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Submission to Inquiry into Biodiversity

In this submission I intend to make a suggestion for an addition to the legislation to protect wildlife habitat in South Australia that strengthens the act to prohibit further land clearing.

Biodiversity is embodied in the reserves currently held by the Natural History Society of south Australia Inc. These are Moorunde Wildlife reserve, Nardoo reserve, Lake Short reserve and Malurus reserve, all home to the southern hairy nosed wombat. Cullen reserve at Robe in the South East is home to bare nosed wombats. Collectively we refer to our group as Wombats SA but our philosophical base is the natural history of native flora and fauna. The society was established in 1960 and the first reserve, Moorunde was established in 1968 after a successful public appeal to obtain funds to purchase the property. We successfully added to the original 2020 hectares with a further parcel of land in 2008, making the total area of Moorunde now 6950 hectares. We have since added a further 500 hectares in an adjacent property we call Wombat Camp. These properties were originally grazed by sheep and we have observed an impressive increase in the vegetation and particularly ground cover on the reserves since removing the sheep and taking them over.

A 15 year survey by recently deceased member Glen Taylor OAM showed that there are over 3000 wombat warrens on the reserve and that on average there is one wombat per warren making an estimate of wombat numbers at around 3000. This will fluctuate with seasonal variations which lead to the variable availability of grasses for the wombats. However, these reserves are planned for the protection of the entire ecosystems in which the wombats and other native flora and fauna live. In order to protect the species of wombats, kangaroos, echidnas, goannas, native birds and all inhabitants thereof it is important to protect the habitat as a whole. Wombat burrows have been shown to provide shelter for a whole range of other species thus contributing to the biodiversity on the reserves. Our society therefore maintains a policy of minimal interference in the wildlife on these reserves.

Past surveys of the flora and fauna on these reserves amounts to many native species :

Plant list 109 species

Reptile list 15 species

Bird list 115 species

Mammal list 4 species

See appendix for detailed list.

Whie these surveys are several years old now they demonstrate the diversity of species that the Moorunde reserve contains. We have had more recent bird survey and reptile surveys and are waiting on the results of those. There has also been a plant survey done on the Cullen reserve at Robe, a very different environment from that of the mallee.

However, biodiversity cannot be sustained in an environment where invasive species are continually intruding. On Moorunde invasive species include many weeds: onion weed, horehound, saffron thistle, wild sage and heliotrope. We maintain a weed control program for these weeds as part of our regular working bees. Other exotics such as Wards weed and thread iris constitute a significant part of the wombat diet and cannot now be removed without causing harm. Heliotrope, on the other hand, while eaten by wombats, has a serious liver toxin causing harm and eventual death of wombats.

Feral mammal species include foxes, rabbits, hares, goats and cats. We control rabbits and foxes by poison baits under heritage agreement grants.

The importance of the biodiversity in the mallee

The biodiversity of the Mallee has been shaped by a climate of temperature extremes, low rainfall, and underlying geology.

The result is a series of unique ecosystems that are significant, particularly for reptiles and birds. This uniqueness combined with historical land clearing for agricultural development has led to a significant number of Mallee flora and fauna species, as well as ecological communities, to be listed as threatened in both South Australia and Victoria and at a national level.

Overview

A primary threat to Mallee biodiversity is the loss of ecological processes, particularly in regard to ecosystem fragmentation, disturbed breeding and regeneration cycles; and species population imbalances. Habitat is the key to maintaining and enhancing biodiversity. The size, number, connectivity and quality of remnant vegetation will determine how well ecological processes continue to function in the region. Invasive plants and animals, land and water salinisation, wind erosion, changing land use and altered fire regimes also interact with and further threaten ecological processes.

Biodiversity in 30 by30

A new initiative to save earth's biodiversity has been driven recently by the WWF . We support this initiative fully.

