
RIVERVIEW

*The Swan Canning
Riverpark's magazine*

ISSUE 3

FEATURES

DIVING THE SWAN

**RIVER PRAWN
COMEBACK**

**BREATHING LIFE
INTO OUR RIVERS**



REGULARS • River Guardians • River Rangers • RiverView interview • Competitions

WELCOME

Welcome to the summer edition of RiverView. It showcases the key projects delivered by the Swan River Trust.

This edition's feature on the Trust's oxygenation initiative shows the evolution of an experiment into a long-lasting and very necessary ecosystem support program.

With the commissioning of a third plant on the Canning River later this year, the Trust and our partners at the Department of Water will add another 2.2 kilometres to the area where we can deliver critical oxygen relief to the river.

"OF COURSE, WE STRESS THAT OXYGENATION OF THE SWAN AND THE CANNING RIVERS – WHILE DEMONSTRABLY EFFECTIVE – IS A LIFE SUPPORT SYSTEM WHICH WE DELIVER WHILE CARRYING OUT LONG-TERM AND MORE DIFFUSE EFFORTS ACROSS THE CATCHMENT."

- Rod Hughes

This echoes comments in our article featuring Eastern Hills Catchment Management program coordinator Karen Warner who notes how river managers must work to long-term goals, making decisions based on good science now but with an eye to the future environment in which we want to live and work.

To that end, we also acknowledge our partners at the City of Belmont and Town of Bassendean who are now leading the way in developing precinct plans for managing the river foreshore. It's through these projects that we can avoid

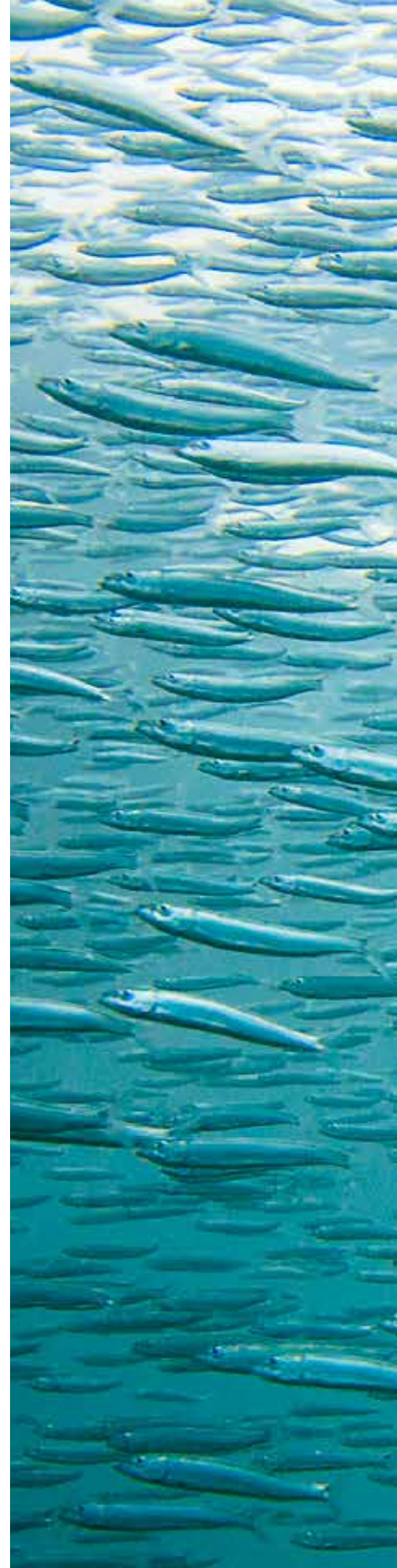


unintended consequences of ad hoc approaches and make better long-term decisions about how we want to manage and protect special places along the river.

There has never been a more graphic reminder of why all river users must be careful with their rubbish and waste than the 2012 episode where dolphin calf Gizmo was badly entangled in fishing line. This was a driver for the Reel It In fishing line disposal bin initiative. There has been a highly enthusiastic response to this project and as our article shows we expect up to 20 kilometres of fishing line to be collected in the first year – that's a lot of fishing line that won't be harming wildlife.

So many of the articles in the pages that follow show that managing and protecting the Riverpark is all about partnerships and collaborations. Again, on behalf of the Swan River Trust, I thank all of our valuable partners.

Rod Hughes
General manager
Swan River Trust



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Contributions and comments are welcome and should be sent to miranda.holker@swanrivertrust.wa.gov.au

Photo: **Matt Kleczkowski**
Cover photo: **Stewart Allen**
Design: **Miranda Holker and Rachel Hutton, Swan River Trust**

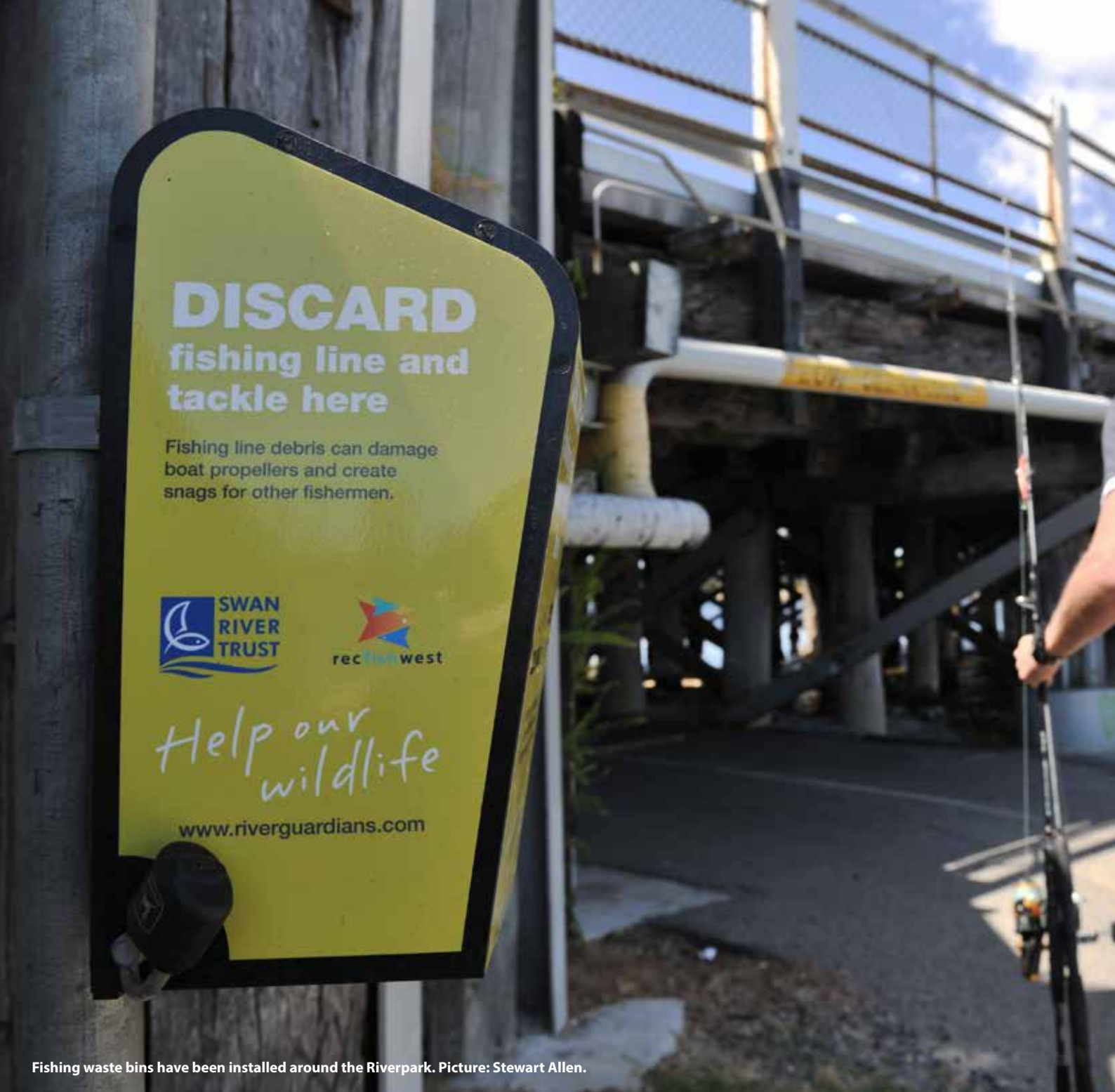


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*NGAALA KAADITJ WHADJUK MOORT KEYEN KAADAK
NIDJA BOODJA.*

WE ACKNOWLEDGE THE WHADJUK PEOPLE AS THE
ORIGINAL CUSTODIANS OF THE LAND AND WATERS.



Fishing waste bins have been installed around the Riverpark. Picture: Stewart Allen.

REELING IN WASTE

Fishing waste bins are helping to reduce fishing line entanglements impacting on dolphins, pelicans and other wildlife in the Swan Canning Riverpark.

