

# BUNDANON



## PROPERTY MANAGEMENT PLAN



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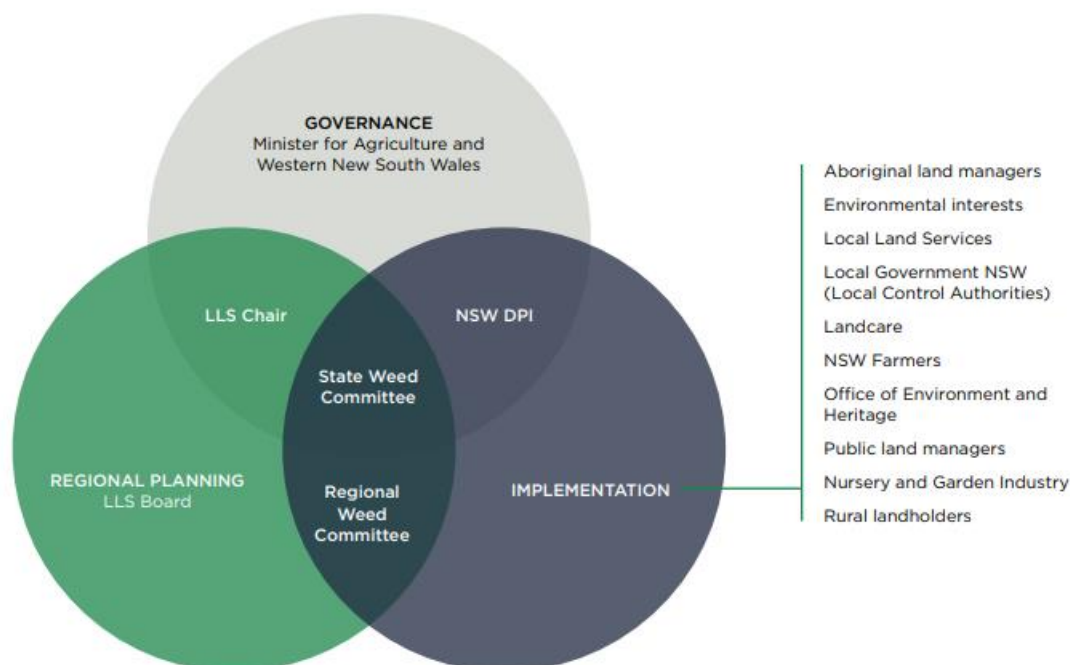
# INTRODUCTION

## Our obligations

Bundanon manages four properties covering 1000 ha (more than 5 times the size of Centennial Park in Sydney). As a Commonwealth Government body, National Heritage listed property and landholder, Bundanon has responsibilities under Commonwealth and New South Wales laws. Our legal obligations and responsibilities for our natural environment include matters covered by the Environment Protection and Biodiversity Conservation Act 1999, Biosecurity Act 2015 and Noxious Weeds Act 1993 (which regulates noxious weeds in NSW). In summary our obligations can be explained as “every person and organisation need to do their bit to protect the economy, environment and community from the risks posed by weeds.”

The management of weeds is a collaboration of Government, Local Land Services and land holders as shown in the picture below. To ensure responsibility is shared across government, community and industry, the Act applies equally to all people and all land in NSW. The Act also applies to all plants in NSW, which are regulated through the general biosecurity duty. All people who deal with plants through their commercial, professional, volunteer, recreational or lifestyle activities have a duty to be aware of the impacts the plants they deal with might have. These people must take action to remove or reduce the likelihood of those impacts occurring.

Bundanon also shares obligations with our key partner in landscape management ~ Landcare Australia. As a public site, practicing artists organisation and working farm we also have responsibilities to visitors, artists, the community and through commercial arrangements



## Our commitment

Arthur and Yvonne Boyd's commitment to the natural environment was a driving force behind their decision to gift their Shoalhaven property to the Australian people in 1993. Their determination to protect the landscape saw their acquisition of a number of adjoining properties to increase the area of pristine bush surrounding the Bundanon and Riversdale properties. In designating the Bundanon property as a Wildlife Refuge, and in seeking to maintain continuity with its agricultural and settler history, Boyd's commitment to Bundanon went beyond protecting its possibilities for artistic inspiration.

Boyd's views are manifest in Bundanon's constitution:

- ~ to conserve and preserve the Natural Heritage at Bundanon.
- ~ to maintain the non-arable parts of Bundanon as a native Wildlife Refuge.
- ~ to maintain and develop the arable parts of Bundanon as a farm.

Whilst the Boyd's vision was expressed more than twenty years ago, the growing need to actively address environmental degradation has greatly increased over time. Broader environmental threats such as climate change, combined with loss of biodiversity and wildlife habitat ~ further impel landowners to consider the needs of natural and environmental assets.

This vision is as expressed through the constitution, the strategic plan and the conservation management plans with particular reference to the statement in the Boyd vision; the 'celebration of the importance of the Australian landscape in the lives of Australians'.

As such an important tenet that drives the organisation is the *genus loci*. It is this *sense of place* that provides support and inspiration to the myriad of artists, guests and visitors to Bundanon.

An emerging risk of reputational damage increases in its potential impact if Bundanon fails to adequately address the source of this risk ~ the health and wellbeing of its natural assets and land holdings. The social responsibility to be actively caring for the land and environment now drives sustainable strategies.

This property management plan is designed to capture four distinct areas of strategic action.

- **Part One ~ Bundanon's natural and cultural heritage**  
The identification and categorisation of our broad range of natural assets.
- **Part Two ~ Management actions**  
The actions and methods that are applied in order to achieve our aims.
- **Part Three ~ Investment opportunities**
- **Part Four – Priority projects**  
The identification of both established and potential opportunities.

Best Practice Management (BPM) has been adopted as a guiding principle in the development of this Property Management Plan. The following sections outline prioritisation, rationale and objectives for the development of this plan.

BPM in Bundanon's situation can be defined as being:

- Ecologically regenerative
- Socially informative and,
- Financially stable

The following priorities and inter-relationships were outlined within the Land Management Plan (McGahey 2011) and are the essential elements that we must protect and nurture.

- The biological/ecological values of the property,
- The natural pre-European landscape,
- The Aboriginal cultural heritage,
- The built/modified European landscape,
- The artistic legacy of Arthur Boyd (including the artists in residence program),
- The educational opportunities (Environmental, Resource use, Scientific)
- The rural life experience, (interaction with farm, bushland, river)
- The spirit of inclusiveness (international/local, community involvement, cultural events)

This plan is designed to meet the following needs:

1. To provide a detailed strategic approach to the management of our natural heritage,
2. To provide the Natural Resource Manager a clear and detailed work plan that can be costed accurately and plotted across time as a cyclic/seasonal program of works,
3. The careful breaking down of land areas, based on landform and topography, into separate management units and thence determination of best land use considerations for each unit, and
4. To determine and reflect possible investment opportunities – these can then be utilised to potentially attract funding
5. To provide safe access for people with disability where practical and appropriate

Management actions for Bundanon's natural heritage will need to be adaptive, capable of responding to changing circumstances. Natural landscapes are not static. The consequences of climate change and changing community expectations will need to be monitored and addressed including in revisions to this Plan.

#### **Update and Review Period:**

It is intended that this plan will be an active/living document and therefore will have regular review and update periods.

An Annual Review of this plan will be conducted early in the financial year during the latter half of winter – this is traditionally a time of slightly reduced level of activity and maintenance. This allows for alterations to the annual activity plan according to expected seasonal fluctuations or financial/budgetary variations.

This document will be updated every Four Years – thus allowing for the incorporation of strategic changes according to wider organisational objectives.

Management actions for Bundanon’s natural heritage will need to be adaptive and capable of responding to changing circumstances. Natural landscapes are not static. The consequences of climate change and changing community expectations will need to be monitored and addressed including revisions to this Plan.

### **Rationale and Method:**

In order to facilitate clear, objective, evidence-based decision making this Property Management Plan is informed by a series of previous plans, documents, the Bundanon constitution and Arthur Boyd’s wishes which have all been considered or commissioned to support the organisation’s wider master-planning process.

- Land Management Plan 2011 (McGahey)
- The Land Rehabilitation Works Plan 2012 (Waugh)
- The Green Army Project Plan (Norrish/Goodall)
- Bundanon Constitution
- Arthur Boyd’s wishes
- Legal responsibilities as a landowner

Recommendations and advice from these sources have been included throughout this plan and will be implemented according to resource allocation and availability. These recommendations provide the rationale behind the current approach to land management on Bundanon properties.

