
400 HA AUSSIE ARK SANCTUARY

NOTES ON THE PROJECT
1ST FEBRUARY, 2019



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1. Aussie Ark Sanctuary

Aussie Ark has a vision of creating a long-term future for Australia's threatened wildlife through robust insurance populations, and protected wild sanctuaries. Initially this will involve the release of Eastern Quoll, Long-nosed Potoroo, and Brush-tailed Rock-wallaby in to a 377 Ha fenced island [Sanctuary] in the Barrington Tops. The fence will contain this native fauna but will exclude all feral fauna (except rodents) and non-target native species (macropods and wombats). A 26 Ha facility [Devil Ark] will breed the release cohorts (and hold specimens requiring veterinary attention) and a 73 Ha fenced island will also provide an outlet additional for species of native wildlife, local to the area.

Release cohorts will be fitted with GPS loggers that will be downloaded daily until patterns of behavior are understood. Regular trapping for veterinary evaluation will ensure that physical welfare is also monitored. When the Committee of Management is confident there are no systemic problems, trapping, GPS loggers, and night vision cameras will regularly sample to establish the welfare of individuals and provide estimates of population growth and size. In the population founding period measures of success are based on welfare and the confidence with which welfare is evaluated. Established population of the three species become conservation resources once reasonable welfare has been demonstrated.

The species are native and there is evidence that the site would historically have held them. The quoll and rock-wallaby are part of established programs and will be managed as a demographic and genetic resource for conservation. The 2013 Senate report recognized the success of predator-excluded sanctuaries in the protection and recovery of threatened species and Aussie Ark will be an exemplar. However, the Aussie Ark conservation mandate goes beyond species recovery to include environmental values, recognising that conservation is a social issue and that nature is not just a human resource but a shared resource that could be managed to the benefit of all living things. Rather

than display individual species as objects of interest Aussie Ark will enable people to engage with wild life within a natural, pre-European landscape. Quite apart from the role in species recovery Aussie Ark is intended to be an island of intrinsic value and to demonstrate the wonder that Australia once was, and most importantly, could be again.

In so doing Aussie ARK is adopting a transdisciplinary framework to addressing the 'wicked' problem of conservation. The transdisciplinary framework pursues outcomes by integrating the hard science of evidence with the soft science of community values to develop the most effective manner of action that delivers long-term conservation impact. The transdisciplinary framework is very helpful in complex challenges, such as the recovery of species, where the causes of extinction are diverse and at first sight intractable. The transdisciplinary framework has proved useful in engaging and collaborating with the community, corporations, academia and governments to deliver environmental outcomes effectively and efficiently and will be developed in collaboration with tertiary education institutions.

An example of transdisciplinary leverage will be the coincidental improvement of the ecological health of the site. The nature of the place is enhanced through the elimination of the highly invasive weed Scotch Broom, which dominates large proportions of the Barrington plateau, and the soil ecology throughout the Sanctuary will be improved through the foraging behavior of several of the reintroduced species. The potoroo, for example, is an ecosystem engineer that will contribute to the health of the site, promoting an increase in subterranean fungal growth to the benefit a range of fauna and flora species within the fenced areas, including threatened terrestrial orchids.

Whatever the specific causes, early European accounts of wildlife in the Australian bush are startlingly different to the contemporary experience. Aussie Ark will redress that, at least locally.

2.1. Location (refer Appendix 1a)

The location of the land is shown on the locality map (Map 1) and is approximately 85 km north east of Scone. The land is owned privately and has previously been used for forestry purposes and is subject to a private native forestry property vegetation plan.

The location is known as 'Mikel's Paddock', a 512ha heavily timbered site within the bounds of Tomalla Station, which has been generously provided by the land owner to AWA through a decades-long \$1/year lease. The Upper Hunter Shire Council knows the location as part of Lots 40 and 41 DP 753715, off Tomalla Road, near Tomalla in the Parish of Tomalla.

The regional context of the site is its location at the top of the Manning River catchment at the north of the Hunter Valley and at the edge of the Barrington Tops plateau. It is within the edge of the North Coast biogeographic region in the Interim Biogeographic Regionalisation of Australia, and the Tomalla sub-region. The vegetation types and species occurring represent a transition zone between coastal and inland types, and are also affected by altitudinal gradients.

2.2. Habitat (refer Appendix 1c)

The site is moderately sloping mostly on a ridge top. It has been subject to past logging and cattle grazing and is at an altitude of about 1,200 m. Land surrounding the site has been extensively cleared and grazed, with most of the grazing land pasture improved. The geology of the site has not been assessed in detail but comprises Tertiary basalt. Soils are fertile and generally well drained. Major habitat types observed on the site and adjacent sections of the land are as follows:

- a. open forest with scattered trees and grassy under-storey occurs on parts of the land, including most of the proposed development site. The main native tree species include Messmate Stringybark *Eucalyptus obliqua*, Brown Barrel *Eucalyptus fastigata*, Silvertop

Stringybark *Eucalyptus laevopinea*, and Manna Gum *Eucalyptus viminalis/Eucalyptus nobilis*. In some sections of the site the forest canopy has been thinned by recent logging.

