PASTORAL LAND BOARD

2011/12 Annual Report

2011/12 Pastoral Land Board Annual Report

Contents

Chairman's Foreword

The Annual Report of the Pastoral Land Board for 2011/12 covers the period 1 October 2011 to 30 September 2012 in line with a seasonal reporting period approved by the Minister in May 2005.

The Northern Territory pastoral estate is about 606,000 km^2 in size. The gross value of production for the NT cattle industry was estimated at $285.3 million in 2010/11. This represents approximately 53.5% of the total value of the Territory's rural industries and fisheries production.

One of the important functions of the Pastoral Land Board is to monitor the condition and use of pastoral land to facilitate its sustainable use and the economic viability of the industry in accordance with the objects of the *Pastoral Land Act*. The Board is committed to the maintenance and, where possible, the improvement of the condition of the Territory's pastoral land.

For several years, the Board has been concerned that the momentum of pastoral land monitoring has slowed. If the current level of monitoring is not increased it will be impossible to provide an assessment of land conditions throughout the pastoral estate.

A greater allocation of resources to pastoral land monitoring is necessary if the trend described below is to be halted or reversed. At the time of writing (June 2013) the Northern Territory Government has announced an intention to revitalise the monitoring program and to allocate the resources necessary for this to happen.

The table below summarises outputs for the Tier 1 monitoring program over the past eight years.

Reporting Year 1 Oct – 30 Sept	Total No. of properties monitored	Total No. of monitoring sites re-assessed	New monitoring sites established
2004/05	86	774	37
2005/06	52	498	4
2006/07	74	673	20
2007/08	56	460	34
2008/09	22	254	-
2009/10	18	121	-
2010/11	25	106	-
2011/12	3	52	-

Ground based monitoring data provided to the Board for 2011/12 is limited to three properties in three pastoral districts (one in each of VRD, Sturt Plateau and Southern Alice Springs districts).

Due to the limited Tier 1 monitoring the Board is unable to provide an objective assessment of land condition across all of the pastoral districts of the Northern Territory. Reports for the remaining districts are limited to rainfall records and comments on pasture growth as determined by AussieGRASS models. According to these models pasture biomass in these districts was generally average to above average.

As my term of appointment is due to expire shortly I wish to thank those people who have made my job interesting and pleasurable over the past six years: my fellow Board members for their good counsel and good company, the various highly competent and committed departmental officers, including Graeme Fagan, who have worked closely and constructively with the Board, and the members of the pastoral industry for their unfailing courtesy and hospitality to me and other Board members during our property visits.

Anthony Young
Chairman
Pastoral Land Board

Membership of the Board

Chairman
Anthony David Young: 3 year term – expiring 25 June 2013

Members
Colleen Marie Costello: 3 year term – expiring 30 April 2016
Steven Craig: 3 year term – expiring 30 April 2016
Campbell Miller: 3 year term – expiring 25 June 2015
Thomas George Henry Stockwell: 3 year term – expiring 30 April 2016

* Mr Michael Francis Quirk tendered his resignation on 5 July 2012.

Executive Officer
Mrs Judy Bartolo / Ms Alice Henderson

Functions of the Board

Section 29 of the *Pastoral Land Act* outlines the functions of the Board:

[a] to report regularly to, and as directed by, the Minister, but in any case not less than once a year, on the general condition of pastoral land and the operations of the Board;
[b] to consider applications for the subdivision or consolidation of pastoral land and make recommendations to the Minister in relation to them;
[c] to plan, establish, operate and maintain systems for monitoring the condition and use of pastoral land on a District or other basis;
[d] to assess the suitability of proposed new pastoral leases over vacant Crown land;
[e] to direct the preparation, and monitor the implementation of, remedial plans;
[f] to monitor, supervise or cause to be carried out work in relation to the rectification of degradation or other damage to pastoral land;
[g] to monitor the numbers and effect of stock and feral and other animals on pastoral land;
[h] to monitor and administer the conditions to which pastoral leases are subject;
[j] to make recommendations to the Minister on any matter relating to the administration of the Act;
[k] to hear and determine all questions, and consider and make recommendations on all matters, referred to it by the Minister; and
[m] such other functions as are imposed on it by or under the *Pastoral Land Act* or any other Act or as directed by the Minister.

Other functions outlined in the Act include:

i. to determine applications for clearing pastoral land [section38(1)(h)]
ii. to consider breaches of conditions referred by the Minister [section 41]
iii. to consider and make recommendations to the Minister on application for conversion of term pastoral leases to perpetual tenure [section 62]
iv. to administer the access provision of the Act, including nomination of access routes under PART 6
v. to determine application for non pastoral use of pastoral land [PART 7].

Meetings of the Board held during 2011/12

Three teleconference meetings of the Pastoral Land Board were held during 2011/12.

87th Meeting: teleconference held 23 November 2011

The Board gave further consideration to one application to convert term leases to perpetual tenure and approved three clearing applications. The Board determine not to approve an application to vary a clearing permit. Other matters considered included the Pastoral Land Board 2009/10 Annual Report, implementation of a voluntary management plan and approval given to four non pastoral use applications.

88th Meeting: teleconference held 19 June 2012

The Board gave further consideration to three applications to convert term leases to perpetual tenure and determine its recommendation for one application to be referred to the Minister. Other matters considered including one subdivision application, one clearing application, two non pastoral use applications and two remedial plans.

