

gondwana link

Lindesay Link - A Nature Conservation Plan Connecting people and nature



To maintain and improve the distinctive nature of our landscape including native bush, wildlife and healthy waterways co-existing with a productive & vibrant rural and farming community.



Wilson Inlet
Catchment Committee Inc.

This conservation plan was developed consultatively by the Wilson Inlet Catchment Committee with the assistance of Gondwana Link Ltd and facilitated by Greening Australia WA.

The plan focuses on the landscape between the Mt Lindesay and the Porongurup National Parks.

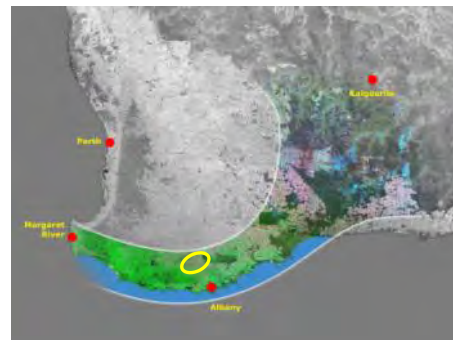
Our focus area

Gondwana Link is one of the largest and most ambitious ecological programs in Australian history. Designed to protect and restore ecological resilience within one of the world's biodiversity hotspots, the completed Gondwana Link will stretch for 1000 kilometres across south western Australia, from the wet karri forests of the far south west to the mallee and woodland on the edge of the Nullarbor plain to the east.

Our focus area is the Lindesay Link landscape stretching roughly 70 km from the Walpole Wilderness Area (Mt. Lindesay National Park) to the east to the Porongurup Range National Park.

This plan builds on the following key ecological features of the area:

- It's rich in biological diversity with very high flora species richness
- The Walpole Wilderness area has approx. 600 species of fungi and 2000 plant species including 235 orchids which is 65% of WA's total
- The Porongurup National Park has more than 700 plant species
- Has many wetlands with important flora and fauna
- situated at the junction of a number of catchments flowing in different directions
- represents the end of the distribution range for a number of species (e.g. Marron, Red-tailed Black Cockatoo, Wandoo and Karri)
- Threatened fauna such as: Quokka; Chuditch; Ring-tailed Possum; Numbat and Cockatoos



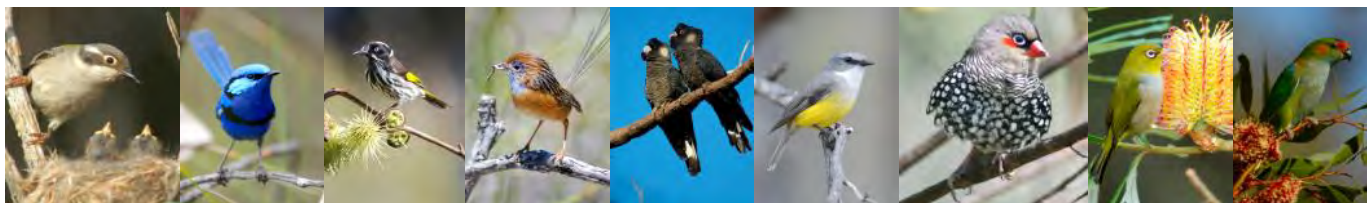
The 'Lindesay Link'

The land use in the Lindesay Link is varied. The western and southern part of the area has many forestry plantation properties, most containing important remnant vegetation and associated fauna. This area also has areas of viticulture and agriculture. This wetter section of the Lindesay Link landscape is primarily forested.

As we move east towards the Porongurup Range National Park, the plantation forestry landscape changes to mainly mixed and broadacre farming (livestock and grain cropping) with more farmland relative to bush.



Threats to the biodiversity values of this area are in part linked to changes that have come about from past agricultural clearing such as fragmentation of bush, changes in water flows and rising salinity. These issues are well known within the community who are continuing to take active steps to address these threatening processes.



Our group

The Wilson Inlet Catchment Committee Inc (WICC) is the peak community based NRM organization in the Wilson Inlet Catchment and has been operating as an incorporated body since 1995. WICC consists of voluntary community representatives and employs NRM officers to facilitate on ground activities. Our area of responsibility includes parts of three local government areas; the City of Albany, the Shire of Plantagenet and the Shire of Denmark. WICC is involved in all areas of Landcare, integrated catchment management, and natural resource management achieving on-the-ground results with land managers and owners.

