National Environmental Research Program

NORTHERN AUSTRALIA HUB

Improving biodiversity conservation in northern Australia

Biodiversity conservation by pastoralists and graziers

Research findings

Overview

Aim of the project

This research explored the willingness of the pastoral sector to undertake conservation activities in exchange for stewardship payments.

Methods

More than 100 pastoral businesses participated in the research, including family farms, Indigenous-owned stations and corporate land managers. They managed a combined area of more than 250,000 square kilometres.

Research meetings and visits to remote stations between Broome and Charters Towers delivered a better understanding of how potential conservation contracts might work.

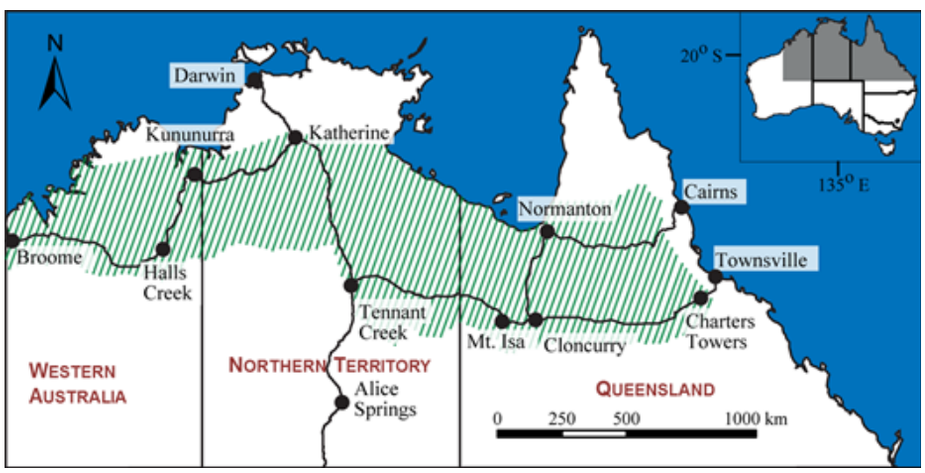
The survey investigated how pastoralists managed their operations and made decisions. Pastoralists were presented with a series of choices involving hypothetical contracts for paid biodiversity conservation, and asked whether any of the options were attractive to them and what factors would influence their involvement.

Research findings

- In general pastoralists have a strong stewardship ethic towards the land, biodiversity and cattle.
- Pastoralists are usually dependent on one income stream (beef cattle) so the opportunity to diversify enterprises and receive income from a range of sources is highly desirable.
- The vast majority of pastoralists are willing to participate in contractual biodiversity conservation on parts of their properties, provided suitable contracts are available.

Pastoralists are more likely to engage in contractual biodiversity conservation if:

- Their land is less productive.
- They understand the relationship between biodiversity and grazing.
- Contracts allow grazing on the contract area during certain times of the year.
- Contracts are shorter.
- Contracts allow a degree of flexibility.
- The stewardship payment is higher.



Study area

Why did we do this research?

The conservation reserves in north Australia's tropical savannas are insufficiently large or connected to safeguard the region's diversity of animals, plants and ecosystems for future generations.

Pastoralists manage vast tracts of land. The average size of a pastoral station is around 250,000 hectares, with many stations exceeding one million hectares (larger than greater Melbourne). Consequently, individual decisions can have long-ranging impacts for the region's natural assets, including biodiversity. Pastoralists can therefore make significant contributions to the conservation effort.

In northern Australia, pastoralists do not receive financial recognition for looking after biodiversity on their land, but other countries and Australia's southern states have implemented agri-environmental schemes that make biodiversity conservation attractive. Suitable conservation contracts could help pastoralists make a strategic and valuable contribution to reversing the decline of northern Australia's biodiversity.

Which biodiversity activities were investigated?

The hypothetical conservation contract options investigated included:

1. 'Strict conservation', which required pastoralists to exclude cattle from a selected area of land for the entire contract.

Block B Choice Situation 2	Option A	Option B	Option C	None
Conservation requirements	Cattle exclusion for prolonged period; up to 50% loss of cattle production	TOTAL exclusion of cattle + active management for biodiversity outcomes	TOTAL exclusion of cattle + active management for biodiversity outcomes	
Annual payment ($/ha)	5.8 / ha	5.31 / ha	5.16 / ha	
Contract length (years)	10 years	40 years	5 years	
Flexibility of conditions	Flexibility	No flexibility	No flexibility	
Monitoring conducted by	Self (25% random spot-checks)	Self (25% random spot-checks)	External	
Q1: Which option would you choose?	○	○	○	○
Q2: Which is your least preferred option?	○	○	○	○
Q3: Which is your 2nd preferred option?	○	○	○	○

Illustration of a discrete choice task

2. 'Conservation with grazing', where the length and timing of cattle access to land were determined by the needs of native plants and animals. For example, if someone has large wetland areas on their property, they could improve the success of brolga breeding by excluding cattle from certain areas when the brolgas are laying eggs and raising the chicks.

