

DEPARTMENT OF **PRIMARY INDUSTRY, FISHERIES AND MINES**

# **pastoral industry survey**

## **NT 2004**



Northern Territory Government

To the reader,

I am delighted to write the foreword for this very important document. The detail and simple logic of the presentation of the material is a credit to all who contributed.

This document will provide a realistic and important benchmark for each region and the Northern Territory industry as a whole to update and compare with on a regular basis in the future. Read in conjunction with the Pastoral Land Board's annual report it will give an excellent view of the health of our resource base and the beef industry to the discerning potential investor and others interested.

It demonstrates the environmental management responsibilities that have been widely embraced by industry participants.

The real and measurable outcomes of production noted in the document is a graphic example of the pastoral industry's lead agency working, with good extension services, to assist industry as was intended from the beginnings of NT self government.

I am happy to recommend this document as a strong indicator of the NT beef industry for anyone who is introduced to it.

Regards,

A handwritten signature in black ink, appearing to read 'J. Armstrong', with a horizontal line underneath.

John Armstrong

NTCA President 2003 - 2006

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### Disclaimer

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## **Executive Summary**

This survey, conducted in 2004, is the first complete survey of the Northern Territory (NT) pastoral industry. Three regions were surveyed more than 20 years ago - Alice Springs in 1979, the Barkly in 1980 and Katherine in 1982 - but the Top End pastoral region was not included. This survey reflects the results of interviews with 149 cattle producers across the four regions, accounting for 71% of producers in the NT.

The average size of a cattle station in the NT is 3122km<sup>2</sup>. On the stations surveyed across the NT there were approximately 1.4 million head. The predominant breed of cattle in the NT is Brahman but British breeds are the most prevalent in the Alice Springs Region, due to a less tropical environment.

The most common ownership structures of stations in the NT are owner/manager (32% of producers), private owned/manager employed (25%) and company/manager (25%). Six per cent of pastoral properties surveyed were Indigenous-owned land.

The majority of properties in the NT have a total herd size between 2000 and 5000 head (20% of properties) and more than 20,000 head (18%). The most common breeder herd size in the NT is that of 2000-5000 head (22%).

The mainstream production system for the NT is breeding, with a number of properties in the Darwin and Alice Springs Regions able to fatten cattle. The most common animal turned off from the NT is 18-24 month-old feeder steers (63% of producers), followed by cull cows and export heifers. Generally, turn-off in the NT occurs between April and September. The two main markets to which pastoralists send cattle are export (64%) and abattoirs (38%).

Producers in the NT undertake two mustering rounds each year. The timing and length of these mustering rounds varies across the NT and is influenced by environmental and market factors. The main mustering methods include helicopters, horses, motorbikes and trap yards.

The bull percentage that NT producers aim to use is 4.3% on average. Bulls that are purchased are most commonly sourced from Queensland stud breeders and Estimated Breeding Values are used mostly by Alice Springs Region producers.

The majority of producers in the NT practise year-round mating of their breeder herds. Ninety-eight per cent of producers practise weaning of calves from their mothers. The average weaning percentage (number of calves weaned/number of cows joined) for the NT was 72% (range of 35 to 90%). The average percentage of cows culled in the NT was 12% and there was an average mortality rate of 3%. The average percentage of heifers kept as replacements was 60%. The mortality rate for first calf heifers was 3.3% and for second calf heifers, 3%.

Ninety-three per cent of producers in the NT provide supplementation to their cattle. Supplement is provided on properties throughout the wet and dry seasons. The most common component of supplement rations in the wet season is phosphorus and, in the dry season, urea. The Alice Springs Region differed from this regime with producers who do supplement with phosphorus doing so in response to a rainfall event. Producers in the NT in general supply supplement to all classes of cattle. Production feeding is not a common component of nutrition management for NT properties.

Of the properties surveyed, 36% stated that they produced their own hay. The average amount of hay produced in the NT is 793 tonnes. In the Top End Region hay is produced from improved pastures, while in the Barkly Region hay production is native pasture based. The Alice Springs and Katherine Regions have a mixture of native and improved hay.

The biggest animal health concern for producers in the NT is botulism. Producers in the Alice Springs Region are also concerned about lice. Top End producers are also concerned about buffalo fly. The most common disease that producers vaccinate for is botulism with a smaller number of producers in the Top End, Katherine and Barkly Regions vaccinating for vibriosis.

Based on producer estimates, carrying capacities across the NT are expected to increase through increases in station infrastructure. Estimated increases are 29% by 2009 and 54% by 2014. The largest increases in estimated carrying capacity relative to area are in the Top End due to planned improved pasture development on already cleared land.



Thirty-five per cent of pastoralists in the NT indicated they had areas of fully improved pasture on their station while 29% indicated they had areas of improved pasture species scattered across paddocks, usually legumes. The level to which pasture had been developed varied greatly across the NT. The most common use of improved pasture in the NT is to improve diet quality in a native pasture system.

Native tree or shrub build-up was reported by 79% of stations across the NT. Forty-eight per cent of these pastoralists believed it to be of major concern to their production system, 33% a minor concern and 19% of no concern. Producers believe it is having a significant effect on pasture growth and mustering. Controlled burning is used by 50% of producers in an attempt to reduce the encroachment.

Weeds are of importance to producers because they can severely limit production. Eighty-one per cent of producers made a planned effort to prevent weeds being introduced to their property. The most common preventative action taken was to buy certified clean hay. To control weeds in 2004 pastoralists spent an average of \$19,568 for each property.

Pastoralists also cited pest animals as hampering production. Wild dogs were named as having the biggest impact on production across the NT, although feral pigs were an equal problem in the Top End Region. Wild dogs were also named as the feral animals receiving the greatest amount of control. The average cost of control for feral animals in the NT was \$4,928 for each property in 2004.

Sixty-seven per cent of producers surveyed named cattle production as their only form of income. Sixteen per cent cited hay production as an additional source of income. Nine per cent of producers indicated that tourism occurred on their station.

Producers were asked to identify hurdles in running or managing their enterprise. The recruitment and retention of staff was identified as the biggest hurdle, except in the Alice Springs Region where seasons were reported to be the largest hurdle. The increasing costs of production were also identified widely as a hurdle to the enterprise.

The most significant threats to economic sustainability were the rising cost of production, cattle prices and other market issues and road conditions. Once again the Alice Springs Region rated seasonal conditions as being the biggest threat to economic sustainability.

Producers named exotic weeds as being a major threat to environmental sustainability with importance placed on issues such as erosion and the ability to manage for climate variability. There was concern over areas such as government policy and ill-advised community pressure.

Producers named lifestyle as being the predominant reason they choose to be a member of the pastoral industry.





## Introduction

The 2004 Pastoral Industry Survey of the Northern Territory (NT) has been prepared by the Department of Primary Industry, Fisheries and Mines (DPIFM). The objectives of this survey are:

1. To document the state of the cattle industry in the NT so that government and industry can monitor more closely the performance of research and development through time.
2. To collect information to allow the needs of industry to be addressed by DPIFM and groups such as Industry Advisory Committees and the Northern Territory Cattlemen's Association.
3. To determine the most effective ways of providing extension information to producers in each Region and to initiate or improve communication between DPIFM staff and cattle producers.
4. To give the industry an up-to-date picture of management practices so that future directions for research and development can be more relevant to industry.

This report summarises the results on a NT basis, taken from the surveys that were carried out in the Katherine, Alice Springs, Barkly and Top End Regions.

### **Climate and Season**

Figure 1 shows the variation in rainfall across the NT.

The Alice Springs Region is an arid to semi-arid environment with an average rainfall that varies from 100mm in the south-east to 350mm in the north. Rainfall is generally in summer, especially in the north.

The Barkly Region is a semi-arid to sub-tropical environment with an average rainfall that varies from 459mm in the south to 965mm in the north-east. Rainfall is generally in summer, known as the wet season.

The Katherine Region has a semi-arid monsoonal climate with a wet season from October to April and a virtually rainless dry season from May to September. The average rainfall can vary from 521mm in the south-west to 981mm in the north.

The Top End Region can be described as having a tropical climate with a wet season from November to April and a dry season from May to October. Rainfall in the region ranges from 1428mm in the south to 1917mm in the north.

FIGURE 1 - AVERAGE RAINFALL ACROSS THE NT

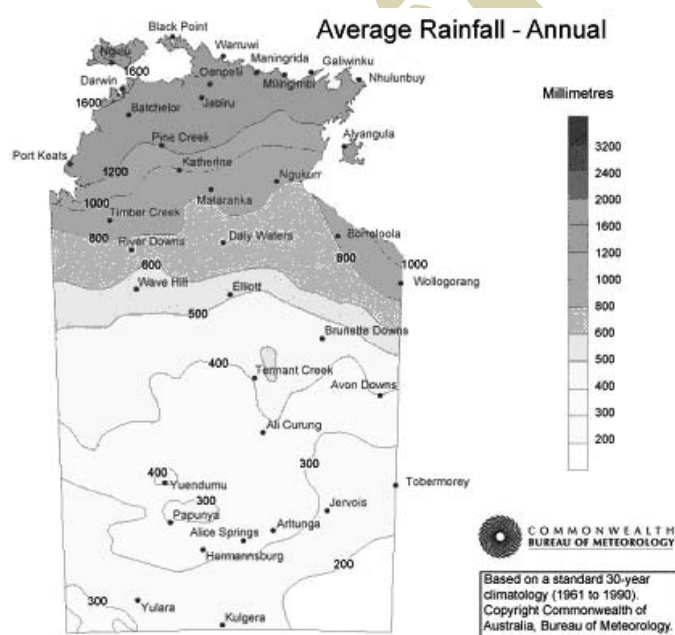
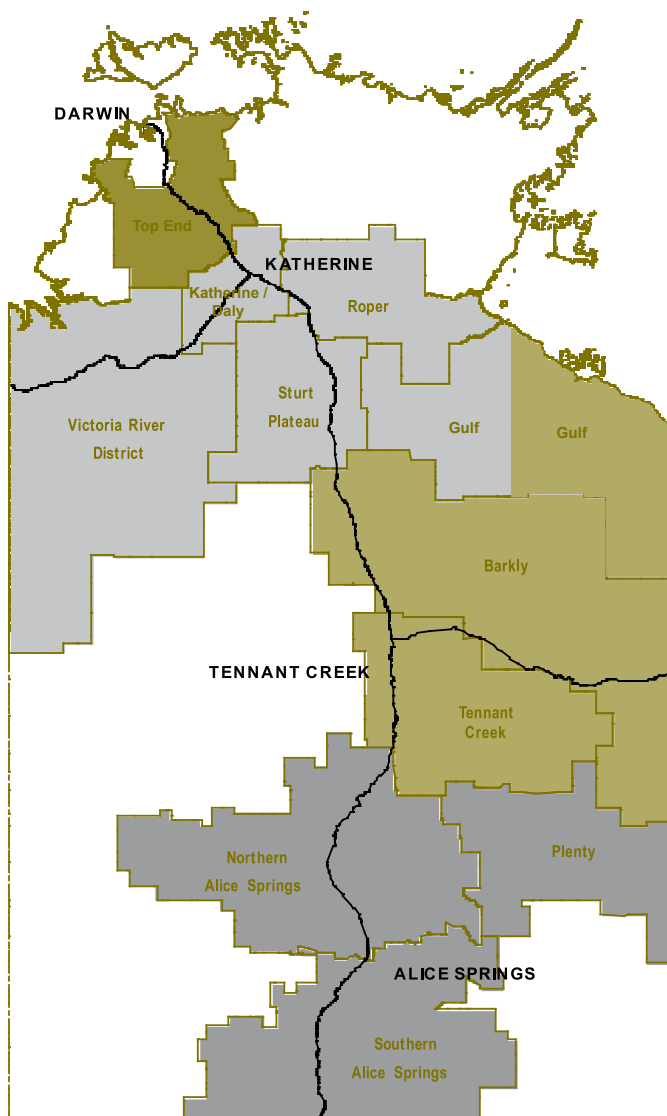


FIGURE 2 - MAP OF THE NORTHERN TERRITORY SHOWING SURVEY REGIONS AND DISTRICTS



## The Survey Region

Figure 2 shows the four Regions used for the purposes of this survey. Each region is divided into districts, apart from the Top End Region.

## Soils and Vegetation

The Alice Springs Region is divided into two districts, Northern and Southern. The main land types of the region that are useful for production include open woodlands, mulga shrublands, gidyea woodlands, calcareous shrubby grasslands, chenopod shrublands and alluvial plains of major rivers.

The Barkly Region is divided into three districts: Tennant Creek, Barkly and the Gulf. The land types of the Tennant Creek District have variable vegetation over light textured soils. The Barkly District is typified by treeless, slightly undulating black cracking clay plains dominated by perennial Mitchell grass and annual Flinders grass. The Gulf District is characterised by Eucalyptus, Bloodwood and Acacia species woodlands and shrublands with grass understoreys.

The Katherine Region is divided into five districts: Katherine/Daly, Roper, Gulf, Victoria River and Sturt Plateau. The Katherine/Daly District is typified by large areas of rugged hills and ridges, with the most pastorally important land being made up of red earths with tropical tall grasses. The Roper and Gulf districts are typified by soils that are shallow, coarsely textured and stony and vegetation of open woodland dominated with Eucalypts. The Victoria River District can be divided into two land types of rugged and hilly with valleys of tropical tall grass and more undulating country of plains dominated by Mitchell grass. The Sturt Plateau is characterised by red and yellow earths with vegetation of Eucalyptus dominated woodlands, and an understorey of Ribbon grass, Perennial Sorghum and Kangaroo grass.

The Top End Region with its sandy land systems and high rainfall produces poor quality native pastures. Consequently, cattle production is based on upland and floodplain improved pastures.

## Regional Differences

There are a number of well-established physical, historical and social differences that determine the nature of the cattle industry in each of the four regions.

Rainfall decreases in amount and reliability from the north to the south of the NT.

The Top End and Katherine Regions have a reliable monsoonal climate. Very high annual rainfall, above 1000mm, results in poorer native pastures as the plants mature and nutrients are diluted quickly. As a result, production north of Katherine is based mainly on improved pasture or floodplains, with native pastures used strategically for part of the year or for particular animal classes.

Districts such as the Barkly and southern VRD that receive an annual rainfall of about 500mm have long been considered the NT's premier cattle breeding areas. These areas still contribute the bulk of the NT's cattle production, but improved management over the past 20 years has transformed the productivity of other areas such as the Sturt Plateau which were later to develop.

Rainfall in Central Australia is extremely variable. In good seasons this region is capable of exceptional cattle performance, but droughts are common. Experienced Central Australian producers have developed management systems appropriate to their highly variable climate.

The simplistic picture of NT markets is that the Top End and Katherine Regions target the South East Asian export trade with predominantly *Bos indicus* cattle, the Alice Springs Region supplies the domestic market to the south with *Bos taurus* cattle, and the Barkly Region sends store crossbred cattle into supply chains in Queensland. While this was still a valid summary in 2004, there are many exceptions and producers are actively exploring alternative markets.

The four regions have also established different patterns of ownership. The Alice Springs Region is dominated by family properties, the Barkly by company properties and Katherine by a combination of private and company. The Top End has predominantly privately owned and managed properties. A substantial number of properties across the NT are now under Indigenous ownership, mainly purchased during the 1990s.

## The Pastoral Industry in 2004

2004 was a mixed year for producers in the NT. There was limited rainfall and fuel prices increased, but cattle prices reached a record high. Rainfall was below average in the Top End, but the Katherine Region experienced a higher than average wet season, while there was no significant summer rainfall in the southern Regions. The lack of summer rainfall for 2004-2005 resulted in 52 stations being drought declared in the Alice Springs and Barkly Regions (refer to regional reports for further information regarding the 2004 season).

Fuel prices continued to rise, especially during the middle of the year. Average oil prices for 2004 were \$US 36.05 a barrel, a 22% increase from 2003. This rise in oil prices was felt by pastoralists who rely on diesel for the day-to-day running of their stations.

