

Communities helping to protect our wetlands

Students on a mission for the Great Barrier Reef

Great Barrier Reef Marine Park Authority

Mission Beach State School students are taking the health of local wetlands and the Great Barrier Reef into their own hands.

Last year, the school launched a project to restore a cyclone-devastated wetland beside their school. Cyclones Larry and Yasi had severely damaged the coastal wetland, decimating melaleuca woodlands and other vegetation. The wetland became choked with weeds which blocked the natural creek flow and caused flooding. With help from the Cassowary Coast Regional Council, 20 truckloads of weeds were removed from the site. Students and the local community then planted over 2000 seedlings on the newly cleared banks.

The return of waterlilies, fish and birds are positive signs that the wetland is recovering from the cyclones. The wetland is also attracting students and has become an outdoor classroom where students monitor the changes taking place.

Principal Gordon Robertson said restoring the wetland was vital as the creek fed into the ocean at Wongaling Beach, where there were inshore reefs. "Even though it's a small-scale project, it shows our kids that every little bit we can do to maintain and improve the environment is worth doing," said Gordon. "If we can get it back to a more natural state, the water quality and therefore the reef and fish diversity in the immediate vicinity of Mission Beach will improve."

The Great Barrier Reef Marine Park Authority has recognised the school and the council as "Reef Guardians" for their work to help build a healthier and more resilient reef.



Mission Beach State School students help to rehabilitate a wetland near their school that was damaged by Cyclones Larry and Yasi (© Copyright, Great Barrier Reef Marine Park Authority)



Karlie Nicholson and Jamela Sepon from Mission Beach State School helped to plant over 2000 seedlings at a wetland near their school (© Copyright, Great Barrier Reef Marine Park Authority)

The Mission Beach State School would like to thank their partners the Cassowary Coast Regional Council, Dunk Island View Caravan Park, Djiru Traditional Owners, Girringun Aboriginal Corporation, Cassowary Coast River Improvement Trust, Community for Coastal and Cassowary Conservation (C4), Terrain Natural Resource Management, Cassowary Coast Local Marine Advisory Committee, Great Barrier Reef Marine Park Authority, and the Mission Beach community.

Mission Beach State School and the Cassowary Coast Regional Council are part of the Great Barrier Reef Marine Park Authority's Reef Guardians program. For further information visit: www.gbrmpa.gov.au/our-partners/reef-guardians.



A cyclone-damaged coastal wetland near Mission Beach State School received some much needed restoration assistance thanks to local students, government and community groups (© Copyright, Great Barrier Reef Marine Park Authority)

Kids Caring For Creeks in New South Wales

Verity Robson, Senior Project Officer Hunter Region, WetlandCare Australia

WetlandCare Australia is working with two local schools in the Hunter Valley to engage their communities and reduce urban stormwater impacts which threaten Ramsar-listed wetlands downstream.

WetlandCare Australia's Hunter branch in New South Wales is restoring the upstream catchment of the Hunter Wetlands Centre Ramsar site through the four year Newcastle Wetland Connections project funded by the Australian Government. The project includes bush regeneration, revegetation of wetland buffers and erosion control. A key element of the project is community engagement which includes an educational outreach program with two schools situated on creeks in the upstream catchment. Other key partners involved in the Kids Caring for Creeks program include the New South Wales Local Land Services and City of Newcastle.

Concrete drains have replaced many natural creeks in Newcastle leading to increased sediment and pollutant loads and the loss of riparian habitat and native flora. Thankfully, Waratah West and Heaton Public schools have relatively natural creeks in the project area. These riparian zones are amazingly rich in biodiversity including the vulnerable powerful owl (*Ninox strenua*), but they are choked with weeds and the water is high in nutrients due to surrounding households.



Students in the Hunter Region draw wildlife from their local creeks (© Copyright, Louise Duff, WetlandCare Australia)

To address these problems, Verity Robson from WetlandCare Australia involved students in outdoor lessons observing plants and wildlife. Students worked together to write key messages and create stunning artworks, which Verity composed into a “letter to neighbours” promoting sustainable behaviours to protect the creeks. Key messages included removing weeds to prevent “backyard escapees”, planting native vegetation, using council green waste bins, limiting fertilisers, scooping dog poo and washing cars on grass. Once complete, students hit the streets to hand deliver 300 letters to their neighbours.

It was wonderful to see the students enthusiastically telling residents, their families and other students about the rich biodiversity that exists in the middle of Newcastle thanks to riparian bushland, urban waterways and nearby significant wetlands.

