

The Lakes Hub is an initiative of the Milang and District Community Association Inc. funded by the Australian Government and the South Australian Government's Murray Futures program.

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Happy New Year

Hello!

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Our first issue for the 2018 year. Starting off we have been keeping an eye on what is happening in relation to the introduction of the Carp virus and have included an article here that makes a few suggestions as to how to control the carp in our rivers and lakes.

Also February has been the month where we celebrate our wetlands and so we have a look at wetlands and their uses. Continuing our look at birds of Prey on the Fleurieu Peninsular, with a look at the Southern Boobook Owl (Ninox Boobook) And the connections between South Australia's Flora and Fauna.

In our Historical section we have taken a look at the history of the Milang Lakeside Butter Factory and the efforts to restore it and suggested future uses. And a report on the Murray Darling Basin Plan with a look at some of the efforts being made in revegetation and conservation here and in other parts of the country.

Glen McKenzie

World Wetlands Day

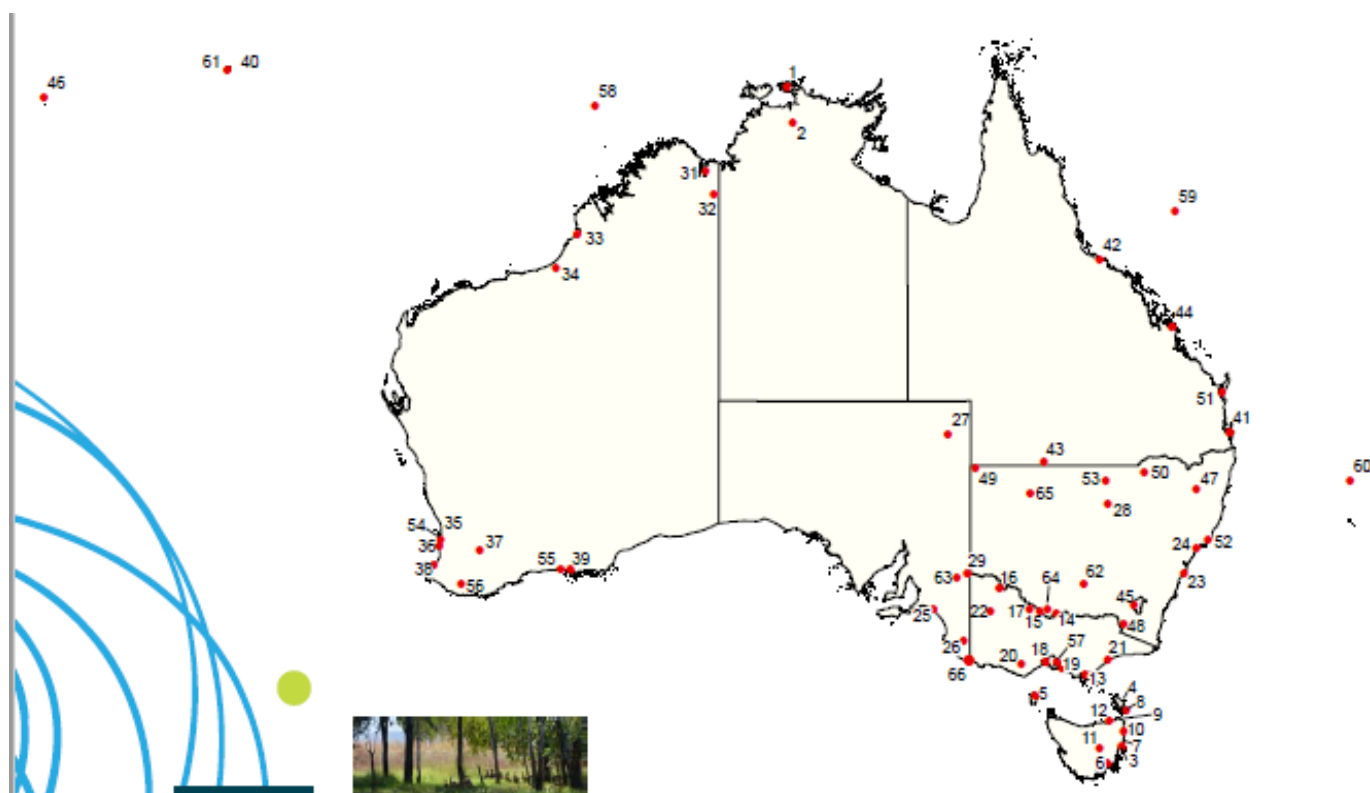
World Wetlands Day is celebrated every year on 2 February. This day marks the date of the adoption of the Convention on Wetlands on 2 February 1971, in the Iranian city of Ramsar on the shores of the Caspian Sea.

The Standing Committee of the Ramsar Convention on Wetlands approved "**Wetlands for a Sustainable Urban Future**" as the theme for World Wetlands Day in 2018.

Wetlands are valuable for the environment, food production, our culture and recreation. A healthy wetland has a rich natural diversity of plants and animals. Did you know that wetlands provide protection from the effects of extreme weather and events such as coastal storm surges and floods? They also store carbon, helping to reduce greenhouse gas emissions.