89th Meeting: teleconference held 14 September 2012

The Board approved one clearing application, four non pastoral use applications and considered a voluntary management plan.

Policy Issues and New Initiatives

Review of the *Pastoral Land Act*

The Board had no further input to the review of the *Pastoral Land Act* during 2011/12.

Guidelines for clearing pastoral land

In March 2010 the Minister advised the Board that the NT Land Clearing Guidelines had been amended and requested the Board to amend their guidelines by incorporating them into Board guidelines where practical. The Board, where requested, utilise the definitions set out in the NT Planning Scheme for native vegetation and clearing of native vegetation.

The Board subsequently undertook a review of its Clearing Guidelines to identify inconsistencies with the NT Planning Scheme Land Clearing Guidelines and amended Board guidelines accordingly.

In August 2010 the Board:

- Adopted the Technical Guidelines contained in the NT Planning Scheme Land Clearing Guidelines 2010 as the technical guidelines for all clearing on pastoral leases.
- Approved additional exemptions that do not require formal clearing approval on pastoral leases.
- Approved changes to the public notification processes so that application requiring formal assessment under the *Environment Assessment Act* do not require further public notification.
- Approved publication of revised Pastoral Land Clearing Guidelines 2010 and revised application form.

Pastoral Land Monitoring Programs

The Pastoral Land Board, the pastoral industry and the Northern Territory Government are working together to maintain and improve the condition of the Territory's pastoral land. This land, held as pastoral leases, comprises around 45% of the Territory. Maintaining this natural resource in good condition is essential for a profitable and sustainable pastoral industry.

Monitoring and reporting on the condition of pastoral land is a key function of the Pastoral Land Board under the *Pastoral Land Act.* The Board is also responsible for instigating remedial action to restore pastoral land condition.
The rangeland monitoring program of the NT was set up in 1993 by recommendations from the Pastoral Land Board. The major roles of the monitoring program are to monitor the effect management regimes have upon the land and provide reports on the land condition of pastoral land; and to gain an understanding of landscape processes.

The monitoring program consists of two levels – Tier 1 and Tier 2.

Tier 1 is photo point monitoring system that uses visual estimates to assess land condition and changes in pasture levels over time. These sites were set up in consultation with land managers who are encouraged to conduct their own photo monitoring of the sites.

The Tier 2 approach is an integrated monitoring system of satellite imagery and ground based measurements from permanent sites. It provides for large spatial scale monitoring and information of landscape change.

Currently a small percentage of pastoral land is monitored and updated annually using satellite imagery. With rapid advancements in technology, data availability and accessibility, methods, implementation and reporting are under review.

In 2011/12, ten properties were selected from five Pastoral Districts and specific land systems within each property were targeted as areas important for grazing. The project assessed the trend of indicators associated with land condition, primarily the response of ground cover to rainfall and the extent and proportion of bare ground. Response to rainfall and bare ground index are being trialled within the southern arid regions of the NT.

The Department is currently part of a national project using satellite MODIS imagery coupled with ground based measurements to develop a national ground cover product. The Department's collaboration with the Commonwealth and States to develop and apply methods to determine ground cover products, provides the NT an opportunity to further develop skills and experience in the implementation of a program across the whole NT. Due to the success of the MODIS based product, the project has been expanded to include Landsat imagery based products, providing to the NT paddock scale land cover change data. Implementing a Landsat imagery based program across the NT is fast becoming a feasible addition to ground monitoring with the opening of the Landsat archive and all images now freely available. The Department, with limited resources, is working towards implementing methods to further expand the monitoring program.

The monitoring programs are further informed from data and information provided from established models and external agencies. AussieGRASS is a spatial modelling framework used by the Department of Resources to estimate pasture and ground cover levels. AussieGRASS estimates various pasture characteristics (such as growth and total standing dry matter) over a given time period and compares it with historical records. It uses rainfall, climate, soil and pasture type information to estimate average growth over 5km x 5km square grids across Australia.
Total Standing Dry Matter is estimated from pasture levels carried over from previous seasons (less grazing, fire and detachment) and the current season's growth. These models are used to inform land management and stocking strategies.

Establishment and Reassessment of Tier 1 Photo-Point Monitoring Sites

During 2011/12 a total of 52 monitoring sites were reassessed on three properties in the VRD, Sturt Plateau Pastoral Districts (refer Table 1).

Pastoral District	Total No. of Sites	No. of Properties [with Tier 1 sites]	Average Sites/Property	New Sites Established 2011/12	Reassessed 2011/12 Sites	Reassessed 2011/12 Properties
Darwin 21 Pastoral Leases	**144**	**21**	**7**	**0**		**0**
Katherine 7 Pastoral Leases	**49**	**7**	**7**	**0**	**0**	**0**
Roper 11 Pastoral Leases	**52**	**10**	**5**	**0**	**0**	**0**
VRD 25 Pastoral Leases	**338**	**25**	**14**	**0**	**40**	**1**
Sturt Plateau 27 Pastoral Leases	**180**	**26**	**7**	**0**	**4**	**1**
Gulf 18 Pastoral Leases	**112**	**17**	**7**	**0**	**0**	**0**
Barkly 31 Pastoral Leases	**447**	**31**	**14**	**0**	**0**	**0**
Tennant Creek 8 Pastoral Leases	**80**	**8**	**10**	**0**	**0**	**0**
Plenty 14 Pastoral Leases	**157**	**14**	**11**	**0**	**0**	**0**
Northern Alice Springs 30 Pastoral Leases	**340**	**30**	**11**	**0**	**0**	**0**
Southern Alice Springs 26 Pastoral Leases	**278**	**24**	**12**	**0**	**8**	**1**
Other Tenure **All Pastoral Districts** Aboriginal Land and Crown Leases	**115**	**15**	**8**	**0**	**0**	**0**
Totals	**2291**	**228**	**10**	**0**	**52**	**3**

