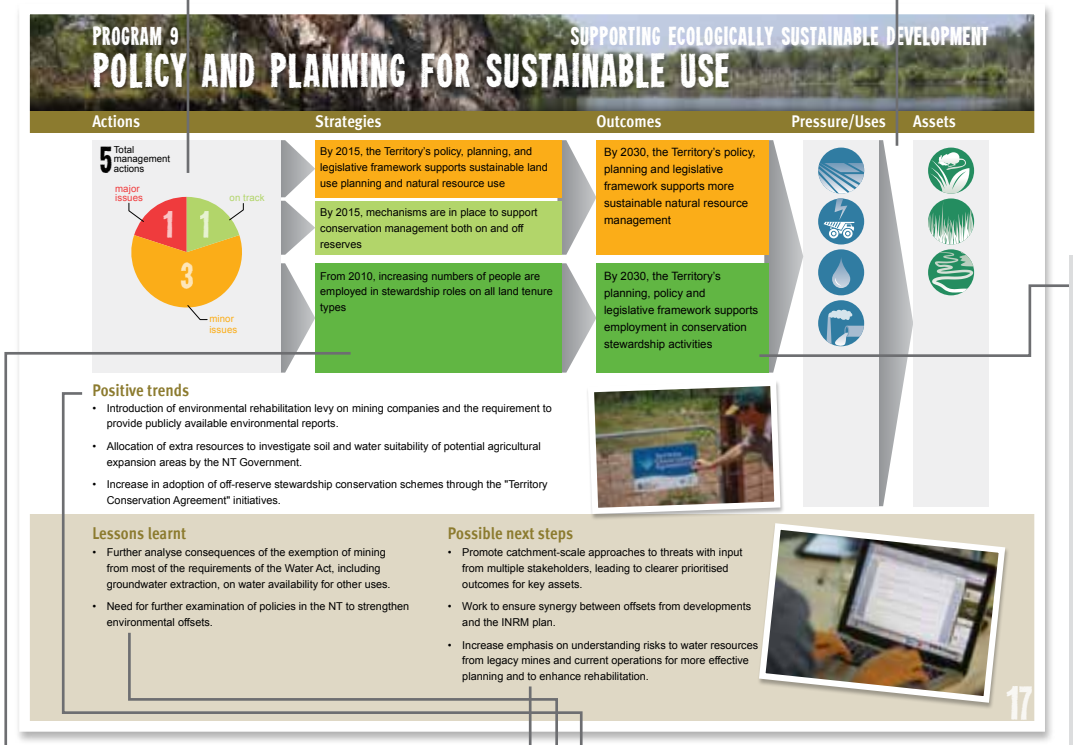
COMPLETE: All activities under the management action have been achieved during this period.

ON-TRACK: Activities have been achieved at the expected level and are ongoing.

MINOR ISSUES: Activities have been progressed, however there are some issues to be addressed to achieve the management action.

MAJOR ISSUES: Activities have generally not progressed and there are significant issues and impediments to achieving this management action.

NO LONGER PRIORITY: Activities are no longer considered important to achieve targets.



Pressure/Uses and Assets

Each management action contributes to a strategy, and so in turn to an outcome that protects or enhances an asset. See pages 6 and 7 for details of pressure/uses and assets.

Outcomes

Several strategies contribute to each long-term outcome, for achievement by 2030. Measures for each strategy were rated in terms of progress towards the long-term outcomes, as follows:

VERY GOOD: Strategies are being achieved and the long-term outcome is on-track.

GOOD: Strategies are mostly being achieved and generally moving towards the long-term outcome.

FAIR: Strategies have some issues and need to be addressed if the long-term outcome is to be achieved.

POOR: Strategies are not being achieved and the long-term outcome will not be achieved through the current approach.

Strategies

Short-term targets expected to be achieved during the life of the Plan have been renamed 'strategies'. Management actions are linked to achieving the strategy. There are a number of measures of achievement (indicators) listed in the Plan against each strategy that were used to assess progress towards achievement of strategies and outcomes. The measures of achievement were rated:

STRONG INCREASE: Indicator is trending significantly better during the life of the Plan.

INCREASE: Indicator is trending positively.

STEADY: Indicator has neither shown a significant increasing or decreasing trend.

DECREASE: Indicator is trending negatively or not increased at the expected level.

STRONG DECREASE: Indicator is trending significantly worse during the life of the Plan.

Positive trends

Major achievements and contributions towards the longer term outcome.

Lessons learnt

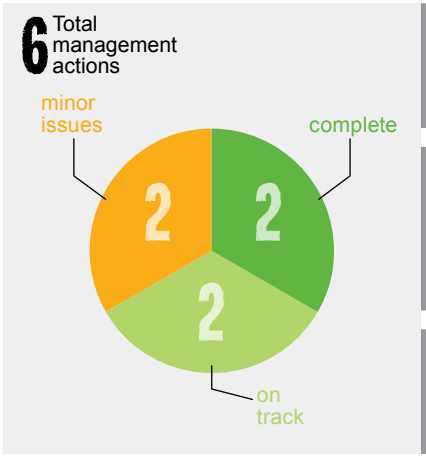
Factors that are limiting progress towards the longer term outcome.

Possible next steps

Suggested actions and strategies that are necessary to achieve longer term outcomes.

