RIVERVIEW

The Swan Canning Riverpark's magazine

ISSUE 2



WELCOME

Welcome to our second new-look RiverView. The Trust was very pleased with the reception of the first edition and we hope to build on that achievement. As the pages following show, it's been another busy and interesting period at the Trust.

The subject of our lead story on research into the Western School Prawn has captured the imagination of many people since public announcements of the project were made recently.

Obviously, many Perth residents remember summer nights drag-netting for prawns along the river foreshore. Whether we will return to those halcyon days remains to be seen but the Trust's focus here is very much on the 'science' of what ecological variables influence the river prawn population. We have already seen a world first in the prawn breeding program and I acknowledge our partners at Challenger Institute, RecfishWest, Murdoch University, the WA Fish Foundation and the Fisheries Research and Development Corporation.

THE RESEARCH WE DO AS **PART OF THIS PROGRAM WILL HELP GUIDE OUR MANAGEMENT ACTIONS BOTH IN THE RIVER** AND, IMPORTANTLY, IN THE CATCHMENT. THIS **WILL HELP ENSURE OUR RIVERPARK REMAINS AS HEALTHY AS POSSIBLE** AND A MAGNIFICENT RECREATIONAL ASSET.

And while on the topic of things that live in the river, we are looking ahead at a promising new tool to help assess the condition of the estuary. The Fish Community Index, developed over five years by Murdoch University,

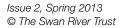


uses a newly-developed ecological index that is based on the Riverpark's fish communities to give a score of estuary condition. This initiative could become another valuable tool to help assess our progress made in the long journey to restore and maintain health in the Swan-Canning system.

This edition of RiverView again acknowledges the contributions of our many partners in managing the rivers and their catchments. For example, this year saw us celebrating 15 years of the Swan River Trust and Alcoa Landcare Program. This is an amazing milestone for a community environment program and we again thank our partners in Perth Region NRM, Alcoa Australia and the many community groups who deliver the hard work on the ground.

Finally, beautiful images of the Swan and Canning rivers are a very important aspect of how we engage with the Perth community. Through this year's River Guardians' photography competition we have been reminded of our rivers' wonderful and interesting sights and the amazing photographic talents of the Perth community. Thanks all!

Rod Hughes General Manager



Contibutions and comments are welcomed and should be sent to riverview@swanrivertrust.wa.gov.au

Design: key2creative

Black bream perspective. Photo: Matt Kleczkowski



RETURN OF THE RIVER **PRAWN**

Story and Photos: Mark Thornley

A world-first scientific breakthrough by a team of dedicated West Australian scientists is set to restore the once popular summer pastime of prawning in the Swan Canning Riverpark.

Researchers cleared their first significant milestone at the Australian Centre for Applied Aquaculture Research (based at Challenger Institute), when they successfully developed a technique to grow Western School Prawns or river prawns from eggs.

Centre Director Dr Greg Jenkins said he was excited with the river prawn culturing and the prospects for the recreational fishery.

"This is the first time Western School Prawns have been cultured anywhere in the world, and there's no doubt we have learnt a lot along the way," Dr Jenkins said.

"We still have a long way to go, but we are confident we have refined the method and will be releasing significant numbers of prawns back into the Swan River next year."

The Western School Prawn (Metapeneus dalli) was once abundant in the Riverpark supporting a commercial and recreational fishery – but stocks have been in decline since a peak in 1959.

Collaboration between the Department of Fisheries, Swan River Trust, Challenger Institute of Technology, Murdoch University and the WA Fish Foundation is poised to turn back the clock for recreational fishers.

The joint project partners said the recent breakthrough could signal a welcome return to recreational prawning in the Riverpark and researchers are confident of releasing large numbers of juvenile Western School prawns into the river by April 2014.

Swan River Trust Principal Scientist Dr Kerry Trayler said the road to culturing Western School Prawns has been challenging with the research team having to overcome major hurdles including sourcing adult prawn brood stock from the river in a narrow time window.

"Western School Prawns are comparatively small and their tiny juveniles proved to be harder to culture than other prawn species," Dr Trayler said.

"Researchers experimented to find the right conditions and diet to raise the juveniles to the ideal release size."

Dr Trayler said the prawn restocking, combined with on-going monitoring and research, will help identify the key environmental factors that have affected Perth's river prawns.

She said over fishing and river pollution have been blamed for the river prawns' decline but at this stage scientists don't know the cause of the decline in prawn numbers.



