



Lake Macquarie
Landcare

Case Study

Riparian Sites

One-hundred-thousand Plants: Warners Bay Landcare 2000-2015



Project Partners:

- Landcare Resource Centre and LMCC
- Australian Government (and past funding programs through NHT and Caring for Our Country).
- NSW Government (and past funding programs through CMA)

Background

Warners Bay Landcare works to regenerate a number of Landcare sites in Warners Bay, New South Wales.

The group was established following an initial meeting for the Cleaner Waterways for Warners Bay Project on 20th December, 1999. John Hughson, the Lake Macquarie Landcare Co-ordinator at the time, spoke with interested community members about the benefits of setting up Warners Bay Landcare (WBLC) and possible grants that could be accessed.

Warners Bay Landcare's first meeting was on 22nd February, 2000, and it was resolved to meet monthly to decide on projects and methods for conserving the natural areas of North and South Creeks within Warners Bay and Eleebana. The inclusion of Warners Creek catchment, which lies between North and South Creeks, was first suggested in December, 2002.

Kath Palmowski was elected chairperson of the group at its first meeting, and she remained in the position for one year, when Robert Loughran took over.

The organisational structure of WBLC includes members who attend the monthly meetings under the chairperson, and guardians for each Landcare site who are responsible for outlining the programme of work at their sites. The activities and associated resources proposed for all sites, are approved by the Lake Macquarie Landcare Coordinator according to the sites' Agreed Action Plans.

WBLC mission statement:

- To help the community to better manage the three catchments of Warners Bay;
- To protect or, where necessary, rehabilitate the natural vegetation of the riparian zones of these creeks, so as to create wildlife corridors and reduce adverse impacts on Lake Macquarie;
- To educate the community about how to protect the natural vegetation of the area.

The first planting

On the 5th March, 2000, the first plantings by WBLC were done on the foreshore reserve, south of the North Creek estuary, and along North Creek itself. This was also Clean-Up Australia Day.

First planting by Warners Bay Landcare
on the Esplanade, 2000



Warners Bay Catchment

The Warners Bay catchment has an area of 11.2 square kilometres and a variety of land uses. The built urban environment takes up 70% of the catchment, 3% is rural land with some equestrian properties, and 27% is forested land around the hillsides. Runoff from these areas flows into small ephemeral streams, then to the larger watercourses North Creek, South Creek and Warners Creek, and eventually into Lake Macquarie.

Site Information

Landcare sites (past and current) within Warners Bay are:

North Creek catchment

- Feighan Oval/Park – riparian zones of North Creek, Egret Creek and Banded Rail Creek (Guardians, successively, Elmo Lourensz and Steve Dewar)
- Albert Street Reserve [No longer an active site]
- Warners Bay High School (Dennis Thurlow) [No longer part of WBLC]
- Lakelands (Guardians, successively, Graham Dunlop and Craig Whitford)



Warners Bay Landcare sites



Date: 20-May-15



Meters
Scale 1: 23152 @A4

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Above: Location of Warners Bay Landcare sites

Warners Creek catchment

- James site (adjacent to St John's Ambulance Hall, James Street and St Mary's School). Guardian, Ann Loughran.
- Virginia site (Virginia Street). Guardian, Phil Taylor.
- Bucklee site (Bucklee Crescent). Guardian, Roy Stanners.

South Creek catchment

- Jones site (between Lake Macquarie and Punt Road) right bank of South Creek (Guardian Ken McGregor)
- Bunya Park site (natural area of the park) left bank of South Creek (Guardians, successively, Sharryn Brown, Ann Loughran and Annette Ryan)

Vegetation

North Creek Communities

The vegetation communities vary on either bank at the North Creek Site: on the south bank, there is a linear remnant of LHCCREMS Map Unit 40 Swamp Oak- Rushland Forest with *Casuarina glauca* Swamp Oak and *Phragmites australis* Common Reed. Around the creek mouth on the north bank, there is a more complex linear remnant, resembling LHCCREMS Map Unit 38 Redgum Rough-barked Apple Forest with mature rainforest species, like *Elaeocarpus obovatus* Hard Quandong, and *Glochidion ferdinandi* Cheese Tree, amongst the *Casuarina glauca* Swamp Oak, *Melaleuca styphelioides* Prickly-leafed Paperbark, and *Angophora floribunda* Rough-barked Apple. A band of LHCCREMS Map Unit 47 Mangrove Estuarine Complex lines both banks of the creek in the tidal zone.