PROGRAM 1
HARNESSING FIRE

Actions



Strategies

By 2015, collaborative landscape-scale fire management is being undertaken in all NRM regions

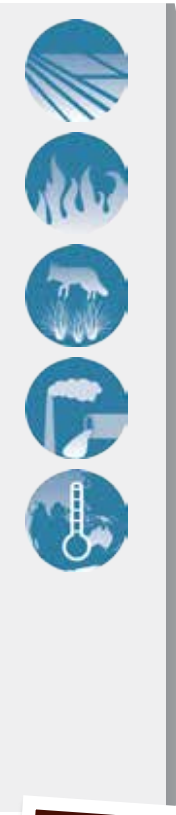
By 2015, the occurrence of fires across the NT is being monitored using remote sensing, and reported together with implications for greenhouse gas emissions

By 2015, fire management is being informed by regionally-appropriate cultural and environmental considerations

Outcomes

By 2030, Territorians are working together to manage fire, based on knowledge of cultural, biodiversity and production values, threats and the best management options

Pressure/Uses



Assets

Positive trends

- Improved capacity of both Central Australian and Top End Aboriginal ranger groups to manage fire and incorporate traditional ecological knowledge with newly emerging fire management tools.
- Multiple landowners, managers and agencies beginning to take a more collaborative approach to fire management.
- Improved monitoring, reporting and understanding of fire through further refinement and increased utilisation of the NAFI tools.
- Extension of carbon abatement opportunities from fire management in the high rainfall areas of the Top End.

Lessons learnt

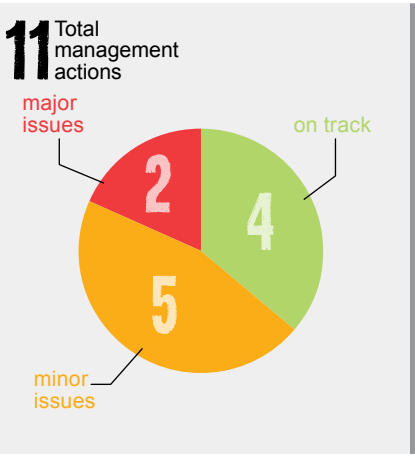
- Despite greater efforts in managing fire, large areas of the NT are still subject to inappropriate fire regimes. Too many fires are being lit at the wrong time.
- It is still not well understood how fire regimes influence biodiversity.
- The spread of high fuel load grasses such as Gamba grass in the Top End and Buffel grass in the Arid Lands threatens current approaches to fire management.

Possible next steps

- Pursue landscape fire management programs and support cross-tenure fire management and planning, particularly in the Gulf Savanna and Western Top End regions.
- Increase knowledge and application of economically-efficient fire management that promotes biodiversity and ecosystem function.
- Increase utilisation of fire management tools available (NAFI, GIS. etc.) through training and capacity building of NRM practitioners.
- Manage fire at a finer scale so that more appropriate fire regimes are promoted according to different habitat and ecosystem type.

CONTROLLING WEEDS AT THE CATCHMENT SCALE

Actions



Strategies

By 2015, weeds are being strategically controlled at the catchment-scale, with effective sharing of information and resources across regions

Outcomes

By 2030, Territorians are working together to manage weeds at the catchment scale, based on knowledge of cultural, biodiversity and production values, threats and the best management options

Pressure/Uses

Assets

Positive trends

- Collaborative efforts to manage *Mimosa pigra* on private and Aboriginal land in the Daly River region.
- Management of Prickly Acacia in the Victoria River District (VRD).
- Reduction in Athel Pine in the Finke River area.
- Reduction in prickle bush densities in the Barkly Tablelands

Lessons learnt

- Need to be more responsive to emerging weeds rather than reactive once a weed is widespread and difficult to manage.
- We must further emphasise a risk management approach to weed management and prioritise our limited resources.
- Importance of increasing landholder responsibility and stakeholder collaboration in weed management at the catchment level.
- Improve our ability to monitor effectiveness of control and being dynamic and adaptive towards weed management.

Possible next steps

- Integrating weed management efforts with biosecurity, feral animal management and fire management is essential for successful catchment scale programs.
- Pond Apple, Chinese Apple, African Mahogany and Neem are all emerging threats requiring increased funding and effort for the next five years.
- Increased enforcement of the Weeds Management Act to encourage action by landholders across the NT.
- Regular monitoring of the effectiveness of weed management efforts to inform adaptive management.

REDUCING FERAL ANIMAL IMPACTS

Actions	Strategies	Outcomes	Pressure/Uses	Assets
4 Total management actions 2 minor issues 2 on track	By 2015, feral animals are being strategically managed at the landscape scale, with effective sharing of information and resources	By 2030, Territorians are working together to manage feral animals, based on knowledge of cultural, biodiversity and production values, threats and the best management options		

Positive trends

- Reduced densities of camels at targeted sites to levels now requiring ongoing maintenance.
- Horse and donkey control in the VRD has reduced densities in some areas.
- Landholders increasingly taking responsibility for feral animal control on their land.
- Increase in support provided to Indigenous ranger groups to carry out feral animal control.

Lessons learnt

- Cats and foxes remain a significant threat to native mammals and control programs are complex.
- Large scale efforts to reduce densities of large feral herbivores require ongoing funding to have a lasting impact.
- Feral animal control programs need to have clear objectives and target where they are having the highest impact.

Possible next steps

- Long-term commitments by funding agencies, landholders, stakeholders and government with clear strategic objectives.
- Communicating the impacts of feral animals through photo monitoring and demonstration exclusion zones.
- Integrated approaches to management of feral animals, weeds, fire and biosecurity.

STRENGTHENING BIOSECURITY SURVEILLANCE AND RESPONSE

Actions

Strategies

By 2015, Territory natural resource managers are fully engaged in detecting the arrival and preventing the establishment of new weeds and pest animals, and we are routinely assessing the pest potential of all proposed plant and animal introductions to the NT

Outcomes

By 2030, collaborative biosecurity programs are in place to reduce the likelihood of new weeds, pests and diseases becoming established in the NT

Pressure/Uses

Assets

Positive trends

- Community engagement with Indigenous ranger groups across Northern Australia and increasing capacity for early detection of potential pests.
- Planning to prevent spread of Rubber Vine into the NT from Queensland.

Lessons learnt

- High risk of incursions of pests from other states into the NT and further west to WA.
- Vehicle wash down facilities have been implemented in QLD and may have practical application in preventing the spread of weeds into non-infested areas in the NT.
- Rabies continues to pose a major biosecurity threat in North Australia and requires increased surveillance.