(For more Information on Australia's wetlands and the Ramsar Convention go to www.environment.gov.au/wetlands or www.ramsar.org)

Australia's Ramsar Sites



Ramsar site	Area (ha)	Ramsar site	Area (ha)
1. Cobourg Peninsula	220 700	34. Eighty-mile Beach	175 487
2. Kakadu National Park	1 979 766	35. Forrestdale and Thomsons Lakes	784
3. Moulting Lagoon	4 507	36. Peel-Yalgorup System	26 530
4. Logan Lagoon	2 257	37. Toolibin Lake	493
5. Lavinia	7 034	38. Vasse-Wonnerup System	1 115
6. Pitt Water-Orielton Lagoon	3 334	39. Lake Warden System	1 999
7. Apsley Marshes	880	40. Hosnies Spring	202
8. East Coast Cape Barren Island Lagoons	4 473	41. Moreton Bay	113 314
9. Flood Plain Lower Ringarooma River	3 519	42. Bowling Green Bay	35 500
10. Jocks Lagoon	19	43. Currawinya Lakes (Currawinya National Park)	151 300
11. Interlaken	517	44. Shoalwater and Corio Bays (Shoalwater Bay Training Area, in part – Corio Bay)	239 100
12. Little Waterhouse Lake	56	45. Ginini Flats Wetland Complex	368
13. Corner Inlet	67 186	46. Pulu Keeling National Park	2 602
14. Barmah Forest	28 515	47. Little Llangothlin Nature Reserve	258
15. Gunbower Forest	19 931	48. Blue Lake	338
16. Hattah-Kulkyne Lakes	955	49. Lake Pinaroo (Fort Grey Basin)	800
17. Kerang Wetlands	9 419	50. Gwydir Wetlands: (Gingham and Lower Gwydir (Big Leather) Watercourses)	823
18. Port Phillip Bay (Western Shoreline) and Bellarine Peninsula	22 645	51. Great Sandy Strait	93 160
19. Western Port	59 297	52. Myall Lakes	44 612
20. Western District Lakes	32 898	53. Narran Lake Nature Reserve	5 531
21. Gippsland Lakes	60 015	54. Becher Point Wetlands	677
22. Lake Albacutya	5 731	55. Lake Gore	4 017
23. Towra Point Nature Reserve	604	56. Muir-Byenup System	10 631
24. Hunter Estuary Wetlands	2 969	57. Edithvale-Seaford Wetlands	261
25. The Coorong and Lakes Alexandrina and Albert	140 500	58. Ashmore Reef National Nature Reserve	58 300
26. Bool and Hacks Lagoon	3200	59. Coral Sea Reserves (Coringa-Herald and Lihou Reefs and Cays)	1 728 920
27. Coongie Lakes	2 178 952	60. Elizabeth and Middleton Reefs Marine National Nature Reserve	187 726
28. The Macquarie Marshes	19 850	61. The Dales	583
29. 'Riverland'	30 640	62. Fivebough and Tuckerbil Swamps	689
30. There is no site with this number*		63. Banrock Station Wetland Complex	1 375
31. Ord River Floodplain	141 453	64. NSW Central Murray State Forests	84 028
32. Lakes Argyle and Kununurra	117 495	65. Paroo River Wetlands	138 304
33. Roebuck Bay	34 119	66. Piccaninnie Ponds Karst Wetlands	862
		Total area (ha)	8 314 125

* In May 2010, two separate Ramsar sites in Kakadu National Park were expanded and merged to form the Kakadu National Park Ramsar site. See site 2.



 Fishers: Glen and Tracy Hill, pictured at a fair at Meningie in March, hope to develop an alternative to the planned release of the carp virus. Photo: Marianne Cunneen.

Carp herpes virus: Inland Seafood Co-Op plans commercial fishing as alternative

Where some see a scourge, Tracy Hill sees an opportunity. She and her husband Glen are working with other Murray-Darling Basin fishers on an alternative to the planned release of the carp herpes virus in 2018.

The virus would kill almost every carp in the river, affecting South Australia's water supply and potentially, Mrs Hill worries, de-oxygenating it to the point that many or all native species could be wiped out as well.

Instead of that "nuclear option", she is proposing a commercial harvest of the fish across three states to bring their population under control.

"I've got an order I could fill tomorrow of 10,000 tones of carp to China," she said. "I've got fish meal places, fertilizer places.

"If they're going to pay someone to take the fish, they may as well pay someone to make something out of it. Under the name Inland Seafood Co-Op, Mrs. Hill and her collaborators hope to develop an independent plan to lower carp populations while providing employment, revenue and food security.

Carp might be considered a pest in Australia, she said, but it was the most widely eaten fish in the world, and delicious when handled and processed correctly. The Co-Op's plan would centre on a commercial harvest, but incorporate long-term measures such as genetic sterilization, which might take decades to become effective.

"A forward-thinking industry is trying to get out there and ... create solutions."

Tracy Hill

Mrs. Hill described the National Carp Control Plan's focus on the virus as a failure of imagination.

On its [website](#), the National Carp Control Plan (NCCP) acknowledges the potential of commercial fishing to remove large quantities of carp quickly in specific locations. But it said fishing had "low viability" as a control plan because it was not economical and depended too heavily on market prices, costs and the quantity of available fish. That assessment was based on studies from 2005 and 1998. When used correctly, based on science, bio-control would be a better option.

However, the NCCP also noted that mass carp mortalities "could have water quality impacts detrimental to native species". The terms of reference for the NCCP do not describe the release of the virus as a certainty, but the NCCP is required to develop a strategy for its potential release and "follow-up activities", which can then be accepted or rejected based on the available science. The NCCP's final plan is due to be presented at the end of 2018.