Cattle prices were very favourable. The Eastern States Young Cattle Indicator was up 12% from 2003 and up 26% from 2002. Record prices were paid at the annual Alice Springs store cattle sale. Export prices for light Indonesian steers out of Darwin increased from an average in 2003 of \$1.60 a kg to \$1.71 a kg in 2004. The same trend was apparent for heavy steers (\$1.54, increasing to \$1.69), and light export heifers (increasing from \$1.41 to \$1.54). (Source; *MLA market report*).



## How the Survey was conducted and considerations for use of the information

A total of 149 face-to-face interviews were conducted with NT producers running a cattle enterprise of more than 300 head. Table 1 shows the breakdown of a number of producers and the area of land surveyed. A cattle enterprise was considered to be someone running cattle on a property they owned or leased or an agisted area within a pastoral lease. In cases where more than one pastoral lease was run as one enterprise, it was counted as only one business. Two producers had two properties that were run quite separately, so they answered for two enterprises, but were counted as one producer.

These surveys were carried out between October 2004 and March 2005. DPIFM staff identified that the total number of producers who met the criteria of this survey was 210, resulting in a 71% response rate. Interviews were carried out by DPIFM staff across the NT.

Surveys were collected on a written hard copy, then entered into an Access database. Questions were then analysed using a combination of Access and Excel spreadsheets.

It was felt this survey needed to concentrate on gaining responses from as many people as possible to provide an accurate picture of how cattle in the region are being managed. The survey was also designed to capture the attitudes and problems faced by pastoralists as a guide to future research, rather than it being a numbers-collecting exercise which might only replicate the work undertaken by the Australian Bureau of Agriculture and Resource Economics (ABARE), and potentially lead to fewer producers being willing to participate if they felt they had to disclose their cattle numbers or financial position.

Throughout this report there are many results in which the percentages total more than 100. This occurs where people have responded to more than one variable, eg. mustering, where they may have chosen horse, helicopter, motorbike, or any combination of these. In some cases where producers declined to answer a question, the average is calculated over the number of producers who did respond.

In considering the accuracy of the data it should be remembered that producers were asked for their best estimate, which sometimes was their best guess as to what was actually happening in relation to production performance that was not currently being formally recorded on the property.

This report documents a dynamic industry undergoing constant change. Future use of the data needs to acknowledge it is a historical snapshot of 2004.

The data collected from this survey is completely anonymous, and remains the property of the producers of the NT. The database is managed by Pastoral Production at the Katherine Research Station; any requests for interrogation of this data must be approved by the executive of the NTCA.

TABLE 1 - NUMBER OF PRODUCERS AND PROPERTY SIZE SURVEYED ACCORDING TO REGION

	TOTAL PRODUCERS IDENTIFIED AS MEETING CRITERIA	TOTAL SURVEYED	PERCENTAGE OF PRODUCERS SURVEYED	LAND ACTIVELY MANAGED FOR PASTORAL	TOTAL SURVEYED	PERCENTAGE OF TOTAL PASTORAL LAND SURVEYED
	Number	Number	%	km <sup>2</sup>	km <sup>2</sup>	%
Alice Springs	65	40	62	235856	151498	64
Top End	32	25	78	23801	20680	87
Katherine	85	60	71	183986	131330	71
Barkly	28	24	86	203201	161893	80
NT Total	210	149	71	646844	465401	72



## Picture of Industry 2004

### Size

Table 2 shows that the larger properties are located in the Barkly and Alice Springs Regions. The overall average size of a cattle property in the Northern Territory is 3122km<sup>2</sup>.

### Current Infrastructure

To gain an understanding of the level of infrastructure development, Table 3 shows the average number and size of paddocks for each region.

This table demonstrates that properties in the Alice Springs and Barkly Regions have the larger paddocks. This is a reflection of larger property sizes, and also the fact that in the past 10 years there has been a rapid period of intensification occurring in the Katherine and Top End Regions.

Properties in the NT on average have six sets of permanent yards. The number of permanent yards varies markedly between the northern and southern zones. The Alice Springs Region had the highest number of portable yards. Some producers are using them to extend permanent yards. Portable yards are also used in the Alice Springs Region in association with trap yards, which commonly do not have permanent yards (Table 4).

Trap yards are a more important infrastructure in the drier areas of the NT where less surface water makes them a more viable proposition.

Water point development varies significantly throughout the NT. The wetter Top End Region had a higher incidence of naturally permanent waters. Due to this and smaller property size, this region has the lowest incidence of man-made watering points. There is a heavy reliance on man-made watering points in the drier Barkly and Alice Springs Regions (Table 5).

Stations in the NT have, on average, 85% of the property effectively enclosed. This was very similar across regions (Table 6).

TABLE 2 - AVERAGE PROPERTY SIZE IN EACH REGION

	AVERAGE SIZE KM <sup>2</sup>
Alice Springs	3885
Top End	827
Katherine	2200
Barkly	6894

TABLE 3 - AVERAGE NUMBER OF PADDOCKS AND THEIR AVERAGE SIZE ACCORDING TO REGION

	AVERAGE NUMBER OF PDKS	AVERAGE SIZE KM <sup>2</sup>
Alice Springs	11	335
Top End	19	51
Katherine	15	94
Barkly	20	313
Average NT	15	182

TABLE 4 - AVERAGE NUMBER OF PERMANENT, PORTABLE AND TRAP YARDS ACCORDING TO REGION

	PERMANENT	PORTABLE	TRAP YARDS
Alice Springs	12	2.4	15
Top End	1	1.0	4
Katherine	3	0.9	5
Barkly	10	1.8	21
Average NT	6	1.5	11

TABLE 5 - AVERAGE NUMBER OF MANMADE AND NATURAL WATER POINTS ACCORDING TO REGION

	NATURAL	MANMADE
Alice Springs	5	27
Top End	24	14
Katherine	5	34
Barkly	3	56
Average NT	151	32

TABLE 6 - PERCENTAGE OF PROPERTY EFFECTIVELY ENCLOSED BY REGION

	% EFFECTIVELY ENCLOSED
Alice Springs	85
Top End	85
Katherine	86
Barkly	81
Average NT	85



TABLE 7 - PERCENTAGE OF DIFFERENT OWNERSHIP TYPES IN THE NT

	%
Agisting / Indigenous	1
Company / Manager	25
Company / Manager Indigenous Owned Land	1
Family Trust	1
Indigenous Owned Land	6
Other (Government Owned and Managed)	1
Owner / Manager	32
Partnership	1
Partnership / Manager	1
Private / Agistor	1
Private / Lessee	5
Private Owned / Manager	25
Total	100

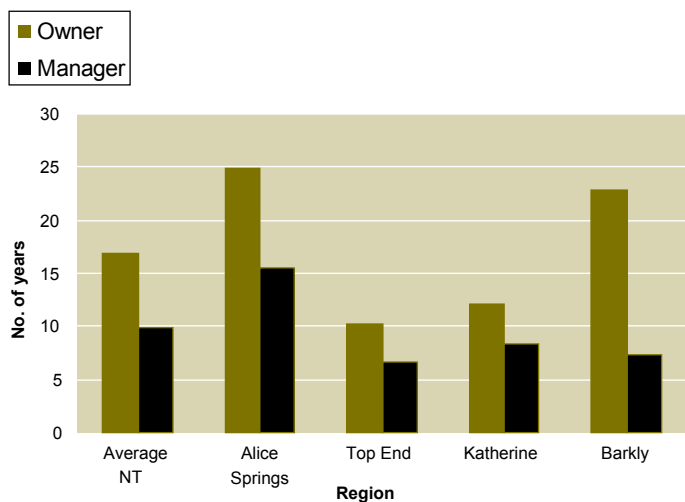
TABLE 8 - AREA OF LAND UNDER DIFFERENT TYPES OF OWNERSHIP IN THE NT

OWNERSHIP	KM <sup>2</sup>
Private	239998
Company	196952
Indigenous	18663
Government	544

TABLE 9 - PERCENTAGE OF PROPERTIES THAT ARE INTEGRATED ACCORDING TO REGION

	INTEGRATED	INDIVIDUALLY
	%	%
Alice Springs	23	77
Top End	52	48
Katherine	36	64
Barkly	65	35

GRAPH 1 - AVERAGE YEARS CURRENT OWNER AND MANAGER ON PROPERTY



## Ownership

Table 7 shows the most common form of management in the NT is owner-managers, where by the owner is also the manager. In conjunction with privately owned enterprises employing a manager, private ownership makes up 55% of the number of stations in the NT. Company-owned properties also make up a substantial proportion, with just over one-quarter of all properties being company owned. This varies between regions, with properties in the Alice Springs and Top End Regions more likely to be privately owned and only having 15% and 8% company ownership respectively. Properties in the Barkly and Katherine Regions were more likely to be company owned, with 50% and 30% company ownership respectively. Producers running cattle as a management enterprise on a pastoral leased that they do not own were also considered a management unit. Table 8 shows that largest area of land is under private ownership.

Table 9 shows a higher proportion of properties are run as an integrated system in the Top End and Barkly Regions (an integrated system was defined as using more than one property to produce sale cattle). This can be explained by the incidence of higher company ownership on the Barkly (with 73% of company owned properties saying they were integrated compared with only 29% of privately owned). These company-owned properties are linked to interstate supply chains. In the Top End Region, integration is related to the high incidence of properties that receive young cattle for finishing from larger breeding properties, mainly in the Katherine Region.

Graph 1 demonstrates the length of time that the current owners and managers have been employed. It indicates that properties in the Alice Springs Region have had, on average, the longest term of ownership. This is due to successive generations of the same family or company owning the same property. There is a much higher turnover rate in the Top End and Katherine Regions, for various reasons. One factor may have been the increased profitability of the industry due to improved management systems, the use of tropically adapted cattle, and the export market increasing in importance to the region. This has caused land values to increase and the regions to be viewed more favourably as a viable area. Property turnover has occurred as demand has risen, with many property owners realising their capital gain. Another factor has been the subdivision of larger properties



(such as in the Douglas Daly, Roper and Sturt Plateau districts), which has created new opportunities for property ownership.

## Staff

Staff are a major consideration for Northern Territory cattle producers. Graph 2 shows the average number of people employed seasonally and permanently on a station. In general, more staff are employed in the Barkly and Katherine Regions, which is a function of larger properties, more cattle and a higher incidence of company ownership. Appendix 1 demonstrates the average number of staff employed according to the number of head per property. There appear to be some labour efficiencies in having more cattle where seasonal staff are concerned, but the requirement for permanent staff increases markedly with larger numbers of cattle.

## Number of Cattle

The most common herd size in the NT is between 2000 and 5000 head (20% of producers). Fifty-three per cent of producers manage herds over 5000 head. Graph 3 details the breakdown of percentage of people managing various herd sizes.

Graph 4 shows the breakdown of number of breeders. The proportion of breeders as a percentage of the total herd number is affected by the herd structure of each region depending on the age sale cattle are turned-off.

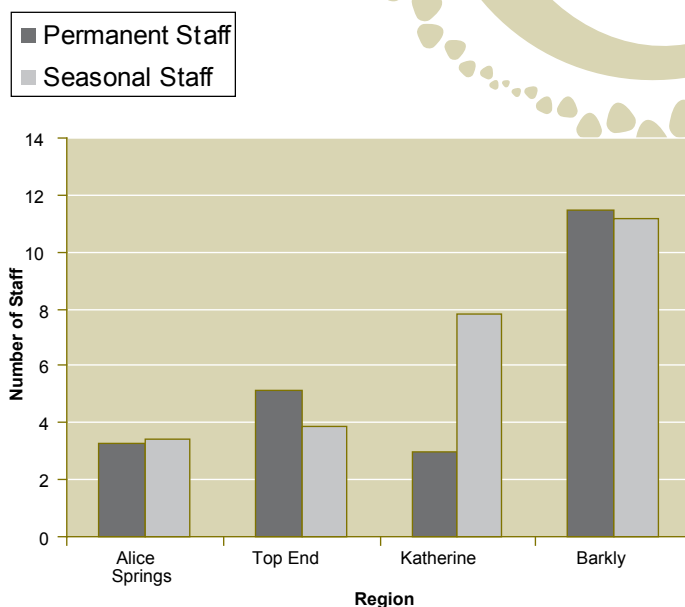
## Management Practices of the Pastoral Industry 2004

### Turn-off and markets

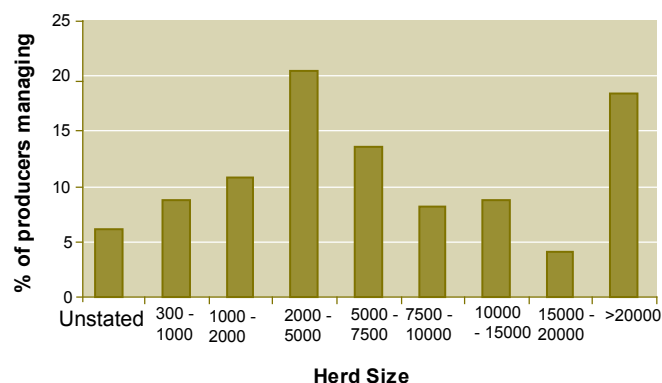
There are three important market/turn-off destinations for sale stock in the NT. The export market to South East Asia, in particular Indonesia, absorbs the bulk of the cattle in the northern half of the NT. Cattle are all sold on property before being trucked to export depots or directly on ship. Properties on the Barkly tend to turn-off some cattle for export, but the majority go into their supply chains of feedlots and abattoirs for the domestic market.

Some producers in the Alice Springs Region are able to target the export market, but the majority produce for the domestic market, with turn-off destined for eastern and southern markets. Cattle that meet domestic slaughter specifications are sold direct to abattoirs, with the bulk of cattle sold direct to feedlots and the remainder sold as store cattle.

GRAPH 2 - AVERAGE NUMBER OF STAFF EMPLOYED PER STATION



GRAPH 3 - SIZE OF HERDS MANAGED BY NT PRODUCERS



GRAPH 4 - BREEDER HERD SIZES MANAGED BY NT PRODUCERS

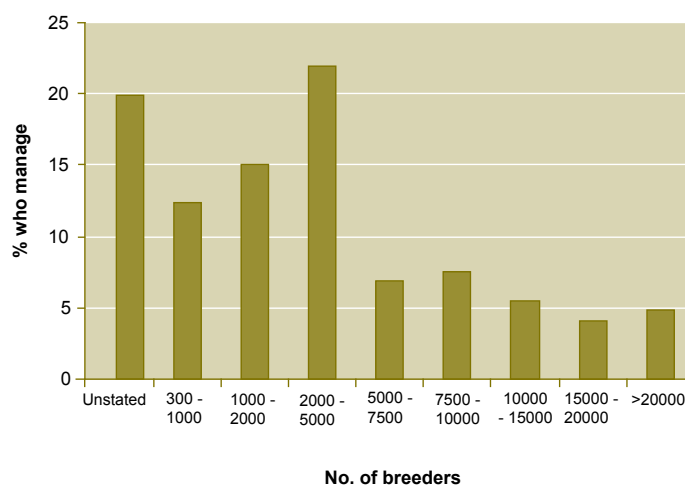
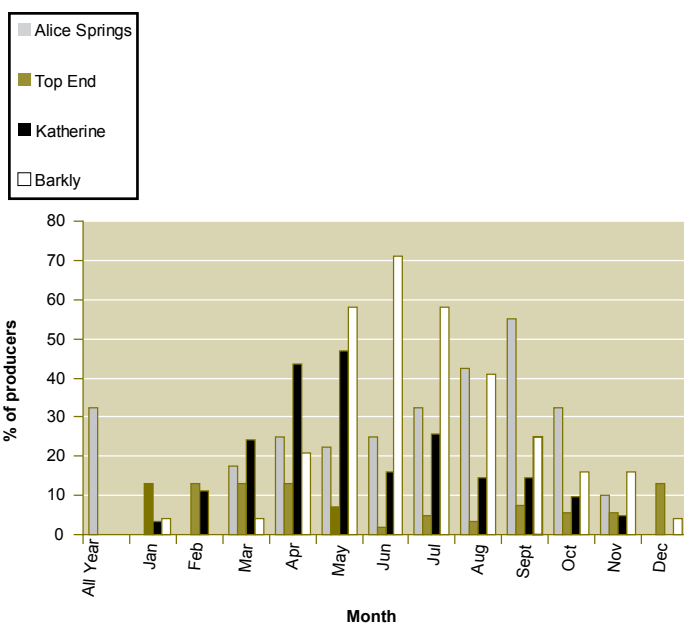


TABLE 10 - TYPES OF PRODUCTION SYSTEM ACCORDING TO REGION

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Breeding	45	16	89	83
Fattening	3		3	4
Breeding & Fattening	20	40	5	13
Breeding Fattening & Trading	22	12		
Breeding & Trading	5	16		
Trading			2	
Other	5	8	2	
Fattening & Trading		8		

GRAPH 5 - MAJOR TURNOFF PERIODS



### Main types of cattle enterprises

Table 10 demonstrates the difference between each region in terms of their production system. These figures tend to say a lot about the destination of stock turned off from each area and the production environment.