Table 1: Tier 1 Photo-point Monitoring Sites established and reassessed 2011/12 (1 October 2011 – 30 September 2012)

Pastoral District Reports 2011/12

General Definition of Land Condition

A general definition of landscape condition is provided by the Commonwealth Land and Water Audit (2001) “as a value judgement related to the worth of a landscape for a particular use”. In the Northern Territory, where maintaining natural pastures is a primary goal of sustainable pastoral management, landscape condition is most usefully defined in terms of the ability of the land to maintain productivity for future generations. Land condition in the Northern Territory pastoral estate can best be described by three main indicators:

- The distribution of water and nutrients in a landscape often scarce in these essential components, which in turn affects:
- The productivity and composition of pasture plant species; and
- The presence of feral animals and noxious weeds.

Criteria used to assess Pasture Condition

Three condition classes are used to assess pasture condition (good, fair and poor). These classes are based on indicators of pasture condition such as the abundance of perennial plants known to increase or decrease following grazing, and ground surface indicators such as the exposure of bare soil to wind and water and its subsequent erosion. These indicators of pasture condition and associated assessment criteria have largely been determined from historical information, local knowledge, cross fence comparisons and stock grazing gradients out from water. The further from water the less intense the stock grazing pressure and the higher the condition class rating tends to be.

The condition classes can be described as follows:

Good: There is close to maximum diversity and cover of annual and perennial plant species possible for that pasture type with perennial species of various ages. There is no active erosion other than natural features and processes. Plant and litter cover protects the soil from wind and water in all seasons except following fire.

Pastures in good condition are stable and are at, or close to, their productive potential. Pastoral managers should be aiming for good pasture condition, which necessitates careful management practices that maintain or improve pasture condition.

Fair: Reduced cover and regeneration of palatable perennial species and there has been some establishment of less preferred unpalatable plants. Productivity remains high in good seasons but is markedly reduced in dry seasons. Lower plant cover increases the susceptibility of soil to erosion in most seasons and there is evidence of moderate erosion on susceptible land types.

Pastures in fair condition are productive, but below their productive potential. They are sometimes actively eroding and can rapidly deteriorate to poor condition. Maintaining pastures in fair condition is not a satisfactory status quo, as long term damage to their productive capacity will result. They should be managed with the aim of improving condition and ultimately achieving good condition status.

Poor: The palatable component of the pasture is depleted and the pasture is dominated by annual, ephemeral and unpalatable perennial species. There is no, or markedly reduced, regeneration of desirable perennial plants, productivity is impaired and the seasonal response is poor. Soils are unstable and susceptible to erosion in all seasons and past erosion leaves the site susceptible to further soil movement if grazed.

Pastures in poor condition have severely reduced productivity, which is most noticeable during dry periods. They require a very long period of spelling to improve condition or mechanical intervention such as erosion control earthworks or reseeding.

Darwin Pastoral District Report 2011/12

Rainfall Darwin District	
30 year district average 1749 mm	2011/12 district annual average 2918 mm
30 year district average summer (October to April) 1684 mm	2011/12 district average summer (October to April) 1872 mm
30 year district average winter (May to September) 45 mm	2011/12 district average winter (May to September) 72 mm

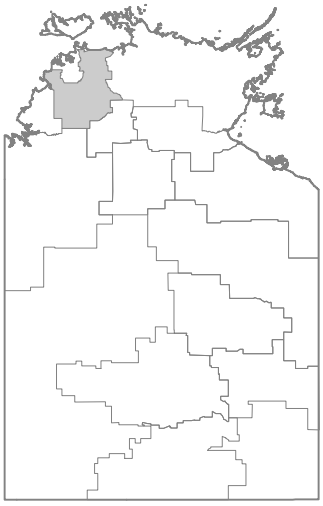

Figure 1: Location of Darwin Pastoral District

Seasonal Conditions

The Darwin Pastoral District experienced average to above average rainfall for 2011/12, with effects from Cyclone Grant December 2011 and large tropical depression in late January 2012.

Pasture growth for the reporting period October 2011 to September 2012, was average to extremely high, as determined by AussieGRASS models. The standing biomass May 2012 for the district was above average with some areas having greater than 3000kg/ha. High levels of standing biomass persisted for the District through to September 2012 with some areas with up to 2000kg/ha.

Monitoring

No properties within the Darwin Pastoral District were assessed under the monitoring program for 2011/2012.

