



Lake Macquarie  
Landcare

# Case Study

Coastal Site

## Redhead Coastal Corridor Project



Above: Looking from Redhead Bluff along Redhead Beach

### Project Partners:

- Landcare Resource Centre (Lake Macquarie City Council)
- Redhead Bluff Landcare Group
- Redhead Sustainable Neighbourhood Group

## Background

Redhead, the traditional land of the Awabakal people, is located in Lake Macquarie City and is part of the Hunter Region of New South Wales, Australia.

Redhead is a secluded coastal community bounded by the Pacific Ocean to the east, the Awabakal Nature Reserve to the north, Jewells Wetland to the west and Belmont Lagoon to the south.

Features include Redhead Beach, which stretches into Nine Mile Beach, and the Fernleigh Track Cycleway which connects the community to Belmont in the south and Newcastle CBD in the north.

The Redhead area contains seven of the City's nine ecosystem types including forest, woodland, heath, wetlands, ocean, coast and waterways. As is the case with most urban bushland areas, the natural assets of the Redhead neighbourhood area are deeply treasured by residents but are unfortunately under considerable pressure. Key issues include weeds and feral animals, dune degradation, waterway pollution, irresponsible pet ownership and illegal dumping.

Redhead was founded on a rich

## Lake Macquarie

Lake Macquarie is located on the NSW east coast, It contains mountains, forests, waterfalls, extensive beaches, and a large coastal estuarine lake with an area of approximately 110 square km, and a catchment area of 605 square km.

These areas support a wide range of habitats and uses including nature conservation, recreation, residential and commercial development and rural activities. As a result, the natural environment has suffered a high degree of modification and degradation.

## Aboriginal Heritage

Lake Macquarie is rich in Aboriginal cultural heritage dating back tens of thousands of years. The people who lived around Lake Macquarie and Newcastle were known as the Awabakal which means "*the people of the flat surface*" presumably referring to the Lake and its flat surrounds.

history of coal mining. Collieries operated from late 1880's to 1992. Much of Redhead sits on a maze of underground tunnels created during this coal mining era. The Belmont Railway line connected the Colliery to Newcastle City, and this is now the Fernleigh Track.



Above: The sites of Redhead Bluff Landcare

## Redhead Bluff Landcare Site

Redhead Bluff Landcare site has evolved and extended its boundaries since the group's original site of 2004. In 2020 the site can be roughly divided into three areas:

### 1. The Bluff

The site is located off Ocean Street and Iluka Street, Redhead and is bounded by the Tasman Sea. The site is a cliff-top reserve variously mapped as Natural Area- Bushland, Natural Area - Escarpment and Park on the Community Land Plans. The reserve is zoned 7(4) Environmental - Coastline, and adjoins Awabakal Nature Reserve

(zoned 8) to the north. The site provides a continuous strip of natural vegetation between Webb Park in the South and the Awabakal Nature Reserve. This provides important filtration and other environmental services to the large area of road surface and urban development it sits beside.

**Vegetation Community:** Coastal headland Complex (MU51 under the Lower Hunter and Central Coast Regional Environmental Management Strategy vegetation mapping of 2000)

**Endangered Ecological Community:** Themeda grasslands on seacliffs and coastal headlands in NSW North Coast, Sydney Basin and SE Corner Bioregions.

**Landcare goals and activities:** The group has been targeting the Bitou on site, and this is working well in the northern section with the majority of vegetation cover now regenerating natives with a good cover of *Acacia longifolia*, *Acacia sophorae*, *Kennedia rubicunda*, *Breynia oblongifolia*, *Leptospermum laevigatum*, *Polymeria calycina* and *Gahnia sp. Banksia integrifolia*. Other weeds on site are Gazania, African Daisy, Cassia and Buffalo Grass.

The section of the site south from Iluka Street is more problematic with Bitou dominating much of the site, and occasional “islands” of native plants including *Banksia integrifolia*, *Rapanea variabilis*, *Lomandra*



**Left:**  
Landcare  
volunteers  
with  
corporate  
volunteers  
from GIO  
planting at  
Redhead  
Bluff in 2011

The Redhead bluff is home to a variety of birds such as Quail, Honey Eaters, Superb Blue Wren and Variegated Wren. It is also habitat for ground dwelling mammals such as Long-nosed Bandicoot, Northern Brown Bandicoot, New Holland Mouse, and Spotted-tail Quoll. Other fauna include the occasional Echidna, Lace Monitor and Diamond Python. These animals are dependant on shrub and ground cover vegetation to allow them to avoid predators - both native predators such as falcon and kestrel and introduced predators such as foxes, dogs, and cats.