Alice Springs has a wide variety of markets, including the domestic market, which requires fatter animals. It demonstrates the ability of the country in the region to fatten cattle in favourable seasons. Pastoral activities in the Top End Region are based on smaller, more intensive properties with cattle grazing mainly improved pastures, both upland and floodplain. The value and productivity of these pastures make it more cost-effective to finish cattle bred in more extensive regions. Generally, both the Top End and Alice Springs Regions have more access to markets year-round to facilitate the increased number of producers trading cattle (due to their ability to muster/access cattle). The Katherine Region has large areas of native pasture suitable for breeding large numbers of young cattle for the export trade. These cattle go either directly overseas or into the Top End Region to be finished. The Barkly Region is also characterised by large areas of native pasture. Many large companies use the area as a breeding ground for their supply chains, which feed into Queensland fattening operations and feedlots. Some opportunistic fattening does occur on highly productive country by non-integrated properties.

### Turn-off

The main type of animal turned off from NT properties is the 18-24 month-old feeder steer, with 63% of producers nominating this as their major turn-off class. The second and third most significant turn-off classes were cull cows and export heifers. Appendix 2 provides the details. The Alice Springs Region had a common occurrence of cull cows being sold in the region due to the dry conditions of 2004 and the reasonable prices being paid for these older animals. There were very low numbers of breeding females sold in 2004 in the NT.

Turn-off months vary between regions, however in general, NT producers turn-off/sell most of their cattle between April and September. The Alice Springs and Top End Regions have an extended turn-off period compared to the Barkly and Katherine Regions which have fewer opportunities to get cattle out through the year, so this activity is mainly confined to the dry season (Graph 5).

Table 11 demonstrates the percentage of properties that use the various market options. The export market features heavily. Appendix 3 demonstrates the percentages of turn-off that go to these different markets. This graph gives a better understanding of the volume of sales directed to the different markets. It demonstrates that producers sending cattle for export tend to send the majority of their turn-off to one market. The market not included in this graph is that of one producer who sends 30-40% of his/her turn-off to organic markets.

Appendix 4 shows the breakdown of the percentage of cattle sold by producers who choose to use a particular market. For example, 50% of the producers who send cattle to South East Asia send 100% of their turn-off to this market, and 33% of producers who use the NT market sell 100% of their sale cattle within the NT.

## Cattle Management

### *Predominant Breed of cattle*

The predominant breed of cattle in the NT is Brahman, but this differs according to the region (Table 12). The Alice Springs climate does not require a tropically adapted animal, and due to different market requirements producers tend to have more *Bos taurus* breeds. Further up the rainfall gradient it becomes increasingly important to have higher *Bos indicus* content which display tropical adaptation, including tick resistance.

### *Breeding Aims*

Producers were asked to name their most important breeding goal. Table 13 shows that trait selection within breeds is the most important breeding objective of producers in the NT. Many producers are looking to use crossbreeding to improve performance and to better meet market specifications.

TABLE 11 - PERCENTAGE OF PROPERTIES CHOOSING DIFFERENT MARKETS FOR THEIR SALE STOCK

MARKET	%
Live Export	64
Abattoirs	38
Restockers	25
Saleyards	19
Feedlots	17
Backgrounders	12
European Union	3
Organic	1

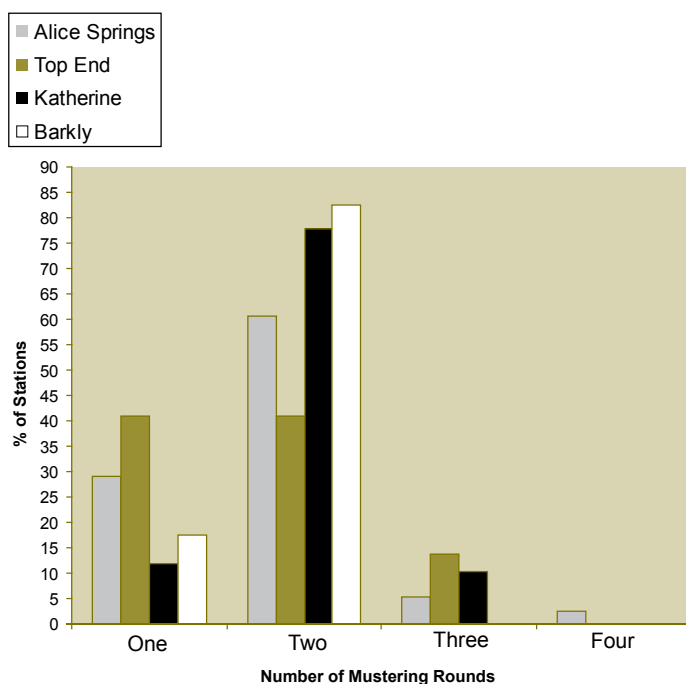
TABLE 12 - PREDOMINANT BREEDS OF CATTLE IN EACH REGION

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
Angus	13			
Brahman	3	64	97	71
Brahman X	15	32		4
Composite				8
Crossbred		4		
Droughtmaster	5		3	
Hereford	28			
Santa Gertrudis	21			16
Shorthorn	15			

TABLE 13 - MAIN BREEDING AIM OF NT PRODUCERS

	%
To select traits within breed	29
To crossbreed to suit markets	22
To crossbreed for improved herd performance	21
To upgrade to Brahman	15
Concentrating on management, not genetics	12
To upgrade to purebreed	6
To make multi-breed	3
Other	3

GRAPH 6 - NUMBER OF MUSTERING ROUNDS CONDUCTED BY THE NT PASTORAL INDUSTRY



GRAPH 7 - MUSTERING METHODS USED IN THE NT

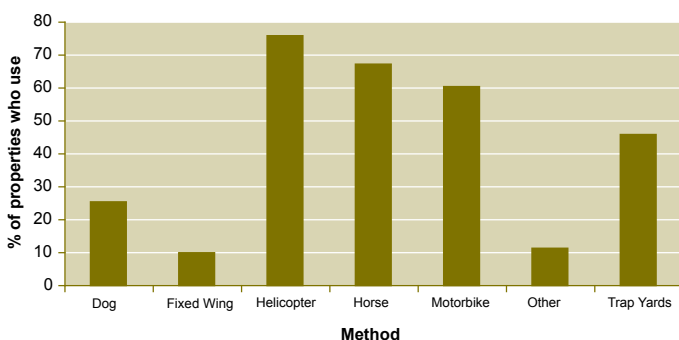


TABLE 14 - SOURCES OF BULLS USED BY NT PRODUCERS

Source	%
Qld Stud Breeders	60
NT Stud Breeders	31
Breed your own	24
SA Stud Breeders	14
Commercial Breeders	11
Within Company	9
NSW Stud Breeders	8
Other	3

TABLE 15 - PERCENTAGE OF PRODUCERS USING ESTIMATED BREEDING VALUES ACCORDING TO REGION

Region	YES	NO
	%	%
ALICE SPRINGS	48	53
TOP END	35	65
KATHERINE	22	78
BARKLY	65	35

### Mustering

Most producers in the NT undertake two mustering rounds per year. A higher proportion of producers in the Alice Springs and Top End Regions indicated they carried out only one round. (Graph 6). The main months for carrying out first round are between April and June, second round between August and October, and any third rounds generally between October and December.

Producers in the Alice Springs Region have a more variable timing for mustering rounds as mustering is reliant on whether there has or has not been rain. The Top End is more influenced by producers mustering sale cattle. Barkly and Katherine Regions tend to have a more compressed mustering season, mainly limited to the dry season.

Mustering methods vary throughout the NT. In the Alice Springs Region the majority of properties rely on trap yards, motorbikes and helicopters (Graph 7). These three methods allow for maximum efficiency for mustering cattle on large properties. The Barkly, Top End and Katherine Regions rely on horses and helicopters. Past experience has shown that using helicopters without handling or walking cattle on horseback led to the stock becoming intractable.

### Bulls

The average bull percentage used in the NT is 4.3%. The regional variations were Alice Springs 4.6%, the Top End 4.1%, Katherine 4.4% and the Barkly 3.9%

Table 14 demonstrates that the most common way of sourcing bulls is from Queensland Stud breeders. NT stud breeders are the next most common source.

Estimated Breeding Values (EBV) are most commonly used in the Alice Springs Region. Herds in this region have greater numbers of *Bos taurus* cattle and these breeds have a greater accuracy for EBVs. Katherine and the Top End use EBVs less often than the other two regions (Table 15). Fewer of their bull suppliers have a long history of collecting EBVs. It is presumed this use will increase as more bull breeders collect data and as the breeding goals for the region become more defined.

Table 16 shows the percentage of people that chose the EBV traits that are the first and second highest priority in their breeding program. Fertility is by far the most important trait, followed by birth weight. Other traits producers considered important when selecting bulls included temperament, structure and whether or not they were polled.

Fertility testing of bulls varies in popularity, with Katherine and Top End producers undertaking the most bull testing (Table 17).

## Breeder Management

### Weaning Percentage

The average weaning percentage for the Northern Territory over a three-year period up to and including 2004 was 72%, with a minimum of 35% and a maximum of 90%. Table 18 shows the variation between regions.

### Cull cattle

The age producers cull breeders averages 10 years, with Alice Springs having the youngest culling age of 8, Barkly the oldest at 11, Katherine culling at 10.5 and Top End 10. Graph 8 outlines the percentage of producers who use various criteria for culling breeders. Table 19 shows the variations producers specify if they are culling due to pregnancy.

The percentage of cows culled in each district is detailed in Graph 9. The Katherine Region has the lowest culling percentage, suggesting that many more herds here are in a numbers build-up phase than in other areas.

GRAPH 9 - PERCENTAGE OF BREEDERS CULLED ANNUALLY

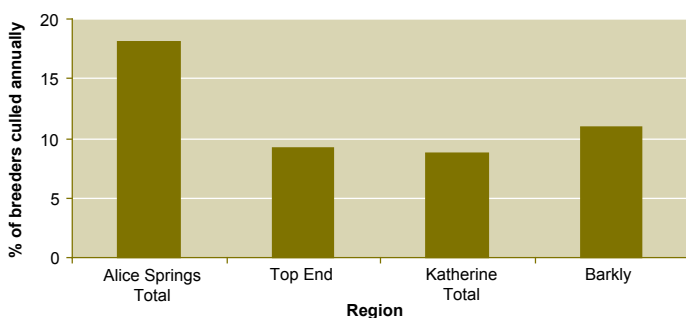


TABLE 16 - PRIORITIES FOR CHOICE OF ESTIMATED BREEDING VALUES

	1ST PRIORITY	2ND PRIORITY
	%	%
Carcase	8	10
Fertility	74	0
Growth Rate	13	8
Birth Weight	4	76
Other	2	6

TABLE 17 - PERCENTAGE OF PRODUCERS IN EACH REGION FERTILITY TESTING BULLS AND AVERAGE INTERVAL BETWEEN TESTS

	YES	NO	YEARS BETWEEN TESTS
	%	%	
ALICE SPRINGS	28	73	4.9
TOP END	38	62	1.8
KATHERINE	45	55	3.7
BARKLY	30	70	2.3

GRAPH 8 - CRITERIA FOR CULLING BREEDERS

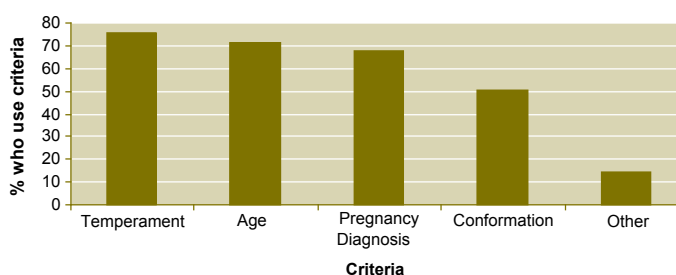


TABLE 18 - WEANING PERCENTAGE ACCORDING TO REGION

	%
Alice Springs	76
Top End	70
Katherine	71
Barkly	70

TABLE 19 - CRITERIA FOR CULLING ACCORDING TO PREGNANCY TEST

CRITERIA	%
Empty	38
Empty Dry 1st Round	25
Empty Dry	15
Empty Dry for 2nd Year	13
Dry	6
Other	2
Empty Dry - Heifers	2



TABLE 20 - CRITERIA FOR SEGREGATION OF BREEDERS

	%
Age	60
Pregnancy Status	28
No	17
Other	14
Colour	8
Condition	6

GRAPH 10 - PREGNANCY TESTING OF DIFFERENT FEMALE CLASSES

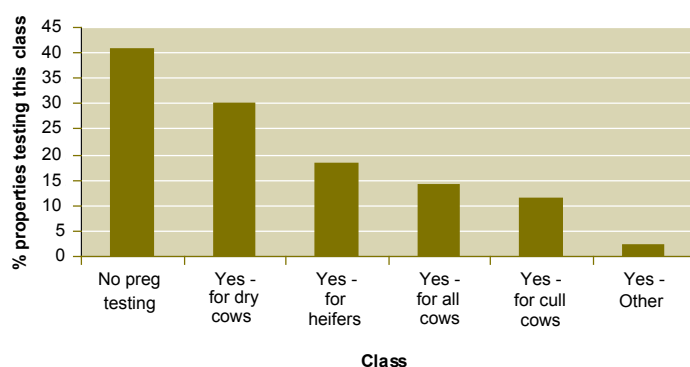


TABLE 21 - AVERAGE MORTALITY RATE OF BREEDERS ACCORDING TO REGION

	AVERAGE MORTALITY RATE (%)
ALICE SPRINGS	3.0
TOP END	2.7
KATHERINE	3.0
BARKLY	3.5

### Segregation

Producers undertake segregation of breeders to allow them to target management in some way. Grouping animals into paddocks according to different criteria can often assist in their management. Age was the most important criteria for segregation (60% of producers) (Table 20). Those who chose to segregate grouped breeders according to age groups. Pregnancy status was also an important criteria with a smaller number of producers choosing to segregate based on colour and condition. Other reasons included breed and late calvers.

### Pregnancy Testing

Forty per cent of producers in the NT do not use pregnancy testing. Of those that do, the majority test dry cows and heifers (Graph 10). Use of pregnancy testing varies between regions, with Alice Springs using it the least (21% of producers) and higher use in the Barkly (75%), Katherine (74%) and Top End (70%). Barkly and Katherine Regions tend to use testing more for dry cows, while producers in the Top End have a higher incidence of testing all female classes.

### Artificial Insemination or Embryo Transplanting

Ninety-one per cent of producers in the NT do not use Artificial Insemination. Eight per cent used it for stud cattle, and one producer used it for their commercial herd. No producers were using Embryo Transplant technology in 2004.

### Continuous or control mating

A continuous mating system where the bulls stay with the cows year round is the most common in the NT. No producers surveyed were attempting to control mate their mature breeders in the Barkly Region, and only 3% were control mating in the Alice Springs Region. Higher numbers of producers were attempting to control mate a proportion of their breeders in the Top End (35%) and Katherine (23%). A number of problems are recognised with attempting to control mate, with many producers believing it too difficult to achieve good bull control.

### Mortality rates

Table 21 shows the average regional mortality rates given by producers. They range between 2.7% and 3.5%. The average for the NT is 3%.



## Heifer Management

The number of heifers kept in most regions reflects that many herds are in a build-up stage (Table 22).