Source : Murray Valley Standard, 13th Nov 2017

National Land care Program - Small Environmental Grants

Just letting you know that applications are now open to community, environment and other natural resource management groups to share in \$5 million worth of [Environment Small Grants](#), available under the [National Landcare Program](#).

One off grants between \$5000 and \$50,000 are available for activities including invasive pest and weed management, revegetation, erosion control, threatened species conservation, community engagement and Indigenous land and sea planning. Application details are at this site - www.business.gov.au/Assistance/National-Landcare-Program-Environment-Small-Grants

Applications close on **19 March 2018**.

Birds of Prey in the Fleurieu

Peninsular



**Southern
Boobook
(Ninox
Boobook)**

Description: There is considerable individual and geographic colour variation. The facial disc is paler than the feathering of the head, and has large dark patches behind each eye, and an indistinct whitish rim. The eyes are pale greenish-yellow to yellow and the bill is bluish-grey. Upperparts are pale to dark brown with irregular pale or white spots on the wing-coverts. The primaries and secondary wing feathers are rufous-brown with dark brown bars. The tail is dark rufous-brown with paler bars, becoming whitish-buff on the inner webs.

The throat is whitish, and the rest of the underparts have broad rufous-brown streaks and cross-bars.

Tarsi are feathered, and the brownish-grey toes are bare, with bristles on the upper-side. Claws are dark horn with darker tips.

Size: Length 27-36cm. Wing length 188-261mm. Tail length 100-160mm. Weight 146-360g. Females often larger than males.

Habits: Generally nocturnal, roosts by day in thick foliage. When threatened, they sit bolt upright, with feathers pressed tight against the body, and turn side-on to the source of the threat, appearing long and slender.

Voice: Normal call is a brief double hoot with the second note pitched lower than the first, each note lasting for about a quarter of a second with a half second gap in between. There is usually a brief pause and then the call is repeated at a frequency of about twenty calls a minute. Calling may last for only a minute or two or may go on for hours. Boobooks also call in a low, soft 'pot pot pot por pot pot por'. This is a call between mated birds but its use is not confined to the breeding season. The breeding call is a tremulous braying call, the equivalent of the bleating call of the Powerful Owl.

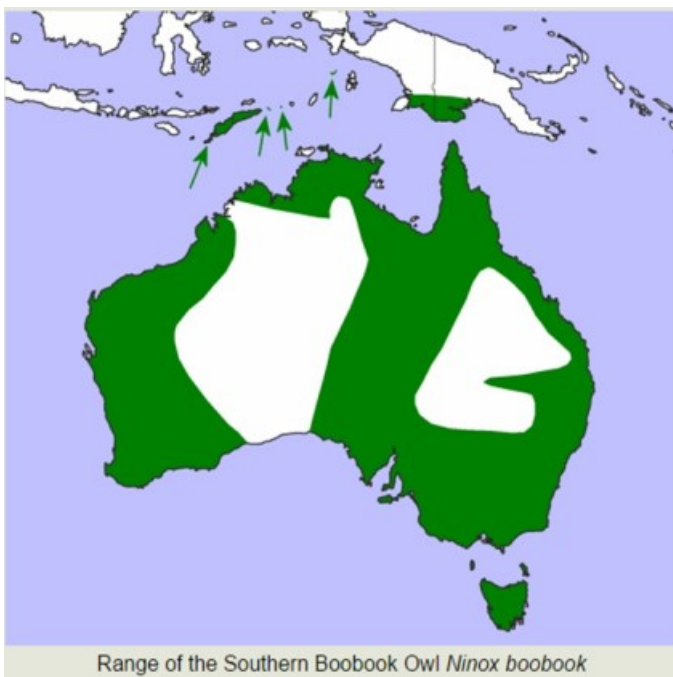
Hunting & Food: The type of prey taken seems to vary greatly with individual birds. Generally feeds on small mammals, especially the House Mouse *Mus musculus*, and birds up to the size of a House Sparrow. Will also take invertebrates including beetles and moths. Hunts from a perch, such as a low branch or fence-post. Flying insects are taken by hawking flight through and above trees, taking only one insect each flight, and transferring it to the beak before bringing it to the nest or landing to eat it. Other insects are snatched from foliage or caught on the ground.

Breeding: The breeding season is August and September almost throughout Australia. One or both birds may roost in nest hole together for weeks before breeding starts but these out-of-season roosts are not always chosen as the eventual nest site. The nest can be a wide variety of tree hollows - the tree may be alive or dead with a hole in a limb or the main trunk, upright or sloping. The male cleans out the hollow before eggs are laid - usually 2 or 3, rarely up to 5. The eggs are white and almost round, being 40-45mm by 32-37mm. They are laid at 1 to 2 day intervals and are incubated for 35 days. The young have white down and are fledged in 5 to 6 weeks. Like other Ninox Owls, they leave the nest well below full size and with abundant down. They are probably dependent on the parents for 2

to 3 months after this.

Habitat: Almost anywhere where there are trees. Eucalypt forest and woodland appears to be the optimum habitat but also mallee, mulga, semi-desert, tree-lined creeks, residual timber on farmland, leafy suburbs, offshore islands. They are generally absent from dense rainforest, except for the Red Boobook of north Queensland.