Our main focus is on:

- Reducing nutrification of the waterways and eutrophication of Wilson Inlet
- Sustainable agriculture and improvement of productivity
- Maintaining biodiversity and conserving our natural environment
- Promote land use practices that protect our environment, natural heritage, biodiversity and agricultural resource base through education, biodiversity conservation, sustainable agriculture, capacity building and recognizing and rewarding best practice .



Who we work with

We consult and collaborate with a range of stakeholders who provide information, guidance, technical expertise, passion, dedication, commitment and the range of skills needed to help us achieve our conservation goals.



What success looks like for us

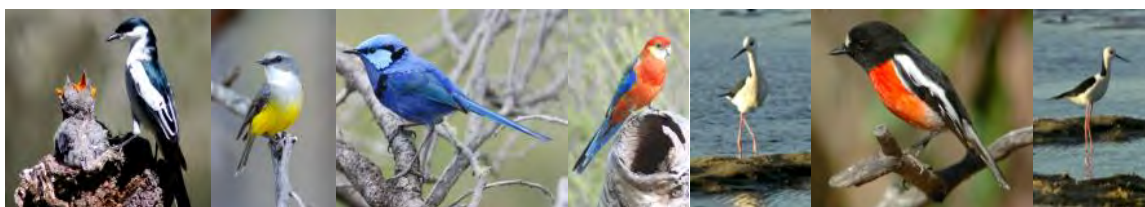
Resilient, healthy bush and its wildlife connecting the Walpole Wilderness Area and the Porongurup Range National Park across our agricultural landscape through the maintenance or improvement of the distinctive nature of our landscape including native bush, wildlife and healthy waterways co-existing with a productive and vibrant rural and farming community.

How we developed our plan

We used the *Conservation Action Planning** methodology to identify seven key conservation „targets“ or biodiversity assets, as the focus for our protection and restoration efforts. If we improve the viability of each of these targets, we believe we will improve the ecological condition of the entire system. A limited suite of species, communities and ecological systems are chosen to represent and encompass the full array of biodiversity found in the project area. They are the basis for setting goals, carrying out conservation actions, and measuring conservation effectiveness. In theory, conservation of the targets will ensure the conservation of all native biodiversity within functional landscapes.

Each target includes „nested“ targets (species or communities with similar needs, threats or situation) and has different characteristics or attributes that need to be considered when developing strategies for their protection. In an initial assessment of the viability of the targets for this plan, most were determined to be in fair condition.

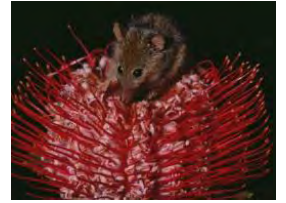
* Conservation Action Planning (CAP) is a powerful tool to guide conservation teams to develop focused strategies and measures of success. CAP is The Nature Conservancy's (www.nature.org/) version of the Open Standards for the Practice of Conservation www.conservationmeasures.org/initiatives/standards-for-project-management



Our Conservation Targets

Honey Possums

The Honey Possum *Tarsipes rostratus* is unique in being the only non-flying mammal entirely dependent on flowers for its nutrition. They feed on nectar and pollen in the Proteaceae, Epacridaceae and Myrtaceae families and particularly favours Banksia species. It is endemic to the south west corner of Western Australia and although not yet listed as threatened, its range has contracted considerably in recent times and its preferred habitat of Banksia woodlands is declining as a result of continued clearing and the impact of *Phytophthora cinnamomi* dieback.



Although Honey Possums have relatively small home ranges (0.13 – 0.79 ha for males and 0.07 – 0.14 ha for females) they have been shown to move 0.5 km overnight and pollen in their snouts has been found from plants located a few kilometres away. It is thought that they need 25ha of suitable vegetation for healthy animal populations and safe passage between habitats. In addition Honey Possums show some of the highest levels of genetic variation found in vertebrates, indicating a significant level of out-breeding, suggesting that they were able to move freely throughout their range in the past, interchanging their genes.

In addition to habitat loss, bush fires can threaten Honey Possums and although research has shown that Honey Possums were able to re-invade a burnt territory from an unburnt refuge area after a few years, a viable population that depends on the full suite of mature flowering plants requires at least 20 to 30 years after a fire. It is worth noting that the interval of natural fire (i.e. caused by lightning) in the southern parts of Western Australia is between 30 to 100 years. Honey Possums have a low rate of reproduction that evolved in an environment of infrequent and irregular fire. It is likely that this low reproductive rate will not be enough to sustain future populations exposed to fire at more frequent intervals.