The Swan River Trust has joined forces with Recfishwest, Native Animal Rescue (NAR), Clean Marine and five

Perth riverfront councils to install fishing waste units at popular recreational fishing locations throughout the Riverpark. It is hoped the project will stem the

impact discarded fishing gear has on native wildlife.

More than 25 dedicated fishing waste bins have been installed at jetties, fishing platforms, traffic



incinerating fishing line and hooks and recycling lead sinkers.

"This initiative is a perfect project for our River Connections program, which works with at risk youth," NAR chief executive officer Lizzie Aravidis said.

"Emptying and auditing the fishing waste units adds another dimension and an important learning experience for our at risk youth who are already out on patrol removing fishing waste."

The project's first six months of data suggests each unit will collect up to 30 plastic bait bags per week. This translates to about 700 bait bags per week or 36,400 bait bags per year collected by the 25 units. The bins also collected lures, sinkers, hooks, floats, tackle packaging and general rubbish that was prevented from entering the river system.

BASED ON THIS INITIAL DATA, THE PROJECT'S 25 UNITS ARE EXPECTED TO COLLECT MORE THAN 20 KILOMETRES OF FISHING LINE PER YEAR.

Recfishwest chief executive officer Dr Andrew Rowland said the units provide a cost effective solution to benefit the river environment and urged the recreational fishing community to embrace the project.

"All responsible fishers know the damage discarded fishing line can cause to wildlife and the majority of them are out there doing the right thing," Dr Rowland said.

"Fishing line placed in normal bins can still find its way into the river through overflowing bins.

"These specially designed fishing waste units will eliminate this from happening and will help educate the wider community about the importance of correctly disposing of fishing gear."

The fishing waste bin project has attracted support from the Cities of Melville, Bayswater, Belmont, Canning and South Perth and the data collected will be used to evaluate the project after 12 months.

bridges, yacht clubs and boat ramps along the Swan and Canning rivers as part of the 12 month pilot project.

Launched in December 2013, the project has attracted widespread media coverage and is promoted under the Reel It In campaign. It has now evolved into an annual foreshore clean up event.

NAR workers empty the fishing waste bins once a week, recording the contents on specialised data sheets. All rubbish collected is correctly disposed of including

BINS ROLLED OUT AROUND THE RIVERPARK

Fishing waste units are made from 100 per cent recycled materials, are fire proof and are designed with high visibility stickers so they can be easily identified.

The units have been installed at Garratt Road Bridge, Maylands jetty, Narrows Bridge, Applecross jetty, Point Walter jetty and South Perth boat ramps along the Swan River, and Canning Bridge, Riverton Bridge and a variety of fishing platforms and other locations along the Canning River.

Fremantle Ports is trialling a further six bins along the North and South Moles.

The Cockburn City Council has also installed two units at popular beachfront fishing locations in Cockburn Sound.





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Proudly supporting the Swan River Trust and Alcoa Landcare Program for 16 years

In conjunction with the Swan River Trust and Perth Region NRM, Alcoa has distributed \$6.5 million to 1000 community landcare projects throughout the Swan Canning Catchment.





TACKLING A DANGER TO WILDLIFE

Continued from page 5: The fishing waste bin project reduces the adverse impacts of discarded fishing line on the Riverpark's small resident dolphin population. It will also help protect birds and other marine life which can drown, lose limbs, starve or die if they become entangled.

Swan River Trust principal scientist Dr Kerry Trayler said four Riverpark dolphins had died as a result of injuries caused by fishing waste in the last five years.

"A fifth dolphin calf, Gizmo, was severely entangled in 2012 but was luckily rescued and freed and in the same year Fingers, an adult who has been visiting the Riverpark for 20 years from Cockburn, had life threatening injuries from an entanglement of his tail fluke and has not been sighted since," she said.

Native Animal Rescue chief executive officer Lizzie Aravidis said many waterbirds such as pelicans and other wildlife were suffering severe injuries from fishing line and tackle and animal rescuers were dealing with bird entanglements on a weekly basis.



Pictures (from top) Gizmo, a three-year-old dolphin calf, was entangled in discarded fishing line and netting for two months before his rescue (picture: Richard Gorham/Department of Parks and Wildlife), a darter rescued with cloth tangled in his beak was later released after veterinary treatment (picture: Miranda Holker), fishing line and tackle removed from a fishing waste bin in Applecross, discarded fishing equipment including line and nets can have a devastating effect on wildlife.



DIVING THE SWAN

As a child, marine ecologist and photographer Matt Kleczkowski was mesmerised by the aquatic wonders of the Swan River. Now an adult, he is still in awe of what lies beneath.

Marine biologist Matt Kleczkowski researches and photographs some of the world's most amazing marine environments.

But he has never lost the passion for diving the Swan River.

"People are often surprised when I say I dive the Swan," Mr Kleczkowski said. "I'm not sure why as the downstream reaches from Mosman Bay to the mouth have some great

dives with so many interesting creatures to photograph or eat.

"In the right conditions, on a slack tide, prawns can be prolific on the drop-offs around Bicton Baths and Mosman Bay and there have been times where I have had hundreds of King Prawns, up to 22 centimetres long, crashing into my mask.

"At other times, when I was foolish enough to leave the cameras at

home, I have seen remarkable subjects such as schools of sea horses arranged in musical scales.

"The lower reaches resemble a coastal embayment and the intrusion of salt water has brought with it marine fishes such as Skipjack Trevally, Tailor, Herring, Whiting, Butterfish, King Wrasse, Brown Spotted Wrasse, Samson Fish and Pink Snapper as well as the Banded Toadfish or 'blowie'.



Photos (clockwise from left): A starfish in the Swan River, photographer Matt Kleczkowski in his element, a colourful jellyfish, the Western Australian Seahorse (*Hippocampus angustus*).



“PEOPLE ARE OFTEN SURPRISED WHEN I SAY I DIVE THE SWAN.”

- Photographer Matt Kleczkowski

“The Giant Herring, a northern speedster, can also be found harassing baitfish schools in the shallows of the Swan in years when the Leeuwin Current is strong.

“The beauty of diving the downstream reaches of the Swan is that not only do you see marine and coastal species, you are also likely to encounter the estuarine fish such as Black Bream, Silver Bream and the hallowed Mulloway.

“I have yet to succeed in the challenge of photographing Mulloway or Giant Herring in the Swan but it is the thrill of interacting with such enigmatic species that lures me back to dive the Swan at every opportunity.”

Visit www.kleczphoto.com.au to view more of Matt Kleczkowski's photographs.



Photos (clockwise from left): Gobbleguts (*Apogon rueppellii*), Banded toadfish (*Torquigener pleurogramma*), Tube Anemone (*Cerianthus membranaceus*). Following page: Sea Mullet (*Mugil cephalus*).



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- Matt Kleczkowski





COMMUNITY ROLE IN RIVER PRAWN COMEBACK

The iconic pastime of prawning on the Swan and Canning rivers is enjoying a revival thanks to a joint effort between researchers and the community.

The Perth community has an opportunity to join an exciting project focused on Western School Prawns in the Swan and Canning rivers.

The citizen science project is an integral part of the Western School Prawn program that aims to restock the rivers and reignite the once popular pastime of prawning.

Swan River Trust principal scientist Dr Kerry Trayler said Prawn Watch complements the research program – which includes culturing the Western School Prawn for release and understanding factors limiting recruitment – by getting the community actively involved.

“THROUGH PRAWN WATCH, THE TRUST IS ENCOURAGING PEOPLE TO GET BACK INTO THE WATER AND SHARE INFORMATION ON RIVER PRAWNS TO HELP SCIENTISTS UNDERSTAND WHAT’S HAPPENING TO THE PRAWNS.”

- Dr Kerry Trayler

“There are still prawns in the river but they are less common than in the past and initially Prawn Watchers will be making a far greater contribution to science by sharing vital data while the restocking program tackles the population’s decline.”

Dr Trayler said the Trust provided a free training session and some great incentives to all Prawn Watch volunteers.

“Our volunteers are taught to collect and log data on the abundance and distribution of prawns on a specially developed website and they also learn the importance of returning all by-catch, including blowies, protecting the foreshore and sustainable fishing,” Dr Trayler said.

“It’s important we teach the next generation key tools to protect the fishery. The community can then connect with the river in a sustainable way and preserve activities, such as prawning, that go



The Western School Prawn program aims to reignite the popular pastime of prawning in the Swan and Canning rivers by restocking the rivers with Western School Prawns. Main picture: Aoife Mohan, 7, shows off a Western School Prawn. Pictures: Stewart Allen.

to the heart of Perth’s connection to the Swan and Canning rivers.”

The project was launched in February this year and the take up from the community has been impressive with more than 135 people registered as volunteers.

Kevin Reid, who has been prawning on the Swan and Canning rivers for more than 50 years and regularly prawns on the river with his family, was one of the first to sign up.

The knowledge of Mr Reid and his long-time friend Will Smithwick have been vital in the restocking program and he believes Prawn Watch will encourage many families and friends to take up prawning.

“It’s just a magic night out,” Mr Reid said.

“The view alone as the sun sets over the water, the smell of the river - everything is there for families and I’d encourage people to get involved in Prawn Watch.