Despite the management of Gardens and Roads falling within the responsibility of the Natural Resource Program Unit, they are not dealt with in this plan – so it is worth noting that, unless otherwise stated, this Plan will principally deal with all land units beyond the *mown* areas.

### **Land Areas - Prioritisation and Objectives**

Environmental and Land Management activities are ultimately determined by the broader priorities of Bundanon as a whole. Combined with these organisational priorities are also notions of financial sustainability and the maintenance of completed works or prevention of further environmental deterioration.

These ideas are succinctly expressed by McGahey 2011 (p.51) *Land Management Plan* – “Management Actions must be carefully planned to correlate with secured funding. Priority Actions may require ongoing resource allocation over decades and may be beyond the financial capability of the Trust to complete. While other Actions that have a lower priority may be required once and are very sustainable. The Trust *must* consider the sustainability of management actions before committing financial and human resources to the actions.”

“..... *the land will never fully recover all that has been lost since European settlement; however, the causes of the degradation can be reduced or eliminated, and the landscape of the past can be partially recovered. The propensity for recovery is referred to as resilience.*”

The following objectives, and therefore priorities, for each Management Area have been identified:

Indigenous cultural usage will be included as an opportunity across all land portions.

## **RIVERSDALE:**

**58ha**

Public visitation is the *overall* objective for the Riversdale site. With this focus the management of Natural Values, Interpretation and Maintenance of Fire Protection Areas are deemed as priority actions.

1. Natural and cultural heritage will be maintained and highlighted through interpretation,
2. Asset Protection Zones (APZ) and Strategic Fire Advantage Zones (SFAZ) are managed according to Rural Fire Service recommendations and
3. Northern portions [RD-NB-101, RD-NB-224, RD-NB-227] may present a Bio-Banking opportunity and carbon market opportunity

## **EEARIE PARK:**

**248ha**

Carbon market opportunity is the objective of land management activity on the Eearie Park Property. Therefore, contractual obligations to manage Carbon Estimation Areas are priority actions.

1. Carbon Sequestration – management units [EP-NA-B, EP-NA-L] that are part of the Trusts Carbon Estimation Areas (CEA) must be managed according to contractual obligations pertinent to the ‘Reforestation by Permanent Environmental Plantings Methodology’.
2. These areas are registered with the *Clean Energy Regulator* for carbon abatement and therefore a disciplined maintain and monitor protocol must be applied.
3. Passive environmental market opportunities shall be pursued.
4. Asset Protection Zones (APZ) and Strategic Fire Advantage Zones (SFAZ) are managed according to experienced fire practitioners (eg: Rural Fire Service, National Firesticks Alliance, NSW Fire and Rescue.)

## **BUNDANON:**

**242ha**

Productive agriculture and carbon sequestration are the objectives of land management on the Bundanon Property. As such; soil health, pasture productivity, grazing potential and contractual obligations to manage Carbon Estimation Areas are priority actions.

1. Grazing Bundanon’s own herd of cattle has proven to be un-financial as resourcing demands to manage a herd conflicts with other essential land management activities,
2. Agisting grazing paddocks to external primary producers, and leasing land to producers are options,
3. Carbon market opportunity – management units [BN-NA-DB, BN-NA-RS] that are part of the Bundanon’s Carbon Estimation Areas (CEAs) must be managed according to contractual obligations pertinent to the ‘Reforestation by Permanent Environmental Plantings Methodology’,
4. Regeneration – management units [eg: BN-NB-HP, BN-R-C] that are part of Bundanon’s Carbon Estimation Areas (CEA) must be managed according to contractual obligations pertinent to the ‘Human Induced Regeneration Methodology’,
5. Asset Protection Zones (APZ) and Strategic Fire Advantage Zones (SFAZ) are managed according to experienced fire practitioners (eg: Rural Fire Service, National Firesticks Alliance, NSW Fire and Rescue.)
6. Riparian zone management is critical in all Management Units that front the river.

Environmental Preservation is the major objective of Land Management activities on Beweeree. Therefore, maintenance of environmental values and reducing the risks of further degradation are priority actions.

1. Preservation – maintenance of current works and mitigation of risk of further environmental degradation. ‘Holding ground’ and ‘watch and act’ best describe the rationale behind managing these areas and
2. Powerline Easement – this land is managed under contract by an external operator – however, Bundanon maintains a ‘watching brief’ over it for risk mitigation reasons (particularly fire management).

**CROWN LAND, NOLANS (Eearie Park):****(214ha + 153ha) 367ha**

Neighbouring land portions present a major risk to Bundanon as both a fire hazard and a harbour for introduced species, therefore a ‘watching brief’ is maintained over these areas in order to keep abreast of potential risks.

1. Risk mitigation - Whilst Bundanon has no ownership of these land portions they have been considered in this plan primarily for risk mitigation purposes. Neighbouring lands present risk to Bundanon’s land management objectives in the form of being a harbor for invasive weed and feral animal species as well as being a real risk if not managed properly for fires and
2. Therefore, for a small financial outlay and with minimal resource allocation Bundanon maintains a ‘watching brief’ over this land. This is considered prudent from a risk mitigation perspective.

**Achievements since the 2016 Property Management Plan**

Our flagship partnership with Landcare Australia has enabled the development of significant projects including the establishment and maintenance of two Carbon market forests, the restoration of Riverflat Eucalyptus Forest at Haunted Point, the establishment of a Junior Landcare site to enhance Illawarra Lowlands Grassy Woodland at the Bundanon Historic Homestead site and maintenance of major weed control projects across all sites.

Since 2016 Bundanon has successfully delivered several landscape initiatives including:

- Five Commonwealth Green Army projects over three years, 2016-2018,
- Collaboration with Shoalhaven Landcare Association to “Re-introduce Stuttering Frog to the Tapitallee Ranges” and the establishment of over 1000 trees in the Art Museum Precinct’s northern valley, (2018-2021),
- Implementation of the NSW Environmental Trust funded “Restoring Riverflat Eucalypt Forest” (\$96,100 from 2019- 2022) within 8 h/a of the Haunted Point floodplain. To date the project has seen extensive weed control and the establishment of 22 fenced planting cells incorporating over 650 trees, shrubs and groundcovers,
- Extension of the Haunted Point restoration project by a further 2 h/a (\$13,219 from 2022-2023) through funding from South East Local Land Services,



- Extensive perennial and annual weed control along 300 metres of Riversdale Creek (culvert to Shoalhaven River) and the introduction of 5,000 grasses and trees with fenced cells,
- Establishment of over 1000 trees within fenced cells along Earie Park's Shoalhaven River frontage in partnership with Landcare Australia and Toyota 2019-20,
- Regular weed control maintenance sweeps across approximately 100 h/a within Bundanon/Haunted Point/Bundanon Ridge, Earie Park and Bundanon Carbon market forests and upper Riversdale Creek (the Creekwalk), and
- Ongoing maintenance of Treelines Track plantings and the establishment of the final stage of the Track incorporating 45 trees of 21 species of bushtucker and colonial plants.

Regular initiatives, such as through Bundanon's Siteworks programs, have been characterised by joint work from artists and scientists - a key interest of Arthur Boyd and one which contributes to Bundanon's unique nature as an art and research destination.

Bundanon strives to develop meaningful relationships with external organisations. Formal partnerships have been established and maintained through MOU agreements with Landcare Australia and the National Firesticks Alliance.

Partnerships with the local Mudjinggaalbaraga Firesticks team and the National Firesticks Alliance have fostered strong bonds with First Nations people from across Australia. Elders have come to Bundanon to meet and teach young Indigenous men and women as they learn more about traditional land management skills and practices. The re-introduction of Cultural Burning to Bundanon has seen over 150 h/a of Country treated through traditional techniques that were instrumental in protecting the properties from the Black Summer fires of 2019/20.

On-going relationships with Shoalhaven Landcare and Shoalhaven Riverwatch have seen extensive riverbank protection works, native tree-plantings and the re-introduction of the regionally extinct Stuttering frog, trialing of alternate habitat for Broad headed snake and seed collection efforts to provide a diversity of native plant species for the region.

The construction of the Art Museum and Bridge has necessitated a major focus on the Riversdale precinct. Revegetation of the creekline from the culvert to the Shoalhaven River has seen significant weed control and planting to stabilise the creekbanks and enhance habitat for native species.

