ANNUAL BIODIVERSITY MONITORING REPORT 2020

Prepared for Hodgson Quarries and Plant Pty Ltd

November 2020 V.1

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Annual Biodiversity Monitoring Report 2020

Hodgson Quarries and Plant Pty Ltd

Roberts Road Maroota NSW

This assessment has been prepared by

South East Environmental

November 2020 V.1

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Abbreviations

Abbreviation	Description
BC Act	*Biodiversity Conservation Act 2016*
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
HTW	High Threat Weed
KPI	Key Performance Indicators
KTP	Key Threatening Processes
LEP	Local Environmental Plan
NSW OEES	New South Wales Office of Environment, Energy and Science
OEMP	Operational Environmental Management Plan
ONR	Old Northern Road
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
THSC	The Hills Shire Council
VIS	Vegetation Information System
WoNS	Weeds of National Significance

1 INTRODUCTION

This Annual Biodiversity Monitoring Report presents the findings of the annual monitoring of the biodiversity value within the Hodgson Quarries operation at Roberts Road Maroota.

1.1 BACKGROUND

Hodgson Quarries and Plant Pty Ltd operates a sand extraction and processing operation on a 28 hectare site including Lot 1 and 2 of DP228308 and Lot 2 of DP312327 Roberts Road Maroota. The quarry operates in compliance to Development Consent File No. S98/00772 issued by the Minister for Urban Affairs and Planning in 2000.

Several modifications have been made to the Development Consent, the most recent being approved in 2016. The most recent approval triggered a review of the Operational Environmental Management Plan (OEMP) which included the update of a Flora and Fauna Management Plan. A requirement of the Flora and Fauna Management Plan, as addressed in Schedule 2 Condition 55 of the consent, is to develop an ongoing monitoring program for existing vegetated areas to assess their floristic structure, diversity, resilience, robustness to disturbance and fauna species diversity.

1.2 OBJECTIVES

The objectives of this Annual Biodiversity Monitoring Report is to describe the current condition of the vegetation found throughout the site and to advise Hodgson Quarries on the appropriate management measures that should be implemented to meet the expectations of the Flora and Fauna Management Plan (2016) prepared by VGT Pty Ltd.

This report will:

- identify native flora and fauna species, populations and ecological communities known to or likely to occur within the site;
- describe the native vegetation and habitats within the site;
- describe the current condition of the threatened flora and its habitat found within the site;
- determine the legislative and conservation significance of species, populations and ecological communities known or likely to occur within the site with reference to the Commonwealth *EPBC Act 1999* and the *NSW BC Act 2016*;
- recommend appropriate biodiversity and environmental management measures that should be implemented to reach criteria for monitoring success set by the Flora and Fauna Management Plan for the Sand Quarry, Roberts Road Maroota, NSW (2016);
- provide an independent monitoring report for inclusion as part of the external reporting for the quarry Annual Review.

2 METHODOLOGY

2.1 SITE HISTORY

2.1.1 Agricultural use

Much of the undisturbed area on the Roberts Road quarry site is agricultural land which currently supports beef cattle. Approximately 9 hectares is currently in use for this purpose, with approximately 0.5 hectares currently under active rehabilitation within the agricultural land area as will be discussed further in this report.

The remaining vegetation within the agricultural land area has had ongoing disturbance over many years which has including timber removal, livestock grazing and fruit orchards. As a result, exotic weed species are prolific and at times dominate the landscape. Farm dams have been dug which once provided irrigation to the fruit orchards and now provide water to livestock and Sunrise Plant Nursery which is located in the north/west corner of the property. They also provide a water source for native and exotic species that occur in the immediate area.

2.1.2 Remnant native vegetation

An area immediately north of the entrance gate along Roberts Road contains remnant native vegetation which has been excluded from the sand extraction operational area. Although this area shows signs of past disturbance, it remains relatively intact and appears to be supporting a reasonable diversity of native flora and fauna given its small size of approximately 1 hectare.

The remnant native vegetation consists of a Sandstone Gully Forest type which was most likely once a moist open forest at the head of the catchment for Coopers Creek which extends further to the north. This vegetation type would have supported several species of canopy tree which were likely to have been harvested for fence post timber in the early European settlement era. Remaining canopy species are most likely regrowth from a clearing event in the early 1900's and provide ample protection for the lower stratums. Fencing to exclude livestock has improved the ability for native species, particularly the ground cover stratum, to flourish.