- b. grassland and pasture. A mixture of introduced and native grasses occurs in areas of the land that have been cleared for grazing. Introduced weed species primarily occur in these areas which have been most subjected to disturbance and continuing cattle grazing. The fauna habitats on the site have been affected by past clearing and logging, and road construction. There are some old trees with hollows, some fallen timber, and debris and soil disturbance from recent forestry operations.
- c. significant areas of the site are occupied by the weed Scotch Broom which is identified as a State Priority Weed – Asset Protection and a Regional Priority Weed – Containment in the Hunter Regional Strategic Weed Management Plan 2017 – 2022 (Hunter Local Land Services 2017). Approximately 20% of the subject property (Mikel's Paddock) has a dense understory of the highly invasive Scotch Broom *Cytisus scoparius*. Control measures have already reduced coverage to 20%, down from approximately 30% coverage at the onset of weed control measures. The eradication will take three to five years from within the sanctuary. Scotch Broom thickets provide refuge for feral pigs and wild horses, and it is believed that both act as significant vectors for seed dispersal.

2.3. Facilities (see Appendix 1b)

Devil Ark 26 Ha (DA 135-2010):

Comprises a number of 1 - 5 Ha enclosures and support facilities dedicated to management of Tasmanian Devil under the aegis of the Save the Tasmanian Devil Program of DIPWE, including a visitor centre. Aussie Ark has a NSW government licence, through the NSW Department of Primary Industries.

Aussie Ark Includes:

An **Eastern Quoll** breeding facility, on a grant from Australian Geographic Society has a holding capacity of approximately 100 quolls. These animals held for Tasmanian Quoll Conservation Program, including release in to Booderee by Parks Australia (Commonwealth).

Additionally **Brush-tailed Rock-wallaby** mounds that have recently been constructed within Devil Ark 26 Ha. Each of five mounds will house 1:3 plus young according to recommendations from ZAA though these animals are ultimately under the custodianship of the NSW SoS program.

Refuge 73 Ha (DA 58-2018):

This fenced island borders Aussie Ark and the 377 Ha Sanctuary. It is primarily intended to facilitate the management of the animal populations in the Sanctuary.

Sanctuary 377 Ha (DA 58-2018):

This fenced island will be a very important native wildlife conservation resource, an ecotourism facility, and an example of a rehabilitated ecosystem. Re-introduced into this site will be Brush-tailed Rock-wallaby, Eastern Quoll and Long-nosed Potoroo.

The DA 58-2018 application to Upper Hunter Shire-Council included a **Statement of Environmental Effects and a Flora & Fauna Assessment**. The Statement of Environmental Effects concludes that "Both proposed enclosures represent minor development that is rural in character, and permissible under the land use planning controls applying to the land.", while the Flora & Fauna Assessment similarly concludes that "The proposed

development will not have a significant effect on NSW listed threatened species or endangered ecological communities and no species impact statement is therefore required to accompany the development application. There will also be no significant effect on Commonwealth listed matters, and no referrals or approvals will be required."

DA consent requirements include a Bush Fire Plan and protocols for OH&S. Much of the DA consents for the Sanctuary and Refuge build on procedures and resources already in place for Aussie Ark. Staff residences will be expanded and maintained in partnership with Devil Ark in a 1ha area of leasehold land approximately 5km from the Sanctuary. The fence itself meets or exceeds regulations regarding the containment of quolls, rock-wallabies and potoroos. Photographs and technical drawing of the 8.6 km fence are provided (see Appendix 2).

3. Baseline

The comparative changes to the ecological system, including flora, fauna and soil assessments will be monitored under the direction of Dr Michael Letnic, UNSW. The comparative changes between the 377 Ha before and after fencing, with an unfenced block of similar size and habitat profile as a control, will be used to monitor Sanctuary health and carrying capacity. The first two surveys took place in early 2019 with further surveys to be undertaken in future years.

Native mammal species currently on the site include Eastern Grey Kangaroo, Red-necked Wallaby, and Common Wombats. These will be corralled out of the 73 and 377 Ha enclosures. Non-native species presently inhabiting the site include cattle, horses, pigs, foxes, cats, hares, and rabbits. These will also be corralled out of the enclosures or euthanized.