Distribution: Almost Australia-wide including many offshore islands. Lesser Sunda Islands, Timor and New Guinea.



Lakeside Butter Factory – Milang

Starting operations on 2nd July 1893; operated by Mr Edwin Buckland & Mr Arthur Lipson until 1904. The factory was on Darandra Tce, on the top of Todd's Hill, Milang.

The original building was of stone with a curved corrugated iron roof with a large



cellar which served as a cold storage area for the tins of butter and later the rounds of cheese. Originally there was a tunnel built under Darandra Tce which came out on the other side to catch the afternoon breeze, (The Milang Doctor) to help keep the cellar cool. It became very popular among the children of the township to go into this tunnel, to see how far they could go in.

From the very first butter from the Lakeside Butter factory became renowned for its quality and taste and won many awards over the years. The factory became a must see for visitors to the township.

On 27th Sept 1893 the South Australian Government passed an act which came to be known as the "Butter Bonus Act." This act was designed to encourage exports of butter from the colony of South Australia. The act provided for an inspector to inspect shipments of butter ready for export. This bonus was paid on shipments of 100 pounds or more and entitled the manufacturer to receive a bonus payment of two pence per pound on butter that was deemed acceptable by the inspector.

Along with other businesses the Lakeside Butter factory exported its butter to England. The Mount Barker Courier dated 6th October 1893, reported that the Lakeside butter Factory shipped 2 ½ tons of butter as part of a 10 ton shipment on the "Oruba." Later we learn from "The South Australian register" dated – 28th August 1895 – that the owners of the Lakeside Butter Factory received £769 10s 6p as a butter bonus payment.

Since Mr Buckland and Mr Lipson owned the Lakeside butter factory there have been a number of different owners. In 1904 Mr Lipson sold the factory as he was mov-

operated the factory from 1904 – 1911; next Mr D H Griffin, who owned a bakery in Goolwa, bought the property and owned it from 1911 – 1915. From 1915 – 1919 an Adelaide produce Company; Murphy Fromen & Co owned and operated the factory. Farmers Union Co-op were the last company to operate the factory as a butter and cheese factory and they operated the factory from 1919 till the 1950's. The property was then bought by the Simm's family and used as a private residence and remained in their family until 2016.

In 2016 with the aid of a grant of \$325,000 from the Alexandrina Council and funds from MADCA, (Milang and Districts Community Association) the Butter Factory and adjoining manager's cottage were purchased by the community.

The aim of the purchase is to restore this local Icon to full functionality so that it becomes an asset to the community. So far there has been over 500+ hours spent by volunteers in clearing out the buildings and organising and running several fundraising events. However, it will take a lot of work and money to restore these buildings to make them a sustainable community asset.

An engineer's report commissioned by the Alexandrina council identified some \$300,000 of structural repairs to be undertaken. As well as cosmetic treatment, such as painting, landscaping etc.

In the meantime, the Steering & fundraising committees are seeking the public's help in either financial contributions, (either via sponsorship or donation), or as a volunteer or in donation of materials to help in the restoration process.

Further information can be found at either on their webpage: <http://www.milangbutterfactory.org.au> or on their Facebook page: Milang lakeside butter factory

Email: milangbutterfactory@madca.org.au



Autumn Lower Murray Bird Field Surveys

Are you interested in bird watching?
Would you like to improve your knowledge of local bird species and contribute to Citizen Science?

Lawari Conservation Park

Friday 13 April 2018, 8:30am – 1pm
Denver Road, Hindmarsh Island

Book here by 10 April
<https://autumn-lawari-2018.eventbrite.com.au>

Laratinga Wetlands

Thursday 19 April 2018, 10am – 12pm
Mount Barker, school holiday kids workshop

Book here by 17 April
<https://birdwatchingfun.eventbrite.com.au>

Tolderol Game Reserve

Saturday 28 April 2018, 8:30am – 1pm
11 kms south of Langhorne Creek

Book here by 25 April
<https://autumn-tolderol-2018.eventbrite.com.au>

Cost

FREE with morning tea provided.
Binoculars and ID guides will be available to loan.

More information

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This project is supported by the South Australian Murray-Darling Basin Natural Resources Management Board through funding from the Australian Government's National Landcare Program.



Australian Government



National Landcare Program



"Life is thickly sown with thorns, and I know other remedy than to pass quickly through them. The longer we dwell on our misfortunes the greater is their power to harm us."