*Malurus cyaneus* - Superb Fairy-wren, male.  
(Birds in Backyards Image: K Vang and W Dabrowka © from [www.birdsinbackyards.net](http://www.birdsinbackyards.net))

*longifolia*, *Kennedia rubicunda*, *Glochidion ferdinandi*, *Monotoca elliptica*, *Leptospermum laevigatum* and *Themeda australis*. The long-term goal is to remove weed species from these “islands”, and to gradually expand and link up these areas on the clifftop.

## 2. Freshwater Creek Site

The site is located between Allard Street and Alison Street, Redhead in the Freshwater creek sub-catchment. The site is a riparian reserve (zoned 7(2)) and identified minor wildlife corridor linking Awabakal Nature Reserve with the Redhead coastal zone and Jewell’s Wetland system to the south. The reserve is also a proposed pedestrian link in the Coastline Management Plan between the Cain Street pathway/ Ken and Audrey Owens boardwalk at Webb Park, and the clifftop walk through Awabakal Nature Reserve.

### Vegetation Community:

There are two distinct native vegetation communities on the site: the immediate creekline community of *Eucalyptus robusta* Swamp Mahogany, *Melaleuca quinquenervia* Broad-leafed Paperbark, *Glochidion ferdinandi* Cheese Tree, *Gahnia sp.*, *Phragmites*, etc. and the surrounding vegetation on both slopes with *Angophora costata* Sydney Red Gum, *Banksia integrifolia* Coastal Banksia, *Banksia serrata* Old Man Banksia, *Duboisia myoporoides* Corkwood, *Pittosporum undulatum* Sweet Pittosporum and *Allocasuarina littoralis*



**Above: Freshwater Creek**



**Above: Boardwalk from Webb Park to Redhead Beach, part of the Ken and Audrey Owens Walkway**

Coastal Sheoak, etc. The area is mapped as Coastal Sand Apple-Blackbutt Forest MU33 under LHCCREMS.

### 3. Foredune area

This site takes on an area originally under the care of Redhead Care Landcare group. It encompasses part of the Cain Street Reserve, the adjacent wetland and a section of dunes off Redhead Beach.

**Vegetation Community:** The site has a mosaic of vegetation communities – wetland with *Melaleuca quinquenervia* and rushland, revegetated dune paddocks and *Leptospermum laevigatum* Coastal Tea Tree restructured hind dunes.

A number of LHCCREMS vegetation communities occur on the site including Coastal Sand Wallum Woodland-Heath MU34 (off Cain Street), Swamp Mahogany - Paperbark Forest MU37 (in small wetland section off Cain Street), Coastal Sand Scrub MU50 (hind dunes) & Beach Spinifex MU53 (beach/primary dune).



*Carpobrotus glaucescens* - Pigface (top), *Hibbertia scandens* - Climbing Guinea Flower (middle) and *Scaevola calendulacea* - Dune Fan Flower (bottom) are some of the native species that occur in the foredune area.

## **Projects and Achievements**

### **Restoring a Coastal Wildlife Corridor**

The 'Redhead Coastal Corridor Project' was originally the 'brainchild' of Brian Hilton (Redhead Bluff Landcare Team Leader). It also involved nearby groups Redhead Care and Freshwater Creek Landcare (no longer operating).

This project involves the planting of a living fence of native vegetation that runs along side the edge of the Redhead Beach Surf Life Saving Club car park in a strip approximately 10 metres wide. The planted corridor connects the natural area of Redhead bluff with the bushland of Webb Park. The corridor helps with the migration of native birds and animals between these two natural areas and helps connect the Awabakal Reserve to the Belmont Wetlands and State Park south of Redhead.

The first planting was carried out in stages through spring and summer in 2011 and utilised low-growing native coastal plants, consistent with surrounding plant communities.