It is important to maintain healthy proteaceous rich communities for nectar and pollen, an important food source, for Honey Possums throughout the year, particularly during autumn and winter when other food sources are limited.

Black Gloved Wallaby

A number of the native mammal species have been lost from the Lindesay Link area. Both fragmentation of habitats and introduced predator pressures are likely to be responsible for the decline of the Black-Gloved Wallaby (*Macropus irma*). These Wallabies were very common in the early days of settlement and periodically large numbers were traded commercially for skins. Wallaby ranges have been seriously reduced and fragmented due to past clearing for agriculture and the quality of the existing habitat has also declined to a large extent.

These Wallabies are currently only known from the heavily forested part of the Lindesay Link. It has been noted that they: intermingle with Kangaroos; and do not venture far into paddocks only foraging up to 200m from bush; and are dependent on having a healthy understorey cover of native vegetation which is thought to provide protection from predators. Wallabies drink water every day and occur in small family groups of 2-4 individuals but little is known about the population density of Wallabies.

It is known from the Wheatbelt that Black-Gloved Wallabies can survive in reserves of less than 500 hectares providing there is both dense vegetation for shelter and more open areas for feeding. The same research suggests that Wallabies cannot survive in bush areas of less than about 100 hectares in size.

If Black-Gloved Wallaby populations can be sustained in the area it is believed that other species such as the Brush-tail Possum, and other “snack-sized” mammals, such as Quendas (also known as Bandicoots) that are vulnerable to predation, will also benefit.



Albany Blackbutt (*Eucalyptus staeri*) and Banksia Woodland

This conservation target can be described as *Eucalyptus staeri* mallee-heath on low yellow sand-hills (30-90m) with species including *Banksia attenuata*, *B nivea*, *B plumosa*, *Lysinema ciliata* and *Melaleuca thymoides*. It is sometimes associated with Yate wetlands and proteaceous-dominant vegetation that grades from sand onto laterite ridges. Some *Allocasuarina fraseriana* occurs in these systems primarily associated with a “grey-sand landscape”, but have highly variable soil structures throughout the project area. Sometimes these systems also contain Moit (*Eucalyptus decipiens*) grading into *Banksia quercifolia* where sand starts to get wetter and *Banksia littoralis* in very wet/riparian areas. Examples of this vegetation type occur in the Narrikup reserves and surrounds, in which there are several Genera of Proteaceae in close proximity to each other.



These conservation targets are subject to a number of threats: in particular historical clearing that caused altered hydrology (mainly waterlogging); threats associated with fire; weeds; and grazing. In addition they are very susceptible to the plant pathogen *Phytophthora cinnamomi*. These communities were historically small in extent and being easy to clear for agriculture in the past, are now highly fragmented and further reduced in size.



Healthy Banksia shrubland provides copious amounts of nectar and pollen, an important food source for native birds, mammals and insects throughout the year particularly during autumn and winter when other food sources are limited. Owing to their high value as habitat and a food-rich resource, Banksia shrublands are important for a range of species, even if they are limited in area, and should be a priority to protect and restore.



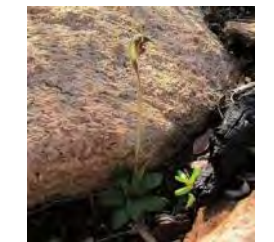
Granite outcrops and ridges

There are large expanses of granite outcrops at the extremes of the Lindesay Link (Mt. Lindesay National Park to the west and the Porongurup National Park to the east) and a number of smaller granite outcrops across the project area. These include the granite outcrops along the Hay River, Mt. Barker and Mt. Barrow. Granite outcrops in the Lindesay Link area are typical of those in the South West showing patterns of plant species diversity with a species-rich flora; high levels of species turnover within and between rocks; as well as endemism; and rarity. These systems give rise to herblands with *Borya* (resurrection plants), orchids and species of *Stylidium* (trigger plants) and *Drosera* (Sundews) and on deeper soils, heath vegetation with larger trees typically occurs. Typical plant species associated with these systems include *Eucalyptus cornuta*, *Thryptomene spp.*, *Eutaxia obovatus* and *Verticordia spp.*



The rock sheets collect water and have small habitat niches in between rocks which are important as they can serve as climate refugia for some species (including Gondwanan relics of a wetter age) that have contracted from the drying landscape to these wetter sites. The diversity of microhabitats and soil moisture regimes supported by granite outcrops has enabled the persistence of refugial species beyond their main range and the evolution of several species endemic to the South-West. Species potentially seek refuge in granite outcrops where they are protected from frequent fire by rock barriers.