“Not only does it provide an opportunity to make a contribution to science and the Swan and Canning rivers but there’s a good chance you’ll get a great feed.”

To get involved in Prawn Watch log on to www.riverguardians.com/projects/prawn-watch.

MASS RELEASES UNDERWAY

Challenger Institute of Technology director Greg Jenkins said his team at the Australian Centre for Applied Aquaculture Research had developed ground-breaking systems to culture river prawns and large-scale releases. In 2014, more than 635,000 juvenile Western School Prawns were released.

“This project is not about re-establishing a commercial fishery, it’s about helping the community engage with the river and science,” Mr Jenkins said. “We now have the systems in place to culture and release up to a million juvenile prawns during the breeding season from December to April.”

INNOVATION KEY TO GREEN THINKING

Embracing out of the box thinking is a core focus for the Eastern Hills Catchment Management Program (EHCMP), based in Perth's Eastern Region.

And it is an approach shared by the group's natural resource management coordinator Karen Warner. Ms Warner says the program has a strong focus on working with scientific institutions and researchers and taking a proactive approach to looming environmental issues associated with climate change, including reduced rainfall and rising temperatures.

"A passion for the environment is what drives our many volunteers and it is this passion that makes us aware of the challenges groups such as this face," said Ms Warner. "But it is a challenge we as a collective group are ready to tackle.

"We need to work strategically, secure long-term funding and work with long-term goals and projects. We have a lot of people on the ground weeding and planting and I see our role as looking at the bigger picture. We face a huge challenge with climate change and if our overstorey is dying, whole ecological communities are going to change.

"We need to be looking at what our environment is going to be like in the future and how we can deal with that now, and we need to be responding to that challenge with the backing of science."

Among the program's highest profile projects is the development of a smartphone application to track a disease affecting Marri trees. EHCMP identified widespread native tree decline in Marris, thought to be caused by Marri canker, a fungal pathogen that causes lesions in the trees.

After approaching Murdoch University, an App was developed allowing people to record its range and severity, with this information feeding back to Murdoch University scientists. The App is now used in the south-west of Western Australia as well as the Perth Hills region and has been the focus of presentations as far away as China. It is textbook citizen science, a relatively new but growing trend in environmental management.

Other innovative projects in the planning phase include research on using farm dams as ecological refuges in dry times and reconnecting young people with their environment through the Bush Skills for Youth program. A successful project sponsor application with the Australian Government will also see three Green Army teams working in Perth's eastern region, delivering tangible benefits for the environment while providing young people with skills and training.

With three active catchment groups, two sub-catchment groups, 130 friends groups and close to 1700 volunteers working as part of the EHCMP, it is a leader in community involvement. The 30,000 hours these volunteers put towards environmental projects are among the highest in the country.

"What makes these programs unique is the amount of community support," Ms Warner said. "Our programs support community groups, enabling them to achieve great things in natural resource management."



Karen Warner. Picture: Miranda Holker.

The programs forming the EHCMP include the popular Bush Skills for the Hills environmental workshops, the bi-monthly Greenpage Newsletter and providing community groups with skills, advice and on-ground assistance to make their projects a reality.

EHCMP is a highly successful partnership between the Eastern Metropolitan Regional Council (EMRC), the Shires of Kalamunda and Mundaring, the City of Swan and the Swan River Trust, and is aimed at finding innovative solutions to some of the region's biggest environmental concerns. The program has been the proud recipient of several awards over the years, including a 2011 State Landcare Australia award for local government partnership.



BREATHING LIFE INTO OUR RIVERS

Oxygenation is improving water quality and providing a refuge for aquatic life, proving the value of this once experimental technology.

The Swan River Trust and Department of Water's oxygenation program on the Swan and Canning rivers has been pumping vital oxygen into these waterways since the late 1990s. Sixteen years on, the once experimental technology has proven to be an effective tool for improving water quality and providing refuge to aquatic life during times of stress.

The oxygenation program in the Swan Canning Riverpark began in response to low oxygen conditions and severe algal blooms in the Canning River upstream of the Kent Street Weir. Since then, the program has expanded significantly.

Today there are two oxygenation plants on the Canning River, with a third plant located at the Nicholson Road Bridge set to come online this year as part of a \$2.4 million State Government commitment to improve water quality. The three plants will collectively provide oxygen relief to a 5 kilometre stretch upstream of the weir.

There are also two plants on the Swan River that can provide oxygen to a 10 kilometre zone downstream of the Guildford Road Bridge to the Middle Swan Bridge where the Reid Highway crosses the Swan, areas prone to low oxygen conditions.

Trust river health program manager Alex Hams said the oxygenation program was important because at times of low dissolved oxygen levels the plants provided a tool to help support the ecology in Perth's iconic rivers.

"Just like people animals require oxygen to breathe, so having adequate dissolved oxygen in the water is crucial for the health and wellbeing of fish and other aquatic fauna," he said.

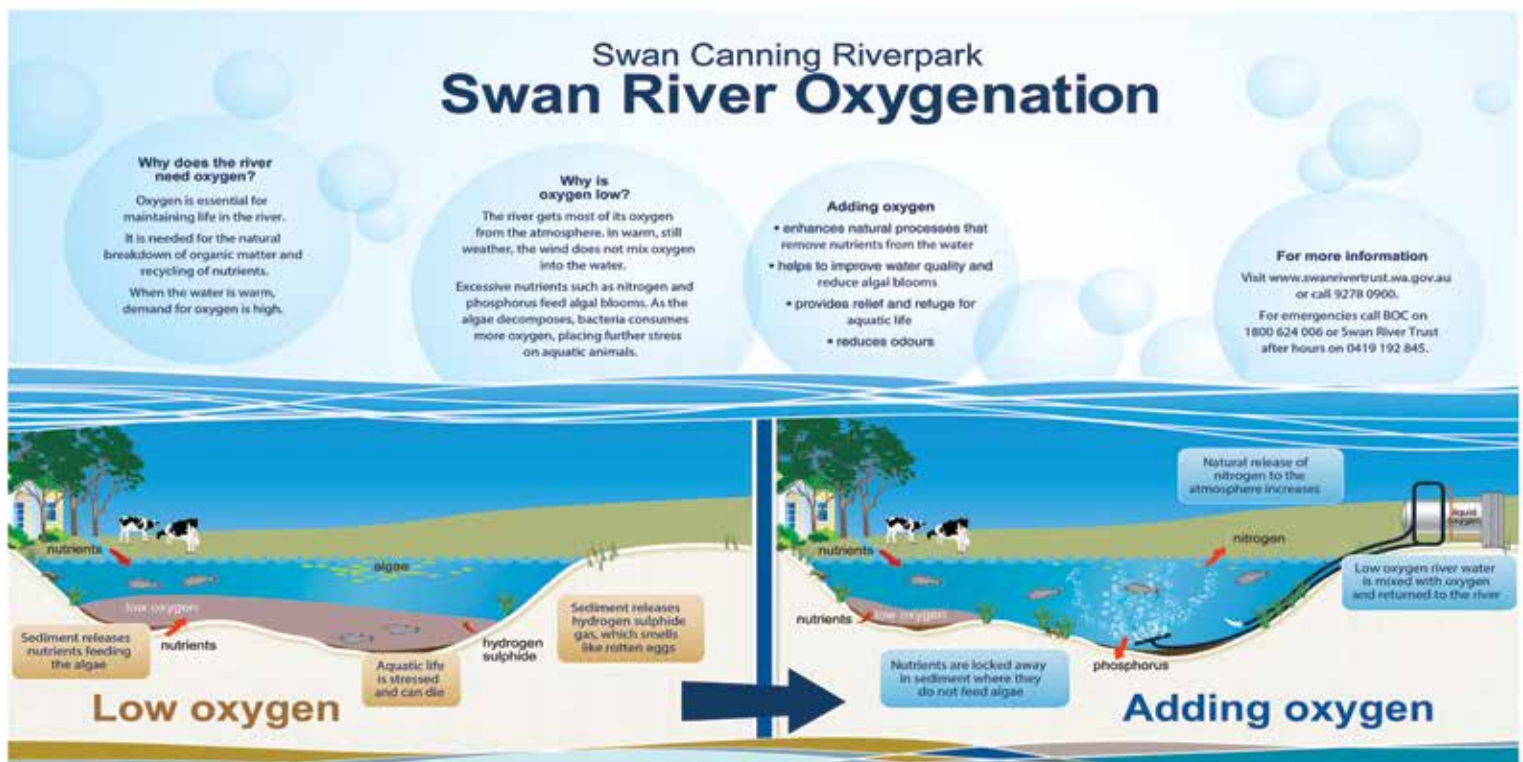
"The oxygenation program aims to maintain oxygen levels above critical thresholds required to provide survival and ecological functioning for aquatic organisms.

"Without the oxygenation program, the upper reaches of the Swan and Canning would suffer low oxygen conditions for extended periods, making it a hostile environment for our aquatic fauna.

