

Nature Refuges in Queensland:

Report to The Pew Charitable Trusts
and Queensland Trust for Nature.

Protected Area Solutions, September 2018



Title

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Authors

Lyn Allen, Richard Ledger, Andrea Leverington, Fiona Leverington

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Cover photo

Mt Windsor Nature Refuge.
Photo: Fiona Leverington

Abbreviations

ACCU	Australian Carbon Credit Units
BCT	Biodiversity Conservation Trust (New South Wales)
CAR	comprehensive, adequate and representative (protected area system)
DES	Department of Environment and Science
FTE	full time equivalent
ha	hectares
IUCN	International Union for the Conservation of Nature
LRF	Land Restoration Fund
m	million
NRM	Natural resource management
NSW	New South Wales
pa	per annum
Qld	Queensland
QTfN	Queensland Trust for Nature

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Executive summary and recommendations

This report aims to assess the ability of the Nature Refuges program to deliver large scale, tangible conservation outcomes in Queensland.

Nature refuges are established under the *Nature Conservation Act 1992* (the Act) as a means of extending protected area status to privately held freehold and leasehold land. Declaration of nature refuges occurs by regulation and must be accompanied by a conservation agreement between the landholder and the Minister. The conservation agreement binds the parties and any successors to the title in the land. The agreement may be in perpetuity or may be for a set period of time. Nature refuges can be revoked by regulation.

Nature refuges are not exempt from mining related or other extractive activities including forestry. These activities will be prohibited in special wildlife reserves, soon to be established under 2018 amendments to the Act. Special wildlife reserves will be established in perpetuity, and require parliamentary consent for revocation.

In September 2018, there are 514 nature refuges covering a total area of more than 4.4 million hectares. Nine percent of nature refuges (46 agreements) hold 94% of the total area. Nearly 80% of nature refuges are less than 1 000 hectares, comprising only 1% of the total area. Conservancies hold almost a quarter of the nature refuges larger than 10 000 hectares, and comprise nearly 22% of the total area of nature refuges.

The area of nature refuges has grown significantly over the last decade, and they now comprise 30% of the area of the Queensland protected area estate.

The assessment involved analysing relevant literature and publicly available program-related material, the nature refuge database and other material made available by the Department of Environment, and responses to a questionnaire distributed to nature refuge landholders; targeted discussions with key stakeholders; and drew on the expertise and experience of the directors of Protected Area Solutions who have held key roles in biodiversity conservation programs in Queensland.

Conclusions

1. The Nature Refuges Program has delivered a substantial increase in the area of land held under conservation agreement, and as such is an **important component** of the Queensland protected area system. The proposed new category of special wildlife reserve is a useful improvement given it prohibits extractive activities and requires a management plan for each property.
2. It is difficult to determine how **effective** the nature refuge network is at protecting conservation values because there is no system or requirement for monitoring the condition of conservation values on nature refuges.
3. There is **very limited technical or financial support** available to nature refuge landholders from Queensland Government sources beyond the initial establishment negotiations. Follow-up assistance may be available from other sources such as local government, natural resource management bodies and conservancies depending on their priorities and available resources.
4. Nature refuges (and, when in place, special wildlife reserves) can contribute to nature conservation in different ways depending on their size and geographical location:
 - In the intensive use, coastal and agricultural zones where it may be difficult to significantly increase the area of national parks, nature refuges and special wildlife reserves can play an important role in maintaining remnant vegetation, restoring habitat including watercourses especially for threatened species, feral animal and weed control, and increasing connectivity.
 - In arid pastoral zone and savannah landscapes, nature refuges and special wildlife reserves can complement national parks to ensure sustainable land management including through changes to stocking rates and fire regimes, feral animal and weed control, and rehabilitating and/or protecting waterways.

Recommendations

Investment

Additional investment is required so that nature refuges and special wildlife reserves contribute effectively to the Queensland protected area system. This investment will contribute to:

- a) continuing to identify and negotiate with priority properties for inclusion in the nature refuge and special wildlife reserve network that will contribute to the conservation aims of a comprehensive, adequate and representative reserve system for Queensland, including promoting connectivity and resilience to climate change.

The Government will need to restore its knowledge of bioregional priorities, given the departure of relevant experts in recent years.

In negotiating agreements, landholder aspirations, needs and capacity need to be taken into account as well as the conservation values to be protected. Agreements need to be made as simple as possible, bearing in mind that they are binding legal documents.

- b) developing strong partnerships between nature refuge and special wildlife reserve landholders and program staff (public servants and/or third party organisations) who can assist landholders to improve their capacity for adaptive management and meeting conservation outcomes.

Both nature refuge landholders and departmental staff indicated that departmental assistance is currently focussed on negotiating conservation agreements, and that follow-up support (or even regular contact) is rarely available to landholders, especially in remote areas.

Nature refuge landholders may take advantage of complementary programs operated by resource management bodies and local governments, where such programs exist.

Unlike special wildlife reserves, there is no legislative requirement for management plans to be prepared and implemented for nature refuges. Strong relationships will facilitate on-going exchanges of knowledge and experience between landholders and conservation expertise, in turn informing adaptive management and strengthening the likelihood of good conservation outcomes. This virtuous cycle increases the likelihood that sustainable management approaches will be expanded beyond the nature refuge and special wildlife reserve boundaries.

This support may be provided by government, but could also be through long-term, dedicated funding for third party expertise that focuses on building collaboration, capacity and evidence-based practice, with adequate long-term funding, including discretionary funding for contracting local/regional advice sources.

Support programs should be integrated with public protected area management in order to promote connectivity, monitoring, and economies of scale.

- c) establishing and providing support and training for a monitoring and evaluation framework and system for nature refuges and special wildlife reserves that enable landholders to implement adaptive management to protect natural and cultural values, and which complement monitoring and impact assessment efforts at the regional and state-wide levels.

Government is best placed to resource and lead the development and implementation of a monitoring and evaluation system for the overall Queensland protected area system, including nature refuges and special wildlife reserves.

The system will need to be structured to allow different intensities of monitoring, differing capabilities, and to accommodate different scales of decision-making (property, sub-region, bioregion, state-wide).

Conservancies and some natural resource management bodies are developing monitoring and evaluation systems, for example based on the Open Standards for the Practice of Conservation. Government is also preparing state of the parks reporting. It will be important to draw this experience into an overall approach.

- d) assisting nature refuge and special wildlife reserve landholders through a variety of financial incentive mechanisms including grants and rebates, and longer-term financial assistance arrangements such as stewardship payments, offset and carbon credits.

Financial incentives need to be matched with the negotiated conservation outcomes, and be able to be flexibly administered. Examples include:

- allowing payments to individual landholders over time, rather than one-off payments
- using draw-down mechanisms that enable agreed amounts of funding to be released as particular milestones are met
- reinstating the rebate program for state fees and charges associated with declaring and managing land as nature refuges and special wildlife reserves
- advocating tax relief for improvements related to nature conservation where these do not have a production function, and are therefore ineligible expenses for income tax purposes
- enabling multiple programs to contribute to payment for ecosystem services
- subsidising landholders wishing to shift from a nature refuge to a special wildlife reserve to strengthen conservation outcomes.

Greater public accountability would result from publishing government financial contributions to managing nature refuges and special wildlife reserves.

- e) connecting with Indigenous ranger groups and other established and competent not-for-profit groups to undertake work on nature refuges and special wildlife reserves on a fee-for-service basis.

Nature refuge landholders can find that the additional management effort required for achieving conservation outcomes strains their available resources. As well as augmenting their ability to achieve conservation outcomes, partnering with Indigenous ranger groups provides opportunities for Traditional Owner visits to country to improve cultural and social outcomes.

The Queensland Government Indigenous Land and Sea Ranger Program could support work on nature refuges and special wildlife reserves, but would require additional investment to expand.

To achieve these elements, the funding available for the Nature Refuges program (including special wildlife reserves) should be increased to \$28 million per annum for managing the existing network, with the allocation increased over time by at least \$0.6 million per 100 000 hectares, as the coverage expands to meet protected area targets.

This estimate is based on the current Government allocation of funding and staffing to the program (\$4.6 million and 21 fulltime equivalents in 2018-19) and discussions with a conservancy managing large nature refuges in Queensland about its operational costs.

Program structure

The Nature Refuges Program should be structured and funded to reflect the differences in the size and function of nature refuges in the coastal and agricultural bioregions compared to those in the outback.

In the closely settled areas and agricultural zones, nature refuges play a critical role in protecting remnant habitats and regional connectivity. There are large numbers of relatively small nature refuges, which are potentially eligible to participate in programs such as the Land Restoration Fund and Biodiversity Offsets. Funding (\$2.8 million per annum i.e. 10%) for the program should focus on:

- continuing to form partnerships with local governments, existing catchment/natural resource management bodies including Queensland Trust For Nature, and taking a collaborative, group-oriented approach to supporting activities
- promoting the revolving fund model, and use conservation tenders/reverse auctions as funding mechanisms
- employing facilitators who can draw in resources and promote collaborative effort to ensure positive conservation outcomes, particularly in areas that are too small to be managed as an isolated conservation reserve.

In outback areas, nature refuges complement national parks to ensure sustainable land management and weed and feral animal control over large areas of (primarily) grazing land. There are small numbers of very large nature refuges. The program needs to recognise the distances and other barriers to collective effort by nature refuge holders, and that programs such as the Land Restoration Fund and Biodiversity Offsets will be inherently more difficult to access. Funding (\$25.2 million, 90%) should focus on:

- providing technical expertise within government and/or trusted third parties and encouraging frequent, personal interaction with large nature refuge and special wildlife reserve landholders, potentially on the basis of one advisor per landholder (for non-conservancy properties)
- building relationships to support nature refuge and special wildlife reserve landholders to adopt adaptive management approaches that result in measurable conservation outcomes, including monitoring and reporting
- providing access to a range of financial incentives that are matched to the conservation outcomes, and which are available on an ongoing basis. These may include stewardship payments, access to biodiversity offsets programs.
- supporting the re-instatement of the National Reserve System funding from the Australian Government, and negotiating with conservancies to purchase large properties for declaration as nature refuges or special wildlife reserves.

Investment in nature refuges and special wildlife reserves areas should be proportionate to the scale and significance of the conservation values secured. Each proposed area should be assessed on its merit however it is expected that new investment in Outback areas will be directed primarily towards larger private protected areas (greater than 5000ha) to support effective conservation planning, management and monitoring of conservation outcomes at scale.

1 Introduction and objectives

1.1 Scope and objectives of the report

The objective of this report is to:

- a) assess the Queensland Nature Refuges program in consultation with nature refuge landholders, departmental staff, relevant experts and key stakeholder organisations, with a focus on the ability of the program to deliver large scale, tangible conservation outcomes (including comparison with other private land mechanisms) and including recommendations for strengthening the program and consideration of the role of special wildlife reserves (assuming passage of the relevant legislation); and
- b) provide the basis for a proposal for government, including rationale for increased investment in private protected areas, priorities for expenditure and relationship with other strategies and programs.

This report recognises that The Pew Charitable Trusts has a particular interest in outback areas, highlighting the need to protect large intact landscapes that still exist in their natural state (Figure 1). This report only considers area within Queensland.

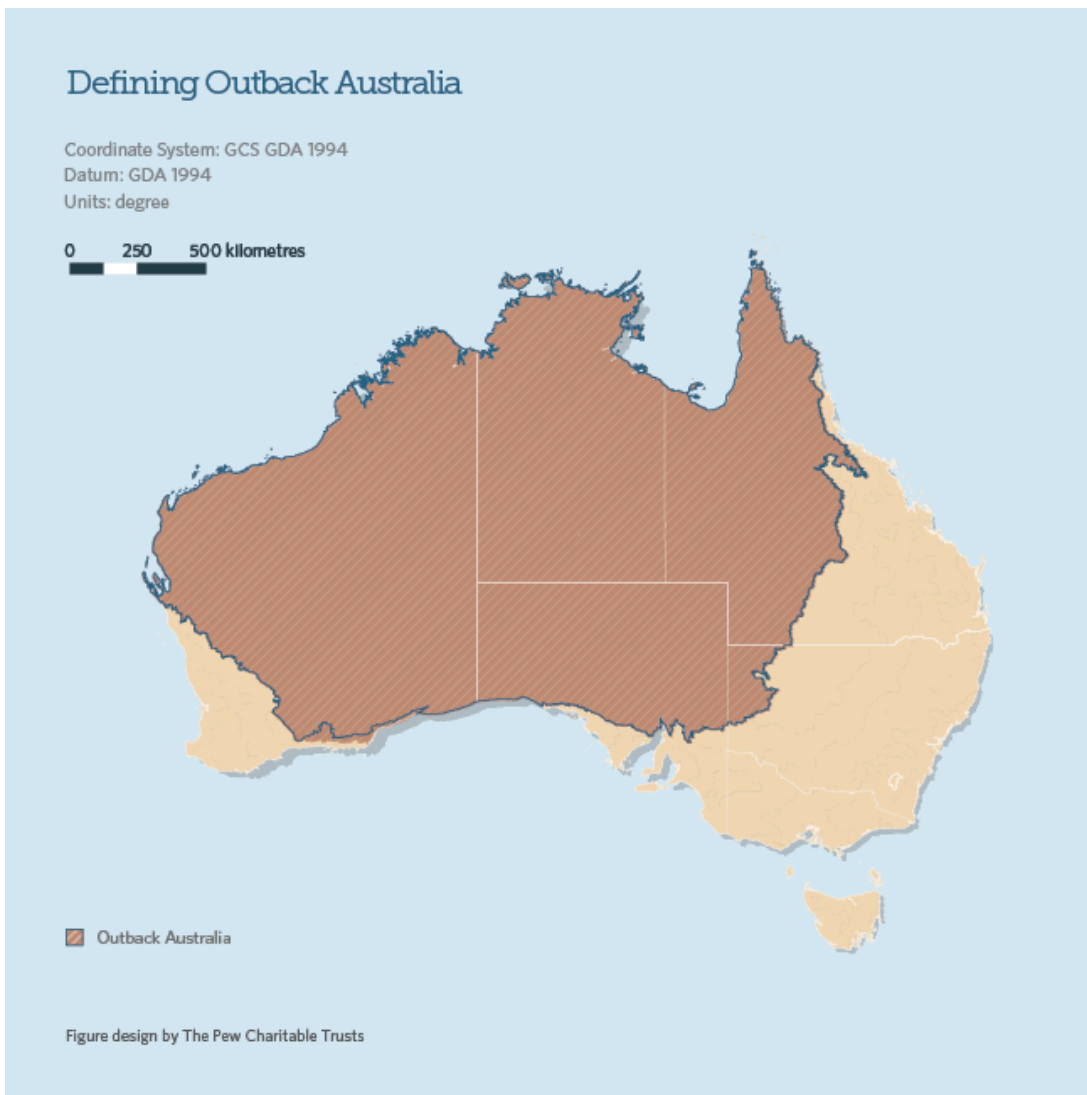


Figure 1 Outback Australia as defined by The Pew Charitable Trusts

1.2 Assessment methodology

The Queensland Nature Refuges program was assessed by considering the key questions and indicators identified in

Table 1, based on:

- scanning relevant literature to identify critical factors in successful private protected area systems and programs
- distributing a questionnaire to nature refuge landholders and analysing responses (see Appendix 1)
- targeted discussions with key stakeholders including from state and local government, natural resource management bodies and nature refuge landholders
- reviewing publicly available program-related material
- analysis of the nature refuge database and additional material made available by the Department of Environment and Science
- drawing on the expertise and experience of the directors of Protected Area Solutions who have held key roles in biodiversity conservation programs in Queensland.

Table 1: Assessment methodology

Assessment questions	Indicators	Methods/ tools
What is the coverage of the nature refuge network, and what is its contribution to the comprehensive, adequate and representative (CAR) network and protected area goals in Qld?	<ul style="list-style-type: none"> • Area, % of each bioregion and subregion • Coverage of regional ecosystems 	<ul style="list-style-type: none"> • Compile tables and maps of coverage. • Compile tables of coverage of regional ecosystems in each bioregion
How has the Nature Refuges Program been managed at a state and regional level?	<ul style="list-style-type: none"> • Strategic targeting of properties for inclusion • Negotiated and flexible arrangements • Extent and adequacy of resourcing • Effectiveness of communication with landholders • Level of satisfaction of landholders, including with follow-up service • Success of recruitment and renewal of time-bound nature refuges • Monitoring and evaluation 	<ul style="list-style-type: none"> • Publicly available material • Evidence provided by the Department of Environment and Science • Interviews with current and former staff • Interviews with key stakeholders • Landholder questionnaire results
How well are the nature refuges managed by landholders on the ground – i.e. in reducing threats and restoring integrity?	<ul style="list-style-type: none"> • Extent to which activities are undertaken to manage threats • Existence of some form of management plan or program • Level of commitment shown by landholders 	<ul style="list-style-type: none"> • Expert opinion • Questionnaire asking how the nature refuge is managed
How have these nature refuges contributed to conservation outcomes?	<ul style="list-style-type: none"> • Evidence of species, ecosystem or landscape recovery (photos, monitoring results, expert opinion or anecdotal) 	<ul style="list-style-type: none"> • Expert opinion • Questionnaire asking for evidence
What are the lessons from the journey to date? Have major positives and shortcomings contributed to success and failure?	<ul style="list-style-type: none"> • Review of success factors from literature, desktop data, survey and interviews. 	<ul style="list-style-type: none"> • Analysis of questionnaire results • Expert opinion and interviews

1.3 Structure of this report

Section 1 introduces the report; sets out the aims guiding the project; and describes the methodology used to assess the Nature Refuges program.

Section 2 provides an overview of nature refuges including the history, legislative and regulatory environment, and the current program elements, priorities and resources.

Section 3 describes the coverage of the nature refuge network, and its contribution to a comprehensive, adequate and representative (CAR) protected area system in Queensland.

Section 4 identifies the critical factors required for a successful private protected area system and maps the current Queensland Nature Refuges program against these.

Section 5 describes how the Nature Refuges program could be strengthened, including how and where coverage could be extended and other Queensland programs that could augment resources available for managing and expanding the nature refuge network.

Section 6 consolidates the conclusions and recommendations.

2 The Queensland Nature Refuge program

This section introduces the regulatory, funding and operational frameworks underpinning the Nature Refuges program in Queensland.

2.1 Legislative and policy frameworks

Nature refuges are established under the *Nature Conservation Act 1992*¹ (the Act) as a means of extending protected area status to privately held freehold and leasehold land.

Section 22² of the Act establishes that a nature refuge is to be managed to conserve significant cultural and natural resources, enable the controlled use of those resources, and provide for the interests of landholders to be considered. Declaration of nature refuges³ occurs by regulation⁴ and must be accompanied by a conservation agreement between the landholder and the Minister. The conservation agreement binds the parties and any successors to the title in the land. The agreement may be in perpetuity or may be for a set period of time but can be revoked by regulation.

Under the current legislation, nature refuges are not protected from mining related or other extractive activities including forestry. The special wildlife reserves category included in the Nature Conservation (Special Wildlife Reserves) and Other Legislation Amendment Bill 2018⁵ introduced to Parliament in February 2018 aims to create a level of protection for privately held land that is equivalent to national park status. Passage of the Bill will also amend the *Land Act* to add conservation as a recognised management outcome for pastoral leases, opening the way for land designated as nature refuges or special wildlife reserves to be managed primarily for conservation outcomes.