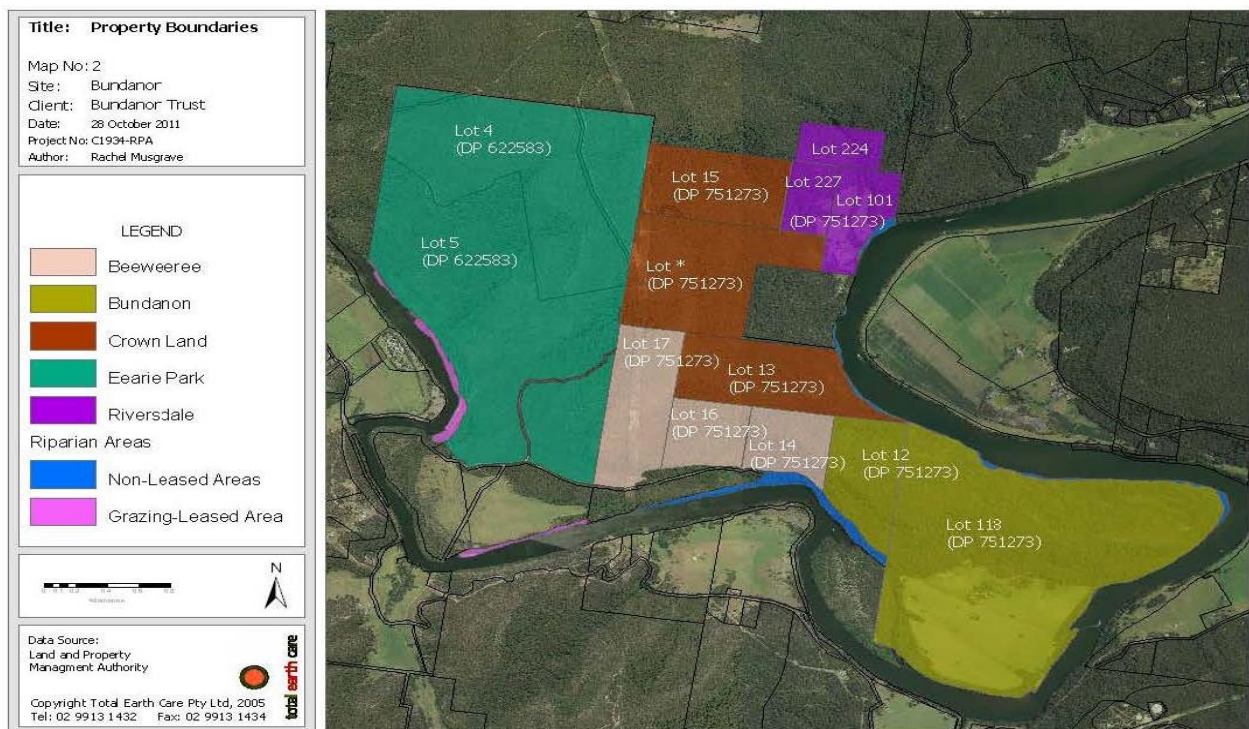


These are:

- Eararie Park 2 (Lady Nolan’s land)
- Lot 12/DP 751273 (Crown Land - Special Lease - Ongoing Monthly)
- Lot 13/DP 751273 (Crown Land - License)
- Lot \* /DP 751273 (Crown Land - License) - \* this is referred to the “unnamed portion” in the Deed of Gift.
- Lot 15/DP 751273 (Crown Land - License)

One strategically critical land parcel that is privately owned and has not been captured in this plan is;

- Lot 171/DP 751273 (Cooks and Jewels) – it is adjacent south of Lot 101 (Riversdale).



## Management Areas and Units

The *Management Areas* are the broader land parcels or properties managed by Bundanon eg: ‘Riversdale’, ‘Bundanon’, ‘Eearie Park’ and include Crown Land portions. In order to develop and consolidate a systematic approach to this plan, each *Management Area* has been divided into *Management Units* according to *Land Classification*.

<b>Schedule of Management Units</b>				
<b>MU-Code</b>	<b>Management Unit</b>	<b>Land Use</b>	<b>Area</b>	<b>Property</b>
<b>Arable</b>				
BN-A-WYP	Waterless & Yard	Grazing	1.5	Bundanon
BN-A-RP	Road Paddock	Grazing	1.5	Bundanon
BN-A-SMH	Single Men’s Hut	APZ	2.0	Bundanon
BN-A-M3	Mackenzie’s 3	Grazing	2.0	Bundanon
BN-A-CPN	Coral Tree North	Grazing	2.0	Bundanon
BN-A-W3	Warrens 3	Grazing	2.5	Bundanon
BN-A-BP	Bull Paddock	APZ	2.5	Bundanon
BN-A-M2	Mackenzie’s 2	Grazing	2.5	Bundanon
BN-A-M1	Mackenzie’s 1	Grazing	2.5	Bundanon
BN-A-B3	Boyds 3	Grazing	2.5	Bundanon
BN-A-TP	Tip Paddock	Grazing	3.0	Bundanon
BN-A-W1	Warrens 1	Grazing	3.5	Bundanon
BN-A-W2	Warrens 2	Grazing	3.5	Bundanon
BN-A-B2	Boyds 2	Grazing	3.5	Bundanon
BN-A-B1	Boyds 1	Grazing	3.5	Bundanon
BN-A-HY	Holding Yards	Grazing	0.5	Bundanon
			<b>TOTAL Arable</b>	<b>39.0</b>

MU-Code	Management Unit	Land Use	Area	Property
<b>Natural Bush</b>				
EP-NA-H	Biddulph's	APZ	11.0	Eearie Park
BN-NB-BIW	Bush Incentives West	SFAZ-Regeneration	13.0	Bundanon
RD-NB-227	227	SFAZ	13.5	Riversdale
RD-NB-224	224	SFAZ	15.0	Riversdale
BN-NB-BIE	Bush Incentives East	SFAZ-Regeneration	15.5	Bundanon
CL-NB-W	West of Easement	TBC	16.0	Crown Land
EP-NB-LPC	Lilli Pilli Creek	TBC	18.5	Eearie Park
BE-NB-S14	S14	TBC	2.5	Beweeree
BE-NB-N14	N14	TBC	25.0	Beweeree
BE-NB-N16	N16	TBC	26.0	Beweeree
CL-NB-E	East of Easement	TBC	31.0	Crown Land
CL-NB-12	Lot 12 Crown Land (Special Lease)	Externally Maintained	38.0	Crown Land
BN-NB-I	Island	Regeneration	4.0	Bundanon
BN-NB-HP	Haunted Point	Regeneration	43.0	Bundanon
CL-NB-15	Lot 15 Crown Land - License to Occupy	Externally Maintained	46.0	Crown Land
BE-R-R	Riparian	Riparian	5.2	Beweeree
CL-NB-13	Lot 13 Crown Land - License to Occupy	Externally Maintained	53.0	Crown Land
BN-NB-NWR	Northwest Ridge	SFAZ-Regeneration	72.0	Bundanon
CL-NB-7315	Lot 7315 Crown Land - License to Occupy	Externally Maintained	72.5	Crown Land
BE-NB-S16	Homestead Block	TBC	8.0	Beweeree
CL-NA	Powerline Easement	Externally Maintained	8.0	Crown Land
RD-NB-101	101	SFAZ	9.5	Riversdale
TOTAL Natural Bush				<b>546.2</b>

MU-Code	Management Unit	Land Use	Area	Property
<b>Non-Arable</b>				
NL-NA-EP2	Powerline Easement	Natural Bush	1.5	Nolan's
EP-NA-L	Lumsden's	Reveg-Carbon	11.5	Eearie Park
EP-NA-B	Biddulph's	Reveg-Carbon	15.0	Eearie Park
BN-NA-RS	Riverbank South	Reveg-Carbon	23.0	Bundanon
RD-NA-S	Sprinkler	APZ	4.0	Riversdale
RD-NA-E	East	APZ	5.0	Riversdale
RD-NA-BE	Built Environment	APZ	9.0	Riversdale
CL-NA-7315	Powerline Easement	Externally Maintained	9.0	Crown Land
BN-NA-DB	Dam Block	Reveg-Carbon	9.5	Bundanon
TOTAL Non-Arable				<b>87.5</b>