In addition to working with students, WetlandCare Australia and partners are removing weeds and planting local natives to restore riparian habitat and water quality over time. Both schools will continue to involve students in bush regeneration and weed maintenance at their creeks, while on-ground work for the Newcastle Wetland Connections Project continues across 14 sites.

To find out more about the project, please contact Louise Duff, Wetlandcare Australia Manager Hunter Region, 02 4951 1425, Hunter@wetlandcare.com.au or visit: www.wetlandcare.com.au/index.php/our-work/current-projects/newcastle-wetland-connections-program. You can also visit the MERIT site on the Atlas of Living Australia and search for the ‘Newcastle Wetland Connections project’.

South East Wetland Carers Network: Connecting people to protect and restore our wetlands

Conservation Volunteers Australia

Wetland ecosystems are under increasing pressure, with urbanisation, development, reclamation and sea-level rise, it feels like the odds are stacked against them.



Adam Woods from Conservation Volunteers Australia talks with participants at a fauna workshop in Moruya, New South Wales (© Copyright, Mia Brown)

Did you know that as well as providing habitat for a multitude of birds and animal species, protecting our shoreline from severe weather events and helping to purify our water, coastal wetlands also have the potential to sequester more carbon than tropical rainforests?

Yes, wetlands potentially hold the answer to slowing the threat of climate change with their ability to store carbon. This view of our wetlands is important on two levels. The first is their ability to store large amounts of carbon and the second is the risk of releasing large amounts of carbon stored in these environments through wetland degradation and disturbance.

Wetlands form the basis of industry, recreation, tourism and our culture, by providing essential environmental services. Our wetlands will continue to disappear without the engagement and support of communities and individuals in the implementation and continuation of on-ground conservation works.

The South East Wetland Carers Network strives to create and connect a network of motivated groups and individuals, to foster and encourage their existing knowledge, experience and passion for wetlands in southern New South Wales. Building momentum in the community will build and facilitate social change, working towards a greater appreciation and protection of our wetlands and their ecological function.

The South East Wetland Carers Network is a partnership between South East Local Land Services, WetlandCare Australia and Conservation Volunteers Australia and is supported by the Australian Government. The network covers the coastal region from Wollongong in the north to the Victorian boarder in the south. The network is a 'community of practice' which aims to bring people together to learn and share information about wetland ecology and support communities to make informed decisions about wetland management.

Conservation Volunteers Australia are driving wetland protection projects in a number of locations throughout the Illawarra, with a focus on bringing together multiple stakeholders and ensuring that works performed on site are all working towards a common goal. Our primary focus is on the containment and control of weed species within wetlands, whilst also monitoring change, increasing connectivity and recording data to track trends across a range of wetland ecosystems.

If you would like to find out more about the South East Wetland Carers Network, please contact Adam Woods, Wetlands Program Officer, Conservation Volunteers Australia.
awoods@conservationvolunteers.com.au



Lake Woollumboola in the Shoalhaven region of New South Wales (© Copyright, Adam Woods)



Participants learn about local birds in a 'Birds in Backyard' workshop run by the South East Wetland Carers Network
(© Copyright, Jess Foster)

Discovering the hidden secrets of the cryptic burrowing crayfish

Lauren Veale, Nature Glenelg Trust

Ecologists engage a range of stakeholders to learn more and raise awareness about some of Victoria's least known wetland species.

Ecologists at Nature Glenelg Trust have been working with community groups, landholders and regional schools to unlock some of the mysteries surrounding two of western Victoria's least known wetland species, the hairy burrowing crayfish (*Engaeus sericatus*) and the Portland burrowing crayfish (*Engaeus strictifrons*). While both species are listed as vulnerable in Victoria, very little is currently known of their ecology.

To address this large knowledge gap, the Trust was awarded grant funding by the Victorian Department of Environment and Primary Industries and Glenelg Hopkins Catchment Management Authority to determine the current distribution, threats and habitat requirements of these species and increase community awareness on the importance of their conservation. While these critters are known to play vital roles in ecosystems through aerating soils and recycling nutrients, their trademark burrows also provide a window into past and present wetland extents and areas of groundwater interaction.

Over the wetter periods, crayfish are busy maintaining their intricate underground homes. Like engineering masters, they bring soil pellets to the surface of their burrows and form 'chimney-like' structures, which can be visible along roadsides drains or in low-lying pastoral or wetland areas. These damp habitats allow crayfish to burrow down to the water table (sometimes up to 2 metres below ground).