"Instead the program is providing a number of benefits. As well as providing improved habitat conditions for fish and other aquatic fauna, it also helps to retain potentially harmful nutrients in the sediment that can be released under low oxygen levels and can prevent the release of noxious gasses such as hydrogen sulphide (rotten-egg gas)."



Mr Hams said there were periods when the Swan and Canning rivers did not require oxygen to be pumped into the system and generally the plants were most active during summer and autumn.





A new oxygenation plant at Nicholson Road Bridge on the Canning River will come online this year. Page 15: Swan River Trust river health program manager Alex Hams at the Bacon Street plant on the Canning River. Pictures: Stewart Allen.

“JUST LIKE PEOPLE, ANIMALS REQUIRE OXYGEN TO BREATHE, SO HAVING ADEQUATE DISSOLVED OXYGEN IN THE WATER IS CRUCIAL FOR THE HEALTH AND WELLBEING OF FISH AND OTHER AQUATIC FAUNA.”

- Alex Hams

“It’s during this period when the river is under the most stress from environmental conditions such as warm temperatures and biological activity in the sediments that consume oxygen from the water column,” he said.

The presence of stratification, when denser salty water from the ocean sits below fresh water, can also exacerbate reduced oxygen levels in the water by preventing oxygen from the surface penetrating into bottom waters and sediment.

“This is when we are most likely to see algal blooms and subsequent low oxygen conditions that can lead to fish kills,” Mr Hams said.

“During these extreme events, the plants can run 24 hours a day. We have specially designed water quality monitoring buoys in place that trigger the plants into operation depending on the conditions. Generally the plants are only triggered when dissolved oxygen levels are low and they automatically switch off once levels have improved. In winter, when we traditionally have good inflows into the system and increased water mixing, we are less likely to witness depleted oxygen levels in the upper Swan and Canning.”

The oxygenation program is funded by the Trust. It is only one component of an overall catchment to coast approach being used to protect and improve the health of the Swan and Canning rivers.

How does oxygenation work?

River health program manager Alex Hams described the oxygenation program as an effective but relatively simple process.

“Oxygenation works by supersaturating river water with oxygen,” he said.

“Water is taken from oxygen-depleted bottom waters of the river and mixed under pressure with oxygen gas in the plants. The highly oxygenated water is then piped back into the bottom waters of the river where it mixes, distributing dissolved oxygen throughout the water column.

“In the Swan, the oxygenated water is transported through the movements of tides, while in the Canning, the oxygen is piped directly to specific locations, usually in deeper pools.”

REVITALISING WATERWAYS

THE CREATION OF A VIBRANT WETLAND THAT WILL IMPROVE WATER QUALITY HAS REACHED AN IMPORTANT MILESTONE IN PERTH'S NORTHERN SUBURBS.



Kate Bushby and Christie Atkinson from the Swan River Trust at the Ellen Brook wetland. Stage one of the nutrient stripping wetland - which will reduce phosphorus and nitrogen reaching the Swan River - is now complete. Picture: Jennifer Eliot.

Stage one of the Ellen Brook wetland project – a nutrient stripping wetland designed to cut the amount of nutrients reaching the Swan River from the Ellen Brook Catchment – is now complete.

This stage has included the planting of 50,000 native seedlings, the creation of a vegetated wetland basin, approximately 800m² of bank stabilisation works and the construction of a riffle.

It is estimated this first stage of the project will remove about

270 kilograms of phosphorus and 330 kilograms of nitrogen from the Ellen Brook every year. The wetland will remove pollutants including nitrogen and phosphorus, a major cause of algal blooms in the Swan River. Wetland vegetation and filter material will work together to strip nutrients from the water before it is returned to the brook.

Swan Canning Water Quality Improvement Plan coordinator Kate Bushby said initial works, which included the application of Phoslock in late 2013, were already making a difference to the quality of water

entering the Swan River from the brook.

Phoslock is known for its ability to bind phosphate, making it unavailable to algae.

“Water quality monitoring clearly showed that a reduction in phosphorus occurred following the application of Phoslock,” Ms Bushby said.

“The application of Phoslock is believed to have reduced the phosphorus load entering the Swan River from the Ellen Brook in 2013 by up to 500 kilograms and positive results are expected to continue.”

Ms Bushby said the project was innovative as it was the first large-scale application of IronMan Gypsum as a filter material. IronMan Gypsum is a by-product of mineral sand mining with an extremely high nutrient uptake capacity.

LOCAL WILDLIFE WILL ALSO BENEFIT, WITH MORE THAN 30 EXOTIC TREES AND 1.3 HA OF WEEDS REMOVED FROM THE SITE AND A MASS PLANTING OF 50,000 NATIVE SEEDLINGS ENDEMIC TO THE SWAN COASTAL PLAIN SET TO IMPROVE THE LOCAL ENVIRONMENT.

Ms Bushby said the Ellen Brook Catchment was selected for the project because of the large nutrient load it contributed to the Swan River.

“The Ellen Brook Catchment is the greatest contributor of nitrogen and phosphorus of the 31 catchments draining into the Swan and Canning rivers,” she said.

“Modelling from the Trust’s Swan Canning Water Quality Improvement Plan indicated Ellen Brook exports about 70 tonnes of nitrogen and 10 tonnes of phosphorus into the Swan Canning river system each year.”



It is hoped birds including Black Swans will return to the Eric Singleton Bird Sanctuary with the completion of a \$3 million project to revitalise the wetland. Picture: Paul Fullwood.

BIRDS TO RETURN TO ERIC SINGLETON

While stage one of the Ellen Brook wetland has now been completed in Perth’s northern suburbs, work will shortly commence on another wetland in Bayswater in the city’s east.

The Eric Singleton Bird Sanctuary is set to benefit from a \$3 million restoration, a joint project between the Swan River Trust and City of Bayswater. Key benefits of the project will include an increase in biodiversity, the creation of a valuable asset for the local community, and a reduction in nutrients and sediment reaching the Swan River. The wetland is a keystone project of the City of Bayswater’s Best Practice

Management in Water Sensitive Urban Design plans.

The restoration of the wetland is expected to result in a significant reduction in pollutant loads to the Swan River, including 1.3 tonnes of nitrogen and 200 kilograms of phosphorus a year.

Swan Canning Water Quality Improvement Plan coordinator Kate Bushby said a highlight of the project would be the creation of sustainable bird habitat, with hopes it will see the return of Pelicans and Black Swans. Construction is due to start later this year, with revegetation beginning in May 2015.



Planting of 50,000 native plants was a key achievement of stage one works at the Ellen Brook wetland. Picture: Jennifer Elliot.



BEHAVIOUR CHANGE PROGRAMS SPRING TO LIFE

An exciting new behaviour change program beginning this summer has its sights set on reducing fertiliser and water use in home gardens.

The RiverWise-Waterwise Program is a joint venture between the Swan River Trust and the Water Corporation and is focusing on a priority sub-catchment in Perth's southern suburbs. The program is currently being delivered in South Perth and follows on from the success of the Trust's RiverWise Bennett Springs behaviour change program.

The RiverWise Bennett Springs program targeted fertiliser use and resulted in 90 per cent of participants adopting RiverWise products and a significant reduction in fertiliser applications in the high use suburb.

Participants reduced their fertiliser use by 8.8 kilograms or 15 per cent over the course of the pilot. Household toxic nasties

including more than 112 kilograms of fertiliser, nearly 9 kilograms of granular insecticides and herbicides and 27.5 litres of liquids were handed in by residents during home visits.

The innovative program helped home owners change the way they use fertilisers to reduce damaging nutrients entering the Swan and Canning rivers. It harnessed a series of free initiatives to educate the local community, including personal home coaching visits, fertiliser swaps and an amnesty of harmful backyard chemicals.

Trust community engagement manager Jason Menzies said the Trust and the Water Corporation had now teamed up and secured \$200,000 in funding to roll out a new pilot focused on reducing

fertiliser and water use in South Perth, Como and Manning.

"The new program has been designed to target high use suburbs, and like Bennett Springs, it will engage homes on a personal level by providing free advice and assistance to reduce fertiliser application and water consumption," Mr Menzies said.

"While accessing tailored advice from a garden professional, participants will also be able to receive help to correctly program irrigation systems and to install basic mechanical tap timers.

"Both the Trust and the Water Corporation recognise the correlation between water usage and nutrient levels – where there's high water usage, there's often high nutrient levels, as approximately 45 per cent of residential water usage in WA is for the garden."

PERTH GARDENERS TURN OVER NEW GREEN LEAF

Bennett Springs resident David McKinlay didn't know a lot about sustainable gardening when he moved to the suburb nearly four years ago. RiverWise is a new term in his vocabulary and he is the first to admit to adopting some bad habits when he began establishing his garden.

But after taking part in the RiverWise Bennett Springs behaviour change program he has turned over a new leaf.

"I was constantly putting fertiliser on my garden because it was always disappearing," he said. "It looked great for a week then it would go downhill again. There was literally nothing holding the fertiliser around the roots – it went straight through the soil into Bennett Brook."

Mr McKinlay said he took advantage of the fertiliser and product swap, as well as the chance to get some valuable tips and advice from local gardening expert Amanda Gunzburg.