Katherine Pastoral District Report 2011/12

Rainfall Katherine District	
30 year district average 716 mm	2011/12 district annual average 805 mm
30 year district average summer (October to April) 696 mm	2011/12 district average summer (October to April) 797 mm
30 year district average winter (May to September) 9 mm	2011/12 district average winter (May to September) 8 mm

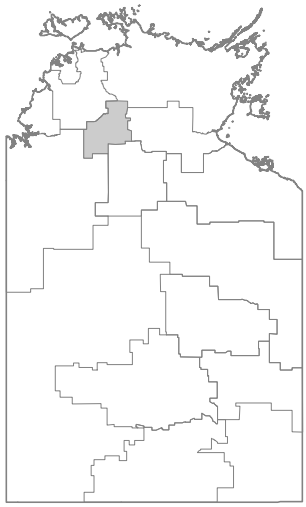

Figure 2: Location of Katherine Pastoral District

Seasonal Conditions

The Katherine Pastoral District experienced slightly above average rainfall conditions for 2011/12.

Pasture growth was average to above average from October 2011 to September 2012, as determined by AussieGRASS models. The standing pasture biomass for May 2012 for the District was average. This trend of high cover and biomass continued through to September 2012 with pasture biomass levels of the District ranging from average to above average.

Monitoring

No properties in the Katherine Pastoral District were assessed under the monitoring program during 2011/2012.

Roper Pastoral District Report 2011/12

Rainfall Roper District *	
30 year district average 624 mm	2011/12 district annual average 1405 mm
30 year district average summer (October to April) 569 mm	2011/12 district average summer (October to April) 758 mm
30 year district average winter (May to September) 20 mm	2011/12 district average winter (May to September) 17 mm

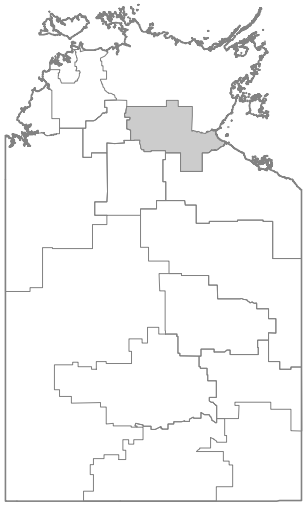

Figure 3: Location of Roper Pastoral District

Seasonal Conditions

The Roper Pastoral District experienced above average rainfall for 2011/12, with effects from an active wet season with numerous tropical depressions in the area.

Pasture growth for the reporting period October 2011 to September 2012, was average to above average, as determined by AussieGRASS models.

The standing pasture biomass for May 2012 for the District was above average to extremely high with some areas having greater than 3000kg/ha. This trend continued through to September 2012 with pasture biomass levels of average to above average being maintained across the District.

Monitoring

No properties in the Roper Pastoral District were assessed under the monitoring program during 2011/12.

VRD Pastoral District Report 2011/12

Rainfall VRD District	
30 year district average 636 mm	2011/12 district annual average 782 mm
30 year district average summer (October to April) 618 mm	2011/12 district average summer (October to April) 782 mm
30 year district average winter (May to September) 15 mm	2011/12 district average winter (May to September) 0 mm

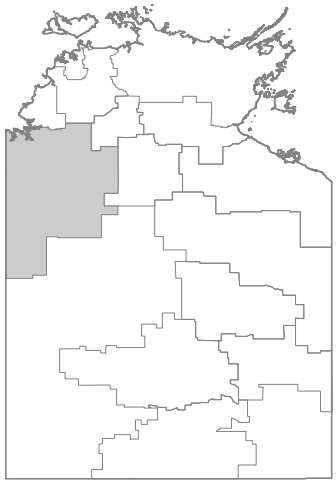

Figure 4: Location of VRD Pastoral District

Seasonal Conditions

The VRD Pastoral District experienced above average rainfall for 2011/12.

Pasture growth for the reporting period October 2011 to September 2012, was average to above average, as determined by AussieGRASS models. The standing pasture biomass for May 2012 for the District was average with some areas with extremely high levels. High levels of standing biomass persisted through the dry season with majority of the District having above average levels at September 2012.

Monitoring

During the 2011/2012 reporting period one station was assessed, with 40 of the 45 monitoring sites revisited. Sites were not re-assessed due to inaccessibility and sites not being able to be located.

Sturt Plateau Pastoral District Report 2011/12

Rainfall Sturt Plateau District	
30 year district average 800 mm	2011/12 district annual average 878 mm
30 year district average summer (October to April) 784 mm	2011/12 district average summer (October to April) 861 mm
30 year district average winter (May to September) 44 mm	2011/12 district average winter (May to September) 17 mm

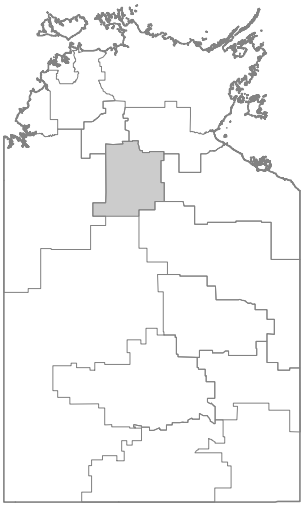

Figure 5: Location of Sturt Plateau Pastoral District

Seasonal Conditions

During 2011/12 the Sturt Plateau District received above average rainfall.