Nature refuges have been an important part of the overall Queensland protected area system since 1994 and built on the long-standing concept of fauna refuges under the previous *Fauna Conservation Act*⁶.

The original intent for nature refuges was to encourage multiple use, with landholders managing land for both sustainable use of resources and conservation of wildlife⁷. They began as a key element of the community conservation program, aimed at increasing community awareness and participation in delivering conservation outcomes. Initially driven by landholders self-selecting to be involved, more targeted programs to identify and secure potential nature refuges evolved as governments increasingly focused on achieving targets for the area under conservation tenure.

Over the past decade, Governments have also used nature refuges as mechanisms for supporting the implementation of specific policy initiatives, such as Blueprint for the Bush⁸, koala protection⁹, tenure resolution on Cape York¹⁰ and Great Barrier Reef water quality¹¹.

Prior to matching funding being discontinued in 2013, the National Reserve System Program¹² supported many acquisitions for the protected area system in Queensland, including the Cape York tenure program and land acquired by conservancies such as Bush Heritage Trust and the Australian Wildlife Conservancy. Entering a nature refuge agreement was a condition of the National Reserve System funding support for purchasing land that would be held privately by conservancies or as Aboriginal freehold.

Current Queensland government priorities¹³ for including properties in the nature refuge network are those which:

- *at a property level, contain significant conservation values that are of a sufficient size, condition and placement in the landscape to remain viable in the long-term;*
- *at a landscape level, increase representation of the state's biodiversity and establish or maintain landscape linkages and corridors;*
- *at a strategic level, possess exceptional values or circumstances that contribute to improved conservation in Queensland.*

1 <https://www.legislation.qld.gov.au/view/html/inforce/2017-07-03/act-1992-020>

2 <https://www.legislation.qld.gov.au/view/html/inforce/current/act-1992-020#sec.22>

3 <https://www.legislation.qld.gov.au/view/html/inforce/2017-07-03/act-1992-020#pt.4-div.4>

4 <https://www.legislation.qld.gov.au/view/html/inforce/2017-07-03/sl-1994-0135#pt.3>

5 <http://www.parliament.qld.gov.au/work-of-committees/committees/ITDEC/inquiries/current-inquiries/2NatCons2018>

6 Member for Pine Rivers, second reading debate, Hansard 5 May 1992, p 4862

7 Minister for Environment and Heritage, second reading speech, Nature Conservation Bill, Hansard 28 April, 1992 p4576-4585

8 <http://statements.qld.gov.au/Statement/46373>

9 <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/koala-nature-refuges.html>

10 <https://www.datsip.qld.gov.au/programs-initiatives/cape-york-peninsula-tenure-resolution-program>;

<https://www.capeyorknrm.com.au/news/story/2013/1049>

11 <https://www.reefplan.qld.gov.au/resources/assets/reef-plan-2013.pdf>

12 The Strategy for the National Reserve System 2009-2030 (Natural Resource Management Ministerial Council, 2009) was based on a landscape approach including a range of protected area types and governance styles, and emphasised the role of partnerships with landholders and conservancies. It used the term 'private protected areas' to include reserves such as nature refuges, and set particular criteria for them, including the requirements that they should be reserved for perpetuity and that any change in status should have ministerial or statutory approval. Although the strategy is now nearly ten years old, it has not been replaced.

13 https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the_nature_refuges_program.html#nature_refuge_agreements

Consideration is given to¹⁴:

- areas containing, or providing habitat for, threatened species of plants and animals
- habitats or vegetation types that are threatened, such as endangered and of concern regional ecosystems
- habitats and ecosystems that are poorly represented in existing protected areas
- remnant vegetation
- movement corridors for native animals, especially those linking areas of remnant vegetation or existing reserves and/or
- significant wetlands.

In September 2018, there are 514 nature refuges listed in Schedule 5 to the *Nature Conservation (Protected Areas) Regulation 1994*¹⁵ covering a total area of more than 4.4 million hectares and comprising 30% of the Queensland protected area estate. Of these, approximately 1 million hectares are held under agreements that are not in perpetuity (DES staff, pers comm). Information about how nature refuges contribute to protecting conservation values can be found in Section 3.

The draft Queensland Protected Area Strategy released in 2016, includes in its principles recognition of the role of private protected areas, including statements that “[P]rivate protected areas will be an increasingly important component of the protected area system and investment should be encouraged to recognise and support their contribution to the state’s conservation objectives” and that the “values and management of a protected area, rather than its ownership, will determine its level of protection”.

2.2 Administering the Nature Refuges program

During the 2015 Estimates hearings, the then Minister for Environment and Heritage Protection indicated that the Labor Government would provide new funding of \$5 million in 2015-16 to continue the NatureAssist program for securing nature refuges, an increase of \$1.8 million over funding available in 2014-15.¹⁶ The Minister stated that the funding would maintain 22 permanent staff to deliver NatureAssist and aimed to secure more than 100 000 hectares of new nature refuges in 2015-16, continue the climate change conservation analysis and partnership with James Cook University, and the collaborative relationship with Agforce and peak conservation partners.

The Department provided a breakdown of Nature Refuges program expenditure for the financial years 2013-14 to 2017-18¹⁷. Approximately 60% of expenditure over the five year period was paid as staff salaries, with 23% spent on incentives, grants and subsidies (Figure 2). The expenditure on the total Nature Refuges program in 2017-18 was approximately \$4.6 million.

¹⁴ https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the_nature_refuges_program.html

¹⁵ <https://www.legislation.qld.gov.au/view/html/inforce/2017-07-03/sl-1994-0135#sch.5>

¹⁶ Agriculture and Environment Committee Estimates Pre-Hearing Government Question On Notice No. Gov-10 asked on Wednesday, 29 July 2015 to Minister for Environment and Heritage Protection Stephen Miles.

¹⁷ Nick Weinert, pers. comm.

QLD GOVERNMENT EXPENDATURE NATURE REFUGES PROGRAM 2013-2018

■ Employee Related Expenses
 ■ Consulatants and Contractors
 ■ Grants and Subsidies
■ Incentives
 ■ Operating

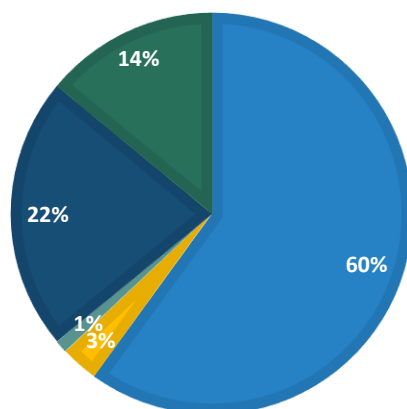


Figure 2 Queensland Government expenditure – Nature Refuges program 2013-18 (DES, pers. comm.).

The Department of Environment and Science¹⁸ advised that it currently has 21 full time equivalent staff working on the Nature Refuges program: 13.5 in the nature refuge section of Conservation Operations, four of whom are based in regional offices outside south-east Queensland; 2.5 employed in relation to Springvale Station Nature Refuge; and five in Conservation and Biodiversity Strategy.

Creation and management of special wildlife reserves is to be undertaken by Department of Environment and Science staff within the existing NatureAssist budget allocation¹⁹. The department anticipates that it may require one additional full- time equivalent position for every five to 10 special wildlife reserves that are created.

¹⁸ Pers. comm., 8 August 2018, David Shevill, Director – Conservation Operations, Department of Environment and Science; 9 August 2018 Narelle Sutherland, Director – Knowledge Information & Analysis Conservation and Biodiversity Strategy
¹⁹ <http://www.parliament.qld.gov.au/Documents/TableOffice/TabledPapers/2018/5618T198.pdf>

3 The nature refuge network

This section describes the coverage of the nature refuge network, and its contribution to a comprehensive, adequate and representative (CAR) protected area system in Queensland.

3.1 Current area of nature refuges

At the time of writing (September 2018), 514 nature refuges are listed in Schedule 5 to the *Nature Conservation (Protected Areas) Regulation 1994*²⁰ covering a total area of more than 4.4 million hectares and comprising 30% of the Queensland protected area estate. In addition to their intrinsic biodiversity values, the size and locations of nature refuges are important in determining their contribution to the protected area estate.

Forty-six nature refuges (9% of all nature refuges) are very large – over 10 000 hectares – and comprise over 94% of the total area under nature refuge agreements (Table 2). In contrast, 301 nature refuges (nearly 60%) are less than 100 hectares. Most of the small areas are in densely settled coastal bioregions, and these small areas can make a significant contribution to conservation of wildlife.

Table 2: Size distribution of nature refuges in Queensland

Size class (ha)	Number of nature refuges	% of the number of nature refuges	Area (ha)	% of area
>100 000	14	3%	2984098	68%
10 000 -100 000	32	6%	1166732	26%
1 000 -10 000	65	13%	212622	5%
100 -1 000	102	20%	34594	1%
10 -100	218	42%	8856	>1%
<10	83	16%	417	>1%
Total	514	100%	4407319	100%

The expansion over time of the Queensland protected area system including nature refuges is shown in Table 3 and Figure 3. Over the past ten years, nature refuges have grown significantly in area and in importance in their contribution to the total area of protected areas in Queensland (Figure 4).

²⁰ <https://www.legislation.qld.gov.au/view/html/inforce/2017-07-03/sl-1994-0135#sch.5>

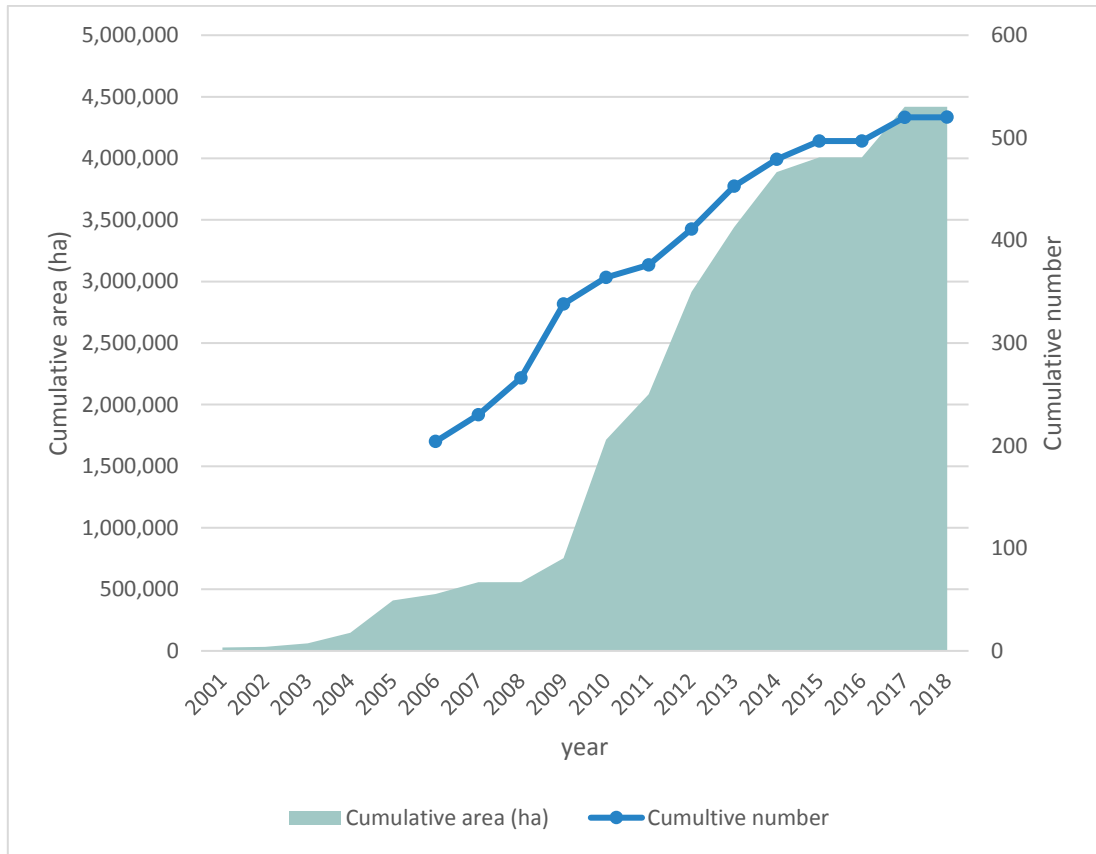


Figure 3 Cumulative numbers and area of nature refuges since 2005

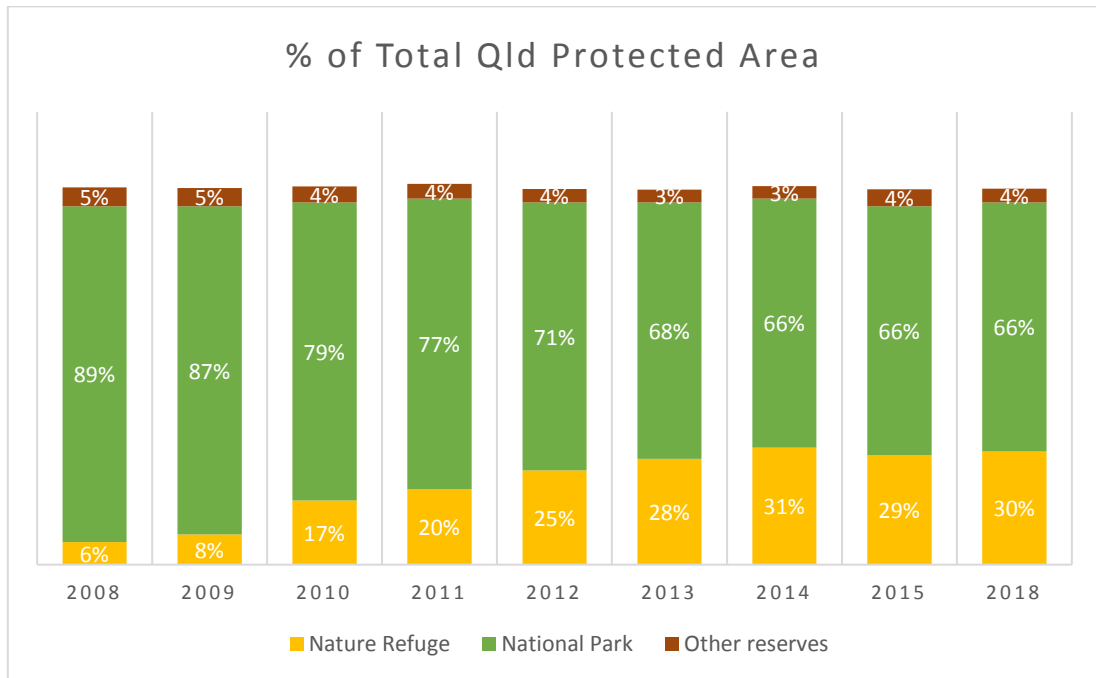


Figure 4 Changes in the relative contribution of the nature refuge network to total Queensland protected area system (Source: Parliamentary Library 2018: collated from Department of Environment and Science, Rate of change in extent of protected areas, 8 September 2016, and statistics provided by DES May 2018)

Table 3: Protected areas, Queensland, 2008 to 2015 and 2018

Protected area type	2008 (ha)	2009 (ha)	2010 (ha)	2011 (ha)	2012 (ha)	2013 (ha)	2014 (ha)	2015 (ha)	2018 (ha, from GIS data)
National park	7 530 914	7 685 468	7 781 428	7 780 393	6 911 089	6 911 877	6 645 598	7 120 938	7 490 113
National park (Cape York Peninsula Aboriginal Land)		193 918	274 636	274 636	1 253 500	1 309 538	1 664 329	1 933 959	2 068 252
National park (recovery)	17 687	27 671	30 912	32 949	37 231	37 231	Not used	Not used	Not used
National park (scientific)	52 221	52 221	51 811	53 189	53 189	53 189	Not used	Not used	53 189
Total national park	7 600 822	7 959 278	8 138 787	8 141 167	8 255 009	8 311 835	8 309 927	9 054 897	9 611 554
Nature refuge	554 891	750 989	1 711 863	2 082 687	2 914 222	3 438 004	3 887 431	4 005 582	4 418 882
Conservation park / regional park (general)	65 967	73 253	66 007	68 069	68 232	69 897	70 928	78 191	78 932
Resource reserve / regional park (resource use area)	356 644	366 667	366 382	344 707	341 564	340 972	340 972	530 508	450 993
Coordinated conservation area	2 121	2 121	2 121	2 121	2 121	2 121	2 121	2 121	2 121
Total - all protected areas	8 580 445	9 152 308	10 285 160	10 638 751	11 581 148	12 162 829	12 611 379	13 671 299	14 562 482
National parks as % of all protected areas	89%	87%	79%	77%	71%	68%	66%	66%	66%
Nature refuges as % of all protected areas	6%	8%	17%	20%	25%	28%	31%	29%	30%

Source: Parliamentary Library 2018: collated from Department of Environment and Science, Rate of change in extent of protected areas, 8 September 2016, and statistics provided by DES May 2018.

3.2 Current bioregional distribution of nature refuges

The coverage of nature refuges varies widely between bioregions (Table 4), due to factors including priorities for recruitment. The Mitchell Grass Downs in Queensland has the poorest representation of both nature refuges and national parks, while Cape York Peninsula Bioregion has the highest proportion of nature refuges as well as a high proportion of national parks, due largely to the Cape York Tenure Resolution process.

Table 4: Bioregional representation of nature refuges and other protected areas in Queensland (World Wide Fund for Nature, 2016)²¹.

Bioregion	Total area of bioregion in Qld (ha)	Nature refuge (ha)	Nature refuges (% bioregion)	Other protected areas (% bioregion)	All protected areas (% bioregion)	Nature refuges (% protected area in bioregion)
Wet Tropics	1 992 899	28 821	1.5%	49.4%	50.8%	2.8%
Cape York Peninsula	12 305 219	1 425 456	11.6%	19.8%	31.3%	37.0%
Southeast Queensland	6 248 417	31 150	0.5%	13.7%	14.2%	3.5%
Central Qld Coast	1 484 277	5,540	0.4%	12.9%	13.2%	2.8%
Channel Country	23 217 288	1 061 456	4.6%	6.7%	11.3%	40.6%
Northwest Highlands	7 343 635	196 414	2.7%	5.2%	7.8%	34.2%
Einiasleigh Uplands	11 625 726	285 052	2.5%	4.3%	6.7%	36.3%
Gulf Plains	21 910 942	368 489	1.7%	3.2%	4.8%	34.8%
Mulga Lands	18 605 811	179 097	1%	3.7%	4.6%	20.7%
New England Tableland	774 795	6 311	0.8%	3.5%	4.3%	18.9%
Brigalow Belt	36 528 106	341 613	0.9%	2.5%	3.4%	27.2%
Desert Uplands	6 941 095	34 506	0.5%	2.7%	3.2%	15.6%
Mitchell Grass Downs	24 162 329	16 082	0.1%	1.4%	1.5%	4.5%
TOTAL	173 140 541	3 979 987	2.3%	5.6%	7.9%	29.0%

²¹ WWF submission 2017 <https://www.parliament.qld.gov.au/documents/committees/AEC/2017/rpt40-NatureConserv/submissions/02.pdf>

The distribution of protected areas in Queensland is shown in Figure 5. In the western bioregions, most national parks are clustered on bioregional boundaries, a deliberate acquisition strategy to maximise diversity in a minimal area (F. Leverington, pers. comm.). This pattern appears to be largely repeated with nature refuges, meaning that a large swathe of rangelands country has no formal conservation protection.