2.1.3 Threatened flora habitat

An area in the north eastern corner of the site contains a threatened flora species which has previously been identified and monitored. The area where this species has been located has had severe disturbance in the past from clearing, grazing and most recently the sand quarry operations.

The area immediately surrounding the threatened species consists of pushed up crushed sandstone material which has resulted in an extremely compacted ground surface. Native shrubs from the soil seed bank and surrounding areas are becoming established despite the harsh growing conditions. It is expected that over time without intervention this area will establish as an extension of the remnant native vegetation adjacent although the plant community type may remain different indefinitely due to the change in surface geology.

2.2 FIELD SURVEY

Botanical surveys of the study area were conducted during November 2020. The survey consisted of a random meander throughout the areas of the property not in current use by quarry operations.

A targeted threatened flora survey was undertaken to locate *Acacia bynoeana* onsite. All flora species recorded are listed in Appendix A of this report.

Opportunistic sightings were also undertaken for indirect evidence of native fauna, including scratches, scats, nests, hollows in use, camps, roosts, den sites etc. Opportunistic sightings of all fauna species were recorded throughout the survey period.

No previous records of threatened fauna have been located onsite therefore no targeted threatened fauna survey was undertaken for this report.

2.3 CRITERIA TO MONITOR SUCCESS

VGT Pty Ltd 2016 have outlined the Key Performance Indicators (KPI) to measure success of the biodiversity and rehabilitation effort of the flora and fauna management within the Roberts Road quarry site. The following tables depict the performance and completion criteria for the site.

Table 1. Performance and completion criteria for Roberts Road quarry (taken from VGT Pty Ltd 2016)

	Performance Criteria being monitored
Native Vegetation monitoring	Demonstrated use of native plant species naturally occurring in the Maroota area used in all progressive revegetated and rehabilitated areas.
	Low mortality of plants used in progressive revegetation with 75% becoming established 3 years after planting.
	Installation of high durability fencing, with low maintenance requirements and suitable for excluding cattle and other livestock, to be installed prior to the completion of revegetation work areas.
	Fencing surrounding revegetated and rehabilitated areas are maintained in working condition.
	Installation of fencing along the southern fence line and to the north of the site entrance completed during dewatering of the fines ponds and prior to the construction of the new access track.
	Vegetation is retained.
	Low evidence of native vegetation disturbance surrounding the bund walls at the corner of Old Northern Road and Roberts Road.
	Weeds, pests and feral animals are to be controlled.
Fauna Monitoring	Weeds, pests and feral animals are to be controlled.
	Connectivity between current and future rehabilitated areas are established adjacent to existing and future areas of vegetation. Patches are not to be separated by more than 10 metres.
	Evidence of varying sized rocks between 20mm and greater than 200mm spread over rehabilitated areas.
	Evidence of logs and other fallen timber spread over rehabilitated areas.
	Ground dwelling fauna species of similar diversity to adjacent areas of similar habitat.
	On completion of the rehabilitation, a suitably qualified ecologist has determined the requirement on whether nest boxes are required. If nest boxed required to be installed a nest box management plan has been prepared.

2.4 SURVEY LIMITATIONS

The survey was conducted within a short timeframe during spring. Therefore some plant species may not have been identified due to the survey being performed when not in flower, or when dormant. It is noted that some flora species are seasonal, and may not have been visible at the time of the surveys.

The survey limitations have been addressed through:

- consideration of flora and fauna species known to occur in the locality (including number of records from BioNet);
- consideration of habitat suitability present within the study areas and connectivity to other areas of habitat in the local landscape;
- consideration of past and current weather conditions;
- A conservative approach in assuming the presence of a species that could potentially be present in the study areas.

Where the study area contains potential habitat for threatened fauna species known to occur in the locality, and where survey areas support a likelihood of occurrence, it has been assumed on a conservative approach that such species may occur in the study area.

3 RESULTS

Results from the field surveys conducted over November 2020 have been separated into three distinct areas to enable quantification of condition for each specific location and its monitoring objectives.