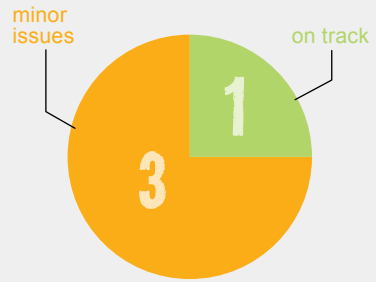
Possible next steps

- Consideration of agricultural expansion in the NT should take account of the need for increased resources for biosecurity surveillance.
- Greater surveillance and collaboration over biosecurity on the QLD/NT border.
- Biosecurity needs to be linked closely to livelihoods, and communication programs with the general community should be extended.

UNDERSTANDING CLIMATE CHANGE

Actions

4 Total management actions



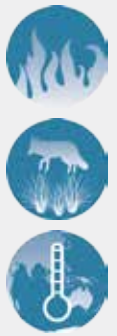
Strategies

By 2015, the most significant climate change risks to the Territory environment have been identified, along with options for addressing them

Outcomes

By 2030, Territory natural resource managers have adopted a range of options to better cope with climate change impacts

Pressure/Uses



Assets

Positive trends

- Increased knowledge through research on likely impacts of climate change on fire frequency, livelihoods and coastal wetland ecosystems.
- Climate Change Adaptation Research to assist NRM planning and decision making.

Lessons learnt

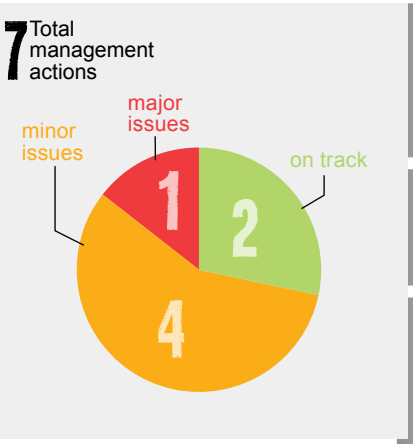
- Climate change is an important added stressor to consider in planning for ecosystem health and productivity.
- Shifting policy on approaches to climate change mitigation makes it challenging for the NRM community to engage.
- Further research is required to better understand what climate change impacts will be in the NT and the best way to adapt to these.

Possible next steps

- Increasing our understanding of climate change impacts on key assets and communities including suitable adaptation approaches.
- Integrate climate change impacts throughout the INRM Plan and consider future climate scenarios and adaptation pathways in prioritising NRM actions.

ENTERING THE CONSERVATION ECONOMY

Actions



Positive trends

- Amendments to the Pastoral Land Act allowing diversification of activities on pastoral properties.
- Further development of carbon market opportunities in the NT.
- Engagement in savanna burning carbon abatement programs.

Strategies

By 2013, Territory natural resource managers understand the broader range of opportunities for gaining livelihoods from emerging economies in natural resource management

By 2012, options for greenhouse gas abatement and carbon storage are identified and promoted to NRM managers.

By 2015, Indigenous enterprises based on harvest of native products and landscape management are benefiting from a more supportive planning and policy environment, and ethical and sustainable credentials

By 2015, sustainable production practices and the management of key biodiversity assets are contributing to industry income directly or through environmental certification

By 2015, marine debris monitoring and removal is ongoing, adequate and consistent, and contributes to the viability of marine ranger groups

Outcomes

By 2030, the conservation economy is an integral part of natural resource businesses in the NT providing employment and enhancing enterprise viability

Pressure/Uses

Assets

Lessons learnt

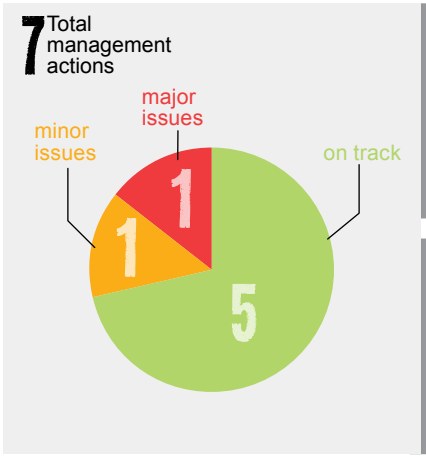
- Improve management, organisational and governance structures to support NRM stakeholders to engage in more fee for service work.
- Carbon opportunities possibly applicable in the NT include savanna burning, carbon grazing on semi-arid rangelands, carbon forestry, reducing livestock methane emissions, carbon storage in soils and blue carbon (i.e. mangrove forests).

Possible next steps

- Advancing carbon sequestration and savanna burning methodologies in lower rainfall areas in NT.
- Adopting greater certainty and consistency in carbon abatement policies to allow NRM stakeholders to engage in carbon market opportunities.
- Understanding the value chain for potential Indigenous wildlife enterprises, including marketing.

SUPPORTING INDUSTRY ADOPTION OF SUSTAINABLE PRACTICES

Actions



Strategies

By 2015, best practice industry extension programs delivered across the NT

By 2015, solutions to conflicts between pastoral production and conservation are identified and communicated to pastoralists

Outcomes

By 2030, Territory livelihoods and environmental conditions are benefiting from more efficient and sustainable practices

Pressure/Uses

Assets

Positive trends

- Introduction of Environmental Management Systems for the fishing industry promoting sustainable practices.
- Grazing land management and ecosystem management understanding extension programs delivered to pastoralists.
- The strengthening and expansion of the NT Environmental Protection Agency into a regulatory body.

Lessons learnt

- Management of wild dogs requires further work to reconcile management objectives.
- Need to engage with industry to capture knowledge and skills in monitoring ecosystem changes (e.g. fishing industry providing marine biodiversity data).
- Increasing densities of agile wallabies are having increased impacts on pastoral productivity in the Gulf Savanna region.