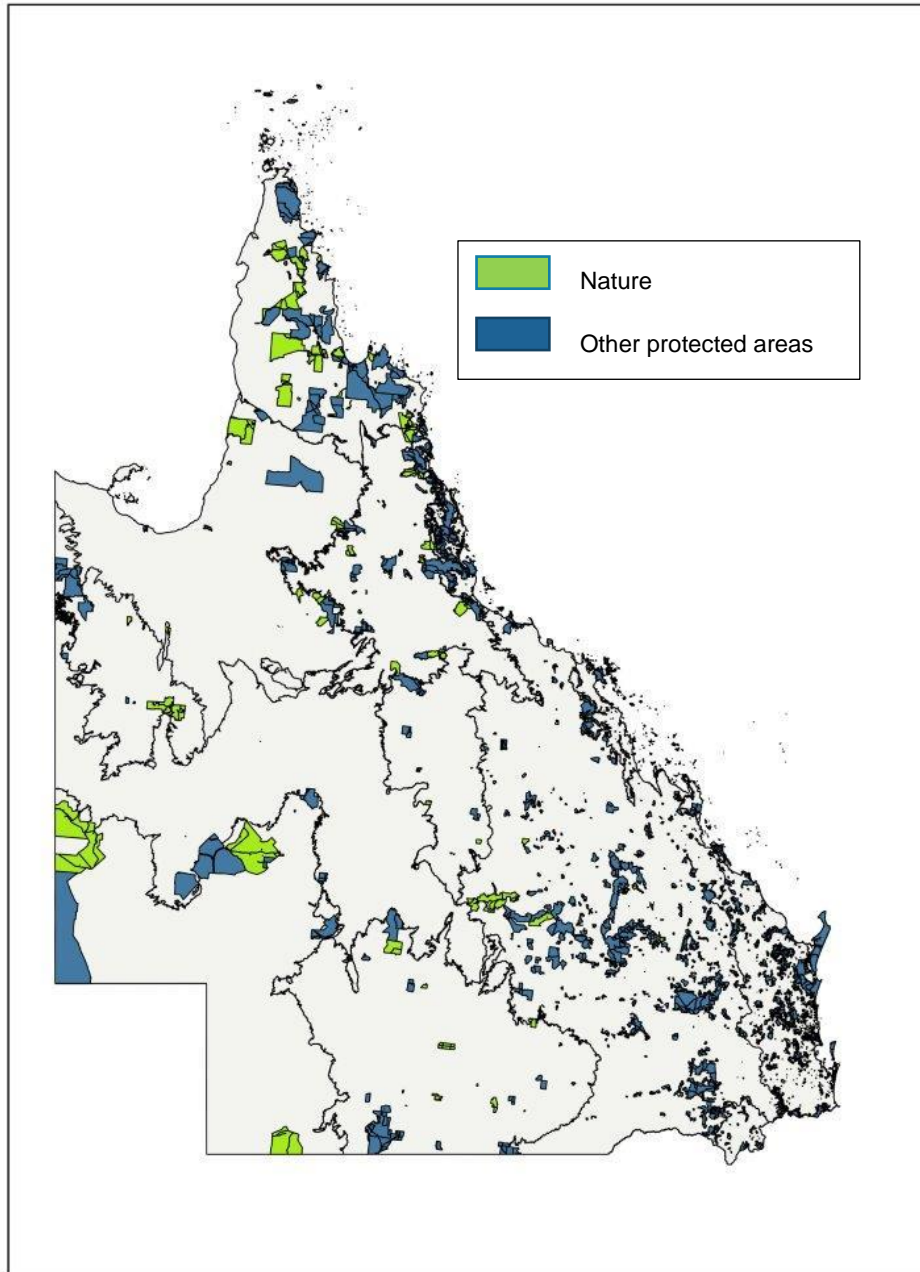


Figure 5: Distribution of nature refuges and other protected areas in Queensland
(Source: DES data, August 2018)

4 Assessment of Nature Refuges program

This section describes critical success features for establishing and maintaining a successful private protected area system and maps the current Queensland Nature Refuges program against these. Although focussed on nature refuges, other forms of private protected areas are also considered. The section has been prepared based on a scan of recent literature (including unpublished reports), supplemented by the results of the survey of nature refuge landholders and interviews with key stakeholders.

The methodology and results of the survey of nature refuge landholders are presented in Appendix 1. Consistent with the distribution of the numbers of nature refuges, a large majority of survey responses came from landholders managing small nature refuges located in coastal bioregions.

The critical success factors for successful private protected area systems are:

- strategic and targeted inclusions
- flexibility to meet the needs and aspirations of both landholders and governments
- flexible financial incentives
- support and partnerships
- monitoring, reporting and learning
- tenure security.

The current legislative, policy and administrative situation is mapped against each of the critical success features with a view to identifying matches, mis-matches and any gaps. These have been used to inform recommendations for strengthening the program.

4.1 Strategic and targeted inclusions

For private protected areas to contribute most effectively to conservation outcomes, they should be established in conjunction with strategic level plans that account for landscape, temporal and institutional concerns; conservation management of ecosystem processes; and resilience in the face of climate change (Perkins, 2015). Individual private protected areas should protect specific attributes (Perkins, 2015). Greiner (2015) also emphasises that targeting properties to include in private protected areas should be based on identifying biodiversity assets.

The *Nature Conservation Act* and *Regulations* do not specify what or how properties should be selected for declaration as nature refuges. Section 22 of the Act sets out very general management principles for nature refuges aimed at conserving significant cultural and natural resources while at the same time providing for controlled use of those resources and taking into account the interests of the landholder²².

Current Queensland Government policy as articulated through the NatureAssist program²³, prioritises negotiating nature refuge agreements with properties selected for their significant conservation values, connectivity and their predicted resilience to a changing climate. However, there is no clear link between these priorities and a national park acquisition program, and it was reported that there have been occasions in the past when there was direct competition rather than collaboration between the Nature Refuges program and the park acquisition program (DES former staff member, pers. comm.).

It is understood from discussions with agency staff that the focus of the Nature Refuges program is to consolidate the 'at-risk' nature refuges in the program. Term-agreements were offered around 2008-2010 to graziers to encourage graziers to sign up to nature refuge agreements. Now as these are moving towards the end of the agreement term, negotiations with existing and new owners to change over to perpetual agreements is a focus. The repercussions of the term agreements are that there are about 1 million hectares of nature refuges that are under non-perpetual agreements.

There has been a reported reduction in voluntary inquiries from landholders wishing to join the Nature Refuges program and develop conservation agreements. The department has reverted to very targeted contact, based on conservation priorities. Desktop analysis of landscape conservation issues and needs are undertaken. Field assessment and data collection then occur before initiating contact with prospective nature refuge properties.

In the early-mid 2000s, NatureAssist funding was allocated through competitive tender rounds. In their review of the use of conservation tenders in Australia, Rolfe et al. (2017) found that in the tenders performed to date, there has been sufficient participation for competition, but they have been relatively small scale, with limited potential for landholders to behave strategically. They conclude that it is still not known if tenders are effective in settings which require substantive

²² <https://www.legislation.qld.gov.au/view/html/inforce/current/act-1992-020#sec.22>

²³ <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/natureassist/>

behavioural changes by a large proportion of landholders. Greiner (2015) argues that competitive allocation of contracts has limited applicability in tropical savannas (extensive grazing areas).

The draft Queensland Protected Areas Strategy²⁴ released for public comment in May 2016, recognises that private protected areas complement public protected areas by creating landscape-scale linkages with public protected areas, and contribute to a CAR protected area system in Queensland.

Expanding the private protected area program should prioritise areas which make the greatest contribution towards establishing a comprehensive, adequate and representative (CAR) protected area system for Queensland, considering connectivity and resilience in the face of climate change. This should be an integrated strategy with national park acquisitions and other programs such as Indigenous Protected Areas, to maximise the gains across the landscape.

Section 5 of this report describes the potential for private protected areas to play a significant role in achieving the CAR objectives of the overall protected area system.

4.2 Flexibility to meet the needs and aspirations of landholders and government

Declaring a nature refuge requires the landholder and the government to have entered into a binding conservation agreement. Greiner (2015) found that flexibility about the agreement significantly and positively influences how readily landholders will embrace the program.

In general, the literature identifies that landholders are more willing to establish private protected areas, where covenants (agreements) are negotiated and tailored to suit individual needs including in relation to the duration of the agreement, and where they recognise seasonal and landscape scale issues (Greiner, 2015; England, 2015; Comerford, 2013). Covenants (agreements) may need to be designed differently for applying in high quality agricultural land compared with less or non-productive enterprises (Comerford, 2013).

Successful negotiations depend on establishing common goals; simplifying bureaucratic requirements; and matching the agreement to the capabilities of local and regional agencies and the landholder (Comerford, 2013; Moon & Cocklin, 2011).

Section 45 of the *Nature Conservation Act 1992* gives the parties to the conservation agreement considerable flexibility about what is included in the agreement. The only requirement is that the agreement must be consistent with the management principles for a nature refuge (set out in Section 22 of the Act) which are to conserve the area's significant cultural and natural resources; provide for the controlled use of these resources; and take into account the interests of landholders. The duration of the nature refuge and the conservation agreement are tied together, but are not set in the Act.

Survey respondents were overwhelmingly positive about nature refuges, emphasising the importance of nature conservation as part of their personal values. Seventy percent indicated that their nature refuge has helped them achieve business goals and aspirations, through promoting nature based activities (28%), potential for carbon abatement/emissions reduction (28%), better market advantage (19%), and improved resilience to drought (9%). Better returns due to land management was recognised by one respondent.

Although 55% of survey respondents indicated that they have a management plan for their nature refuge, these do not necessarily form part of their conservation agreement. Nor is it possible from the survey to determine whether large nature refuge landholders (other than conservancies) utilise conservation management plans for their properties. Management plans potentially enable greater specificity than conservation agreements, are likely to be more readily changed as circumstance change, and potentially provide a framework for adaptive management.

In response to the question about what guides the management of their nature refuge, 51% indicated that their management was guided by responding to threats as they arose, 48% said it was through a management plan or similar, 45% indicated it was through the nature refuge agreement and just under 6% used an annual schedule of works. A little over half of the survey respondents have a management plan (55%), and over 70% thought a management plan would be helpful. 93% said they would develop a management plan if there was funding and support to do so.

From the survey and interviews, reasons for landholders not wanting to enter into conservation agreements seem to focus on a mistrust of government and the long term implications of a long term encumbrance on their property. In particular, cheap freeholding options, changes to the title system (e.g. rolling leases), and uncertainty about vegetation management between 2012 and 2017 resulted in landholders being unwilling to add a perpetual encumbrance to their title.

Asked why other landholders may be reluctant to have a nature refuge on their land, 73% of respondents said a mistrust of government, 70.5% were concerned about loss of property rights and 62% thought it was about property valuations declining. Nearly half (47%) thought the process was too bureaucratic. Just under 30% thought loss of farm income was an issue, while 17% thought reluctance was due to time constraints associated with management. Other comments

²⁴ <https://cabinet.qld.gov.au/documents/2016/May/ProtArea/Attachments/DraftStrategy.PDF>

included concerns about lack of protection (e.g. from mining), wrong perceptions and fear about the program, and lack of incentives.

When asked if banks and real estate agents raised concerns about the possible effects of entering into a nature refuge, 10% of the landholders responded. The main concerns raised were the impediment on title and the effect of property value. A small number of respondents reported reduced income or productivity was raised.

Nature refuge conservation agreements are primarily negotiated by departmental staff. In addition, some nature refuges are negotiated by Queensland Trust for Nature on behalf of the department under a fee-for-service agreement. The number of nature refuges negotiated within a 12-month period is set at 12, based on the number the Department can process, with the possibility of more as resources allow. Agreements have evolved over time to take into consideration the working experience of the Nature Refuges program.

The legislative and policy frameworks allow agreements to be flexible and to take into account the aspirations of both the landholder and government. There is opportunity within the existing framework to improve the likelihood of applying adaptive management approaches.

4.3 Financial incentives

Financial incentives are a key element in encouraging landholder participation in establishing and managing private protected areas. Payments need to be effective, appropriate and flexible (Perkins, 2015), and encourage connectivity between protected areas and encourage the establishment of networks (Stolton et al., 2014).

For production landholders, financial incentives can reduce financial risk and uncertainty; support adoption of new conservation measures without personal financial outlay; and provide payments for reduced agricultural production (Moon & Cocklin, 2011). Greiner (2015) found that pastoralists grazing less productive land were significantly more likely to participate in conservation, and England (2015) observes that good quality conservation projects require maintenance and upkeep.

This implies that there is a case for on-going, longer-term incentives rather than one-off grants (Florance et al., 2016; Perkins, 2015; England, 2015), potentially including rate relief, tax deductibility, and/or stewardship payments. For government, the questions of additionality between various schemes and market payments for ecosystems services will need to be addressed (Fitzsimons, 2015).

Section 45(5)(a) of the *Nature Conservation Act 1992* enables a conservation agreement to contain terms that require the government to provide financial or other assistance. The Queensland Government currently has two forms of financial assistance for landholders with nature conservation agreements: NatureAssist²⁵ and Nature Refuge Landholder Grants²⁶.

NatureAssist funding is provided for projects with clear conservation outcomes and which enhance the resilience and sustainable management of a property. Once the works are agreed, the department manages the project and funds contractors to complete it. Landholders may negotiate to be project contractors. The types of activities favoured include²⁷:

- reducing the impacts of stock and pest animals on environmentally sensitive areas such as vine thickets, watercourses and wetlands by managing access.
- stabilising soils, improving water quality or increasing the value of wildlife habitat
- integrating the management of pest plants, pest animals and fire.

Activities that are part of day-to-day maintenance or required by legislation are not eligible for funding.

Nature Refuge Landholder Grants provide up to \$10 000 matched dollar for dollar (in cash and/or kind) by the landholder. Works must be completed within 6 months. The types of activities favoured include:

- control of environmental weeds to rehabilitate native vegetation areas
- installation of fencing to restrict/exclude stock accessing ecologically significant areas
- development and implementation of fire and pest animal management programs/plans
- revegetation of degraded areas and establishment of vegetation corridors

25 <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/natureassist/>

26 <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/landholder-grants.html>

27 <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/natureassist/>

- activities relevant to the conservation and management of the nature refuge values (e.g. fire access tracks, ecological surveys, off-stream stock watering points, reducing sediment loss, wildlife monitoring, environmental education/interpretive material).

From 2003 to 2006, the Queensland Government operated a Green Rewards program which enabled eligible nature refuge landowners to request reimbursement for land tax and transfer (stamp) duty paid for registering a nature refuge. In 2006, the then Minister announced that the reimbursement facility was to be extended to 2009-10 as part of the NatureAssist program²⁸. At that time \$112 500 had been reimbursed to 19 landholders. Not all nature refuge owners qualified for Green Rewards, for example lessees did not pay land tax on leasehold land and freehold landholders did not pay tax if the property was their principal place of residence or the land value was less than the current land tax threshold of \$450,000.

The draft Protected Areas Strategy²⁹ notes that NatureAssist incentives have been directed to adding additional areas of nature refuges rather than to their ongoing management. It suggests that the current range of incentives could be expanded to attract greater participation in nature refuges and better support landholders who already manage their land for conservation outcomes. Higher levels of assistance for on-going management could be in monetary or other forms.

Survey responses and interviews with key stakeholders reflected concern about incentives. Interviews with departmental staff indicated that financial incentives encouraged about half of the nature refuges to sign up, or about 2 million hectares. Some landholders, such as those at the very large Mt Windsor Nature Refuge, did not seek financial assistance.

Almost 90% of survey respondents indicated that the key reason they have nature refuges on their property is to permanently protect the natural values of their land. However, a majority also see nature refuges as a means for accessing funding for land management activities such as weed and pest control (72%); to access funding for infrastructure such as fencing or moving watering points (55%); and to reduce council rates (50%). Council rate relief only occurs in some areas, and many comments reflected the desire for this to happen across the state. In some cases, rates have increased to provide for a levy for pest management.

Many of the comments from respondents reflected a frustration that there were few if any incentives for landholders to enter into conservation agreements. Lack of general support and departmental contact were also raised.

Just under 70% of survey respondents indicated that they had received support for their nature refuge. The type of assistance included funding (87%), physical on-ground support (62%), advice (56%), help with planning or survey work (34%), and provision of materials, for example for fencing (25%). Over three quarters of those who responded to this question said it was sufficient for their needs.

The draft Protected Areas Strategy suggests that offering or facilitating access to alternative income streams such as environmental stewardship programs, carbon abatement programs or biodiversity offsets schemes could encourage landholders to refrain from adverse management decisions. The Government also intends to consider options for reducing government taxes and charges and other disincentives to private participation in conservation.

The experience of the newly established New South Wales Biodiversity Conservation Trust (see Appendix 2) which introduces annual stewardship payments for managing to protect, maintain and/or enhance nature conservation values will provide useful lessons about designing, operating and funding large scale schemes³⁰. The NSW Government is investing \$246.6 million in the initial four years to 2020–21, and \$70 million per annum in perpetuity, subject to program performance reviews. Although a useful guide to the level of investment required to establish a comprehensive support system for private protected areas in NSW, it is not clear how transferable this estimate is to Queensland. Targeted NSW Landscapes are predominantly in high value agricultural zones; farmers may therefore require a premium in order to manage them for conservation values. Some areas of high conservation value are likely to be remnants that exist only because they do not have value as productive land.

4.4 Support and partnerships

Education and extension are important complements to financial incentives for landholders to manage for conservation outcomes (Greiner, 2015). Private protected areas such as nature refuges are most likely to be effective where there are strong working relationships between landholders, government and non-government agencies such as natural resource management groups. Managing broad scale ecosystem processes requires building cooperation and alliances

²⁸ <http://statements.qld.gov.au/Statement/Id/45819>

²⁹ <https://cabinet.qld.gov.au/documents/2016/May/ProtArea/Attachments/DraftStrategy.PDF>

³⁰ The Biodiversity Conservation Act 2016 that establishes the BCT has been widely criticised for relying on voluntary landholder action for retaining vegetation and protecting natural and cultural values. The companion legislation Local Land Services Amendment Act 2016 repeals the former Vegetation Management Act 2003 which was instrumental in slowing rates of clearing across the state.

with government agencies, other landholders and other groups (Fitzsimons,2015). These partnerships facilitate exchange of advice, assistance and communication with landholders (Florance et al., 2016; Moon & Cocklin, 2011; England, 2015).

Participation in private protected areas may be inhibited by distrust of government stemming from frequent changes in policies, programs and agendas and from staff turnover (England, 2015). This can be addressed through strengthening relationships and partnerships between landholders and government agencies, and/or by having trusted third party 'qualified Covenant Scheme Providers' negotiate and sustain the agreements with landholders.

Stolton et al. (2014) propose establishing (or strengthening) 'national' private protected area support organisations to help determine effectiveness, provide training and develop support systems for participating landholders; underpinned by a best practice guide.

Hardy et al. (2017) found that covenant (agreement) breaches could be reduced by:

- focusing on supporting landholders in order to clarify their understanding of covenant obligations
- supporting new owners who inherit covenants
- supporting for elderly landholders who may need additional support to meet their obligations
- preventing breaches perpetrated by people who are not parties to the covenant, for example firewood collectors
- clear definition of who holds responsibility for monitoring, preventing and rectifying damage.