Producers were asked to rate the importance of various traits when they were selecting a heifer for breeding purposes. Each person was asked to rate on a scale of one to five the importance of a heifer's weight, confirmation, type, temperament, colour and fertility (if they were being selected after first joining). One represented not important and five extremely important. The average ranking of importance is shown in Table 23.

Graph 11 shows the variation in age of replacement breeders. The majority of producers select which heifers they keep at joining age.

Graph 11 also shows the spread of ages chosen to first join heifers, with a large proportion being joined at two years of age. A small number of producers choose to mate heifers as yearlings.

Weight tended to be a more important indicator of stage of puberty than age. The ranges of estimated joining weight are indicated in Graph 12. The regional average joining weights were 280kg for Top End, Barkly and Katherine, and 265kg for Alice Springs. The lower joining rate in Alice Springs is because the majority of cattle in the district are *Bos taurus* which reach puberty at a lower weight.

Eighty-one per cent of producers indicated that they did not weigh heifers at any time prior to joining. Companies were the most likely to weigh before joining, with 39% of company properties weighing at least a proportion of their joiner heifers.

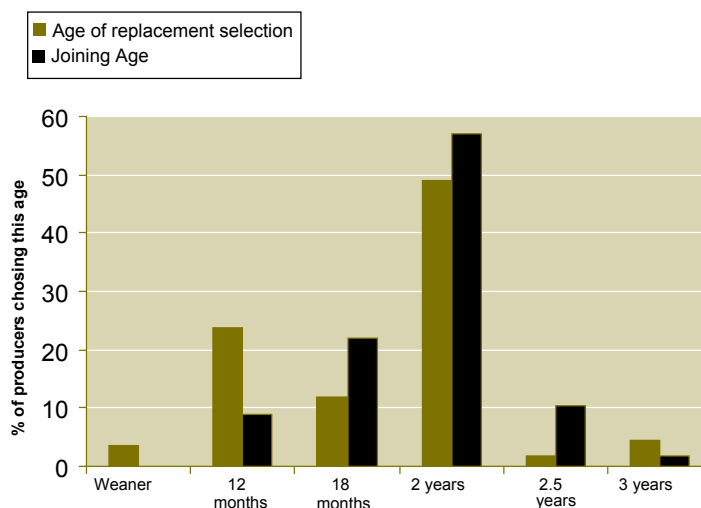
TABLE 22 - AVERAGE PERCENTAGE OF HEIFERS KEPT FOR REPLACEMENTS IN EACH REGION

	PERCENTAGE HEIFERS KEPT AS REPLACEMENTS
Alice Springs	62
Top End	63
Katherine	57
Barkly	61

TABLE 23 - RATING OF IMPORTANCE OF CRITERIA FOR HEIFER SELECTION

Temperament	4.5
Conformation	4.5
Type	4.2
Fertility	4.0
Weight	3.5
Colour	2.9

GRAPH 11 - CRITICAL AGE FOR DECISIONS REGARDING JOINER HEIFERS



GRAPH 12 - MAIDEN JOINING WEIGHTS FOR HEIFERS

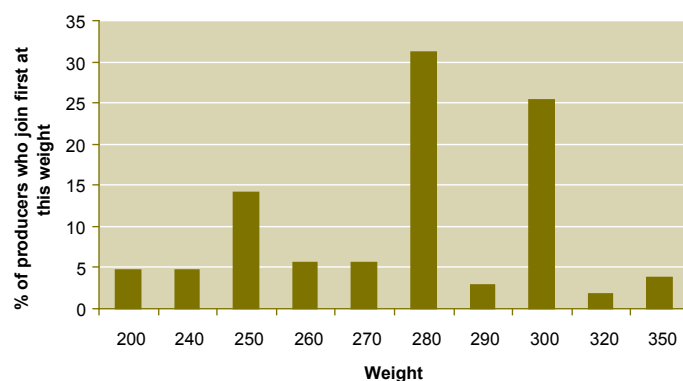


TABLE 24 - PERCENTAGE OF PRODUCERS IN EACH REGION WHO SEGREGATE HEIFERS FROM BREEDERS

	% WHO SEGREGATE HEIFERS FROM BREEDERS
Alice Springs	58
Top End	65
Katherine	78
Barkly	82

TABLE 25 - AGE HEIFERS ARE KEPT SEPARATE FROM MAIN BREEDER MOB UNTIL

AGE KEPT SEPARATE UNTIL ....	%
After weaning 1st calf	30
After weaning 2nd calf	5
After weaning 3rd calf	4
Start of first joining	11
Start of second joining	7
Until pregnant with second calf	4
Stay separate as age group	11
Other	5

TABLE 26 - PERCENTAGE OF PRODUCERS WHO ATTEMPT TO CONTROL MATE IN EACH REGION

PERCENTAGE WHO ATTEMPT TO CONTROL MATE THIS AGE GROUP	1ST JOINED HEIFER	LACTATING 1ST CALF HEIFER
Alice Springs	16	3
Top End	46	35
Katherine	25	24
Barkly	6	6

TABLE 27 - REASONS FOR NOT CONTROL MATING ACCORDING TO REGION

	Paddock & Labour Shortage	Bull Control Difficult	Expect Lower Fertility	Too Much Hassle	No Reason Given
	%	%	%	%	%
Alice Springs	53	3	13	8	24
Top End	42	4	0	4	50
Katherine	25	25	14	3	32
Barkly	41	24	12	0	23

TABLE 28 - AVERAGE WEANING PERCENTAGE FROM HEIFERS BY REGION

WEANING %	1ST JOINED HEIFER	LACTATING 1ST CALF HEIFER
Alice Springs	70	70
Top End	61	55
Katherine	68	60
Barkly	70	62

Segregating heifers from the rest of the breeder herd so they receive more targeted management, for example being able to provide increased supplement or provide them with a better paddock, is practised fairly commonly in the NT. Table 24 details the regional differences. Of these the majority answered they were separated until after weaning their first calf. The other variations are detailed in Table 25.

Producers who did not segregate heifers from their breeder herd cited a lack of paddocks and an increase in labour required to manage segregated heifers as their reasons.

The majority of producers indicated they preferred to mate young bulls (two years of age) to their maiden heifers.

Control mating heifers is often seen as a way of getting breeders into a pattern of calving that sees them having calves at the desired time of year, even after they join the mature breeding herd with a continuous mating strategy. The percentage of producers who attempted to control mate heifers is shown in Table 26.

Of those who attempted to control mate a proportion of their herd, the most common months for the bulls to be joined with the herd were December and January. Appendix 5 shows the months which producers who are control and continuous mating choose to put bulls with joiner heifers. Appendix 6 shows the months producers choose to join their heifers to join the heifers under a control mating system. Appendix 7 shows the average length of the joining period.

People who chose not to control mate gave various reasons as outlined in Table 27.

Producers were asked to give their estimates on the weaning percentages achieved in maiden and first calf heifers which is shown in Table 28. The average weaning percentage from first joined heifers was 67%, and the average of second joined heifers was 61%.

These figures seem to be at odds with research results (it would be expected the first calver rate would be higher, and the second calver rate would be lower).

This could be caused by factors such as:

- The amount of people who considered their heifers to be first joiners even though they would not have yet hit puberty;
- The difficulty in following the performance of second calving heifers as they are often mixed in with the rest of the breeding herd.



The average death rate given by producers in the NT for heifers was 3.3% for maiden heifers and 3% for second calvers (Table 29). It was generally acknowledged that this was difficult to estimate.

The most common vaccination heifers are given in the Northern Territory is for botulism. The proportion who use it differs between regions (Table 30).

## Management of young stock

### Weaning

Ninety-eight per cent of producers in the NT indicated that they carried out at least one weaning round. Twenty-seven per cent said they weaned according to age, 58% said they weaned according to a different weight each year according to seasonal conditions and 15% said they weaned to a set weight each year.

Table 31 shows the variation in average, and the highest and lowest minimum weaning weight mentioned between the four regions of the NT in 2004. The average weaning weight across the NT was 126kg. Average minimum weaning weight tended to be lower at second round (Table 32).

Producers had different feeding strategies for weaners according to the type of season and the resources available. Many use a combination of methods, or use different strategies for different sizes of weaners. Table 33 shows the methods they used in 2004.

### Year Branding

Producers were asked what method they used to brand their stock. Sixty-seven per cent indicated they branded to a calendar year, 25% to a financial year, 3% did not use year branding and 6% used some other method, such as August to August.

TABLE 29 - AVERAGE HEIFER MORTALITY ACCORDING TO REGION

MORTALITY %	WEANER HEIFER	1ST JOINED HEIFERS	LACTATING 1ST CALF HEIFER
Alice Springs Total	3.8	4.0	3.8
Top End Total	2.4	2.7	2.2
Katherine Total	2.6	2.9	3.0
Barkly	3.5	4.2	3.8

TABLE 30 - COMMON VACCINATIONS GIVEN IN EACH REGION

	BOTULISM	LEPTO	5 IN 1	7 IN 1	VIBRIO
	%	%	%	%	%
ALICE SPRINGS	37	0	8	3	0
TOP END	42	4	15	31	0
KATHERINE	92	8	19	14	17
BARKLY	88	6	6	0	24

TABLE 31 - AVERAGE MINIMUM FIRST ROUND WEANING WEIGHT IN EACH REGION

	AVERAGE MINIMUM KG	LOWEST MINIMUM MENTIONED	HIGHEST MINIMUM MENTIONED
ALICE SPRINGS	158	80	280
TOP END	106	70	180
KATHERINE	110	40	210
BARKLY	143	80	200

TABLE 32 - AVERAGE MINIMUM SECOND ROUND WEANING WEIGHT IN EACH REGION

	AVERAGE MINIMUM KG	LOWEST MINIMUM MENTIONED	HIGHEST MINIMUM MENTIONED
ALICE SPRINGS	161	80	272
TOP END	106	60	180
KATHERINE	97	40	210
BARKLY	113	60	170

TABLE 33 - FEEDING STRATEGIES FOR WEANERS

	%
Short term feeding in yards with hay	75
Put on spelled pasture	46
Short term feeding in yards with concentrate	30
Feed throughout the dry season	15
Other	14
None	1

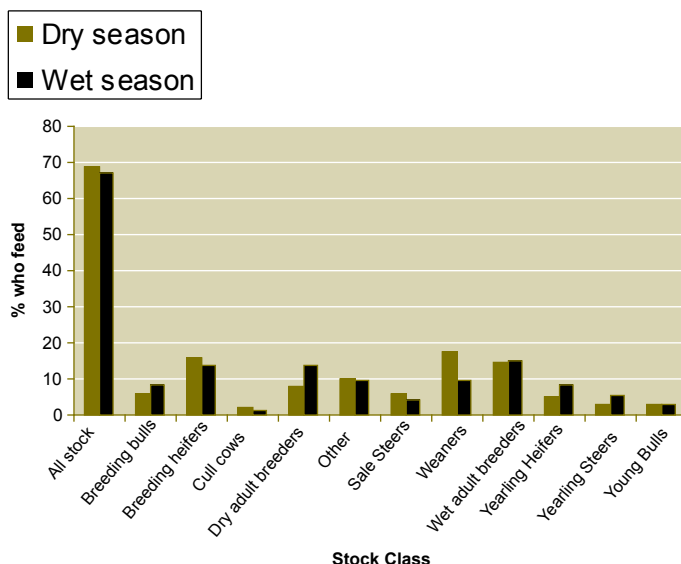
TABLE 34 - MONTHS IN WHICH DRY SEASON SUPPLEMENT IS FED OUT

	%
All dry season (Apr-rain)	59
May-rain	1
June-rain	13
July-rain	12
August-rain	7
September-rain	5
As required	3

TABLE 35 - MONTHS IN WHICH WET SEASON SUPPLEMENT IS FED OUT

	%
All wet season	76
January	8
February	7
March	7
April	1
May-Sep	0
October	3
November	8
December	11
Other	4

GRAPH 13 - STOCK CLASSES WHICH ARE SUPPLEMENTED



## Nutritional Management

Ninety-three per cent of people indicated they fed supplement at some stage through the year. Seventy-two per cent indicated they fed dry season supplement, and 52% said they fed out wet season supplement. The Alice Springs Region differs from the other regions in not having distinct wet and dry seasons. Some producers in response to good rainfall events will provide a 'wet season' supplement to their cattle.

Tables 34 and 35 show the range of months in which dry and wet season lick are fed out. Table 35 shows the months in which wet season lick is fed, indicating that of those people who supplement, most feed throughout the wet season. Others indicated different combinations of months. The table shows the percentage of people feeding lick in a particular month, not necessarily indicating that they feed only in that month.

Producers had different ideas as to which were the most critical classes of stock to supplement. Of those who supplemented, the majority of people supplemented all classes. Of those who chose certain groups the breakdown is shown in Graph 13. The percentage that feed "other" classes of stock mostly indicated that they fed according what land types the stock were running on rather than stock class.

The most commonly fed supplement was urea in the dry season and phosphorus in the wet season. Methods used to distribute supplement are shown in Graph 14. The preferred method appears to be loose mix in the dry season as it is perceived as a cheaper option, and blocks in the Wet when it is more difficult to distribute and needs to withstand weather. Eleven per cent of properties used water medicators. The average number on a property was five, ranging between one and 16. More than half the properties using water medicators were in the Alice Springs Region. This is due to a lack of permanent surface water in the region and a water medicator trial that convinced producers they would be suitable and profitable.

Eleven per cent of people indicated they provided some level of production feeding. These included a combination of purchased liquid feed - mostly molasses (used on 44% of properties that carried out production feeding), a homemade mix (38%), grain concentrates (6%) or some other mix not specified (13%). Production feeding was carried out in the Barkly and Katherine Regions only.

Twenty per cent of people indicated they had attended Nutrition EDGE courses. Sixty-six per cent of those who had attended said they had made management changes as a result.

### Hay for own use

Thirty-six per cent of properties surveyed in the NT indicated they had produced their own hay in 2004. The breakdown of hay produced in the regions is shown in Table 36. The average across the NT was 793 tonnes but varied significantly according to region. The larger average in the Katherine Region was influenced by one major hay producer who cut 12,000 tonnes.

Hay was made from both native and improved pasture. Table 37 shows the mixture of hay produced in the regions. The Top End relies heavily on improved pasture for hay production. Katherine and Alice Springs have a mixture, while the Barkly Region cuts native pasture only.

## Animal Health

### Common problems

Producers were asked to name the two most common animal health problems on their property. The number of times different problems were mentioned is outlined in Appendix 8. Botulism is commonly seen on NT properties. Ticks and Buffalo fly were commonly seen in the Top End and Katherine Regions. Pink eye was a common problem in the Alice Springs Region which has a higher incidence of susceptible breeds such as Herefords.

Nutritional deficiencies in phosphorus and protein were commonly mentioned animal health problems.

### Vaccines

Botulism is the most common disease vaccinated for in the NT. Seventy-nine per cent used long-acting vaccines and 21% used the conventional annual vaccine.

Other diseases vaccinated against in 2004 are outlined in Table 38.