4. Governance

The development and management of the Sanctuary will be conducted by Australia's Wildlife Ark inc (AWA), ABN 5141 787 1203, is a registered not-for-profit deductible-gift-recipient organisation registered under the Registry of Environmental Organisations. AWA developed and presently manages Devil Ark, a large-scale conservation, Insurance population breeding facility for Tasmanian Devil located adjacent to the proposed Sanctuary, for the purpose of rewilding Tasmania. AWA is oversighted by a Committee of Management (see Appendix 3).

The Committee of Management (CoM) will receive technical advice from partner individuals and organisations in the areas of environmental and ecological sciences, mammal biology, feral animal control, fire control, and weed management. It will be provided scientific and practical advice throughout the Project. The CoM will also invite recommendations around the cultivation and management of relevant supportive scientific research, and environmental projects undertaken within the Sanctuary. The CoM acknowledges the ongoing contribution of the following in nominated fields:

	Affiliation	Specialism
Dr Michael Letnic	UNSW	Ecology and research
Paul Andrew	Conservation Planning Specialist Group	Studbook, small population management
Dr Madelon Willemsen	USYD	Transdisciplinary frameworks and behavior change

The CoM will also be responsible for relationships with the recovery teams of species in agency recovery plans (e.g. Eastern Quoll, Brush-tailed Rock-wallaby). In general, the CoM will retain responsibility for animal welfare but within welfare constraints will accede to requests and direction from recovery teams.

5.1 Species

The species must be historically native to the site, being NNC13 Barrington in the NSW North Coast Interim Biogeographic Regionalisation of Australia. Five species have been identified as locally extinct and suitable candidates for re-introduction, in addition to Eastern Quoll, Long-nosed Potoroo and Brush-tailed Rock-wallaby these are Rufous Bettong and Long-nosed Bandicoot.

Habitat suitability within the Barrington sub-region is assumed (though see Brush-tailed Rock-wallaby below) though no claims are made to it being prime habitat and carrying capacities are conjectural.

First 3 months	Release cohorts behavioural and physical health maintained	No unexplained injuries or deaths and species appropriate patterns of behaviour
Short term (one year)	Sampling sufficient to monitor welfare and population growth	Evidence of breeding (pouch young or distended nipples)
Medium term (two years)	Sampling sufficient to monitor welfare and population growth	Increasing populations with evidence of adult animals who were born in Sanctuary
Long term (> five years)	Sampling sufficient to monitor welfare and population growth	Population stable and demographic interventions not required or minimal

5.2 Stocking

The success rate of vertebrates released into predator-free areas averages about 80%, whereas that for animals released into unprotected sites varies from 0 to 60%. Preferred stocking of all species will be up to 60 animals in tranches of up to 10:10 over 5 years. Each tranche will represent at least 90% wild heterozygosity based on animals of known pedigree and founder details (10:10 captures 97.5% of the genetic diversity of the source population). Minimum 90% heterozygosity will be maintained indefinitely by the introgression of unrelated individuals as required, based on random genetic sampling across the population. Note that the performance of the population can be gauged by pedigree data, often sufficiently, or genomics but here stocking will be based on pedigree and post-stocking population performance will be based on genomics.

Target	10-year working target or threshold	Rationale
Total managed meta-population		
Insurance meta-population size (minimum)	10,000	From 100/1000 rule plus general demographic viability guidelines
Total founder target	150 sampled randomly from across range	From theory (confers 95% chance of capturing alleles occurring at frequency of $\geq 1\%$ (from Marshall & Brown, 1975))
Sub-populations		
Ideal sub-population size	1500	Inbreeding resilient and likely to behave as demographically wild. No demographic intervention and IUCN considers wild.
Minimum sub-population size	N = 400+	From mala and eastern barred bandicoot models - 95% chance of persistence for 50 years
Minimum genetically effective founders per sub-population	≥ 20 (≥ 30 for K = 1500)	Targets high level of gene diversity - more needed where securing rare alleles
Minimum number of animals to seed a new population	≥ 60 within 5 yrs	Aims to secure multiple copies of any rarer alleles plus provide some defence against demographic stochasticity

Breeding facilities at Aussie Ark are presently accumulating appropriate stock from a range of zoos and other sources with the aim of representing the broadest possible genetic diversity. These animals are being held and strategically bred in spacious enclosures in preparation for eventual 'soft release' into the Sanctuary. Each species is managed in a studbook as follows:

Species	Program	Founders	Program GD
Eastern Quoll	Tasmanian Quoll Conservation Program		
Long-nosed Potoroo	In house studbook		
Brush-tailed Rock-wallaby	ZAA Brush-tailed Rock-wallaby Conservation Program		

5.3 Demographics

The demographic goal is to have populations large enough to be stable without demographic intervention. Such animals are considered wild, following the IUCN Standards and Petitions Subcommittee (2017:8 [2.4.1 Managed subpopulations]) which classes native animals in fenced facilities as wild, as long as there is no supplementary feeding or other demographic management. This classification is maintained even if genetic supplementation from captive stock is required to maintain genetic diversity (under 2.4.1 the amelioration of human induced threatening processes does not preclude animals from being considered wild).