"We hope to answer a question that has baffled West Australians for more than 20 years and discover the key to the river prawns survival and growth," Dr Trayler said.

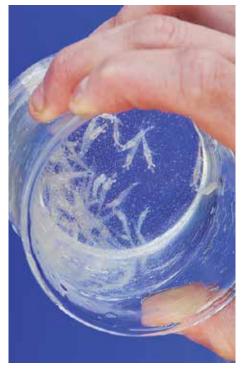
"Research at Murdoch will help us understand what is limiting the prawns' natural recruitment by allowing us to assess their habitat and water quality requirements as well as predation factors," she said.

The three year river prawn culture and release project was made possible by the Recreational Fishing Initiatives Fund and supported by Recfishwest and Department of Fisheries. The research is backed by support from the Fisheries Research and Development Corporation.

Recfishwest Chief Executive Dr Andrew Rowland welcomed the river prawn







Juvenile western school prawns ready for release.

world first and said local recreational prawners and fishers had been working with researchers to source and capture Western School Prawns for culturing.

"River prawning is part of our state's history and holds a special place in the hearts and minds of generations of many West Australians," Dr Rowland said.

"Now the project has achieved this world first, we hope the wider recreational fishing community will get involved via a Prawn Watch community engagement program that will provide researchers with valuable data."

Prawn Watch will be a citizen science research project modeled on the Swan River Trust's enormously popular Dolphin Watch program.

Community volunteers will be encouraged to report prawn sightings and catches to help inform Murdoch University's research program into the river prawns.

Prawn Watchers will be able to upload their data online and eventually via a phone application. For more information visit the River Guardians website at riverguardians.com



A gravid (spawning) western school prawn.



The western school prawn larvae were fed on a special algae paste in the laboratory.

CREEPING CATFISH While netting for Western School Prawns brood stock scientists have discovered a few unusual creatures in the waters around Keane's Point in Peppermint Grove. Murdoch researcher James Tweedley netted several striped eel catfish. The venomous fish are typically a coral reef species but scientists believe that the marine heat wave may have led the catfish to creep their way down the coast. Dr Tweedley said the striped catfish have an eel-like body and grow to a maximum of 350mm. They have highly venomous serrated dorsal and pectoral-fin spines. Striped eel catfish. Photo: James Tweedley

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Perth's Dolphin Watch project is forging a reputation as one of the most progressive citizen science programs in the world.

WA's Chief Scientist Professor Lyn Beazley said the Dolphin Watch program had established an important and successful model for community engagement programs around the globe.

"Perth is one of the few capital cities where residents can see dolphins on their doorsteps," Professor Beazley said.

"There are now nearly 600 trained dolphin watchers monitoring the Swan Canning Riverpark dolphins. Their efforts have been unlocking

the mysteries of these animals and helping scientists to understand how and why Indo-Pacific dolphins are using the Riverpark."

Dolphin watchers are also helping to trial a new phone application technology with Gaia Resources and soon they will be able to upload their observation data through a sophisticated on-line template. This information will help inform the Coastal and Estuarine Dolphin Project (CEDP) research program into bottlenose dolphins conducted by Murdoch and Curtin universities.

Part of this research examines how environmental changes in the Swan and Canning rivers and human activities affect the dolphin community. CEDP researchers work with Perth's dolphin watchers to monitor the movement and behaviours of the Riverpark dolphins. This helps track injured or sick dolphins throughout the Riverpark and assists the Swan River Trust, Department of Parks and Wildlife and researchers to assist individual animals if necessary. The total number of dolphin sightings reported by Dolphin Watchers since the project began in April 2009 is 4160.

Swan River Trust Principal Scientist Dr Kerry Trayler said this year alone Dolphin Watch volunteers had spent 2467 hours monitoring and photographing the dolphins. Most sightings occurred within the Fremantle Port (20%) and the mid reaches of the Riverpark, i.e. Melville Waters (22%) and Matilda Bay (15%).



She said the latest research data reveals 40 dolphins have been using the Riverpark in the past 2 years – including 10 females and their calves and at least 22 of those dolphins are thought to be resident within the Riverpark, including 4 mother calf pairs.

"This work is invaluable," Dr Trayler said.

"PRIOR TO DOLPHIN WATCH STARTING, SCIENTISTS HAD A LIMITED RANGE OF DATA ON THE RIVERPARK DOLPHINS AND WE KNEW LITTLE ABOUT HOW THE POPULATION INTERACTED AND USED THE RIVER."