GRAPH 14 - FORM OF SUPPLEMENT FED

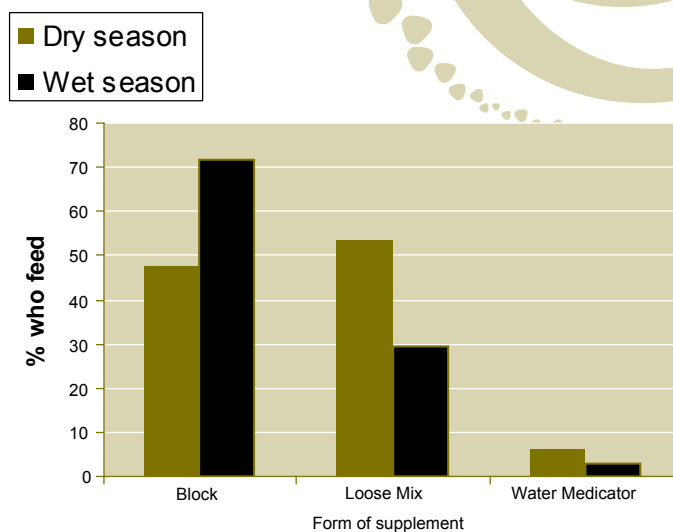


TABLE 36 - AVERAGE HAY PRODUCTION IN EACH REGION

	AVERAGE TONNES	% WHO PRODUCE OWN HAY	MINIMUM TONNES	MAXIMUM TONNES
Alice Springs	170	8	9	300
Top End	712	63	100	3200
Katherine	1404	29	4	12000
Barkly	367	60	50	1129

TABLE 37 - TYPES OF HAY PRODUCED IN EACH REGION

	IMPROVED PASTURE	MIXED	NATIVE
	%	%	%
Alice Springs	33	33	33
Top End	100	0	0
Katherine	59	6	35
Barkly	0	0	100

TABLE 38 - PERCENTAGE OF PRODUCERS WHO VACCINATE AGAINST VARIOUS DISEASES IN EACH REGION

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Botulism	95	76	95	96
3 Day		6	7	8
Clostridial	11		25	8
Red Water		12	12	4
Vibriosis		24	48	42
Tetanus		6		

TABLE 39 - MEDICAL TREATMENTS USED ON STOCK IN EACH OF THE REGIONS

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Growth Promotants		72	83	71
Wound Antisepsis	22	64	72	46
Fly Control		96	65	29
Tick Control		88	62	29
Worming	11	80	45	21
Lice Control	28	24	2	8
None	50			13

TABLE 40 - PERCENTAGE OF PRODUCERS USING RADIO FREQUENCY IDENTIFICATION DEVICES ACCORDING TO REGION

	% USING RFID
Alice Springs	29
Top End	4
Katherine	5
Barkly	20

TABLE 41 - PERCENTAGE OF PRODUCERS WHO TAG DIFFERENT CLASSES OF CATTLE

	% WHO TAG THIS CLASS
All cattle	31
Sale cattle	42
Stud cattle	3
Weaners/calves	22

TABLE 42 - ESTIMATED CURRENT AVERAGE AND FUTURE CARRYING CAPACITY ACCORDING TO REGION

	2004	2009	% INCREASE	2014	% INCREASE
	AE/ property	AE/ property	%	AE/ property	%
NT	11812	15262	29	18202	54
Alice Springs	6240	6575	5	6844	10
Top End	5548	13602	145	21492	287
Katherine	12986	16189	25	18543	43
Barkly	24522	28065	14	30935	26

### Other Medical Treatments

Table 39 outlines the medical treatments that stations in the NT use on some or all of their stock. The actual products used are detailed in Appendix 9. The most common treatments used on stock in the NT are wound antisepsis, and hormonal growth promotants. Producers in the Alice Springs Region do not use hormonal growth promotants because the unpredictable growing seasons of the region make them uneconomical.

### National Livestock Identification System

Twenty-four per cent of properties in the NT were using NLIS accredited RFIDs (Radio Frequency Identification Device) which require readers. These properties are predominantly in the Alice Springs Region where the market requirements are different to the mostly export oriented regions to the north, as demonstrated by Table 40.

The different classes of cattle, which are tagged, are shown in Table 41 and these reflect the attitudes of producers to RFIDs. Producers who have tagged all or just their stud cattle are most likely using RFIDs as part of their management. Producers who either tagged just their sale cattle or their calves/weaners were meeting current or future market requirements.

Appendix 15 shows the current legislative requirements in the NT for NLIS.

## Grazing Management

### Carrying Capacity

Table 42 summarises the average estimated carrying capacity for each region. These figures are estimates only provided as a guide by each property owner/manager. The capacities reflect the difference in average property size between the regions. Producers were also asked to give an estimate on what they felt the potential carrying capacity of the property might be, taking into account current plans for infrastructure development, in five and 10 years' time. For the three southern regions, producers were generally just taking into account an increase in capacity through increased water point and fencing infrastructure development as they answered this, rather than wide-scale pasture improvement. However, in the Top End Region, the benefits of improving the productivity of land already cleared were taken into consideration.

Across the NT it was estimated that an increase of 29% in five years could be made with current infrastructure development plans, and an increase of 54% across the whole area could be achieved with more infrastructure development in 10 years.

Matching what a paddock can carry with actual stock numbers is an important management skill. Table 43 outlines the variety of methods that producers use to determine the carrying capacity of a paddock.

### Water point development

Water point placement and the availability of water have huge implications for stocking rates of paddocks in the NT. Often extremely large paddocks may have only a few watering points, forcing cattle to walk increasingly further away to graze as the areas around water become progressively more heavily grazed. This often creates what is commonly known as a grazing gradient around water points, where grazing intensity decreases according to how far away the feed is from water. To provide adequate watering points on many NT properties requires substantial capital investment.

Producers were asked to give an upper distance from water around which they would like to plan their infrastructure, given that it would be a compromise between capital development limitations and optimal cattle production. Table 44 shows the average upper distance from water that producers thought cattle should walk. The average distance increases from north to south due to larger paddock sizes and less available surface water. Note: this figure is what people think is the upper limit cattle will graze out under normal circumstances, not the actual distance they can walk. Graph 15 shows the distribution of distances, which made up these averages.

People were asked if they thought increasing water points within a paddock was sufficient to spread grazing pressure more evenly. Eighty per cent of people agreed with this, while 20% felt that cattle often continued to graze in preferred areas despite new waters. Producers in the Alice Springs Region felt most strongly that new water points disperse grazing satisfactorily (Table 45).

TABLE 43 - METHODS USED BY PRODUCERS FOR DETERMINING CARRYING CAPACITY OF A Paddock

	%
Experience/Paddock history	19
Pasture Available	16
Available watering points	14
Pasture Condition/Composition	13
Condition of cattle	8
Season/Rainfall	8
Land Type	8
Paddock size	6
Class of Stock	3
Government benchmarks	2
Feed budgeting	1
Past expenditure	1
Common Sense	1
Ground cover	1
Environment conditions	1
Fire history	1

TABLE 44 - AVERAGE UPPER LIMIT OF DISTANCE FROM WATER PRODUCERS PREFER IN EACH REGION

	AVERAGE (KM)
NT	5.7
ALICE SPRINGS	8.8
TOP END	3.4
KATHERINE	4.5
BARKLY	6.4

GRAPH 15 - UPPER LIMIT DESIRED FOR CATTLE HAVING TO WALK TO WATER

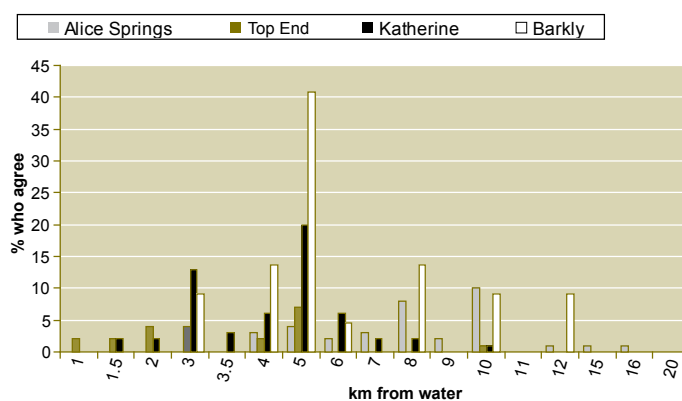


TABLE 45 - PERCENTAGE OF PEOPLE WHO BELIEVE WATER POINTS ARE SUFFICIENT TO MOVE STOCK AROUND A Paddock

	NO	YES
	%	%
Alice Springs	5	95
Top End	17	83
Katherine	34	66
Barkly	17	83





TABLE 46 - METHODS OTHER THAN WATER POINT'S PRODUCERS USE TO MOVE STOCK AROUND A PADDOCK

	%
Supplement	73
Fire	31
Fencing	26
Other	7
Roads	6
Rotational grazing	2

TABLE 47 - GRAZING STRATEGIES USED BY PRODUCERS IN THE NT

	%
Continuous	59
Spelling	54
Rotational Grazing	28
Extended rest grazing	5
Other	5
Time control/cell grazing	2

TABLE 48 - PERCENTAGE OF PRODUCERS WHO HAVE EXCLUDED AREAS OF THE PROPERTY FROM GRAZING

	NO	YES
	%	%
Alice Springs	31	69
Top End	48	52
Katherine	45	55
Barkly	39	61

TABLE 49 - PERCENTAGE OF PROPERTIES AFFECTED BY WILDFIRE AND INTENTIONAL FIRE ACCORDING TO REGION

	% PROPERTIES AFFECTED BY WILDFIRE	AVERAGE % OF PROPERTY BURNT BY WILDFIRE	% PROPERTIES WHO BURNT INTENTIONALLY	AVERAGE % OF PROPERTY INTENTIONALLY BURNT
Alice Springs	49	23	33	11
Top End	52	25	68	28
Katherine	95	36	87	13
Barkly	88	29	40	10

Producers were asked what other methods they used to distribute grazing pressure; the most popular were supplement and fire. Table 46 details the other methods used.

### Grazing Strategies

The most common grazing strategy in the Northern Territory is a continuously grazed system (Table 47), with 59% nominating this as their grazing strategy. Also known as set stocking, this method is popular because it does not require the amount of labour or infrastructure of some other strategies. It does require a conservative approach, however, to prevent overgrazing of preferred areas. Other strategies, such as rotation and spelling, allow plants time to build up their reserve and can have benefits to pasture health. Many people use continuous grazing as their main system and opportunistically spell paddocks when they have the chance or the paddock requires it.

Fifty per cent of all properties surveyed had at some time excluded certain areas from regular grazing. The regional breakdowns are shown in Table 48. Examples of these included fencing off riparian areas or fragile country, areas that were of low production value, to spell areas that needed it, to provide areas of drought reserve, and to conserve areas of special significance. Of the people who had not excluded areas from grazing, more than 50% said they would consider excluding areas if the situation required.

Twenty-seven per cent of respondents had attended a Grazing for Profit course, with 83% of attendees saying they had changed practice or made management decisions as a result. Eleven per cent had attended a Grazing Land Management course – and all said they had made management decisions or changed practice as a result.

### Fire

Wildfire affected significant proportions of producers in every region in 2004, with most producers on average having about one-quarter of their property burnt unintentionally (Table 49).

The amount of intentional fire is influenced by the amount of wildfire and also by its location. Producers in the northern regions, particularly the Top End, where grass growth is greater and of lower quality, use controlled burning of rank feed frequently to prevent wildfires and encourage regrowth.

In areas where the climate is more variable and less grass is produced, conservation of feed is a higher priority. This requires careful balancing between feed conservation and the use of fire to achieve grazing management goals.

Producers stated they lit intentional fires to manage their properties in a variety of ways. These are outlined in Table 50.

Cooler, early fires were generally used for wildfire prevention, managing species composition and removing rank grass. Common practice appears to be to wait until after the first rains before burning off to remove rank grass.

Many producers agreed that hotter, more intense fires were required to control tree and shrub build-up.

### **Improved Pasture**

Thirty-five per cent of producers indicated they had areas of fully improved pasture on their station. Twenty-nine per cent indicated they had areas of pasture, mainly legumes, distributed over larger areas among native pastures – also known as augmenting. The regional breakdowns are found in Table 51. One special case property, which had wide-scale rehabilitation, was taken out of the average for the Katherine Region, which had more than 1000ha of improved pasture. Many people had difficulty estimating the size of their improved pasture because much of it was scattered over large areas.

The reasons for using improved pasture are shown in Table 52. The most common reason is to increase the diet quality of cattle, generally through over-sowing legumes throughout extensive areas of native pasture.

TABLE 50 - REASONS FOR USING INTENTIONAL FIRES ACCORDING TO REGION

REASON	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Burn off rank feed	7	44	58	40
Burn problem areas	4			
Burn Spinifex	26			8
Control/prevent wildfires	11	52	45	32
Regenerate native grasses	7	12		
Native shrub control	19	32	53	32
Stop regrowth	4			
Weed management	4			
Manage species composition			3	
Pasture development				4

TABLE 51 - PERCENTAGE OF PROPERTIES WHICH HAVE AREAS OF IMPROVED PASTURE AND AVERAGE AREA OF IMPROVED PASTURE ACCORDING TO REGION

	% WITH FULLY IMPROVED	AVERAGE AREA (KM <sup>2</sup> ) FULLY IMPROVED	% PRODUCERS WITH AUGMENTED	AVERAGE AREA (KM <sup>2</sup> ) AUGMENTED
Alice Springs	10	6	21	758
Top End	96	32	44	19
Katherine	35	58	35	59
Barkly	12	19	12	357

TABLE 52 - REASONS FOR USING IMPROVED PASTURE

	%
Improved diet quality (in native pasture system)	36
Special purpose area	28
Hay production	15
Improved diet quality (in improved pasture system)	10
Rehabilitation	7
Other	5

TABLE 53 - PERCENTAGE OF PRODUCERS WHO HAVE NOTICED A BUILD UP OF NATIVE SHRUBS AND TREES IN EACH REGION

	YES	YES-REGROWTH	YES-ON BLACK SOIL	YES-ON RED SOIL	NO
Alice Springs	69	15			15
Top End		40	28	20	4
Katherine	5	16	47	42	21
Barkly		4	32	32	36

TABLE 54 - METHODS OF CONTROLLING NATIVE SHRUB AND TREE BUILD-UP USED BY PRODUCERS

	%
Controlled burning	50
Nothing - it's not an issue	13
Nothing - unable to do anything	13
Clearing	12
Chemical	7
Other	3
Spelling	2

## Natural Resource Management

### *Native tree and shrub build-up*

Seventy-nine per cent of producers in the NT have noticed a build-up of native trees or shrubs on their property (Table 53). Of these, 48% felt it was a major concern, 33% thought it a minor concern and 19% did not feel that it was a concern. Sixty-two per cent of producers rated effect on pasture growth as significant, and 58% rated effect on mustering as significant.

Other issues cited included damaging fence lines, harbouring weeds, reduced ability to burn, the cost of removal, erosion underneath due to reduced grass cover and losing biodiversity.

People were asked if they were doing anything to control the build-up of trees and shrubs. Thirteen per cent of producers were doing nothing because they either felt unable to, or that it wasn't an issue. The most popular method of control was burning, with half of producers surveyed using this technique (Table 54). In the Top End it was found that most concern for increase of trees and shrubs was as regrowth on previously cleared areas.

### **Weeds**

A regional breakdown of impact, presence and the percentage of producers who have a particular weed and are attempting to control it is shown in Appendix 10. In the Top End Region, the weeds rated as having a high impact were Sida, Senna, Mimosa (*Mimosa pigra*) and Hyptis. These are also the most common weeds producers attempt to control.

Noogoora burr, Parkinsonia and Rubber bush were all rated as having a high impact in the Barkly, with the highest number of producers putting efforts into controlling Parkinsonia and Rubber bush. Weeds rated as having a high impact in the Katherine Region included Hyptis, Mission grass, Rubber bush, Senna and Sida. Alice Springs has very few weeds rated as having a high impact. Athel pine and Mexican poppy were mentioned by less than 10% of producers as having a high impact.

As demonstrated in Appendix 10, a number of weeds were rated as having a low impact, due to the very small percentage of the property they covered. However, producers understood that if this area increased the impact would rise considerably.



This understanding has resulted in high numbers of people being aware of the need to focus on preventing the introduction of new species, and controlling the increase of existing weed species.

Eighty-six per cent of producers said they made a planned effort to prevent the introduction of weeds on to their property. The most popular strategy was to buy clean hay. Many said this was often difficult. Table 55 shows the number of properties and the type of strategies producers use.

The average amount of money spent on weed control on properties across the NT in 2004 was \$19,568. Table 56 shows the regional breakdowns, where by far the largest amount of money spent is in the Top End brought about largely by the widescale *Mimosa pigra* control on the flood plains.

### **Pest Animals**

Each region is affected differently by various species of pest animals.

Appendix 11 shows the impact rated by producers of each animal considered a pest in each region or, in the case of kangaroos and wallabies, adding unwanted grazing pressure. There was a large variation between regions in making up the NT average. Wild dogs and pigs were having the highest impact in the Top End. Wild dogs were most affecting producers in the Katherine and Barkly Regions, while in the Alice Springs Region wild dogs, camels, kangaroos and wallabies were having the most impact.