MU-Code	Management Unit	Land Use	Area	Property
<b>Riparian</b>				
RD-R-U	Upstream	TBC	0.1	Riversdale
RD-R-D	Downstream	TBC	1.0	Riversdale
CL-R-13	R13	TBC	1.3	Crown Land
CL-R-12	R12	TBC	1.6	Crown Land
BN-R-B	Bamarang - Punt to HP Gate	Regeneration	11.0	Bundanon
BN-R-W	Wogamia - Green Wall to W Boundary	Regeneration	2.0	Bundanon
CL-R	Powerline Easement	Externally Maintained	2.0	Crown Land
EP-R-FF	Flying Fox	TBC	3.5	Eearie Park
EP-R-G	Grady's	TBC	4.7	Eearie Park
CL-R	Powerline Easement	Externally Maintained	5.0	Crown Land
BN-R-HP	Haunted Point - Gate to Green Wall	Regeneration	5.0	Bundanon
BN-R-C	Calymea - Island to Punt	Regeneration	5.5	Crown Land
CL-R	Powerline Easement	Externally Maintained	6.0	Crown Land
TOTAL Riparian				<b>48.7</b>

MU-Code	Management Unit	Land Use	Area	Property
<b>Other</b>				
EP-NB-U	Underwoods	TBC	183.0	Eearie Park
PT-CKS	Private Title	Externally Maintained	32.0	Cooks
NL-NB-4	Eearie Park 2	Natural Bush	152.0	Nolan's
TOTAL Other				<b>367.0</b>
<b>Total Area</b>				<b>1088.4</b>

## Land Classifications

Four broad land area classifications have been established. These allow for the grouping of treatment applications based on shared opportunities.

These are:

- 1. Arable: 40ha**

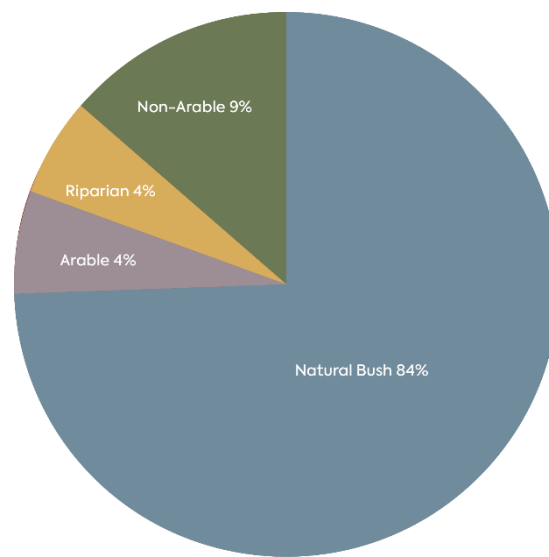
Land that is capable of being cultivated and can therefore be used to grow crops for agriculture and food production. It does not necessarily have to be used for this purpose ie: a golf course would be classed as Arable land.  
Eg: Bundanon 'Coral Tree North' [BN-A-CTN]
- 2. Non-Arable: 97.5ha**

Land that is incapable of cultivation and unsuitable for farming and food production – generally land areas of little or no water, temperature extremes, excessive pollution or very poor nutrients.  
Technically there is no non-Arable land on the Bundanon Trust properties – however, areas under power line easements and grazing land that has recently been planted with trees are now classified as non-arable.  
Eg: Bundanon 'Riverbank South' [BN-NA-RS]
- 3. Natural Bush: 870ha**

Uncultivated land that is covered with trees, shrubs, or other natural vegetation. Natural bush or 'bushland' is a blanket term for land which supports remnant vegetation or land which is disturbed but still retains a predominance of the original floristics and structure.  
Bushland provides a number of ecosystem services including the protection of water quality, stopping erosion, acting as a windbreak, and trapping nutrients. Bushland is prone to bushfires. This presents a challenge to authorities as infrastructure and habitations encroach into bushland areas. Eg: Bundanon natural bushland along ridgeline behind Homestead [BN-NB-NWR]
- 4. Riparian Zone: 52.5ha**

Riparian zones are vegetated areas along both sides of water bodies that generally consist of trees, shrubs and grasses and are transitional boundaries between land and water environments. Riparian zones act as buffers to protect surface waters from contamination and can be habitat for a variety of fauna.  
Or similarly, the riparian area is defined as the part of the landscape adjoining rivers and streams that has a direct influence on the water and aquatic ecosystems within them. It includes the stream banks and a strip of land of variable width along the banks.  
Eg: Riversdale Riverbank below the BEC [RD-R-U]

## Breakdown by land classification





## Land Uses

Land uses represent **investment opportunities** as each management unit has a land use classification.

These are:

### 1. Asset Protection Zones (APZ):

An Asset Protection Zone (APZ) is often referred to as a fire protection zone and aims to protect human life, property and highly valued assets. It is a buffer zone between a bush fire hazard and buildings, which is managed progressively to minimise fuel loads and reduce potential radiant heat levels, flame, ember and smoke attack on life and property.

The width of the APZ will vary with slope, vegetation and construction level. It consists of an area maintained to minimal fuel loads and, for subdivision, comprising a combination of perimeter road, fire trail, rear yard or a reserve, so that a fire path is not created between the hazard and the building.

An APZ consists of two areas:

- Inner Protection Area, closest to buildings, incorporating the defensible space and for managing heat intensities at the building surface
- Outer Protection Area, for reducing the potential length of flames by slowing the rate of spread, filtering embers and suppressing the crown fire

Eg: Landscaped Bank - West of BEC [RD-NA-BE]

### 2. Strategic Fire Advantage Zones (SFAZ):

These are larger bush fire hazard reduced areas where fuels are managed to slow a bush fire and reduce its intensity. They are usually located adjacent to an APZ to enhance its effectiveness.

SFAZs can be established in strategic locations, such as adjacent to fire trails in high ignition areas or fire paths. They can enhance fire control options and provide opportunities to contain fires before they threaten communities or assets. Generally, fuel loads in these areas are reduced using prescribed burning, ecological burning or cultural burning techniques implemented by appropriate fire practitioners.

Eg: Natural Bush Area uphill and West of BEC – water tanks and Cinder block studio [RD-NB-227]

### 3. Bio-Diversity Banking/Markets:

Bio-Banking benchmarking creates a potential opportunity for Bundanon to participate in the development offsets market, which may generate funding for on-going maintenance of land rehabilitation works. The work also provides a valuable benchmark for monitoring and evaluation of ecological change as the Living Landscapes project progresses.

Bio-Banking was established by the New South Wales Government as a method to address the loss of biodiversity and threatened species. The scheme attempts to create a

market framework for the conservation of biodiversity values and the offsetting of development impacts. The scheme is currently voluntary.

Bio-Banking was established under Part 7A of the NSW Threatened Species Conservation Act 1995 (TSC Act), which was enabled by the Threatened Species Conservation Amendment (Biodiversity Banking) Bill 2006.

These legislative frameworks have seen significant amendments since then and currently fall within various departments including Local Land Services and the Biodiversity Conservation Trust. The Bio-banking Assessment Methodology sets out how biodiversity values will be assessed, establishes rules for calculating the number and class of credits, and determines the trading rules that will apply.

Current recommendations are that Bundanon should pursue 'species based' rather than 'habitat based' Bio-Banking credits.

It should be considered that the sale of Bio-Banking credits is predicated on external parties needing to purchase credits to off-set land clearance in other locations. Bundanon should consider whether it wishes to support such arrangements.

Eg: Bundanon Natural Bushland along ridgeline behind Homestead [BN-NB-NWR]

#### **4. Carbon Markets:**

Carbon sequestration will occur in revegetated (or re-forested) areas where the replanting of trees on former grazing land incorporates carbon from atmospheric CO<sub>2</sub> into biomass. For this process to succeed the carbon must not return to the atmosphere from burning or rotting when the trees die. To this end, the trees must grow in perpetuity or the wood from them must itself be sequestered, e.g., via biochar, bio-energy with carbon storage (BECS) or landfill. Short of growth in perpetuity, however, reforestation with long-lived trees (>100 years) will sequester carbon for a more graduated release, minimizing impact during the expected carbon crisis of the 21st century.

Through partnerships established in 2010 (Landcare Australia, Southern Rivers CMA, Aust Gov's Biodiversity Fund) Bundanon has established approximately 60 h/a of Carbon Market Forests at Earie Park and Bundanon. Auditing accepted by the Clean Energy Regulator (2018) allocated Bundanon over 11,909 Australian Carbon Credit Units. These credits can be sold either through the Regulator's auction process or through private procedures. Auditing is due to be repeated in 2023.