Pasture growth for the reporting period October 2011 to September 2012, was average to extremely high, as determined by AussieGRASS models. The standing pasture biomass for May 2012 for the District ranged from average to areas with extremely high levels. This trend continued through to September 2012 with pasture biomass levels of average to above average levels.

Monitoring

Tier 1 data collection was undertaken on one property in the Sturt Plateau Pastoral District during 2011/12 with four sites re-assessed.

Gulf Pastoral District Report 2011/12

Rainfall Gulf District	
30 year district average 839 mm	2011/12 district annual average 1120 mm
30 year district average summer (October to April) 874 mm	2011/12 district average summer (October to April) 1048 mm
30 year district average winter (May to September) 10 mm	2011/12 district average winter (May to September) 72 mm

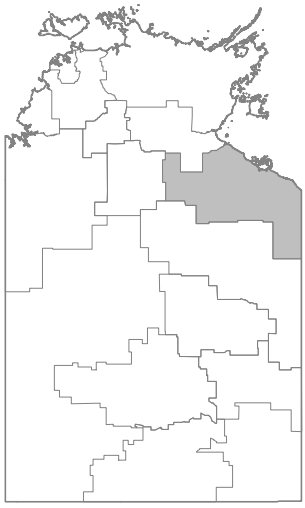

Figure 7: Location of Gulf Pastoral District

Season Conditions

The Gulf Pastoral District experienced above average rainfall for the 2011/2012 reporting period.

Pasture growth for the reporting period October 2011 to September 2012, was average to above average, as determined by AussieGRASS models. The standing pasture biomass for May 2012 for the District was average with extremely high levels in some areas. High levels of standing biomass persisted through the dry season with the majority having above average levels at September 2012

Monitoring

No properties in the Gulf Pastoral District were assessed under the monitoring program during 2011/12.

Barkly Pastoral District Report 2011/12

Rainfall Barkly District	
30 year district average 387 mm	2011/12 district annual average 466 mm
30 year district average summer (October to April) 361 mm	2011/12 district average summer (October to April) 465 mm
30 year district average winter (May to September) 25 mm	2011/12 district average winter (May to September) 1 mm

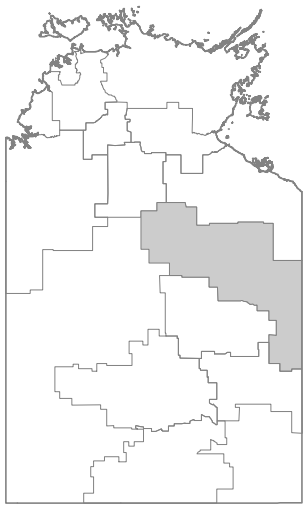

Figure 8: Location of Barkly Pastoral District

Seasonal Conditions

Much of the Barkly District received above average summer rainfall for 2011/12 (October to April).

The standing pasture biomass for May 2012 for the District was above average to extremely high with some regions having greater than 3000kg/ha. This trend continued through to September 2012 with pasture biomass levels of average to above average being maintained across the district.

Monitoring

No properties in the Barkly Pastoral District were assessed under the monitoring program during 2011/12.

Tennant Creek Pastoral District Report 2011/12

Rainfall Tennant Creek District	
30 year district average 461 mm	2011/12 district annual average 572 mm
30 year district average summer (October to April) 413 mm	2011/12 district average summer (October to April) 563 mm
30 year district average winter (May to September) 27 mm	2011/12 district average winter (May to September) 9 mm

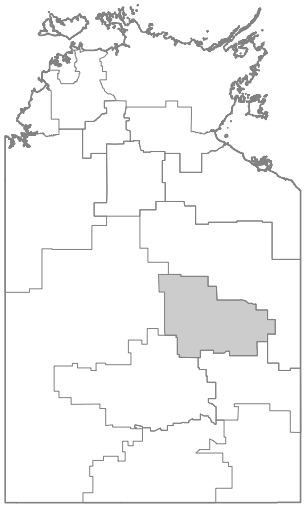

Figure 9: Location of Tennant Creek Pastoral District

Seasonal Conditions

During 2011/12 the Tennant Creek Pastoral District experienced above average rainfall.

Pasture growth for most of the district was average to above average as determined by AussieGRASS models. Some areas experienced extremely high levels of standing biomass, exceeding 4000 kg/ha in May 2012. High levels of biomass continued throughout the dry season with September 2012 levels being average to above average.

Monitoring

No properties in the Tennant Creek Pastoral District were assessed under the monitoring program during 2011/12.

Plenty Pastoral District Report 2011/12

Rainfall Plenty District	
30 year district average 299 mm	2011/12 district annual average 217 mm
30 year district average summer (October to April) 239 mm	2011/12 district average summer (October to April) 198 mm
30 year district average winter (May to September) 59 mm	2011/12 district average winter (May to September) 18 mm

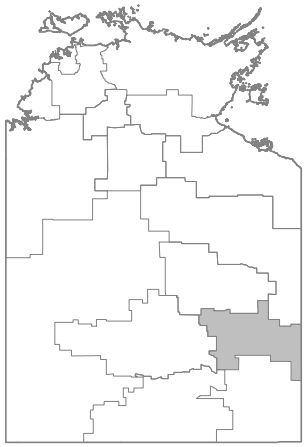

Figure 10: Location of Plenty Pastoral District

Seasonal Conditions

Rainfall for the Plenty Pastoral District for 2011/12 was slightly below average with the majority of the rain falling in the summer period.