Producers were asked to estimate the amount of money they were spending on feral animal control. The amount spent on average in each region is shown in Table 57. The overall average for the NT was \$4,928, including labour costs.

TABLE 55 - STRATEGIES TO PREVENT THE INTRODUCTION OF WEEDS

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Buy clean hay (try)	54	9	52	38
Wash down machinery	12	4	25	8
Quarantine incoming stock	4	24	20	13
Feed in one area			12	
Make own hay		48	10	8
Be vigilant and able to ID weeds	28		7	
Regulate movement of people on property		4	5	8
Prevent further spread from localised area	42			
Buy certified seed	4	38		
Remove feral animals		4		

TABLE 56 - AVERAGE DOLLARS SPENT IN EACH REGION ON WEED CONTROL IN 2004

	AVERAGE \$ SPENT/ REGION	MINIMUM \$ SPENT/ REGION	MAXIMUM \$ SPENT/ REGION
Alice Springs	1414	0	10000
Top End	63700	500	400000
Katherine	7918	0	150000
Barkly	20262	0	100000

TABLE 57 - AVERAGE DOLLARS SPENT IN EACH REGION ON PEST ANIMAL CONTROL IN 2004

	AVERAGE \$ SPENT/ REGION	MINIMUM \$ SPENT/ REGION	MAXIMUM \$ SPENT/ REGION
Alice Springs	3635	100	20000
Top End	11662	100	100000
Katherine	3779	0	40000
Barkly	3105	0	10000



## Business

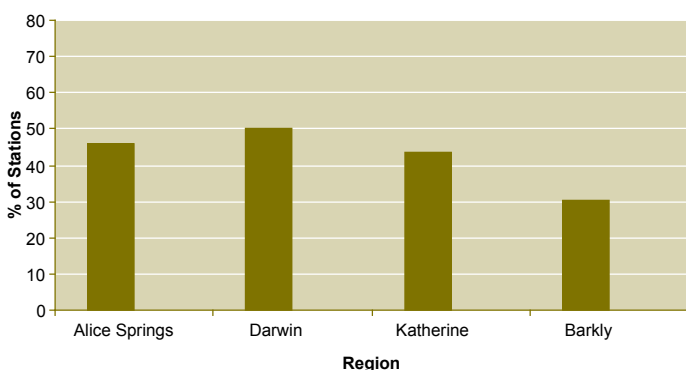
### Staff

Problems with recruiting and keeping skilled staff surfaced in many areas of this survey. Graph 16 shows the differences in the regions, with the Barkly having fewer problems. Many people who said staffing problems did not affect their operations qualified this with a comment along the lines of “No, we usually manage, somehow”. However, many indicated these problems placed increased pressure on existing staff and management.

Staff are primarily recruited through word of mouth, with more than 75% of properties using this method. The other ways in which staff are recruited, in conjunction with word of mouth, are outlined in Graph 17. Other methods included finding them at the pub, and registering with the Willing Workers on Organic Farms organisation which provides volunteers who wish to work on organically run enterprises.

Staff training is formally provided on 70% of stations in the Northern Territory. The types of training are outlined in Table 58.

GRAPH 16 - PERCENTAGE OF PRODUCERS WHO INDICATED OPERATIONS ARE LIMITED BY STAFF AVAILABILITY ACCORDING TO REGION



GRAPH 17 - SOURCES OF LABOUR

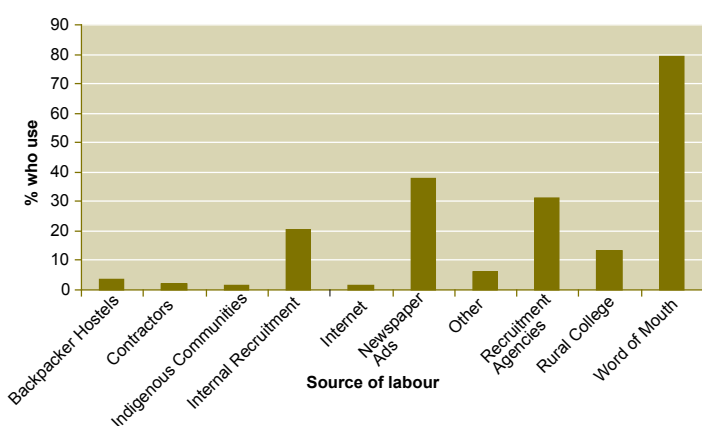


TABLE 58 - TYPES OF TRAINING UNDERTAKEN BY STAFF ON PROPERTIES IN THE NT

TYPE OF TRAINING	%
On the Job	52
Horsemanship	16
First Aid	15
Other	14
Chem Cert	12
Horse Shoeing	10
Low Stress Stockhandling School	9
Pregnancy Testing	9
Cattle Handling	6
Rangeland Management Course	6
Certificate II in Beef Cattle	5
Jabiru Human Resources	5
OH&S	5
Spaying	5
Machinery Operators Certificate	4
Nutrition Edge	4
Certificate III in Beef Cattle	3
CPC Induction	3
Grazing for Profit	3
Bull Selection	2
Grazing Land Management	2
Gun Licence	2
Mechanics	2
Rural College	2
Weed Control	2
Welding	2
Wildfire Fighting	2

## Financial

Sixty-eight per cent of properties indicated they had some form of finance. The most common finance in the NT is from an agribusiness institution (Table 59).

Thirty-three per cent of producers said they received some other form of income beside cattle production (Table 60).

## Benchmarking and planning

Property management plans are found on 43% of stations in the NT. The different types of plans are outlined in Table 61.

Benchmarking is a useful tool to draw “a line in the sand” to help measure future progress and monitor plans. Seventy-seven per cent of producers indicated they understood what benchmarking was. Table 62 demonstrates the percentage of producers in each region using financial or production benchmarks to aid their management.

TABLE 59 - TYPES OF FINANCE USED BY NT PRODUCERS

	%
Agribusiness	34
Agricultural Bank	17
Major trading bank, Interstate branch	10
Major trading bank, NT branch	28
Other	11

TABLE 60 - TYPES OF INCOME BESIDE CATTLE PRODUCTION ON NT PROPERTIES

	%
No	67
Hay Production	16
Tourism	9
Horticulture	4
Mining	4
Store	2
Mixed Farming	1
Earthmoving	1
Cattle Transport	1
Road Constructions	1
Other	1

TABLE 61 - TYPES OF PLANS FOUND ON NT CATTLE STATIONS

	%
Financial Management	86
Human resource Management	43
Sustainable Production Systems	60
Natural Resource Management	63

TABLE 62 - PERCENTAGE OF PRODUCERS USING FINANCIAL AND PRODUCTION BENCHMARKS ACCORDING TO REGION

	YES	NO
	%	%
Alice Springs	35	65
Top End	64	36
Katherine	75	25
Barkly	65	35

TABLE 63 - TYPES OF BENCHMARKS USED TO MANAGE NATURAL RESOURCES

	%
Photographs	24
Monitoring Sites	24
Animal Production	13
Maps	11
In the head	11
Pasture Assessment	11
Financial Benchmarks	6
Stocking Rates	6
Land Confition	6
Monitoring Weeds	5
Rainfall	3
Other Properties	3
Soil Properties	3
Soil Assessment	3
Weed Maps	2
Biodiversity	2
Carrying Capacity	2
EMS	2
Grass Models	2
Erosion Monitoring	2
Landcare	2
Wildlife Surveys	2
Profit Probe	2
Veg Machine	2

TABLE 64 - PERCENTAGE OF PRODUCERS USING DIFFERENT TYPES OF TECHNOLOGY TO ASSIST THEIR MANAGEMENT IN THE NT

	%
Bureau of Meteorology	77
Email	74
Fire Scar & Hot Spot Websites	68
Internet	62
Recording Programs	26
Herd Modelling Programs	19
EID of Animals	13
Other	12
Remote Water Point Monitoring	2

Forty-six per cent of producers said they used benchmarks to manage their natural resources. Table 63 outlines the different types of natural resource benchmarks used.

### ***Information Delivery and Management***

Producers in the NT use an array of technology to help them manage. Table 64 shows the different types used.

### ***Farmbis***

The FarmBis scheme provides financial assistance to attend eligible management training activities. Examples of eligible courses that have been popular with NT producers include Grazing for Profit, Nutrition EDGE, Low Stress Livestock Handling and Grazing Land Management. The scheme provides up to 80% rebate on eligible activities.

It is jointly funded by the Australian and the NT Governments and is administered by DPIFM.

Fifty per cent of producers said that having FarmBis funding available meant they undertook training they otherwise would not have attended.

### **Priorities**

To gain an understanding of the major constraints in running a cattle enterprise in the NT, producers were asked to name the major hurdles in running their business. The summary for each region is found in Appendix 12. A common problem across the NT is staff, ranging from being able to get staff at all, to being able to find skilled staff and retain them. Other strong themes were a lack of cash flow, poor roads and difficult access and the cost of production.

The main limitations to economic sustainability of an NT cattle station are outlined in Appendix 13. Seasonality, cattle prices, the cost of production, roads and access, and market issues came out as problems common to all regions.

The main threats to environmental sustainability are shown in Appendix 14. Exotic weeds were named by producers across the Top End and Katherine Regions as being the biggest threat. The ability to manage for climate variability and concerns over grazing pressure featured heavily in the Alice Springs and Barkly Regions.

### **What are the plans for infrastructure development?**

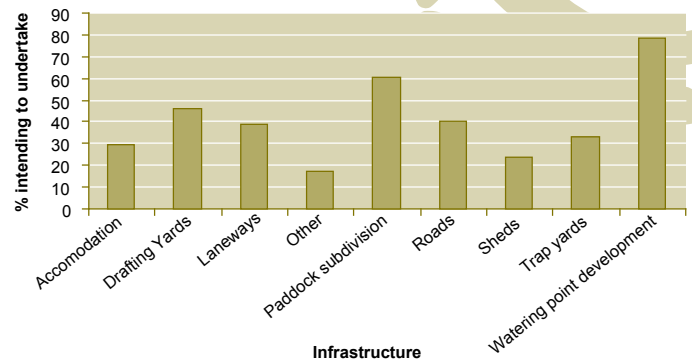
Managers were asked to nominate what types of infrastructure development they intended to undertake in 2005 (Graph 18).

The developments most commonly planned were paddock subdivision and water point development. When asked what they felt the highest priorities for development of their property were, managers indicated increasing waters and reducing the size of paddocks. Roads, laneways and drafting yards were important, but given a lower priority. Appendix 14 details these priorities. Water point development has been encouraged throughout the NT through the Pastoral Water Enhancement Scheme, funded by FarmBis.

### **Motivation**

Despite a number of challenges in running a cattle enterprise producers choose to be a member of the pastoral industry for a wide variety of reasons. Most commonly they nominated lifestyle as being the reason, especially the fact it provided a good lifestyle for the family. Others felt it was the only career they knew. A strong theme emerged of people who choose this lifestyle as it allows them to combine running a business with their love of cattle and the land. Many stated they enjoyed the challenge of the industry, while still others felt they had been born to do it! In the words of one producer, *“Theres nothing else I would rather do”*.

GRAPH 18 - INTENDED INFRASTRUCTURE DEVELOPMENT FOR 2005



## **Index of Scientific Names**

### **Native Pasture Species**

Annual Sorghum - *Sorghum timorense*  
 Black Speargrass - *Heteropogon contortus*  
 Kangaroo Grass - *Themeda triandra*  
 Kerosene Grass - *Aristida* spp.  
 Limestone grasses - *Enneapogon* spp.  
 Mitchell grasses - *Astrelba* spp.  
 Oat grasses - *Enneapogon* spp.  
 Perennial Bluegrass - *Dicanthium fecundum*  
 Perennial Sorghum - *Sorghum plumosum*  
 Perennial wiregrass - *Aristida* spp.  
 Ribbon grass - *Chrysopogon fallax*  
 Silky Browntop - *Eulalia fulva*  
 Soft Spinifex - *Triodia* spp.  
 Umbrella grass - *Digitaria coenicola*  
 Wanderrie grass - *Eriachne* spp.  
 Wiregrass - *Aristida* spp.  
 White grass - *Sehima nervosum*

### **Tree Species**

Acacia - *Acacia* spp.  
 Corymbia - *Corymbia* spp.  
 Eucalypts - *Eucalyptus* spp.  
 Lancewood - *Acacia shirleyi*

### **Weed Species**

Athel pine - *Tamarix aphylla*  
 Barleria - *Baleria prioritis*  
 Bathurst burr - *Xanthium spinosum*  
 Bellyache bush - *Jatropha gossypifolia*  
 Birdsville indigo - *Indigofera linnaei*  
 Caltrop - *Tribulus terrestris*  
 Chinee apple - *Ziziphus mauritiana*  
 Crotalaria - *Crotalaria* spp.  
 Devils claw - *Martynia annua*  
 Gamba grass - *Andropogon gayanus*

Goats head burr/Star burr - *Acanthospermum hispidum*  
 Grader grass - *Themeda quadrivalvis*  
 Hyptis - *Hyptis suaveolens*  
 Khaki burr - *Alternanthera pungens*  
 Lions tail - *Leonotis nepetifolia*  
 Mesquite - *Prosopis pallida*  
 Mexican poppy - *Argemone ochroleuca*  
 Mimosa - *Mimosa pigra*  
 Mimosa Bush - *Acacia farnesiana*  
 Mission Grass - *Pennisetum polystachion*  
 Mossman river grass - *Cenchrus echinatus*  
 Noogoora Burr - *Xanthium occidentale*  
 Nutgrass - *Cyperus rotundus*  
 Ornamental rubber vine - *Cryptostegia madascariensis*  
 Parkinsonia - *Parkinsonia aculeata*  
 Prickly acacia - *Acacia nilotica*  
 Rubber bush - *Caltropis procera*  
 Saffron thistle - *Carthamus lanatus*  
 Senna - *Senna* spp.  
 Sida - *Sida* spp.