3.1 REMNANT NATIVE VEGETATION

The remnant native vegetation is a disturbed patch of native dominant species located in the north eastern corner of the property. The condition of the remnant area can be further divided into two separate areas as determined by disturbance level and the current soil profile available for flora species.

3.1.1 Immediately north of Roberts Road site entry gate

The remnant native vegetation within this area has a mature canopy of Eucalyptus and Angophora species. Lower stratums are present including midstorey canopy, shrubs and ground cover. The exclusion of livestock grazing within this area has resulted in an increase of native ground cover species which over time will contribute to a much richer biodiversity value.

Biodiversity functional attributes such as size class of canopy species, litter cover, fallen timber and natural regeneration of species occurring is present within the area. Such attributes are likely to increase over time providing disturbance remains excluded within the area.

Figure 1. Remnant vegetation located immediately north of Roberts Road site entry gate.

3.1.2 North eastern corner

The remnant vegetation within the area of the far north eastern corner of the site has undergone past disturbance which has left the canopy broken. Eucalyptus and Angophora species are recovering throughout much of the area however the mature specimens are spaced apart providing little in canopy protection to the stratums below. The shrub stratum in this area is dominant and in some areas almost impenetrable. In other areas the shrub stratum is sparse and bare ground occurs.

Leaf litter is abundant throughout most of this area however fallen timber and size class of canopy species is limited.

Figure 2. Remnant vegetation located in the north eastern corner of the site.

3.2 AGRICULTURAL LAND

3.2.1 Roberts Road Boundary

Exotic grasses dominate the agricultural land along Roberts Road. Some native species are present, particularly along the large bund wall which provides protection from the hot westerly sun, including Three-awned Speargrass *Aristida vagans,* Slender Rat's Tail Grass *Sporobolus creber* and Weeping Grass *Microlaena stipoides.* Agricultural weeds occur within the area although they are not considered to be dominant within the landscape. One Weed of National Significance (WoNS) was identified, Fireweed *Senecio madagascariensis*.

The native species which have been planted on a bund wall bordering Roberts Road and Old Northern Road are growing well thanks to the return of regular rainfall. Many of these species have reached reproductive maturity and have had a strong flowering season this year.

Figure 3. Bund wall adjacent to Roberts Road.

3.2.2 Old Northern Road Boundary

This area of agricultural land is dominated by exotic grass species suitable for livestock grazing. Some agricultural weed species occur although they do not dominate the landscape. A WoNS species, Fireweed *Senecio madagascariensis,* was observed in low density within this area. The Common Eastern Toadlet *Crinia signifera* was heard calling from the large dam adjacent to Old Northern Road along the western boundary.

Figure 4. Agricultural land with grassed bund wall adjacent to Old Northern Road

3.2.3 North western corner

A plant nursery is established in the far north western corner of the site. The nursery makes use of water in the farm dams located on site. The agricultural land directly to the east of the nursery site is dominated by exotic grass species suitable for livestock grazing. One WoNS was identified to occur in this location, Fireweed *Senecio madagascariensis*.

Figure 5. Agricultural land along Old Northern Road in the west/south west of the site

3.3 PLANTED NATIVE VEGETATION

3.3.1 North of Roberts Road entrance gate

Bottlebrush *Callistemon* species have been planted along the eastern boundary of the property adjacent to the existing native vegetation. These shrubs are well established and provide a screen to Roberts Road. The shrubs provide habitat for small birds and food resources for a range of mammals, birds and invertebrate.

Figure 6. Bund wall immediately north of Roberts Road site entrance

3.3.2 Old Northern Road

The southeastern corner and southern boundary of the site has small bund walls with planted native trees and shrubs. The trees along Old Northern Road have required pruning due to their close proximity to electrical power lines. As a result some of the trees have perished. The remaining plants appear to have flourished with the return of rainfall in recent months. The bund walls have good coverage of native vegetation with reproduction maturity demonstrated by most species during this monitoring period.

Figure 7. Planted native vegetation along Old Northern Road

3.3.3 Northern Boundary

A variety of Bottlebrush *Callistemon* species have been planted in two locations along the northern boundary of the property. Exclusion fencing has been undertaken and success to date appears to be high. There were two WoNS species present along the fence line of the neighboring property, Lantana *Lantana camara* and Blackberry *Rubus fruticosus sp. aggregate*.

