

OFFICE OF ENVIRONMENT & HERITAGE

Conserving western Sydney's threatened bushland

Growth Centres Biodiversity Offset Program Annual Report 2017-18



© 2018 State of NSW and Office of Environment and Heritage

With the exception of photographs, the State of NSW and Office of Environment and Heritage are pleased to allow this material to be reproduced in whole or in part for educational and non-commercial use, provided the meaning is unchanged and its source, publisher and authorship are acknowledged. Specific permission is required for the reproduction of photographs.

The Office of Environment and Heritage (OEH) has compiled report in good faith, exercising all due care and attention. No representation is made about the accuracy, completeness or suitability of the information in this publication for any particular purpose. OEH shall not be liable for any damage which may occur to any person or organisation taking action or not on the basis of this publication. Readers should seek appropriate advice when applying the information to their specific needs.

All content in this publication is owned by OEH and is protected by Crown Copyright, unless credited otherwise. It is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) [🔗](https://creativecommons.org/licenses/by/4.0/), subject to the exemptions contained in the licence. The legal code for the licence is available at Creative Commons [🔗](https://creativecommons.org/licenses/by/4.0/).

OEH asserts the right to be attributed as author of the original material in the following manner:

© State of New South Wales and Office of Environment and Heritage 2018.

Main cover photo: Regenerating Cumberland Plain Woodland on the Winbourne biobank site. In 2017–18 the program worked with the landholder to establish the 20-hectare biobank site which includes four endangered ecological communities. The site also provides valuable habitat for a diverse range of native animals, including several threatened species.

Unless stated otherwise, all images in this report have been taken by OEH staff and are copyright.

Published by:

Office of Environment and Heritage
59 Goulburn Street, Sydney NSW 2000
PO Box A290, Sydney South NSW 1232

Phone: +61 2 9995 5000 (switchboard)

Phone: 131 555 (environment information and publications requests)

Phone: 1300 361 967 (national parks, general environmental enquiries, and publications requests)

Fax: +61 2 9995 5999

TTY users: phone 133 677, then ask for 131 555

Speak and listen users: phone 1300 555 727, then ask for 131 555

Email: info@environment.nsw.gov.au

Website: www.environment.nsw.gov.au

Report pollution and environmental incidents

Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au

See also www.environment.nsw.gov.au

ISSN 1837-5650

OEH 2018/0601

November 2018

Contents

Executive summary	v
1 About the program	1
1.1 Background	2
1.2 Program funding	3
1.3 Where the program operates	5
1.4 How the program works	6
1.5 Program commitments	8
2 What we have achieved	11
2.1 Ten years of land conservation	11
2.2 Progress towards the program's conservation targets	16
2.3 Conservation outcomes for 2017-18	19
3 Clearing in the Growth Centres	23
3.1 Clearing of vegetation in the 'protected lands'	23
3.2 Clearing of vegetation in the 'developable lands'	23
4 Financial report	26
Appendix A	28
Appendix B	30
Appendix C	31
Appendix D	32
Appendix E	33

Tables

Table 1	Payment timetable for the Growth Centres Biodiversity Offset Program*	3
Table 2	Vegetation communities protected by the program as at June 2018	16
Table 3	Progress towards the program's conservation targets	18
Table 4	Vegetation summary	21
Table 5	Vegetation change in the Growth Centres	23
Table 6	Financial summary report	27
Table 7	Vegetation protected by the program at each location	28
Table 8	Commonwealth-listed vegetation protected by the program at each location	29
Table 9	Threatened species recorded on lands protected by the program	30
Table 10	Potential foraging habitat for targeted Commonwealth-listed threatened fauna species	31
Table 11	Vegetation change in the Growth Centres since certification	32
Table 12	Calculation of program funding for 2017-18	33

Figures

Figure 1	OEH staff meet with willing landholders to discuss opportunities for protecting bushland on their property	1
Figure 2	Administration of funds and program structure	4
Figure 3	Areas of program operation	5
Figure 4	Assessing biodiversity values of a potential biobank site to see if the site meets the program's funding criteria	6
Figure 5	One of the largest populations of the vulnerable Sydney bush pea (<i>Pultenaea parviflora</i>) is now protected at Wianamatta Nature Reserve	6
Figure 6	A bush regenerator treating the weed African Olive on the Stage 1 Mater Dei biobank site	6
Figure 7	Vegetation and habitat protected by the program to date	13
Figure 8	The critically endangered swift parrot	17
Figure 9	Location of the Winbourne biobank site	20
Figure 10	The threatened dusky woodswallow	21
Figure 11	Harp trap set on the edge of a remnant pool in Grey Myrtle Dry Rainforest – Winbourne biobank site	21
Figure 12	Cumberland Plain Woodland on the Winbourne biobank site that meets the condition criteria for listing under Commonwealth legislation	21
Figure 13	The bushland within the Winbourne biobank site that borders the Nepean River will be restored through weed control and revegetation	22
Figure 14	Growth Centres protected lands	25

Executive summary



The Growth Centres Biodiversity Offset Program (the program) enables Sydney's future housing needs to be met without compromising the balance of the social, economic and environmental values of western Sydney. The program is an innovative solution in an area of major land-use change and population growth.

In the 10 years that the program has been operating (2008–09 to 2017–18) it has protected 661 hectares of native vegetation at 19 locations across western Sydney. In accordance with the program's aims, the protected areas are some of the largest areas of high conservation value bushland left in the region.

In 2017–18 the total project revenue was \$19,739,000. Program funds were used to purchase biodiversity credits from nine biobank sites occurring within the program's first preference investment areas. The funding enabled the protection of 93 hectares of threatened vegetation.

Of particular note, during the year the program worked with a landowner to establish a new 20-hectare biobank site at Mulgoa. The historic 'Winbourne' property dates back to the pioneering Cox family in the 1820s and is owned by the Christian Brothers, who now run a retreat and conference centre on the site.

The Winbourne biobank site contains four endangered ecological communities including critically endangered Cumberland Plain Woodland and Shale Sandstone Transition Forest. The site also provides valuable habitat for a diverse range of native animals, including several threatened species.

The high-value bushland protected by the program to date is part of an offset for the net loss of 414 hectares of vegetation in the developable areas of Sydney's Growth Centres since 2007. These conservation outcomes have been achieved through the use of offset funding, which is an effective way of conserving bushland as the population grows in western Sydney.

More information on the program and this annual report is available at www.environment.nsw.gov.au/biocertification/growthcentres.htm.



**The Growth Centres
Biodiversity Offset Program
is securing protection of some
of the best remaining bushland
in Western Sydney for current
and future generations.**

1 About the program

The Growth Centres Biodiversity Offset Program (the program) aims to permanently protect some of the best remaining bushland in western Sydney and surrounding regions. Bushland is protected under the program by acquiring land from willing landowners for new reserves, purchasing biodiversity credits from existing conservation agreements on private land or by funding the establishment of perpetual conservation agreements on private land (see Figure 1).

In the 10 years that the program has been operating, 661 hectares of native vegetation has been protected (note that all values in the report have been rounded and are presented in Table 2 to one decimal place). This land contains:

- 314 hectares of state-listed critically endangered Cumberland Plain Woodland
- 324 hectares of threatened ecological communities other than Cumberland Plain Woodland
- habitat for 20 recorded threatened fauna species
- 12 threatened plant populations.

The program demonstrates how the pooling of offset funds can secure significant bushland areas on large holdings, providing better conservation outcomes than protecting numerous small and often isolated parcels in new urban areas.



Figure 1 As part of the program, OEH staff meet with willing landholders in western Sydney to discuss opportunities for protecting bushland on their property



1.1 Background

The program was established in 2008 as part of a package of conservation measures delivered by the NSW Government to offset the impacts on biodiversity that are occurring as Sydney's Growth Centres are developed.

Over 200,000 housing lots will be delivered in the Growth Centres of western Sydney over the next 50 years. State Environmental Planning Policy – Sydney Region Growth Centres (Growth Centres SEPP) was gazetted in 2006 to provide a planning framework for this development.

In 2007, the Growth Centres SEPP became the first land-use plan in New South Wales to be granted biodiversity certification. The certification of the Growth Centres SEPP continues to have effect through the savings provision¹ under the *Biodiversity Conservation Act 2016*.

Through biodiversity certification, biodiversity values are assessed and conservation issues resolved early in the planning process. Certification supports a more streamlined and cost effective land-release process than site-by-site assessment.

Certification also enables the NSW Government to be strategic in meeting its goals for biodiversity conservation. It is a move away from the 'death by a thousand cuts' scenario for biodiversity in which site-focused decisions are made in isolation and late in the development process. By pooling offset resources, the largest and best remaining bushland on and around the Cumberland Plain can be conserved.

Growth Centres certification

The Growth Centres SEPP was certified on the basis that:

- 2000 hectares of high quality vegetation would be protected in the Growth Centres
- a \$530-million conservation fund (in 2005–06 dollar values and subject to indexing) would be established by the NSW Government over the development period. This funding is derived partly from a special infrastructure contribution applying to development in the Growth Centres and partly from the Government's Consolidated Fund.

Of the \$530 million in conservation funding:

- **\$132.5 million (25%) is being spent in the Growth Centres** to purchase areas of land identified in the Growth Centres SEPP. This land is being acquired by the NSW Department of Planning and Environment.

- **\$397.5 million (75%) is being spent outside the Growth Centres**, targeting the largest and best vegetation remnants for reservation or conservation agreements. These funds provide the revenue for the program.

In 2012, the Australian Government approved the certification as part of a strategic assessment program under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The approval harmonises state and Commonwealth environmental approvals for the Growth Centres and enables the Australian Government to oversee the program.

The program assists both the NSW and Australian governments in:

- achieving better outcomes for biodiversity, and
- streamlining planning decisions.

¹ Refer to clause 43 of the Biodiversity Conservation (Savings and Transitional) Regulation 2017

1.2 Program funding

The biodiversity certification of the Growth Centres SEPP requires funding for the program to be allocated annually at the same rate at which development is expected to occur in the Growth Centres. Funding projections are therefore calculated annually. These will vary from year to year, as they are based on the predicted lot yields in the Growth Centres and an index which accounts for changing land values. There is also a correction applied for any difference in predicted and actual lot yields in previous years. Table 1 shows the actual funding allocation from 2008–09 to 2017–18, and the funding allocation for the next 10 years based on the 2017–18 forecast.