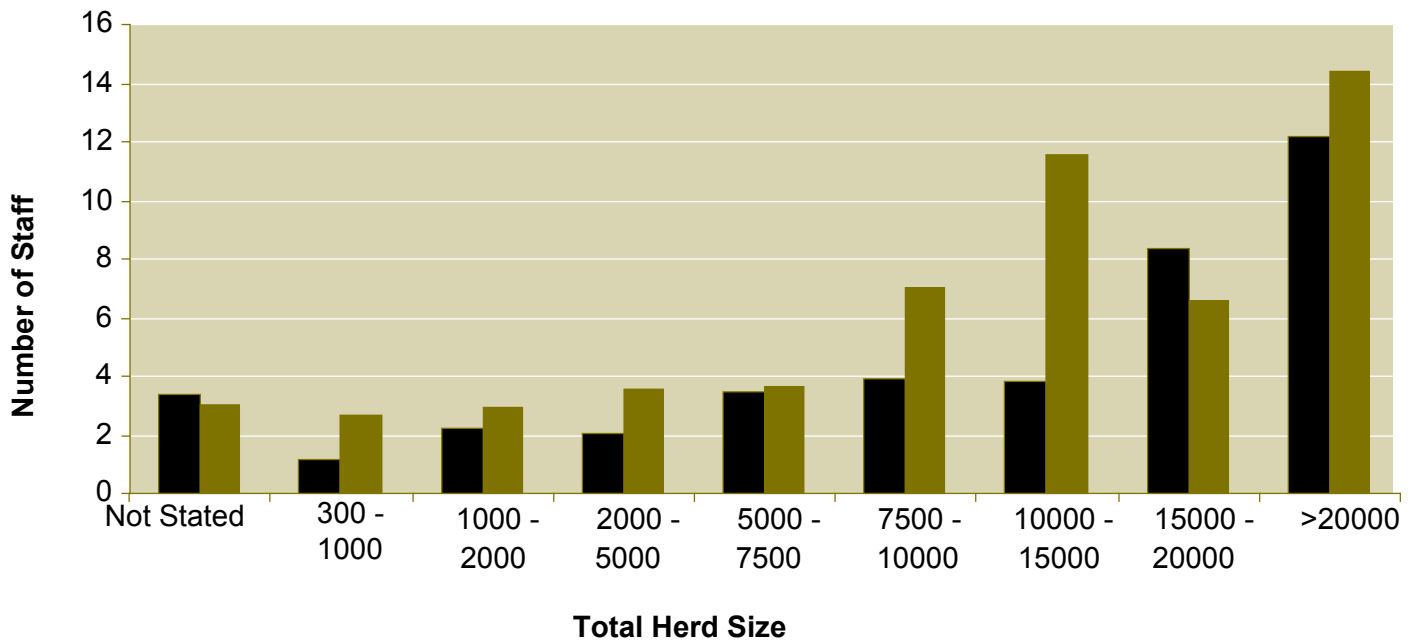
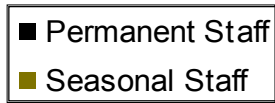
### **Improved Pasture Grass Species**

Buffel - *Cenchrus ciliaris*  
 Jarra - *Digitaria milaniana*  
 Tully - *Brachiara humidicola*

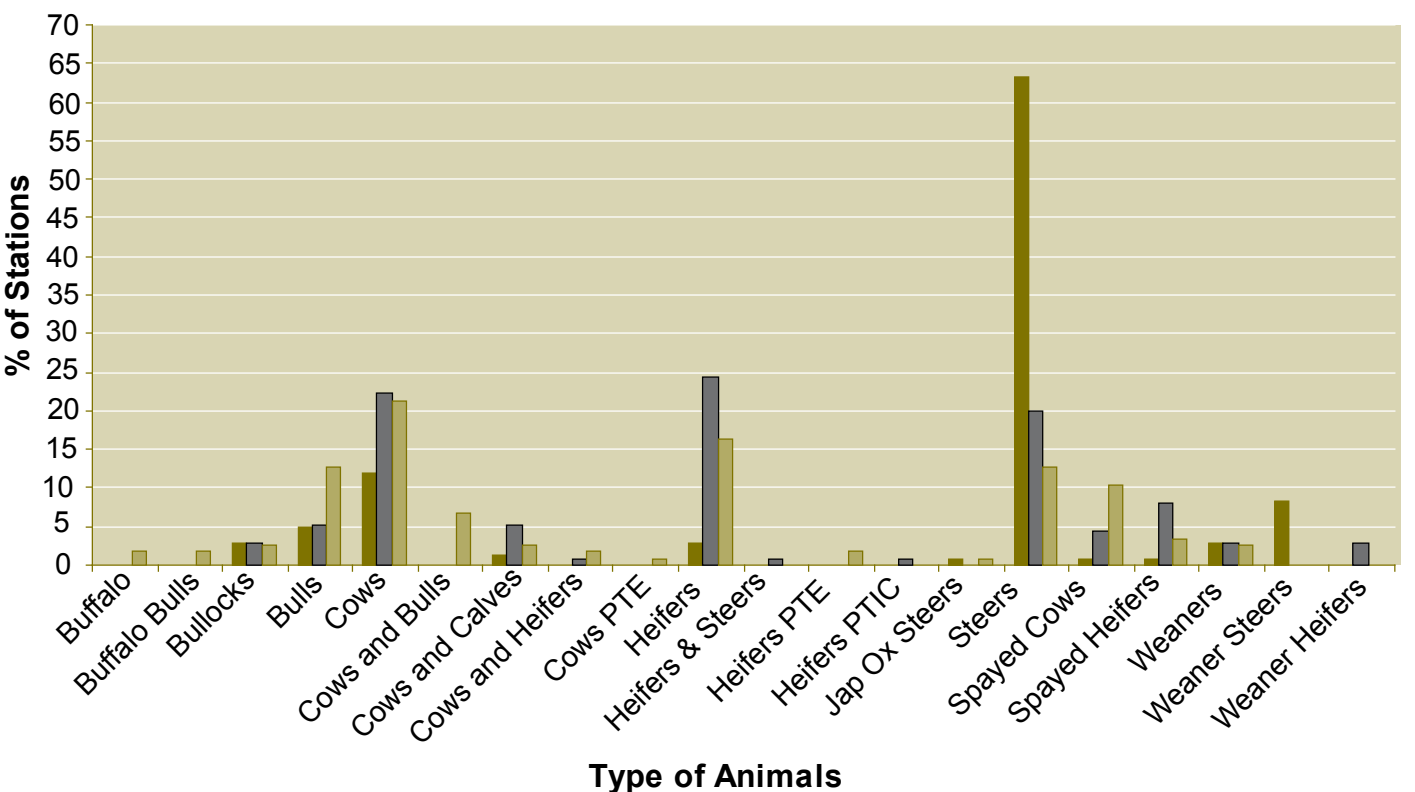
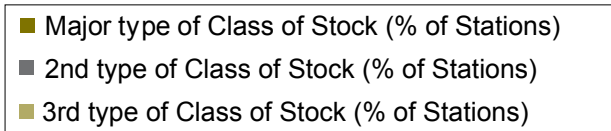
### **Legume Species**

Cavalcade - *Centrosema pascuorum*  
 Stylos - *Stylosanthes* spp.  
 Wynn cassia - *Chamaechrista rotundifolia*

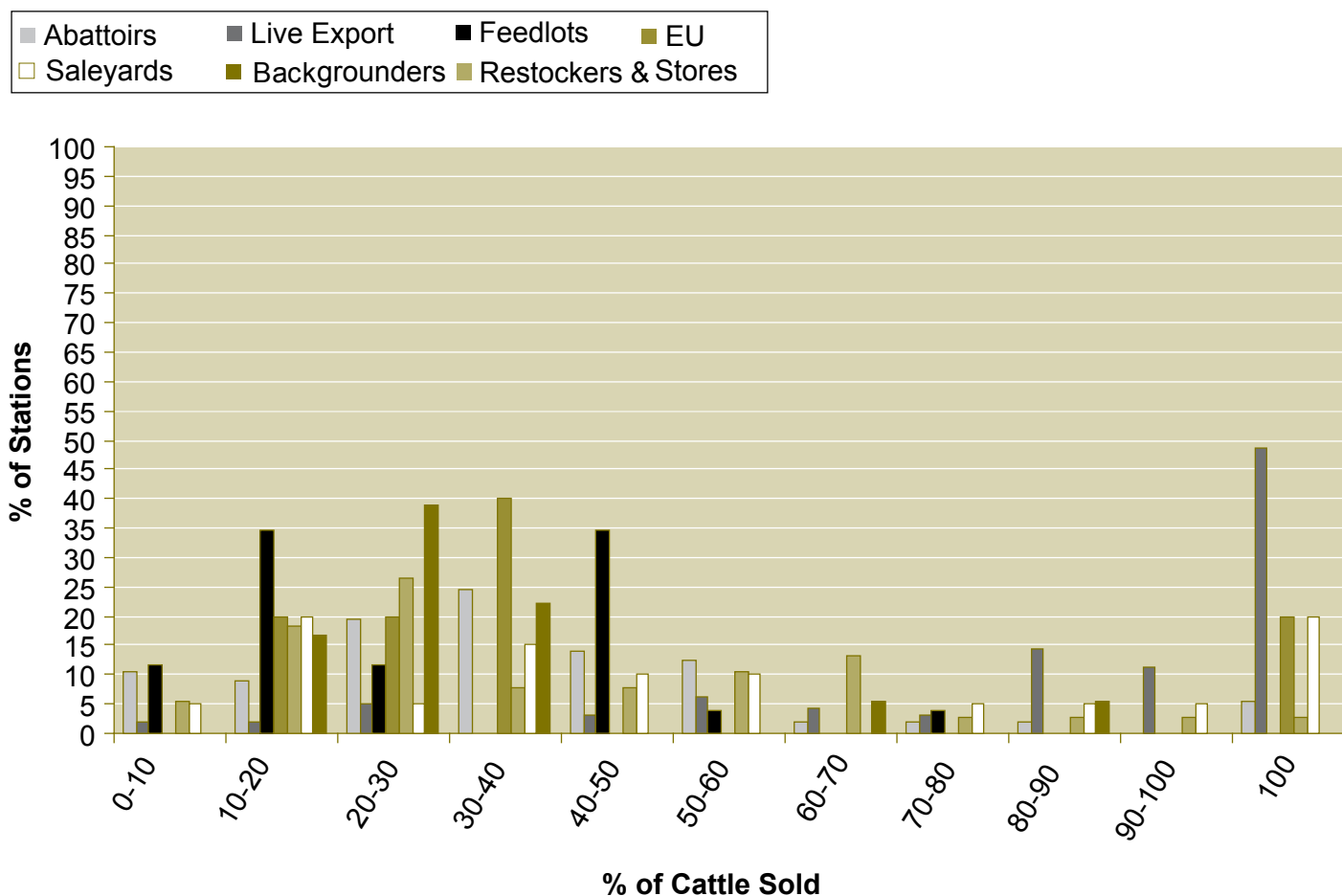
## Appendix 1 - Average Number of Staff Employed per Station Compared to Total Herd Size



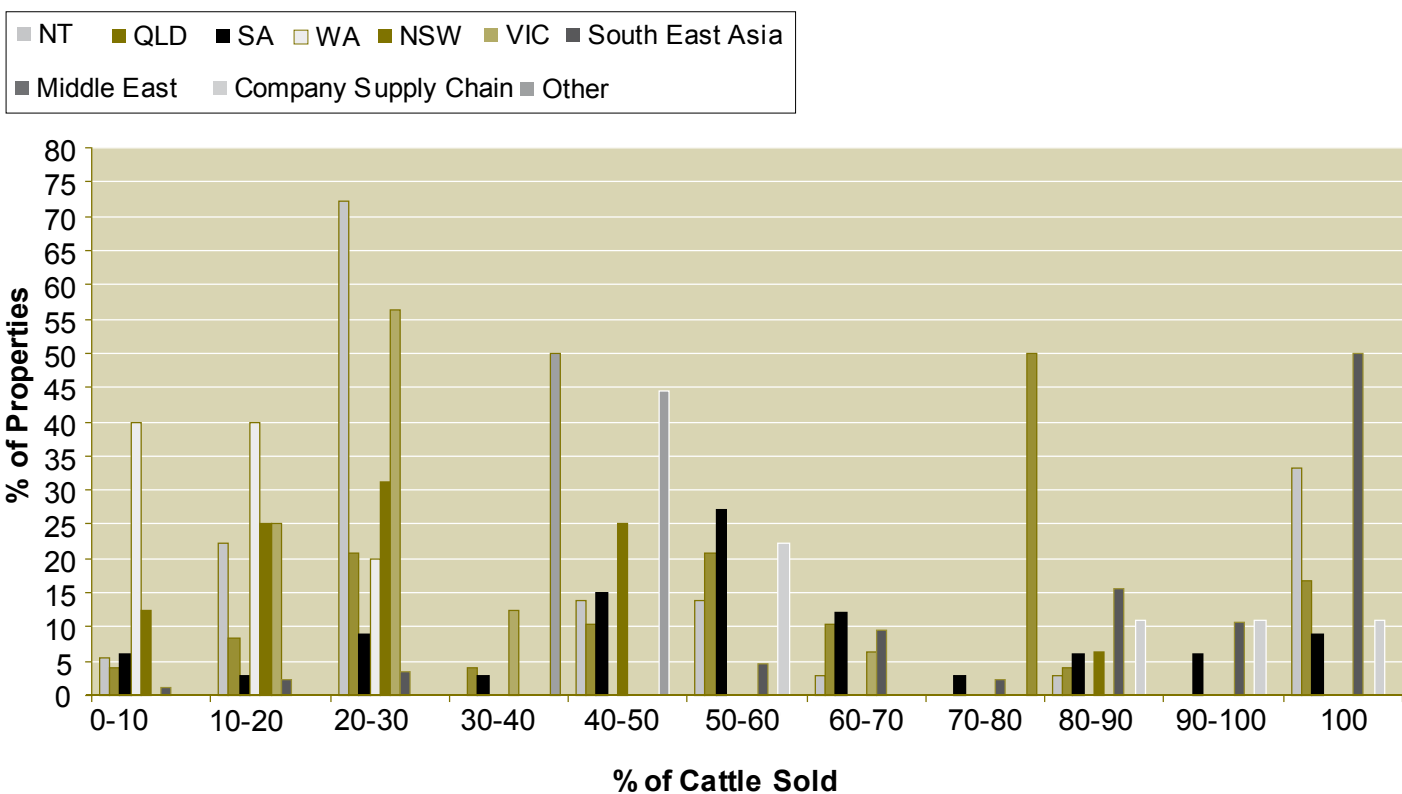
## Appendix 2 - The Three Main Types of Cattle turned off in 2004



### Appendix 3 - The Main Markets for the NT Pastoral Industry in 2004



### Appendix 4 - Location of Markets for the NT Pastoral Industry in 2004





## Appendix 5 - Months in which producers who are control and continuous mating choose to put bulls out with joiner heifers

	JAN	FEB	MAR	APR	MAY	JUNE	JUL	OCT	NOV	DEC
	%	%	%	%	%	%	%	%	%	%
Alice Springs	17	-	-	17	-	-	-	-	33	33
Top End	36	-	-	-	-	-	-	14	7	43
Katherine	26	5	8	5	8	3	5	3	5	33
Barkly	-	-	-	-	-	-	-	5	-	95

## Appendix 6 - Months in which producers choose to put bulls with joiner heifers under a control mating system

	JAN	FEB	MAR	APR	OCT	NOV	DEC
	%	%	%	%	%	%	%
Alice Springs	17	-	-	17	-	33	33
Top End	42	-	-	-	-	8	50
Katherine	33	7	7	7	-	-	53
Barkly		-	-	-	Only 1 property control mates		

## Appendix 7 - Average length of the joining period

	FIRST JOINED HEIFERS	SECOND JOINED HEIFERS
	(months)	(months)
Alice Springs	5.8	5.5
Top End	3.9	4.6
Katherine	5.0	5.0
Barkly	5.0	5.0

## Appendix 8 - Most common animal health problems mentioned by each region

Alice Springs

TWO MAIN ANIMAL HEALTH PROBLEMS SEEN MOST COMMONLY	PERCENTAGE OF PEOPLE NAMING AS MOST COMMON	PERCENTAGE OF PEOPLE NAMING AS SECOND MOST COMMON
Botulism	48	27
Dystocia	4	-
Eye Cancer	11	-
Lack of Rain	4	-
Lice	4	27
Peg Leg	18	-
Pink Eye	7	9
Plant Poisoning	15	-
Respiratory	9	-
Scouring	4	-
Three Day	-	9
Unexplained Deaths	-	4



Top End

TWO MAIN ANIMAL HEALTH PROBLEMS SEEN MOST COMMONLY	PERCENTAGE OF PEOPLE NAMING AS MOST COMMON	PERCENTAGE OF PEOPLE NAMING AS SECOND MOST COMMON
Zamia Palm Poisoning	4	-
Ticks	40	-
Tetanus	4	-
Tail Rot	4	-
Stomach Worm	8	-
Phosphorus Deficiency	16	-
Buffalo Fly	56	-
Botulism	12	-
Three Day Sickness	20	-

Katherine

TWO MAIN ANIMAL HEALTH PROBLEMS SEEN MOST COMMONLY	PERCENTAGE OF PEOPLE NAMING AS MOST COMMON	PERCENTAGE OF PEOPLE NAMING AS SECOND MOST COMMON
Botulism	19	31
Calving Difficulties	2	3
Fly/Insects	8	13
Knuckling Over	2	3
Leptospirosis	0	1
Malnutrition	6	10
Phosphorus Deficiency	2	3
Prolapses	5	8
Tail Rot	11	18
Three Day Sickness	6	10
Ticks	13	21
Vibriosis	0	2

Barkly

TWO MAIN ANIMAL HEALTH PROBLEMS SEEN MOST COMMONLY	PERCENTAGE OF PEOPLE NAMING AS MOST COMMON	PERCENTAGE OF PEOPLE NAMING AS SECOND MOST COMMON
Botulism	42	13
Dystocia	8	-
Peg Leg	8	8
Phosphorus Deficiency	17	4
Prolapse	4	-
Protein Deficiency		8
Three day sickness	13	-
Vibriosis	8	4