Granite outcrops provide a special evolutionary role and each system has its own characteristics and often endemics, but fire management is critical. Although factors such as reduced rainfall and drying of granite outcrops (exacerbated by climate change) are a threat, these systems have some natural resilience as they have the ability to tolerate changes from very wet to very dry over the course of their seasonal cycles. However, these systems are fragile to physical disturbance – it can take 100s of years to recover post disturbance – the shallow soil comprises thin layers that are easily disturbed. Also the addition of nutrients from high numbers of rabbits or sheep has the ability to negatively affect the sensitive soil on which these systems are based and to introduce one the biggest threats, weeds. Granite outcrops are often important cultural sites containing constructed lizard traps and water holes.



While some granite outcrops have been spared direct clearing due to their unsuitability for agriculture most face a range of threats including weeds, feral animals, grazing, inappropriate fire regimes and phytophthora dieback.

Our Conservation Targets

Karri and Wandoo outliers

This conservation target comprises two seemingly different vegetation types, Karri (*Eucalyptus diversicolor*), a high-rainfall forest system of the south coast and Wandoo (*Eucalyptus wandoo*), a lower rainfall woodland system of the inland Wheatbelt region. However, these two systems have been grouped together as outliers as they are both: near the limits of their distribution ranges, northern most, and almost eastern most extent for Karri and southern most extent for Wandoo; occur in small isolated patches across the Lindsay Link area; and are subject to a number of similar threats.



Wandoo woodlands are characterised by a few tree species, in particular Wandoo or White gum with a dominant ground layer of Restios, Lilies, Orchids and Grasses and a scattered shrub understorey of Hakeas, Acacias & other Pea flowers. This range of trees and shrubs, flowering at different times of the year, provides a continuous source of nectar for birds and insects which in turn provide food for insectivorous birds. A number of species such as the endangered Carnaby's Cockatoo rely on old trees with hollows for breeding and nesting. In addition Phascogales, Bats and birds utilise the upper branches and hollows of standing wandoo trees and possums often rest in tree hollows during the day and come out at night to feed on the leaves. Old wandoo trees with their large branches also provide nesting sites for a range of birds including ducks, owls and eagles.



Wandoo woodlands occur on duplex soils (gravel over clay & clay-loams) that have a high value for agriculture and as a consequence have been largely cleared in the past leading to fragmentation and loss of habitat for wildlife. Other threats including selective logging, and inappropriate fire regimes have modified stand density and canopy cover of wandoo communities. Although clearing has largely ceased, degradation of habitat fragments continues. Many remaining trees are dying while natural regeneration and tree planting efforts are not keeping pace with this loss. Furthermore competition for tree hollows, that only start to form when the trees are more than 150 - 200 years old, by feral bees and non-native bird species is seriously diminishing the habitat value of existing trees.

Karri forest is distinguished by the dominance of Karri trees (*Eucalyptus diversicolor*) in the canopy. Karri forests are important for a number of fauna species including Quokka, and also have a rich invertebrate diversity. The high open karri forests are the predominant habitat of Parrots and Cockatoos such as the Western Rosella (*Platycerus icterotis*), the White-breasted Robin (*Eopsaltria Georgiana*) and the Red-winged Fairy Wren (*Malurus elegans*) are also common in these forests. Karri forests have recently been found to be important as breeding trees for the endangered Carnaby's Black Cockatoos (*Calyptorhynchus latirostris*) and are known to be important for the vulnerable Baudin's Black Cockatoo (*Calyptorhynchus baudinii*).

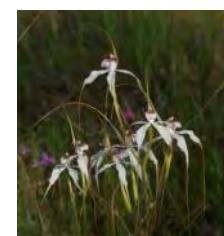


Jarrah and Marri Forest

Jarrah/Marri Forest to Low Woodland is found on a range of soil types including granites, laterites and deep sands. The dominant over-storey trees are Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*). Understorey species include: Proteaceous plants, such as Banksias and Hakeas; a range of Acacias and other pea family plants; Myrtaceae family plants including Sheoaks, Melaleucas and Tea trees; a range of native grasses and Grass Trees.