The total funding for the program when measured in current dollar values is just over \$383 million (see Table 1). This is less than \$397.5 million because the land index determined by the Department of Planning and Environment has fallen in the Growth Centres since 2005–06. The land index is used to ensure the same purchasing power of funds for the life of the program. If the land index increases again, the value of the program's funding will increase. In either instance, the total program's funding will remain equivalent to \$397.5 million when measured in 2005–06 dollar values. This funding will be completed in the year that the last lots are expected to be released in the Growth Centres.

Table 1 Payment timetable for the Growth Centres Biodiversity Offset Program¹

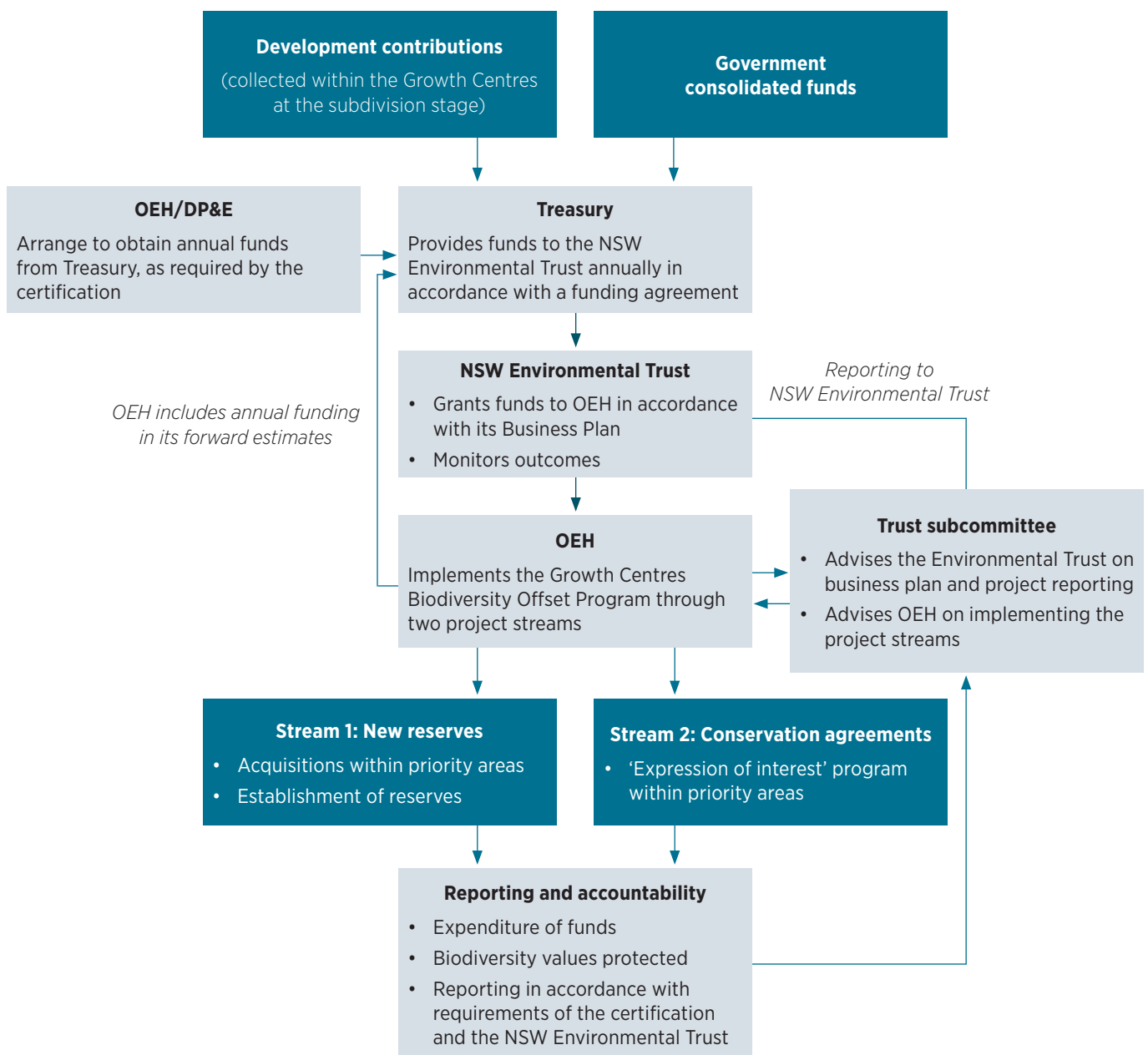
Funding received			
Financial year	Funds received (2005–06 \$ values)	Indexed funds received ² (\$ values at receipt)	Cumulative proportion of total funding (%)
2008–09	917,647	780,000	0.23
2009–10	1,409,606	1,198,000	0.59
2010–11	2,269,735	1,930,000	1.16
2011–12	1,852,340	1,575,000	1.62
2012–13	4,021,886	3,527,000	2.63
2013–14	6,416,203	5,719,000	4.25
2014–15	4,174,449	3,825,000	5.30
2015–16	8,173,153	7,701,000	7.35
2016–17	10,959,877	10,493,000	10.11
2017–18	10,897,251	10,569,000	12.85
Subtotal: funds received	51,092,148	47,317,000	12.85
Future funding			
Financial year	Future funding (2005–06 \$ values)	Indexed future funding (2017–18 \$ values)	Cumulative proportion of total funding (%)
2018–19	12,218,748	12,135,000	15.93
2019–20	8,756,986	8,696,000	18.13
2020–21	8,204,144	8,148,000	20.19
2021–22	8,203,331	8,147,000	22.26
2022–23	6,919,062	6,872,000	24.00
2023–24	6,817,362	6,771,000	25.71
2024–25	8,628,641	8,569,000	27.88
2025–26	8,742,951	8,683,000	30.08
2026–27	8,613,182	8,553,000	32.25
2027–08	8,203,331	8,147,000	34.31
2028–29 – end of program	261,100,113	251,267,000	100.00
Subtotal: future funding	346,407,852	335,988,000	87.15
Total program funding	397,500,000	383,305,000	100

¹ Updated based on information received from the Department of Planning and Environment in December 2017.

² Funding is calculated in 2005–06 dollar values and then indexed each year.

How the program funds are administered

The NSW Environmental Trust provides an annual grant to the NSW Office of Environment and Heritage (OEH) to implement the program (see Figure 2). The Trust is an independent statutory body established under NSW legislation to support and supervise the expenditure of grants. Chaired by the Minister for the Environment, members include the OEH Chief Executive and representatives from Local Government NSW, the NSW Nature Conservation Council, the Department of Planning and Environment and NSW Treasury. A subcommittee of the Trust oversees the governance of the program and contains two non-government representatives.



Note: OEH refers to the Office of Environment and Heritage
DP&E refers to the Department of Planning and Environment

Figure 2 Administration of funds and program structure.

1.3 Where the program operates

The program’s focus areas are specified in the biodiversity certification of the Growth Centres SEPP. These areas are shown in Figure 3 as a series of preferences. The Growth Centres Strategic Assessment under the EPBC Act confirmed that the conservation fund will secure offsets on the Cumberland Plain as a first priority.

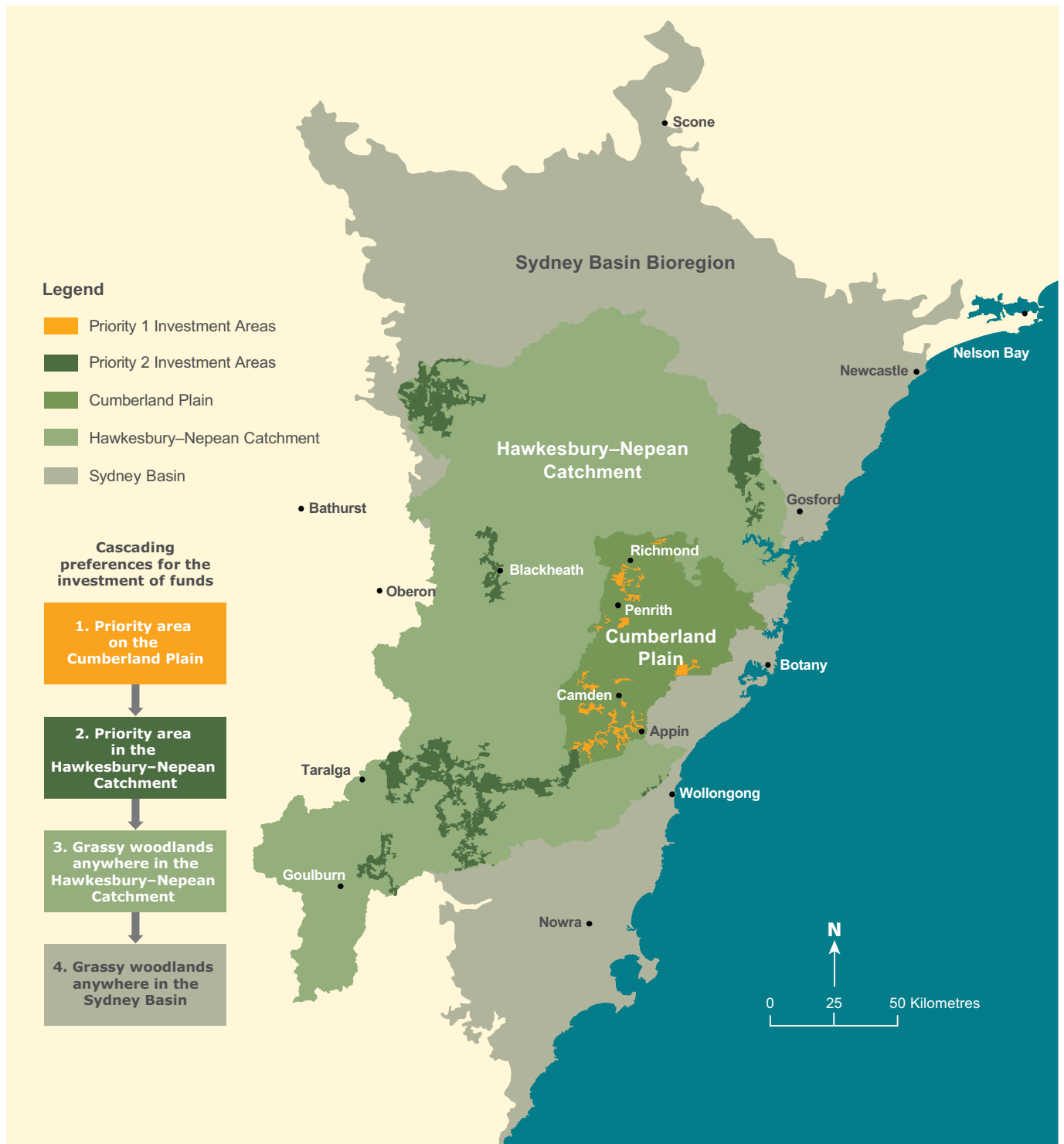


Figure 3 Areas of program operation.