The hairy claw of the hairy burrowing cray (Engaeus sericatus) (© Copyright, David Mossop)



Hairy burrowing crays (Engaeus sericatus) can burrow up to 2 metres below the ground (© Copyright, Lachlan Farrington)



Students from Port Fairy Consolidated School in Victoria get involved in crayfish surveys at a local freshwater wetland
(© Copyright, Lachlan Farrington)

The Trust has been working with students at Hawkesdale P-12 College, who have been keeping a watchful eye on a colony of crayfish burrows spotted along a nearby creek. Students at Port Fairy Consolidated School have also been actively taking part in surveys along a freshwater wetland on a nearby private property. These students have become citizen scientists by recording the location and number of crayfish burrows they see along their bus routes, taking notes on adjacent land-use and helping to formulate ideas on threats and threat management.

While previous monitoring has used sampling methods that have either been inefficient or destructive, the Trust has recently teamed up with researchers at La Trobe University to explore alternative methods to extract DNA from soil samples collected from burrows. These new techniques offer great potential for determining if a crayfish is present, and indeed which species it belongs to, without the need for capture. This will make monitoring easier and ultimately improve our understanding of these lesser known but fascinating wetland species.

For further information on the project, please visit the Nature Glenelg Trust's website: natureglenelg.org.au.

Pitt Town Lagoon in New South Wales celebrates a new bird hide

Keith Brandwood, Cumberland Bird Observers Club

After many years of discussions by Cumberland Bird Observers Club (CBOC), the Pitt Town Bird Hide and Island Modification project became a reality on World Wetlands Day 2014.

The project involved the construction of a new bird hide, and modifications to three of the seven islands at the western end of Pitt Town Lagoon in north-west Sydney. The plan was to reduce the height of the islands and clear them of vegetation to encourage shorebirds to use them. The modification has proved to be a huge success. Prior to modification, you would have been lucky to record a dozen birds using them at any given time. Since the modification, there have been recordings of many tens of ducks, lapwings, egrets, ibis, coots, pelicans, cormorants and herons roosting on the islands and we are confident that shorebirds will use them when they arrive from their migration. Trees that were removed from the islands and placed in the lagoon are also used extensively as roosts by a number of species.

The project was a collaboration between CBOC, New South Wales National Parks and Wildlife Service (NPWS) and Greater Sydney Local Land Services (GSLLS). More than seventy people from CBOC and other bird clubs, local residents, GSLLS and NPWS staff gathered to watch our patron, John Dengate, cut the ribbon and declare the Pitt Town Lagoon bird hide open.

Not to let this important occasion down, approximately 500 birds turned up to join the celebrations, including yellow-billed spoonbills (*Platalea flavipes*) and Royal spoonbills (*Platalea regia*), four species of egret, hundreds of ducks and three species of ibis. A highlight for bird watchers was the roosting of five freckled ducks (*Stictonetta naevosa*), which are listed as vulnerable in NSW, on one of the modified islands.



Bird watchers enjoy the new bird hide at Pitt Town Lagoon in north-west Sydney, New South Wales (© Copyright, John Duranti)

Many of the bird watchers were expecting a much smaller hide, and were pleasantly surprised by the large light airy hide that was built. The new bird hide leaves bird watchers with no excuse for not filling in record sheets provided in the records box, now that they can sit and do it in comfort. All records are entered into the CBOC and Birdlife Australia databases and are of great importance. There are 165 species recorded from Pitt Town Nature Reserve, and CBOC has over 10 000 individual records in its database.

CBOC members contributed funds to this project and I think you will agree it was funds well spent. CBOC's future plans are to encourage schools, study centres and local groups to use the bird hide and Lagoon as a means of educating people on the importance of wetlands and their biodiversity.

For more information on Pitt Town Lagoon and other bird watching activities in this area, please visit the Cumberland Bird Observers Club website: www.cboc.org.au.

Home River Ocean: Protecting waterways through social marketing

South West Catchments Council, Western Australia

Social marketing is being used in the South West of Western Australia in an effort to improve the water quality of coastal receiving environments.



Lawn for Lunch: the Home River Ocean program uses humour and social media to reach the unengaged public

(© Copyright, Bill Kaye, Blowup Photography)

The Home River Ocean program aims to reduce nutrient runoff from urban areas entering waterways through a series of targeted behaviour change campaigns. The first campaign, *Save the Crabs, Then eat Them*, targets winter fertilising by encouraging residents and lawn care providers to hold off on the *fertiliser till spring*.