Pasture growth for most of the district was well above average as determined by AussieGRASS models. Standing pasture biomass levels in May 2012 were in excess of 1000 kg/ha, indicating a good summer growing season. High levels of biomass continued through to September 2012 with above average to extremely high levels across the district.

Monitoring

No properties in the Plenty Pastoral District were assessed under the monitoring program during 2011/12.

Northern Alice Springs Pastoral District Report 2011/12

Rainfall Northern Alice Springs District	
30 year district average 311 mm	2011/12 district annual average 260 mm
30 year district average summer (October to April) 257 mm	2011/12 district average summer (October to April) 258 mm
30 year district average winter (May to September) 53 mm	2011/12 district average winter (May to September) 2 mm

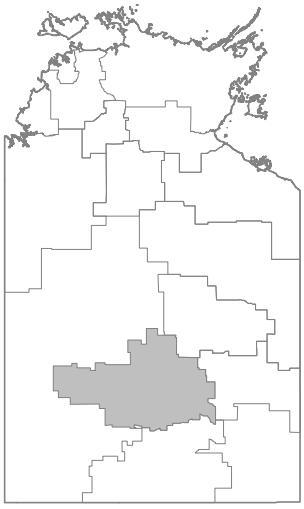

Figure 16: Location of Northern Alice Springs Pastoral District

Seasonal Conditions

During 2011/12 the Northern Alice Springs Pastoral District recorded slightly below average to average rainfall.

Pasture growth across the district ranged from average to extremely high as determined by AussieGRASS models. Very high levels greater than 4000 kg/ha were experienced across some areas of the district. High levels of biomass persisted through to September 2012, with the district experiencing above average levels.

Monitoring

No properties in the Northern Alice Springs Pastoral District were assessed under the monitoring program during 2011/12.

Southern Alice Springs Pastoral District Report 2011/12

Rainfall Southern Alice Springs District	
30 year district average 280 mm	2011/12 district annual average 198 mm
30 year district average summer (October to April) 216 mm	2011/12 district average summer (October to April) 194 mm
30 year district average winter (May to September) 64 mm	2011/12 district average winter (May to September) 4 mm

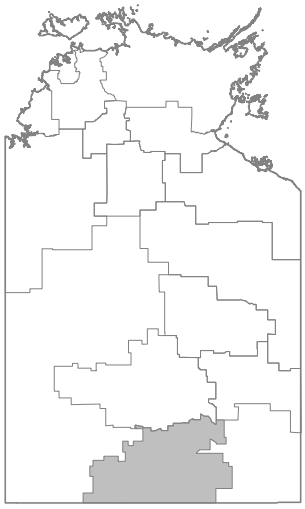

Figure 18: Location of Southern Alice Springs Pastoral District

Seasonal Conditions

During 2011/12 the Southern Alice Springs Pastoral District recorded slightly below average to average rainfall.

Average to extremely high levels of pasture growth was experienced across the District as determined by AussieGRASS models. The standing pasture biomass for May 2012 for the District was average. This level of pasture continued through to September 2012, with the District experiencing average pasture biomass levels.

Monitoring

Tier 1 data collection was undertaken on one property in the Southern Alice Springs Pastoral District during 2011/12 with eight sites re-assessed.

Specific Land Condition Issues

Implementation of Management Plans to address Land Condition Issues

In cases where specific land condition issues are identified on a pastoral property, the Pastoral Land Board may request the lessee to prepare a management plan detailing the action to be taken to address the land management issues which have been identified. It is a basic tenet of the *Pastoral Land Act* that pastoral lessees acknowledge their duty to adopt sound management practices and their responsibility to address any land condition issues that may arise. In line with this philosophy, the Pastoral Land Board seeks voluntary collaboration with pastoral lessees to address land condition issues and implementation of rehabilitation programs.

During 2011/12 action continued in respect of implementation of management plans on a number of properties throughout the Territory.

Erosion on Roads, Fences and other Infrastructure

Erosion on roads, tracks and fence lines continues to be a significant soil management issue on pastoral leases throughout the Northern Territory. Officers of the Land Resources Branch, NRETAS adopt a co-operative approach to assist station managers with appropriate soil conservation earthwork design and construction. Voluntary management plans have been prepared by pastoral lessees and successfully implemented on a number of properties to address issues arising from the poor siting of infrastructure, and/or inappropriate maintenance techniques.

Feral Animals

Large feral vertebrates are a significant problem throughout the Northern Territory as a result of their negative impacts on the agricultural and natural environment. For instance, feral animals have been associated with:

- Declines in the abundance and diversity of native plant communities due to trampling and ingestion of seedlings.
- Increased soil erosion and sedimentation of natural waterways and water bodies as a result of trampling.
- Competition with native species for feed and habitat.
- Consumption of seedlings and plant materials, reducing the capacity for the ecosystem to regenerate.
- Increased spread and establishment of weeds.
- Decreased abundances and diversities of aquatic and terrestrial invertebrates.
- Decreased agricultural productivity by reducing the availability of feed for stock.
- Damage to fences and other infrastructure.