This diverse vegetation type is susceptible to a range of threats including *Phytophthora* dieback, grazing pressure from stock, rabbits and kangaroos and the effects of a drying climate. Jarrah and Marri forests offer a diverse range of habitat and food sources for fauna, and the range of "snack sized" marsupials (to a predator such as a fox) have been identified as an important component as part of these systems. In addition Jarrah and Marri forests are important for the three black cockatoo species that occur in the project area: Carnaby's Cockatoo (*Calyptorhynchus latirostris*); Baudin's Cockatoo (*Calyptorhynchus baudinii*); and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*).



Wetlands including rivers

This conservation target includes lotic (running water) and lentic (still water) wetlands: rivers, streams and creeks; also some perched wetlands; both fresh and saline. Swamp yate (*Eucalyptus occidentalis*) is often associated with wetlands and creeks, as are the grey sands with Albany Blackbutt (*Eucalyptus staeri*) and in some instances *Eucalyptus cornuta* in wetlands associated with granite. In addition Flooded Gums (*Eucalyptus rudis*) occur in some of these systems, including in naturally saline systems at Pardelup. Velvet rush (*Baumea articulata*) growing in the water body is a good indicator of fresh water while River Banksia (*Banksia littoralis*) grows in the riparian zone of fresh water sources. *Melaleuca raphiophylla* is usually associated with fresh water but also has a degree of salt tolerance. Marron (*Cherax cainii*) is a native freshwater crayfish but is no longer common but other species: such as the endemic amphipod *Perthia branchiali*; the Koonacs (*Cherax crassimanus* and *C. preissii*); or native fish species could be used as indicators of water quality.



The Hay River is one of a few systems that is a „hotspot“ for total macro-species richness and endemism for Mayflies (Order Ephemeroptera), Stoneflies (Order Plecoptera) and Caddisflies (Order Trichoptera) in the Western South Coast bioregion. Furthermore the mud minnow (*Galaxiella munda*) a species listed as „restricted“ by the Australian Society for Fish Biology, was found in the Hay River, one of only four river systems in the Western South Coast bioregion. Water rats (*Hydromys chrysogaster*) are still found in the Hay River system.



The natural vegetation of the Hay River is predominantly forest with a great range of forms and diversity of species. Karri (*Eucalyptus diversicolor*) forest occurs in the hilly country, usually on loamy soils derived from granite outcrops or along incised main-stream valleys. Jarrah (*Eucalyptus marginata*) dominates over much of the area. Throughout the area there are broad swampy drainage lines which carry Paperbark or Banksia woodlands and reed swamps, while sandy flats subject to seasonal inundation bear low woodland of Jarrah, Marri, Wandoo or Swamp Yates.

In the freshwater areas of the rivers the fringing vegetation is mostly healthy, but where fences have not been maintained or are absent, livestock have grazed and trampled out native species and, along with frequent fires, have encouraged the growth of introduced grasses. The loss of deep-rooted native vegetation has led to the erosion and subsidence of river embankments in places. The fringing vegetation of the river valleys represents a significant ecological corridor connecting patches of remnant bush along the banks of the river.



In 1995 only 39% of the Hay River foreshores that bordered agricultural land were fenced off, while 173 ha Hay River foreshore areas were identified as in need of revegetation (APACE Green Skills and Pen, 1995). WICC has been working steadily to reduce these numbers.

The wetlands in the Mitchell Creek, Sheep Wash Creek, and Hay River floodplains and basins are representative of wetland types and processes within the „Mitchell Creek suite“. The channels, wetland slopes, floodplains and basins form a linked geomorphic, sedimentological and hydrological system within the broad shallow gently sloping valleys. (Semeniuk, 1998).



Critical threats to our conservation area

All of the conservation targets suffer from multiple ecological stresses which together reduce their viability. During the process of developing this conservation action plan critical stresses were identified and in a two step process the specific “sources of those stresses” (direct threats) were identified and ranked. Identifying the source of the stress means that strategies are aimed at removing that source, rather than only addressing the symptoms.

Twenty project-specific threats to the conservation targets have been identified with climate change, fragmentation, weeds, phytophthora dieback and wildfire being the highest ranked.