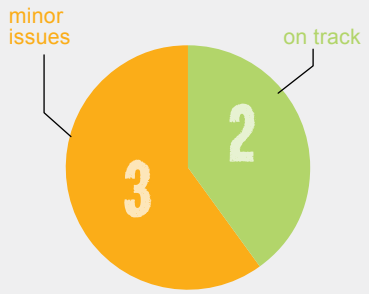
Possible next steps

- Integrated pest management, extension services and research into tropical soil health applicable to the unique climate and soil conditions for the wet/dry tropics.
- Continue to work with industry to support and encourage sustainable practices, particularly to engage with the ‘Developing the North’ agenda to promote sustainable use of our natural resources.
- Encourage greater collaboration across different industries to foster a more integrated and collaborative approach to use of natural resources.

MINIMISING ECOLOGICAL FOOTPRINTS

Actions

5 Total management actions



Strategies

- By 2015, water availability and demands are understood and per capita consumption has decreased over 2010 levels
- By 2015, development of urban and regional centres adheres to principles of Ecologically Sustainable Developments
- By 2015, procedures are in place for the handling of toxic chemicals and waste for rapid responses to excess release to the environment
- By 2015, lead is no longer entering the environment and human food chain through use of lead shot

Outcomes

- By 2030, domestic and commercial water and energy use is sustainable, with minimal environmental impact
- By 2030, Territory towns, suburbs and regional centres are environmental show cases of good environmental planning and management
- By 2030, the entry of toxic chemicals into the environment from private and commercial activities has been reduced

Pressure/Uses

Assets

Positive trends

- NT EPA introduced compliance and enforcement procedures based on risk management plans for hazardous substance handling.
- Darwin City Council passed an Environment and Climate Change Plan.

Lessons learnt

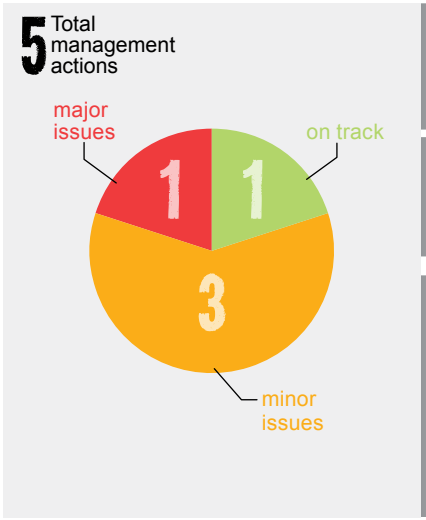
- Increase engagement with local government with NRM issues across the NT.
- Water and energy usage in the NT remains significantly higher than the national average.
- Balancing water use with ecosystem needs also requires more research in regards to how the aquatic ecosystems react to water flows.

Possible next steps

- Further strengthening of the NT EPA's ability to monitor and enforce compliance of hazardous substance handling and develop guidelines for new wastes from the emerging oil and gas industry in the NT.
- Further quantifying our water resources, managing water using the best available science and taking a consultative approach with communities remain important factors to get the balance right between the needs and impacts of water use.

POLICY AND PLANNING FOR SUSTAINABLE USE

Actions



Strategies

By 2015, the Territory's policy, planning, and legislative framework supports sustainable land use planning and natural resource use

By 2015, mechanisms are in place to support conservation management both on and off reserves

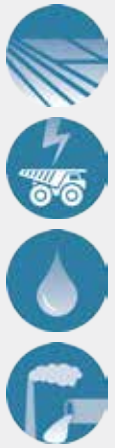
From 2010, increasing numbers of people are employed in stewardship roles on all land tenure types

Outcomes

By 2030, the Territory's policy, planning and legislative framework supports more sustainable natural resource management

By 2030, the Territory's planning, policy and legislative framework supports employment in conservation stewardship activities

Pressure/Uses



Assets

Positive trends

- Introduction of environmental rehabilitation levy on mining companies and the requirement to provide publicly available environmental reports.
- Allocation of extra resources to investigate soil and water suitability of potential agricultural expansion areas by the NT Government.
- Increase in adoption of off-reserve stewardship conservation schemes through the "Territory Conservation Agreement" initiatives.

Lessons learnt

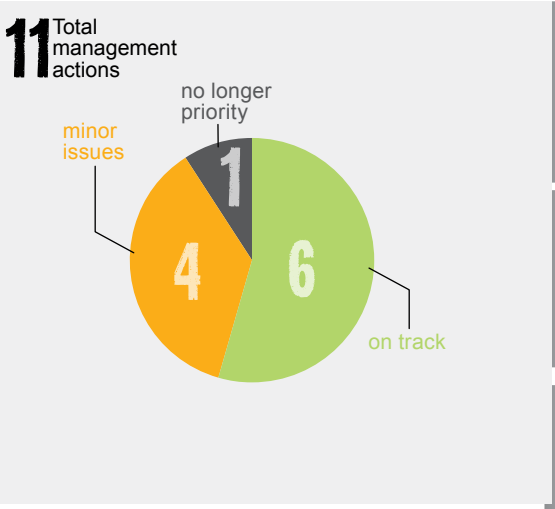
- Further analyse consequences of the exemption of mining from most of the requirements of the Water Act, including groundwater extraction, on water availability for other uses.
- Need for further examination of policies in the NT to strengthen environmental offsets.

Possible next steps

- Promote catchment-scale approaches to threats with input from multiple stakeholders, leading to clearer prioritised outcomes for key assets.
- Work to ensure synergy between offsets from developments and the INRM plan.
- Increase emphasis on understanding risks to water resources from legacy mines and current operations for more effective planning and to enhance rehabilitation.

MANAGING LAND AND SEA COUNTRY BASED ON SOUND INFORMATION

Actions



Strategies

- By 2015, mapping of the NT's ecosystems meets land and sea country planning needs and is better informing decisions made at the property scale
- By 2015, knowledge of the distribution and status of the NT's species meets land and sea country planning needs and is better informing decisions made at the property scale
- By 2015, information is being collected about the condition of landscapes, catchments and waterways to inform management needs
- By 2015, soil loss and land degradation are being prevented and, where necessary, addressed
- By 2015, remediation of priority legacy mines has begun and other legacy mine rehabilitation of other mine sites has been prioritised
- By 2015, significant threats to the Territory's coastal and marine environments are identified, and their impacts monitored and addressed

Outcomes

- By 2030, use of land and sea country is based on sound information about the distribution, characteristics and tolerances of ecosystems and species
- By 2030, condition of landscapes and seascapes is being regularly monitored, and any identified deterioration is being addressed

Pressure/Uses

Assets

Positive trends

- Collection and availability of land and water assessment information.
- Extension services for managing soil erosion and promoting best practice in soil conservation.
- Mapping marine and estuarine habitats in Darwin Harbour.
- Utilising of biodiversity and land information data for resource management decisions.
- Commencement of planning and assessment to tackle legacy mining issues through funds collected from Environmental Rehabilitation Levy.

