

BUSHLAND SITE

A case study of Wangi Ridge Preservation Board Landcare:

WANGI PENINSULA GREEN CORRIDOR PROJECT



Wangi Ridge Preservation Board Landcare site.

Project Partners:

- Lake Macquarie Landcare Resource Office (Lake Macquarie City Council and Lake Macquarie Landcare Network Inc.)
- Caring For Our Country (Australian Government)
- Wangi Ridge Preservation Board Landcare
- Delta Electricity

Lake Macquarie

Lake Macquarie is a large coastal estuarine lake with an overall length of some 22 kilometres in the north-south direction and 10 kilometres in width. The lake covers an area of approximately 110 square kilometres and has a catchment area of 605 square kilometres. The lake contains 12 major, and many more minor, estuarine creek zones where freshwater tributaries interface with the saline body of the main lake. Wangi Wangi Creek is one of those tributaries.

Wangi Wangi

Wangi Wangi is a suburb of Lake Macquarie that lies on a long, narrow peninsula that juts out from the western shore of the lake. It is known locally as 'Wangi' and draws many visitors because of its beautiful scenic values and its access to fishing, swimming, boating, picnicking, and camping.

Wangi Wangi was originally occupied by the Awabakal Aboriginal People and an Aboriginal campsite has been found in Wangi. Lake Macquarie was first inhabited by the Awabakal tribe over 8,000 years ago. The word 'Awabakal' means 'people of the flat surface', reflecting the beauty of the lake that provided nourishment for them.



Wangi Peninsula c1920's



The word 'Wangi' has been translated variously as 'water', 'night owl' or 'dark green tree' so that Wangi Wangi would mean 'place of much water', 'many night owls' or 'many dark green trees'. Early settlers and fishermen used the word to mean peninsula and Point Wolstoncroft was called "Little Wangi". An 1826 sketch of the Lake and an 1829 map marked Wangi Point as 'Wonde Wonde'.

A reserve was declared over the area at the actual Point of Wangi Wangi in 1897 and a reserve was also placed on the entire foreshore before subdivision commenced in 1916. The foreshore was a popular holiday camping area for Cessnock miners when the coalfields closed for Christmas. This tradition of camping at Wangi Wangi continues to be as popular today.

Wangi Wangi enjoyed a varied history with a Chinese market garden and a vineyard operating in the early 1900's. The army operated gun emplacements,



World War 2 gun emplacements on the top of Wangi ridge, were built to protect the Catalina base at Rathmines

known as redoubts in military parlance, during World War II on Wangi Ridge. The world-renowned artist Sir William Dobell used Dobell House as his primary residence and studio from the 1940s until his death in 1970. A thermal power station operated from 1958 to 1986, and Myuna Colliery has been supplying coal to Eraring Power Station since 1981.