"She told me about mowing lawn clippings back into my lawn to put nutrients back in, which my dad used to do and I thought he was crazy," Mr McKinlay said. He has also added mulch and soil wetting agents, as well as reduced the amount of fertiliser he puts on his garden. And he is quick to recommend the Trust's behaviour change programs to others.

"I think the whole concept is terrific," he said. "I'd like to think I'm doing the right thing by myself and by everyone else. Plus, simply by doing a few things we have learnt about, we're cutting down on the money we spend on new plants."

For more information on the Trust's behaviour change programs, visit www.riverguardians.com. Tips to create your own RiverWise and Waterwise garden can be found on the Great Gardens website - <http://greatgardens.info/>.



Above: Native plants are a stunning way to create a low water and fertiliser-use garden. Below: Transforming sand into productive soil is a key message of RiverWise and Waterwise gardening. Main picture: Bennett Springs resident David McKinlay picks up some sustainable gardening tips from Swan River Trust community engagement manager Jason Menzies. Pictures: Stewart Allen.





SHAPING THE FUTURE OF RIVERSIDE COMMUNITIES



Ascot Kayak Club president and community reference group member Leonie Cockman is confident about the future of Belmont's foreshore under precinct planning. Picture: Miranda Holker. Left: City of Belmont residents enjoy stunning water views.

The riverside councils of Belmont and Bassendean are the focus of new plans shaping the future of urban areas along the Swan and Canning rivers.

New plans to guide the future use and management of foreshore areas will soon be unveiled in the City of Belmont and the Town of Bassendean under the Swan and Canning Rivers Precinct Planning Project.

Swan River Trust senior planning officer Glen McLeod-Thorpe said the plans focused on identifying nodes of activity and commercial use, connectivity and land use within a precinct.

This included identifying how the foreshore was being used and potential uses, as well as gaps in infrastructure. The need for a cafe or kiosk could be identified for one area, while another could be recognised as a valuable natural asset needing protection and management.

"We are setting out a vision for these foreshore areas and how they

interface with private development," Mr McLeod-Thorpe said.

"From a planning perspective, it will provide context and certainty for proponents of developments and the community, as well as a framework for future applications to be considered and assessed."

"WE ARE SETTING OUT A VISION FOR THESE FORESHORE AREAS AND HOW THEY INTERFACE WITH PRIVATE DEVELOPMENT."

- Glen McLeod-Thorpe

City of Belmont environment coordinator Nicole Davey said one of the project's biggest strengths was the bringing together of approximately 20 plans, from park upgrade master plans to cycling strategies, the City currently has for managing foreshore areas.

"There are currently lots of plans and documents for different sections of the river, or on different topics. Consolidating these into one plan will be very beneficial – it is smarter and more efficient," she said.

"It also means everyone agrees to what is being developed, and it gives security to environmental works on the foreshore. It will formalise our restoration plans and help us identify priority activity nodes for future enhancement and activities.

"There is a lot of development happening and more people are using the foreshore area. We need to make sure we keep the values that are there."

Detailed planning at a precinct scale has been successfully adopted in many areas including the City of Perth. However, this is the first time it has been applied to the interface between Perth's rivers, foreshore and adjoining development.



Access to the river is a priority for the City of Belmont and (below) the Town of Bassendean.

Prepared by local governments with the assistance of the Trust and the Western Australian Planning Commission, the plans are models of interagency cooperation.

Within each local government, planners, engineers and environmental officers are working together on the plans.

This work is complemented by local community reference groups who are sharing their aspirations for their part of the river. Kayak clubs, cycling groups, business groups, councillors and agencies like the Eastern Metropolitan Regional Council are all represented.

Leonie Cockman has been paddling the Swan River around Ascot for more than 15 years. President of the Ascot Kayak Club and operating her own paddling business, Water Wanderers, for more than two years, she said she relished the opportunity to share her intimate knowledge of the area.

"It's not just lip service," she said of the reference group's contribution to the project. "They really want to know what will work. It consults

directly with the people who use the rivers."

Citing plans for improved disabled access to the river around the kayak club, upgrades and improved public access to beaches, and a new spectator platform, as well as a focus on improving the environment, she said she was positive about the future of Belmont's foreshore under the plan.

"It will be more appealing, be even more beautiful and it's going to look after the environment. I think we'll get more and more people on the rivers and I'd like it to be accessible to the ordinary, everyday person," Ms Cockman said.

Work on the precinct planning project dates back to 1997, when the Trust prepared the Swan River System Landscape Description. The Town of Bassendean and the City of Belmont were the first local governments to commit to the joint preparation of a precinct plan for their river foreshores - 7 kilometres in the Town of Bassendean and 9 kilometres in the City of Belmont. The expected release date for both plans is late 2014.



WELCOME TO RIVER GUARDIANS

.....
Dolphin Watchers can now instantly share data on Perth's river dolphins to a global community of scientists following the release of a specialised smartphone application. A technological leap forward, the App is linked into the Coastal Walkabout project - an initiative between Murdoch University, United States-based Duke University and the Marine Ventures Foundation and the Swan River Trust.
.....





Hello everyone. It's been a massive year for the River Guardians program. There have been lots of new members, more trained Dolphin Watch volunteers and exciting new projects and initiatives to get involved in. Thanks to those of you who are already active members, and if you have been thinking about getting more involved, there has never been a better time. Dolphin Watch continues to go from strength to strength, now celebrating 820 volunteers, while the Prawn Watch project is also set to ramp up again for the summer. You can read more about Prawn Watch on page 12. And don't forget to check out the website's What's On section at www.riverguardians.com to find events and activities you can get involved in with your friends and family. See you around the Riverpark.

Marnie Giroud, River Guardians program manager

DOLPHIN DATA GOES GLOBAL

Dolphin Watch made a significant technological leap forward this year following the release of a smartphone application that allows Dolphin Watchers to share dolphin sightings, photos and videos with a global audience.

Simplifying the data collection process using the latest smartphone technology will significantly improve the quality and flow of information. It will also help researchers track dolphin movements, identify individual animals, determine key behaviour patterns and provide an early warning system for dolphin entanglements.

The data collected by Dolphin Watch volunteers will still be accessed by the Coastal and Estuarine Dolphin Project and analysed by Murdoch and Curtin universities.

The App was developed by Perth-based Gaia Resources to enhance access to Dolphin Watch data and increase global information

exchange on Indo-Pacific bottlenose dolphins. It will improve management and protection of the Riverpark dolphins and will contribute to a global perspective on marine animals by increasing the volume and quality of information flowing to scientists.

Only trained Dolphin Watch volunteers can access the full functionality of the App to protect the integrity of the data. The Trust will hold extra training sessions to help ensure volunteers can access the App and join the global initiative.

Find out how you can become a River Guardian and get involved in the project by visiting www.riverguardians.com.

"BECOME A RIVER GUARDIAN AND A DOLPHIN WATCHER, AND YOU CAN TRAIN TO MONITOR DOLPHINS IN THE RIVERPARK AND CONTRIBUTE TO RESEARCH ON THESE ANIMALS. RIVER GUARDIANS ARE OUR EYES ON THE RIVERPARK."

- Marnie Giroud



Dolphin Watch volunteer Trudy Klessens and River Guardians program manager Marnie Giroud test the new Dolphin Watch smart phone application. Picture: Miranda Holker.



CHILDREN JOIN DOLPHIN WATCH MOVEMENT

Perth's children now have an opportunity to tap into Dolphin Watch following the launch of the Junior Dolphin Watch project.

Expanding Dolphin Watch to children is an exciting development and a great outcome for the long-term future of the Riverpark dolphins.

Junior Dolphin Watch is about getting children to connect with the environment and Perth's unique dolphin population in a fun and informative way. Students will help look after the Swan and Canning rivers by learning about Riverpark dolphins and participating in practical projects like river clean-ups and educational activities focused on improving river health.

Junior Dolphin Watch offers all schools in the Swan Canning Catchment free national curriculum-linked dolphin lessons and free loan of educational resources.

Junior Dolphin Watch is about recognising that today's children are tomorrow's environmental advocates.

LYN BEAZLEY WELCOMED AS NEW PATRON

Former WA Chief Scientist and long-time Dolphin Watch supporter Professor Lyn Beazley was announced as patron for the project at this year's Dolphin Watch Day event.

Professor Beazley is a strong advocate of citizen science and is not shy in expressing her excitement about Dolphin Watch.

"Dolphin Watch is a brilliant example of citizen science and plays a vital role in ensuring that a dolphin population continues to grace our estuaries," she said.

"Blessed with an innovative team, dedicated hard-working volunteers and a program to educate the next generation of Dolphin Watchers, the Dolphin Watch project has an amazing future."

The announcement was just another reason for celebration at the June event, which also marked five years of the Dolphin Watch project, and recognised three outstanding Dolphin Watch volunteers.