In Queensland, landholders with nature refuges may be supported in a number of ways:

- government officers who have roles in administering the Nature Refuges program, for example assessing applications for NatureAssist or other funding sources
- third party support, for example from the Queensland Trust for Nature or where regional natural resource management bodies and/or local government councils have prioritised investment in private protected areas
- self-investment, for example by not-for-profit landholders such as Bush Heritage Australia and the Australian Wildlife Conservancy.

Section 45(5)(b) of the *Nature Conservation Act 1992* enables a conservation agreement to contain terms that require the government to provide technical advice. In practice, conservation agreements use the terminology that government 'may' provide advice.

The departmental website³¹ indicates that it targets areas for nature refuges based on assessments by nature refuge officers and current program priorities. If suitable, the nature refuge officer explains the process of developing a nature refuge agreement and declaring a nature refuge and will discuss any concerns the landholder may have. If the landholder and the department wish to proceed, a draft nature refuge agreement is developed in consultation with the landholder. When a landholder signs a nature refuge agreement they are supported by nature refuge officers located in key locations across the state. These officers support landholders through one-on-one specialist advice on how to best protect the conservation values on their nature refuge.

Establishing a nature refuge may also provide access to Nature Refuges program partners,³² community groups and other programs that may provide additional support. This may include access to expertise, volunteers and specialist activities, such as revegetation programs and pest plant control.

If a property with a nature refuge is sold, nature refuge officers provide the new owners with a copy of the nature refuge agreement and visit them on-site to look at the individual aspects of their new place. The department has a system of notification of impending change of ownership on a nature refuge property. The system advises which block is changing hands and the people involved, so the department can initiate contact to renegotiate the existing conservation agreement or negotiate an entirely new agreement.

The Draft Queensland Protected Areas Strategy indicates that some local governments may be interested in formally delivering protected area outcomes on private land utilising nature refuges. It suggests considering ways in which local governments can be given the capacity to more directly deliver nature refuges, including as an alternative to *Land Act* covenants that are commonly used to deliver local Voluntary Conservation Agreement programs.

Staff from a South-east Queensland council advised that council had agreed to schedule several of its more important environmental parks as nature refuges. This provides a degree of long term protection from development pressures. They had also hoped to access NatureAssist funding to support managing the areas but have been advised that state funding will not be available. Resourcing for on-going management is a deterrent for expanding the council's reach.

³¹ https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the_nature_refuges_program.html

³² <https://www.ehp.qld.gov.au/ecosystems/nature-refuges/partnerships.html>

The Draft Queensland Protected Area Strategy³³ notes that many nature refuge landholders consider the current level of periodic contact and visits by nature refuges program staff is insufficient.

From the survey, just under 70% of respondents have received support for their nature refuge: 80% have received assistance from the Queensland Government; 48% from local government; (significantly Sunshine Coast Regional Council, which may reflect the survey bias); 28% from non-government organisations (e.g. Landcare). As noted previously, the type of assistance has been funding (87%), physical on-ground support (62%), advice (56%), help with planning or survey work (34%), and 25% have received provision of materials (e.g. fencing). Nearly 78% of those who responded to this question said it was sufficient for their needs. However, a number of comments indicated that the landholder has not had any contact since the nature refuge was established.

One of the regional nature refuge officers contacted indicated that he visits nature refuge properties once every five years and has no capacity or resources to provide newsletters or develop regular networking opportunities. This comment highlights one of the differences in availability of support for nature refuges in the outback and those in coastal regions that are more closely settled.

From discussions with the department, incentive funding with peer support and government services (via nature refuge officers) was most effective prior to staffing cuts in 2012. Without staffing and regular engagement, conservation networks dwindle. Agreements that support and foster collaborative engagement with conservation-focused organizations (conservancies, Indigenous rangers etc) with appropriate funding for both parties could improve uptake and outcomes relatively independently to government staffing levels.

Survey respondents indicated that although over 90% had contact with the department following the declaration of their nature refuge, contact has reduced over the years or had only occurred during the initial establishment of the nature refuge. Forty-four percent of respondents received advice about financial assistance; 35% have received assistance with planning; 20% have received compliance checks; 20% have received assistance with pest management and 17% received assistance with plant or animal surveys. Eleven percent received no assistance at all. Contact was made by email (82%), site visits (76%), and phone calls (67%). Landholders also initiated contact about an issue (44%). Survey respondents indicated that the usefulness of the advice varied, with a weighted average of 3.4 (out of 5 being most useful). One fifth of respondents found the contact no use at all.

Asked about networking, 47% of survey respondents indicated that they belong to Land for Wildlife, with 25% not belonging to any land/catchment management network. Nearly 90% of respondents felt there was value in being in touch with other nature refuge owners. The main reasons were to exchange skills and knowledge (82%), and to develop and share new ideas (76%). Working together at the local level (57%), and socialising with like-minded people (57%) were also seen as of value. Reasons for not seeing value in being in contact were split 50/50 between none in their area, or no time.

Nearly all respondents felt it was worth working with neighbours on a landscape/catchment level. Reasons for this were to make corridors, (87%), to increase the area managed for conservation (84%), and to control pests and weeds (84%).

Discussions with staff at the Murray Darling Basin Committee, Fitzroy Basin Association and Southern Gulf NRM, indicated that landholders have not been contacted about nature refuges in recent years. Contact with the departmental officers involved with nature refuges has also been lacking. The regional bodies generally supported nature refuges, and all indicated a willingness to participate in supporting nature refuge landholders with technical advice and practical on-ground support if funding was available. Departmental officers have indicated that they are open to partnership in the administering the Nature Refuges program, with possibilities including working with Queensland Trust for Nature, the natural resource management regional bodies and/or local councils.

4.5 Monitoring, reporting and learning

Assessing the effectiveness of private protected areas such as nature refuges to contribute to conservation outcomes requires monitoring and reporting (Florance et al., 2016; Perkins, 2015). Effective monitoring requires staff and time, knowing what to monitor, consistent monitoring methodologies, benchmark data, appropriate (long) time periods (Fitzsimons, 2015). Monitoring needs to be simple, using metrics that measure biodiversity in an objective and repeatable manner (Perkins, 2015; Moon & Cocklin, 2011), with systems for monitoring and assessing management effectiveness best to be co-designed so that they can be integrated into existing systems (Stolton et al., 2014).

In addressing where, how and what to monitor, Hardy et al. (2017) propose:

33 <https://cabinet.qld.gov.au/documents/2016/May/ProtArea/Attachments/DraftStrategy.PDF>

- focusing on known non-compliance hotspots, or areas with high ownership turnover
- aerial photography, remote sensing and predictive modelling in areas where annual visits are not practical
- landholder questioning, self-reporting and specialised land-holder questioning techniques.

Section 5(a) of the *Nature Conservation Act 1992* recognises that conservation of nature needs an integrated and comprehensive conservation strategy for the whole of Queensland that involves, among other things, gathering, researching, analysing, monitoring and disseminating information on nature. Neither the Act nor the Regulation provide for any requirement or guidance for monitoring. There is no specific mention of monitoring and reporting in relation to conservation agreements for nature refuges.

Budget output reporting has focused on additions to the schedule of nature refuges as areas declared and/or numbers of declared nature refuges. Although this performance indicator will have assisted to maintain the Nature Refuges program, it will inevitably lead to more attention being paid to recruiting new participants or increasing the area declared, rather than on the outcomes achieved through declaration.

The Value Based Park Management Framework³⁴ guides planning, monitoring, evaluation and reporting for public protected areas (national parks and reserves). The first Queensland State of Parks report is due to be published in 2018. To date, the management framework has not been adapted or applied to private protected areas such as nature refuges.

Although there is no systematic approach to monitoring the impact of nature refuges or their contribution to protection of natural and cultural values, requirements for monitoring and reporting can be included in conservation agreements. Where monitoring and reporting requirements are included in agreements, the information appears to be in the form of wildlife sightings, and records of management events such as rehabilitation efforts and fires. Of the eight sample conservation agreements made available to this review, only two specified that monitoring and reporting would be required.

Bush Heritage Australia³⁵ and the Australian Wildlife Conservancy³⁶ place high priority on research, monitoring and assessing impact as integral parts of their property management regimes. These activities are core business for conservation land managers in order to demonstrate that their programs are successful, and are key elements in their branding and communications strategies, and for attracting funding and donations. For example, Bush Heritage Australia has adopted the Open Standards for the Practice of Conservation³⁷ as its framework for planning, implementing and monitoring its activities, and publishes scorecards for its properties³⁸. More information about the Bush Heritage model and investment can be found in Section 5.3.

When asked about the status of the conservation values of their nature refuge, 69% of survey recipients said that the conservation values on their property had either significantly improved (44%), or slightly improved (25%). Nearly 20% said the values had stayed the same, and 11% thought they had declined. One respondent thought the values had significantly declined.

Over 57% thought the improvement was due to improved weed management, 51% thought it was due to re-planting, 45% due to the long-term restoration of the land. 15% thought it was better stock management and destocking. Better management of pest animals (18%) and better fire management (12%) may reflect the overrepresentation of respondents managing smaller, coastal nature refuges. Only one respondent (3%) thought fencing of waterways/watering points was relevant. The main indicators of improvements were fewer weeds (74%), increased wildlife (63%), increased diversity of native species (59%). Just under 15% saw improved water quality as the main change. Respondent comments reflected that much of the evidence is anecdotal, with nearly 87% of the respondents citing causal inspections as the basis for their responses. 46% of respondents use photo points, and 37% use formal monitoring to assess the condition of their properties.

A number of the natural resource management regional bodies have monitoring systems that they would willing expand to cover nature refuges if there was financial support to do so. However, the monitoring systems appear to have been developed separately, and the concern is that there is no common basis for the monitoring taking place. These systems are separate again to those implemented by the conservancies, although some are based on the Open Standards for the Practice of Conservation. This variation may inhibit the development and implementation of a state-wide monitoring and reporting system for nature refuges.

The Draft Queensland Protected Area Strategy³⁹ notes that a broad range of actions, such as landholder engagement, monitoring, reporting and compliance, are necessary to maintain and improve conservation values on, and the integrity of, private protected areas. However, it does not propose new/strengthened measures for monitoring the effectiveness of nature refuges or other forms of private protected areas.

³⁴ <https://www.npsr.qld.gov.au/managing/framework/>

³⁵ <https://www.bushheritage.org.au>

³⁶ <http://www.australianwildlife.org>

³⁷ <http://cmp-openstandards.org>

³⁸ <https://www.bushheritage.org.au/what-we-do/science>

³⁹ <https://cabinet.qld.gov.au/documents/2016/May/ProtArea/Attachments/DraftStrategy.PDF>

As demonstrated in section 3, the area of nature refuges has grown significantly in the last decade, and now contributes 30% of the area of the Queensland protected area system. However, in the absence of systematic monitoring of the conservation values, it is not possible to determine how well the nature refuge network is contributing to protecting and maintaining these values across the full range of properties.

4.6 Tenure security

A protected area is defined by the International Union for the Conservation of Nature (IUCN)⁴⁰ as:

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (Dudley, 2008)

Within the definition of a protected area, the IUCN category system provides options for a range of protected area sizes, circumstances and most importantly management objectives (Table 5). Any category of protected area can be under any type of ownership and governance (Dudley, 2008), so nature refuges may be allocated to any of the categories.

Table 5: Categories of Protected Areas outlined by the IUCN (Source: Dudley, 2008)

IUCN category	Description
I	<p>Ia. Strict Nature Reserve: strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.</p> <p>Ib. Wilderness Area: to protect large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.</p>
II	National Park: to protect a large natural or near natural areas set aside to protect large scale ecological processes, along with the complement of species and ecosystem characteristics of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
III	Natural Monument or Feature: to protect a specific natural monument, which can be a landform, seamount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.
IV	Habitat/Species Management Area: to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.
V	Protected Landscape/Seascape: where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
VI	Protected Area with sustainable use of natural resources: conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

The official Australian list of protected areas is maintained in the Collaborative Australian Protected Area Database (CAPAD), which was last updated in 2016 with advice from its state and territory partners (Department of the Environment and Energy, 2016). In this database, most nature refuges (98.5%) are listed as Category VI i.e. areas where sustainable use of natural resources co-exists with nature conservation. Some of the conservancy properties are

⁴⁰ <https://www.iucn.org/theme/protected-areas/about>

listed as Category II and IV and one as Category IB (Table 6). Conservancy properties represent about 22% of the total area of nature refuges⁴¹.

Table 6: Queensland nature refuges with allocated categories (from CAPAD 2016)

Category	Number	% of area
IB	1	< 1%
II	3	10%
IV	4	2%
VI	503	88%
Total	511	100%

4.6.1 Leasehold land

Nature refuges can be declared over freehold and leasehold land. Under the current provision of the *Land Act*, conservation is not necessarily consistent with primary purpose of a lease. Tenure reform is therefore required to ensure conservation is a legitimate use (Perkins, 2015).

The Nature Conservation (Special Wildlife Reserves) and Other Legislation Amendment Bill 2018⁴² currently before the Queensland Parliament, clarifies that where a protected area declaration is made over a *Land Act* lease, the purpose of the underlying lease is consistent with nature conservation. This amendment will clarify beyond doubt that conservation-focussed management activities on nature refuges declared over leasehold land are consistent with lease requirements.

4.6.2 Protection from extractive activities

Under current legislation, nature refuges can be subject to a range of incompatible land uses, such as mineral resource and forestry activities. It is not practical for all nature refuges to be protected from such uses, as this would greatly impede the ability for nature refuges to be declared in areas where there are potential mineral or forestry interests. Removal of mining interests is both time-consuming and expensive, and often impossible. However, until recently this has meant that all nature refuges are open to new exploration and mining activities, including land owned by the conservancies and specifically purchased and managed for conservation (with funds from the Australian Government and donors). This has been a significant issue, which was brought to a head with properties such as Bimblebox, a nature refuge purchased with National Reserve System funding.

The Land, Explosives and Other Legislation Amendment Bill 2017 is currently before Queensland Parliament. Among other things, the Bill amends the *Cape York Peninsula Heritage Act 2007*. The amendments are intended to ensure that the existing prohibition on resource extraction activities on the Shelburne Bay and Bromley properties on Cape York Peninsula is retained following the transfer of the properties to Aboriginal freehold land. These areas will also be declared as nature refuges and will protect the outstanding cultural, environmental and landscape values. In their submissions to the parliamentary committee considering the Bill, the Olkola Aboriginal Corporation, the Batavia Traditional Owners Aboriginal Corporation and the Chuulangun Aboriginal Corporation requested amendments included at a minimum, sections of their Aboriginal freehold land, including areas of nature refuges. In its report, the committee recommended “*that the Minister consider the request of these organisations and a possible formal mechanism or process that allows Aboriginal corporations to nominate Aboriginal land, at the request of the traditional owners, for protection from mining interests*”⁴³.

The Nature Conservation (Special Wildlife Reserves) and Other Legislation Amendment Bill 2018 establishes special wildlife reserves as a new class of voluntary, privately owned or managed protected area that protects land of outstanding conservation value from incompatible land uses, comparable with national park status.

41 The CAPAD list is not always accurate as it relies on the people reporting having a detailed understanding of the IUCN categories. Further validation would be required to be confident that the objectives and use of each nature refuge are accurately reflected.

42 <https://www.parliament.qld.gov.au/work-of-committees/committees/ITDEC/inquiries/current-inquiries/2NatCons2018>

43 <https://www.parliament.qld.gov.au/documents/committees/SDNRAIDC/2018/4LandExpOLAB2018/4-rpt-19Apr2018.pdf>

Special wildlife reserves can apply to freehold and leasehold tenures. Negotiation and declaration of the reserves is entirely voluntary and conservation agreements cannot impact on the rights and/or interests of other parties including native title holders without their consent.

Clause 21B (1) of the Bill sets out the management principles for special wildlife reserves:

- (a) permanently protect the area's exceptional natural and cultural resources and values;
- (b) protect the area's exceptional scientific values; and
- (c) present the area's cultural and natural resources and values; and
- (d) ensure the only use of the area is nature-based and ecologically sustainable.

Legally binding, perpetual conservation agreements and associated management programs will be negotiated for each special wildlife reserve, detailing the management outcomes and actions for ensuring enduring protection of the conservation values consistent with the management objectives.

It is not yet clear what criteria government will apply to determine what constitutes *exceptional* natural and cultural resources and values. Concerns were raised that few landholders will sign up, and that there will be strong concerns about particular properties with mining opportunities by other government departments with mining interests.

4.6.3 Native Title

The Queensland Government takes the view that declaring nature refuges does not affect native title rights and interests, and therefore does not treat them as future acts.

A future act is a proposal to deal with land in a way that affects native title rights and interests and must comply with the procedures set out in the *Native Title Act 1993* (Cth). These procedures vary depending on the nature of the future act. Under the procedures, the National Native Title Tribunal makes determinations about whether a future act attracting the right to negotiate may be done, may be done subject to conditions, or must not be done. There has been no determination of future acts with respect to declarations of nature refuges.

In 2013, Cape York Land Council acting on behalf of the Atambaya clan challenged the declaration of the Steve Irwin Reserve Nature Refuge in the Planning and Environment Court.⁴⁴ The issues in dispute narrowed during the course of the hearing, with the result that the only matter for determination was that the proposed management intent for the nature refuge was insufficiently described, and rendered the proposal and the declaration of the nature refuge invalid. The Court found that the proposed management intent did not require more detailed description, and that even if more description was required, this would not invalidate the declaration of the nature refuge.

The Court accepted that the Atambaya clan members are Traditional Owners with a legitimate interest in the conservation and management of the cultural resources relating to their ancestors which are likely to be present in Steve Irwin Nature Refuge. The Court found that there was no legislative grounds for a nature refuge to be invalidated if the proposed management intent failed to address cultural resources; and that concerns in respect of Aboriginal cultural heritage are expressly addressed by the *Aboriginal Cultural Heritage Act 2003* and are unaffected by the declaration of the nature refuge.

The fact that Cape York Land Council made the application to the Land and Environment Court and has not pursued it with the National Native Title Tribunal suggests that it is not confident that declaring nature refuges constitutes a future act under the *Native Title Act*.

Cape York Land Council raised similar concerns about the rights of native title holders in relation to the proposal for stronger protection for nature conservation through declaration of special wildlife reserves included in the Nature Conservation (Special Wildlife Reserves) and Other Legislation Amendment Bill 2018. The Government responded by inserting Clauses 43A and 43B which require the Minister to give written notice to any person with an interest in the land considered for special wildlife reserve status, including native title holders. The proposed declaration can only proceed with the written consent of such interested parties.

44 Nona & Ors v The Hon Andrew Powell MP & Anor [2013] QPEC 46 <https://archive.sclqld.org.au/qjudgment/2013/QPEC13-046.pdf>

5 Strengthening the Nature Refuges program

This section proposes ways in which the Nature Refuges program could be strengthened, including how and where nature refuge coverage could be extended and other Queensland programs that could supplement resources available through the Nature Refuges program. It also estimates what additional resources are warranted for effective management and expansion of the nature refuge network.