Voltaire

Murray-Darling Basin snapshot



Within the Basin, there are over **40 Aboriginal Nations**



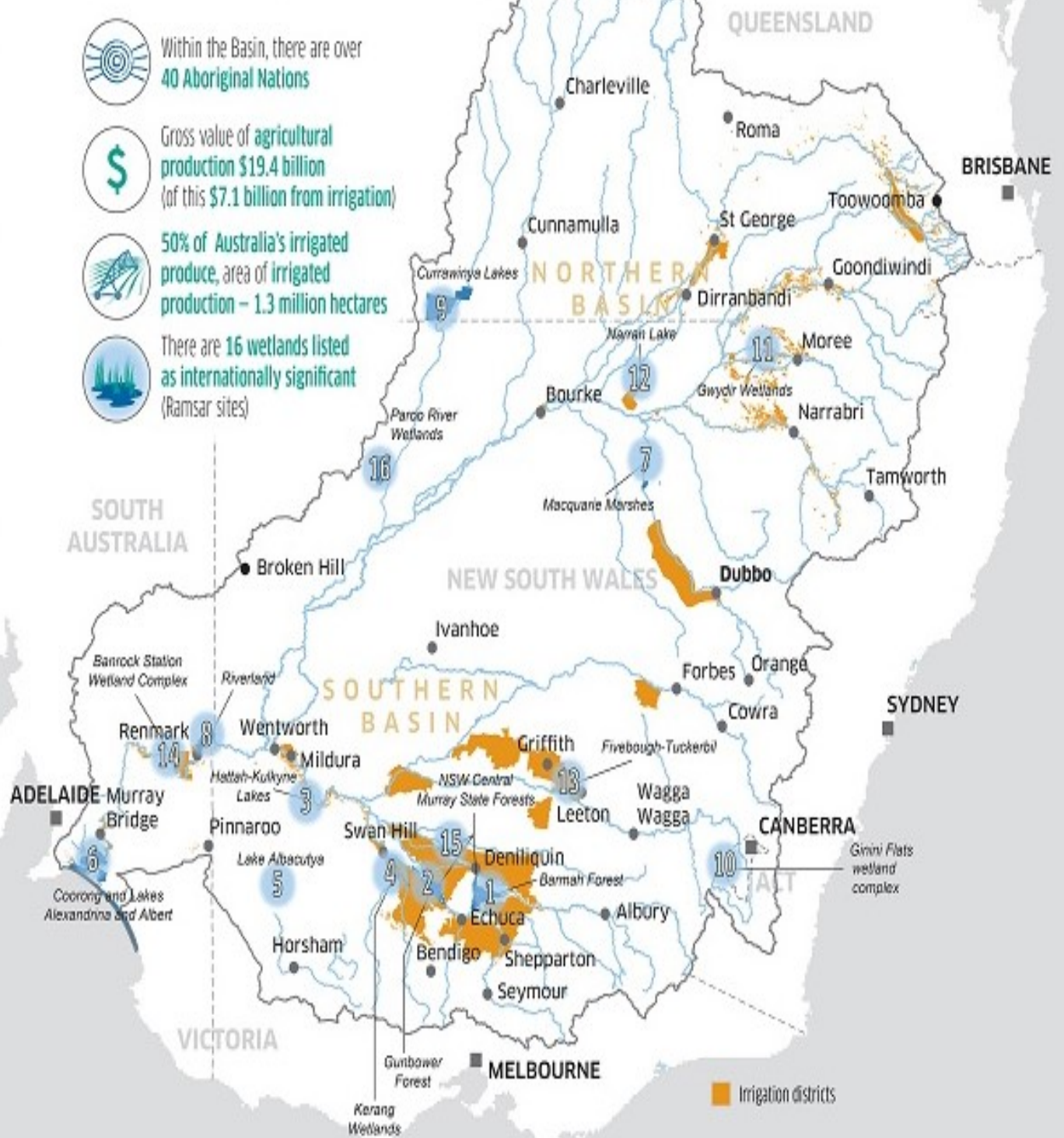
Gross value of **agricultural production \$19.4 billion** (of this \$7.1 billion from irrigation)



50% of Australia's irrigated produce, area of irrigated production – 1.3 million hectares



There are **16 wetlands listed as internationally significant (Ramsar sites)**



Murray Darling Comments

Taken from "The Lakelander" – dated Thursday, 27th July 2017

The Murray Darling Basin Association is again calling for local governments to be given a voice in the implementation of the Basin Plan to support its continuing implantation and avoid a repeat of the problems revealed in last night's Four Corner report.

The report asserted that billions of litres of water, purchased by the commonwealth for the environment, have been pumped from the Barwon- Darling system into private dams in line with New South Wales Government water extraction rules.

In the wake of the report the MDA, which represents over 100 member councils right across the basin, has made a renewed push for local government to be afforded a long- overdue formal role in informing decisions on the implementation of the Basin plan.

MDA chairman, Cr David Thurley, said the best way to ensure local knowledge informed the decisions that effected local communities was to give the association a seat on the Basin Officials Committee.

"Our local communities and councils across the basin have worked hard and borne the pain of adjusting to reduced water allocations," he said.

"They have been aware of the anomalies and irregularities that affect their local areas for a long time, and have sought to be heard."

"Our local government members in the far west of NSW are today feeling vindicated that their concerns were not misplaced,

and are looking forward to working together with their federal counterparts, with the irrigators and farmers in their communities, and with local government across the Basin to ensure the Basin Plan is implemented, and that rules are applied in a fair and equitable way."

MDA chief executive officer, Emma Bradbury, said the issues identified in the Four Corners Report were those of compliance and enforcement or rules under the relevant water sharing plan.

"These matters will no doubt be considered by the responsible authorities to determine whether further action is appropriate," she said.

"It is important that rigorous checks and balances are in place, and that effective compliance and enforcement activities enable the community to have faith in the Basin Plan, and in the state run water sharing plans that support its implementation."

Ms Bradbury said rules for water allocation, access and extraction were governed by water resource plans, with the Basin Plan requiring that by July 2019 all Basin water resources are to be covered by plans approved by the MDBA to ensure that sustainable diversion limits are achieved.

"There are thirty – six water resource plan areas across the Basin, Clearly, not every plan has the settings right, and work to complete the plans must continue," she said.