Other threats identified during this process include grazing: past and current clearing (which has severely changed hydrological regimes); prescribed burning; predation by carnivores; and competition for hollows and loss of food resources. Predation by carnivores affects numerous species, including many of the smaller native mammals and birds that pollinate local plants. Fragmentation of the landscape was caused initially by clearing for agriculture but can be made worse through loss of bushland to salinity, excessive fires, road and other development, or continued invasion by weeds. As bushland becomes more fragmented, native fauna are less able to move between remnants and become more vulnerable to predation while other ecosystem processes, such as nutrient cycling, water cycling and population dynamics are disrupted.



While fires are a part of natural landscapes in Australia, inappropriate fire regimes can destroy some vegetation types completely, particularly when fires are too frequent or too severe to allow seed to set between fires. Many of the protea family are susceptible to fire, but the biggest threat to this family is the spread of *Phytophthora cinnamomi* because it will kill many of the species that are ecologically important as well as being spectacular and characteristic of the area.

The main threats for each conservation target were identified and ranked:

- loss of soil carbon and loss of vegetation cover leading to inefficient water cycling (including reduced rainfall) on agricultural land.
- clearing (past and present, mechanical and through ongoing grazing) leading to loss of habitat and fragmentation of remnants.
- habitat loss, exacerbated by a range of factors including salinity, inappropriate fire regimes, road and other infrastructure development and invasion by weeds.
- *Phytophthora cinnamomi* (Dieback).
- And loss of habitat such as competition for hollows and removal of paddock trees.



Key threats for each conservation target

Targets	Albany Blackbutt & Banksia woodlands	Black-gloved wallabies	Granite outcrops & ridges	Honey possums	Jarrah-Marri forests	Karri & Wandoo outliers	Wetlands including rivers & creeks	Summary Threat Rating
Historical clearing & drainage causing altered hydrology (inundation & salinity)	High	Low		Medium	Very High	High	High	Very High
Grazing (stock & roos, rabbits, pigs) (Understorey loss)	High	High	High	High	High	Very High	High	Very High
Feral animals (cats, feral dogs, foxes)	Medium	Very High	Medium	Very High	High	Medium	Medium	Very High
Clearing causing habitat fragmentation (lack of connectivity)	Medium	High	Low	Medium	Medium	High	High	High
Fire	Medium	Low	Low	High	Medium	High	High	High
Land management practices causing excess nutrients in systems	Medium	Low	Low	Medium	Low	High	High	High
Climate change	Medium	Medium	Medium	Medium	Medium	High	High	High
Weeds	Low	Low	Medium	Low	Medium	Medium	Very High	High
Phytophthora Dieback marri canker)	High	Low	Medium	High	High	Low	Low	High
Summary Target Ratings	High	High	Medium	Very High	Very High	Very High	Very High	Very High



Strategic directions

Our conservation goal in the Lindsay Link is to enhance the viability of each conservation target, which means we need to improve the condition, the size and/or the processes that maintain these targets and eliminate or reduce the threats to them. By doing this for our seven conservation targets, we should also improve the overall ecological health of the system because many of the processes and the threats are common to many components of the ecosystem. A range of objectives and strategies have been developed to enhance the status of the identified conservation targets as follows. Only the highest ranked strategies are described here:

Conservation strategies for each conservation target

Albany Blackbutt

Objective: To improve the condition and connectivity of Albany Blackbutt associated vegetation communities in the Lindsay Link Landscape by 2015.

- Identify key Albany Blackbutt areas requiring fencing
- Fence key Albany Blackbutt remnants to exclude stock
- Connect critical areas of bushland
- Manage remnants for fire, grazing pressure, weeds and other threats
- Determine Phytophthora status of strategic remnants to determine priorities for protection
- Establish the location of protectable areas for dieback control
- Collate information on past and current burning practices to assist in developing better fire regimes and management
- Implement post fire feral animal and weed management



Jarrah/Marri associated vegetation communities

Objective: To improve the condition and connectivity of Jarrah/Marri associated vegetation communities in the Lindsay Link by 2015.