Every species has a role to play

Studies have shown that a single tree can be home to hundreds of species of insects, reptiles and birds. The insects provide the base nutrition for the chain of species that rely on them. Similarly shrubs and ground cover provide habitat for many species. An observation of the mallee vegetation is that it contains a crust consisting of mosses and lichens named as a living duricrust by Dr Mary White in her book, "Listen our land is crying". The crust provides nitrogen fixation from the atmosphere via the mosses and lichens thus increasing the important value of the millimetre thick level of humus. This in turn provides fertiliser for grasses and for species of greenhood orchid of which several thousand plants have been found on the reserves. This occurs on the southern side of bushes such as Geijera. This is to indicate that every species is important in the mallee environment.

Thus it is crucial that we consider carefully every action taken to reduce the natural scrubland environment as that will reduce the number of native species living in that habitat. Any incursion on native scrubland increases the usually deleterious interaction between native species and civilisation.

Action to be taken

Now is the time to act to save our endangered species. We cannot wait until another species joins the extinct list. Australia already has the worst record globally of species extinctions. Overseas people are watching our every move and any increase in species losses will incur embarrassing attention of the kind we do not need.

The main cause of species extinctions is loss of habitat. Our koalas, an iconic species that draws tourists to Australia in droves, is seriously endangered because of logging in some parts of the country. It is not good enough that visitors can only see these animals in sanctuaries and zoos. Many tourists want to see them in the wild. There are fewer and fewer places where they can do that. In addition the wild species are needed to backup the ones kept in zoos as they are not living a normal existence and fertility can be a problem in a zoo setting. In any case it is better all round for the species to live in its normal habitat as part of a thriving ecosystem. That is, in the end, the only way a species can be protected from extinction.

Trade in native species is an illicit but very real threat to some species, particularly our colourful birds. To make matters worse the recent spate of bushfires has even further reduced native bushland and the species that lived there in places where it is already under threat.

The main take home message is that it is loss of habitat that most threatens native species existence. It is our native environment and the species within that environment that attracts most visitors to the country, not big city highlights, golf courses or any other similar experiences which tourists can get in their own countries.

As an example the most endangered mammal in Australia is the northern hairy nosed wombat of which only 300 individual animals remain. The species lives in a small park at Epping forest in southern Queensland of 3160 hectares but is surrounded on all sides by farm land and the wombats have nowhere to expand. A small detachment has been established recently in NSW to take the pressure off the main colony but the species remains severely endangered. The species once ranged throughout NSW to Wagga Wagga but was hunted to near extinction ironically because their burrows were used by rabbits which had become a pest to agriculture.

Our efforts on Moorunde Wildlife Reserve are aimed at the preservation of a population of southern hairy nosed wombats in the Murray mallee. The preservation of the wombat habitat is the stated aim of Wombats SA wherein the preservation of habitat as a functioning ecosystem is the surest way to protect the native species including wombats and many other native species that live on the reserve.

How do we tackle biodiversity protection in Australia?. I propose an immediate ban on <u>any</u> land clearing in Australia. There can be no justification for clearing of native bushland whether the species that depend on it for survival are endangered or not. We need to make it significantly harder for any land clearing to occur and impossible when it is native scrub which is habitat to native species no matter whether endangered or not. The tourism potential of these native species far outweighs any economic gain from the clearing of their precious habitat.

South Australia has long ago taken the lead in Australia by its administration of native vegetation clearance. Landowners must apply for permits to clear any native vegetations and fines apply if this procedure is ignored. It is also worth noting that any vegetation is likely to be habitat for native species whether endangered or not and so must be protected from clearance at the very least. Trivial land uses such as golf courses must not be allowed to take precedence over the long term goal of preservation of our remaining native species. We need to strengthen this legislation and the penalties increased significantly for breaches.

In summary I am asking that new legislation to protect biodiversity include very real instruments to protect the habitat of native flora and fauna. Hefty fines for land clearing need to be enacted. The legislation should prohibit all new land clearing of any kind as all vegetation is habitat for other species and clearance wil eat away at the remaining habitat, whatever the species. In order to prevent any further species loss we must prohibit all land clearing immediately.