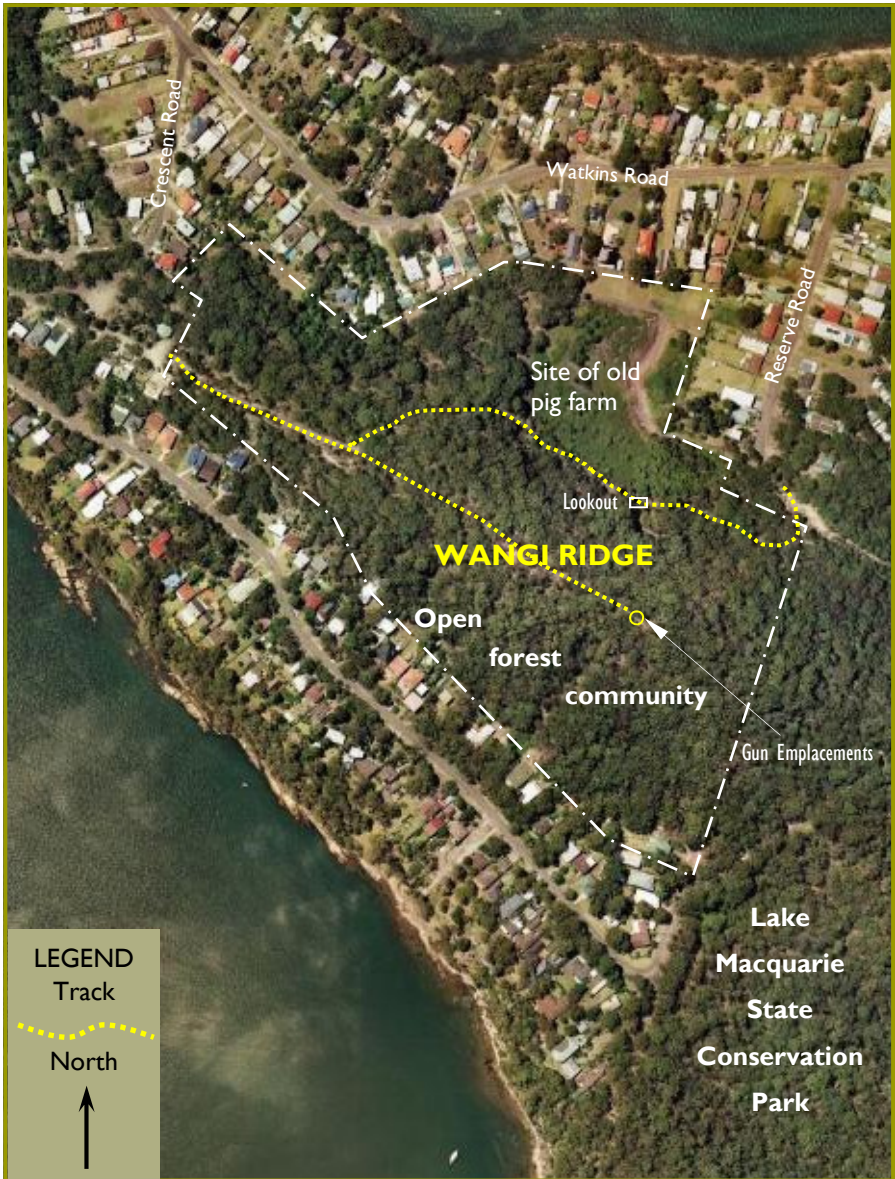
The Wangi Ridge Reserve lies adjacent to the Wangi Wangi Flora and Fauna Reserve, a State Conservation Area operated by the National Parks and Wildlife Service. Together the reserves provide a significant green corridor for flora and fauna, as well as several walking trails that are designed to protect the environment whilst providing the visitor the opportunity to enjoy the variety of vegetation types and visual experiences found in the reserves.

Landcare Site Information

The Wangi Ridge Preservation Board Landcare site encompasses the Wangi Ridge Reserve and can be accessed from Crescent Road and Reserve Road, Wangi. The site is a bushland site owned by the Lake Macquarie City Council. It is an area of reserve consisting of ridge top and mid-slope land with a number of tracks intersecting the site and a constructed viewing platform.

The Crescent Road access reveals the site of an old quarry that has been back filled and planted with native trees. The top of the ridge is basically covered with Spotted Gums with small bush undergrowth.

Further down the hill where it is more fertile the area makes way for more varied trees including Pittosporums and Glochidion.



WANGI RIDGE SITE MAP

Map courtesy of Google Earth



March 2010: View from the lookout, note growth of the *Pittosporum undulatum* Sweet Pittosporum.

The Lookout was constructed approximately 15 years ago and looks over the Reserve Amphitheatre across the lake to the ocean at Redhead, Swansea, and “the Drop Over” with its islands.

The track to the Fern Gully can be accessed from either the Crescent Road or the Reserve Road “South” entrance. The area is very sheltered and offers a variety of Ferns, Monkey Vine, and the start of the growth of Cabbage Tree Palms.

The dominant plant community is *Corymbia maculata* Spotted Gum Open Forest. There are two Management Zones for the Wangi Ridge Landcare site:

- 1) The Open Forest community
- 2) The Pig Farm site.