Lessons learnt

- Catchment management approaches involving multiple sectors and stakeholders are important for informed decision making utilising science and community input.
- Improvements to how data is shared and accessed and how a wide range of stakeholders can contribute to data collection.

Possible next steps

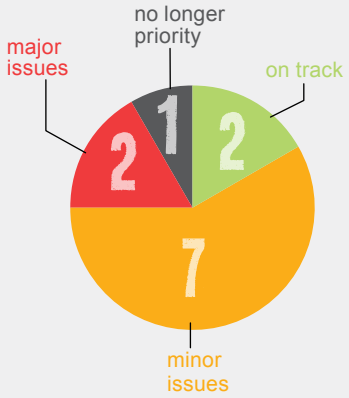
- Increase the utilisation of GIS and Remote Sensing tools amongst NRM practitioners to improve monitoring and identifying change at the local and landscape scales.
- Promote the use of knowledge and best practice to inform the 'Development of the North' agenda.

PROGRAM 11

PROTECTING SIGNIFICANT SITES

Actions

12 Total management actions



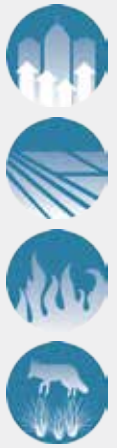
Strategies

- By 2015, an increasing number of culturally significant sites and landscapes are being managed to reduce visitor impact and other significant threats
- By 2015, fire, weed and feral animal threats to Sites of Conservation Significance have been identified and addressed
- By 2015, saltwater intrusion threats to Sites of Conservation Significance have been identified, along with options for addressing them
- By 2015, integrated management programs are being implemented at an increasing number of Sites of Conservation Significance

Outcomes

By 2030, environmentally- and culturally- significant sites are being managed cooperatively, based on knowledge of values, threats and the best management options

Pressure/Uses



Assets

Positive trends

- Utilising Indigenous Ecological Knowledge on managing significant cultural sites.
- Reduced densities of feral herbivores in key aquatic ecosystem sites in arid areas.
- Increased capacity to address threats on the Arafura Swamp.
- Management of weeds on significant wetlands in the Barkly Tablelands.

Lessons learnt

- A need for greater coordination and ongoing effort in managing threats such as buffel grass, pigs and buffalo on Sites of Conservation Significance.
- We need to increase our understanding of biodiversity refugia across the NT.
- All stakeholders need to support efforts to conserve Sites of Conservation Significance.

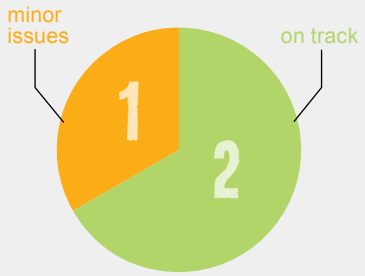
Possible next steps

- Continue to identify priority Sites of Conservation Significance and effectively manage threats to these.
- Prioritise limited resources according to need and likely impact of effort.

RECOVERING SPECIES THROUGH ADAPTIVE MANAGEMENT

Actions	Strategies	Outcomes	Pressure/Uses	Assets

3 Total management actions



- By 2015, we understand the causes of the Top End mammal decline, and have commenced landscape-scale trials to address it
- By 2015, we are successfully reducing the impact of introduced predators on native species
- By 2015, we understand the status and conservation needs of marine mammals

By 2030, we have reduced the decline in native species through improved knowledge of threats and management needs

Positive trends

- Increased understanding of the causes of small mammal decline.
- Establishment of projects supporting the long-term monitoring of coastal dolphins in Darwin Harbour and the abundance and distribution of dugongs in the NT.

Lessons learnt

- Need for improved sharing of biodiversity data to better inform decision making.
- Communicate research outcomes and ensuring that new knowledge is utilised and adapted to threatened species management programs.

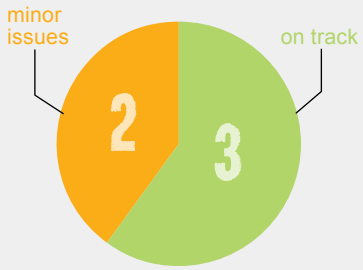
Possible next steps

- Increased collaboration between industries, researchers and government will improve the management of key species throughout the NT.
- Follow up research findings on the impacts of feral cats on native small mammal populations through the implementation of feral cat control programs.
- Continue research on causal factors of small mammal decline and implementing new approaches based on the best available knowledge.

BUILDING NATURAL RESOURCE MANAGEMENT KNOWLEDGE AND CAPACITY

Actions	Strategies	Outcomes	Pressure/Uses	Assets

5 Total management actions



Strategies

- From 2010, the diverse knowledge systems held by Territorians are supported, respected and, where appropriate, incorporated into natural resource management
- By 2015, there is a coordinated approach to the sharing and application of natural resource management knowledge, information and data in the NT
- From 2010, support is provided for training in essential natural resource management skills
- From 2010, increasing numbers of people are employed in environmental stewardship roles on all land and sea tenure types

Outcomes

- By 2030, Territory natural resource managers are incorporating the best available knowledge, information and data into their management
- By 2030, environmental stewardship roles on all land and sea tenure types is a major source of employment and income in remote areas

Positive trends

- Indigenous ecological knowledge projects contributing to inter-generational sharing of knowledge.
- Continued expansion of Indigenous land and sea management programs through the Working on Country program.