5.1 Refining the conservation role of the nature refuge network

Queensland's land settlement and land-use patterns have had a major influence on biodiversity and the resulting threats vary from east to west, reflected by the amount of remnant vegetation in each bioregion and the level of connectivity remaining. From the land use and biodiversity viewpoint, Queensland can be divided into three broad zones in which nature refuges and special wildlife reserves can play different roles: coastal intensive use, agricultural zone and arid pastoral and savannah zone (

Table 7).

Investment in nature refuges and special wildlife reserves areas should be proportionate to the scale and significance of the conservation values secured. Each proposed area should be assessed on its merit however it is expected that new investment in Outback areas will be directed primarily towards larger private protected areas (greater than 5000ha) to support effective conservation planning, management and monitoring of conservation outcomes at scale.

Table 7: Broad zones of Queensland and possible nature refuge/special wildlife reserve strategies

'Zone' and bioregions	Land use and clearing	Nature refuge/special wildlife reserve strategies
Coastal intensive use zone: Wet Tropics, Southeast Queensland and Central Coast bioregions	The more productive parts of the coastal zone - extensively cleared for timber and farming in the past. Contains some of Australia's fastest growing regional centres -continued population growth and increasing human footprint placing more pressure on the remaining terrestrial and aquatic biodiversity. Very high natural biodiversity: wide array of threats. High representation of national parks and many small nature refuges.	Small nature refuges can play an important role <ul style="list-style-type: none"> • Maintain remnant vegetation including wetlands, even in small areas, especially in Reef catchments • Restore habitat, especially for threatened species • Increase connectivity • Feral animal control (especially cats and foxes) and pest plant control Special wildlife reserves unlikely
Agricultural zone: part of the Brigalow Belt, New England Tablelands, east Mulga Lands	Agricultural zone - stretches from the Atherton Tableland south to the cotton country of St George Patchwork of cleared farming and grazing country dissected by rougher country that retains good levels of biodiversity. Challenges for biodiversity include keeping watercourses healthy and re-establishing links in the landscape especially in areas subject to past extensive clearing. Poor representation of national parks and difficult to identify large intact areas for reservation	Nature refuges (and potentially special wildlife reserves) are critical in areas where national park representation is very difficult to achieve. <ul style="list-style-type: none"> • Maintain remnant vegetation in productive lands, even in small areas • Restore habitat, especially for threatened species • Increase connectivity • Feral animal control (especially cats, rabbits and foxes) and pest plant control • Restore watercourses
Arid pastoral zone and savannah: Cape York Peninsula, Gulf, Northwest Highlands, Einasleigh Uplands, Channel Country, western Mulga Lands, Desert Uplands; parts of the Brigalow Belt	The less developed arid inland pastoral zone and the savannah country - have experienced little habitat loss from clearing. Many examples of species extinctions and contractions (for example, the bilby) with introduction of sheep and cattle and impact of feral animals. Much of this vast zone maintains relatively good levels of biodiversity and connectivity	Large nature refuges (and potentially special wildlife reserves) to complement national parks and to ensure sustainable land management and feral animal control <ul style="list-style-type: none"> • Ensure some parts of the landscape are free from stock and artificial waterpoints • Protect waterways from stock • Restore degraded lands through more sustainable stocking rates

	Feral animals, mining and unsustainable grazing main threats to biodiversity. <ul style="list-style-type: none"> Feral animal control (especially cats, rabbits and foxes)
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Considering these strategies, different priorities could be assigned for the roles of nature refuges in each bioregion (Table 8)⁴⁵.

Table 8: Indicative priorities for new nature refuges and special wildlife reserves for Queensland's bioregions

Key roles of nature refuges	Brigalow Belt	Cape York Peninsula	Central Queensland Coast	Channel Country	Desert Uplands	Einiasleigh Uplands	Gulf Plains	Mitchell Grass	Mulga Lands	Northwest Highlands	New England	South-east	Wet Tropics
Complement and buffer national parks and existing nature refuges	▲	●	▲	●	●	●	●	●	●	●	▲	▲	▲
Large areas of intact landscape – sustainable management with minimal or low stocking rates	●	▲	●	▲	▲	▲	▲	▲	▲	▲			●
Re-establish connectivity – small scale	●		▲		▲				▲		▲	▲	▲
Re-establish or maintain connectivity – large scale	▲	●	▲	●	▲	●	●	●	▲	●	▲	●	●
Revegetation/restoration/regrowth	▲		▲		●				●		▲	▲	▲

Key: ▲ primary strategy component – critical importance
 ● secondary strategy component - very high importance

5.2 Integrating nature refuges into targets for Queensland protected areas

This section highlights the role and importance that nature refuges play in contributing to the protected area estate, and provides some guidance about the potential location and total area for nature refuges to assist with meeting protected area targets.

Under the Convention on Biological Diversity, Australia has committed to conservation targets including target 11:

'By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.' (CBD COP 10, 2010).

The area target has already been met by Australia as a whole, with progress in the last decade due largely to the contribution of large Indigenous Protected Areas (Taylor, 2017). However, there is still work to be done towards meeting protected areas being ecologically representative, well-connected and well-managed.

⁴⁵ Priorities based on previous work of Queensland Government (Department of Environment and Resource Management, 2011b).

Principles and targets for the protected area system in Queensland as a whole were defined in the Queensland Biodiversity Strategy (Department of Environment and Resource Management, 2011a) and its companion document Protected Areas for the Future (Department of Environment and Resource Management, 2011b) in 2011.

The Labor election commitments for the 2017 state election included⁴⁶:

Labor endorse the Convention on Biological Diversity target to preserve 17% of the Australian landmass. To meet this target, Labor will expand Queensland's protected area estate to include representative and viable samples of the state's ecological communities and bio-geographical regions.

Reserve selection in Queensland has been built on the CAR principles (aiming for a comprehensive, adequate and representative protected area system) since the 1970s. Modern science considering climate change has concurred that this remain as a very useful approach (Groves et al., 2012; Anderson & Ferree, 2010; Comer et al., 2015; Dunlop & Murphy, 2012).

Progress towards the CAR system is usually measured in two ways: the proportion of each bioregion and subregion included in protected areas; and the proportion to which regional ecosystems are protected in the bioregion. It is often assumed that the targets for each bioregion and regional ecosystem should reflect the overall area national target (17%). However, work in Queensland (Department of Environment and Resource Management, 2011b) recommended a variable target for the proportion of both bioregions and regional ecosystems. This is based on practicality, as well as on good science which points out that scaled targets are the best way to take into account the fact that some ecosystems require more extensive protection than others, based on factors including their extent or rarity, their level of threat, their importance to biodiversity, and the most suitable mechanisms for protection (Pressey et al., 2003). The scaled targets relate to both overall area and the proportional balance of national parks and nature refuges.

For example, the Wet Tropics Bioregion is a relatively small area of extremely high importance to biodiversity with a high number of rare and threatened and endemic species and ecosystems. It is therefore appropriate that this bioregion has a high degree of protection. In contrast, the Mitchell Grass Downs is a large bioregion with comparatively little variation and much lower species and ecosystem diversity. Targets for formal protection also need to consider the existing level of protection: bioregions are currently conserved in national parks at levels varying from 1.6% (Mitchell Grass Downs) to 49% (Wet Tropics), making a flat target of 17% for each bioregion impractical.

Suggested targets for growth across the protected area system are presented in Figure 6. As part of reaching the overall state target of 17%, it is assumed that nature refuges will continue to comprise approximately 30% of the total protected area. This is an increase from 4.4 million hectares in 2018 to 12.3 million hectares. Special wildlife reserves will be considered within the nature refuge target.

The targets provide a starting point for considering how nature refuges, special nature reserves and other protected areas can be planned in an integrated manner to achieve the CAR system in a practical and effective way.

The targets were developed while one of the report authors (F. Leverington) was working on the protected areas program in the then Department of Environment and Natural Resources. Targets for individual bioregions have not been presented for the purpose of this report, but are available from Protected Area Solutions.

⁴⁶ https://www.queenslandlabor.org/media/20088/alp_state_platform_2017_02.pdf

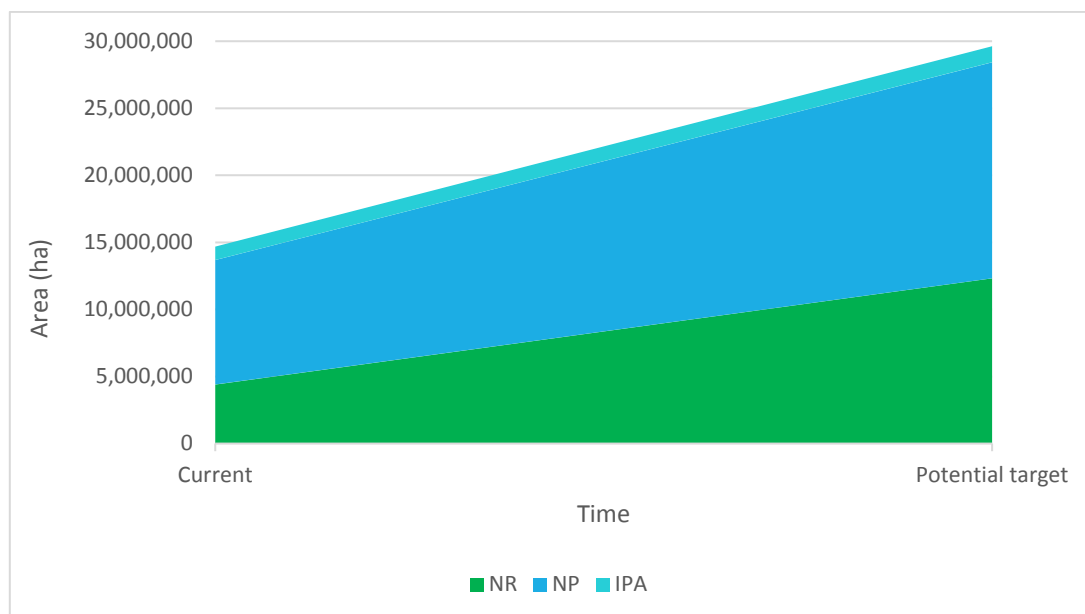


Figure 6: Suggested growth in national parks, nature refuges, and Indigenous Protected Areas augmenting the nature refuge⁴⁷ network

In addition to direct funding for the Nature Refuges program, there are other programs that could augment the resources available for establishing and managing nature refuges and special wildlife reserves.

5.2.1 Land Restoration Fund

As part of its election commitments, the Queensland Labor Government is establishing a \$500 million Land Restoration Fund⁴⁸ that aims to expand carbon farming by supporting land-sector projects that deliver clear environmental and economic co-benefits. Carbon farming refers to land management activities that reduce carbon emissions into the atmosphere, such as planting trees, protecting native forest by reducing land clearing, managing bushfires through savanna burning and changing farming practices to increase soil carbon.

The Land Restoration Fund will support carbon farming projects that provide additional benefits beyond carbon storage or avoided emissions, including projects that:

- sequester carbon in land and soil to reduce Queensland’s carbon emissions
- boost revenue sources for farmers and other landholders in regional and rural Queensland
- deliver social and community benefits especially for Traditional Owners
- improve Great Barrier Reef water quality
- enhance wetlands for fisheries and hatcheries improving commercial fishing opportunities
- strengthen critical habitat protection
- restore ecosystems and degraded land.

As yet there are no publicly available details about how the fund will operate so it is not currently possible to identify the opportunities available through the Land Restoration Fund for establishing nature refuges or special wildlife reserves with any certainty.

The following description is based on the implication on the Land Restoration Fund website that it will adopt the Australian Carbon Credit Units (ACCU) system. An ACCU is a tradable certificate equivalent to one tonne of carbon dioxide equivalent either stored or avoided, achieved by ‘eligible activities’. As at 31 March 2018, almost 5 million Australian Carbon Credit Units had been issued to more than 100 Queensland land-sector carbon farming projects under the Australian Government’s Emission Reduction Fund.

There are a number of requirements that must be satisfied before a project can be declared eligible, and there are ongoing requirements in undertaking an eligible project. The requirements include an approved methodology for the

⁴⁷ Once legislation is passed, the special wildlife reserves can be considered within the area suggested for nature refuges.

⁴⁸ <https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund>

type of project⁴⁹ and that net abatement is additional to what would occur in the absence of the project. Applicability will be influenced by the capacity of the landholder to establish baselines and monitor and achieve change, and the relative costs of doing so compared to the income generated from the credits.

A methodology for rangeland management has not yet been determined for the purposes of the Land Restoration Fund, although it has been discussed in a number of forums (D. Butler, pers. comm.). Until such a methodology is available, nature refuge landholders in outback Queensland are unlikely to benefit from the Land Restoration Fund.

Revegetation, particularly in the Brigalow Belt, has significant potential to meet the Land Restoration Fund requirements and coastal regions such as the Atherton Tablelands are also considered a high priority for reforestation. It will be possible to have such areas considered for scheduling as nature refuges, with the Department advising that this can be accommodated within existing legislation (D. Butler, pers. comm.). Savanna burning in north-west Queensland is an additional option for the Land Restoration Fund, and can potentially be co-located with nature refuges. The Land Restoration Fund is also seeking to specifically work with Aboriginal communities, and carbon management in existing and future nature refuges on Cape York has potential as a source of funding to assist to manage these areas.

5.2.2 Indigenous Land and Sea Rangers

The Queensland Indigenous Land and Sea Ranger Program⁵⁰ is an \$11 million per annum program which assists Aboriginal and Torres Strait Islander organisations with grants to employ Indigenous Land and Sea ranger teams. This complements the Indigenous Ranger program supported by the Australian Government which currently supports more than 20 Indigenous ranger groups across Queensland⁵¹.

The program provides training, networking and partnership support for ranger groups working in remote and regional communities. Rangers deliver negotiated work plans that reflect Traditional Owner, local community, and Queensland Government priorities. Their activities include a wide range of environmental and cultural heritage conservation and community engagement activities.

Conservation work can include feral animal and pest plant control, soil conservation, cultural heritage recording and protection, biodiversity and species monitoring and managed burns. The Department of Environment and Science works with ranger groups to diversify their income and attract other investors.

The program works across all tenures within the land and sea country of the Traditional Owners involved with each program, including on nature refuges. This program has the potential to do more to support work on nature refuges. To do so, will require guaranteed on-going funding and additional investment to expand to provide significant support the Nature Refuges program .

5.2.3 Cape York tenure resolution

The Cape York Peninsula Tenure Resolution Program⁵² returns ownership and management of identified lands on Cape York Peninsula to local Aboriginal Traditional Owners, while ensuring the protection of Cape York Peninsula's iconic natural and cultural values.

Aboriginal freehold land allows Traditional Owners to return to live on country and pursue employment and business opportunities in land management, grazing, and mining. Areas with outstanding environmental values are being dedicated as jointly managed national parks, providing for conservation, recreation and tourism. The state is also converting existing national parks to jointly managed national parks, with Aboriginal freehold as the underlying tenure.

To date, tenure resolution has been completed for 22 properties and 18 existing national parks, resulting in the transfer of almost 3 700 990 hectares of land on Cape York Peninsula to Aboriginal ownership:

- 25 Aboriginal freehold transfers outside national parks (more than 1.5 million hectares)
- 18 existing national parks converted to jointly managed national park (Cape York Peninsula Aboriginal Land or CYPAL) (nearly 1.4 million hectares)
- 10 new national parks (CYPAL) (nearly 703 962 hectares)
- 19 nature refuges on Aboriginal freehold (nearly 303 450 hectares)
- more than 105 165 hectares of jointly managed resources reserves

49 <http://www.environment.gov.au/climate-change/government/emissions-reduction-fund/methods>

50 <https://www.qld.gov.au/environment/plants-animals/community/about-rangers>

51 <https://www.pmc.gov.au/indigenous-affairs/environment/indigenous-land-and-sea-management-projects>

52 <https://www.datsip.qld.gov.au/programs-initiatives/cape-york-peninsula-tenure-resolution-program>

Fifteen existing national parks in the Cape York Peninsula Region, covering almost 413 300 hectares, are yet to be converted to national park (CYPAL). The Daintree National Park is also scheduled to be converted to jointly managed national park (CYPAL).

However, this program is close to achieving its current targets, and unless further funding is provided, few additional protected areas including nature refuges will be declared through this process. Managers of nature refuges under this program are also seeking funds to assist with land management activities (R. Macleod pers. comm., August 2018)

5.2.4 Biodiversity offsets

At a state level in Queensland, environmental offsets⁵³ are defined under the Environmental Offsets Act 2014 as activities undertaken to counterbalance a significant residual impact of a prescribed activity on a prescribed environmental matter. An environmental offset must achieve a conservation outcome for the impacted prescribed environmental matter. A conservation outcome is achieved by an environmental offset that maintains the status quo of the prescribed environmental matter as if the development and environmental offset had not occurred i.e. a requirement for 'like for like' offsets.

An environmental offset may be required as a condition of approval where—following consideration of avoidance and mitigation measures—a prescribed activity is likely to result in a significant residual impact on a prescribed environmental matter(s). A list of prescribed environmental matters is outlined in the schedules to the *Environmental Offsets Regulation 2014*.

The Queensland Offsets Project Management Committee is established to manage funds received as financial settlement offsets and invest in the strategic delivery of environmental offset projects. This program provides an opportunity for interested landholders to obtain funding to deliver projects which benefit particular environmental matters.

The register of offsets lists offset payments that will be used to deliver projects in various locations for the corresponding environmental matters. As part of securing an offset, the area of offset must have security of tenure. Declaring a nature refuge is recognised as one way of securing tenure for conservation purposes, with a requirement for a management plan and associated monitoring and reporting for at least 20 years as part of the offset agreement. There are no offset areas under this program as yet (September 2018).

Offset funds can be used for management and reporting, and incentives are available to landholders to enter into offset projects. Incentive payments are fixed by policy, and are calculated by considering the land value (in coastal bioregions) and by the productivity lost per hectare (for inland bioregions).⁵⁴ It is expected that negotiations for offsets, particularly for impacted regional ecosystems in the Brigalow Belt, will be rolled out in the second half of 2019, following detailed analysis of the most appropriate method for establishing offsets in this region (A. Leverington pers. comm.). Whether the financial incentives for landholders to undertake this commitment are sufficient is yet to be demonstrated, and concerns about the limitations of the incentive payments have been raised in the review of the offsets framework currently being undertaken by the Department of Environment and Science (A. Leverington, pers.comm.).

5.2.5 Queensland Trust for Nature

The Queensland Trust for Nature⁵⁵ is a not-for-profit organisation which aims to achieve enduring nature conservation outcomes on privately-owned land. Its primary focus is the connectivity of strategic wildlife corridors in more closely settled areas of Queensland. Since it was established in 2004, Queensland Trust for Nature has protected over 100 000 hectares of land with high ecological significance using a combination of nature refuge covenants under the *Nature Conservation Act* and voluntary declarations under the *Vegetation Management Act*. Queensland Trust for Nature has been collaborating with the department since 2015 to secure nature refuges on a fee-for-service basis, and has successfully negotiated 15 nature refuges across Queensland. It manages an offsets program focused on koala habitat.

Queensland Trust for Nature operates a revolving fund which acquires and place agreements over land of high ecological value then resells the land onto the private market. This enables the fund to reinvest sale proceeds into acquiring and protecting additional areas. It has acquired and protected properties of varying sizes from 22 to 74 300 hectares, covering 56 regional ecosystems and providing habitat for 69 endangered, vulnerable or threatened species⁷⁷, and maintains Aroona Station and Avoid Island as permanent reserves.