OUTSTANDING DOLPHIN WATCH VOLUNTEERS WERE RECOGNISED AT THIS YEAR'S DOLPHIN WATCH DAY. JOAN MUNRO RECEIVED THE 2014 DOLPHIN WATCHER AWARD FOR CONTRIBUTING THE MOST MONITORING TIME, WAYNE THEOBOLD RECEIVED THE 2014 DOLPHIN WATCH PHOTOGRAPHER AWARD FOR HIS OUTSTANDING DOLPHIN PHOTOGRAPHS, AND SUSAN HARPER (PICTURED ABOVE WITH PROFESSOR LYN BEAZLEY) WAS NAMED THE 2014 CITIZEN SCIENTIST FOR HER EXCELLENT OBSERVATIONS OF DOLPHINS AND THEIR SURROUNDINGS.

Friends of River Guardians

'Friends of River Guardians' are Perth riverside businesses that help support the River Guardians program by providing discounts on goods and services for River Guardians members. To view the special offers provided by our Friends below, please visit www.riverguardians.com

To take advantage of the great special offers all you need to do is show our Friends your current River Guardians membership card. It's that simple – enjoy!



ABOUT BIKE HIRE - 15% discount off all bike, kayak and Family Quad Cycle hires (maximum one day hire and excluding road bikes) to River Guardians members who produce a valid River Guardians membership card at the time of booking.



CAPTAIN COOK CRUISES – 15% off when booking a cruise to River Guardians members who produce a valid River Guardians membership card at the time of booking.



FUNCATS WATERSPORTS - One complimentary HOUR OF CATAMARAN HIRE when another HOUR OF CATAMARAN HIRE of equal or greater value is purchased to River Guardians members who produce a valid membership card at the time of hiring the equipment.



If your business would like to become involved in this initiative and work together to provide win-win outcomes for our members, your customers and the beautiful Swan Canning Riverpark, please contact the River Guardians Team on 9278 0900 or guardians@swanrivertrust.wa.gov.au



THE LEFT BANK - One complimentary MAIN COURSE when another MAIN COURSE of equal or greater value is purchased or when ordering THE SEAFOOD PLATTER \$20 will be deducted to River Guardians members who produce a valid membership card at the time placing their order.



SEGWAY TOURS WA - 20% off the regular price of any guided tour for up to two people to River Guardians members who reference the promo code `riverguardians20` when making a booking and produce a valid membership card when hiring equipment.

150 EAST Riverside Bar Restaurant

150 EAST RIVERSIDE BAR AND RESTAURANT - One complimentary MAIN COURSE when another MAIN COURSE of equal or greater value is purchased or, when dining alone, one main course at 50% off the REGULAR PRICE to River Guardians members who produce a valid membership card at the time of placing their order.

RIVER RANGERS



River Rangers continues to build in strength with four new schools joining this year and plans to expand the cadet program to 15 schools by 2015.



ANOTHER GREAT YEAR FOR RIVER RANGERS

River Rangers was piloted in 2011-12 with five schools. It currently has 11, including new recruits at Weld Square Primary School, Coolbinia Primary School, Regent College and Bassendean Primary School.

Trust education officer Linley Brown said the program was run in partnership with the Trust and the Department of Local Government and Communities and sought to engage and educate the next generation of children to help protect the Swan Canning Riverpark.

“Cadets gain a positive and practical understanding of the local environment as well as being provided the opportunity to develop their leadership and team building skills, improve their self-confidence and make new friends,” Mrs Brown said.

Some of the exciting projects River Rangers have been involved in over the past year include:

- Planting 4000 plants in partnership with Chittering Landcare along a creek in Bullsbrook.
- Taking part in the Men of the Trees world record attempt by planting more than 100,000 Western Australian native plants in one hour at Whiteman Park.
- Creation of environmental art murals with local artists.
- Drain stencilling around school grounds to educate the school community on how stormwater drains lead to our rivers and wetlands.
- Creation of a living stream behind Weld Square Primary School.

DISCOVERING OUR RIVERS YOUTH FORUM

Discovering our Rivers leadership youth forums engaged more than 190 students from 19 schools this year as part of a campaign to target and develop young environmental leaders.

The two-day Riverpark forums are a collaboration between Millennium Kids and the Trust and focus on

young leaders in upper primary and middle schools.

Mrs Brown said the forums started with students having a say about what they liked and disliked about their community and the world with a focus on the Riverpark.

“They then gained a better understanding of the Swan Canning river system and associated environmental issues by taking part in workshops run by a variety of stakeholders – scientists, indigenous elders, local government authorities and community groups tasked to look after the river,” she said.

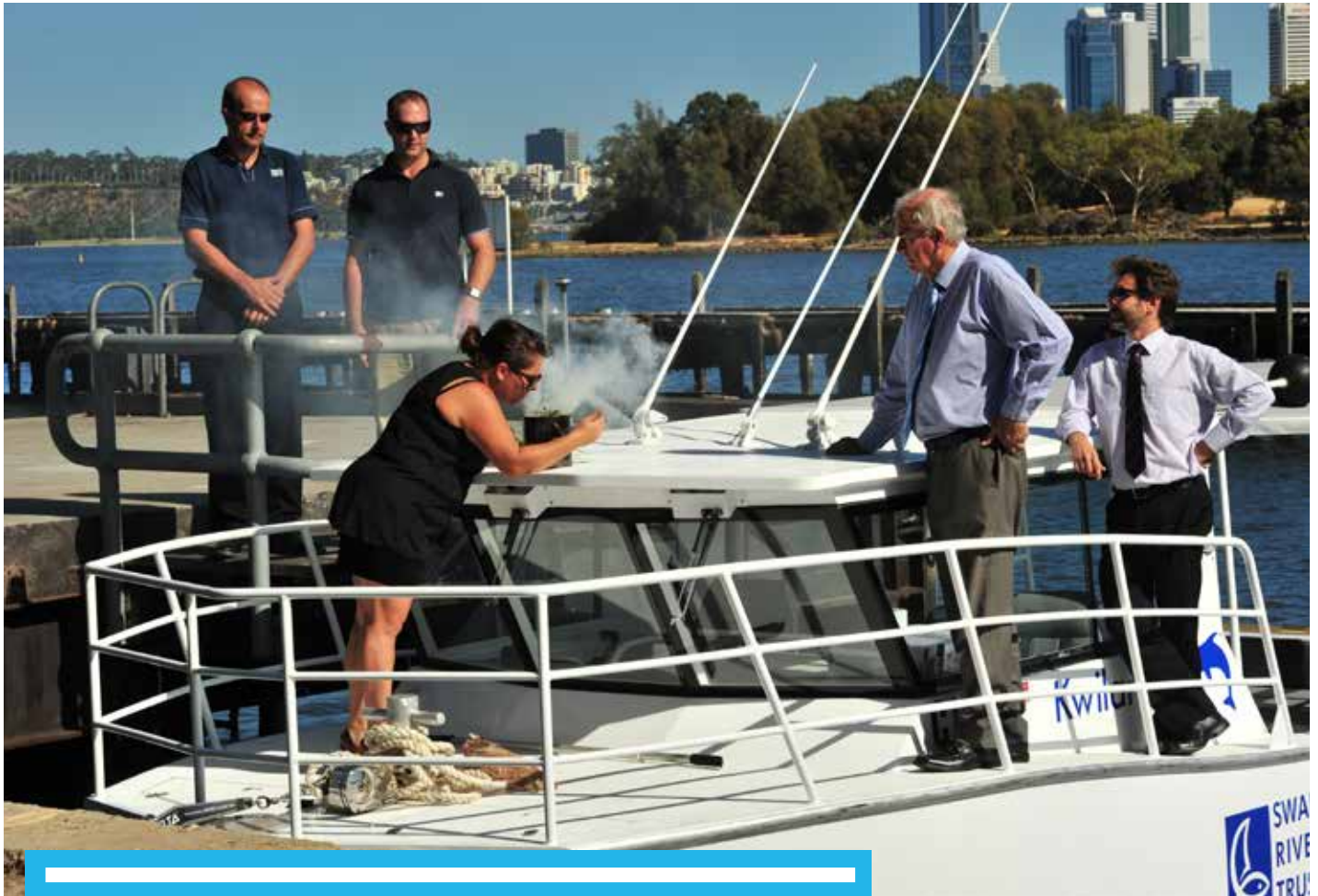
Mrs Brown said at the end of the sessions students were asked to identify an aspect of the health of the river they found most interesting and develop a project they could take back to their peers.

“Students have been working studiously on their projects which included a variety of exciting ideas,” Mrs Brown said.

“Students from Maylands Peninsula Primary School are busily building a native garden on their school grounds, Shelley Primary School students took part in a series of photography workshops and displayed their work at an exhibition, while students from Regent College learnt more about responsible fishing.”



RIVERPARK NEWS



TRUST BOAT CARRIES NOONGAR NAME

The Swan River Trust named its new boat Kwilana - the Noongar word for dolphin – in recognition of the central role the Swan and Canning rivers play in the lives of the Noongar people.

Whadjuk Noongar traditional owner Ingrid Cumming blessed the boat with a traditional smoking ceremony to prepare

it for its role in protecting and managing the river for the entire community.