Peter Clements PhD

Natural History Society of South Australia inc./Wombats SA

Appendix

Species lists for Moorunde Wildlife Reserve.

PLANT LIST FOR THE MOORUNDE WILDLIFE RESERVE.
Plants marked* are introduced species. As at 7/2/2005

Botanical name	Common name
Acacia colletioides	Wait-a- While
Acacia lineata	
Acacia nyssophylla	Wattle
Acacia oswaldii	Wattle
Acacia spp.	Wattle
Alectryon olefolius ssp. Canescens	
Allocasuarina	She oak
Amyema	Mistletoe
Angianthus	Cup flower
Arabidella trisecta	Shrubby cress
Athrixia athrixioides	
Atriplex semidaccata	
Atriplex stipitata	Saltbush
Bassia paradoxa	Cannonball
Bassia sclerolaenoides	
Bassia ventricosa	Salt copperburr
Brachycome ciliaris var.	DaisMinuriay
Callitris preissii	Murray cypres pine
Calotis hispidula	
Carrichtera annua	
Cassia nemophila	Desert cassia
CassiniaToxanthes perpusilla	Tiny bow-flower (cudweed)
Chenopodium curvispicatum	
Chenopodium desertorum ssp.	
Convolvulus	Pink bindweed
Craspedia	Billy button
Crassula	Stonecrop
Cratystylis conocephala	Blue bush
Cynoglossum australe	Australian forget me not
Danthonia	Wallaby grass
Daucus glochidiotus	
Dodonaea attenuata	Hop bush
Dodonea stenozyga	Hop bush
Enchylaena tomentosa var.	Ruby saltbush
Eremophila alternifolia	Emu bush
Eremophila glabra	Emu bush - two forms
Eremophila longifolia	Emu bush
Eremophila scoparia	Emu bush
Eriochiton sclerolaenoides	
Erodium cicutarium	
Erodium cygnorum ssp.	Native geranium

Eucalyptus dumosa	Mallee
Eucalyptus gracilis	Mallee
Eucalyptus oleosa	Mallee
Eucalyptus socialis	Mallee
Euphorbia drummondii	Caustic weed
Exocarpus aphyllus	Leafless cherry
Galium	Native bedstraw
Geijera linearifolia	Sheep bush
Goodenia pusilliflora	
Hakea leucoptera	Needlewood
Halgania	
Helipterum	White everlasting daisy
Helipterum diffusum	Yellow everlasting daisy
Helipterum pygmaeum	Pigmy daisy
Heterodendron oleifolium	Bullock bush
Hypoxis pusilla	Tiny star
Isoetopsis graminifolia	Grass cushions
Kochia sp	
Lavatera plebia	Native hollyhock
Lycium australe	Australian boxthorn
Lysiana exocarpi ssp. Exocarpi	Mistletoe
Maireana erioclada	
Maireana pentatropis	Bluebush
Maireana sedifolia	
Melaleuca lanceolata	Dry land teatree
Minuria leptophylla	Daisy
Myoporum platycarpum	False sandalwood
Nicotiana	Native tobacco
Olearia floribunda	Daisy
Olearia magniflora	Splendid daisy
Olearia muelleri	Mueller's daisy
Olearia pimelioides	Daisy
Pittosporum phylliroides	Native apricot
Plantago varia	
Podolepsis rugata	
Pterostylis biseta	Greenhood orchid
Pterostylis mutica	Greenhood orchid
Ptilotus spathulatus forma	Pussy tails
Rhagodia crassifolia	
Rhagodia gaudichaudiana	Cottony saltbush
Rhagodia nutans	Climbing saltbush
Rhagodia spinescens	
Santalum acuminatum	Quondong
Sclerolaena diacantha	
Sclerolaena obliquicuspis	
Sclerolaena patenticuspis	
Senecio	Groundsel
Senecio quadridentatus	Grass cushions
Senna artemisoides ssp.	
Sisymbrium sp	
Solanum sp	
Stipa elegantissima	Spear grass
Tetragonia	Native spinach
Teucrium racemosum	Grey germander
Thysanotus baueri	Fringe lily
Trifolium sp	
Velleia sp.	
Wahlenbergia	Australian bluebell
Westringia ridgida	Stiff westringia
Wurmbea dioica	Early nancy
Zygophyllum apiculatum	Twinleaf