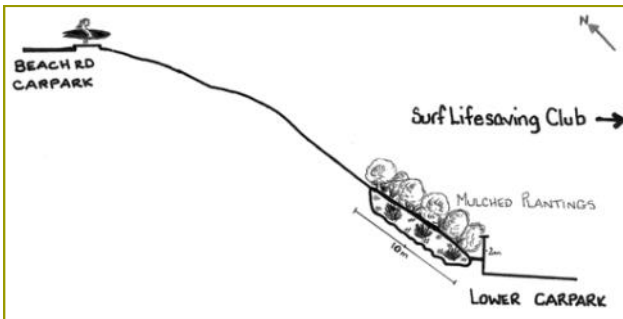
The project was an initiative of the Landcare groups of the area and was supported by Lake Macquarie City Council and the Landcare Resource Centre. The Landcare Bush Regenerator team prepared the grassy site prior to planting by spraying, and then mulching the area that was to become the future fauna route. The Landcare Green Team also assisted with the site preparation leading up to the planting day. Redhead Sustainable Neighbourhood Group was involved in the project and over 30 people, including students from Hunter Sports High participated in a planting day in November 2011, planting almost 2000 plants.

Numerous further plantings have helped consolidate the corridor. Planting events have involved a number of different groups including Church of Jesus Christ of Latter Day Saints members and their families, volunteers from The Body Shop, GIO/Suncorp and various local school groups. Events with Planet Ark and Trees for Mum have also been held as part of the project. Redhead Bluff Landcare would like to thank the many volunteers that have been involved in this project.

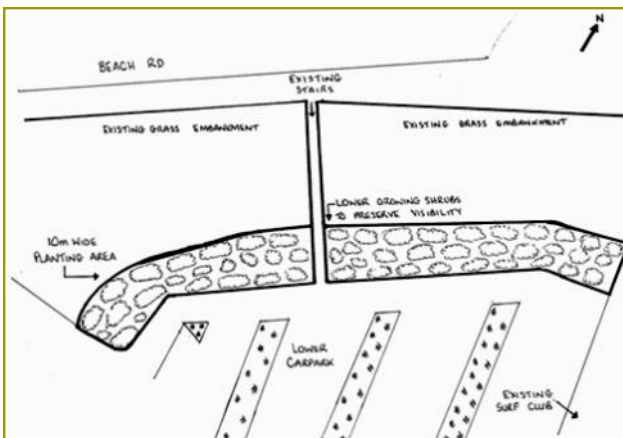




Left: Plants used in the revegetated corridor included low growing *Lomandra longifolia*, *Isolepis nodosa* and *Themeda australis*



Left and below: the plan for the 2011 Corridor plantings



## Planting list for Redhead Coastal Corridor

### Shrubs

- Acacia myrtifolia* - Myrtle-leaved Wattle
- Breynia oblongifolia* - Coffee Bush
- Correa alba* - Coastal Correa
- Correa reflexa* - Native Fuchsia
- Lasiopetalum ferrugineum var ferrugineum* - Rusty Petals
- Leucopogon parviflorus* - Coastal Beard Heath
- Melaleuca thymifolia* - Thyme-leaved Paperbark
- Myoporum boninense* - Coastal Boobiala
- Pelargonium australe* - Coastal Geranium
- Persoonia lanceolata* - Geebung
- Pimelia linifolia* - Slender Riceflower
- Pittosporum revolutum* - Rough-fruited Pittosporum
- Westringia fruticosa* - Coastal Rosemary



***Correa reflexa* - Native Fuchsia**

### Vines/Creepers

- Billardiera scandens* - Appleberry
- Calystegia soldanella* - Calystegia
- Clematis aristata* - Old Man's Beard
- Geitenoplesium cymosum* - Scrambling Lily
- Glycine clandestina* - Love Creeper
- Hibbertia scandens* - Golden Guinea Flower
- Pandorea pandorana* - Wonga Wonga Vine

### Ferns/Groundcovers

- Actinotus helianthi* - Flannel Flower
- Carpobrotus glaucescens* - Pigface
- Commelina cyanea* - Scurvy Weed
- Dianella caerulea* - Blue Flax Lily
- Dichelachne micrantha* - Long Hair Plume Grass
- Geranium homeanum* - Cranesbill
- Isolepis nodosa* - Nodding Club Rush
- Lomandra longifolia* - Coastal Mat Rush
- Scaevola albida* - Pale Fan Flower
- Themeda australis* - Kangaroo Grass
- Viola hederacea* - Native Violet