Acting Riverpark manager Kelly Hudson said the Aboriginal name acknowledged the spiritual and cultural connection Noongar people had to the Swan Canning Riverpark.

\$3 million funding boon announced for river health

The Liberal National Government committed \$3 million in new funding over three years to ensure that the Swan Canning Riverpark remains healthy and accessible for future generations of West Australians.

Environment Minister Albert Jacob said the funding honoured a pre-

election commitment to protect and preserve Riverpark foreshores and allowed the State Government to invest in major long-term projects.

“Since 2008, this government has invested more than \$9.2 million in 100 projects focused on riverbank restoration in the Swan Canning Riverpark,” Mr Jacob said.

Bayswater rubbish run

The inaugural Reel It In fishing line clean-up day at Hinds Reserve was a huge success with more than one kilometre of potentially deadly fishing line removed from the banks of the Swan River.

Swan River Trust communications manager Mark Thornley said a band of 50 dedicated community volunteers removed more than one kilometre of fishing line, 34 hooks, 148 bait bags and more than 47 bags of general rubbish including 121 cans and bottles.

Mr Thornley said the clean-up day formed part of a larger Reel It In campaign installing fishing line disposal bins at popular fishing locations throughout the Swan Canning Riverpark.



Riverpark dolphin Moon has given birth to a calf. Picture: Delphine Chabanne.

Boundary review streamlines planning process

The Development Control Area (DCA) managed by the Swan River Trust was reviewed recently to streamline the planning process.

Statutory Planning manager Jennifer Stritzke said it had been more than 20 years since the DCA had undergone a detailed review.

A raft of boundary changes will clarify and simplify the administration of the Trust's planning powers and generally assist in expediting the decision making process.

"A total of 231 changes were made to the DCA as a result of the review," Ms Stritzke said.

Alcoa partnership delivers community benefit

The Swan River Trust's partnership with Alcoa continues to deliver outstanding outcomes in the Swan Canning Catchment.

The Swan River Trust Alcoa Landcare Program (SALP) has now delivered \$12 million in on-ground works since 1998, attracting \$6.5 million in funding across more than 1000 projects while supporting more than 200 community groups.

Swan River Trust Healthy Rivers coordinator Debbie Besch said the projects funded by SALP focused on reducing harmful nutrients and contaminants from entering rivers and ground water in the Swan Catchment.

Seaplane trial approved on the Swan River

The Swan River Trust has approved a 12 month trial of a commercial seaplane operation on the Swan River.

The trial will allow the airline to land a Cessna 208 Caravan between the South Perth jetski freestyle area and Milyu Marine Park two times a day between 8am and 5pm seven days a week.

Statutory planning manager Jennifer Stritzke said the approved plane had the capacity to carry up to 11 passengers to Rottneest Island, Mandurah and the Margaret River area.

NEW ARRIVAL FOR RIVERPARK

Swan Canning Riverpark dolphin Moon delivered a healthy calf this year and scientists monitoring the Perth's population are optimistic more could be born this summer.

Murdoch University researcher Delphine Chabanne said Moon's calf – her second since being spotted in the river in 2001 – was first recorded in mid-July near Deep Water Point.

"At this stage both mother and calf are doing well but the first 12 months of a dolphin's life is a perilous time," she said.

"We are expecting more births this summer and urge all river users to maintain a safe distance from dolphins and take extra care while on the water to ensure our Riverpark dolphins remain safe."



Check out what's new at Scitech!

Backyard Adventures

Take a closer look at what's in your backyard and discover a hidden world of science. Use special lenses to see a garden through the eyes of a dog or get moving with our giant mechanical skipping rope. Backyard Adventures will inspire wonder and fascination about the science just outside your back door.



new exhibition

Planetarium

Come and experience our state-of-the-art upgrades, bigger and better seats and brand new feature presentations as Scitech unveils its new-look planetarium. There has never been a better time for an out-of-this world experience.

new planetarium



Rio Tinto Innovation Central

Think, try, make and refine in this new permanent exhibition showcasing the process of innovation. From 29 November 2014, high-tech exhibits will be on offer such as a life-sized humanoid robot, as well as innovative ideas you can try yourself at home.

EXHIBITION PARTNER: Rio Tinto

new gallery



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RIVER SAFETY REMAINS TOP PRIORITY

Regular patrols on the Swan and Canning rivers this year have ensured that public safety on the Swan and Canning rivers remained a top priority for the Swan River Trust and partners.

Acting Riverpark manager Kelly Hudson said the Trust, in collaboration with the Department of Transport on 12 occasions, had conducted 63 patrols this season, focusing on a range of compliance issues including boating patrols, jetty based compliance and evening patrols.

“In all during 2013-14, Swan River Trust officers stopped 724 vessels and issued a total of 391 cautions or notices ranging from verbal cautions for minor breaches to marine infringements for issues such as speeding,” she said.





BURSWOOD PARK

AN ICONIC RIVERSIDE DESTINATION

Burswood Park Board provides funding to the Swan River Trust to help protect the Swan Canning Riverpark.

Burswood Park comprises of 110 hectares of natural reserve on the Burswood Peninsula, on the eastern entrance to Perth.

It has been inducted into the WA Tourism Awards Hall of Fame and is one of Perth's favourite recreation destinations. The park offers premier outdoor entertainment venues and is the location of many high profile events each year.

Managed by the Burswood Park Board, the parklands provide

movies and concerts, corporate functions, weddings, picnics and recreation for thousands of people.

Burswood Park's fundraising efforts generate millions of dollars to help address critical needs among community groups in Western Australia.

Burswood Park works with the Trust and provides \$3 million in funding each year. This funding is being used for many of the Trust's key river management projects. This invaluable funding helps restore

river foreshores, reduce nutrients entering the river system, educate the public on RiverWise practices and protect native wildlife through citizen science projects.

The Burswood Park Board is working to develop this iconic Perth destination into the premier park of its type in Australia. The board aims to achieve the highest standard of park maintenance and management and provide maximum visitor enjoyment and recreation.



THINGS TO DO AT BURSWOOD PARK

Events

Burswood Park hosts a number of events such as the HBF Run for a Reason, Music by Moonlight, Walk to Cure Diabetes, Twilight Concert Series, Carols in the Park and McDonald's Community Cinemas. Thousands of people also flock to the park to celebrate Australia Day and enjoy the Perth Skyworks from one of the city's best vantage points.

Western Australian of the Year Lake

The centrepiece of Burswood Park, the Western Australian of the Year Lake is named to honour the Western Australians of all ages and walks of life who provide outstanding community role models and help strengthen the civic, cultural and commercial fabric of this state. Western Australian of the Year Award recipient names are displayed on plaques surrounding the lake, in recognition of their contributions.

Birdlife

A unique regeneration program which began in 1986 has transformed an unloved refuse area into parklands, encouraging the return of bird life,

including many indigenous bird species. Today more than 40 varieties of birdlife call Burswood Park home. Visitors can identify and enjoy the local fauna guided by birdlife interpretation located throughout the park.

Heritage Trail

The history of Western Australia is brought to life for visitors who follow the Heritage Trail which winds through the park. The trail's convenient rest areas feature bronze sculptures of historic figures and scenes.

The future

The thriving Crown Perth entertainment precinct, upcoming Perth Stadium and new homes on Burswood Peninsula will ensure Burswood Park becomes an even busier recreational node. As it continues to evolve, management will focus on protecting habitats and preserving the biological diversity of the local environment. The Burswood Park Board continues to partner with the Trust to help protect and enhance the Swan Canning Riverpark.



RIVERVIEW INTERVIEW

WAYNE THEOBOLD

A passion for Perth's rivers and a natural talent for photography has bagged Wayne Theobald this year's coveted Dolphin Watch Photographer Award. He picked up the accolade at the Dolphin Watch Day event in June, which celebrated five years of the popular citizen science project. Wayne has spent much of the past 18 years skippering cruise boats up and down the Swan and Canning rivers, helping to spread RiverWise messages focused on protecting our rivers. A River Guardian and Dolphin Watch volunteer, he cares deeply about the

rivers and the wildlife that inhabits it. But it was his stunning image of a dolphin near the Barrack Street Jetty that caught the attention of judges.

How did you capture that winning image?

I had taken my camera to work as we had the Tactical Response Group training on our boat that day. Prior to the cruise there was a large pod of between eight and 12 dolphins, it was a beautiful day, and they just started playing. There was a whole group of school kids and members of the public watching, and the dolphins were putting their heads up and looking back at them. They were interacting, breaching and tail

slapping, and I just put my camera on sports mode and snapped away. But I didn't realise I had the shot until I got home and started editing them.

How would you describe your connection to Perth's rivers?

For me it's almost spiritual. Most indigenous peoples around the world feel that way. I'm from New Zealand but I feel a connection to the rivers. It's a sense of identity and belonging.

What do you think the Swan and Canning rivers mean to Perth and its residents?

I think it's the soul of Perth. People define themselves by the river – we say we are from north of the river, or south of the river. We walk along the waterfront, we ski in it, we fish in it, we boat on it, and we swim in it. It's a really integral part of Perth's identity.

What is the most memorable thing you've seen out on the water?