Lessons learnt

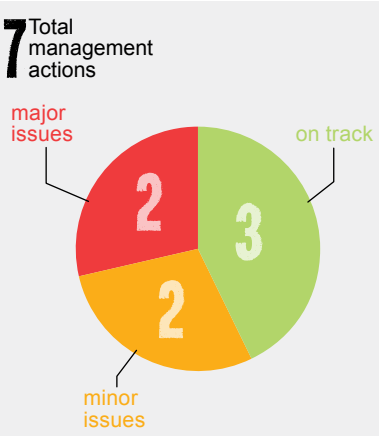
- Formal and informal training in NRM must be relevant and delivered appropriately according to stakeholder needs.
- Standard and consistent approaches to data collection and sharing between stakeholders.
- Need to value and collect data from natural resource users (e.g. commercial fishing industry) and the community that both fosters stewardship of the management of a resource and adds to the body of NRM knowledge.

Possible next steps

- Development of business models for Indigenous ranger groups and other NRM stakeholders that contribute to economic viability of ranger groups.
- Data sharing is promoted across sectors and between organisations.
- Knowledge sharing and planning across sectors is promoted and utilised in decision making.

PROGRAM 14
ENGAGING THE COMMUNITY

Actions	Strategies	Outcomes	Pressure/Uses	Assets



By 2015, support for volunteer based conservation and awareness programs is ongoing, adequate and consistent

By 2015, respect for natural resource and cultural values is promoted to the general public, and information on practical options for protecting these values is effectively disseminated

By 2030, volunteer participation in land and sea management activities and community commitment to principles of ecologically sustainable development have increased

Positive trends

- Regional Pastoral Landcare groups coordinator positions supported.
- Reducing impacts and spread of weeds in the Katherine River corridor.
- Increase in the number of volunteer Landcare groups in the NT.

Lessons learnt

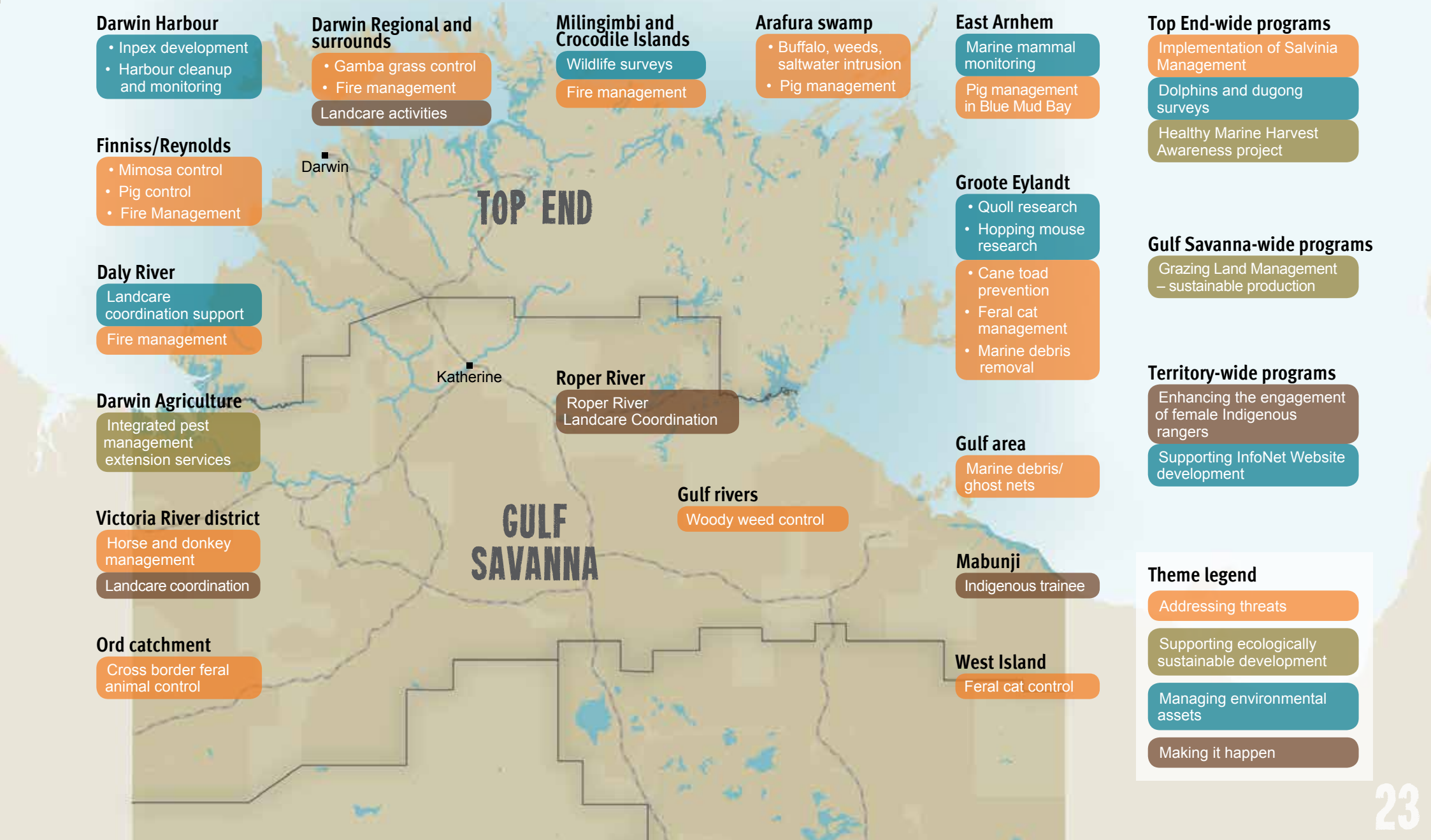
- Greater emphasis on linking NRM issues to tourism opportunities.
- Community water monitoring programs can potentially raise awareness of water quality and riverine habitats.
- Cane toads continue to spread across the NT with observational evidence suggesting serious impacts on aquatic ecosystems.