Feral Camels in Central Australia

Feral camels occur over about 3.3 million square km of arid SA, WA, QLD and the NT. In 2008, the estimated minimum population was 750 000 camels with approximately one third of these occurring in the NT - where there are major concentrations in the Simpson Desert in the east and the Great Sandy, and the Tanami Deserts in the west. Feral camels cause significant damage to the environment, including degradation of wetlands and destruction of vegetation, as well as economic and cultural impacts over approximately half of the area occupied in the NT and in the other affected jurisdictions.

The Northern Territory Government is a partner in the Australian Feral Camel Management Project that commenced in July 2009 and will finish in December 2013. The objective of the project is to reduce the impacts of camels on the environment and other assets by reducing their population in areas where impacts are causing concern. During the reporting period, nine aerial culling operations were conducted across six pastoral stations and adjacent Aboriginal lands in the southern Northern Territory. A total of 36,082 camels were removed during these operations

Weeds

Weeds threaten the sustainability of rural primary industries in the Northern Territory through increased costs, reduced efficiency and limitations on marketing. They also threaten water resources, freshwater fishing, and conservation of the natural environment, recreation, tourism and traditional hunting.

The Weed Management Branch assists landholders to manage weeds by providing technical advice, assisting with weed management plans, carrying out surveys and controlling emergency incursions.

The only serious new incursions during 2011-12 were a rubber vine infestation in the Darwin urban area and pond apple in the Darwin rural area. The infestations have been controlled and are subject to ongoing surveillance.

Major weed issues for each pastoral district during 2011 - 2012 are summarised below.

Pastoral District	**Main weed issues & control programs**
Darwin Emerging Issues	Mimosa (*Mimosa pigra*) Hyptis (*Hyptis suaveolens*) *Sida* spp Gamba grass (*Andropogon gayanus*) Mission grass (*Cenchrus polystachios*) Grader grass (*Themeda quadrivalvis*) *Senna* spp Bellyache bush (*Jatropha gossypiifolia*) Parkinsonia (*Parkinsonia aculeata*) Pond apple (*Annona glabra*) Rats tail grass (introduced *Sporobolus* spp)
Katherine Emerging Issues	Bellyache bush (*Jatropha gossypiifolia*) Prickly acacia (*Acacia nilotica*) Mimosa (*Mimosa pigra*) Parkinsonia (*Parkinsonia aculeata*) Mesquite (*Mesquite pallida*) Grader grass (*Themeda quadrivalvis*) – concern, no definitive control program in place Rubbervine (*Cryptostegia grandiflora*)
Roper	Bellyache bush (*Jatropha gossypiifolia*)

	Lantana (*Lantana* spp.) Mimosa (*Mimosa pigra*) Parkinsonia (*Parkinsonia aculeata*) Grader grass (*Themeda quadrivalvis*)
VRD	Bellyache bush (*Jatropha gossypiifolia*) Mimosa (*Mimosa pigra*) Parkinsonia (*Parkinsonia aculeata*) Prickly Acacia (*Acacia nilotica*)
Sturt Plateau	Bellyache bush (*Jatropha gossypiifolia*) Infestation at Daly Waters on vacant Crown land
Guld	Bellyache bush (*Jatropha gossypiifolia*) Prickly Acacia (*Acacia nilotica*) Bellyache bush (*Jatropha gossypiifolia*)
Barkly	Mesquite (*Prosopis* spp.) Parkinsonia (*Parkinsonia aculeata*) Prickly Acacia (*Acacia nilotica*) Rubberbush (*Calotropis procera*) Parthenium weed (*Parthenium hysterophorous*) Rubber vine (*Cryptostegia grandiflora*)
Tennant Creek	Bellyache bush (*Jatropha gossypiifolia*) Parkinsonia (*Parkinsonia aculeata*) Rubber Bush (*Calotropis procera*) Parthenium weed (*Parthenium hysterophorous*)
Plenty	Parkinsonia (*Parkinsonia aculeata*) Rubber Bush (*Calotropis procera*)
Northern Alice Springs	Athel Pine (*Tamarix aphylla*) Athel pine is principally located south of Alice Springs along the Finke River. Mature athel pine trees have been controlled north of Alice Springs
Southern Alice Springs	Athel Pine (Tamarix aphylla)

Bushfires

The 2010 / 2011 Wet season was above average throughout the District especially in the South. Fuel loads as a consequence were high across the District. A large wildfire in the Tanami affected Wave Hill, Cattle Creek, Murranji, Dungowan and Birrimba. A wildfire in the Gulf in October affected Nutwood, Vermelha, Amungee Mungee and Hayfield.

The wildfire season was followed by an above average wet season increasing fuel loads again across the District. To assist fire management aerial burning was conducted in early 2012 across the Savannah fire control region. In addition to BFNT operations pastoralists in the central and southern VRD were issued incendiaries to carry out their own operations.

	Area Km2	Late 2011	%	Early 2012	%
Vernon	11410.00	1497	13	3384	30
Alice	596164.00	248622	42	19278	3
Arafura	48390.00	10914	23	16916	35
Arnhem	126984.00	40121	32	18977	15
Barkly	279345.00	88588	32	14130	5
Savanna	293600.00	59578	20	47748	16

Areas Km2 burnt per region 2011 / 2012

Value of the Cattle Industry to the Northern Territory

The pastoral estate of the Northern Territory covers around 606,000 km^2 comprising 45% of the area of the Northern Territory under 224 pastoral leases. Pastoral holdings vary from the smallest station of 198 km^2 to the Territory's largest station which runs cattle over 12,212 km^2.