Zygophyllum aurantiacum	Twinleaf
Zygophyllum ovatum	Twinleaf

Reptiles of the Moorunde Wildlife Reserve as at 7/2/2005

Scientific name	Common name
Gragons	
Ctenophorus pictus	Painted Dragon
Pogona barbata	Eastern Bearded Dragon
Amphibolurus nobbi	Nobby
Geckoes	
Diplodactylus vittatus	Tree Dtella
Heteronotia binoei	Bynoes Gecko
Nephrurus milii	Thick-tailed Gecko
Skinks	
Cryptoblepharus carnabyi	Speckled Wall Skink
Lerista dorsalis	Southern Four-toed Slider
Lerista punctatovittata	Spotted Slider
Menetia greuii	Dwarf Skink
Morethia boulangeri	Common Snake-eye
Tiliqua rugosa	Sleepy Lizard
Goannas	
Varanus gouldii	Sand Goanna
Front Fanged Venomous Snakes	
Pseudonaja nuchalis	Western Brown Snake
Blind Snakes	
Ramphotyphylops australis	Southern Blind Snake

Birds of the Moorunde Wildlife Reserve as at 7/2/2005

* Are exotic species

Scientific name	Common name
Acanthagenys rufogularis	Spiny Cheeked Honeyeater
Acanthiza apicalis	Broad Tailed Thornbill
Acanthiza chrysorrhoa	Yellow Rumped Thornbill
Acanthiza uropygialis	Chestnut Tailed Thornbill
Acanthza nana	Yellow Thornbill
Accipiter fasciatus	Brown Goshawk
Aegotheles cristatus	Owlet Nightjar
Anthochaera caranculata	Red Wattlebird
Anthus australis	Australian Pipit
Anthus novaeseelandiae	Richards Pipit
Aphalocephala leucopsis	Eastern Whiteface
Apus pacificus	Fork Tailed Kite
Aquila audax	Wedge Tailed Eagle
Artamus cyanopterus	Dusky Woodswallow
Artamus personatus	Masked Woodswallow
Artamus superciliosus	White Browed Woodswallow
Barnardius barnardi	Mallee Ringneck Parrot
Burhinus magnirostris	Bush Curlew
Caprimulgus guttatus	Spotted Nightjar
Cecropis nigricans	Tree Martin
Certhionyx niger	Black Honeyeater