Unlike traditional environmental campaigns, *Save the Crabs, Then eat Them* focuses on lifestyle in an effort to reach the unengaged public, and uses humour and

clever marketing to make the link between fertilising wisely and being able to fish, crab and enjoy seafood into the future.

“While comedic and engaging, the campaign is also based on well researched behaviour change science,” said South West Catchments Council CEO Damien Postma.

“Learning from international best practice in how to engage in today’s busy and digital world, it’s critical that the audience quickly understands the information and feels empowered to personally contribute to the solution.”

Three television and radio commercials were developed and aired on regional television in Western Australia throughout winter 2013 and 2014. Intensive advertising was supported at the grass roots level through local, targeted initiatives. Residents had the opportunity to become ambassadors for the campaign by displaying signage at their homes and, campaign staff visited hardware stores to engage with customers at the point of fertiliser purchase.

The campaign was adapted from the successful Chesapeake Bay 'Save the Crabs, Then eat Em' campaign in the United States.

Urban expansion is predicted to be the main contributor to large increases in both phosphorus and nitrogen in coastal waterways in the South West, and urban gardens have been identified as a significant and increasing source of these nutrients. Winter fertilising currently contributes 10 per cent of the total urban nutrient load to South West waterways (Kelsey et al, 2010).

An autumn campaign targeting new urban nutrient behaviour is currently being developed for 2015.

Home River Ocean is supported by the South West Catchments Council through funding from the Australian Government and the Government of Western Australia. Project partners include the South West Catchments Council, Peel-Harvey Catchment Council, Water Corporation, GeoCatch, Department of Water, Swan River Trust, Murdoch University, GWN7, and Ten West Regional.

For more information and to view the adverts, visit the Home River Ocean website and social media sites: www.homeriverocean.com.au, www.facebook.com/homeriverocean.

References

Kelsey, P, King, L & Kitsios, A 2010, *Survey of urban nutrient inputs on the Swan Coastal Plain*, Water Science technical series, Report no. 24, Department of Water, Western Australia.



The behaviour change campaign aims to highlight the link between fertilising wisely and being able to fish, crab and enjoy seafood into the future (© Copyright, South West Catchments Council)

Eavesdropping on frogs: Citizen science guiding wetland health management

Anke Maria Hoefer, Australian Capital Territory and Region Frogwatch Coordinator

Healthy waterways are important for our local environment as well as for overall catchment health. One way of testing wetland condition is to count frogs, as they are universally used as an indicator species for environmental health.

The ACT and Region Frogwatch Program, run by the Ginninderra Catchment Group, uses the monitoring of our local frog species as an indication of the health of our waterways. For over a decade, trained volunteers of all ages and walks of lives have been monitoring and assessing urban waterways for habitat quality and frog occurrence in the Capital region.

Collected data (so far almost 4000 surveys at 500 sites across the ACT) is used for strategic planning and sustainable landscape-scale management by many natural resource management organisations, such as local Landcare/Parkcare groups and the Environment ACT Wildlife Research and Monitoring Unit. Data from 2002–2010 are currently being summarized for an online publication.

However, collecting data is not the only Frogwatch achievement!

Frogwatch is a long-term study of frog populations. This very popular citizen science program has involved well over 1500 volunteers! Frogwatch has filled an important data gap as it is the only state-wide frog monitoring program in the ACT. Based on long-term observations, Frogwatch has been able to strategically improve and create frog habitat across the ACT through on-ground plantings

(funded through an ACT Environment Grant).

Furthermore, Frogwatch has been instrumental in recording new frog species for the region, such as the iconic green and golden bell frog (*Litoria aurea*), the broad-palmed rocket frog (*Litoria latopalmata*), and the rocky river frog (*Litoria lesueuri*). Last but not least, Frogwatch runs a range of education programs.

In summary, Frogwatch has contributed to a healthier environment and has collected long-term data about a threatened species group by increasing skill and knowledge levels in local communities. The program has helped build strong relationships within and across communities, offering common goals and providing achievable community outcomes. Volunteers have enjoyed increased interactions and a strong sense of ownership of the environment surrounding them, which has led to long-term behavioural changes that are beneficial for the environment and for the well-being of the participants.

Frogwatch is working hard to secure core funding for future frog monitoring activities and to continue to provide education services. A recently awarded ACT Environment Grant will allow for a much needed upgrade of the online data portal, which in turn will make Frogwatch even more cost-effective.

For more information on the Australian Capital Territory and Region Frogwatch Program, please visit: www.ginninderralandcare.org.au/frogwatch.



Alice Johansson-Granfield and Lillian Burless learn how to identify a frog during a Frogwatch field trip
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