Possible next steps

- Continued funding and capacity building support for volunteer based and landowner based Landcare groups across the NT.
- Promote environmentally responsible recreational behaviour and good NRM practices through public outreach and educational programs.

TOP END AND GULF SAVANNA

TNRM PROJECT HIGHLIGHTS 2010-2015



Darwin Harbour
- Inpex development
- Harbour cleanup and monitoring

Finniss/Reynolds
- Mimosa control
- Pig control
- Fire Management

Daly River
- Landcare coordination support
- Fire management

Darwin Agriculture
- Integrated pest management extension services

Victoria River district
- Horse and donkey management
- Landcare coordination

Ord catchment
- Cross border feral animal control

Darwin Regional and surrounds
- Gamba grass control
- Fire management
- Landcare activities

Milingimbi and Crocodile Islands
- Wildlife surveys
- Fire management

Arafura swamp
- Buffalo, weeds, saltwater intrusion
- Pig management

Roper River
- Roper River Landcare Coordination

Gulf rivers
- Woody weed control

East Arnhem
- Marine mammal monitoring
- Pig management in Blue Mud Bay

Groote Eylandt
- Quoll research
- Hopping mouse research
- Cane toad prevention
- Feral cat management
- Marine debris removal

Gulf area
- Marine debris/ ghost nets

Mabunji
- Indigenous trainee

West Island
- Feral cat control

Top End-wide programs
- Implementation of Salvinia Management
- Dolphins and dugong surveys
- Healthy Marine Harvest Awareness project

Gulf Savanna-wide programs
- Grazing Land Management – sustainable production

Territory-wide programs
- Enhancing the engagement of female Indigenous rangers
- Supporting InfoNet Website development

Theme legend
- Addressing threats
- Supporting ecologically sustainable development
- Managing environmental assets
- Making it happen

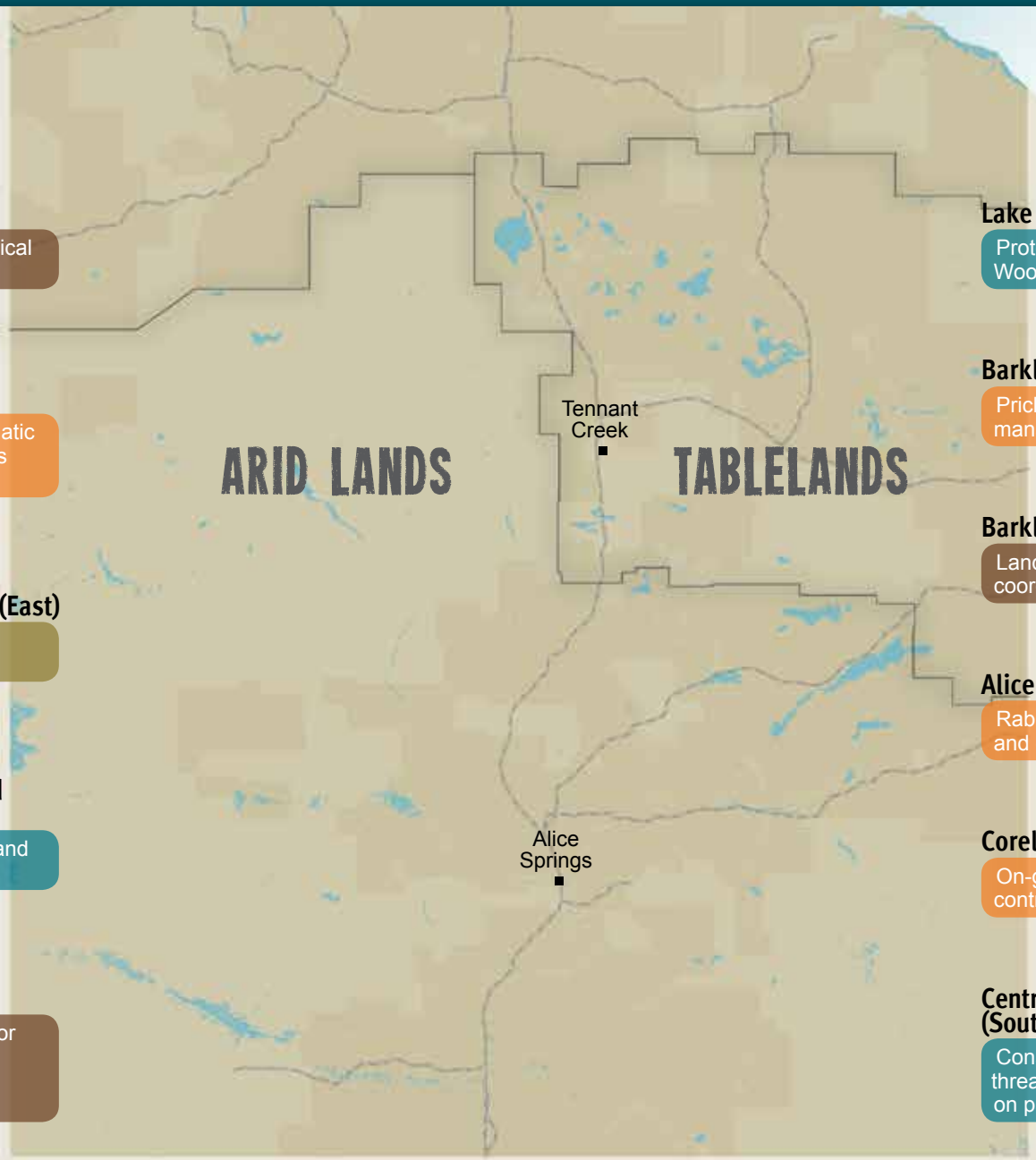
TNRM PROJECT HIGHLIGHTS 2010-2015

Central Australia-wide programs

- Ecosystem Management Understanding extension services provided to pastoralists to promote more sustainable management of pasture and production – rotational grazing, water access management, managing fire.
- Predator control (foxes and cats) to protect key threatened species
- Facilitating Pastoral NRM – Athel Pine & erosion control
- Supporting endangered species surveys (Black-footed rock wallaby and Central Rock-Rat)
- Centralian Land Management Association Coordination

Theme legend

- Addressing threats
- Supporting ecologically sustainable development
- Managing environmental assets
- Making it happen



Tanami

Indigenous Ecological Knowledge project

Various locations

Protecting key aquatic refugia from camels and weeds.