Figure 8. Planted native vegetation along northern property boundary

3.4 Threatened Flora

A single threatened flora species was previously identified within the property boundary. During the site survey in November 2020 two *Acacia bynoeana* individuals were located and identified onsite within the verge of the remnant native vegetation area and the sand quarry operational area. Both plants were approximately 20mm high, 300mm in diameter with multi-stems which were all healthy and had ample foliage. There were some flowers still present on each plant with maturing seed pods indicating the plant has reached reproductive maturity. These plants appear to be new recruits. The plant identified last year could not be located suggesting it may have perished in the ongoing dry conditions from 2017-2020. The two new plants located are within a similar area to the previously identified individual where livestock have been excluded from the area by electric fencing.

NSW OEES plant profile describe the habitat for the *Acacia bynoeana* as:

- Occurs in heath or dry sclerophyll forest on sandy soils;
- Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches; and
- Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.

The location in which these plants occurs is a spoil mound pushed up from the silt pond adjacent. There is no canopy nearby which can be associated with the habitat.

No other threatened flora species were identified onsite.

Figure 9. *Acacia bynoeana* identified and located onsite

Figure 10. Acacia bynoeana identified and located onsite

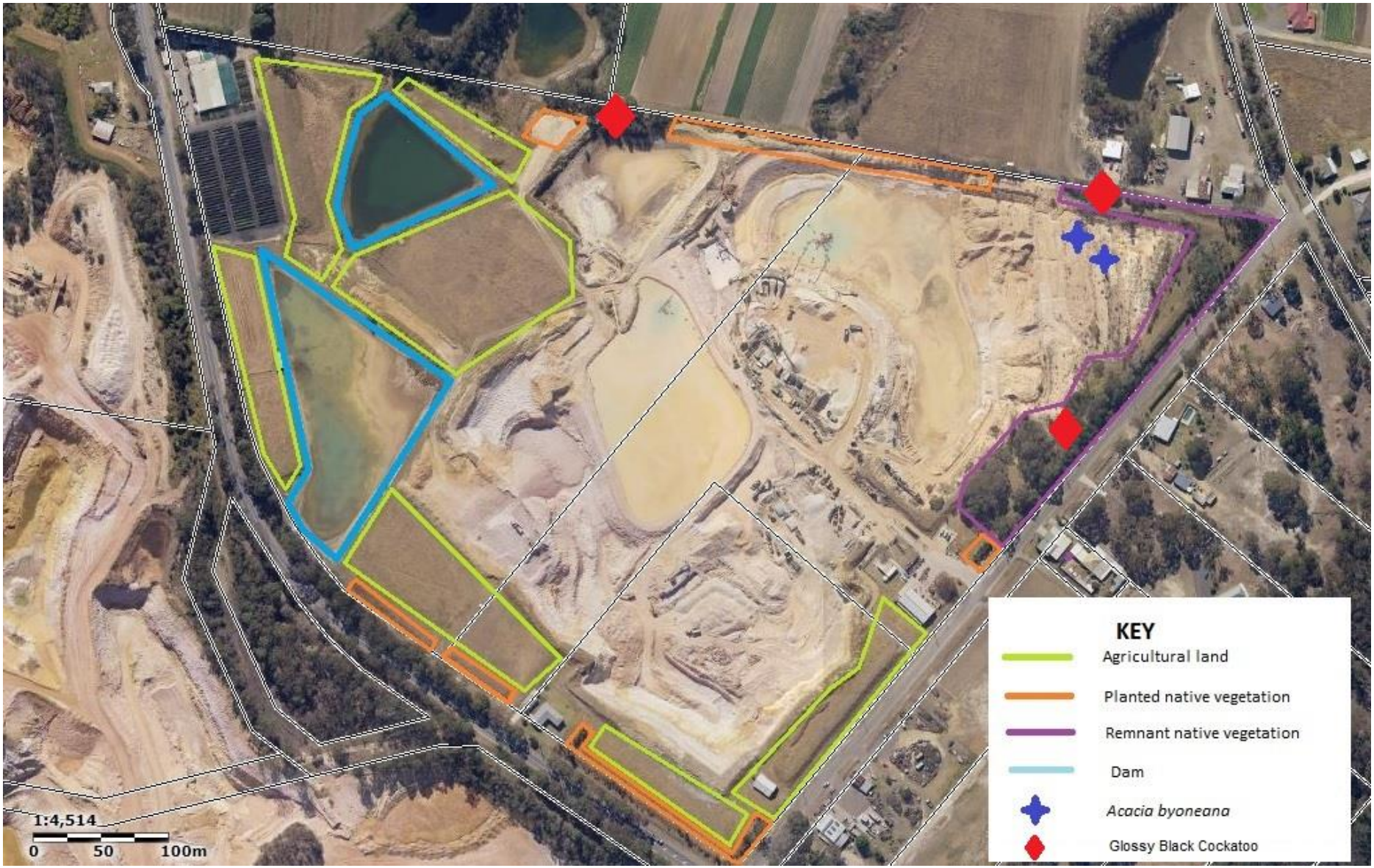

Figure 10. Location of vegetation zones within the Hodgson Quarries Roberts Road site

3.5 NATIVE FAUNA

There was no dedicated native fauna survey undertaken for this report. No threatened fauna species have been previously identified within the property and limited resources would suggest there is a low possibility of threatened fauna species residing within the property boundary.

During the botanical survey in November 2020 opportunistic sightings of native fauna were recorded. In total sixteen native species were recorded onsite. One threatened fauna species was identified onsite being the Glossy Black Cockatoo. These birds, six in total, were observed feeding in the *Allocasuarina littoralis* located on the northern boundary and within the remnant native vegetation. A complete list of fauna observed during the monitoring period can be found in Appendix C.

Overall the condition of habitat for native fauna species within the property is considered to be low in its current state. The remnant native vegetation areas currently have the most habitat value to support a range of native fauna species however this area is small and not likely to be large enough to support any viable population. Connectivity to native vegetation in all directions is broken due to road easements or surrounding agricultural land use.

Figure 11. Glossy Black Cockatoo within the Allocasuarina littoralis on the northern bounday

4 DISCUSSION AND RECOMMENDATIONS