I've had a couple of encounters with bull sharks. Once, I got bumped under a boat. I couldn't see, it was night time, and I was cutting wire



A lot of the changes have been improvements. It's quite exciting to see all the restoration work that is happening along the waterfront where a lot of erosion has taken place.

Also monitoring what's happening with recreational and commercial boating and dropping speeds limits to reduce wake. Physically you can see a lot of the changes.

What is your vision for our rivers?

I think we're working towards it, and the Swan River Trust is doing a great job with education like the River Rangers program in local schools.

Education is starting with kids in schools and that's going to build awareness as they come into adulthood and become custodians of the rivers. It's about looking after the waterways and using them wisely.

The rivers have often been your livelihood – but you spend your leisure time around them as well. What is your favourite way to spend time on the rivers?

Going for a walk with the kids and the dog. Just relaxing. I spend quite a lot of time on the water, so I'm lucky, but it's still nice to be able to just be around the water and be still sometimes.

off a vessel's shaft. I was hit by a very stiff what felt like a pectoral fin, then a big flat tail as I was under the boat. A bull shark is the only thing I can put it down to. I got out of the water fairly quickly.

You've spent countless hours on the rivers over the years – how have you seen them change?

You have captured other amazing images of Perth's dolphins – what have been some of your favourite experiences with them?

Seeing a dolphin breach from one of the boats. On one occasion the bow would have been around two and half metres above the waterline. People were leaning over the side and this dolphin just launched up and was level with these people.

They all leapt backwards. I was up in the wheel house watching and I leapt backwards because I got a surprise as well.

There was another vessel I skippered back around 1998 or 1999 which had a wooden hull, and I found the dolphins responded really well to this boat. I could beach the boat up around Maylands and shut the engines off and start tapping the sides and the dolphins would just come and roll and look up.

We got some amazing footage and saw some amazing things. They got very comfortable with that boat.

If you could show every single person living in Perth one thing about our rivers, what would it be?

I'd cheat. It would be three things - the sunset on the water, sunrise on the water, and a full moon. A full moon on the water is beautiful.



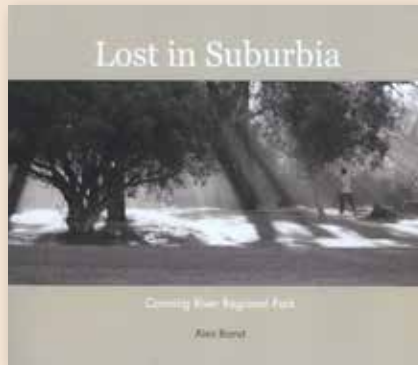
Dolphins in the Swan River, including (right) the Dolphin Watch Photographer Award-winning image. Pictures: Wayne Theobald. Main picture: Jennifer Eliot.

WILD LIFE

BOOKS, DVDS AND COMPETITIONS

Lost in Suburbia

In 2011, Western Australian photographer Alex Bond carried an old twin lens film camera on walks around the wetlands, flooded gums, sheoaks and paperbarks of the Canning River Regional Park. The result of these riverside rambles is *Lost in Suburbia*, a visual record of the parkland's recreational use and beauty. "For those of us lucky to live close to the Canning River Regional Park, the area is a jewel nestled within a city setting," he says. "An ecologically and socially important parkland in a secluded



little pocket off to one side of major urbanisation, a parkland hidden from general view, almost lost in suburbia." Find out more at <http://alexbondblog.com/lost-in-suburbia/>

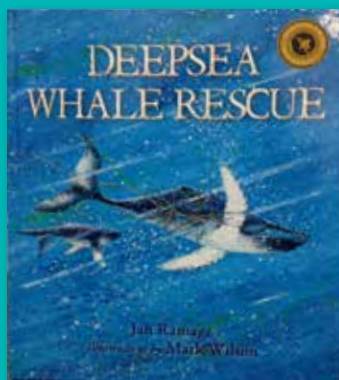
Where to Ride Perth

Brent Meyer, author of *Where to Ride Perth*, has poured hundreds of hours into making it the city's definitive cycling guide. This guide is for anyone looking to ride their bike around Perth. The second edition has been updated to include 75 great rides in the city, along the coast and through

the hills, ranging from short rides suitable for beginners or younger riders, to longer distances that demand a reasonable degree of fitness and skill. Each ride features clear directions, stunning photography and GPS generated mapping.

Deepsea Whale Rescue

Beautifully illustrated by Mark Wilson, Jan Ramage's *Deepsea Whale Rescue* is a gripping account of a real-life whale rescue headed by Department of Parks and Wildlife whale expert Doug Coughran. This children's book tells the story of the rescue of a whale that becomes entangled in fishing ropes after defending her calf against attack by a pod of killer whales. It shares with readers the hazards faced by whales during their 13,000 kilometre annual migration, which includes a stretch of the Western Australian coast.



Deepsea Whale Rescue received a Certificate of Commendation at the 2013 Whitley Awards, which recognise outstanding publications that promote and encourage the conservation of Australasian fauna.



12 Gardens

Jenny and Neil Delmage, two of Australia's best garden designers, share 12 new gardens from their highly successful business of creating waterwise, biodiverse - and gorgeous - gardens that fit the natural environment. This stunning book features new, hands-on information about each garden, including plant lists, soil types, garden orientations, design plans, and client briefs.

Little Thingz

It is often difficult to know how we can each make a positive contribution to our fragile environment. *Little Thingz* empowers individuals to do little things for our world to create a healthy, productive and sustainable future. This book by Liz Blaxell and Debbie Attard Portugues offers tips for the garden and home with in-season recipes and a monthly planner. Visit www.littlethingz.com.au.



WIN: We have copies of *Where to Ride Perth*, *Deep Sea Whale Rescue*, *12 Gardens* and *Little Thingz* to give away. Email miranda.holker@swanrivertrust.wa.gov.au by 31 December 2014 with your details and which book you would like to win.



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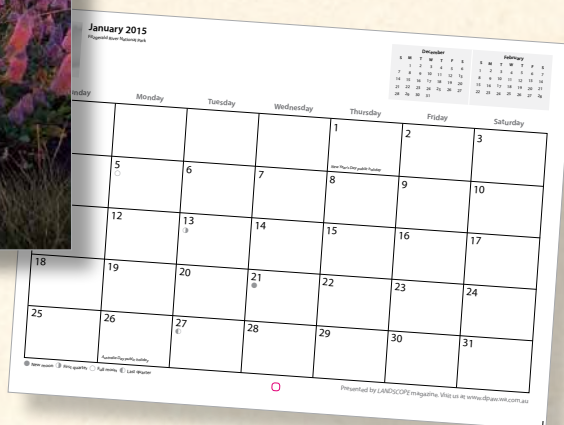


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- newsagencies, visitor centres and
- the Department of Parks and Wildlife

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Based on Australia Post pricing April 2014. Prices subject to change.

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CREATURE FEATURE

BULL SHARKS (RIVER WHALER) *Carcharhinus leucas*



Bull Sharks occur seasonally in parts of the Swan Canning Riverpark and the public should be aware of this when wading or swimming in the rivers. These sharks can be dangerous and aggressive. Unlike most sharks, Bull Sharks tolerate fresh-brackish water and can travel far up rivers.

Description

The Bull Shark has a stout body and can grow to a length of 3.4 metres. It is deep grey in colour with a paler abdomen and sometimes with a pale stripe on the flank. This species has a large second dorsal fin, a short blunt snout, triangular serrated teeth in the upper jaw and small eyes.

Distribution

In Australia, the Bull Shark occurs from Perth, around the northern coastline and down the east coast to Sydney. In the Riverpark they have been caught as far upstream as the Maylands Yacht Club.

Habitat

The Bull Shark can live in a wide range of habitats from coastal marine and estuarine to freshwater. It is the only species of shark known to stay for extended periods

in freshwater with reports of the species being found nearly 4000 kilometres from the sea in the Amazon River system.

Biology

The Bull Shark cannot complete its entire life cycle in freshwater and requires access to saltwater through rivers and estuaries. In the Riverpark, females are thought to move upriver from the ocean in late spring and early summer to give birth before mating and returning to the ocean. They produce up to 13 young after a gestation period of 10 to 11 months.

The young, 55-85 centimetres long at birth, will reach maturity after 9 to 10 years and live for up to 30 years. Bull Sharks usually swim slowly and close to the bottom and are known to ambush predators. Their diet is broad and varied and

includes fish, other sharks, sea turtles, birds, dolphins, crustaceans, echinoderms, molluscs and terrestrial mammals.

Threats

In some parts of the world, the Bull Shark is a popular game fish. Its habitat is vulnerable to modification and pollution caused by human activities.

Management messages

Bull Sharks have a reputation for being dangerous and therefore shark sightings should be reported to the Water Police 24 hour hotline on (08) 9442 8600. There was one fatality in the Swan Canning Riverpark in the 1920s.

For more information, see our Bull Shark factsheet on the Trust website www.swanrivertrust.wa.gov.au/docs/fact-sheets/bull-shark-fact-sheet.pdf.

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