Figure 4 OEH staff assessing the biodiversity values of a potential biobank site to see if the site meets the program’s funding criteria.



Figure 5 One of the largest populations of the vulnerable Sydney bush pea (*Pultenaea parviflora*) is now protected at Wianamatta Nature Reserve



Figure 6 A bush regenerator treating re-growth of the weed African olive at the base of a eucalypt on the Stage 1 Mater Dei biobank site

Priority investment areas

The biodiversity certification requires that, as a first preference, the program’s funds be invested in the priority areas on the Cumberland Plain that were identified in the 2006 Hawkesbury–Nepean Catchment Action Plan.

If no suitable, cost effective lands are available in the areas of first preference, priority areas in the broader Hawkesbury–Nepean catchment can next be considered. If these areas are not available, funding can be spent on conserving grassy woodlands in the Hawkesbury–Nepean catchment and then the Sydney Basin respectively.

The NSW Government intends to spend all of the program’s funds on the Cumberland Plain, except for in exceptional circumstances that have been agreed to by the NSW and Australian governments. To date, all offsets have been located in the first preference investment areas on the Cumberland Plain.

In the priority investment areas, the selection of land for protection is guided by the criteria in the certification. Preference is given to protecting the largest remnants of intact vegetation with the greatest potential for long-term retention of biodiversity values. Factors such as conservation values, the size of the land, the land’s landscape context and the cost effectiveness of the investment are considered. Figure 4 shows staff assessing biodiversity values of a potential biobank site.

1.4 How the program works

Areas of conservation value are protected by voluntarily acquiring land for reservation or establishing perpetual conservation agreements with willing landowners.

Reserve acquisition

Reserve acquisition is the highest priority for the program when a property with suitable conservation values is of a sufficient size or adjoins an existing reserve and can be managed cost effectively by the National Parks and Wildlife Service (NPWS). If such a property is available for purchase, OEH will assess the priority of the purchase and, if warranted and agreed to by NPWS, will acquire it. Land will only be purchased from willing sellers.

Funding will be provided over the first five years following the acquisition of new reserves to manage threats to biodiversity values. Funding over a longer period may be warranted if establishment actions are not completed in the first five years. Such actions may include management planning, fencing, managing weeds, removing rubbish and track maintenance.

Conservation agreements

Conservation agreements are a priority for properties that have suitable conservation values but are too small to be managed as public reserves, or where the landowner is not interested in selling. The preferred conservation agreement is a biobanking agreement which is an agreement made with landowners under the NSW Government's Biodiversity Banking and Offsets Scheme (BioBanking Scheme). Biobanking agreements provide permanent security for the land and funding for ongoing management and monitoring. Other types of perpetual conservation agreements could also be used under the program in exceptional circumstances.

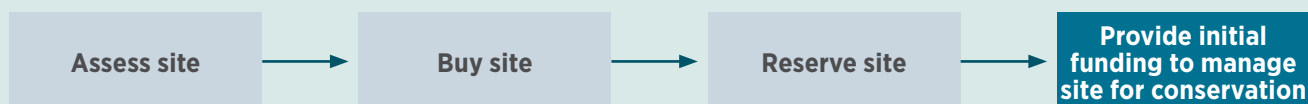
One advantage of biobanking agreements compared to reserve acquisitions is that all future management costs are secured up front. The disadvantages are that biobank sites remain in private ownership and public access is usually not available.

In some cases, OEH will work in partnership with other government authorities to establish biobanking agreements on properties with high conservation values that are for sale but are not suitable for reservation. In these cases, OEH will fund the appropriate government authority to purchase the land. A biobanking agreement will be established on the property, which can be on-sold at a later date to a new owner who will manage the land for conservation.

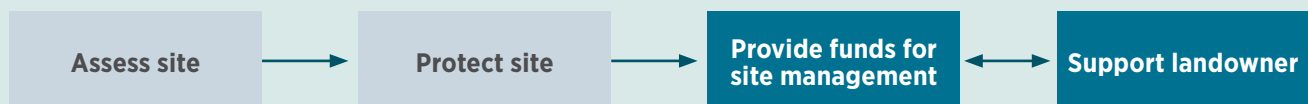
The program protects areas of conservation values through:

1. Reserve acquisition and establishment

Buying properties to create new reserves or expanding existing reserves

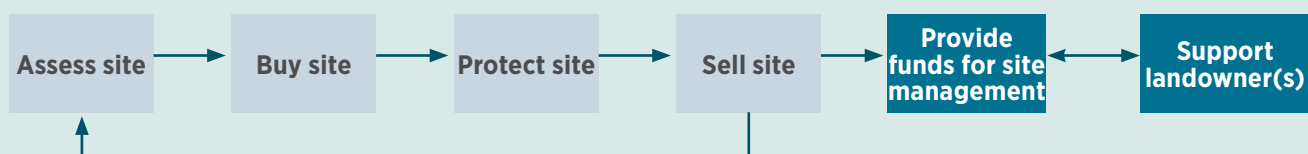


2. Conservation agreements* with willing landowners



3. Conservation agreements* through a partnership

Buying, establishing conservation agreements on, and selling high conservation value properties



*Biobanking agreements are used by the program as the preferred conservation agreement.



1.5 Program commitments

The program is committed to implementing outcomes under three agreements:

1. Biodiversity certification of the Growth Centres SEPP
2. Growth Centres Strategic Assessment approval
3. Mulgoa biobank site funding agreement with the Australian Government.

Biodiversity certification of the Growth Centres SEPP

The program is committed to allocating funds each year to purchase reserves or establish conservation agreements in the locations, and in accordance with the criteria, specified by the certification. These locations and criteria are described in previous sections.

Growth Centres Strategic Assessment approval

In 2012, the Australian Government approved NSW's Sydney Growth Centres Strategic Assessment Program (except for actions on Commonwealth land or by the Australian Government). The approval enables development to proceed in the Growth Centres in accordance with the EPBC Act while protecting biodiversity values through offsets implemented under the program. As part of the requirements of the approval, the following will be protected under the program:

- at least 2400 hectares of Commonwealth-listed Cumberland Plain Woodland or other 'grassy woodland' communities, with preference given to Cumberland Plain Woodland, followed by White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland
- at least 205 hectares of high quality Commonwealth-listed Cumberland Plain Woodland – 15% of this target will be protected every four years until 205 hectares are protected
- at least 132 hectares of Shale Sandstone Transition Forest
- at least 4.4 hectares of Turpentine Ironbark Forest
- potential habitat for two threatened plant species, *Acacia pubescens* and *Pimelea spicata*
- potential habitat for three threatened fauna species: the swift parrot, large-eared pied bat and grey-headed flying-fox.

The program will also ensure that all investments occur on the Cumberland Plain unless there are exceptional circumstances that are approved by the Australian Government.




Mulgoa biobank site funding agreement with the Australian Government

In May 2013, OEH entered into a funding agreement with the Australian Government, which provided OEH with a grant of \$4,110,230 (excluding GST) to purchase biodiversity credits from the Mulgoa biobank site. Of the 50 hectares of high conservation bushland protected on the site, 38 hectares is Cumberland Plain Woodland of which 30 hectares meet the definition of Commonwealth-listed Cumberland Plain Woodland. This agreement therefore contributes significantly to the program meeting the 205-hectare target for conserving Cumberland Plain Woodland set by the Growth Centres Strategic Assessment approval.

Given the co-contribution of Commonwealth funds to assist the NSW Government in meeting its offset requirements, OEH is committed to protecting Commonwealth-listed vegetation in addition to the vegetation required to be protected under the Strategic Assessment approval. The amount of additional vegetation protected over the next 10 years will be equivalent to \$1,942,043 (in 2012–13 dollar values), which is the contribution provided by the Australian Government towards protecting the 30 hectares of Commonwealth-listed Cumberland Plain Woodland on the Mulgoa site.



A photograph of a forest scene. On the left, there is a rocky overhang or cave entrance. The ground is covered with vibrant green ferns. A large, light-colored tree trunk stands prominently in the center-right. The background is filled with dense green foliage and trees.

661 hectares of high conservation value land has been protected over the 10 years that the program has operated

2 What we have achieved



2.1 Ten years of land conservation

In the 10 years that the program has been operating (2008–09 to 2017–18 over 661 hectares of high conservation value land has been protected at 19 locations in western Sydney (Figure 7). Work by the program has included:

Wianamatta Nature Reserve (2008–09): Assisting in the purchase of the 181-hectare Wianamatta NR at Cranebrook and funding the fencing of the reserve’s perimeter to prevent illegal damage.

St Mary’s Towers (2009–10): Establishing the state’s first biobank site at St Mary’s Towers, Douglas Park, protecting 80 hectares of significant bushland.

Beulah (2010–11): With the Historic Houses Trust, jointly funding the purchase of the historic Beulah property near Appin and protecting 60 hectares of its important bushland through a biobanking agreement.

Mater Dei (2011–12): Establishing the Mater Dei biobank site on the banks of the Nepean River at Cobbitty and protecting 26 hectares of threatened bushland.

Mt Hercules (2012–13): Establishing the Mt Hercules biobank site on the Razorback Range, protecting 22 hectares of threatened vegetation containing critically endangered Cumberland Plain Woodland.

Mulgoa (2012–13): Assisting in protecting 50 hectares of ecologically rich bushland directly adjoining Mulgoa Nature Reserve.

Fernhill East (2013–14): Assisting in protecting 16 hectares of critically endangered Cumberland Plain Woodland on the historic Fernhill Estate.

Orangeville (2013–14): Establishing the Orangeville biobank site, protecting 38 hectares of ecologically rich bushland on a working farm at Orangeville from clearing and grazing.