The NT cattle population in 2011[1] was estimated to be around 2 million head, over 7.0% of the Australian total.

The estimated gross value of production for the cattle industry was $285.3 million in 2010-11, a 12.3% increase compared to the previous year. This was mainly due to a small decrease in the value of live cattle exports offset by an increase in value of cattle movements' interstate. Cattle contributed 53.5% of the total value of Territory rural industries and fisheries production in 2010-11.

The flow-on effects of additional output (direct contribution) of $145.5 million and income (indirect contribution) of $36.1 million by the pastoral industry on the rest of the NT economy is estimated to be $181.6 million.

In 2010-11, an estimated 542,471 head of cattle were turned off from Territory pastoral properties, an increase of 12.2% on 2009-10. Of the total Territory cattle turned off in 2010-11, 49.9% were destined for interstate trade, and 50.1% were exported live overseas. Some cattle were slaughtered in small private abattoirs as there is currently no commercial, domestic or exporting abattoir operating in the NT. AAco has commenced construction of a large-scale, state of the art meat processing facility at Livingstone (outside Darwin).

More recent figures for NT live cattle exports through the Port of Darwin show that in 2010-11, 271,891 head of NT cattle were exported, a decrease of 6.6% compared to 2009-10. The June 2011 temporary trade suspension of live exports to Indonesia by the Australian Government in mid-2011 and subsequent reduction in import permits by the Indonesian Government have impacted on export numbers. Interstate movements' rose to 270,580, a 40.7% increase on 2009-10 as overall NT turn-off rose (on the 2009-10) while Indonesian buyers were importing fewer cattle.

Applications considered by the Board during 2011/12

Applications to clear Pastoral Land 2011/12

(i) Clearing applications approved 2011/12 – Purpose and Areas

Purpose of clearing	Number of proposals	Area approved
Improved pastures for grazing	3	13899.3ha
Irrigated pasture for grazing	1	99ha
Totals	**4**	**13998.3ha**

Table 3: Purpose and areas of pastoral land clearing approved 2011/12

(ii) Applications to clear Pastoral Land 2011/12

Active Applications carried over from 2010/11	3
Applications carried over from 2010/11 as held in abeyance pending formal assessment under the *Environmental Assessment Act*	0
Total number of clearing applications lodged 2011/12	1
Applications approved	4
Applications lapsed/withdrawn	0
Applications carried over as held in abeyance pending formal assessment under the *Environmental Assessment Act*	0
Active Applications carried over	**0**

Table 4: Clearing applications determined 2011/12

(iii) Applications to vary Clearing Permits 2011/12

Purpose of variation	Number of proposals	Approved
Nil	0	0

Table 5: Variations to Clearing Permits 2011/12

Applications for Non Pastoral Use 2011/12

(i) Applications for non pastoral use 2011/12

Applications carried over from 2010/11	3
Applications lodged during 2011/12	8
Applications approved	10
Applications lapsed/withdrawn	0
Applications carried over	**1**

Table 6: Applications for non pastoral use determined 2011/12

(ii) Purpose of non pastoral use approvals 2011/12

Non Pastoral Use Activity	**No. of Approvals**
Tourism	7
Horticulture	3

Table 7: Purpose of non pastoral use approvals 2011/12

Applications to Subdivide a Pastoral Lease into two or more Pastoral Leases 2011/12

Active Applications carried over from 2010/11	2
Applications carried over from 2010/11 as held in abeyance	0
Applications referred 2011/12	0
Applications considered by the Board with recommendation to the Minister	0
Applications carried over as held in abeyance at lessee's request	1
Active Applications carried over	**2**

Table 8: Subdivision applications considered 2011/12

Applications to surrender Term Pastoral Leases in exchange for Perpetual Pastoral Leases 2011/12

Applications carried over from 2010/11	1
Applications referred 2011/12	2
Applications considered by the Board with recommendation to the Minister	1
Applications carried over	**2**

Table 9: Applications to convert to perpetual tenure considered 2011/12

Report on Land Clearing previously approved

It is a requirement of the *Pastoral Land Act* that a lessee shall not undertake clearing on pastoral land without the written consent of the Pastoral Land Board. The Pastoral Land Board has included details of the number of clearing applications and purpose of land clearing approvals in each of its Annual Reports to the Minister since 1992/93. Since 1999/2000, the Board has also reported on progress with previous land clearing approvals. Table 10 below outlines whether clearing has proceeded and current status for individual determinations of the Board since the last report.

Year	Clearing Purpose	Area	Status at 30/9/2010
2007/08	Introduced pasture for grazing	1304 ha	Clearing completed.
2007/08	Introduced pasture for grazing	1613 ha	Clearing completed
2007/08	Introduced pasture for grazing	911 ha	Clearing completed.
2008/09	Irrigated pasture and hay production	82 ha	Clearing commenced.
2011/12	Research trials	80 ha	Clearing completed.

Table 10: Status of land clearing previously approved