Above: *Melaleuca styphelioides* in flower

Warners Creek Native Vegetation Communities

Lower Hunter & Central Coast Regional Environmental Management Strategy (LHCCREMS) mapping identifies three vegetation communities on the Warners Creek catchment:

- MU11 Coastal Sheltered Apple-Peppermint Forest in sheltered areas around the creekline in the middle and lower

catchment, with *Eucalyptus piperita* Sydney Peppermint, *Angophora costata* Smooth-barked Apple, *Corymbia maculata* Spotted Gum in the canopy, and *Allocasuarina torulosa* Forest Oak in the mid-storey. Around the



Backhousia myrtifolia - Grey Myrtle

creekline are “rainforest” species like *Alphitonia excelsa* Red Ash, *Pittosporum undulatum* Sweet Pittosporum / Native Daphne, *Backhousia myrtifolia* Grey Myrtle.

- MU15 Coastal Foothills Spotted Gum-Ironbark Forest extending to the ridgelines in the upper catchment, with *Corymbia maculata* Spotted Gum, *Eucalyptus punctata* Grey Gum, *Corymbia gummifera* Red Bloodwood, *Angophora costata* Smooth-barked Apple, *Eucalyptus paniculata* Grey Ironbark, *Eucalyptus umbra* Bastard Mahogany, and the occasional *Eucalyptus piperita* Sydney Peppermint in the canopy. This would have been the dominant vegetation community on the ridgeline around Mills Street. Similar “rainforest” species are growing around the creekline in the upper catchment.
- MU38 Redgum Rough-barked Apple Forest in the lower catchment off James Street, with *Eucalyptus tereticornis* Forest Redgum, *Angophora floribunda* Rough-barked Apple, *Eucalyptus robusta* Swamp Mahogany, *Melaleuca styphelioides* Prickly-leafed Paperbark, and *Glochidion ferdinandi* Cheese Tree. This vegetation community is heavily weed infested in the mid-storey, and is growing closer to the Lake off James Street. The complexity of this forest type will need to be re-created around the creekline using some of the “rainforest” species occurring further up the catchment.

South Creek Communities

Within South Creek, there are Endangered Ecological Communities of Swamp Oak Floodplain Forest, River-Flat Eucalypt Forest on Coastal Floodplain and Swamp Sclerophyll Forest on Coastal Floodplain with rainforest elements supporting a variety of threatened species.

Bunya Park is a Lake Macquarie City Council park on the bank of South Creek, Warners Bay. It is part of a wildlife corridor and provides refuge for rainforest species found at nearby Green Point. The riparian zone consists of *Casuarina glauca* Swamp Oak Forest with rainforest components, and is regularly maintained by Warners Bay Landcare.

Fauna

Considering the urban nature of the Warners Bay catchment there has been a surprising number of animal and bird species observed in the area. These include the Long-nosed Bandicoot, Brushtail and Ringtailed Possums, Sugar and Feathertail Gliders and Grey-headed Flying Fox. Reptiles such as the Lace Monitor, Eastern Water Dragon, Land Mulletts, Blue-tongued Lizards, Eastern Brown Snake, Red-bellied Black Snake, Whip Snake and Southern Dwarfed Crown Snake. Green Tree Frog, Striped Marsh Frog and Brown Frog are also present. There is abundant bird life including Powerful Owl, Masked Owl, Satin Bowerbirds, Whipbirds, Rosellas, Butcher Birds, etc.



Magenta Lilly Pilly *Syzygium paniculatum* a threatened species has been planted at the Bunya Park site. (Image courtesy of ANBG)



Powerful Owl

Projects and achievements

Over the past 15 years Warners Bay Landcare has been involved with three government-funded projects, local (community) issues, education (schools and the public), annual national events, as well as monthly conservation activities within the three Warners Bay catchments.