In the short term, until the second (500 Ha) and third (1000 Ha) sanctuaries are completed, some species management is, however, likely to be required to ensure animal welfare, small population resilience, and genetic integrity of populations. The smaller enclosure (73ha) will provide an outlet for gender biased removal of surplus (e.g. males and/or non-reproductive hormonally implanted females) in the event of overpopulation in the principal enclosure.

Species	Territory/home range	K	Social system
Eastern Quoll	4Ha female	>100	Solitary
Long-nosed Potoroo	2- 5 Ha	>100	Solitary
Rock-wallaby	15 Ha for 1.1.3	100 - 120	Harem

K [capacity] is 377 divided by an estimate of territory or home range, which in all three cases are derived from SOS pages. These extrapolations could be significantly overestimated so the general health of the individuals in the population must be monitored as the population grows. Aussie Ark is at 1200 m and productivity is much lower in winter. The rate of growth is not a measure of success but quoll and the potoroo are fecund species and growth rates exceeding 0.1 might be expected.

5.4 Genetics

Supplementation sufficient to ameliorate the accumulation of inbreeding and loss of genetic diversity through drift will be required. Frankham et al. (2017) recommend incorporating five effective founders per generation, regardless of sub-population size. In the absence of empirical studies indicating the effective to actual population size ratio of any of quoll, potoroo or rock-wallaby, a rule of thumb is applied: $N_e/N = 0.1$ (Frankham, 1995). This would prescribe the movement of up to 10 founders into each population (based on $K = 100$ for each species), every generation (approximately 2.5 years). A more moderate approach is recommended here.

Pending further research and clarification of the genetic efficiency of fenced-wild and wild bilby sub-populations, the receipt of five comparatively unrelated individuals every five years will be the targeted rate of gene flow. Individuals will be drawn from other sites within the relevant programs and numbers can be modified as genomic evidence as to the condition of the populations accumulates.

5.5 Welfare

SOPs will include monitoring of the animals to the extent that is required to ensure appropriate levels of animal welfare and trigger contingencies. It is generally accepted as reasonable that the human responsibility for welfare is directly proportional to the degree of demographic management required. Miniaturized GPS loggers and remote surveillance cameras facilitates the necessary population monitoring and structured sampling allows for individual health estimations.

The different species will require different monitoring technologies, for example rock-wallaby is large enough for remote cameras and night vision equipment to be useful whereas the quoll and potoroo are more suited to GPS loggers and trapping. The intention is that all animals released into the Sanctuary will be monitored individually for three months and that following three months of meeting targets, welfare monitoring will be achieved by sampling of the population wherein a percentage of the population is caught, and veterinary checked at a designated rate.

The comparative changes to the ecological system, including flora, fauna and soil assessments will be monitored in parallel with an unfenced control area adjacent to the enclosures. Environmental stress should be identified before it becomes problematic for one or more of the species.

Release cohorts: individuals in release cohorts will be fitted with GPS/VHF devices capable of remote download such that each animal's movements can be monitored daily for 3 months. Thus, all animals in release cohorts this will require daily mapping of movements to check patterns of activity and weekly trapping to check body condition. The intention is to establish a routine that has a high likelihood of capturing physical and behavioural anomalies within 24 hours such that intervention SOPs can be triggered. The animals in release cohorts will be monitored individually and the welfare of each individual evaluated individually.

Capacity: when the quoll and potoroo populations grow and young recruit (and GPS recorders are removed) individual animals will not be monitored

for welfare but the population will be monitored by camera and trapping such that a statistical evaluation of individual welfare can be grounded by a random sample of a number of captures a month. Note that sampling will be required to estimate the average health of the population (based on its individuals) and the size of the population. Sampling can include trapping and camera, the latter feeding back in to trapping (trapping intensified at particular camera locations) but with no GPS data the welfare estimates will depend upon a sufficiently determined trapping effort. For example, to be 95% confident that 90% of the individuals in the population are doing okay might be 10% of the population caught each week on a random basis.

Period	Frequency	SOP	Response
3 months	Daily	Individual fitted with remote reading GPS logger.	Solitary
1 year	Weekly	Trapping and camera	This will be a population level response, as in evidence of weight loss might prompt removal to 73 Ha.
2 year	Monthly	Trapping and camera	This will be a population level response, as in evidence of weight loss might prompt removal to 73 Ha.
3 year	As required	Trapping and camera	This will be a population level response, as in evidence of weight loss might prompt removal to 73 Ha.

Note that measures of success are welfare. The desired rapid population growth and spectacular breeding success are expected to correlate but the measure is welfare.