The Landcare group have been rehabilitating the Open Forest community over the last 20 years so it currently presents as an extremely healthy and biodiverse system. The old Pig Farm site however is extensively weed-invaded, dominated by Bitou Bush with some Lantana and other weed species. Several pioneer species such as *Pittosporum undulatum* Sweet Pittosporum and *Glochidion ferdinandi* Cheesetree emerge through the weeds. The Pig Farm site is the focus area for rehabilitation using the funds from the Federal Government’s Caring for Our



October 2006: Landcarers at the Lookout



March 2008: More remains of the gun emplacements at Wangi Ridge, the underground anti-aircraft bunker

Country Community Action Grant and funds from Delta Electricity.

The Wangi Ridge site WWII gun emplacements provide European cultural heritage values and have been listed on the register of historic sites. The four Army gun emplacements were built as an anti-aircraft battery to defend the RAAF air base at Rathmines during WWII, and each accommodated a 3.7 inch high altitude gun. A command post or ammunition priming area is part of this historic site, and other structures, yet to be discovered probably also exist here. At the time of construction a lot of supplies for the gun site came by boat and the remains of the wharf can be seen in the National Park Reserve. The Landcare group has cleared one of the gun emplacements, while the RSL is investigating the possibility of restoring the area to a reserve-style park that will double as a museum to complement the restoration of the Catalina Base at Rathmines.

Vegetation

The Lower Hunter & Central Coast Regional Environmental Management Strategy (LHCCREMS) mapping identifies three vegetation communities on the Wangi peninsula:

- **MUII Coastal Sheltered Apple-Peppermint Forest** in sheltered southerly and easterly areas below the ridgeline;

- **MUI5 Coastal Foothills Spotted Gum-Ironbark Forest** on the ridgelines and in some areas almost to the shoreline;
- **MU40 Swamp Oak-Rushland Forest** as a fringing band of vegetation around the lake shore on both sides of the Peninsula.



Glochidion ferdinandi Cheese Tree (above) and *Eucalyptus tereticornis* - Forest Red gum (below)

Stephen A.J. Bell (for NPWS) identifies plant communities that are more locally accurate:

Sydney Sandstone Sheltered Dry Forest with:

- *Eucalyptus piperita* Sydney Peppermint,
- *Angophora costata* Smooth-barked Apple,
- *Corymbia maculata* Spotted Gum,
- *Allocasuarina torulosa* Forest Oak,
- *Elaeocarpus reticulatus* Blueberry Ash,
- *Glochidion ferdinandi* Cheesetree
- *Rapanea variabilis* Muttonwood.



This community appears in sheltered areas from the south-easterly aspected zone of Wangi Ridge Reserve to the southern shoreline. This vegetation community would probably be the local variant of LHCCREMS MUI 1.

Permian Macquarie Grassy Forest with:

- *Corymbia maculata* Spotted Gum,
- *Eucalyptus punctata* Grey Gum,

- *Corymbia gummifera* Red Bloodwood,
- *Angophora costata* Smooth-barked Apple,
- *Eucalyptus paniculata* or *Eucalyptus siderophloia* the Ironbarks,
- *Eucalyptus umbra* Bastard Mahogany,
- *Eucalyptus piperita* Sydney Peppermint.

This is the dominant plant community on the Peninsula occurring from the ridgeline reserves at Cecil Avenue & Wangi Ridge down to the foreshore reserves at Wangi Point & Lake View. This vegetation community is similar to LHCCREMS MUI5.

Estuarine Swamp Oak Forest with *Casuarina glauca* Swamp Oak, and *Eucalyptus tereticornis* Forest Red Gum. This vegetation community occurs in all of the foreshore reserves except where rock platforms prevent tree growth, or where it has been cleared. It should be protected or re-established as an essential component to prevent foreshore erosion. This vegetation community is the localised equivalent of LHCCREMS MU40.