Fernhill Central West (2014–15 & 2015–16): Protecting nine hectares of the critically endangered ecological community Shale Sandstone Transition Forest, all of which meet the condition criteria for the Commonwealth-listed Shale Sandstone Transition Forest.

Glenmore Park (2014–15): Assisting in the protection of a 15-hectare biobank site providing a crucial missing link between two parts of the Mulgoa Nature Reserve.

Williamswood (2015–16): Assisting in the protection of 32 hectares of Cumberland Plain Woodland at the 105-hectare biobank site at Mt Hunter.

Mater Dei Stage 2 (2015–16): Establishing the second biobank site at Mater Dei, protecting 58 hectares of endangered bushland that adjoins the existing 26-hectare biobank site on the banks of the Nepean River at Cobbitty.

Hardwicke Stage 1 (2016–17): Assisting in the protection of 27 hectares of Cumberland Plain Woodland at the 56-hectare biobank site at the Oakes Estate, Wollondilly.

Winbourne (2017–18): Establishing a 20-hectare biobank site on a historic property in Mulgoa providing habitat for 10 threatened fauna species.



Montpelier Lot 64 (2017–18): Assisting in the protection of 13 hectares of Cumberland Plain Woodland at a 160-hectare biobank site at the Oaks, Wollondilly.

Montpelier Lot 72 (2017–18): Assisting in the protection of three hectares of Cumberland Plain Woodland at a 160-hectare biobank site at the Oaks, Wollondilly.

Montpelier Lot 653 (2017–18): Assisting in the protection of 11 hectares of Cumberland Plain Woodland at a 160-hectare biobank site at the Oaks, Wollondilly.

Nepean River (2017–18): Assisting in the protection of 18 hectares of Cumberland Plain Woodland on a biobank site joining the banks of the Nepean River.

Hampden Vale (2017–18): Assisting in the protection of eight hectares of Cumberland Plain Woodland at the 104-hectare biobank site in Wollondilly.



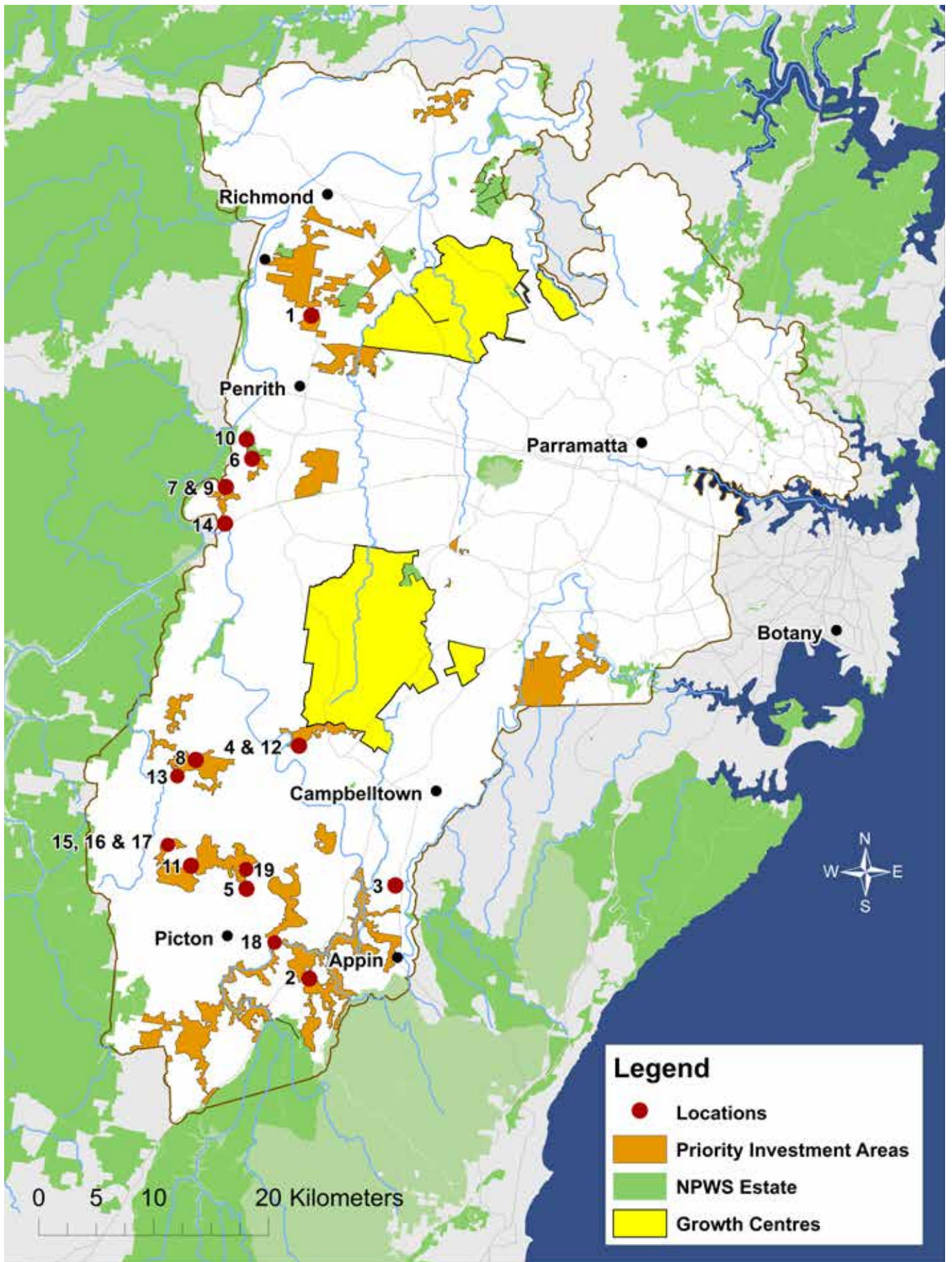


Figure 7 Vegetation and habitat protected by the program to date.

Key to locations identified in Figure 7²



1. Wianamatta Nature Reserve (Cranebrook) (2008–09)



2. St Mary's Towers biobank site (2009–10)



3. Beulah biobank site (2010–11)



4. Mater Dei biobank site (2011–12)



5. Mt Hercules biobank site (2012–13)



6. Mulgoa biobank site (2012–13)



7. Fernhill East biobank site (2013–14)



8. Orangeville biobank site (2013–14)



9. Fernhill Central West biobank site (2014–15)



10. Glenmore Park biobank site (2014–15)

²Dates indicate the year of first investment at the location



11. Williamswood biobank site (2015-16)



12. Mater Dei Stage 2 biobank site (2015-16)



13. Hardwicke Stage 1 biobank site (2016-17)



14. Winbourne biobank site (2017-18)



15. Montpelier Lot 72 biobank site (2017-18)



16. Montpelier Lot 64 biobank site (2017-18)



17. Montpelier Lot 653 (2017-18)



18. Nepean River biobank site (2017-18)



19. Hampden Vale biobank site (2017-18)

2.2 Progress towards the program's conservation targets

Protecting native vegetation

Of the 661 hectares of native vegetation protected to date, 638 hectares comprise threatened ecological communities listed under state legislation (Table 2, see Appendix A for area of vegetation protected at each location). In accordance with the program's aims, the protected areas are some of the largest areas of bushland with high conservation values left in western Sydney.

Protecting threatened animals and plants

Valuable habitat for 32 threatened flora and fauna species has now been protected using the program's funds. The populations of three threatened shrubs (*Dillwynia tenuifolia*, *Micromyrtus minutiflora* and *Pultenaea parviflora*) are among the largest recorded for those species (Appendix B).

Table 2 Vegetation communities protected by the program as at June 2017

Vegetation types	Status TSC Act ¹	Total (ha)
Cumberland Plain Woodland	CE	314.2
Shale Sandstone Transition Forest	CE	94.4
Castlereagh Swamp Woodland	E	50.5
Cooks River Castlereagh Ironbark Forest	E	41.2
Moist Shale Woodland	E	13.7
River-Flat Eucalypt Forest	E	38.5
Shale Gravel Transition Forest	E	3.5
Sydney Turpentine-Ironbark Forest	E	14.7
Western Sydney Dry Rainforest	E	1.6
Castlereagh Scribbly Gum Woodland	V	66.1
Sydney Hinterland Transition Woodland	-	3.0
Grey Myrtle Dry Rainforest	-	10.5
Hinterland Sandstone Gully Forest	-	8.6
Total vegetation protected by the program		660.6
Commonwealth-listed communities	Status EPBC Act ^{1,2}	Total (ha)
Commonwealth-listed Cumberland Plain Woodland	CE	278.5
Shale Sandstone Transition Forest	CE	93.8
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	CE	3.9
Western Sydney Dry Rainforest and Moist Woodland on Shale	CE	9.9
Total Commonwealth-listed communities protected		386.1

¹ TSC Act refers to the NSW *Threatened Species Conservation Act 1995*. Status refers to either critically endangered (CE); endangered (E) or vulnerable (V).

² EPBC Act refers to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Refer to Appendix A for notes and further information on this table.



Figure 8 The critically endangered swift parrot

Photo: Neville Lazaeus

Protecting matters of national environmental significance

To date, 386 hectares of nationally-listed ecological communities have been protected through the program (Table 2), including 279 hectares of Commonwealth-listed Cumberland Plain Woodland. Only the vegetation protected from 2010–11 onwards counts towards meeting the targets set by the Growth Centres Strategic Assessment approval (Table 3). Since that time 241 hectares of Commonwealth-listed Cumberland Plain Woodland has been protected in accordance with the approval. ‘High management viability’ Cumberland Plain Woodland (CPW) is a subset of Commonwealth-listed CPW that is of particularly high quality (as defined in Commitment 6 of the Sydney Growth Centres Strategic Assessment Report). In 2017–18 the target of protecting 205 hectares of ‘High management viability’ CPW was met. The program has protected 239 hectares of ‘High management viability’ CPW to date.