Ms Bradbury said the matter raised in the Four Corners report did not compromise the integrity of the Basin Plan, but emphasized the need for communities and all levels of government to work together and stay on course.

Goolwa to Wellington's 20 Million Tree's Projects are Right on Track



In South Australia, the Goolwa to Wellington Local Action Planning Association (GWLAP) is currently delivering a large scale revegetation project through the 20 Million Trees program with Landcare Australia.

Creating critical catchment to coast connectivity will buffer and link important areas of bush around the lower lakes to protect habitat

for the Mount Lofty Ranges southern emu wren, and malleefowl.

The three year project is due to be completed later this year and will establish nearly 100,000 plants on 124 hectares over nine different site locations.

To date we have achieved 226 km of machine direct seeding (2016 and 17) with 27 species in the seed mix and 23,525 seedlings have been planted (2017) with 59 different species, and preparation is underway for the 2018 season – well on track to achieve our targets.

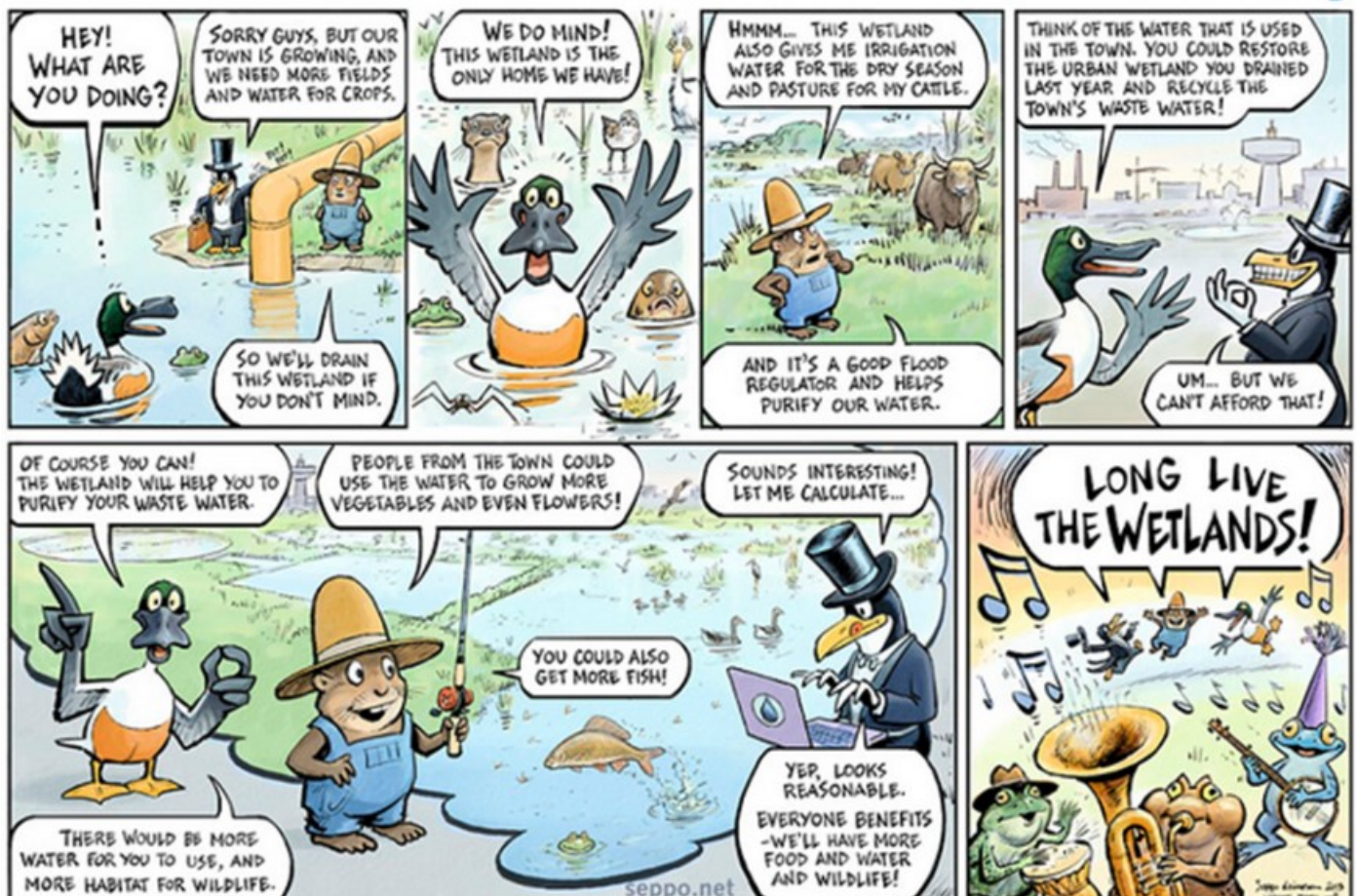
This has all been achieved thanks to the hard work of our Green Army teams, hundreds of volunteers, our staff and works crew and some amazing local contractors.

This project has been supported by Landcare Australia through funding from the Australian Government's National Landcare Programme.

(originally published in Gwlap's newsletter)

FOOD, WATER AND WETLANDS

www.ramsar.org



Murray-Darling Basin Plan's extra 450-gigalitre target could be reached without harming upstream communities: EY report

Peri Strathearn

Source: Murray Valley Standard, 22nd Jan 2018

Hopes are rising that a year - long argument about one aspect of the Murray, Darling Basin Plan may be settled with an independent report released on Friday.