An additional plant community, not identified in current mapping or documentation, occurs within sheltered zones below mid-slope rock outcropping in the southerly aspected sites of the Peninsula. Pockets of Littoral Rainforest grow as an understorey near the rock shelf on the mid to lower slope. The species present include:

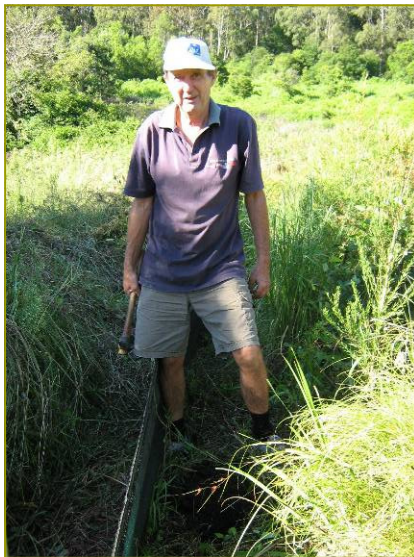
- *Ficus rubiginosa* Port Jackson Fig,
- *Ficus fraseri* Fraser's Fig or Sandpaper Fig,
- *Cupaniopsis anacardioides* Tuckeroo,
- *Rapanea variabilis* Muttonwood,
- *Notelaea* sp Native Olive,
- *Acmena smithii* Creek Lillipilly,
- *Cassine australis* Red Olive Berry.



Cassine australis -
Red Olive Berry

Wangi Ridge Preservation Board Landcare Group

The Wangi Ridge Preservation Board was founded over 20 years ago and has received funding from Lake Macquarie City Council with an annual grant. Garth Chapman is a long-term member of the group and details the site below. Garth states the inspiration for starting the Wangi Ridge Preservation Board was simply “to protect the environment and maintain it for future generations.” The Landcare group greatly values the natural assets and also the cultural history of the site. Garth explains “the gun emplacements are not a priority of the Landcare group, but out of respect for those who served in the war, we hope they are preserved effectively, and we are happy to assist the Rathmines Air Base Committee or similar groups interested in restoring and protecting the site.”



March 2008: Garth Chapman from Wangi Ridge Preservation Board Landcare group.

Fauna at Wangi Ridge

The Whip Bird and the Bower Bird can often be heard in this area. Wangi Ridge also has a population of Mopoke Owls, which can be heard at night and can be sometimes observed by day. Wangi Ridge Reserve is adjacent to Wangi National Park and as a result provides a green corridor for birds and animals in the area.

There have been several sightings of Koala's over the last



Southern Boobook Owl -
Ninox novaeseelandiae

Eastern Whipbird -
Psophodes olivaceus



few years. With the planned work to be done on the Amphitheatre below the lookout, it is proposed to plant vegetation to encourage their numbers to increase. Garth explains “the Koala sightings are proof that the work of the Landcare group is effective in improving habitat and assisting native species. The Landcare group would like to assist further by planting appropriate habitat for these species.”



Koala – *Phascolarctos cinereus*, is listed as a vulnerable species on schedule 2 of the NSW



View from Wangi Point State Conservation Area to Wangi Ridge Reserve, which provides a green corridor for native birds and animals

Caring For Our Country Community Action Grant

The Wangi Ridge Preservation Board Landcare group recently secured a Federal Government Community Action Grant through the Caring for Our Country grant program. The grant titled the Wangi Peninsula Green Corridor Project provided \$20,000 over 18 months to protect and enhance the recognised wildlife corridor at Wangi Ridge.

The Community Action Grant program is an important initiative of the Federal Government that assists Landcare groups to continue their valuable work and provides opportunities for communities to increase their knowledge and skills of Landcare and natural resource management through resources such as this case study and field days.

The Wangi Ridge Preservation Board Landcare group are using the funds from the Community Action Grant to focus on the highly degraded Pig Farm site

removing Weeds of National Significance, Bitou Bush and Lantana and planting local provenance native species. Works are occurring from the top of the slope down into the Pig Farm site. A 'mosaic' pattern is followed to maintain some habitat for native fauna and to minimise erosion problems.