GOVERNMENT FUNDED PROJECTS

Warners Bay Riparian Zone Rehabilitation and Wildlife Corridor Extension Project

At the end of 2000, a major grant was made to WBLC for riparian zone rehabilitation in the Warners Bay catchments, which consisted of \$227,000 from the Federal Natural Heritage Trust, \$174,645 from Lake Macquarie City Council and \$200,813 from the Office of the Lake Macquarie Catchment Co-ordinator, making a total of \$602,958. This amount included \$60,110 of in-kind volunteer contributions.

Project duration was from February, 2001, to March 2003, and Suzanne Pritchard was appointed Project Officer in April, 2001.

North and South Creek catchments were the focus of the



The Jones site on South Creek; jute matting laid on flood plain surface to suppress weeds, after clearance by the Green Corps, and prior to planting (NHT Grant), 2002



Ecologs placed along South Creek to protect the bank from erosion, 2000

programme, with 327 people actively involved in the planting of 51,000 trees within an area over 5 ha. A considerable amount of this work was done by the Green Corps, administered by Conservation Volunteers Australia. Educational materials were also produced, with 16,500 brochures and 15,350 newsletters distributed.

As part of the educational programme, Suzanne Pritchard organised a “Water Week Wonder Walk” (14th to 20th October, 2001), which consisted of guided and self-guided walks along North and South Creeks.

The Catchment Management Authority

In 2004, the CMA provided a grant of \$8690 for the purchase of plants and mulch for riparian zone rehabilitation within the North and South Creek catchments.

Caring for Our Country

In June, 2010, a grant of \$18,182 from the Federal Government, under the Caring for Our Country program, was given for the rehabilitation of the downstream portion of Warners Creek and for educational purposes (community and schools).



An open-day was held in the reserve near St Mary's School to launch the Warners Creek 'Caring for Our Country' project.



Two National Tree Day events were held with students of St Mary's School. Every student in the school participated in planting 4100 trees, under-storey and ground-covers along Warners Creek in 2011 and 2012.

Warners Bay Landcare has continued to look after the James Street (Warners Creek) site by weeding and planting native species.



The James Street site on Warners Creek was, in part, infested with choko vines (2011)



After weeding, the James site was planted with species endemic to the area (2015)



Warner's Bay scouts helping to prepare the Bucklee site on Warner's Creek, 2011



Preparation of Bucklee site on Warner's Creek, 2011



Placing protective fencing on Bucklee site on Warner's Creek, 2014

ANNUAL, NATIONAL PROGRAMS

Warners Bay Landcare has been regularly involved with three national, environmental programs, National Tree Day, Clean-Up Australia Day and Water Week.

National Tree Days

National Tree Day began in 1996 and, with Schools' Tree Day, is the country's largest community planting and nature care event. Warners Bay Landcare had its first NTD in 2002 at two sites: the Jones site at South Creek and at New York Avenue. At the former site, 60 persons attended and 1400 trees were planted. Every year since then, except in 2010, when the group helped with NTD at Wangi Ridge, WBLC has participated and a total of 21,241 plants have been put in. The group has been well supported by the community, notably by staff and friends of BUPA at Cardiff.

The Green Team from the LRC prepares the site by mulching and drilling holes, and LMCC provides funds for purchasing the tube-stock. In recent years, LRC staff has been on hand to support the volunteers and provide food and drink on the day.

North Creek, Warners Creek and South Creek riparian zones have all been venues for NTDs over the years.



National Tree Day in 2007 at Bunya Park, Eleebana



Banner and photographic display showing locations of NTDs at Bunya Park, Eleebana, 2005-09 and 2012



National Tree Day planting in North Creek catchment, 2013

Clean Up-Australia Day

On 11 occasions, WBLC has supervised annual Clean-Up Day sites in Warners Bay and Eleebana. Many, but not all, have been on Landcare sites, and volunteers have often ranged far and wide to bring rubbish to a central point for collection.