Eg: Bundanon 'Riverbank South' [BN-NA-RS]

#### **5. Revegetation:**

Revegetation is the reconstruction of native vegetation and habitat through planting, direct seeding, brush matting and/or transplanting.

When native vegetation is highly degraded or has been totally cleared so that natural regeneration is no longer possible, revegetation is necessary to reinstate native vegetation and habitat.

The choice of method will depend on the size and nature of the site, the time and money available, and the purpose of the revegetation. Commonly used methods are planting and direct seeding.

Additional methods for small areas include broadcasting seed by hand, brush matting, transferring leaf litter or plugs of topsoil and transplanting. Advice from local experts is valuable, as it can take trial and error to work out the most effective methods for each site.

Revegetation can be costly in both time and money if the work is not planned and implemented well.

Eg: Bundanon 'Riverbank South' [BN-NA-RS]

## **6. Regeneration:**

Natural regeneration means allowing or assisting the bush to grow back by itself and requires harnessing and promoting the regeneration processes that are built into native ecosystems. Regeneration is the most effective and most economical way to expand patches of native vegetation and improve their condition.

Each site is different, and techniques and methods are tailored to suit the ecosystem being restored (eg: grassland, rainforest, woodland, wetland etc) and the type of threats being managed.

In healthy bushland natural regeneration occurs with little help from people, such as after a bushfire or an ecological or cultural burn designed to replicate traditional fire regimes. When natural regeneration is actively promoted in degraded areas, it is referred to as assisted natural regeneration.

Active regeneration may include removing threats such as weeds, browsing or grazing, plus using triggers such as fire or soil disturbance. When planting or direct seeding is required, it is generally referred to as revegetation. The aim of assisted natural regeneration is to create conditions that favour the ecosystem's own recovery processes.

Eg: Haunted Point [BN-NB-HP]

## **7. Productive agriculture:**

Extensive livestock production uses grasses and improved pastures as the main source of feed and nutrition. Appropriate grazing management techniques balance the need for maintaining forage and livestock production, while still maintaining biodiversity and ecosystem services. Through the utilisation of grazing systems and ensuring adequate recovery periods for regrowth, both the livestock enterprise and environment will benefit. By implementing suitable recovery periods, producers can manage an appropriate number of stock on a pasture, so as not to overgraze. Additionally, producers can increase plant and species richness through grazing, by providing an adequate habitat. It is well established that properly managed grazing systems can reverse environmental degradation and improve landscape function. There are four enterprise options for grazing cattle on the agricultural land at Bundanon:

- (a) Until recently, Bundanon managed its own herd for beef production. This option has proven to be financially un-viable. Bundanon’s herd was sold off in 2018.
- (b) Leasing agricultural land – the 40ha of agricultural land at Bundanon could be leased, to a local farmer on terms that would be negotiated.
- (c) Agisting land to a local farmer on a \$/head/week basis on terms to be negotiated.
- (d) Other forms of productive agriculture eg: cropping, vegetable production, bush tucker production may be possible through negotiation with interested parties.

Eg: Bundanon McKenzie’s Block [BN-A-M1]

Options b), c) and d) are all compatible with Bundanon’s Constitution: to maintain and develop the arable parts of Bundanon as a farm.

In 2022, a lease arrangement has been established with a local dairy farmer. Wet weather has prevented the leasee stocking the property.

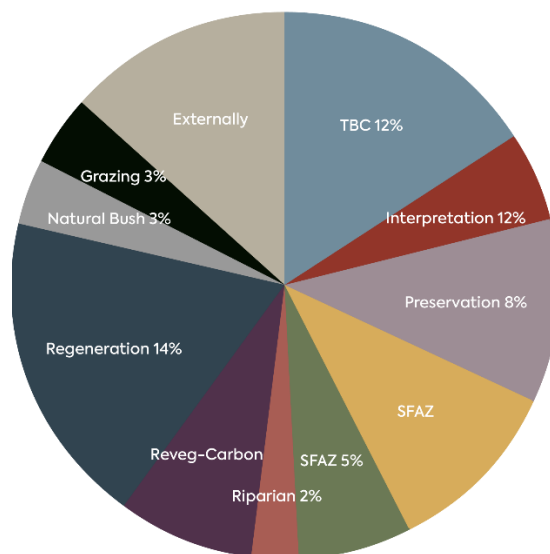
**8. Preservation**

Preservation implies that humans can have access to the land, but they should only utilise it for its natural beauty and inspiration. Land and its natural resources should not be consumed by humans and should instead be maintained in its natural form. Preservation relies on the premise that the value of the land is not what you can use from it, but instead that land has an intrinsic value, meaning that it is valuable, simply by existing.

**9. Interpretation**

Interpretation is the art of explaining the place of humanity in the environment; to increase visitor or public awareness of the importance of this relationship; and to awaken a desire to contribute to environmental preservation.

**Breakdown by Use**



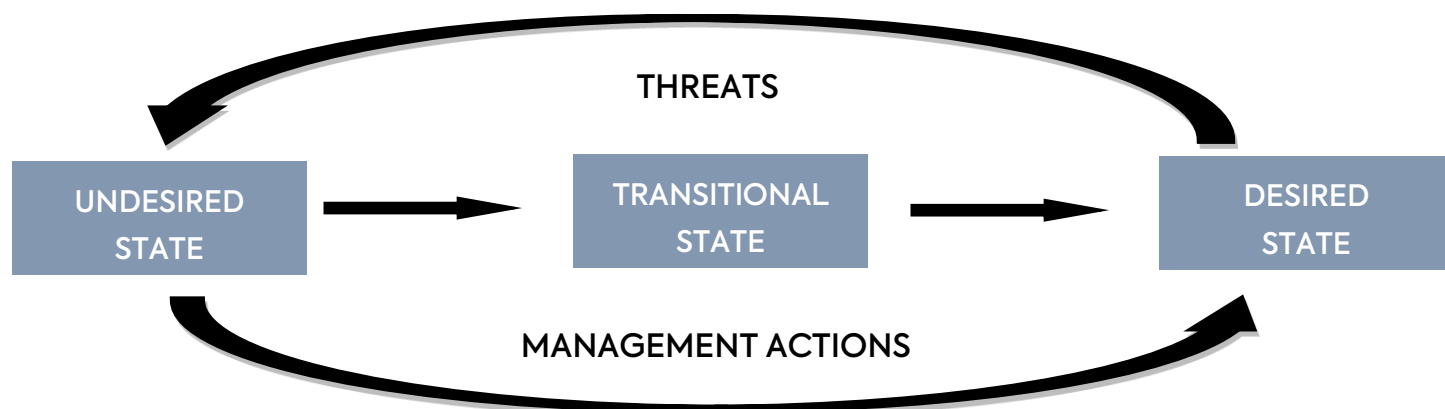


## PART TWO

### MANAGEMENT ACTIONS

#### Desired State Aims:

Each management unit or group of units will be subject to a process of “state” change over time. This reflects the application of inputs via *Management Actions* that target improvement and take the Management Unit (MU) from its current *Undesired State*, through a *Transitional State* and finally to a target *Desired State*. A number of threats or risks must be managed in order to mitigate the negative effects that such factors have upon the overall state change effort.



It is recognised that the Desired State objectives of each MU or group of MUs is wholly contingent upon the current or existing state. Ie: some MUs may require little input whilst other MUs may require substantial resources and inputs in order to achieve a remediated state. Once a stable, yet fully realised state has been achieved it is presumed that resources or inputs can be somewhat reduced.

#### Program

The aim is to develop and maintain a responsive, dynamic and rolling five-to-twenty-year program of activities that will allow the organisation to achieve both strategic natural resource aims and provide management and field staff with a scope of work across time. As resource needs are identified and forecast; costs are established and achievable outcomes can be planned. Risk to planned the outcome is mitigated by the introduction of both circumstance contingent (weather) plans and targeted risk control actions.

## Management Inputs

Various combinations of the following land management activities will be applied across the relevant *Management Units*.

<b>Mechanical</b>	<b>Chemical</b>	<b>Manual</b>
Slash	Boom Spray	Planting
Mulch	Spot Spray	Watering
Cultivate		Cut and Paint
Spread/Spin		Monitor/Inspect
Sow		Survey/Audit/Soil Test
Pasture Establishment		Reporting/Admin

Extensive budgeting and input cost estimation have been calculated over 15 years (from 2015 to 2030). It is important to note that these costs have been calculated to mitigate the risk of further environmental degradation and also, importantly, to secure the gains made from the significant investment made in environmental management by Bundanon Trust and its partners between 2012 and 2015.