Chrysococcyx basalis	Horsfield Bronze Cuckoo
Chrysococcyx osculans	Black Eared Cuckoo
Cinclorhamphus mathewsi	Rufous Songlark
Cinclosoma castanotum	Chestnut Quail Thrush
Climacteris picumnus	Brown Treecreeper
Colluricincla harmonica	Grey Thrush
Coracina maxima	Ground Cuckoo Shrike
Coracina novaehollandiae	Black Faced Cuckoo Shrike
Corcorax melanorhamphus	White Winged Chough
Corvus coronoides	Australian Raven
Corvus mellori	Little Raven
Coturnix novaezelandiae	Stubble Quail
Cracticus torquatus	Grey Butcher Bird
Cuculus pallidus	Pallid Cuckoo
Cuculus pyrrhopanus	Fan Tailed Cuckoo
Cygnus atratus	Black Swan
Daphoenositta chrysoptera	Varied Sittella
Dicaeum hirundinaceum	Mistletoe Bird
Dromaius novaehollandiae	Emu
Drymodes brunneopygia	Southern Scrub Robin
Ephthianura Albifrons	White Fronted Chat
Ephthianura tricolor	Crimson Chat
Eurostopodus guttatus	Spotted Nightjar
Falco berigora	Brown Falcon
Falco cenchroides	Nankeen Kestrel
Falcunculus frontatus	Crested Shrike Tit
Gliciphila albifrons	White Fronted Honeyeater
Glossopsitta porphyrocephala	Purple Crowned Lorikeet
Gymnorhina tibicen leuconota	White Backed Magpie
Gymnorhina tibicen tibicen	Black Backed Magpie
Halcyon pyrrhopygia	Red Backed Kingfisher
Hieraaetus morphnoides	Little Eagle
Hylochelidon nigricans	Tree Martin
Kakatoe roseicapilla	Galah
Lalage suerii	White Winged Triller
Leptolophus hallandicus	Cockatiel
Lichenostomus leucotis	White Eared Honeyeater
Lichenostomus ornatus	Yellow Plumed Honeyeater
Lichenostomus penicillatus	White Plumed Honeyeater
Lichenostomus virescens	Singing Honeyeater
Malurus assimilus	Purple Backed Wren
Malurus lambert	Variegated Fairy Wren
Malurus leucopterus	White Winged Fairy Wren
Malurus melantaus	Black Backed Wren
Malurus splendens	Splendid Fairy Wren
Melanodryas cucullata	Hooded Robin
Meliphaga leucotis	White Eared Honeyeater
Meliphaga ornata	Mallee Honeyeater /Yellow- Plumed Honeyeater
Meliphaga virescens	Singing Honeyeater
Melithreptus brevirostris	Brown Headed Honeyeater
Melopsittacus undulatus	Budgerigar
Merops ornatus	Rainbow Bird
Microeca fascinans	Brown Flycatcher
Microeca leucophaea	Jacky Winter
Milvus migrans	Black Kite
Myiagra inquieta	Restless Flycatcher
Neophema elegans	Elegant Parrot
Neositta pileata	Black Capped Sittella
Ninox boobook	Boobook Owl
Nymphicus hollandicus	Cockatiel
Ochyphaps lophotes	Crested Pigeon

Oreocia gutturalis	Crested Bellbird
Pachycephala inornata	Gilbert Whistler
Pachycephala pectoralis	Golden Whistler
Pachycephala rufiventris	Rufous Whistler
Pardalotus substriata	Striated Pardalote
Pardalotus xanthopygus	Yellow Tailed Pardalote
Pelecanus conspicillatus	Australian Pelican
Petrocia goodenovii	Red Capped Robin
Phaps chaloptera	Common Bronzewing Pigeon
Phylidonyris albifrons	White Fronted Honeyeater
Plectorhynche lanceolata	Striped Honeyeater
Podargus strigiodes	Tawny Frogmouth
Pomatostomus ruficeps	Chestnut Crowned Babbler
Pomatostomus superciliosus	White Browed Babbler
Psephotus haemonotus	Red Rumped Parrot
Psephotus varius	Mulga Parrot
Psophodes nigrogularis	Western Whipbird
Pteropodocys	Ground Cuckoo Shrike
Rhipidura fuliginosa	Grey Fantail
Rhipidura leucophrys	Willy Wagtail
Rhipidura rufiventris	Grey Fantail
Seisura inquieta	Restless Flycatcher
Sericornis cautus	Shy Hylacola
Smicrornis brevirostris	Brown Weebill
Sternis vulgaris *	English Starling
Strepera versicolor melanoptera	Grey Currawong
Taeniopygia guttata	Zebra Finch
Trichoglossus haematodus	Rainbow Lorikeet
Turnix velox	Little Button Quail
Vanellus miles	Masked Lapwing
Vanellus tricolor	Banded Lapwing
Zosterops lateralis	Grey Backed Silvereye

Mammal list

Scientific name	Common name
Megaleia rufa	Red Kangaroo
Macropus fuliginosus	Western Grey Kangaroo
Tachyglossus aculeatus	Echidna
Lasiorhinus latifrons	southern hairy nosed wombat

* Exotic species

Vulpes vulpes *	Common Fox
Oryctolagus cunifculus *	Rabbit
Felis catus*	Feral Cat
Sus scrofa	feral pig