What this research means

Northern pastoralists regard themselves as custodians of the land and biodiversity, and the industry as a whole is keen to have this stewardship role acknowledged and formalised through contractual biodiversity conservation programs.

A diversity of contract options will help address biodiversity needs, while matching contract conditions with pastoralists' business conditions and personal preferences.

Biodiversity conservation may not always be incompatible with cattle grazing and certain contract features can encourage industry participation and improve the cost effectiveness of conservation programs.

For example 'conservation with grazing' allows grazing for parts of every year but puts biodiversity needs first, while contract flexibility options (such as the ability to negotiate a temporary suspension of a contract during exceptional circumstances) provides ways for pastoralists to reduce production risk.

Who participated?

Survey respondents: 104

Range of property sizes: 18 – 16,000 km^2

Average property size: 2,400 km^2

Total land managed by people surveyed: 1,650,00 km^2

Range of herd sizes: 50 – 110,000

Average herd size: Qld – 10,000, NT 30,000, WA 15,000

Average stocking rate: 9 head/km^2

Who participated in the research?

	Total	Queensland	Northern Territory	Western Australia
	(n=104)	(n=61)	(n=25)	(n=18)
Property size (km2)				
Average	2,411	1,010	5,150	3,354
Median	775	549	4,500	2,375
Minimum	18	40	20	18
Maximum	16,116	6,950	16,116	12,955
Total	250,750	61,610	128,738	60,368
Herd size (head)				
Average	15,925	10,302	29,872	15,259
Median	7,000	5,300	20,000	6,000
Minimum	50	600	300	50
Maximum	110,000	110,000	92,000	60,000
Total	1,656,200	628,422	746,800	274,659
Stocking rate (head/km2)				
Average	9.0	11.2	6.4	4.2
Stated size of 2011/12 profit of the beef enterprise (% of respondents)				
Large profit	7%	8%	8%	0%
Small profit	36%	37%	24%	50%
Broke even	21%	18%	36%	6%
Small loss	17%	13%	20%	25%
Large loss	20%	23%	12%	19%
Respondent's role on the property (% of respondents)				
Owner-Manager	62.1%	76.7%	40.0%	44.4%
(Co-)Owner of company	1.0%	0.0%	0.0%	5.6%
Employed manager	26.2%	15.0%	48.0%	33.3%
Family member	3.9%	3.3%	4.0%	5.6%
Other	6.8%	5.0%	8.0%	11.1%
Gender of primary respondent (% of respondents)				
Male	81.6%	83.3%	84.0%	77.8%
Age of primary respondent (% of respondents)				
<30 years	5.8%	6.7%	8.0%	0.0%
30-39 years	24.3%	13.3%	44.0%	33.3%
40-49 years	26.2%	30.0%	16.0%	27.8%
50-59 years	25.2%	28.3%	24.0%	16.7%
60+ years	18.5%	21.7%	8.0%	22.2%
Business structure (% of respondents)				
Family owned	80.8%	88.5%	60.0%	83.3%
Corporation owned	19.2%	11.5%	40.0%	16.7%
Length of current property ownership (% of respondents)				
<5 years	8.7%	10.0%	12.0%	0.0%
5-9 years	11.7%	5.0%	32.0%	5.6%
10-19 years	26.2%	21.7%	24.0%	44.4%
20-39 years	29.1%	31.7%	12.0%	44.4%
40+ years	24.3%	31.7%	20.0%	5.6%
Previously participated in a conservation program (% of respondents)				
Yes	32.7%	36.1%	32.0%	22.2%
Membership of industry / NRM organisation(s) (% of respondents)				
Yes	76.7%	68.3%	96.0%	77.8%

What the survey participants said

"It is important for land conservationists like us that this research is being done. We have to stay viable and ensure the land we leave for future generations is healthy."

"If the biodiversity conservation contracts were to be made available, that would definitely be a feasible option to look at. You would be a land manager and still make a living. It would make life on the land a lot more enjoyable."

Further information

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For more information visit http://www.nerpnorthern.edu.au/research/projects/12

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