Rubbish awaiting collection at Bunya Park, Eleebana, 2005

Water Week

Every year since 1993, National Water Week has raised awareness about water-related issues in Australia. WBLC has been involved with St Mary's School and the public, hosting educational activities in Warners Bay. In 2005 there was continuous rain for several days, so three Landcare members entertained Class 6 children in the school hall by building an indoor catchment!



Identifying water creatures at North Creek during a community awareness day

OTHER COMMUNITY ACTIVITIES

Carp cull at Lakelands

Lakelands, Warners Bay, has been the venue for six educational fish-awareness days for children. Organised by WBLC member Graham Dunlop, with assistance from LMCC staff, a 'carp cull' has been held at the Lakelands ponds. Carp cause environmental damage to waterways, and controlling them by removal is one management option. Prizes of various kinds were given out in several categories, including largest and smallest carp and most carp caught. Council and fisher groups have also attended in an educational capacity.



Carp cull in progress at Lakelands in 2005

North Creek channel at the Delforce site

Between 2000 and 2003, developers proposed to cover the channel of North Creek near Warners Bay High School, the so-called Delforce site, to allow heavy vehicle access to a new commercial area. WBLC was concerned that the placing of the creek in what was effectively a concrete culvert would have a deleterious effect on the hydrology, flora and fauna of the creek.

Submissions to the Council and meetings with the developers eventually saw the creek's channel being saved. However, the flood plain has now been built-up with car parks, roads and shops.



North Creek looking upstream towards King Street: Landcare has been unable to plant on this site because it is inaccessible. The growth of weeds and other plants in the channel has, nevertheless, helped filter nutrients and sediment from the runoff water and provide habitat.

Warners Bay Community Garden at Bunya Park, Eleebana

Lake Macquarie City Council invited WBLC to submit a report and make submissions on the possible environmental effects of placing a community garden adjacent to Endangered Ecological Communities that Landcare looks after in Bunya Park, Eleebana. As part of this exercise, WBLC was granted public access at Council meetings to state its point of view. After a lengthy process, a DA was granted for the garden to go ahead.

Conflict of interests in riparian zones

It is not unusual for bushland reserves in urban areas to come under pressure from neighbours and the providers of utilities.

Children need recreation areas, and sometimes damage is done to native vegetation and soils in the process. When BMX tracks are built on Landcare sites, for example, volunteers can find it difficult to manage the situation. WBLC is no exception, and eventually sought assistance from LMCC to repair damage to the South Creek riparian zone.



The building of a BMX track on the Jones site, South Creek, caused considerable damage to soils and vegetation.



Earthmoving equipment was used to reshape the disturbed surface.



Steel posts and cables were placed at intervals to discourage bike riders.

In other instances, the provision of additional sewerage lines and overhead power cables can, necessarily, cause disturbance to vegetation and soils. Landcare sites in Warners Bay have been affected, but repair work has been negotiated by officers of Lake Macquarie Landcare.



An additional sewer main was built by Hunter Water through Landcare plantings at the Jones site on the flood plain of South Creek. Funding was provided by Hunter Water for Landcare to rehabilitate the site.

One-hundred-thousand Plants

In 2015 Warners Bay Landcare, associated groups and individuals have, after 15 years, reached the milestone of 100,000 plants in the three catchments of Warners Bay.



Warners Bay Landcare and Green Team members at Bunya Park on the day the 100,000th plant was put in the ground

ACKNOWLEDGEMENTS

The assistance of the Lake Macquarie Landcare Co-ordinators, the staff of the Landcare Resource Centre, the Project Officers and all others who helped conserve the riparian zones along North Creek, Warners Creek and South Creek, Warners Bay, is gratefully acknowledged.

References and Further Information

Australian National Botanic Garden - www.anbg.com.au

Buchanan, R, 2009, *Restoring Natural Areas in Australia*, NSW Department of Primary Industries

LMCC, 2004, *Lake Macquarie Coastal Planting Guide*, available at www.lakemac.com.au

Weeds Australia - www.weeds.org.au

The Lake Macquarie Landcare website 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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