53 <https://www.qld.gov.au/environment/pollution/management/offsets/what-when>

54 Queensland Environmental Offsets Policy (V1.6)

55 <http://qtnf.org.au>

It also operates as a third party biodiversity offset provider in Southeast Queensland. The "Offsets with Outcomes" project is designed to provide a meaningful alternative to aggregated biodiversity offsets for developers in existing project areas. The program aims to protect large areas of connected koala habitat. It also harnesses funds from the sale of offsets to revegetate and manage substantially disturbed areas in order to provide connectivity between existing protected areas. Queensland Trust for Nature continues to manage the habitat in accordance with the approval conditions even once the land is on-sold to private purchasers. This means purchasers effectively purchased managed vegetation and offsets funds are used to fund the Trust's ongoing management actions. Nature refuge declarations are an important part of the protection applied to these parcels before they are on-sold.

5.2.6 Drought and climate adaptation program

The GrazingFutures⁵⁶ program aims to help graziers in Western Queensland build resilience in their businesses and to recover from drought as quickly as possible. GrazingFutures is funded by the Queensland Government's \$17.5 million Drought and Climate Adaptation Program, which aims to improve drought preparedness and resilience for Queensland producers. It offers training and extension services to help graziers better plan and manage for future droughts.

It will focus on recovery through improvements in business efficiency, land management and animal production while also identifying how landholders can gain knowledge and skills for resilience for future droughts. The project will link in to the Grazing Best Management Practices initiative (Grazing) to develop services and activities. While this project does not relate directly to nature refuges, it does encourage sustainable stocking practices which is a key issue for improving the conservation values of grazing lands.

The national debate about drought policy and funding provides an opportunity to advocate for a more rational approach to land management in arid and semi-arid areas of Queensland including options for extending nature refuges, prior to any efforts to rebuild herd numbers.

5.3 Expanding the role of conservancies

Bush Heritage Australia, Australian Wildlife Conservancy and the South Endeavour Trust are independent, not-for-profit charitable organisations which buy and manage land of high conservation value⁵⁷. Most of the large property purchases were supported by the National Reserve System Program, with a condition of support being that the lands became nature refuges. It is unclear whether the program managers or the donors who supported the purchases realised that most of the larger properties were leasehold and therefore under a legal obligation to be grazed; and were still subject to extractive industries. This situation will be resolved by the amendments currently being considered to the *Land Act* included in the Nature Conservation (Special Wildlife Reserves) and Other Legislation Bill which clarify that the management principles governing nature refuges and special wildlife reserves are recognised for the purposes of the Act, and the creation of the special wildlife reserve category which offers full protection to declared properties once all encumbrances are cleared.

In Queensland, properties managed by these conservancies cover approximately 966 000 hectares, with most properties scheduled as nature refuges. Conservancy properties comprise nearly 22% of all nature refuges (by area) and almost a quarter of the nature refuges larger than 10 000 hectares (by number). In addition, conservancies such as Bush Heritage Australia have partnered with nature refuge holders such as the Olkola Aboriginal Corporation to develop a healthy country plan that articulates the direction for investment, land management and conservation activities.

Each conservancy places a high value on research, monitoring and adaptive management in order to maintain and improve the nature conservation values of their properties. As noted above in section 4.5, they can have sophisticated and transparent monitoring and reporting systems that provide regular and reliable assessments of impact of their management on conservation values.

Conservancies self-fund their operations primarily through private donations. Additional investment in outright purchases by conservation interests with capacity for monitoring, evaluation and flexible management have high potential as a cost-effective way of adding to the protected area system.

At a program level, Fitzsimons (2015) recommends the reinstatement of National Reserve System funding which was able to quickly access funding to purchase properties outright as they became available, and to leverage private funding for acquisition and management.

5.4 What additional resources are needed for the Nature Refuges program?

This section roughly estimates the cost of actively managing nature refuges to meet the management principles enshrined in the legislation and reflected in conservation agreements, based on resourcing information provided by the Department and a conservancy managing large areas in Queensland as nature refuges. In addition to the work to enrol new landholders already undertaken by the Department, the estimates allow for technical support for landholders;

⁵⁶ <https://www.daf.qld.gov.au/business-priorities/environment/drought/dcap/grazingfutures>

⁵⁷ Note that the Wildlife Preservation Society of Queensland also owns and manages three small nature refuges in south east Queensland.

monitoring and impact assessment systems that feed into adaptive management at the property level and to regional/state-wide frameworks for tracking outcomes; and contributing to operational costs for any additional costs to landholders for managing their properties for conservation outcomes (Table 9). Key assumptions are added as footnotes to the table.

Two figures are used for annual operational costs per hectare. One is an estimate of the full cost of managing a property, including landholder obligations that exist independently of the conservation agreement such as managing weeds, feral animals and fire regimes, preventing soil erosion and any other leasehold conditions. The second isolates the additional (marginal) costs of managing for nature conservation outcomes, estimated to be in the order of 25% of total cost (DES, pers. comm.).

The cost of managing the existing nature refuge network is estimated to be in the order of \$28 million per annum, an increase of approximately \$24 million per annum over current budgets. This represents a 9 % increase in the overall, annual protected area budget (national parks plus nature refuges) of \$252.6 million in 2018-19⁵⁸.

Increasing the area of nature refuges to 12.3 million hectares, requires an additional 7.9 million hectares to be scheduled. If the additional area is to be achieved by 2030, on average 660 000 hectares need to be added each year. Table 9 includes estimates of the costs required to manage new areas as they are added.

The Queensland Government currently allocates \$248 million per annum to managing national parks. Nature refuges contribute approximately 30% of the total area of protected areas in Queensland. A very crude measure of the cost effectiveness of private protected areas is that if these nature refuges were managed as national parks, it would be reasonable to suggest that the protected area system would cost the Government at least another \$74 million per annum. However, this does not discriminate between the funding required for highly visited and intensively managed national parks and those in more remote areas.

These estimates do not take into account the potential for programs such as the Land Restoration Fund and Biodiversity Offsets to fund managing nature refuges.

Table 9 Estimates of additional funding for the Nature Refuge Program

Delivering improved management of the existing nature refuge network	Full management costs	Marginal cost of managing for conservation outcomes (25% of full cost) ^{****}
Estimated average cost per hectare of effective conservation management *	\$6.09/ha	\$1.52/ha
Current extent of nature refuge network (September 2018)	4.4 million ha	4.4 million ha
Estimated cost for effective management of existing network	\$26.8 million	\$6.7 million
Existing program budget – recruitment and establishment of new nature refuges **	\$4.6 million	\$4.6 million
Less contribution to management costs by private conservancies ***	- \$2.9 million	- \$2.9 million
Total cost per annum to manage the existing network	\$28.4 million	\$8.4 million
Proposed budget increase in 2019-2020	\$23.8 million	\$3.8 million
Proposed increase as a percentage of current total protected area budget (\$252.6m)	9.4%	1.5%

58 <https://budget.qld.gov.au/files/SDS-Environment%20and%20Science-2018-19.pdf>

Building the network – management costs for new nature refuges and wildlife reserves	Full management costs	Marginal cost of managing for conservation outcomes (25% of full cost)
Estimated annual management cost for each additional 100,000 hectares (\$6.09/ha)	\$0.6 million	\$0.15 million
Annual incremental increase in funding to achieve 12.3 million ha by 2030	\$4.0 million per year	\$0.7 million per year
Proposed annual increment as a percentage of the total 2018-19 protected area budget (\$252.6m)	1.6%	0.3%

* Based on full operating costs per ha for conservancy properties (without staff) of \$2.44 per hectare; assumes: additional 15 FTE pa at \$150 000 per annum per FTE including vehicle and travel allowance costs for field staff (DES, pers. comm.)

** Assumes current 2017-18 budget of \$4.6 million per annum is sufficient to recruit and establish new nature refuges

*** Assumes the Queensland Government need not fund the full operating costs of conservancies. Discounted by 50% for current area of 966 000 hectares.

**** Assumes government pays only the marginal cost of managing for conservation outcomes, and that landholders are covering the cost of managing to 'duty of care' standards. This will vary greatly according to the values to be protected on individual properties. Additional funding would be required for establishing and implementing extension and monitoring systems.

6 Conclusions and recommendations

This section draws together the conclusions arising from the analysis and makes recommendations for strengthening the Nature Refuges program.

6.1 Conclusions

Nature refuges were initially envisaged as a mechanism for engaging landholders in voluntary nature conservation activities with little emphasis on how they could contribute to regional and state-wide nature conservation goals. The program has become more strategic and targeted over time, with nature refuges now forming a significant (30%) proportion of the Queensland protected area system. In 2016, nature refuges contributed between a third and 40% of the area of protected areas in the Cape York Peninsula, Channel Country, Northwest Highlands, Einasleigh Uplands and Gulf Plains bioregions.⁵⁹

The Nature Refuges program has delivered a substantial increase in the area of land held under conservation agreement, and as such is an important component of the Queensland protected area system. The new category of special wildlife reserve is a useful improvement given it prohibits extractive activities and requires a management plan for each property.

The Queensland Government previously held a sophisticated understanding of the priorities required to increase the extent of protected areas in order to achieve a CAR system consistent with contemporary international standards. Such a system needs to be reviewed and re-instated through an integrated planning approach to bioregions with national parks, nature refuges and other protected area types. Extending the protected area system will be a mix of acquisitions for national parks and scheduling of nature refuges (and special wildlife reserves).

Nature refuges and special wildlife reserves can contribute to nature conservation in different ways depending on their size and geographical location:

- In the intensive use, coastal and agricultural zones where it may be difficult to significantly increase the area of national parks, nature refuges and special wildlife reserves can play an important role in maintaining remnant vegetation, restoring habitat including watercourses especially for threatened species, feral animal and weed control, and increasing connectivity.
- In arid pastoral zone and savannah landscapes, nature refuges and special wildlife reserves can complement national parks to ensure sustainable land management including through changes to stocking rates and fire regimes, feral animal and weed control, and rehabilitating and/or protecting waterways.

In order for Queensland to make substantial progress towards a comprehensive, adequate and representative protected area system, the total area of land held as nature refuge and special wildlife reserves should be almost trebled to 12.3 million hectares by 2030.

Given the reliance on nature refuges for achieving the aims of the protected area system, it is therefore critical that they are managed in ways that ensure that their natural and cultural values are maintained and protected.

There is very limited technical or financial support available to nature refuge landholders from Queensland Government sources beyond the initial establishment negotiations. Follow-up assistance may be available from other sources such as local government, natural resource management bodies and conservancies depending on their priorities and available resources.

The Nature Refuges program does not monitor the impact of nature refuges. (This is not unusual for government programs; for example, the first Queensland State of the Parks report is due in 2018). Regionally based nature refuge officers are hard-pressed to resource regular visits to declared nature refuges, in light of successive Governments' priority for adding new properties to the network. This means that even anecdotal evidence is limited.

At the individual property level, the landholder survey suggests that very few landholders undertake more than observations as a way of determining the impact of their management. The exceptions are where third parties such as conservancies or natural resource management bodies have resources available to establish and implement monitoring frameworks. Conservancies currently hold around a fifth of the land scheduled as nature refuges, so their contribution is significant.

It is difficult to determine how effective the nature refuge network is at protecting conservation values because there is no system or requirement for monitoring the condition of these values on nature refuges.

It is apparent from Table 10 that further work needs to be undertaken to develop a successful private protected area system in Queensland. Some of the elements exist, such as the capacity to target and strategically identify potential additions to the estate, and flexibility around meeting the needs and aspirations of landholders and governments. Tenure security will be improved once the special wildlife reserve category is in place. The key elements are missing include

⁵⁹ in WWF submission 2017 <https://www.parliament.qld.gov.au/documents/committees/AEC/2017/rpt40-NatureConserv/submissions/02.pdf>

financial incentives sufficient to meet the desired conservation outcomes and support and partnerships to assist nature refuge landholders with their management. Without a state-wide monitoring and reporting framework it is not possible to evaluate the effectiveness of the private protected areas in achieving conservation outcomes.

Table 10 Elements of the conservation programs described in sections 5.1 to 5.4 with the critical elements required for a successful private protected area system

	Nature Refuge Program	Special Wildlife Reserve amendments	Other Qld
Targeted and strategic additions	Yes	Yes	n/a
Flexibility to meet the needs and aspirations of landholders and governments	Yes	Yes	n/a
Financial incentives	NatureAssist Nature Refuge Landholder Grants Interviews indicate these are insufficient	Nothing new announced	LRF Biodiversity offsets Drought
Support and partnerships	Insufficient	No additional resources	QTfN NRM bodies Local government
Monitoring, reporting and learning	None	Nothing new announced	Conservancies Some NRM bodies
Tenure security	Term agreements Revocation by regulation No protection from extractives	In perpetuity Revocation by Parliament Protection from extractives	n/a

6.2 Recommendations to improve the Nature Refuges program

6.2.1 Investment

Additional investment is required so that nature refuges and special wildlife reserves contribute effectively to the Queensland protected area system. This investment will contribute to:

- continuing to identify and negotiate with priority properties for inclusion in the nature refuge and special wildlife reserve network that will contribute to the conservation aims of a comprehensive, adequate and representative reserve system for Queensland, including promoting connectivity and resilience to climate change.
- developing strong partnerships between nature refuge and special wildlife reserve landholders and program staff (public servants and/or third party organisations) who can assist landholders to improve their capacity for adaptive management and meeting conservation outcomes.
- establishing and providing support and training for a monitoring and evaluation framework and system for nature refuges and special wildlife reserves that enable landholders to implement adaptive management to protect natural and cultural values, and which complement monitoring and impact assessment efforts at the regional and state-wide levels.
- assisting nature refuge and special wildlife reserve landholders through a variety of financial incentive mechanisms including grants and rebates, and longer-term financial assistance arrangements such as stewardship payments, offset and carbon credits.
- connecting with Indigenous ranger groups and other established and competent not-for-profit groups to undertake work on nature refuges and special wildlife reserves on a fee-for-service basis.

To achieve these elements, the funding available for the Nature Refuge Program (including special wildlife reserves) should be increased to \$28 million per annum for managing the existing network, with the allocation over increased over time by at least \$0.6 million per 100 000 hectares, as the coverage expands to meet protected area targets.

6.2.1 Program structure

The Nature Refuges program should be structured and funded to reflect the differences in the size and function of nature refuges in the coastal and agricultural bioregions compared to those in the outback.

In the closely settled areas and agricultural zones, nature refuges play a critical role in protecting remnant habitats and regional connectivity. There are large numbers of relatively small nature refuges, which are potentially eligible to participate in programs such as the Land Restoration Fund and Biodiversity Offsets. Funding (\$2.8 million per annum i.e. 10%) for the program should focus on:

- continuing to form partnerships with local governments, existing catchment/natural resource management bodies including Queensland Trust For Nature, and taking a collaborative, group-oriented approach to supporting activities
- promoting the revolving fund model, and use conservation tenders/reverse auctions as funding mechanisms
- employing facilitators who can draw in resources and promote collaborative effort to ensure positive conservation outcomes, particularly in areas that are too small to be managed as an isolated conservation reserve.

In outback areas, nature refuges complement national parks to ensure sustainable land management and weed and feral animal control over large areas of (primarily) grazing land. There are small numbers of very large nature refuges. The program needs to recognise the distances and other barriers to collective effort by nature refuge holders, and that programs such as the Land Restoration Fund and Biodiversity Offsets will be inherently more difficult to access. Funding (\$25.2 million, 90%) should focus on:

- providing technical expertise within government and/or trusted third parties and encouraging frequent, personal interaction with large nature refuge and special wildlife reserve landholders, potentially on the basis of one advisor per landholder (for non-conservancy properties)
- building relationships to support nature refuge and special wildlife reserve landholders to adopt adaptive management approaches that result in measurable conservation outcomes, including monitoring and reporting
- providing access to a range of financial incentives that are matched to the conservation outcomes, and which are available on an ongoing basis. These may include stewardship payments, access to biodiversity offsets programs.
- supporting the re-instatement of the National Reserve System funding from the Australian Government, and negotiating with conservancies to purchase large properties for declaration as nature refuges or special wildlife reserves.

Investment in nature refuges and special wildlife reserves areas should be proportionate to the scale and significance of the conservation values secured. Each proposed area should be assessed on its merit however it is expected that new investment in Outback areas will be directed primarily towards larger private protected areas (greater than 5000ha) to support effective conservation planning, management and monitoring of conservation outcomes at scale.

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Appendix 1 Survey summary

Introduction

The Department of Environment and Science contacted over 450 nature refuge landholders by email. The email outlined the work that The Pew Charitable Trusts and Queensland Trust for Nature were undertaking with respect to nature refuges, and requested landholders to contact Protected Area Solutions if they were interested in being part of a survey. The survey was designed to gauge landholders' views about a range of issues associated with nature refuges. More than 65 responses were received, indicating interest in being part of the survey.

Protected Areas Solutions then sent the survey to these landholders via survey monkey, with 42 responses being received. The distribution of respondents by area and by bioregion are shown in Table 11 and Table 12 respectively.

Protected Area Solutions asked the Department and remotely-based natural resource management bodies were asked to provide contacts for landholders with nature refuges over 10 000 hectares in critical bioregions. This resulted in contact with several landholders who were then interviewed by telephone.

Table 11 Percent of respondents to the nature refuge survey by area

Area ha	Percent of respondents	Percent of all nature refuges
>10	24	16
10-100	45	42
100-1000	18	20
1000-10,000	10	13
>10,000	2	9

Table 12 Percent of respondents the nature refuge survey by bioregion.

Bioregion	Percent of Respondents	Percent of all nature refuges
South East Qld	40	41
Wet Tropics	18	17
New England Tablelands	15	4
Brigalow Belt	15	16
Central Queensland Coast	8	5
Mitchell Grass Downs	2	<1
Einasleigh Uplands	2	4

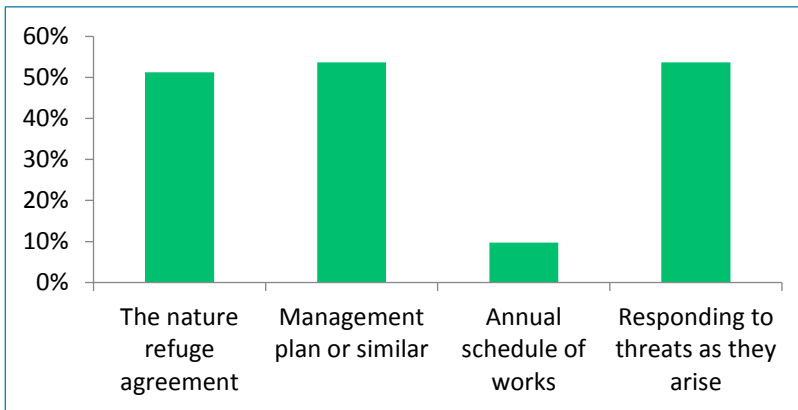
The survey was developed to inform the following questions:

- what guides the management of nature refuges, and can this be further supported
- what assistance are landholders provided to manage their nature refuges
- who provides assistance, what type of assistance is provided, and is it sufficient for landholder needs
- are conservation values on nature refuges improving (or at least staying the same), and how is this assessed
- what incentives would encourage other landholders to join the nature refuge program
- why might other landholders not want to be involved with nature refuges.