Central Australia (East)

Medicinal plant species use

Orange Creek and Coniston station

Soil conservation and erosion control

Central Australia (South-East)

Building capacity for improved fire management on Aboriginal Land

Lake Woods

Protecting Lake Woods

Barkly Tablelands

Prickly bush management

Barkly

Landcare coordination

Alice Springs

Rabbit monitoring and control

Corella Creek

On-ground weed control work

Central Australia (South)

Conservation of threatened species on pastoral land

NT NRM PLANNING - A BRIEF HISTORY

1990-2002

The Landcare Council of the Northern Territory (LCNT) was formed as a result of a NT Cabinet decision in 1990. The current era of Natural Resource Management in Northern Territory began in 1990 with the decade of Landcare.

Plans were generally issue, organisation and regionally specific rather than integrated.

1997-2001

The Natural Heritage Trust (NHT) provided $162 million for community projects across Australia. The LCNT provided advice on regional priorities for NHT funding in the NT.

LCNT provided some strategic analysis on priority NRM issues affecting the NT.

1999

The National Action Plan for Salinity and Water Quality (NAP) jointly provided $319.5 million with NHT. This was a major commitment to tackle these two major issues facing Australia's rural industries and communities.

LCNT decided what projects were prioritised.

2003-2005

The LCNT was designated the NT Regional Body (2003) under a Bilateral Agreement between the Australian and NT Governments to plan and define Natural Resource Management priorities and allocate funding to these priorities through the NHT.

The first Integrated Natural Resource Management Plan was produced using an assets based structure and based on a community consultation process and including a Regional Investment Strategy.

2005-2010

The Natural Resource Management Board of the Northern Territory (NRM Board NT) was established under the Northern Territory Associations Act in 2005. The key function of the organisation was to implement the accredited NT INRM Plan 2005-2010 and Regional Investment Strategy.

2008-2013

The Australian Government delivered its $2 billion Caring for our Country (CfoC) program, the successor of NHT and NAP, with a further $2 billion allocated from 2013-2018. CFoC Business Plan included the Government's priorities which were not explicitly incorporated in existing NRM plans.

2011-2014

The NRM Board NT changed to Territory Natural Resource Management Incorporated and published the 2010-2015 INRM Plan structured around 'issues of concern'.

The revised 2010-2015 Plan was developed through extensive community consultation providing a strategic document for NRM in the NT.

2013-2016

In 2013, Australian Government announced the 'Regional Natural Resource Management Planning for Climate Change Fund' to update all NRM plans across Australia to guide planning for climate change impacts on the land, and to maximise the environmental benefits of carbon farming projects.

2014&BEYOND

National Landcare Programme to replace CfoC includes a revenue stream ($454 million) from 2014-2018 to be invested through regional NRM organisations. Regional NRM organisations to work with communities to identify and set priorities for investment.

TNRM commences a process of engagement to develop the revised and updated 2016-2020 INRM Plan for the Northern Territory.

The updated INRM Plan for the Northern Territory will include considerations of climate impacts on NRM targets and management actions including regional climate projections and adaptation and mitigation options.

The new INRM plan will be regionally explicit, have clear strategies and outcomes, be focused on adaptive management, and include all key partners in its development.

FUTURE TRENDS

Future trends set the context for possible future scenarios in the NT.
Some of these trends are summarised here and have implications for future NRM planning.

Developing North Australia

- Northern Australia is close to the fast growing international markets for beef in Asia, so gradual intensification of the beef sector is expected
- Increasing development in the mining industry requires improved regulation to ensure minimal impacts on ecosystems
- Expansion of the oil and gas industry in the NT is likely and will need to be planned with minimal impact on natural resources in mind
- Potential horticultural expansion in areas with suitable water and soil would benefit from a parallel investment in farmer capacity and support services such as biosecurity
- Tourism is regionally significant and developing the Territory's tourism potential relies on healthy ecosystems and unique landscapes

Future Socio-Economic Drivers

- Development of remote areas to ensure economic benefits of major projects benefit the host regions and communities
- Supporting diverse and strong Indigenous culture and particularly continued engagement and expansion of land and sea management programs
- Significant population growth in Greater Darwin region will lead to more intensive urban and peri-urban land and water resource use

Climate Change

- Climate change will add more pressure on ecosystems, natural resources, industry and peoples' livelihoods
- The Bureau of Meteorology predicts that Australian average temperatures will rise by 0.6 to 1.5° by 2030 compared with the climate of 1980 to 1999 and 1.0 to 5.0° by 2070
- The influence on rainfall in the NT is harder to predict, but an increase in extremes is expected (more dry days and more very wet days)
- There will be fewer but more intense tropical cyclones
- More specific climate projections for the Monsoonal North and Rangelands areas of the NT will be provided by CSIRO and BoM by the end of 2014 and included in the revised 2016-2020 NT INRM Plan

Population

- High rates of population turnover in Northern Territory with high rates of growth linked closely to major construction projects
- Currently there are an estimated 231,000 people in the NT
- 30% of the population is Indigenous
- Significant population growth is expected – 360,000 people in the NT by 2041
- Higher growth expected in the Greater Darwin area
- The NT has a younger population than the national average, however, the proportion of the population over 65 is likely to increase by 2041

NEXT STEPS

A series of planning workshops and events are proposed throughout the NT during 2014 and 2015.

Stakeholders are encouraged to provide input and advice to develop the revised 2016-2020 INRM Plan for the Northern Territory.

To find out how you can be involved please contact Territory Natural Resource Management by e-mail: info@territorynrm.org.au or
Phone: (08) 8942 8307.

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