***Melaleuca thymifolia* - Thyme-leaved Paperbark**



**Above and top: The 2011 planting day planted almost 2000 plants along the lower car park board, to provide a vegetated corridor.**



**Above: In 2020 the low shrubs, creepers and groundcovers have grown to provide a vegetated connection between headland habitats**



**Top: Part of the Coastal Corridor site before planting in 2011**  
**Bottom: Same area in 2020, showing the low corridor that provides habitat and protection for wildlife**



Generated by: LakeMaps  
Date: 22-May-20

2010 Aerial of Coastal Corridor site

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Generated by: LakeMaps  
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2020 Aerial of Coastal Corridor site

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## **Freshwater Creek Restoration Project**

A collaborative rehabilitation effort between Council and the Redhead community occurred in 2013 to improve the creek downstream from Beach Road at Redhead.

Beginning its journey in the Awabakal Nature Reserve, Freshwater Creek flows south onto the sands of Redhead Beach near the surf club. Over the years, stormwater pollution, litter, weeds and exotic pests have degraded the waterway, which is an important corridor linking the woodlands and coastal wetlands in the Redhead area.

Clogged with a build up of organic material, the creek had become stagnant in some sections, affecting the overall water quality.

A partnership between Council, Lake Macquarie Landcare and the Redhead Sustainable Neighbourhood Group was formed to carry out the project, which involved the removal of 3,300 square metres of weeds and stabilisation of 80 metres of the Freshwater Creek streambank.

Several schools were then involved in a number of planting events to help revegetate the streambank with native plants. Schools involved were:

- St Mary's High School (Gateshead) - Year 10
- Lakeside School - 4 students
- Charlestown Public School - Years 4,5 and 6
- Lake Macquarie High School - 3 students

John Hughson from the Landcare Resource Centre, along with teachers from the various schools and Landcare volunteers from Redhead Bluff and Redhead Care Landcare groups, guided the students in planting techniques and the value of Landcare activities for addressing coastal issues.

**Right : Creek rehabilitation works using machinery to stabilise Freshwater Creek bank (top); School students involved in planting of creek edge to provide long-term stability and water quality benefits (bottom)**



## **Dune Ecosystem Recovery Project**

Lake Macquarie City Council supported the work of Landcare groups with the Dune Ecosystem Recovery Project in 2011 and 2012. This project focused on the Coastal Sand Scrub zone (mostly under canopy) that occurs in the hind dune area of Redhead Beach, behind the Ken and Audrey Owens Boardwalk.

Target weeding occurred in this zone, including manual removal of small Bitou, cut/paint of isolated clumps, and splatter gun spraying of large clumps and the wetland/foredune edge zones. The project also included a community education day involving the Redhead Sustainable Neighbourhood group.

Subsequent Council weeding programs and follow-up weeding by volunteers has meant that in 2020 the dunes between Freshwater Creek and Second Creek are almost free of Bitou. All mature Bitou (capable of seeding) in this area has been removed.

Bell, S.A.J. (2016) Volume 2: Vegetation Community Profiles, Lake Macquarie Local Government Area. Working Draft v2. Unpublished Report to Lake Macquarie City Council. March 2016. Eastcoast Flora Survey available at [www.lakemac.com.au](http://www.lakemac.com.au)

Buchanan, R, 2009, [\*Restoring Natural Areas in Australia\*](#)

LMCC, 2004, *Lake Macquarie Coastal Planting Guide*, available at [www.lakemac.com.au](http://www.lakemac.com.au)

PlantNET (The NSW Plant Information Network System). Royal Botanic Gardens and Domain Trust, Sydney. <http://plantnet.rbgsyd.nsw.gov.au>

The Lake Macquarie Landcare website [www.lakemacquarielandcare.org](http://www.lakemacquarielandcare.org) provides links to newsletters, environmental programs, grants, Landcare, weeds and trees.

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

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Landcare Resource Centre  
80 Toronto Road, Booragul NSW  
Box 1906 HRMC NSW 2310  
Phone: 4921 0392

Email: [lro@lakemac.nsw.gov.au](mailto:lro@lakemac.nsw.gov.au)  
[www.lakemacquarielandcare.org](http://www.lakemacquarielandcare.org)  
Opening Hours:  
Monday to Friday 8am - 4pm



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