Through the program, potential habitat for three Commonwealth-listed threatened fauna species has been protected in accordance with the offset requirements for the Strategic Assessment approval (refer to Table 3 and Appendix C). Specifically; 347 hectares of potential habitat has been protected for the swift parrot (Figure 8), 276 hectares for the large-eared pied bat and 289 hectares for the grey-headed flying-fox. In 2017, the grey-headed flying fox was recorded on the program’s new conservation investment at Winbourne and has also been recorded at the Saint Mary’s Towers biobank site. The critically endangered swift parrot was observed at the Mater Dei biobank site by the bush regeneration team in June 2014 and then again in May 2016 during the winter migration. The large-eared pied bat was also recorded in a riparian corridor on the Mater Dei property during a recent fauna survey (May 2016) and has been previously recorded at the St Mary’s Towers site. These recordings indicate that the potential habitat for these species, which is required to be protected as part of the Strategic Assessment approval, is actually being utilised by the species.

The purchase of 109 biodiversity credits of Shale Sandstone Transition Forest (SSTF) from the Winbourne biobank site at a cost of \$1,053,158 (plus GST) was counted towards the program’s commitment to the Australian Government to protect ‘Additional Conservation Outcomes’ under the Mulgoa biobank site funding agreement (Table 3). The commitment has now been met through this credit purchase and a previous purchase of 100 SSTF credits from the Fernhill Central West biobank site at a cost of \$1,000,000 (plus GST). The purchased credits protect 17.4 hectares of SSTF and, in accordance with the terms of the Mulgoa funding agreement, this vegetation has not been counted towards New South Wales’ compliance obligations under the Strategic Assessment Approval.

The target of protecting 72 hectares of Commonwealth-listed Cumberland Plain Woodland under the Edmondson Park Conservation Agreement was completed in September 2012 (Table 3) by protecting 76 hectares of Commonwealth-listed Cumberland Plain Woodland on four biobank sites: St Mary’s Towers, Beulah, Mater Dei and Mt Hercules.

More details of the conservation outcomes achieved in 2017–18 are provided in Section 2.3.

Swift parrots breed in Tasmania and then migrate across Bass Strait to forage on the flowering eucalypts in open box-ironbark forests of the Australian mainland. While on the mainland they are nomadic, spending weeks or months at some sites depending on the supply of nectar. Swift parrots have been listed as critically endangered by the Australian Government due to the loss of habitat and predation.

Table 3 Progress towards the program's conservation targets

Biodiversity feature	Target	Target due date	Progress to date	Progress
Biodiversity certification of the Growth Centres				
<i>Cynanchum elegans</i> ¹	1 population ²	End of program ³	0	0%
Edmondson Park Conservation Agreement				
Commonwealth-listed Cumberland Plain Woodland ⁴	72 ha	August 2012	Completed	Completed
Growth Centres Strategic Assessment approval⁵				
Allocation of funds to protect targeted MNES	\$278.25 M ⁶	End of program	\$55,261,515	19.9%
Commonwealth-listed Cumberland Plain Woodland or other 'grassy woodlands'	2,400 ha	End of program	241.1 ha	10.0%
'High management viability' Cumberland Plain Woodland ⁷	205 ha	End of program	239.2 ha	Completed
Shale Sandstone Transition Forest ⁸	132 ha	End of program	43.6 ha	33.0%
Turpentine Ironbark Forest	4.4 ha	End of program	3.9 ha	88.8%
<i>Acacia pubescens</i>	1 population ²	End of program	0	0%
<i>Pimelea spicata</i>	1 population ²	End of program	0	0%
Cwlth-listed swift parrot (potential habitat)	1 ha habitat ²	End of program	347.4 ha	Completed
Cwlth-listed large-eared pied bat (potential habitat)	1 ha habitat ²	End of program	276.2 ha	Completed
Cwlth-listed grey-headed flying-fox (potential habitat)	1 ha habitat ²	End of program	288.9 ha	Completed
Mulgoa biobank site funding agreement				
Threatened communities listed under the EPBC Act	\$1,942,043 ⁹	May 2023	\$2,053,189 ¹⁰	Completed

¹ Refer to Relevant Biodiversity Measure 34 of the Growth Centres Biodiversity Certification.

² The terms '1 population' or '1 ha habitat' indicate that no specific targets have been set and the program will endeavour to protect at least one population or as many hectares as possible.

³ 'End of program' refers to the completion of the program over a 50-year period.

⁴ Refer to Clause 3.3 of Schedule 4 of the Edmondson Park Conservation Agreement.

⁵ Only investments from 2010-11 onwards count towards meeting the Strategic Assessment target. The targets therefore exclude the biodiversity values protected by the program at Wianamatta Nature Reserve (2008-09) and St Mary's Towers biobank site (2009-10).

⁶ 2005-06 dollar values

⁷ 'High management viability' Cumberland Plain Woodland (CPW) is a subset of Commonwealth-listed CPW that is of particularly high quality. The vegetation protected as part of the 205 ha for 'High management viability' CPW is therefore also counted towards the 2400 ha target for CPW. All of the Commonwealth-listed CPW protected since 2010-11, with the exception of 1.9 ha at Mater Dei Stage 1, has been assessed as being of 'high management viability' or as having regeneration capacity, as defined in Commitment 6 of the Sydney Growth Centres Strategic Assessment Report.

⁸ Progress towards the target for SSTF excludes the 9.5 ha protected at Fernhill Central West biobank site in 2014-15 and 2015-16 and the 7.9 ha protected at Winbourne biobank site in 2017-18. The funding to protect this vegetation has been counted towards the Mulgoa funding agreement. As noted above, it also excludes SSTF protected prior to 2010-11 at St Mary's Towers.

⁹ \$1,942,043 in 2012-13 dollar values with indexing must be spent protecting Commonwealth-listed threatened vegetation communities in western Sydney.

¹⁰ \$2,053,158 in current dollar values, has been spent by the program to meet the target.



2.3 Conservation outcomes for 2017–18

During 2017–18, the program protected an additional 93 hectares of threatened vegetation by purchasing biodiversity credits from three existing biobank sites and six new biobank sites that occur within the program’s first preference investment areas. A summary of these outcomes is provided below.

Existing biobank sites:

- protecting two hectares of Cumberland Plain Woodland by purchasing 23 credits from the Hardwicke Stage 1 biobank site
- protecting six hectares of River-Flat Eucalypt Forest by purchasing 90 biodiversity credits from the Mater Dei Stage 2 biobank site
- protecting 18 hectares of Cumberland Plain Woodland and three hectares of Moist Shale Woodland by purchasing 244 credits from the Williamswood biobank site

New biobank sites:

- protecting three hectares of Cumberland Plain Woodland by purchasing 47 credits from the Montpelier Lot 72 biobank site
- protecting 13 hectares of Cumberland Plain Woodland by purchasing 168 credits from the Montpelier Lot 64 biobank site
- protecting 11 hectares of Cumberland Plain Woodland by purchasing 148 credits from the Montpelier Lot 653 biobank site
- protecting 18 hectares of Cumberland Plain Woodland by purchasing 243 credits from the Nepean River biobank site
- protecting eight hectares of Cumberland Plain Woodland by purchasing 98 credits from the Hampden Vale biobank site
- protecting four hectares of Cumberland Plain Woodland and eight hectares of Shale Sandstone Transition Forest by purchasing 154 biodiversity credits from the Winbourne biobank site

A case study on the investment of funding at the Winbourne biobank site is provided on the following pages. For more information on the other biobank sites refer to the program’s web page.

Biobanking protects historic ‘Winbourne’ woodland

‘Winbourne’ is a privately owned historic property that dates back to the early 1800s pioneering Cox family. It is located in Mulgoa and directly adjoins the Nepean River. The property comprises cleared or partially cleared land interspersed with patches of near intact native vegetation. Past uses of the property have included grazing and timber getting. The Winbourne biobank site was established by the program in May 2018 and protects 20 hectares of threatened bushland (Figure 9).

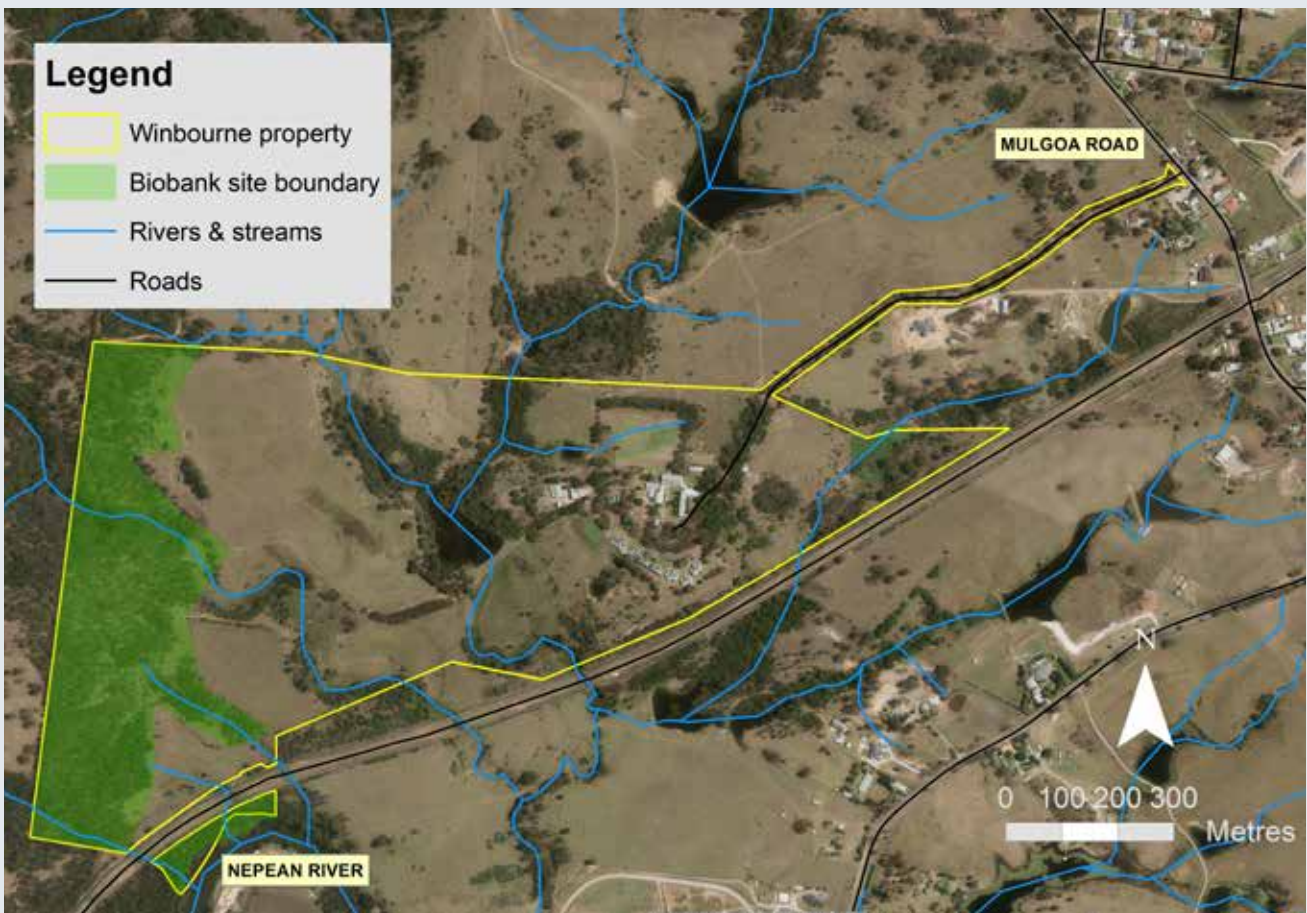


Figure 9 Location of the Winbourne biobank site

Conserving natives animals and threatened species

The native forest and woodland at the site provides habitat for a diverse range of native animals, including several threatened species.