Trapping: this program has one hundred traps placed at 500 m intervals along trails throughout the Sanctuary. Traps are 20 x 20 x 50 cm wire cage traps with every fifth trap a 30 x 30 x 60 cm cage trap. One end of the trap was covered by plastic to shelter trapped animals from inclement weather and traps are baited with a mixture of rolled oats and peanut butter. This mix may be changed to suit the more carnivorous eastern quoll by adding sardines. For the first month 50 traps are open for four nights and checked each morning and in the subsequent week; 50 traps are open in the western half of the Park and checked each morning for four nights.

6. Eastern Quoll *Dasyurus viverrinus*

Eastern quolls held in breeding facilities at Aussie Ark are managed as part of the Tasmanian Quoll Conservation Program and it is from this program that 10.10 representing >90% heterozygosity will be acquired. Commitments to the TQCP include the breeding and harvesting in collaboration with Parks Australia's Booderee rewilding project.

Range:

Formerly across much of south-east Australia. No verified sightings of live animals have occurred in NSW since 1963, although credible reports have been made repeatedly across much of the former range. A road-killed individual collected on Barrington Tops in 1989 was recently identified genetically as coming from mainland rather than Tasmanian provenance. The species is now listed as Endangered by the Commonwealth due to a population crash in Tasmania over the past decades. Translocation of Eastern Quolls from Tasmania is currently proceeding or proposed for several mainland sites including Jervis Bay.

Habitat:

Highly flexible habitat selection, occurring in dry sclerophyll forest, scrub, heathland, pasture and even cultivated land. This nocturnal and opportunistic carnivore hunts and scavenges, feeding largely on insects. Opportunistic carnivore with insects as its most important prey. Capable of taking prey nearly as large as itself.

Demographic management:

Home ranges vary between sexes and are dependent on habitat quality. In fertile habitats females restrict their movements to a few hundred meters surrounding their dens because prey is plentiful. Males often travel over a kilometer in a night, familiarising themselves with local mates. Target population of >100 with the potential of being demographically stable though animals will be harvested for release to other rewilding programs.

Genetic management:

Stocking will be based on pedigree (GD>90%) and ongoing population parameters such as inbreeding and retained genetic diversity will be managed using genomics.

Welfare:

Attempts will be made to re-trap animals on a weekly basis over the 3-month stocking period to check body condition and changes in internal and external parasite community, in particular for the presence of paralysis ticks *Ixodes holocyclus* on Eastern Quoll.

7. Long-nosed Potoroo *Potoroos tridactylus*

Range:

Occur in highly-fragmented populations along the east coast, found on the south-eastern coast of Australia, from Queensland to eastern Victoria and Tasmania, including some of the Bass Strait islands. In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm, including the Mt Royal NP and Barrington Tops NP, presumably in low densities.

Habitat:

Coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. A sandy loam soil is also a common feature.

The fruit-bodies of hypogeous (underground-fruiting) fungi are a large component of the diet. Dig extensively in search of subterranean fungi, roots, tubers, insects and their larvae and other soft-bodied animals in the soil, and in doing so are credited as 'ecosystem' engineers. Because they eat fungi, they spread fungal spores in their droppings. Some of these fungi grow on the roots of native plants and assist the plant in the uptake of nutrients from the soil. Often digs small holes in the ground in a similar way to bandicoots.

Demographic management:

Mainly nocturnal, hiding by day in dense vegetation though in winter months animals may forage during daylight hours. Individuals are mainly solitary, non-territorial and have home range sizes ranging between 2-5 ha. Target population of >100 with the potential of being demographically stable. Though this species can live at high densities (not territorial) resource restrictions will limit population size.

Genetic management:

Stocking will be based on pedigree (GD>90%) and ongoing population parameters such as inbreeding and retained genetic diversity will be managed using genomics.

Welfare:

Breeding peaks typically occur in late winter to early summer and a single young is born per litter. Adults are capable of two reproductive bouts per annum. The trapping to sample will be the primary monitoring technique for quolls and potoroos.

8. Brush-tailed Rock-wallaby *Petrogale penicillata*

Brush-tailed Rock-wallaby has been assigned to the Iconic species management stream under the Saving our Species (SoS) program. It is the subject of a National and NSW state recovery plan, a recovery plan targeting the population in the Warrumbungles, and a coordinated ZAA breeding program. Members of the recovery team have visited Aussie Ark and the breeding facility within Aussie Ark is specifically built to team requirements. Aussie Ark will contribute animals as required by the SoS program and stand as a bulwark alongside Jenolan Caves against the retreat of the rock-wallaby.

Range:

The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit.

NSW North Coast Interim Biogeographic Regionalisation of Australia: Barrington

Habitat:

Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.