The number at the heart of the plan has always been 2750 gigalitres: the amount of extra water which will eventually be returned to the basin environment each year over and above what humans used in the year 2012, the year the plan was adopted.

But during the plan's formation, South Australia's government negotiated for the return of an extra 450 gigalitres, on the condition it could be returned without harming upstream communities.

Friday's report by EY, formerly Ernst & Young, attempted to give a definitive answer to that question.

Yes, it could be done.

However, the report noted four main risks: that sticking to set budgets and timelines could prove difficult, that participation rates in on-farm efficiency projects needed to improve, that not enough people understood why water needed to be returned to the environment, and that recovery programs needed to be designed with communities and industries in mind.

It projected that only a fraction of the water savings now required - up to 62 of the 450 gigalitres- would come from South Australia.

Up to 12 GL could be saved through on-farm efficiency upgrades, for example, by extending funding to more than 400 farmers who applied for but did not receive it through the SA River Murray Sustainability

program .

The report also floated the idea of a federal subsidy for Adelaide's Desalination plant that would make it more viable to run, reducing the amount of water Adelaide would need to draw from the Murray.

Achievement of the 450GL target would rely heavily on potential efficiencies in area's such as the Goulburn and Murray, in Victoria, such as reduction of evaporation and lining of irrigation channels .

Federal Agriculture and Water Resources Minister, David Littleproud, said he believed the report offered a way forward.

"I am keen to work with basin states to begin implementing many of these efficiency measures in the coming months," he said.

"We can lay out the path to do this when the ministerial council meets in April."

"I will not play politics with this . . . What farmers, rural businesses and communities need most is certainty and to see that we are nearing the light at the end of the tunnel."

South Australia's Water and River Murray minister, Ian Hunter, put it more bluntly.

"This detailed report should be the impetuous to finally get us all moving forward with the (Murray-Darling) basin plan instead of continuing to stall and argue," he said.

"EY has the framework; the Commonwealth has the money; the market has the technology; the farmers and irrigators have the will; now the upstream states just need their politicians to get out of the way and give farmers access to the \$1.5 billion that is sitting in the bank, ready to improve their businesses, grow jobs and return water to the river, as agreed in 2012.

Link for pdf of EY Report: www.mdba.gov.au/about-us/governance/ministerial-council

Coorong Revegetation Project Win

Source: "The Lakeland" Thurs 8 Feb 2018 VolXLIII; pg 7; (edited)

A three year revegetation project will begin across the Coorong and Tatiara Districts this year, following the announcement of \$100,000 in funding for the Coorong & Tatiara Local Action Plan Group. (CTLAP)

More than 61,000 native plants will be planted across the 117 hectare site, helping to restore critical native habitat and areas of refuge for native wildlife.

This project will deliver benefits to threatened species such as the orange-bellied parrot, Malleefowl, Bushstone curlew and the red tailed Black Cockatoo.

The project was awarded funding from the Australian Governments, *20million trees program* which, as the title suggests, aims to see 20 million new trees planted across Australia by the year 2020.

Coorong District Council Mayor, Neville Jaensch, said this exceptional project would help protect and sustain one of South Australia's most significant environmental icons.

"We are fierce about protecting and ensuring sustainable biodiversity practises around the Coorong and Lower lakes," Mayor Jaensch says, "Not only do we have our own interests at heart, but we also want to make sure the magic of the Coorong, including all of its native flora and fauna, are here for future generations to enjoy."

"We have this globally renowned environmental beauty on our doorstep, and programs like this are vital to ensuring we can take care of it."

CTLAP Sustainability Officer, Samantha Blight, said the project would utilise existing remnant vegetation to create corridors or pathways, which will provide a habitat for native wildlife, including those threatened

species.

Ms Blight says the project will restore a large area of habitat across the district and private landholders will assist us by planting 61,180 trees on their properties. It will also restore 34 hectares of Grey box grassy woodland by planting understory trees which will enhance and connect existing vegetation.

An additional bonus is the thousands of native plants and trees required for the project will be specially grown by Meningie Nursery, offering a significant boost to a local business.

Between 2002 and 2016 the CTLAP was awarded \$3.6 million from the Australian Government for projects including establishing and reconnecting native ecosystems within the joint regions. This new project will build upon its success.

Mayor Neville Jaensch also congratulated the CTLAP on its latest funding success, saying the group is firmly focussed on the regions environmental future. "Over the twenty years CTLAP has been in operation, we have seen many significant sustainability and biodiversity projects carried out within the Coorong and Tatiara region," he said.

The CTLAP is run by passionate people and has always worked closely with the community to identify priority issues and develop a range of land management and biodiversity projects. Thanks to the continued hard work of this group, our region's environmental future is in safe hands.

Planning for the project is now underway and site preparation will begin in the coming months.