This is the third Annual Biodiversity Monitoring Report produced for Hodgson Quarries Roberts Road Maroota. Rehabilitation work is in the early stages and will increase with both intensity and measurable criteria in the years that follow, particularly as the quarry operations come to an end.

The site does appear to be recovering from the dry weather conditions which persisted from mid 2017 and into early 2020. Evidence of some die back, particularly of large shrubs is still apparent although juvenile growth is reasonably prolific. Forbs and ferns which were not well represented in the previous monitoring period are now present. Native grasses are making a strong comeback in the native vegetation areas, particularly along Roberts Road. It is expected with the return to average weather conditions the ground stratum will demonstrate the biggest increase in density and diversity over time.

It would appear that some natural native regeneration from the soil seed bank is occurring throughout much of the remnant native vegetation areas. Fencing to exclude livestock has occurred which has most likely assisted in the ability for natural regeneration to occur undisturbed. Fencing has also taken place in planted areas along the northern property boundary where planting success is high.

Weeds are present throughout the property with WoNS occurring in low density within the agricultural areas and in higher density within the planted native vegetation along the northern boundary. High Threat Weeds (HTW), as determined by the DPIE BAM Calculator, are also present although most of these weeds can be found within the agricultural land area. It is highly recommended these weeds are managed to maintain control of their growth and spread. Regular sweeps for Fireweed is recommended throughout the year to minimise the further spread and density of this weed throughout the property. Recommended weed control methods suitable for use throughout the year is supplied in Appendix D.

There is an intention to undertake some infill native planting over time on the bund wall along the southern end of Roberts Road and the eastern bund wall facing Old Northern Road. Due to overhead powerlines in the immediate area, low growing native shrub species suitable for planting in these locations is highly recommended.

Overall the rehabilitation and biodiversity of the site is within the expectations of the life of the quarry. Regular weed management would benefit the site, particularly the WoNS.

5 LIMITATIONS AND ASSUMPTIONS

This study was limited by the timing and frequency of the survey. There may be flora and/or fauna species present at the site that were not recorded due to their seasonal, territorial or cryptic nature.

It can never be proven that threatened species have not, do not or will not use the site as habitat. The conclusions drawn in this report are a result of testing, observation and experience.

This report describes the habitat and vegetation of the site at the time of the field survey. Vegetation and habitat will change over time and therefore the findings of this report are only relevant for the current proposal and for the duration of the application.