Demographic management:

Highly territorial and have strong site fidelity with an average home range size of about 15 ha. Males tend to have larger home ranges than females. The home range consists of a refuge area and a foraging range linked by habitually used commuting routes. Females settle in or near their mother's range, while males mainly disperse between female

groups within colonies, and less commonly between colonies. Dominant males associate and breed with multiple females.

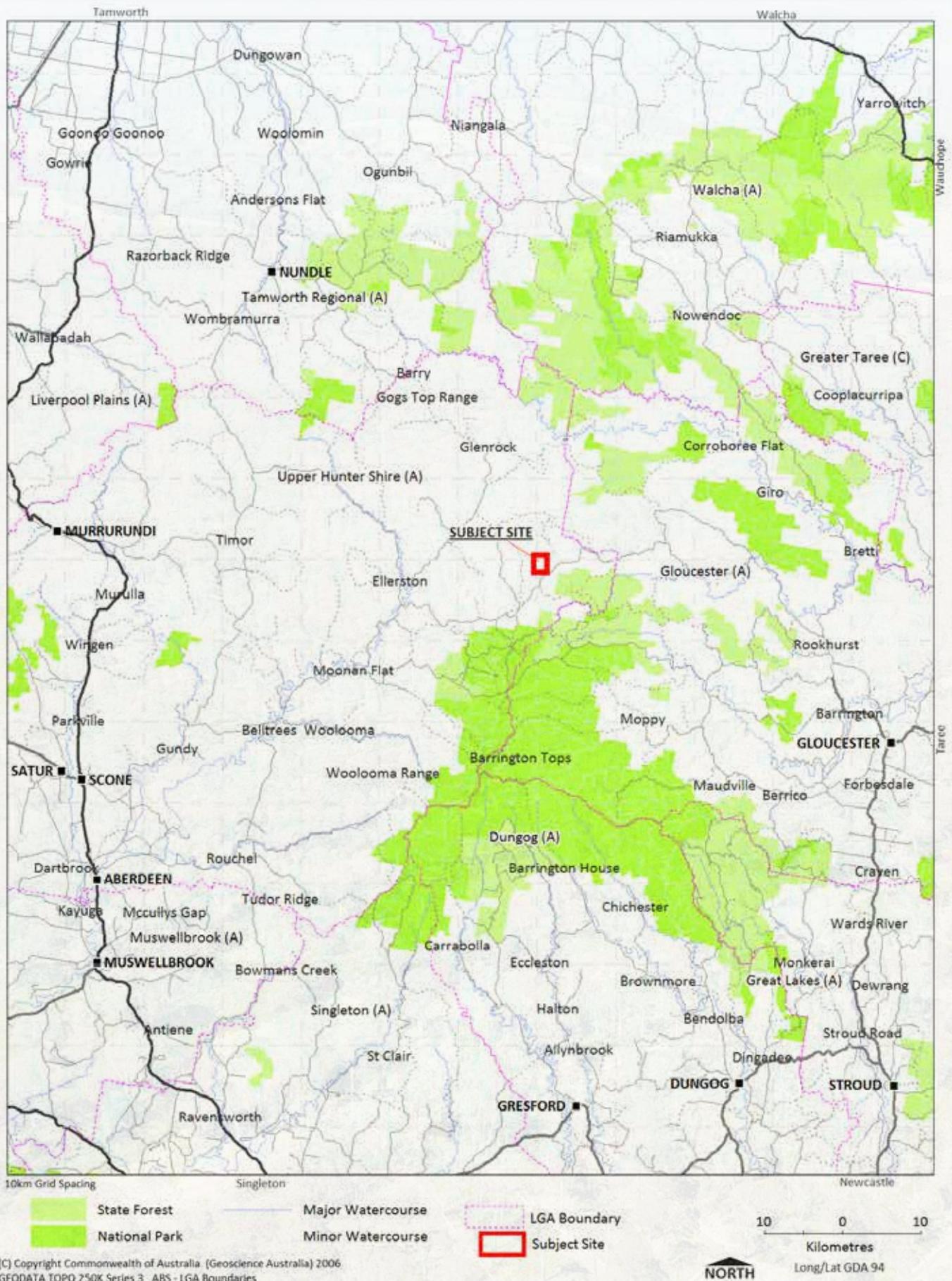
Based on male home range the target population of 100 – 120 based on group (1.1.3) home range of 15 Ha, which is a similar population to Jenolan Caves. Though a population of this size is unlikely to be demographically self-regulating it will be managed genetically with the Jenolan population and demographically surplus to Shoalhaven as required.