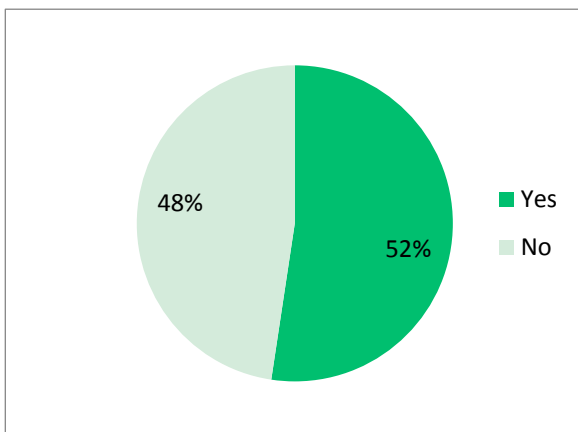
Results

Managing nature refuges

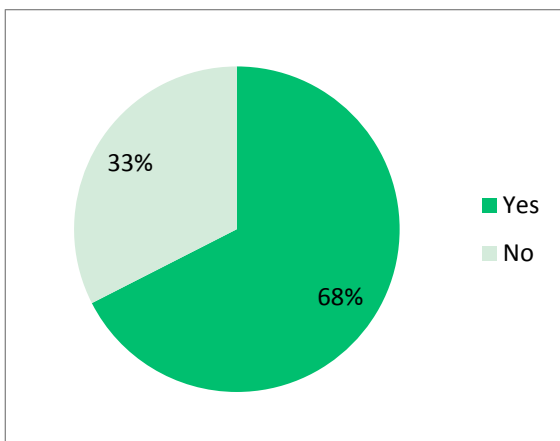
What guides the management of your nature refuge?



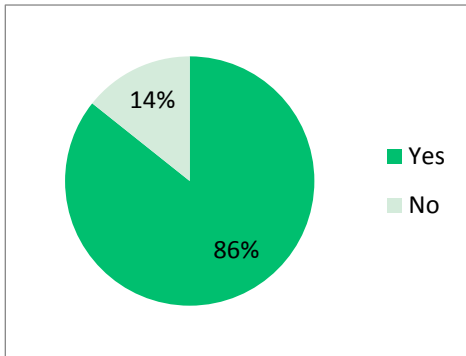
Do you have an existing management plan?



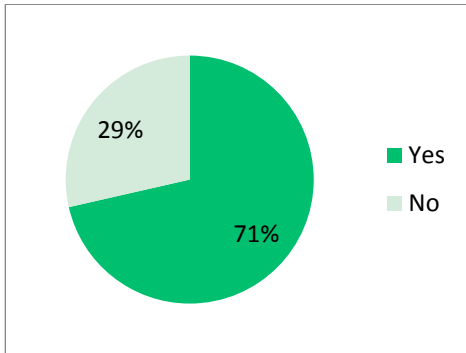
Would you find a management plan or similar useful to manage your nature refuge?



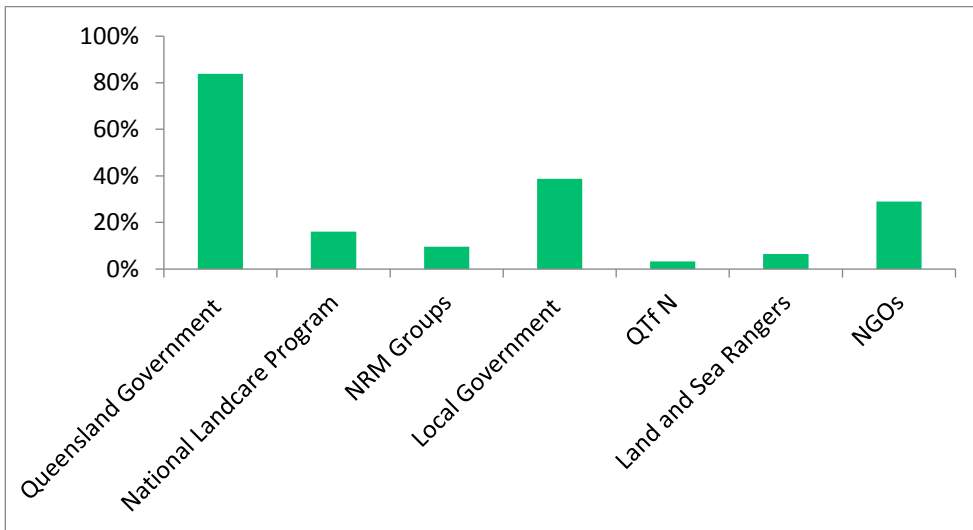
Would you develop a management plan if you had support to undertake this work?



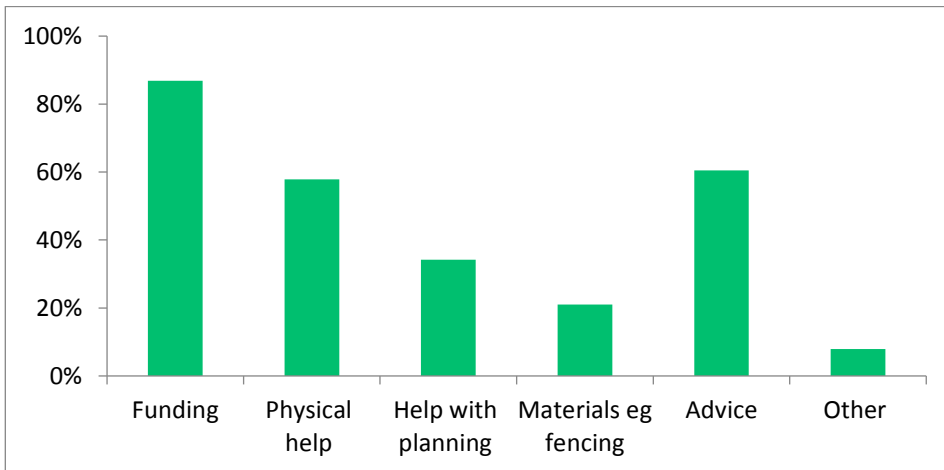
Have you received any support to manage your nature refuge?



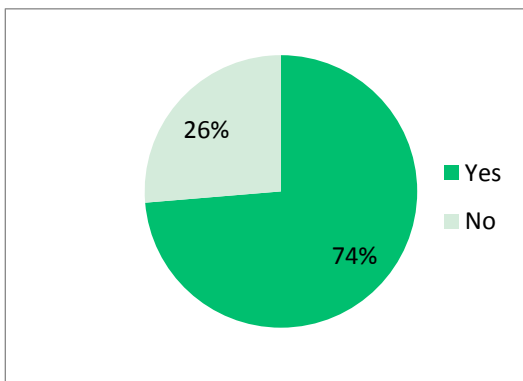
If yes, from which organisation?



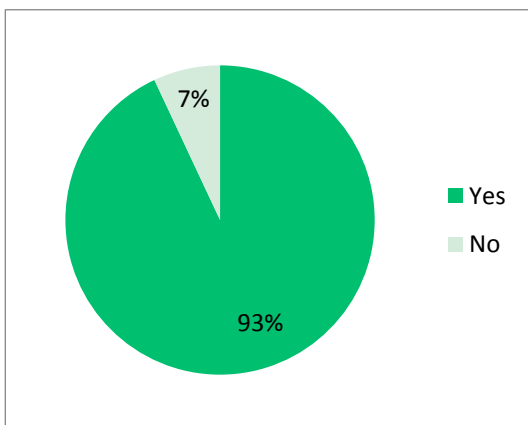
What type of support have you received?



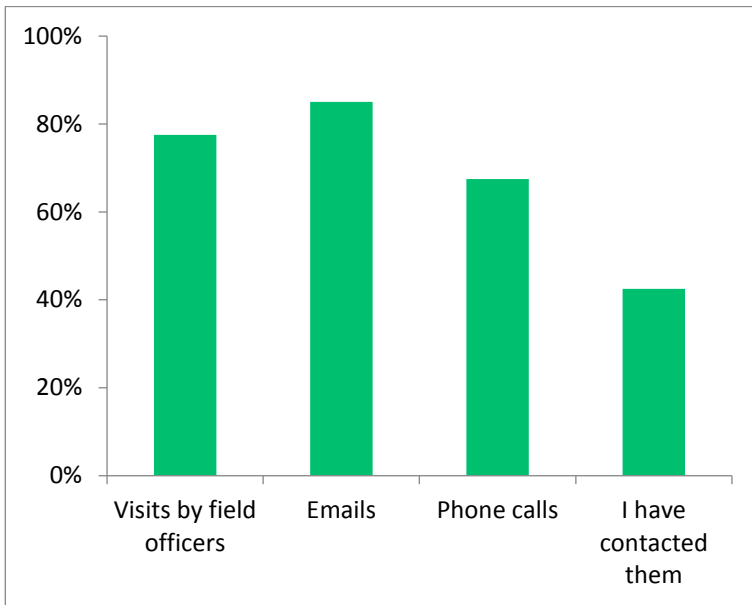
Was it sufficient for your needs?



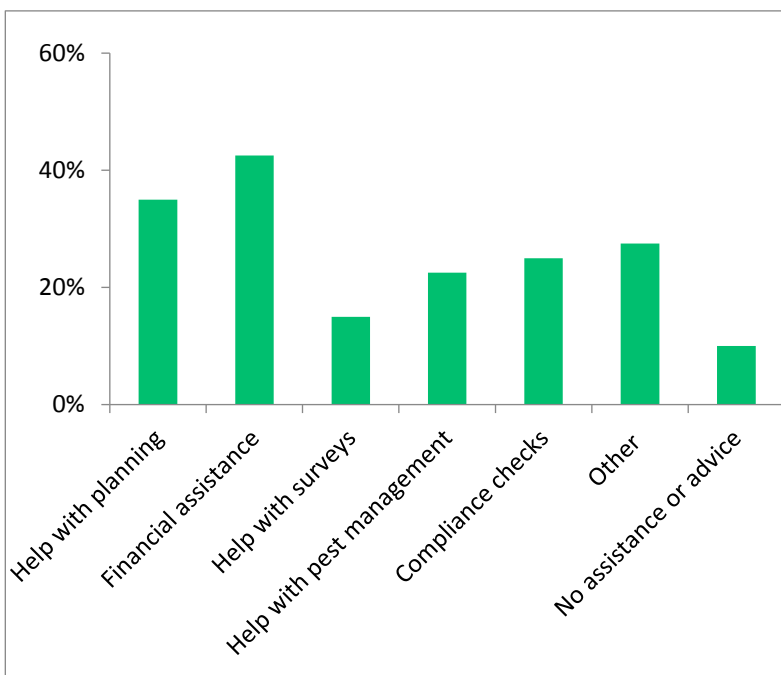
Have you had any contact with the Government (QPWS, DES, EHP, DERM etc) about your nature refuge since it was declared?



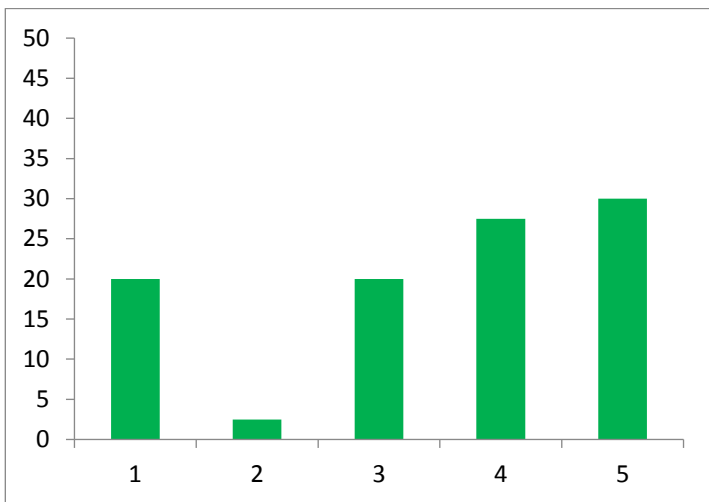
What type of contact have you had?



What assistance/advice did staff offer?

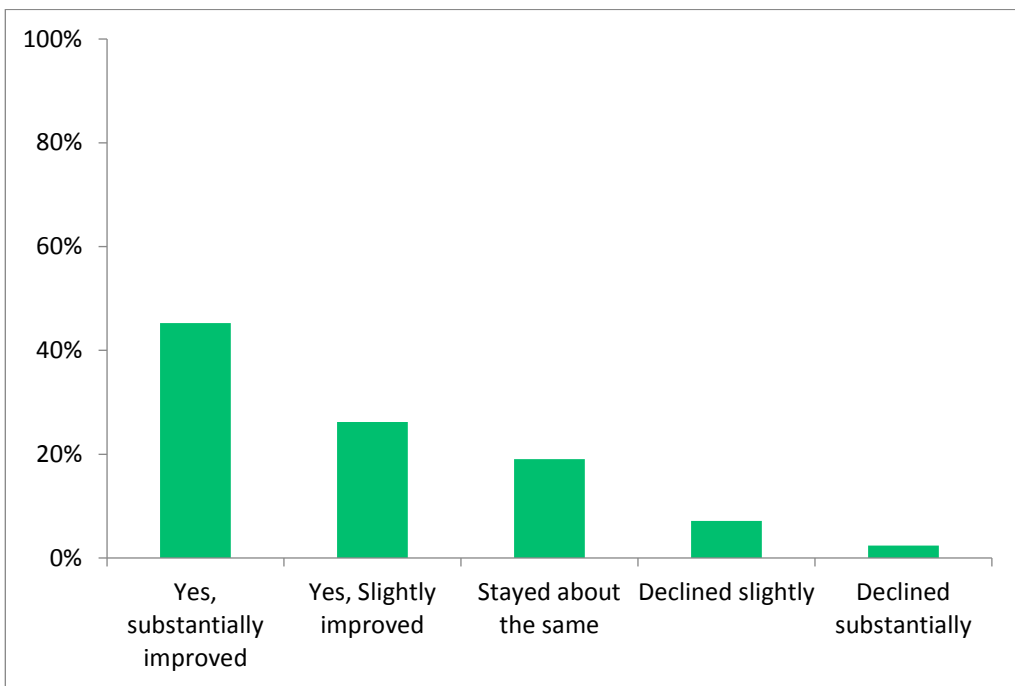


On a scale of 1-5, was it useful? (1 being of minimal use, and 5 being most useful)

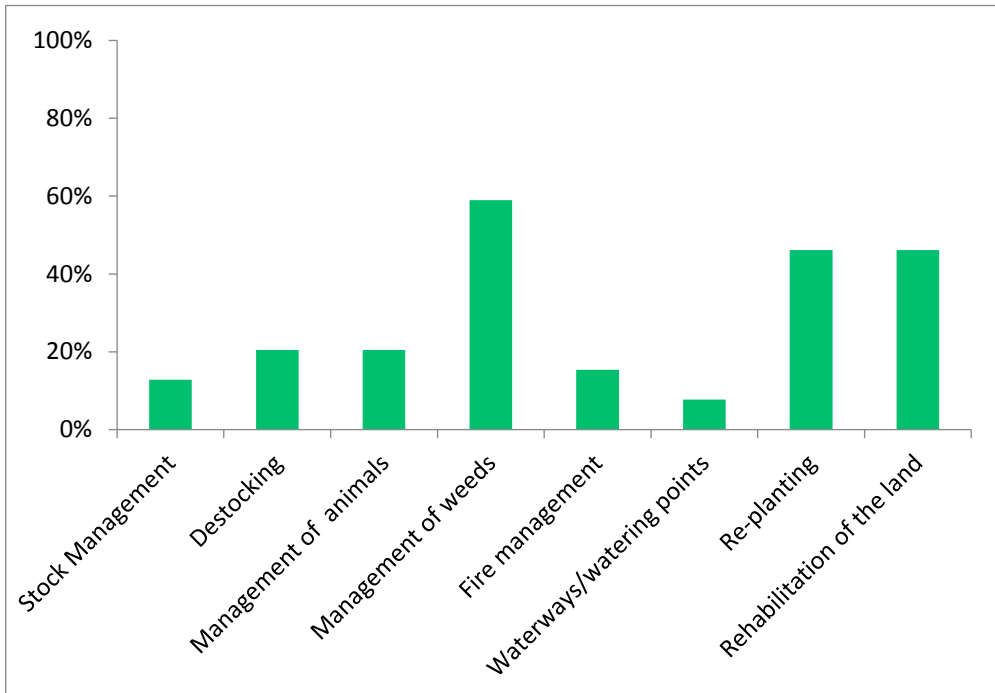


Monitoring conservation values

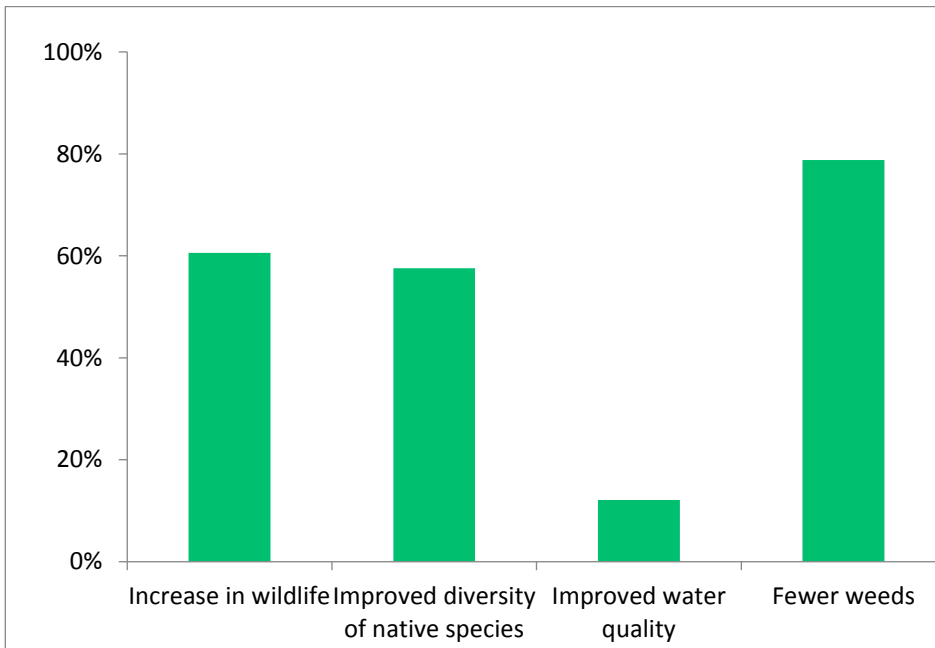
Do you think the conservation values on your property have improved (or declined) since it has been a nature refuge?



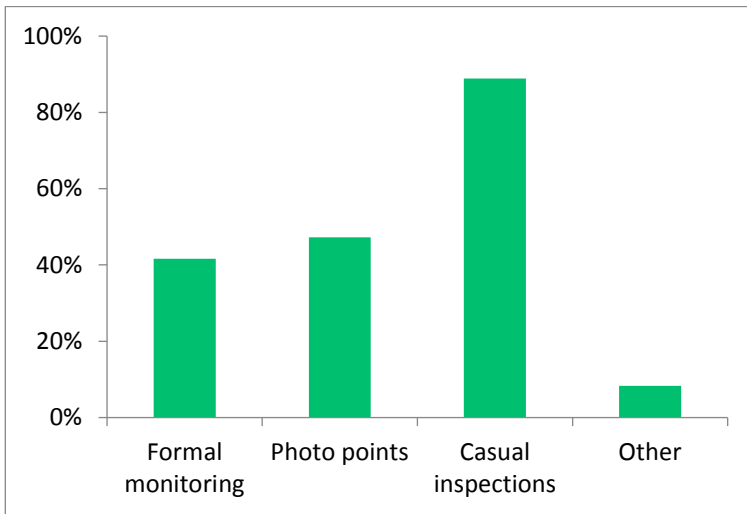
If you think condition has improved, what do you think has changed to impact



What changes have you observed?