6 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR AND FIELD ECOLOGIST

The Author and Field Ecologist, Melissa Mass, has formal qualifications including a Bachelor of Applied Science (B. App. Sc.), majoring in Ecology, and a Certificate 3 in Horticulture. Her current Scientific Licence number issued from the NSW OEH is SL101441 with expiry date 31st Oct 2021. Furthermore an Animal Research Authority issued by the NSW Animal Care and Ethics Committee is current to undertake general survey work throughout NSW with expiry date 23rd Mar 2021. Melissa is an accredited Biodiversity Assessor conforming to the requirements as imposed by DPIE with Accreditation number being BAAS18053.

Melissa has been working as an Ecologist for 12 years. Her work has included targeted threatened species assessment and management, reviews of environmental factors, bush regeneration, environmental impact assessments, and environmental survey and monitoring.

Melissa has a strong focus on threatened species ecology and has actively contributed to the Long-nosed Potoroo National Recovery Plan.

7 BIBLIOGRAPHY

Australian Government Com Law. 2014. *Environment Protection and Biodiversity Conservation Act 1999*. [ONLINE] Available at: http://www.comlaw.gov.au/Details/C2014C00506 [Accessed 15th November 2020].

Australian National Herbarium. 2012. Australia's Virtual Herbarium. [ONLINE] Available at: http://avh.chah.org.au/ [Accessed on 16th November 2020].

Department of Environment and Climate Change NSW. 2008. Recovery Plan for the Koala (*Phascolarctos cinereus*). [ONLINE] Available at: http://www.environment.nsw.gov.au/resources/threatenedspecies/08450krp.pdf [Accessed 16th November 2020].

Department of Lands Spatial Information Exchange. 2014. SIX Maps. [ONLINE] Available at: http://maps.six.nsw.gov.au/ [Accessed 14th November 2020].

Menkhorst P. & Knight F. 2004. A Field Guide to the Mammals of Australia, 2nd Edition. Oxford University Press, South Melbourne Vic.

New South Wales Consolidated Acts. 2017. *Biodiversity Conservation Act 2016*. [ONLINE] Available at: https://www.legislation.nsw.gov.au/~/view/act/2016/63 [Accessed 16th November 2020].

NSW Office of Environment and Heritage. 2018. *NSW BioNet*. [ONLINE] Available at: http://www.bionet.nsw.gov.au/ [Accessed 16th November 2020].

NSW Office of Environment and Heritage. 2018. *NSW BioNet Vegetation Classification*. [ONLINE] Available at: https://www.environment.nsw.gov.au/NSWVCA20PRapp/default.aspx [Accessed 26th October 2020].

New South Wales Office of Environment and Heritage 2018. *NSW Threatened Species Profiles*. [ONLINE] Available at: http://www.environment.nsw.gov.au/threatenedspecies/ [Last accessed 26th October 2020].

New South Wales National Parks and Wildlife Service (2002) Interpretation Guidelines for the Native Vegetation Maps of the Cumberland Plain, Western Sydney, Final Edition NSW NPWS, Hurstville.

PlantNet. 2018. Royal Botanic Gardens and Domain Trust, Sydney. [ONLINE] Available at: http://plantnet.rbgsyd.nsw.gov.au [Last accessed 16th November 2020].

Readers Digest. 1998. Readers Digest Complete Book of Australian Birds, 2nd Edition. Readers Digest, Surry Hills NSW.

Simpson K., Day N. & Trusler P. 2004. Field Guide to the Birds of Australia, 7th Edition. Penguin Group, Camberwell Vic.

Strahan R. 1996. A Photographic Guide to Mammals of Australia. New Holland Publishers, Frenchs Forest NSW

The Hills Shire Council (2020) *The Hills Local Environmental Plan 2019*. [ONLINE] Available at http://www.thehills.nsw.gov.au/IgnitionSuite/uploads/docs/LEP%202019%20document.pdf [Last accessed 16th November 2020].