The plants chosen for the revegetation program are generally found in 'rainforest' areas. This will complement the regenerating native species currently present that suggest a change in soil chemistry and nutrient levels from past land-use practises and therefore a change from the sclerophyll species further up the ridge. Planting rainforest species will also minimise bushfire threat from the reserve, an important factor in rehabilitation in urban areas. An existing mown zone acts as an adequate hazard reduction zone further down the ridge.

The plantings also incorporate local Koala fodder trees, as the recent sightings suggest the ridgeline corridor is still viable. The primary food tree species are *Eucalyptus tereticornis* Forest Red Gum and *Eucalyptus robusta* Swamp Mahogany. Secondary food tree species are *Eucalyptus resinifera* Red Mahogany and *Eucalyptus punctata* Grey Gum. *Eucalyptus globoidea* White Stringybark and *Eucalyptus capitellata* Brown Stringybark can also be planted as supplementary fodder species.

Chrysanthemoides monilifera subsp. *rotundata* - Bitou bush in dense thickets on the pig farm site





March 2010: Lantana cleared from the lower slopes of Wangi Ridge near the houses off Reserve Road.



March 2008: Green Team planting an edge strip of natives to separate the site from the mown area.

March 2008: Green Team planting and weeding an edge strip of natives. Compare with photo below, taken two years later.



March 2010: Green Team planted an edge strip of natives in 2008, to separate the site from the mown area.

Support from Delta Electricity

Delta Electricity have been providing financial support towards the Wangi Peninsula Green Corridor Project for a number of years. This funding has assisted in transforming the old Pig Farm site from a weed infested hillside (with Bitou and Lantana) to a functional native forest incorporating a fire-retardant mid-storey of local "rainforest" species with Koala fodder trees as emergents. To this end, the Delta funds have been and will be spent on bush regeneration support for the long-established Wangi Ridge Preservation Board Landcare to:

- Maintenance-weed the plantings that have already been established,
- Prepare further sites for planting by the Landcare group on National Tree Day in July, and
- Extend weeding into areas that are still weed-dominated.



Chrysanthemoides monilifera - Bitou Bush



Lantana camara - Lantana



2011: Volunteers at a tree-planting day.

References

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- Visit Lake Macquarie NSW. Wangi Wangi Flora and Fauna Reserve.
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- Caring for Our Country 2009-10 Community Action Grant, Wangi Peninsula Green Corridor Project. Wangi Peninsula Native Vegetation Communities. Carl Fulton. LRO 2010.
- Restore Defences Plan. Lakes Mail 24 July 2008. David Quick
- Koalas - Threatened species information / NSW National Parks & Wildlife Service
www.npws.nsw.gov.au
- Birds - Birds in Backyards
www.birdsinbackyards.net
- Plants - Australian National Botanic Garden
www.anbg.com.au

2006: View from the lookout constructed on the side of Wangi Ridge looking out towards Coal Point.



Further Information

Lake Macquarie Coastal Planting Guide (LMCC),

Attack of the Killer Weeds (Coastcare),

Weeds of the Hunter and Central Coast (Weeds Committee Information Booklet),

Foreshore Stabilisation and Rehabilitation Guidelines (LMCC),

Native Plant or Weed, Pick the Difference, Volumes 1 & 2 (Ann Loughran),

Restoring Natural Areas in Australia (Robin Buchanan),

Community Support Information Pack (Lake Macquarie City Council and the Hunter Central Rivers Catchment Management Authority).

If you wish to know more about this and other projects in Lake Macquarie, please contact the Landcare Resource Centre.

Images courtesy of:

Lake Macquarie Landcare

Denis Hilder of Landcare Resource Centre 2010

Weeds: Attack of the Killer Weeds - Land & Water Conservation Pub. 1998



CARING
FOR
OUR
COUNTRY



**LAKE MACQUARIE
BUSHLAND SITE**

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