- Identify key Jarrah/Marri areas requiring protection
- Fence Jarrah/Marri remnants to exclude stock
- Connect critical areas of bushland
- Manage remnants for fire, grazing pressure, weeds and other threats
- Identify and select Dieback resistant species (and resistant provenances of susceptible species) for use in revegetation projects
- Determine Phytophthora status of remnants to determine priorities for protection
- Establish location of protectable areas for dieback control
- Collate information on past and current burning practices to assist in developing better fire regimes and management
- Implement post fire feral animal and weed management



Wetlands includes all waterbodies

Objective: To improve the condition of the Wetlands in the Lindsay Link by 2020.

- Exclude stock with fencing from rivers, creeks and wetlands
- Buffer wetlands with natural vegetation
- Undertake hydrological assessments of key pilot priority sites to determine their condition and future prospects
- Implement perennial pastures/ agroforestry or other high water use options for agriculture where beneficial.
- Develop a decision making framework for optimising location of restoration works
- Revegetate key areas for biodiversity including buffering and connecting remnants
- Build knowledge base of fire history and investigate if there are any requirements for small cool fires
- Inform landholders and land managers on fire best management practices for remnants
- Ensure that monitoring takes place to keep track of water quality trends
- Maintain weed control projects that are currently underway
- Identify and undertake further strategic weed control projects in priority wetland areas



Conservation strategies for each conservation target

Black Gloved Wallaby

Objective: To improve the habitat and conservation status of Black Gloved Wallabies (and fauna with similar habitat requirements/threats) in the Lindesay Link by 2015.

- Undertake community surveys for Black Gloved Wallabies and other fauna species targeting specific areas such as reserves, in a co-ordinated survey.
- Undertake habitat protection (fencing) of good quality bush that has the potential to support Black Gloved Wallabies and create important habitat linkages.
- Restoration of key areas of habitat with high linkage value on previously cleared land using high quality revegetation/restoration practices.
- Participate in the Red Card for Rabbits and Foxes Program and develop an integrated feral control program for the area.
- Erect Wallaby „friendly“ fences and gates



Honey Possums (Proteaceous rich shrublands/woodlands)

Objective: To improve the condition and conservation status of Proteaceous rich shrublands/woodlands in the Lindesay Link by 2020.

- Identify and map the extent of proteaceous rich communities
- Fence proteaceous rich remnants
- Ensure high quality composition, structure & function are included in all revegetation projects
- Include proteaceous revegetation in key areas
- Increase regional capacity to apply best direct seeding (and other revegetation) practices
- Implement feral control program
- Identify the Phytophthora Dieback extent
- Implement Dieback hygiene strategies
 - Implement entrance signage for landholders – bio-security
 - Undertake Phosphite applications in key areas if practicable
 - Targeted education on Proteaceae and dieback risk
- Increase proportion of proteaceous plants in Carbon Offset programs
- Inform landholders on best fire management practices for remnants
- Build knowledge base of fire history and investigate if there are any requirements for small cool fires
- Implement post fire feral animal and weed management
- Provide extra nesting boxes and fire refugia
- Implement post fire feral animal and weed management



Wandoo and Karri Outliers

Objective: To improve the management and condition of the Wandoo and Karri outliers in the Lindesay Link by 2020.

- Identify key Wandoo and Karri areas requiring fencing
- Fence Wandoo and Karri outlier remnant vegetation to exclude stock
- Connect critical areas of bushland
- Manage remnants for fire, grazing pressure, weeds and other threats
- Establish location of protectable areas for dieback control
- Link to groups monitoring Wandoo decline to assist with Wandoo health information
- Collate information on past and current burning practices to feed into better informed fire regimes and management



Granite Outcrops

Objective: To improve the condition and connectivity of Granite Outcrops associated vegetation communities in the Lindesay Link by 2015.

- Identify key Granite Outcrops areas requiring fencing
- Fencing off key Granite Outcrops remnants to exclude stock
- Collate information on plant genetics and movement of plants around granite outcrops
- Connect critical areas of bushland
- Collate information on past and current burning practices to assist in developing better fire regimes and management
- Manage remnants for fire, grazing pressure, weeds and other threats
- Implement post fire feral animal and weed management



Overall enabling strategies for all conservation targets

Objective: Ensure that enabling strategies (in particular funding, capacity building & communications) for the Wilson Inlet Catchment Committee (WICC) and associated groups are scoped and developed by 2013, to ensure the effective implementation of conservation strategies through to 2020 and beyond.