Coming Up Next Issue

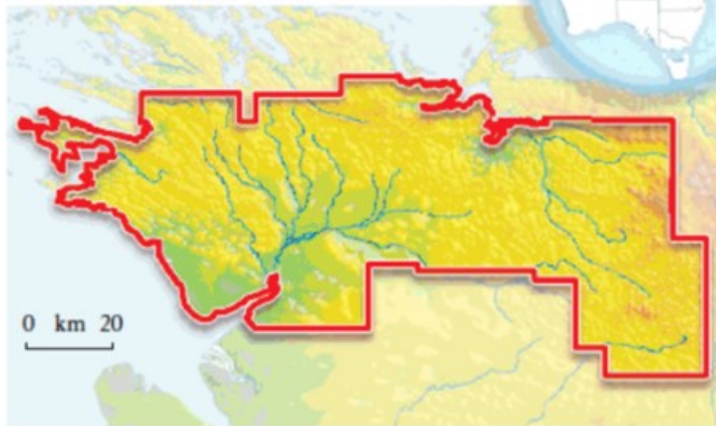
World Water Day - 22nd March

Peregrine Falcon

Yampi – ADF Training Grounds & AWC join hands in looking after a Kimberly Jewel.

KEEPING CRITTERS SAFE

Defence's Yampi Sound training area



Source: Australian Wildlife Conservancy

In a remote corner of the Kimberley lies a vast property that has been largely unexplored for almost 50 years. The land is protected as Australia's second largest military training area. Towering escarpments stand guard over long, hidden valleys decorated by pockets of rainforest. Tropical streams cascade over waterfalls and through chains of rock pools before meandering through savanna woodland until they reach the coast. Rugged sandstone and basalt ranges extend into the ocean, creating an

intricate pattern of bays and inlets flanked by dense mangrove forests. Held as a military training area since the 1970's, the extraordinary natural values of this place - the **Yampi Sound Training Area (Yampi)** - will now be safeguarded under an innovative partnership between the Department of Defence and AWC. AWC has been contracted to design and deliver science and land management at Yampi in a manner that integrates conservation with the property's vital role as a military training area. Located within the traditional country of the Dambimangari people, Yampi covers over 5,600 sq km, straddling three different bioregions and incorporating almost 700 km of coastline.

When Defence purchased the land, it secured an area of outstanding ecological significance that now rivals Australia's great national parks for the diversity and abundance of threatened wildlife.

Yampi is a vital last stronghold for species like the Golden Bandicoot and the Golden-backed Tree-rat and an important



refuge for threatened and endemic species such as the Monjon, the Narbalek, the Red Goshawk, the Flatback Turtle and the Gouldian Finch.



Working closely with the Dambimangari Aboriginal Corporation, AWC will design and deliver feral control, fire management and a world class science program, protecting Yampi's natural values while supporting its continued use as a training area. **It is the first partnership of its kind in Australia between conservation and Defence, and represents a model with the potential for broader application.**

Through this project, Defence is making a tremendous contribution to conservation, enhancing protection for one of the country's great natural assets.

Video - <https://www.youtube.com/embed/U6qcYZ9ZMbs>

Understand the connection between some of SA's flora and fauna

Source: Good Living - E magazine (DEWNR) 14 Feb 2018

Learn how relationships are important in nature – like this special one between mistletoe and the mistletoebird.

Everything in nature is connected, so it's no surprise that native plant and animal species rely on each other to survive and thrive.

While it might be easy to understand and imagine the ways in which animals rely on plants to survive, the way plants rely on animals may be a little less obvious. So let's take a closer look at mistletoe and the mistletoebird to get a better understanding.

Mistletoe: the food source

You might be most familiar with mistletoe as the Christmas decoration that could get you a kiss – if you stand under it long enough! – but it's also an important food source for a particular species of bird.

Mistletoebirds (*Dicaeum hirundinaceum*) love mistletoe berries – it's their favourite food. They gobble them up, but interestingly they don't digest the seed inside the berries.

From mouth to... well, you know where we're going with this... Let's just say the mistletoe seed can make its way through the mistletoebird in as few as four minutes. Despite this quick process, the bird manages to draw plenty of nutrients from the berry.

Once the seed has passed through their system it is planted where it lands. Or more accurately, the undigested stickiness helps the seed stick to whatever plant it lands on, and from there it can grow.

Mistletoe: the parasite

In Adelaide, there are two species of mistletoe you're likely to spot box mistletoe (*Amyema miquelii*) and harlequin mistletoe (*Lysiana exocarpii*).

Mistletoe is a parasite, which might automatically make you think it is bad, but it really just means that it relies on something else to survive – in this case, trees.

Mistletoe doesn't have roots but it does

have something similar called a haustorium, a highly modified root that penetrates the host tree tissue, which is how it can tap into, and feed from, the tree it grows on.

It draws some of the nutrients it needs from the tree but because it can actually create some of the nutrients it needs itself, it's only considered a half parasite.

Mistletoe: the reputation

Mistletoe has a reputation as a tree-killer because it's thought that their overabundance on a host tree can lead to its death. But this status is not completely accurate and the link between mistletoe abundance and tree decline is not straightforward.

On its own, mistletoe is not commonly the reason for tree deaths, however, it might contribute to them when combined with other stressors such as drought.

According to the authors of 'Mistletoe, friend and foe: synthesizing ecosystem implications of mistletoe infection', mistletoe can actually be beneficial to an overall ecosystem by helping improve biodiversity.

In fact, one study showed that three years after removing mistletoe from woodland sites, almost 30 per cent of woodland-dependent bird species were lost.

Some of the information in this blog is derived from Adelaide: nature of a city, edited by Chris Daniels and Catherine J. Tait. Professor Chris Daniels is also Presiding Member of the Adelaide and Mount Lofty Ranges Natural Resources Management Board.

Main image: Mistletoebird courtesy of Martin Stokes