These budget costings are considered critical expenditure in order to maintain the current environmental state and slowly move through the transitional to a desired state – as reflected in the previous flow diagram.

Five-year cost summaries are provided here and presented alternately by Management Area and then by Enterprise/Land Use.

## 5 Year Cost Cycles

*Draft Note – cost data has only been calculated for the next three years – five year data is currently being estimated hence the visible decline in forecasted expense.*





## PART THREE

# INVESTMENT OPPORTUNITIES

## Opportunity # 1 – Primary Production

### *Overview*

Historically, it was considered that extensive cattle grazing enterprise is the most effective use of this land type. However, with current resource and budget allocation the grazing enterprise will continue to degrade soil condition and reduce productivity of pastures and animal health will suffer.

Appropriate *regenerative* grazing management practices address the need for maintaining ground cover, improving soil health and resultant livestock production, whilst also increasing biodiversity and positive environmental outcomes. To maintain soil nutrients, minerals and biology, *generative* grazing systems maintain 100% ground cover 100% of the time – this requires stocking rates that match pasture productivity and adequate recovery periods for pasture growth. The resultant ‘flow on’ effects are reflected in:

- better animal welfare,
- reduced animal health costs,
- more productive livestock – more kilos of beef per hectare and
- reduced costs of weed management

### *Opportunity*

Riverflat land on the Shoalhaven has been exploited for primary production since the early days of colonisation and it could be argued that land such as the Bundanon floodplain should be used for the production of food and fibre. Indeed, productive agriculture is a requirement under the terms of the bequest between Arthur and Evonne Boyd and the Australian Government in 1993. However, Bundanon’s capacity to resource its own primary production is extremely limited.

### *Challenges & Risks*

Leasing or agisting floodplain lands to external producers has been achieved with a outcome that is productive, economically viable, maintains soil and river health and supports native biodiversity.

## Opportunity # 2 - Carbon Markets

### *Overview*

Reforestation or afforestation activities sequester atmospheric carbon and can thus help offset the environmental impact of greenhouse gas emissions. As forests grow, they accumulate carbon from the atmosphere via photosynthesis. This carbon sequestration follows an S-shaped curve. Carbon is contained in several 'pools', including above-ground biomass (trees, litter and woody debris that lie on the forest floor); below-ground biomass (roots and soil carbon) and harvested materials. CO<sub>2</sub> is also released from both vegetation and soils by the process of respiration. In initial years after planting, carbon accumulation is slow, or can even be negative, reflecting soil disturbance during planting. This is followed by a period of rapid tree growth and associated carbon sequestration. When the trees are nearing maturity, the growth/sequestration rate declines, and net sequestration rate eventually drops to zero on maturity.

The total amount of carbon stored by a forest of a given area will vary according to:

- which species have been planted,
- climatic conditions (e.g. temperature and rainfall),
- site conditions (wind, pests, slope etc.) and
- site management (thinning, rotation length, felling, weeding).

### *Carbon Economy*

The *Carbon Economy* or price on carbon, represents an opportunity to source modest financial benefit via sequestration projects. Australian Carbon Credit Units (ACCUs) are calculated against the quantity of CO<sub>2</sub> that has been abated as a result of retaining, regenerating or planting trees and associated vegetation. With appropriate benchmarking, aggregation and maintenance, this captured Carbon is then able to be traded via the Australian Government's Emission Reduction Fund or on the open 'voluntary' emissions offset market.

The 2018 audit of Bundanon's Carbon Market forests determined that 11,909 ACCUs had been sequestered. The value of an ACCU varies according to demand. In 2018, the estimated value of Bundanon's ACCUs, @ \$18/unit was approximately \$200,000. The Clean Energy Regulator's auction in Feb 2022 sold ACCUs for \$52, meaning that Bundanon's units may have realised approximately \$600,000. In March 2022, the value of ACCUs had fallen to \$36.

### *Opportunity*

It is believed that the strongest opportunity for maximum return on our ACCUs is in the secondary or voluntary market. Bundanon is well placed to value add to its ACCU price as a result of existing cultural and environmental programs that further advance these two key areas of activity. The potential customer can leverage their ACCU or carbon purchase by reinforcing these features to their customers and stakeholders. We are also well placed to provide a leadership role in a voluntary market that targets the arts and cultural industry. Our long-standing relationships with both Landcare Australia and Shoalhaven Landcare Association offers an added promotional opportunity. Again, pricing leverage via strength of

brand and assisting cultural sector partners to offset carbon emissions within their industry, augments this opportunity.

### ***Challenges and Risks***

The single most dominant challenge for this opportunity is accurately establishing annualised abatement estimates and the resulting cost liabilities that are applied in order to realise the income potential of carbon credit sales. The costs of maintaining, auditing and reporting versus potential income were assessed in 2019 when it was determined there was sufficient cost benefit for the replanted forests of Bundanon to remain registered for ACCUs.

## **Opportunity # 3 – Biodiversity Markets**

### ***Overview***

The conservation of our endangered animals, plants and ecosystems is one of the greatest environmental challenges facing Australia today. The key reason for the historically high extinction rate of these animals, plants and ecosystems is habitat degradation and loss, initially from over-grazing and clearing for agriculture, and more recently from the clearing of native vegetation for urban development.

The NSW Government has introduced a range of processes to help address the loss of biodiversity values, including threatened species. Bio-Banking is a market-based scheme that provides a streamlined biodiversity assessment process for development, a rigorous and credible offsetting scheme as well as an opportunity for rural landowners to generate income by managing land for conservation.

Bio-Banking enables 'biodiversity credits' to be generated by landowners who commit to enhance and protect biodiversity values on their land through a bio-banking agreement. Once credits have been issued to a bio-bank site owner, they can immediately be sold to any buyer. Each biobank site may generate a number of different ecosystem or species credits, and any of these credits may be sold separately or in groups, generating funds for the management of the site. Credits can be used to counterbalance (or offset) the impacts on biodiversity values that are likely to occur as a result of development. The credits can also be sold to those seeking to invest in conservation outcomes, including philanthropic organisations and government.

The price of biodiversity credits will be based on the characteristics of the bio-bank site from which the credits are generated, as well as the existing supply and demand for credits by the market.

Those buying credits are securing the conservation of biodiversity in perpetuity. If participants fail to meet their commitments under the scheme, penalties can be applied. The performance of participants is monitored by the NSW Government.

All bio-banking agreements are registered on the land title. The obligation to protect and manage the land is binding on both current and future owners of the site.

## ***Opportunity***

Bundanon has several areas within its land holdings that have been classified - within this *Property Management Plan* - as natural bush. Studies and surveys to date have indicated that these areas have high ecological value. It is these areas that hold the greatest potential to allocate towards this opportunity type.

Thirteen threatened fauna species have been confirmed or are considered to have a high potential to occur on these sites and could potentially generate species credits. There has been limited recent survey efforts to identify threatened fauna species and suitable habitat on the study area, and so a preliminary assessment has been provided based on the existing lot data and vegetation mapping.

The “Jacobs Report (Bio-banking Assessment - Bundanon Trust 2014)” - commissioned as part of the Living Landscape Project - established that a total of 7,796 ecosystem credits have been generated by the Bio-banking sites identified and the proposed revegetation and management actions as specified by the Bio-banking credit calculator and specified input variables. The final credit report specifies 16 credit groups. Whilst this assessment captured all of our land holdings it follows that that this opportunity will target specific land areas or management units.

If Bundanon secures control or title over adjoining crown land parcels then a potential to further augment the total bio-bank land holdings will increase our opportunity accordingly.

Changes in NSW Government legislation and departmental restructures through 2014-2017 established the Biodiversity Conservation Trust to oversee Biobanking and other species credit systems. These changes mean that the findings of the Jacob Report would need to be re-assessed by accredited assessors to re-calculate Bundanon’s species and ecosystem credits under an up-dated methodology.

## ***Challenges and Risks***

The major challenge for this opportunity is ecological degradation as a result of invasive and unwanted flora species. If this opportunity has the potential to generate Bio-diversity credits that translate into financial income, then central to any sale contract will be the maintenance and improvement of the biodiversity.

The challenge therefore is to ensure that adequate resources are allocated to ensure that contracted obligations are met and risk of contract breach, itself triggering liquidated damages claims, is mitigated.