## Appendix 9 - Medical treatments used on properties in each region

### Alice Springs

WORMING	NUMBER USING	LICE CONTROL	NUMBER USING	ANTISEPTIC	NUMBER USING
Cyductin	2	Tiguvon	2	Defiance	1
Ivermec	1	Epenerec		Cetrigen	1
				General	4

### Top End

WORMING	%	FLY	%	LICE	%	TICK	%	WOUNDS	%	GP	%
Paramax	36	Paramax	17	Paramax	15	Paramax	15	Defiance S	81		67
Cyductin	27	Cyductin	17	Cyductin	12	Cyductin	12	Hibitane	19		33
Ivomec	18	Ivomec	17	Ivomec	0	Ivomec	0				
Baymev	18	Baymec	17	Baymec	12	baymec	12				
		Acatak	33	Ear tags	0	Ear tags	0				
				Supona	0	Supona	0				
				Sumifly	0	Sumifly	0				
				Barricade	12	Barricade	12				
				Bayticol	12	Bayticol	12				
				Acatak	27	Acatak	27				
				Plunge dip	12	Plunge Dip	12				
80		96		24		88		64		72	

### Katherine

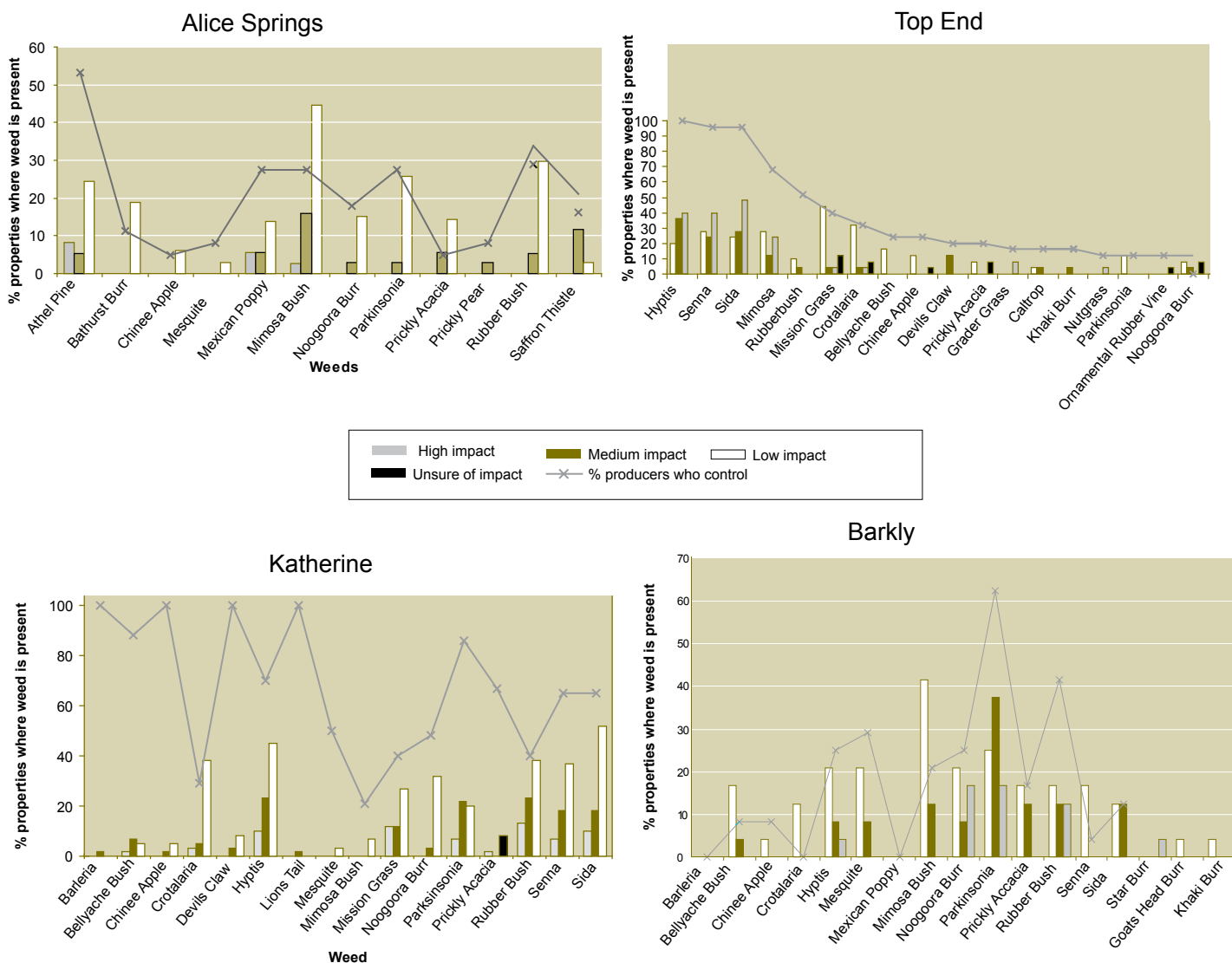
REASON USED	WORMS	NUMBER WHO USE	FLIES	NUMBER WHO USE	LICE	NUMBER WHO USE	TICKS	NUMBER WHO USE	WOUND ANTISEPSIS	NUMBER WHO USE	GROWTH PROMOTANTS	NUMBER WHO USE
Product	Bayomec	1	Barricade	1	Bayomax	1	Acatak	8	Defiance	33	Compudose 100	2
	Cyductin	11	Bayomec	1	Bayticol Dip	3	Barricade	1	Farmers Friend	1	Compudose 200	11
	Dectomax	10	Bayticol Dip	3	Brute	1	Bayomax	1	Hibitane	12	Compudose 400	30
	Ivermectin	1	Brute	1	Cyductin	6	Bayticol Dip	14	Kleendok	1	HGP unspecified	2
	Maximin	1	Clout S	2	Dectomax	3	Brute	1	Nucidol	1	Revalor	5
	Paramax	3	Cooper Fly	2	Demise	1	Cyductin	4	Stockholm Tar	6	Ravalor G	8
			Cyductin	6	Tiguvon	1	Dectomax	2	Zeeolite/Ti-tree	1	Synavex	2
			Dectomax	3			Paramax	1				
			Demise	5			Spike Tags	1				
			Spike Tags	3			Ticksafly	1				
			Stockholm Tar	2								
			Sumafly	7								
Number using		27		36		16		34		55		67

### Barkly

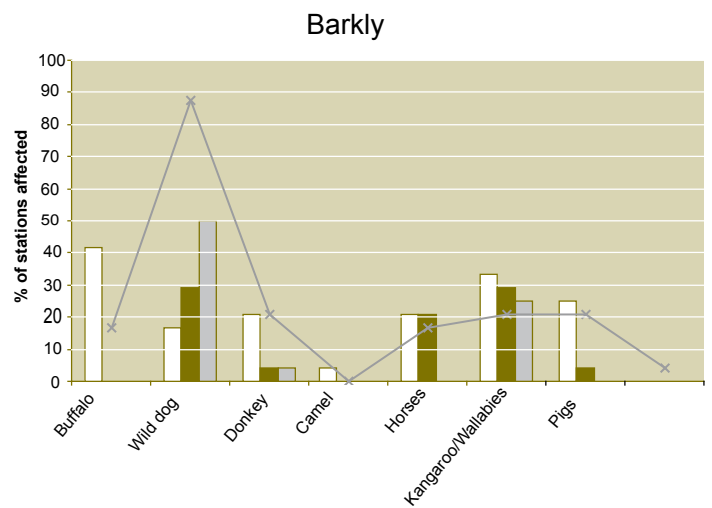
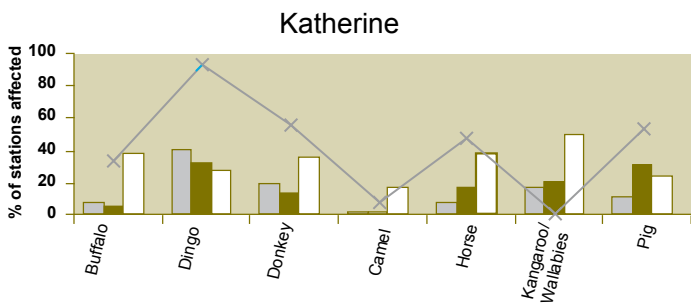
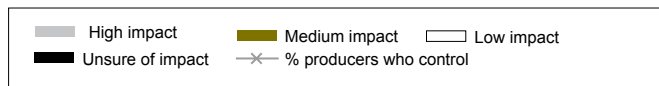
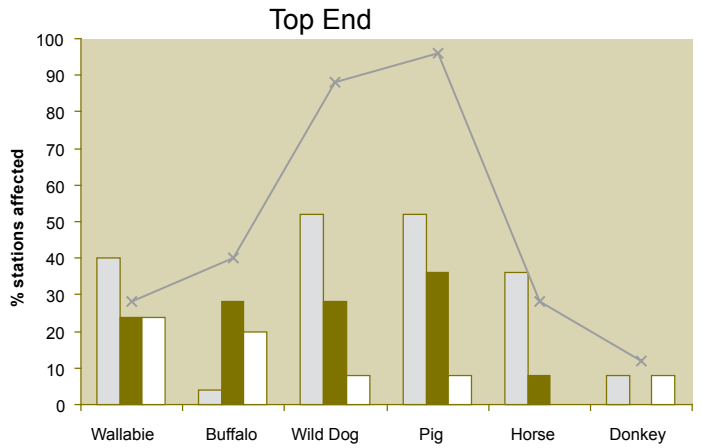
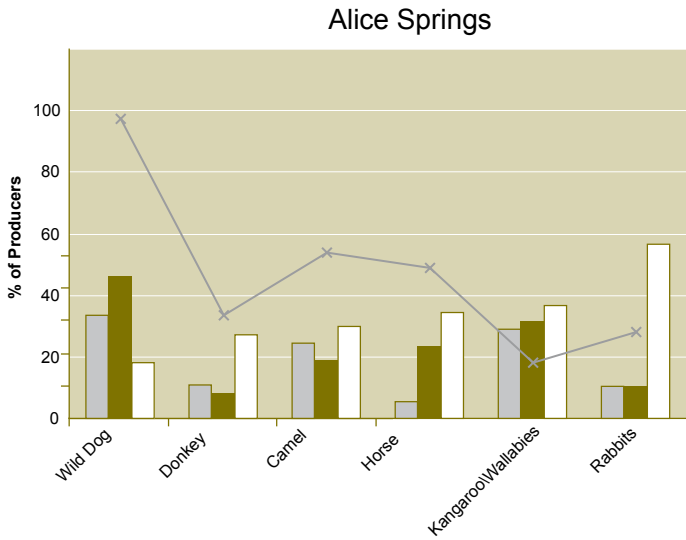
WORMS	NUMBER WHO USE	FLIES	NUMBER WHO USE	LICE	NUMBER WHO USE	TICKS	NUMBER WHO USE	WOUND ANTISEPSIS	NUMBER WHO USE	GROWTH PROMOTANTS	NUMBER WHO USE
Bayomec		Barricade	1	Bayomax		Acatak	1	Defiance	4	Compudose 100	
Cyductin	2	Bayomec		Bayticol Dip	1	Barricade		Farmers Friend		Compudose 200	10
Dectomax	3	Bayticol Dip	4			Bayomax		Hibitane	2	Compudose 400	14
Ivermectin		Brute		Cyductin		Bayticol Dip	4	Kleendok	1	HGP unspecified	
Maximin		Clout S		Dectomax		Brute		Nucidol		Revalor	
Paramax		Cooper Fly	1	Demise		Cyductin	1	Stockholm Tar	1	Revalor G	3
		Cyductin		Tiguvon		Dectomax		Zeeolite/Ti-tree		Synavex	
		Dectomax				Paramax		Impatoin	1		
		Demise				Spike Tags					
		Spike Tags				Ticksafly					
		Patriot	1			Defiance S					
		Stockholm Tar									
		Subpena	1								
		Sumafly									



**Appendix 10 - Impact of weeds and the percentage of producers trying to control them on properties where present according to region**



# Appendix 11 - Impact of pest animals and the percentage of producers trying to control them on properties where present according to region



## Appendix 12 - Biggest hurdles in running a cattle enterprise named by producers in each region

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Staff Availability	55	52	26	14
Time	53		6	1
Distance	16			1
Fire	11	8	5	
Seasons	11			6
Trespassers	8	8		
Native Title	8			
Family	5			
Future Developments	5			1
Money	5			
Neighbours	5			
Water	5			2
Lack of Government Support	3	8		
Cost of Production	3	16	11	5
Roads/Access	3	40	10	2
Erosion	3	40		
Market Issues	3		3	1
Isolation	3	-	10	
Pest Animals	3	-		
Ownership	3			
Regulations	3	-		
Research Management	3			
Transport	3	-		
Poor Service from NT Business		8	-	
Weeds		20	7	
Lack of Cashflow		28	11	
Fertility of Herd		7	2	1
Communications and Education			3	1
Cattle Control			5	2
Managing in a Tropical Environment			7	

## Appendix 13 - Factors most affecting economic sustainability according to region

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Climate/Seasons	63		8	6
Cattle Prices	21	13	10	6
Staff	18	4	3	8
Lack of Support from Government	17			
Cost of Production	13	23	20	9
Fuel Costs	13			
Road Conditions/Access to Property	11	11	7	1
Transport	11			
Economies of Scale	8			
Fertility	8	6		
Fire	8			
Diversification	5			
Minimising Mortality Rates	5			1
Business Partners	3			
Credibility	3			
Good Luck	3			
Infrastructure	3		12	
Insurance	3			
Interest Rates	3			
Land Development	3	11		
Native Titles	3			1
Quality of Cattle	3			
Succession Planning	3			
Wages	3			
Weight for Age Gain not Sufficient	3			1
Wild dogs	3			1
Workers Compensation	3			1
Market Issues		19	15	1
NRM Issues		11	20	1
Animal Welfare		4		
Community Pressure			3	
Lack of Cashflow			3	
Distance				4
Value Australian \$				3
Environmentalists				1
Lack of Meatworks				1



## Appendix 14 - Factors most affecting environmental sustainability according to region

	ALICE SPRINGS	TOP END	KATHERINE	BARKLY
	%	%	%	%
Ability to manage for climate variability	62		5	6
Wildfire	12		10	5
Overgrazing	12		14	1
Weeds	9		45	4
Buffel Grass	6			
Grazing Pressure	6			2
Public Access	6			1
Woody Weeds	6		13	
Cattle Prices	3			
Diminishing Returns	3			
Erosion	3	14	20	
Pest Animals	3			
Infrastructure	3			
Land Development	3			
Local Abattoir	3			
Markets	3			
Monitoring	3			
Ill Advised Community Pressure	3		10	
Scale of Operations	3			
Government Policy		11	2	4
Saltwater Intrusion		6		
High Input Costs		6		
Other		17	5	
Ability to Plan and Monitor			10	
Clearing			2	
Not being able to clear			3	1
Radical Green Groups				2
Sustainability				2

## Appendix 15 - NLIS Update September 2005

The mandatory use of Radio Frequency Devices (RFIDs) for NT cattle will be phased in between 2005 and 2007. The change to mandatory use of RFIDs is being adopted to support a nationally consistent approach to livestock traceability. In contrast to results at the time of the survey, pastoralists subsequently are committed to implementation.

A timetable detailing the implementation milestones has been approved the Minister for Primary Industry, Fisheries and Mines. Mandatory use of RFIDs and transaction recording to the national NLIS database will apply to:

Cattle moving interstate	1 July 2005
Cattle carrying RFIDs must be recorded to the national database prior to entry to the NT. Any subsequent movements will be read and recorded.	1 July 2006
Cattle moving to saleyards	1 August 2006
Cattle moving to abattoirs	1 July 2006
Cattle moving from property to property	1 July 2007

(Under the risk based system agreed by the Primary Industries Ministerial Council, exemptions may apply where cattle go direct from property of birth to slaughter or export).

## Appendix 16 - Priorities for Infrastructure development