- Develop and implement a long-term funding strategy for conservation interventions in the Lindsay Link.
- Increase the capacity of WICC to plan, implement, monitor and review conservation interventions in the Lindsay Link.
- Develop and implement a strategy for communicating the value of the biodiversity of the Lindsay Link landholders, local authorities and visitors.



Overarching strategies

- Develop and implement communications and engagement strategy
 - Raise community awareness of biodiversity values
 - Raise awareness of value of swamps, granite outcrops and other fire-sensitive ecosystems and the destructive impacts of inappropriate fires regimes
 - Collate information on past and current burning practices to assist in developing better fire regimes and management
 - Develop and implement an urban biodiversity strategy. This initiative could: feed into town planning schemes reviews; be important for engagement of people living in towns; and could be linked to feral control and fauna corridor projects in urban/peri-urban environments
- Rate adjustment for landowners willing to protect native vegetation
- Restore natural water flows where possible including retrofitting water sensitive design to altered waterway systems
- Develop optimum drainage strategy in a changing climate to reduce inundation and salinity effects. Modifying drainage to benefit wetlands and perched water tables. There is a lot of data already but needs to be collated and reviewed in the light of current thinking. Important sub-strategy is to retain annual freshwater on site - not in dams but in soil.
- Maintain NRM Officer capacity to facilitate the implementation of strategies and continue momentum for on-ground works

Future strategies

This plan will be reviewed regularly as we learn more about the responses of the landscape and ecosystems to our management, and in particular as we become better informed by some of our further surveys and investigations. Future reviews of this plan will likely yield additional strategies. It is hoped that the strategies identified in this plan will go a long way towards abating the critical threats to our conservation targets.



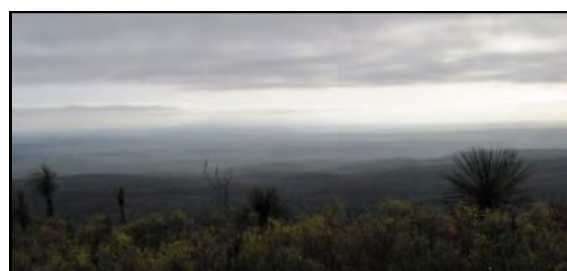
Measuring our success

The fundamental question facing any conservation project team is: “Are the conservation strategies we are using having their intended impact?”

To answer this question, we are collecting and planning to collect further data on a number of indicators that gauge how well we are keeping the critical threats in check and, in turn, whether the viability of our conservation targets is improving. To date a monitoring framework has been developed (see below) and the most critical and practical methods to develop and implement our monitoring program further are being investigated.

Lindesay Link Monitoring Framework:

Conservation Target	Indicator
Wetlands	<ul style="list-style-type: none"> • Area and condition of native vegetation • Fringing vegetation assessment • Physical, chemical and biological Ausrivias indices • Percentage of catchment with perennial vegetation cover • Pools affected by sedimentation • Foreshore assessment
Wandoo and Karri outliers	<ul style="list-style-type: none"> • Proximity to other Karri/Wandoo woodlands and to other vegetation communities • Suite of fauna • Range of ant activity • Understorey & recruitment health • Crown condition of wandoo and Karri trees • Total area of (healthy) target vegetation (hectares)
Honey Possums	<ul style="list-style-type: none"> • Proteaceous rich shrublands/woodlands • Disturbance within natural regime • Presence of key pollinators • Diversity of species age classes
Black gloved wallaby	<ul style="list-style-type: none"> • Area and condition of native vegetation • Importance of movement and the effect of fences • Number/ percentage of potential suitable habitat occupied
Jarrah/Marri associated vegetation communities	<ul style="list-style-type: none"> • Complete range of age classes of woodland species across the area • Presence of healthy understorey including proteaceous communities • Crown condition of key tree species • Total area of (healthy) target vegetation (hectares)
Albany Blackbutt	<ul style="list-style-type: none"> • Complete range of age classes of woodland species across the area • Presence of healthy understorey including proteaceous communities • Crown condition of key tree species • Total area of (healthy) target vegetation (hectares)
Granite Outcrops	<ul style="list-style-type: none"> • Fire age mosaic • Vegetation assessment



How can you get involved?

Please contact one of the following groups to find out how you can get involved:

Wilson Inlet Catchment Committee
Gondwana Link

www.wicc.southcoast.org.au
www.gondwanalink.org



This plan is under ongoing review. For the more detailed, current version please see:
<http://conpro.tnc.org/1721/>

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