## **Opportunity # 4 - Research & Development**

### ***Overview***

The broad range of land uses contained within our land holdings present a significant opportunity to engage, coordinate, partner or enable related natural and cultural heritage management research and development opportunities.

### ***Opportunity***

Educational institutions or providers, as well as both public and private organisations, could benefit from this varied range of land uses and treatments. Bundanon has the established capacity to support and enable, with modest resource inputs, research and development projects that support, promote and advance both existing and aspirational programs.

The following examples are considered key opportunity projects.

- (a) Cell grazing,
- (b) Pasture improvement,
- (c) Test or trial cropping,
- (d) Soils improvement,
- (e) Fauna studies,
- (f) Flora studies,
- (c) Soil carbon storage method trials and
- (d) Cultural burning impacts on Country and Indigenous Fire Practitioners.

### ***Challenges and Risks***

A key challenge is both finding organisations that seek sites for research and development and to have the resource capacity to service the activity.

A number of standard site visitor or guest risks would emerge requiring standard risk controls being applied such as site inductions and periodic refresher sessions.

## **Opportunity # 5 - Broad Environmental Support**

### ***Overview***

The combined cultural and environmental benefits that drive Bundanon's strategic efforts present a unique offer opportunity for philanthropic organisations or individuals to achieve enhanced value to their philanthropic or support initiatives.

### ***Opportunity***

An opportunity exists whereby individuals, groups or organisations may seek to financially assist us by brand strengthening, customer relations benefits or targeted specific social or environmental organisational outcomes.

An example of this would be businesses with a publicly known social or environmental commitment and could seek a high value brand such as Bundanon as a combined social/cultural/environment partner. A sponsorship agreement may be brokered that could see Bundanon receive a fixed ongoing income and strengthening the partner brand through a range of communication and public relations opportunities.

### ***Challenges and Risks***

Securing such an arrangement would present a modest challenge if a company was both in the market for environmental and marketing leverage. Some risk would exist if Bundanon failed to

meet any environmental targets that form part of the agreement. Expected revenue may be lost and associated risk to reputation by the partner company may result.

## **Opportunity # 6 – Public / Private Partnerships**

### ***Overview***

A strengthening market is the urban based corporation's needs for both value added team-based conferences or sessions in a non-urban based setting. The ability for focussed work without metropolitan distractions enables highly effective learning or collaborative outcomes.

Core business for Bundanon is residential programs across a broad customer base and range of disciplines. Existing facilities and established administrative and operational systems are in place to respond to this opportunity.

### ***Opportunity***

The organisation is well positioned to immediately present commercially based residential opportunities to organisations that seek either social, cultural or environmentally targeted conference or workshop experiences an example is our new partner with the Royal Australian Navy.

### ***Challenges and Risks***

A key challenge is the capacity to deliver on service provision promises because of lack of resources being applied. An effective control is the (re)investment of income from this area of business being used to ensure that service delivery is maintained at an optimum level.

## **Opportunity # 7 – Eco-tourism / walking access**

### ***Overview***

A developing market is in eco-tourism as people are seeking richer leisure activities that allow them to experience high quality native bushland and outdoor settings that are fully endorsed environmentally. We currently provide guided, self-guided and first nation lead tours at our properties.

### ***Opportunity***

Whilst the existing built infrastructure constrains our ability to provide a guaranteed level of comfort and amenity, the land areas do present a number of low impact camping or overnight occupancy opportunities.

Well established walking tracks are an important component of eco-tourism markets. While the Bundanon property is well serviced in this regard, Riversdale presents extensive opportunity for walking track infrastructure which may be self-guided, guided or First Nations led.

The day visit market may be targeted directly by guided walks, however return on investment constraints may emerge as a result of pricing point imperatives.

### ***Challenges and Risks***

Similarly, with the corporate residential opportunity, this form of enterprise needs to be adequately resourced in order to ensure that a high level of customer service and provision occurs.

Site related risks typically exist and standard guest/visitor procedures as controls would need to be applied. Risk exists when this need is under resourced and inadvertent exposure to hazards by guests occurs.

## **Opportunity # 8 – Species, / Landscape Management and Environmental Conservation Grants**

### ***Overview***

The NSW and Australian Governments, Not-for-profit organisations and corporate industry periodically offer funding streams that present significant opportunities.

### ***Opportunity***

A key objective of many grant programs is to engage the community and align stakeholders across NSW in working towards common goals of securing the state's threatened species. Bundanon must continue to seek partners in the planning and implementation of program priorities (e.g. conservation projects for site-managed and landscape species). Government Departments websites, landholder networks and corporate newsletters are standard vehicles for the announcement of funding opportunities. Bundanon must subscribe to such sources (eg: Small Farms Newsletter, Landcare newsletters/updates) to ensure opportunities are not missed.

### ***Challenges and Risks***

The key challenge is maintaining the internal expertise and capacity needed to both identify these opportunities for the life of the fund; efficiently submit well considered applications, implement obligations and acquit the funding grants accordingly.

Time frames to develop and submit project proposals are often tight. It is therefore essential that partner engagement is strong and on-going, and potential project ideas are discussed and preliminarily developed so that high quality submissions may be developed within tight deadlines.

Failing to deliver on agreed project funding objectives are the single most defining risk. Adequate resources must be applied to best control this risk.





## PART 4

### PRIORITY PROJECTS

The following list represents a range of potential projects that are considered to be compatible with the objectives of this *Property Management Plan*. In each case, external consultation, legislative compliance and resourcing need to be evaluated before any significant works commence:

**Project proposal: Bundanon to Riversdale Walk**

**Date:** 2.11.2021

**Management Unit: Northwest ridge (BN-NB-NWR) to Riversdale (RD-NA-BE)**

**Project outline:**

This walk will substantially enhance day and residential visitor opportunity to experience all that Bundanon has to offer. Linking the Boyd Homestead and AIRs complex to the Art Museum Precinct by the installation of a 3-4 km walking route will showcase exceptional views of the Shoalhaven River and landscape and high conservation value habitats. Sections of the route include rugged escarpment ascents and descents requiring the construction of steps and handrails to ensure safe access for an independent walker experience. On-going resources to maintain the track are essential, however, this will decrease as usage increases. Construction will require experienced track construction contractors and substantial quantities of materials delivered to remote locations.

**Unit description:**

Escarpment country. Native vegetation including Red bloodwood, Yellow stringybark, Burrawang, Black Sheoak. High diversity of native wildlife

**Current State:**

Good to very good condition native vegetation providing habitat for a range of native fauna. Some areas include exotic weeds, particularly Lantana.

**Desired State:**

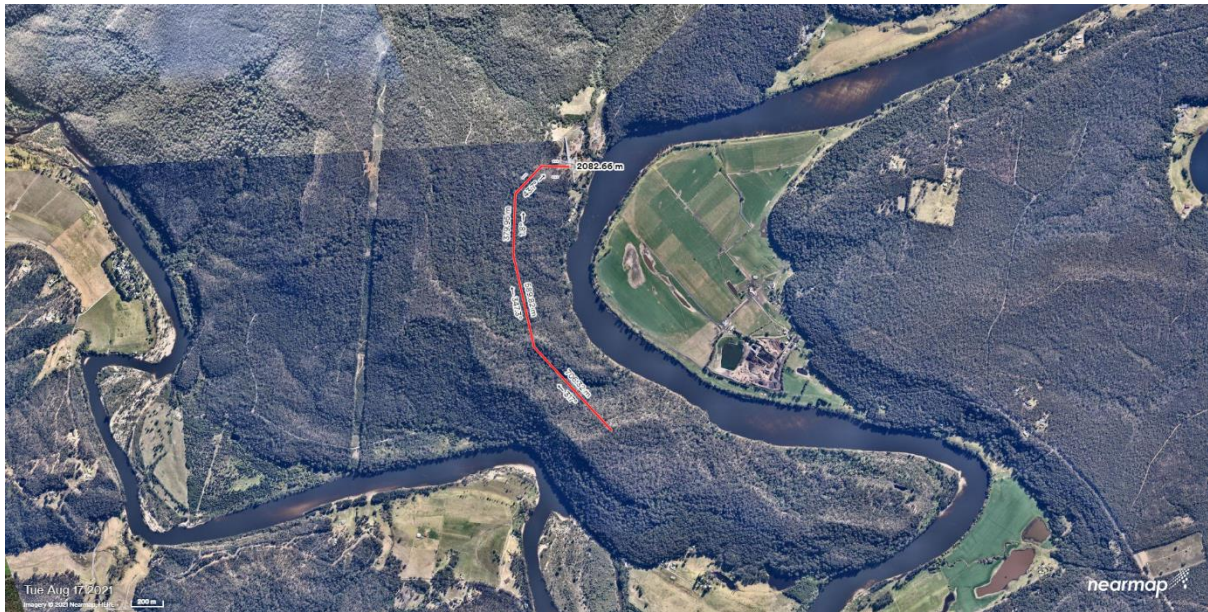
A developed 3 - 4 km walking track linking Bundanon to the Art Museum Precinct to provide increased visitor opportunity.