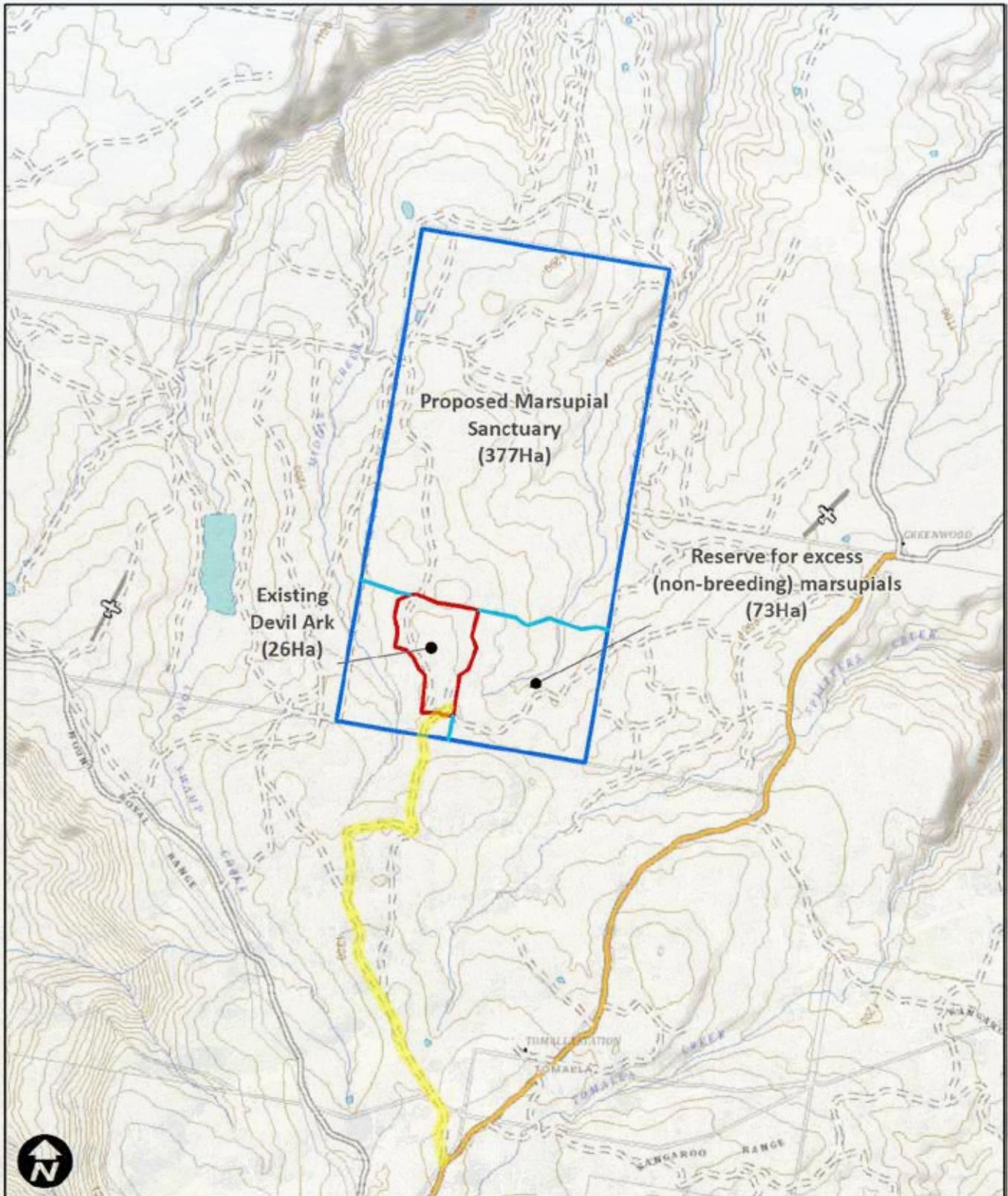
Genetic management:

Stocking will be based on pedigree (GD>90%) and ongoing population parameters such as inbreeding and retained genetic diversity will be managed using genomics.

Welfare:

Breeding occurs throughout the year with a peak in births between February and May, especially in the southern parts of the range and at higher altitudes. Following the three months on GPS logging, monitoring will be accomplished (as it is at Devil Ark for devils) through nocturnal inspection by keepers with night-vision equipment, extensive use of a large number of infra-red camera traps, the use of funnel-fence 'corrals' with microchip-reading weigh-station gates, and enclosure-wide periodic trapping efforts will be undertaken as appropriate. Triage then returns the animal to the Sanctuary, places it in veterinary care, or removes it from the breeding pool by releasing in to 73 Ha space.