Tozer MG, Turner K, Keith DA, Tindall D, Pennay C, Simpson C, MacKenzie B, Beukers P, and Cox S. 2010. *Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. Cunninghamia (2010) 11(3): 359-406

VGT Environmental Compliance Solutions Pty Ltd. 2018. Landscape and Rehabilitation Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

VGT Environmental Compliance Solutions Pty Ltd. 2018. Operational Environmental Management Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

VGT Pty Ltd & NGH Environmental. 2016. Flora and Fauna Management Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

8 APPENDIX

Appendix A – Native Flora identified and recorded as present onsite November 2020

Scientific Name	Common Name	Status
Acacia bynoeana	Bynoe's Wattle	*BC Act* – Endangered *EPBC Act* – Vulnerable
Acacia linifolia	White Wattle	
Acacia myrtifolia	Red-stemmed Wattle	
Acacia parramattensis	Parramatta Wattle	
Acacia suaveolens	Sweet Wattle	
Acacia ulicifolia	Prickly Moses	
Allocasuarina littoralis	Black She-oak	
Allocasuarina paludosa	Swamp She-oak	
Allocasuarina torulosa	Forest Oak	
Amyema congener	Variable Mistletoe	
Angophora bakeri	Narrow Leaved Apple	
Angophora costata	Smooth Barked Apple	
Anisopogon avenaceus	Oat Speargrass	
Aristida vagans	Three-awn Speargrass	
Aristida warburgii	Fine leafed wire grass	
Blechnum cartilagineum	Gristle Fern	
Bossiaea heterophylla	Variable Bossiaea	
Breynia oblongifolia	Coffee Bush	
Callistemon citrinus	Crimson Bottlebrush	
Cassytha pubescens	Devils Twine	
Cheilanthes sieberi	Mulga Fern	
Clematis aristata	Old Mans Beard	
Cyathea australis	Rough Tree Fern	
Daviesia ulicifolia	Gorse Bitter Pea	
Dianella caerulea	Blue Flax-lily	
Dichelachne micrantha	Shorthair Plumegrass	
Dodonaea triquetra	Large Leaf Hop Bush	
Drosera auriculata	Sundew	
Echinopogon ovatus	Forest Hedgehog Grass	
Einadia hastata	Berry Saltbush	
Entolasia marginata	Bordered Panic	
Eucalyptus acmenoides	White Mahogany	
Eucalyptus eugeniodides	Thin Leaved Stringybark	
Eucalyptus haemastoma	Scribbly Gum	
Eucalyptus notabilis	Mountain Mahogany	
Eucalyptus tereticornis	Forest Red Gum	
Eucalyptus umbra	Broad-leaved White Mahogany	
Euchiton sphaericus	Star Cudweed	
Geranium homeanum	Cranesbill	
Gleichenia dicarpa	Pouched Coral Fern	
Glycine clandestina	Twining Glycine	
Grevillea buxifolia	Grey Spider Flower	

Grevillea speciosa	Red Spider Flower	
Hakea sericea	Needlebush	
Hardenbergia violacea	False Sarsaparilla	
Juncus usitatus	Common Rush	
Kunzea ambigua	Tick Bush	
Leptospermum polygalifolium	Tantoon	
Lindsaea microphylla	Lacy Wedge Fern	
Lomandra longifolia	Spiny head Mat-rush	
Lomandra multiflora	Many-flowered Mat-rush	
Microlaena stipoides	Weeping grass	
Notelaea longifolia	Large Mock Olive	
Oxalis perennans	Native Sorrel	
Ozothamnus diosmifolius	Rice Flower	
Parsonsia straminea	Common Silkpod	
Persoonia lanceolate	Lance Leaf Geebung	
Petrophile pulchella	Conesticks	
Phyllota phylicoides	Heath Phyllota	
Pittosporum undulatum	Sweet pittosporum	
Pratia purpurascens	White Root	
Pteridium esculentum	Bracken Fern	
Senecio linearfolius	Fireweed Groundsel	
Sporobolus creber	Slender Rat's Tail Grass	
Syncarpia glomulifera	Turpentine	
Themeda triandra	Kangaroo Grass	
Viola hederacea	Ivy Leaved Violet	
Xanthorrhoea media	Grass Tree	

Appendix B – Exotic flora identified and recorded as present onsite November 2020