In a fauna survey undertaken in 2017, 146 native animals were recorded including 10 threatened species. Of these threatened species the barking owl, dusky woodswallow, Dural land snail, eastern freetail-bat and greater broad-nosed bat are of particularly high conservation significance in the Cumberland Plain region, as they were recorded regularly and/or are likely to breed within the bushland.

The habitat value of the biobank site for threatened species and other native animals is expected to increase over the coming years as the lantana is removed and regeneration work takes place with funding through the program.



Figure 10 The threatened dusky woodswallow

Photo: R Eckermann

Several dusky woodswallows were observed hawking for insects and perched in canopy trees upslope of the Nepean River, directly adjacent to the Winbourne biobank site. There are a number of other records of the species from nearby bushland, such as in the Fairlight Road area and Mulgoa Nature Reserve.

Both the eastern freetail-bat and the greater broad-nosed bat were recorded frequently during the fauna survey suggesting that a population occurs within the area and is likely to roost within the bushland.

Protecting threatened bushland



Figure 11 Harp trap set on the edge of a remnant pool in Grey Myrtle Dry Rainforest – Winbourne biobank site

Photo: M Shultz



Figure 12 Cumberland Plain Woodland on the Winbourne biobank site that meets the condition criteria for listing under Commonwealth legislation

The biobank site contains four endangered ecological communities that are listed under the TSC Act, including 4.6 hectares of critically endangered Cumberland Plain Woodland (Table 4). Approximately 3.5 hectares of this vegetation meets the criteria for listing as critically endangered under Commonwealth legislation (Figure 12).

Table 4 Vegetation summary

Cumberland Plain Woodland	CE	4.6
River-Flat Eucalypt Forest	E	2.28
Sydney Turpentine-Ironbark Forest	E	0.52
Shale Sandstone Transition Forest	CE	12.67
Grey Myrtle Dry Rainforest	-	0.37
Total vegetation protected at the biobank site		20.44

Purchasing biodiversity credits

To establish credits for a biobank site a landholder must commit to enhancing and protecting biodiversity values over time. A biobanking agreement is registered on the title of the land and binds both the current and future landholders to maintaining biodiversity through the completion of a range of management actions. Each biobank site creates ecosystem credits and these credits may be sold either individually or as a group on the open market.

The establishment of the Winbourne biobank site created 281 biodiversity credits. Of these credits, 154 were purchased by the program in June 2018. The purchase ensures that 11.4 hectares of critically endangered Cumberland Plain Woodland and Shale Sandstone Transition Forest will be managed in-perpetuity.

The credits were purchased at market value for \$1,711,688 (excluding GST). Most of this funding was paid into the Biobanking Trust Fund to provide for management of the site. The 154 credits purchased by the program will be retired so that they cannot be used as a future offset. The remaining 127 biodiversity credits have been retained by the landholder for future sale.

Back to nature

The bushland on the site is in a variety of conditions, ranging from highly disturbed riparian forest through to good condition Cumberland Plain Woodland. Most of the site has been previously grazed by cattle and is under threat from the invasion by several weeds including lantana, privet and exotic grasses.

Under the biobanking agreement, the landowners can continue to use the bushland for passive recreation but will be unable to develop or use the site for grazing. They are responsible for managing the biodiversity on the site by removing rubbish, installing new fences, controlling weeds and feral animals, and revegetating previously grazed land and areas along the Nepean that need stabilisation (Figure 13). The landowners will receive funding each year from the Biobanking Trust Fund for commercial contractors to undertake this work.

Without the ongoing funding delivered through the biobanking agreement, these areas would continue to degrade and eventually lose their conservation values. The secure funding provided through the biobanking agreement ensures this historic site will be protected and well managed into the future.



Figure 13 The bushland within the Winbourne biobank site that borders the Nepean River will be restored through weed control and revegetation

3 Clearing in the Growth Centres

3.1 Clearing of vegetation in the ‘protected lands’

The biodiversity certification of the Growth Centres SEPP requires a minimum of 2000 hectares of the ‘existing native vegetation’ (ENV) identified in Figure 14 to be retained and protected in the Growth Centres.

The certification anticipated that this vegetation would be retained in areas identified as the ‘protected lands’ (Growth Centres Commission 2007, Growth Centres Conservation Plan – Exhibition Draft).

Development controls apply to these areas to restrict vegetation clearing (see Part 6 of the Growth Centres SEPP). Where clearing is permitted with consent, additional vegetation will be protected or revegetation undertaken to achieve the 2000-hectare target.

When it was certified in 2007, 1981 hectares of ‘existing native vegetation’ were protected by the Growth Centres SEPP (see Table 5 and Appendix D). All values in the report have been rounded and are presented in Table 5 to one decimal point.

In 2018, 2020 hectares of ENV is protected within the Growth Centres, exceeding the 2000-hectare target. In the past year the overall amount of ENV protected in the Growth Centres decreased by 1.6 hectares due to clearing.

Table 5 Vegetation change in the Growth Centres

Land class (all values in hectares)	Vegetation present in 2007	Vegetation present in 2018	Vegetation cleared in last year	Total vegetation change since 2007
Protected land	1,980.7	2,019.5	-1.61	38.8
Developable land	1,765.1	1,351.2	-16.2	-413.9
Total	3,745.8	3,370.7	-17.8	-375.1

Refer to Appendix D for details.

3.2 Clearing of vegetation in the ‘developable lands’

Vegetation amounting to 1765 hectares existed at the time of certification in the areas that are being developed in the Growth Centres (the ‘developable lands’). This vegetation was identified at the time of certification as being less viable for long-term conservation as it occurs in patches of less than four hectares or is highly threatened with future degradation. The certification provided for the loss of all of this vegetation during the development of the Growth Centres. Actual clearing, however, may be less, with some native vegetation being retained through detailed local planning. All losses will be offset by the acquisition and establishment of new reserves in the Growth Centres and through the land protected by this program.

As indicated in Table 5, 1351 hectares of ‘existing native vegetation’ remains in the ‘developable lands’ in 2018, with 16 hectares lost in the past year through clearing.



Losses of vegetation are being offset by the acquisition and establishment of new reserves in the Growth Centres and through the land protected by this program.