**Management Actions:**

Actions:
Survey and mark route
Control exotic weeds.
Clear vegetation to create a walking track with vehicle access to both ends of the route.
Procure and transport construction materials and equipment.
Construct steps/hand-rails to ensure safe access in steeper sections.
Install way-finding bollards
Update walking track brochure and web-site.

**Costing:**

Estimate: TBA



**Project proposal: Restoring Riverbank Eucalypt Forest – Stage 2**

**Date:** 2.11.2021

**Management Unit:** Haunted Point (BN-NB-HP)

**Project outline:**

Haunted Point incorporates over 20 hectares of river flat Country which has a long history of ecological disturbance since colonial times. Productive agriculture is no longer practiced on the site, but it is accessible by 4WD management tracks and the 3.5 km Haunted Point Loop walk from the Bundanon Homestead and AIRs precinct. Investment since 2011 has included extensive mechanical, chemical and manual weed control and revegetation works designed to restore its former Riverflat Eucalyptus Forest. The current NSW Environmental Trust funded project "Restoring Riverflat Eucalypt Forest" (RREF 2019-2023) focusses on 8 hectares of weed control and revegetation.

This proposal is to extend the methodologies employed in the current project to a further 5 hectares.

**Unit description:**

Riverine floodplain encompassing the landscape from the northern foot of Bundanon ridge to Shoalhaven River.

**Current State:**

Disturbed Country, post grazing and invasion by native and exotic vegetation.

**Desired State:**

Extend the methodology being implemented in RREF – Stage 1 to create a restored plant community containing representative species of Riverflat Eucalypt Forest.

**Management Actions:**

<b>Actions:</b>
Implement weed control across 5 hectares, using multiple techniques.
Install fenced plots and plant with native species.

**Costing:**

Estimate \$200,000 over 3 years.

**Project proposal: Creekwalk**

**Date:** 2.11.2021

**Management Unit:** Riversdale (RD-NA-BE)

**Project outline:**

The Creekwalk is an informal, un-marked track following the creek in a north west direction from the lower slopes of the Art Museum Precinct. Bundanon has been utilising this forest enclosed creekline for many years in the delivery of educational, environmental and artistic events and activities. It represents the only bushland walking experience within the Precinct.

The creek line has also been the focus of Shoalhaven Landcare Association's 2018-2021 project to Reintroduce the Stuttering Frog to the Cambewarra Ranges. The project has seen over 1000 new trees planted to improve habitat values for the regionally extinct frog, extensive weed control and the release of frogs into the landscape.

This proposal aims to enhance both organised and independent walking opportunities for the delivery of Learning Programs and un-supported visitor experience. It will establish an extended (1 km) loop track to allow safe access to the creek and three associated vegetation communities

**Unit description:**

Creekline and lower slopes incorporating moist gully forest, the transitional ecotone and Spotted gum/Burrawang Forest.

**Current State:**

Un-marked walking track along the creekline used for Learning team workshops and activities. Current construction activities (waste-water treatment plant and bore) not yet complete. Secondary weed control required.

**Desired State:**

Up-graded, 1 km marked loop track incorporating three vegetation communities and construction of a number of gully crossing points.

**Management Actions:**

<b>Actions:</b>
Survey and mark track
Clear vegetation to establish a 1 km loop track incorporating several bridge/step constructions.
Install way-finding bollards.
Produce a walking track brochure and web-site information for Art Museum precinct tracks.

**Costing:**

Estimate: \$100,000



**Project proposal: Shoalhaven River bank stabilisation**

**Date:** 2.11.2021

**Management Unit:** Shoalhaven River bank adjacent to jetty (RD-NA-E)

**Project outline:**

The banks of the Shoalhaven River are prone to erosion caused by the action of minor to major flooding, tidal variation and boat wake. In partnership with Shoalhaven Riverwatch, remediation structures including mangrove beds and "sand sausages" have been installed at the toe of the bank, up-stream of Riversdale creek over recent years. These interventions have proven to be quite successful in reducing bank erosion here and at many other South Coast locations.

This project aims to install similar, or more substantial engineered structures downstream from Riversdale Creek, in the vicinity of the jetty. Technical advice from Shoalhaven Riverwatch, Soil Conservation Service, Local Land Services and DPI -Fisheries is to be sought to determine the most appropriate technique will dictate how the works are to be completed and any necessary permits and approvals.

**Unit description:**

Un-stable riverbank containing a small number of mature native trees and extensive Lantana and Black wattle.

**Current State:**

Steep riverbank site potentially subject to erosion and bank slumping through minor-major flooding and boat wash.

**Desired State:**

Toe of the bank to be stabilised by installation of engineered bank stabilisation techniques. Replacement of exotic species with natives.

**Management Actions:**

Actions:	Timing:
Consult with local and state govt. agencies (Shoalhaven City Council, Soil Conservation Service, Local Land Services, DPI – Fisheries) re: design development	tbc
Installation of recommended bank stabilisation structure.	tbc
Establish native vegetation on bank and up to 20 metres onto floodplain.	tbc

**Costing:**

Estimate: \$10,000 - \$300,000 depending on construction technique required.



**Project proposal: Shoalhaven River Lookout walk**

**Date:** 2.11.2021

**Management Unit:** North west ridge – 75 hectares (BN-NB-NWR)

**Project outline:**

This un-named look-out location to the western end of the Bundanon ridgeline offers spectacular views of the Shoalhaven River flowing from the mountains; around the Bundanon/Haunted Point bend to the sea.

This proposal is to extend a one-way access track for vehicular and foot traffic from the existing Haunted Point Loop Track to access track the lookout and complements the establish of a Bundanon to Art Museum Precinct walking track.

**Unit description:**

Native vegetation including Red bloodwood, Yellow stringybark, Burrawang, Black sheoak. Provides habitat for a diversity of native fauna.

**Current State:**

Native vegetation in very good condition, providing suitable habitat for a broad range of native fauna. Infrastructure includes vehicle/walking access (Haunted Point Loop Track) and Bundanon communications tower.

**Desired State:**

Increased visitor opportunity.  
 Extended Haunted Point Loop Track to Shoalhaven River Lookout.  
 Native vegetation managed through partnership with the Firesticks Alliance.

**Management Actions:**

<b>Actions:</b>	<b>Timing:</b>
Clear a 600 metre vehicle/walking track and vehicle parking/turning bays to access the Shoalhaven River lookout.	tbc
Consult with First Nations custodians to support and name the walk.	tbc
Install way-finding bollards.	tbc
Update walking track brochure and website content.	tbc

**Costing:**

Estimate: \$10,000



## **Project proposal: Enhance Bundanon's Resilience Against a Changing Climate**

**Date:** 29 March 2022

**Management Unit:** All

### **Project outline:**

Our changing climate has become front and centre across the County and the globe. Responding to crises is essential but preparing for them is smart.

Bundanon has taken significant steps in this regard over recent years. Bushfire Suppression systems at both Riversdale and Bundanon enhance our preparedness. Cultural burning arguably protected our properties from the Black Summer fires of 2019/20. APZ are compliant with Rural Fire Service guidelines.

More can and must be done, as has been made blatantly obvious in the wet weather events of July 2020 and February/March 2022.

A short-list of priority short-term actions includes:

- 1) Purchase a 3-tonne excavator and suitable trailer to enable in-house preventative maintenance of culverts, table drains and riparian areas,
- 2) Relocate the Riversdale machinery shed to a location at least 2 metres higher than its current location,
- 3) Install flood-markers at key locations,
- 4) Ensure that emergency preparedness information is adequately assessed in advance of extreme weather conditions, and that staff and visitors are well informed and
- 5) Implement roadworks along the Bundanon Rd (inside our gate) to reduce the risk of landslides.
- 6) Engage with appropriate fire practitioners and neighbouring property managers to develop and implement Strategic Fire Advantage Zones (SFAZ).

### **Costing:**

tba



# BUNDANON