Scientific Name	Common Name	Status
Agapanthus spp.	Agapantha	
Ageratina adenophora	Crofton Weed	High Threat Weed (HTW)
Anagallis arvensis	Red Pimpernel	
Andropogon virginicus	Whisky Grass	HTW
Bidens pilosa	Cobblers pegs	HTW
Briza minor	Shivery Grass	
Chloris gayana	Rhodes Grass	HTW
Cirsium vulgare	Spear Thistle	
Conyza bonariensis	Flax-leaf fleabane	
Cynodon dactylon	Couch Grass	
Eragrostis curvula	African Lovegrass	HTW
Gnaphalium coarctatum	Cudweed	
Hypochaeris radicata	Catsear	
Lantana camara	Lantana	WoNS, HTW
Oxalis corniculata	Creeping Woodsorrel	
Paspalum dilatatum	Paspalum	HTW
Paspalum urvillei	Vasey's Grass	
Pennisetum clandestinum	Kikuyu Grass	
Phytolacca octandra	Inkweed	
Plantago lanceolata	Lambs Tongues	
Rubus fruticosus sp. agg.	Blackberry	WoNS, HTW
Senecio madagascariensis	Fireweed	WoNS, HTW
Setaria parviflora	Slender Pigeon Grass	
Sida rhombifolia	Paddy's Lucerne	
Solanum mauritianum	Wild Tobacco Bush	
Solanum nigrum	Black Nightshade	
Solanum sisymbriifolium	Sticky Nightshade	
Sonchus oleraceus	Common Sow Thistle	
Trifolium repens	White Clover	
Verbena bonariensis	Purpletop	
Vicia sativa	Common Vetch	

Appendix C – Fauna identified and recorded as present onsite July 2019

Scientific Name	Common Name	Observation Type
Bird		
Anthochaera chrysoptera	Little Wattlebird	Observed
Colluricincla harmonica	Grey Shrike-thrush	Observed
Calyptorhynchus lathami	Glossy Black Cockatoo	Observed
Cracticus tibicen	Australian Magpie	Observed
Dacelo novaeguineae	Laughing Kookaburra	Observed
Eopsaltria australis	Eastern Yellow Robin	Observed
Malurus cyaneus	Superb Fairy Wren	Observed
**Manorina melanocephala*	Noisy Minor	Observed
Sericornis frontalis	White-browed scrubwren	Observed
Vanellus miles	Masked Lapwing	Observed
Mammal		
**Oryctolagus cuniculus*	European Rabbit	Scat and digs
Trichosurus vulpecula	Brush-tailed Possum	Scat
**Vulpes vulpes*	European Red Fox	Scat
Wallabia bicolor	Swamp Wallaby	Scat
Reptile		
Chelodina longicollis	Snake-necked Turtle	Observed
Ctenotus taeniolatus	Copper-tailed Skink	Observed
Lampropholis guichenoti	Common Skink	Observed
Amphibian		
Crinia signifera	Common Eastern Toadlet	Heard call

*Pest species

Appendix D – Recommended weed control for each month of the year (WoNS and HTW only)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
African Lovegrass	Herbicide	Herbicide	Slashing	Slashing	Slashing				Herbicide	Herbicide	Herbicide	Herbicide
Blackberry	Herbicide	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
Cobblers Pegs	Hand removal	Hand removal	Hand removal	Hand removal					Herbicide	Herbicide	Herbicide	Hand removal
Crofton Weed	Slashing	Herbicide	Herbicide	Herbicide	Herbicide				Slashing	Slashing	Slashing	Slashing
Fireweed	Hand removal	Hand removal	Hand removal	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Hand removal	Hand removal	Hand removal
Lantana	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Paspalum	Slashing	Slashing	Slashing	Herbicide	Herbicide	Herbicide			Slashing	Slashing	Slashing	Slashing
Rhodes Grass	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing
Whiskey Grass	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Herbicide	Herbicide	Herbicide	Hand removal

Herbicide – Foliar spray with an appropriate product as per the instructions on the label. Foliar spray should be carried out during active growing season.
Slashing - Slashing within agricultural land areas only. Slashing is only effective if the targeted species has not yet reached flowering maturity.
Hand removal – Necessary when targeted species have reached flowering maturity. Entire plant can be removed or flowering heads may be cut. Removed material should be immediately bagged to prevent spread of seed and appropriately disposed of.
Herbicide* – Treatment via either cut and paint or drill and inject methods.

This table should be considered a guide for appropriate treatment during different months of the year. It does not indicate a specified work schedule.