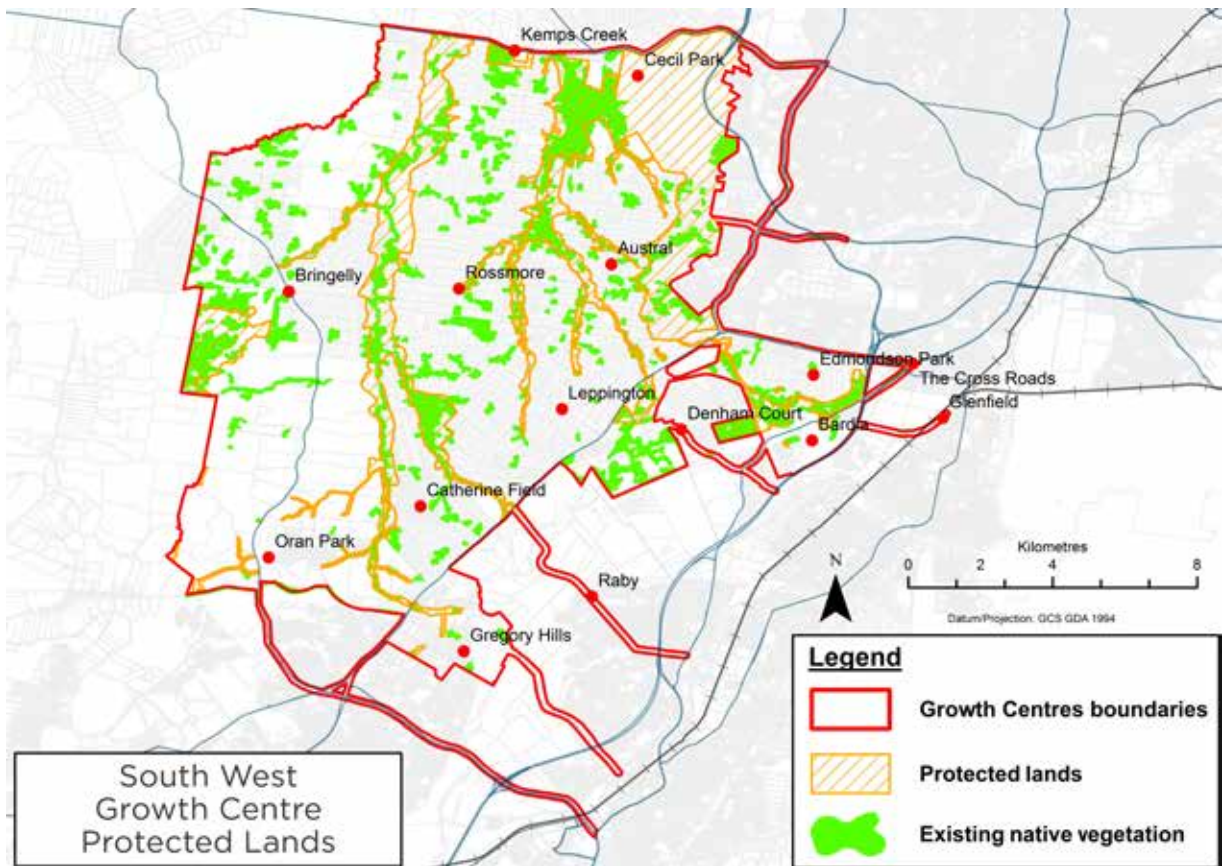
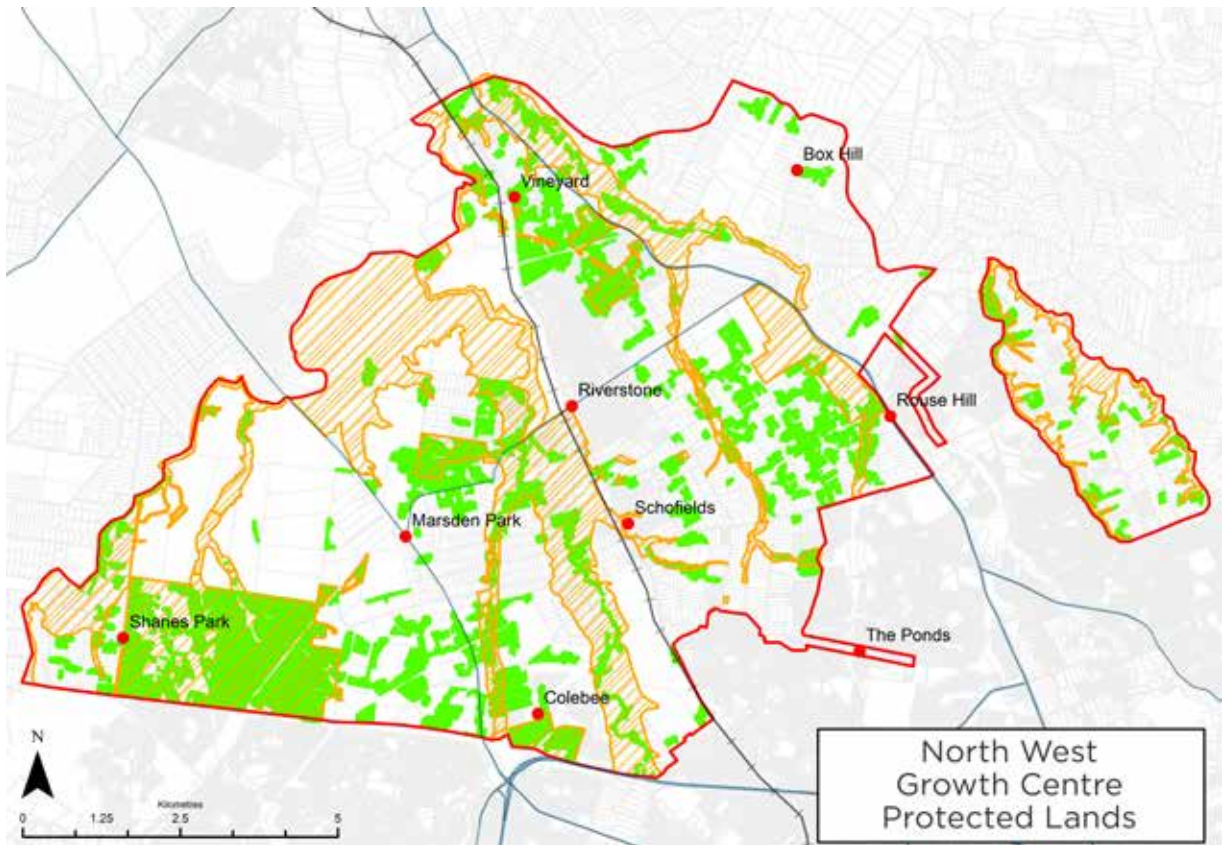


Figure 14: Growth Centres protected lands

Note: The term ‘protected lands’ refers to land within the Growth Centres that is not certified, as identified in Amendment 1 to the subject lands maps for the biodiversity certification.

4 Financial report



4.1 Opening balance

The program commenced operation in 2017–18 with a surplus of \$2426 resulting from a minor underspend in the previous year (see Table 6).

4.2 Revenue

Total revenue for the program in 2017–18 was \$19,739,000.

The total revenue comprised an annual allocation to the program of \$10,569,000 (see Appendix E) and an advanced allocation of an additional \$10,800,000 from the Environmental Trust however, this level of funding was reduced by \$1,630,000 following the acceleration of the program in previous financial years that needed to be returned to the Environmental Trust in 2017–18.

4.3 Expenditure

Total expenditure for the program in 2017–18 was \$19,709,697. Of this amount, \$19,511,656 was allocated to purchasing biodiversity credits from nine biobank sites as well as the costs of two staff to work with landholders.

The remaining \$198,042 of total expenditure was spent on the program's administrative costs. This comprised of:

- the salary and on-costs for 1.0 OEH staff to manage the program
- contractor's costs to assess the values and provide specialist advice for sites from which credits are purchased through the program
- contractor's costs to assist in the development of a consistent method for planning and costing biobank sites within the programs area of interest, and
- miscellaneous expenses such as transport and consumables.

The certification of the Growth Centres SEPP requires that the administration costs for the program, combined with the initial management costs of any purchased land, do not exceed 5% of the annual allocation of new program funding. In 2017–18, these costs amounted to \$198,042 which is 1.9 % of the program's allocation for the year of \$10,569,000.

4.4 Closing balance

The program ended the year with an underspend of \$31,729 (0.2% of total revenue) which will be re-allocated to the program for expenditure in 2018-19.

Table 6 Financial summary report^{1,2}

	Funds (\$)
OPENING BALANCE AT 1 JULY 2017	(2,426)
REVENUE	
Program allocation (net of prior fund acceleration) ³	(19,739,000)
TOTAL REVENUE PLUS OPENING BALANCE	(19,741,426)
EXPENDITURE	
Operational expenses	
Land purchase for reservation	0
Initial management of purchased land	0
Conservation agreements	
Williamswood biobank site: credit purchase	3,985,000
Mater Dei Stage 2 biobank site: credit purchase	1,170,900
Hardwicke Stage 1 biobank site: credit purchase	393,300
Hampden Vale biobank site: credit purchase	1,675,800
Montpelier Lot 64 biobank site: credit purchase	2,872,800
Montpelier Lot 72 biobank site: credit purchase	822,500
Montpelier Lot 653 biobank site: credit purchase	2,530,800
Nepean River biobank site: credit purchase	4,155,300
Winbourne biobank site: credit purchase	1,711,688
Operational costs: salaries with on-costs	193,568
Operational expenses – sub-total	19,511,656
Administration expenses	
Administration: salaries with on-costs	138,646
Contractors	27,789
Miscellaneous expenses	31,607
Administration expenses – sub-total	198,042
TOTAL EXPENDITURE	19,709,697
BALANCE AT 30 JUNE 2018	(31,729)

Notes:

- 1 This financial report is not a General Purpose Financial Report and has not been separately audited; however, these financials form part of the OEH agency accounts.
- 2 Values in brackets represent either revenue received by the program or a positive balance.
- 3 The program allocation of \$19,739,000 included:
 - allocation of \$10,569,000 as new program funding for 2017-18 (refer to Appendix E)
 - allocation of \$10,800,000 as an advance of program funds in 2017-18 to enable the purchase of additional credits
 - deduction of \$800,000 as the third of three repayments for an advance of \$2,000,000 in 2013-14
 - deduction of \$500,000 as the second of three repayments for an advance of \$1,500,000 in 2015-16
 - deduction of \$330,000 as the first of three payments for an advance of \$1,000,000 in 2016-17.

Appendix A: Vegetation protected by the program

Table 7 Vegetation protected by the program at each location¹

Location ²		Vegetation protected at sites prior to 2017-18	Ww	MDei2	Har1	Hamp	M64	M2	M653	NR	Win	
Vegetation types	Status TSCA ³	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Total
Cumberland Plain Woodland	CE	238.1	18.1	-	1.9	7.6	13.1	3.1	11.0	17.9	3.5	314.2
Shale Sandstone Transition Forest	CE	86.5	-	-	-	-	-	-	-	-	7.9	94.4
Castlereagh Swamp Woodland	E	50.5	-	-	-	-	-	-	-	-	-	50.5
Cooks River Castlereagh Ironbark Forest	E	41.2	-	-	-	-	-	-	-	-	-	41.2
Moist Shale Woodland	E	10.9	2.8	-	-	-	-	-	-	-	-	13.7
River-Flat Eucalypt Forest	E	32.2	-	6.3	-	-	-	-	-	-	-	38.5
Shale Gravel Transition Forest	E	3.5	-	-	-	-	-	-	-	-	-	3.5
Sydney Turpentine Ironbark Forest	E	14.7	-	-	-	-	-	-	-	-	-	14.7
Western Sydney Dry Rainforest	E	1.6	-	-	-	-	-	-	-	-	-	1.6
Castlereagh Scribbly Gum Woodland	V	66.1	-	-	-	-	-	-	-	-	-	66.1
Non-threatened vegetation	-	22.1	-	-	-	-	-	-	-	-	-	22.1
Vegetation protected by the program		567.4	20.9	6.3	1.9	7.6	13.1	3.1	11.0	17.9	11.4	660.6

¹ Note that the value of the 'Totals' may vary from the sum of the component locations due to rounding.

Table 8 Commonwealth-listed vegetation protected by the program at each location¹

Location ²		Sites prior to 2017-18	Ww	MDei2	Har1	Hamp	M64	M72	M653	NR	Win	
Vegetation types	Status EPBC ³	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Total
Cumberland Plain Woodland ⁴	CE	148.9	31.9	26.7	20.9	7.6	11.7	2.1	7.3	17.9	3.5	278.5
Shale Sandstone Transition Forest	CE	85.9	-	-	-	-	-	-	-	-	7.9	93.8
Sydney Turpentine Ironbark Forest	CE	3.9	-	-	-	-	-	-	-	-	-	3.9
Western Sydney Dry Rainforest ⁵	CE	9.9	-	-	-	-	-	-	-	-	-	9.9
Vegetation protected by the program⁶		248.6	31.9	26.7	20.9	7.6	11.7	2.1	7.3	17.9	11.4	386.1

¹ Note that the value of the 'Totals' may vary from the sum of the component locations due to rounding.

² Locations: Refer to 'Key to location names'.