0 500m

Map Produced by Dot Density v1.1

Data Source

©Department Finance, Services & Innovation 6/2/2018

- Existing Devil Ark Facility
- Subject Land & Perimeter Fence
- Proposed Fence
- Access Road



 Existing Devil Ark Facility  Subject Land  Lot

0 500m

Map Produced by Dot Density v1.0

Data Source

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Imagery date 11/1/2013



Bionet data identifies 14 threatened species listed in the Biodiversity Conservation Act 2016 occurring within approximately 10 kilometres of the site. Threatened fauna species determined to have potential to occur on the site and in the locality are indicated in the table below: Threatened plant and animal species potentially occurring or nearby

Diuris venosa Veined Doubletail O*

Euphrasia ciliolata Polblue Eyebright N*

Tasmania glaucifolia Fragrant Pepperbush N*

Tasmania purpurescens Broad-leaved Pepperbush N*

Ninox strenua Powerful Owl O*

Tyto novaehollandiae Masked Owl P*

Pachycephala olivacea Olive Whistler P*

Petroica phoenicea Flame Robin P* (record near property)

Dasyurus maculatus Spotted-tailed Quoll D*

Petaurus australis Yellow-bellied Glider O*

Pteropus poliocephalus Grey-headed Flying-fox P*

Mormopterus norfolkensis Eastern Freetail-bat P*

Kerivoula papuensis Golden-tipped Bat P*

Miniopterus schreibersii oceanensis Eastern Bentwing-bat P*

Key to table:

L Likely to occur on development site or immediately adjacent land

D Likely to use development site occasionally for foraging and/or movement

P Possibly may use development site for foraging and/or movement

O Possibly may occupy habitat within or immediately adjacent to development site

N Not likely to occur on the land

* Occurrence within 15 km of the site (mostly in State Forest and NPWS land to south)

Committee of Management

The AWA Committee of Management (Management Committee) conducts all of the business of AWA, including the development and management of the proposed Sanctuary. The Management Committee is comprised of the following members:

John Weigel

Director of Australia's Wildlife Ark, John is also Managing Director of Australian Reptile Park. Through a 'can do' approach, he has cultivated a range of diverse and innovative projects of similar or greater scale than the subject proposal. In 2008 John was appointed Member, Order of Australia (AM) in recognition of his work in tourism, education, advancement of amateur science, and contributions to the development and production of snake and spider antivenoms.

Tim Faulkner

President of Australia's Wildlife Ark, and a Director of Australian Reptile Park, Tim is a highly effective manager who is well respected in the zoo industry and well beyond. He has ensured the sustained level of professionalism that has made the Australian Reptile Park and Aussie Ark a success. Tim has earned a Certificate IV Captive Animal Management, and a Diploma of Management. Tim is a presenter in the popular US television show Wildlife of Tim Faulkner, and earlier in Australia through a compere role in Bondi Vet. In 2015 he was awarded the prestigious Australian Geographic Society's Conservationist of the Year.

Liz Gabriel

Secretary / Treasurer / Curator - Co-Director and Curator of Australian Reptile Park and Australia's Wildlife Ark, Certificate IV Captive Animals and studies in Animal Science, Accredited in Biosecurity awareness and Approved Arrangements Accreditation Classes 1-8. Liz has 15 years of experience in captive animal facilities and management. She has an established track record as an extraordinary administrator, records keeper, and liaison with government agencies.

Paul Andrew

Paul is an AWA Committee Member and advisor. His qualifications include an Masters Degree in Professional and Applied Ethics and BSc (Hons) in Ecology and Evolution. As a senior Curator at Taronga Zoo for 20 years, Paul provided leadership in many collaborative conservation-oriented projects, and continues in an advisory role. He is presently a member of the Conservation Planning Specialist Group (CPSG) and currently Chair of the Bilby Meta-population Working Group.

Chris Chapman

Chris is a Committee Member and advisor. He has a legal background (Dip Law, Dip CIS, Dip CM, FGIA, FAICD, MBA) and is a registered Barrister and Solicitor in NSW, VIC, ACT, and the High Court of Australia. He is the Managing Director of the Foundation for Australia's Most Endangered (FAME), and has been a Board Member since 2005. He is a Committee of Management Member of Aussie Ark, and is well known in conservation circles for a range of activities, including playing a key role in the innovative development of Australia's first 'feral-free' exclosures, and finding the funds to operate them. More recently he has been a driving force in the reestablishment of Western Quolls and Brush-tailed Possums to the Flinders Ranges of South Australia.

Bruce Kubbere

Committee Member - Founder of Featherdale Wildlife Park, Awarded the Order of Australia Medal in 1999 for his contribution to Community and Tourism in Australia.

Brad Walker

Committee Member - Brad is a qualified teacher and educator with a Dip Ed VET, a qualified landscape and exhibit designer with a Diploma in Landscape Design and has many other industry skills. Brad worked at Featherdale Wildlife Park for 18 years as the Senior Curator before accepting the position of Head Teacher of Animal Science at Richmond College of TAFE NSW.

Matthew Radnidge

Committee Member - Owner and Director of Symbio Wildlife Park, Certificate IV Captive Animal Management, and 15 years of experience in captive animal industry