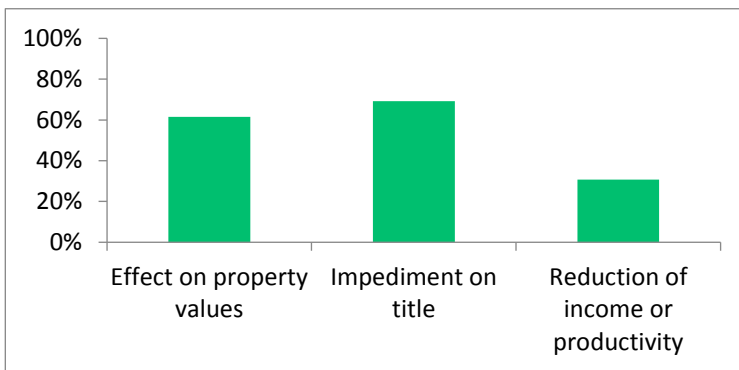


What evidence do you have for your observations?

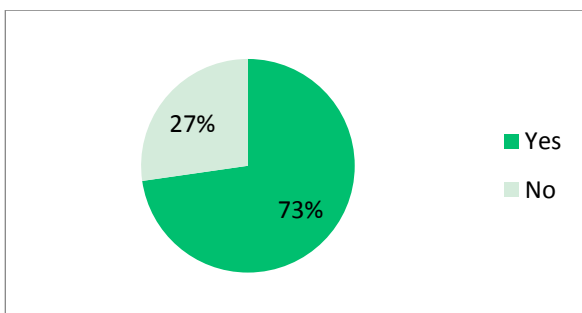


7.1.1 Business impacts

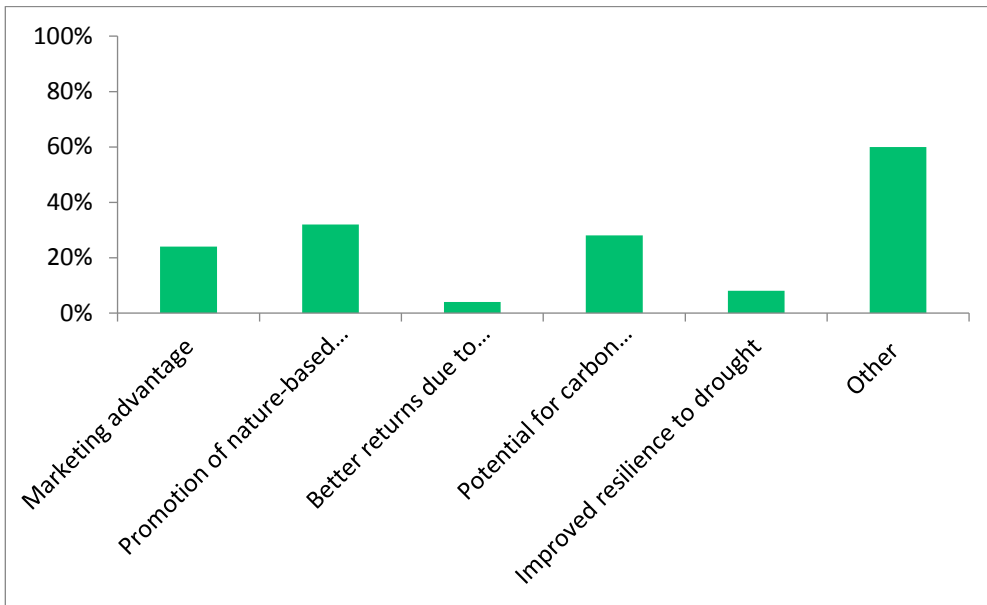
If your bank and/or real estate agent expressed concern about your decision to have a nature refuge, did they express concern about: (32 skipped this question)



Has the nature refuge declaration helped you to achieve your property business goals and aspirations?

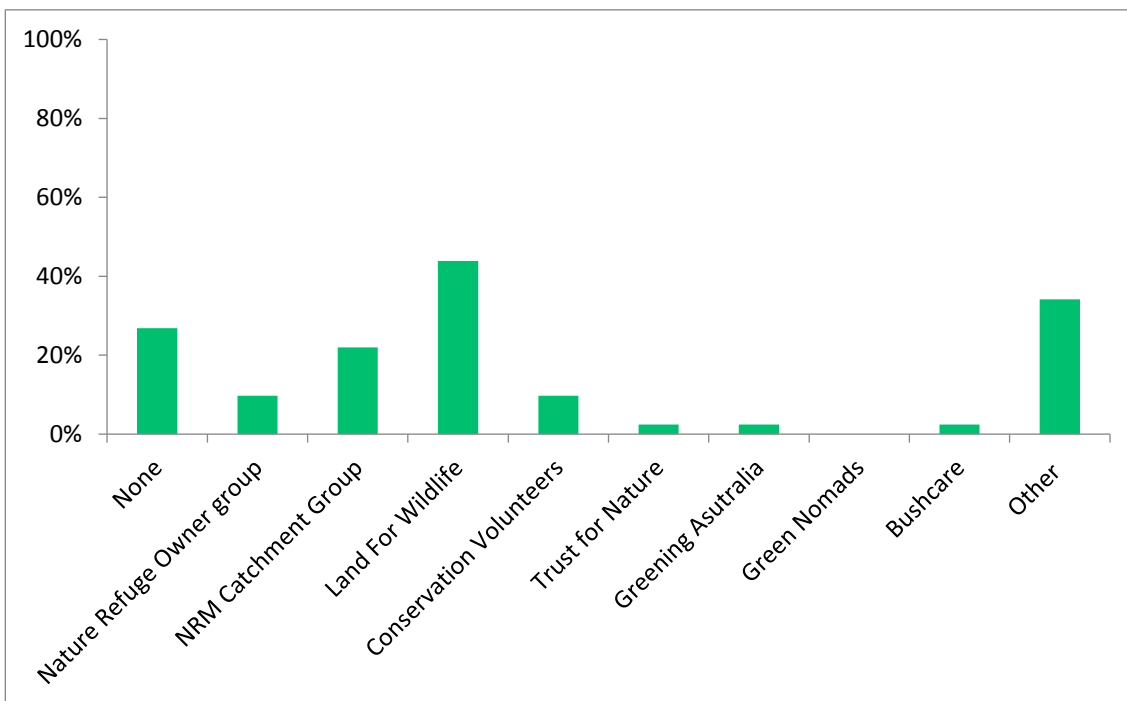


If yes, how has your nature refuge helped you achieve your goals and aspirations for your property?

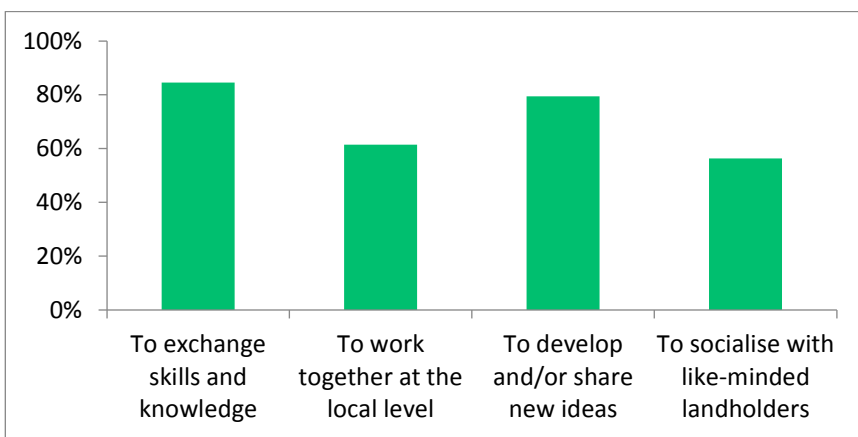


7.1.2 Networks

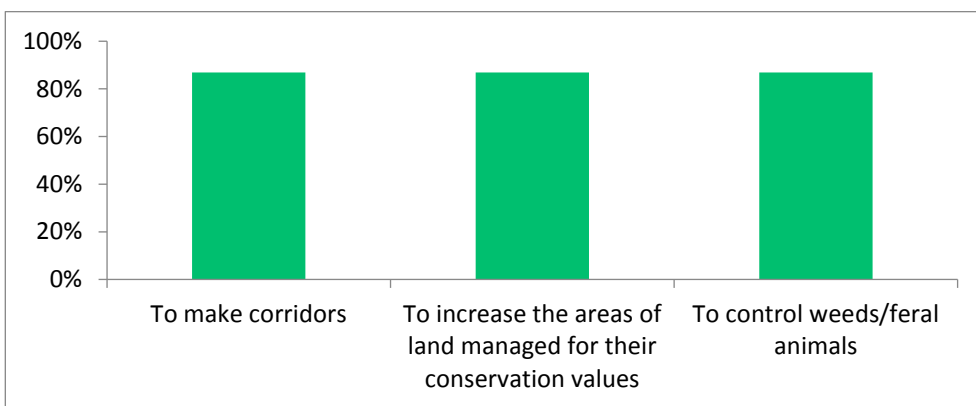
What networks are you a part of?



What is the value of being in contact with other nature refuge landholders

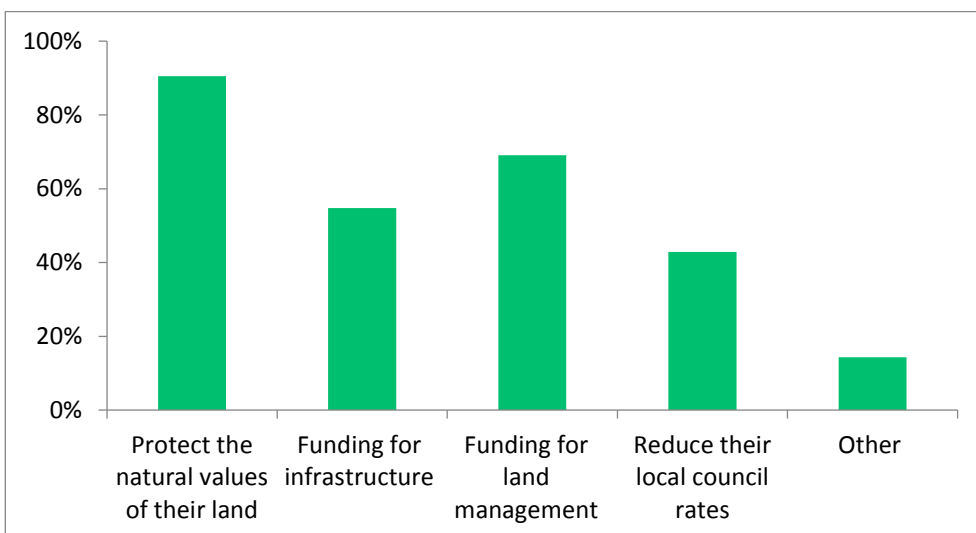


Why should neighbours work together on a landscape/catchment scale?

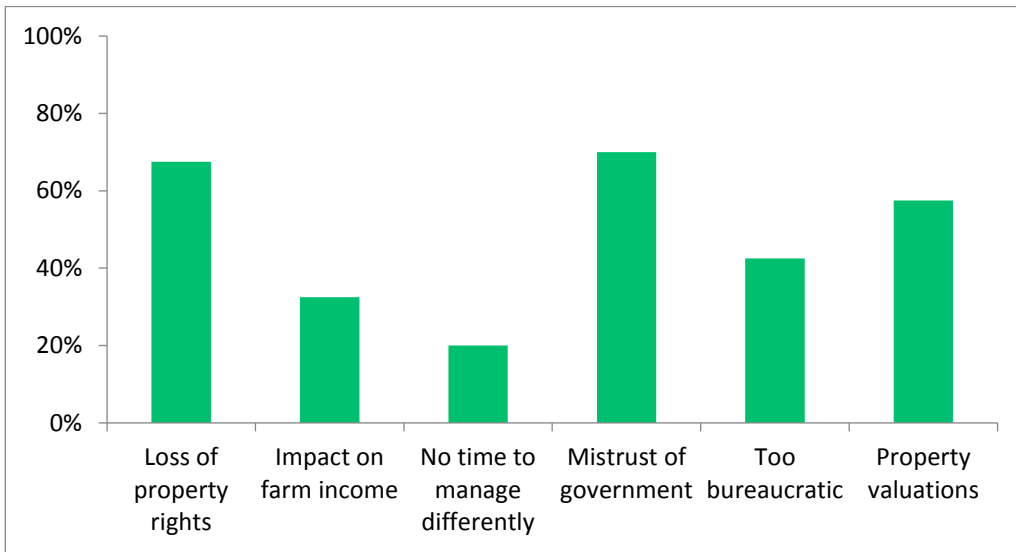


Incentives and disincentives

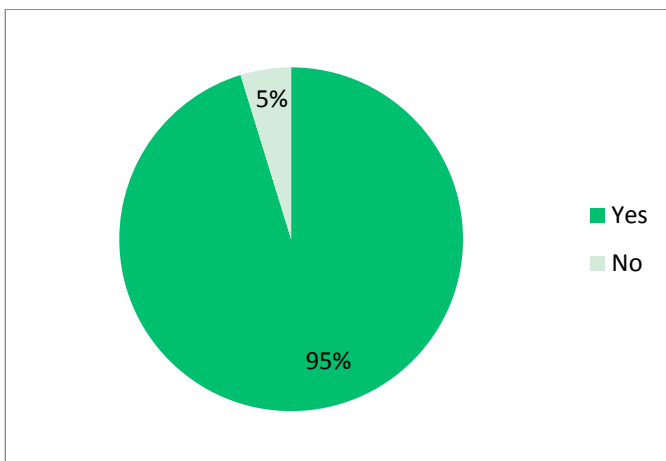
What incentives encourage landholders to have a Nature Refuge on their land?



Why do you think some landholders are reluctant to have a Nature Refuge on their land?



If you had your time again, would you commit to the nature refuge program?



Appendix 2 NSW Biodiversity Conservation Trust

The NSW Biodiversity Conservation Trust (BCT) is a not-for-profit statutory body, established under the *Biodiversity Conservation Act 2016* to support and encourage landholders to protect and conserve biodiversity on private land⁶⁰.

Under its initial investment and business plans, the BCT aims to have private land conservation agreements in place that will protect examples of:

- 30 NSW Landscapes (regional ecosystems) that are either not represented within, or are inadequately protected in, the protected area system in 2017 by 2022; and
- a further 90 NSW Landscapes (regional ecosystems) which are either not represented within, or are inadequately protected in, the protected area system in 2022 by 2037.

Areas targeted for priority investment⁶¹ are in the NSW agricultural districts which have been extensively cleared and which tend to be underrepresented in the protected area system. They include the sheep-wheat belt on the western side of the Great Dividing Range, stretching from Victoria to Queensland; the lower slopes of the coastal ranges, the coastal valleys, floodplains and estuaries, and remnant ecosystems on rich volcanic soils; and the flat and undulating landscapes of the tablelands.

The NSW Government is investing \$246.6million in the initial four years to 2020–21, and \$70 million per annum in perpetuity, subject to program performance reviews. This equates to \$1296.6 million (\$1.3 billion) by 2037 for including 120 NSW Landscapes in the protected area system, an average of \$10.8 million per regional ecosystem.

Under the Conservation Management Program, conservation agreements are being rolled out using three delivery mechanisms:

- *Conservation tenders* focused on particular locations or regions which enable landholders to submit expressions of interest against stated criteria. Agreements will include a payment schedule which may be limited to 15 years or made in perpetuity. BCT pays for establishment and ecological assessment costs, with landholders covering their own financial and/or legal advice.
- *Fixed rate offers* where BCT identifies landholders who have land of high ecological value in good condition, and who agree to enter a conservation agreement binding on title in perpetuity, in return for a fixed payment per hectare per annum, for a minimum area of 50 hectares.
- *Revolving fund properties* which BCT will acquire and protect via conservation covenants, then on-sell with a funded conservation agreement in place.

Under the Conservation Management Program, on-going funding is available for management actions that improve, maintain or restore conservation values consistent with the management arrangements specified in the conservation agreement. BCT also has a grant program (Conservation Partners Program) aimed at properties that do not qualify for annual payments.

An integral part of the BCT investment is a regional delivery presence administered through the NSW Government's local land services structure which will provide technical and practical support to assist landholders to implement the conservation management actions in their agreements. The BCT will employ regional coordinators, landholder support officers, ecologists and program support officers in each of its seven regions. The regions will also undertake conservation planning in partnership with local organisations, Aboriginal landholders and the broader community. The Landholder Technical Support Package⁶² is expected to include regular site visits, telephone support, fact sheets, technical guidelines, field days and workshops to share skills and knowledge, ecological monitoring, and agreement compliance monitoring. Landholders will also be supported through social media, access to the BCT's website and newsletters.

The BCT's site-based monitoring framework will consist of:

- ecological monitoring – to provide scientifically robust and defensible datasets to validate performance of the BCT's programs and contribute to evaluating outcomes of the Act
- agreement monitoring – to capture data on management actions and check for agreement compliance.

60 <https://www.bct.nsw.gov.au>

61 Biodiversity Conservation Investment Strategy 2018

62 <https://www.bct.nsw.gov.au/about-our-landholder-technical-support-package>

The site-based monitoring framework will feed into the OEH Environmental Monitoring, Assessment and Reporting (eMAR) system and the NSW Sharing and Enabling Environmental Data (SEED) Portal to assess biodiversity conservation outcomes at State and bioregional scales⁶³.

The BCT budget for its first four years of operations is allocated as shown in Table 13⁶⁴:

Table 13 Biodiversity Conservation Trust budget for 2017-2020

Function	\$ million	%
Conservation Management Program	192.1	77.9
Conservation Partners Grants	9.0	3.6
Regional delivery and landholder support	16.8	6.8
Program design and delivery	12.4	5.0
Communications, stakeholder engagement and education	3.7	1.5
Funds and investment management	1.5	0.6
DPE corporate services costs	3.4	1.4
Other operating costs	7.1	3.1
TOTAL	246.6	100

The *Biodiversity Conservation Act 2016* that establishes the BCT has been widely criticised for relying on voluntary landholder action for retaining vegetation and protecting natural and cultural values. The companion legislation *Local Land Services Amendment Act 2016* repeals the former *Vegetation Management Act 2003* which was instrumental in slowing rates of clearing across the state.

Although a useful guide to the level of investment required to establish a comprehensive support system for private protected areas in NSW, it is not clear how transferable this estimate is to Queensland. Targeted NSW Landscapes are predominantly in high value agricultural zones; farmers may therefore require a premium in order to manage them for conservation values. Some areas of high conservation value are likely to be remnants that exist only because they do not have value as productive land.

63 Biodiversity Conservation Trust Business Plan 2017-18 to 2020-21

64 Biodiversity Conservation Trust Business Plan 2017-18 to 2020-21