³ EPBC refers to the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*. Status refers to critically endangered (CE), endangered (E) and vulnerable (V).

⁴ Commonwealth-listed Cumberland Plain Woodland comprises NSW TSC Act-listed 'Cumberland Plain Woodland' and 'Shale Gravel Transition Forest' where these communities meet the required condition thresholds.

⁵ Commonwealth-listed Western Sydney Dry Rainforest and Moist Woodland on Shale comprises NSW TSC Act-listed 'Western Sydney Dry Rainforest' and 'Moist Shale Woodland' where these communities meet the required condition thresholds.

⁶ The figures describing the area (ha) of Commonwealth-listed communities protected at some locations differ from those in previous annual reports. This is the result of a revision to the method used by the program to apply the condition thresholds described by the Commonwealth for each community.

Key to location names

Ww Williamswood biobank site

MDei2 Mater Dei Stage 2 biobank site

Har1 Hardwicke Stage 1 biobank site

Hamp Hampden Vale biobank site

M64 Montpelier Lot 64 biobank site

M72 Montpelier Lot 72 biobank site

M653 Montpelier Lot 653 biobank site

NR Nepean River biobank site

Win Winbourne biobank site

Appendix B: Recorded threatened species

Table 9 Threatened species recorded on lands protected by the program

Threatened species	Status TSC Act ¹	No. of sites protected	Locations where species is known to occur
Fauna			
Cumberland Plain land snail	E	10	WNR, SMT, Beu, MDei, MHerc, FE, GP, MDei2, Win, NR
East coast freetail-bat	V	3	WNR, MDei, MDei2
Eastern bentwing-bat	V	3	MDei, MDei2, Win
Large-eared pied bat	V	2	SMT, MDei2
Greater broad-nosed bat	V	2	Win, SMT
Southern myotis	V	1	SMT
Grey-headed flying-fox	V	2	SMT, Win
Koala	V	2	Beu, SMT
Greater glider	V	1	SMT
Little lorikeet	V	2	SMT, Win
Square tailed kite	V	1	SMT
Varied sittella	V	5	Mul, FE, FCW, GP, Win, SMT
Black-chinned honeyeater: eastern subsp.	V	2	Mul, GP, SMT
Glossy black-cockatoo	V	2	FCW, GP
Little eagle	V	3	Ww, MDei2, Hamp
Speckled warbler	V	2	Ww, SMT
Sooty owl	V	1	Win
Barking owl	V	1	Win
White bellied sea eagle	V	1	Win
Dusky woodswallow	V	2	MDei, Win
Flora			
Nodding geebung (<i>Persoonia nutans</i>)	E	1	WNR
Bynoe's wattle (<i>Acacia bynoeana</i>)	V	1	WNR
<i>Allocasuarina glareicola</i>	E	1	WNR
<i>Dillwynia tenuifolia</i>	V	1	WNR
<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	V	1	WNR
<i>Micromyrtus minutiflora</i>	V	1	WNR
Sydney bush pea (<i>Pultenaea parviflora</i>)	V	1	WNR
Brown pomaderris (<i>Pomaderris brunnea</i>)	V	1	Beu
Port Jackson heath (<i>Epacris purpurascens</i>)	V	1	SMT
Bargo geebung (<i>Persoonia bargoensis</i>)	E	1	SMT
Camden white gum (<i>Eucalyptus benthamii</i>)	V	1	MDei2
Spiked rice flower (<i>Pimelea spicata</i>)	E	1	Ww

¹ TSC Act refers to the NSW *Threatened Species Conservation Act 1995*. Status refers to critically endangered (CE), endangered (E) and vulnerable (V).

Appendix C:

Potential foraging habitat

Table 10 Potential foraging habitat for targeted Commonwealth-listed threatened fauna species¹

Threatened species	Status EPBC Act ²	Total area of potential foraging habitat protected since commencement of the strategic assessment approval ³	Locations where potential foraging habitat is reliably predicted to be present ⁴
Fauna		(Ha)	
Swift parrot	E	347.4	Beu, FE, GP, Ora, Mdei, MHerc, Mul, MDei2, Ww, Har1, Hamp, M72, M653, M64, NR, Win
Large-eared pied bat	V	276.2	Beu, FE, GP, Ora, Mdei, MHerc, Mul, Ww, Har1, Hamp, M72, M653, M64, NR, Win
Grey-headed flying-fox	V	288.9	Beu, FE, GP, Ora, Mdei, MHerc, Mul, Ww, Har1, Hamp, M72, M653, M64, NR, Win

¹ Potential foraging habitat for three Commonwealth-listed threatened fauna species has been protected in accordance with the offset requirements for the Strategic Assessment approval. For each of these species, potential foraging habitat is deemed to be present if the vegetation is predicted to provide habitat for the species using the biobanking assessment methodology.

² EPBC Act refers to the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*.

³ Only investments from 2010–11 onwards count towards meeting the Strategic Assessment target. The targets therefore exclude the biodiversity values protected by the program at Wianamatta Nature Reserve and St Mary's Towers biobank site.

⁴ The locations identified for a species in Table 9 are different to those identified in Table 10. The reason for this is that Table 10 identifies the locations containing potential habitat for the species whereas Table 9 identifies the locations of known sightings.

Key to location names for Tables 9 and 10

WNR	Wianamatta Nature Reserve
SMT	St Mary's Towers biobank site
Beu	Beulah biobank site
MDei	Mater Dei biobank site
MHerc	Mt Hercules biobank site
FE	Fernhill East biobank site
Mul	Mulgoa
Ora	Orangeville biobank site
FCW	Fernhill Central West biobank site
GP	Glenmore Park biobank site
Ww	Williamswood biobank site
MDei2	Mater Dei Stage 2 biobank site
Har1	Hardwick Stage 1 biobank site
Hamp	Hampden Vale biobank site
M64	Montpelier Lot 64 biobank site
M72	Montpelier Lot 72 biobank site
M653	Montpelier Lot 653 biobank site
NR	Nepean River biobank site
Win	Winbourne biobank site

Appendix D: Vegetation change since certification

Table 11 Vegetation change in the Growth Centres since certification¹

Land class	Vegetation community	Vegetation present in 2007 ²	Vegetation present in 2018 ³	Vegetation cleared in last year ⁴	Total vegetation change since 2007 ⁶
Protected	Castlereagh Swamp Woodland	35.6	35.6	0.0	0.0
Protected	Cooks River Castlereagh Ironbark Forest	140.4	140.1	-0.3 ⁵	-0.2
Protected	Cumberland Plain Woodland	664.4	679.4	0.0	15.0
Protected	Moist Shale Woodland	0.6	0.6	0.0	0.0
Protected	Shale Sandstone Transition Forest	37.7	38.8	0.0	1.1
Protected	Shale Gravel Transition Forest	390.7	406.6	0.0	16.0
Protected	River-Flat Eucalypt Forest	711.3	718.3	-1.4	7.0
Protected	Total	1,980.7	2019.5	-1.6	38.8
Developable	Castlereagh Swamp Woodland	0.0	0.0	0.0	0.0
Developable	Cooks River Castlereagh Ironbark Forest	26.0	23.8	0.0	-2.2
Developable	Cumberland Plain Woodland	1,252.2	968.3	-12.4	-283.9
Developable	Moist Shale Woodland	0.0	0.0	0.0	0.0
Developable	Shale Sandstone Transition Forest	66.2	39.1	0.0	-27.1
Developable	Shale Gravel Transition Forest	221.5	171.3	-1.3	-50.2
Developable	River-Flat Eucalypt Forest	199.2	148.7	-2.5	-50.5
Developable	Total	1,765.1	1351.2	-16.2	-413.9
Total	Vegetation	3,745.8	3370.7	-17.8	-375.1

¹ All values are in hectares. Totals may appear to differ from the sum of components because the components have been rounded.

² The amount of 'existing native vegetation' (ENV) present in 2007, approximating the time of certification.

³ The amount of ENV identified in March 2017 using remote sensing analysis.

⁴ The amount of ENV cleared between March 2017 and March 2018.

⁵ Clearing of vegetation may occur within the 'Protected lands' due to either existing development rights, or permitted clearing with consent in accordance with *State Environmental Planning Policy (Sydney Regional Growth Centres) 2006* or unauthorised clearing.

⁶ The total change in the amount of ENV between 2007, approximating the time of certification, and March 2018.

Appendix E: Calculation of the program's funding allocation for 2017-18

Annual allocations to the program are calculated based on:

- the proportion of total remaining lot production in the Growth Centres that is expected to occur in a given financial year. The certification ensures that the same proportion of the remaining, unallocated amount of the planned \$397.5 million funding is also allocated for that year (refer to measure 22b of the Growth Centres biodiversity certification).
- a land index which converts 2005-06 dollar values into current dollar values. The purpose of the index is to ensure that the conservation funding retains an equivalent ability to purchase land over the years of the program's operation. The land index is based on the Consumer Price Index as described in the Environmental Planning and Assessment (Special Infrastructure Contribution – Western Sydney Growth Areas) Determination 2011.
- a correction for any difference between the predicted and actual lot yields for the previously completed year.

Table 12 provides the calculations for the program's funding allocation for 2017-18 and is based on information provided by the Department of Planning and Environment in April 2017.

Table 12 Calculation of program funding for 2017-18

Total remaining lot production at start of 2017-18 (Note that this contains both residential and non-residential lot equivalents)	345,611 lots
Predicted lot production for 2017-18 (Note that this contains both residential and non-residential lot equivalents)	8,462 lots
Adjustment for difference between actual and predicted lot production from the previous completed year (2015-16)	2,079 lots
Predicted lot production for 2017-18 (adjusted for past actuals)	10,541 lots
Percentage of total remaining lots predicted to be produced in 2017-18 (adjusted for past actuals) (i.e. 10,541 as a percentage of 345,611 lots)	3.0498 %
Total remaining unspent funds at start of 2017-18 (2005-06 \$ values)	\$357,305,065
Allocation for this year in 2005-06 \$ Values (i.e. 3.0498% of \$357,305,065)	\$10,897,251
Land index value (converts 2005-06 \$ values to current \$ values) (based on an increase in the land index from 2016-17 of 1.305%)	0.9699
Required allocation for 2017-18 in current \$ values (i.e. 0.9699 x \$10,897,251)	\$10,569,243
Total allocation in current dollar values (rounded)	\$10,569,000