Dolphin Watch Citizen Scientist of the Year Trudy Klessens accepts her award from WA Chief Scientist Professor Lyn Beazley. Photo: Miranda Holker.

"We now know that the Riverpark is an important foraging and socialising area for dolphins and it is also an important weaning area for mothers and calves. We have also realized that the dolphins travel a lot further into the upper reaches of the Swan River than we first anticipated.

"There is also evidence to suggest that there are a number of dolphin hotspots in the Riverpark and scientists can now confirm Fremantle Harbour, the Canning River and the middle Swan are regularly frequented by dolphins."

A recent Dolphin Watch research report showed the Riverpark dolphin population has recovered well from the events of 2009 when six river dolphins died. It completes a series of studies into the deaths and confirms that cetacean morbillivirus, which weakens the immune system, was present in the population and played a role in the death.

The first case of a known third generation river dolphin was also documented by Murdoch researcher Delphine Chabanne. Resident dolphin *Moon*, who was first recorded with her mother *Socket* in 2001, now has her own calf, *Night*, aged about three years.

Trust River Guardians program manager Marnie Giroud said every volunteer Dolphin Watcher made an invaluable contribution but there were a number of stand-outs that deserved to be recognised at a recent awards ceremony attended by 300 guests at the Perth Convention Centre.

"Trudy Klessens received the 2013 Chief Scientist's Citizen Scientist Award. Trudy was selected from hundreds of volunteers because of the detail contained in her reports," Ms Giroud said.

"Trudy's reports not only contained presence and absence data but she also went a step further to include information on weather conditions, dolphin behaviour and whether people were present."

Peter and Trita Agar were named the 2013 Dolphin Watchers of the Year and were presented their award by Environment Minister Albert Jacob. The couple has been involved in Dolphin Watch since 2009 and this year they contributed an incredible 223 hours monitoring around Shelley.



RIVER VIEWS

The Swan Canning Riverpark was captured in all its glory in the recent River Guardians Photography Competition.

he Swan River Trust and the Community Newspaper Group called on amateur photographers to capture their favourite places, people and wildlife in the Riverpark and the response was overwhelming.

More than 400 images - double the number of entries in previous years - were received and it left our four judges with the difficult task of narrowing down the talent and selecting the winners.

Swan River Trust General Manager Rod Hughes said judges were impressed by the diversity of images.

"The competition showed what a strong connection West Australians have with the Swan Canning Riverpark," he said.

"The images captured the beauty of the Riverpark both above and below the water, its abundant wildlife and most importantly people engaging in play, sport and relaxation."

The winners shared \$4000 worth of great prizes including digital cameras from Camera Electronic, fabulous Finn Kayaks, Captain Cook Cruises and family passes from Scitech.

IMAGES L-R

Below: Erosion by Jessica Wormuth Top: Como Jetty by Anne Costhuizen Right: Fun in the sun by Chelsea Bates



Amateur Category winner - Michael Farnell

The River Guardians Photography Competition has opened up a whole new world for aspiring photographer Michael Farnell.

The photography student had his heart set on becoming a sports photographer but his winning image Morning Stroll has created an appreciation of landscape photography and the Swan River. "I got up early to take a photo for the competition and came across the bridge near Ascot," he said.

"It's given me a new passion for landscapes."

Visit an online gallery of the River Guardians photo entries @ www.riverguardians.com/ get-active/competitions/ peoples-choice-award





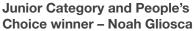












Applecross teenager Noah Gliosca has plenty to be proud about.

He won the junior category of the River Guardian Photography and also took out the People's Choice Award with his image Fun at Dusk.



"I was pretty amazed," he said, "I didn't see it coming."

Noah, 13, put plenty off effort into the competition and spent a couple weeks on the river trying to snap that winning shot.

"I just kept on going down the river and all up I took about 60 pictures."

IMAGES L-R

Top: Low Tide Leeuwin Barracks by Vanessa Pogorelic. Top right: Sailboats lining up by Richard Goodwin. Middle: Walyunga Pool by Elliot Keeney. Middle right: Morning Stroll by Michael Farnell. Bottom right: Catching jellyfish at sunset by Mark Binns

TALE TWO CITIES

Story and Photo: Miranda Holker

In the year of its 15th anniversary, the Armadale Gosnells Landcare Group (AGLG) can celebrate more than reaching a milestone of longevity. AGLG members are also providing an inspiring example of community and local governments working together to protect the environment.

Funding by the councils and work by a dedicated team of volunteers and staff allowed the group to plan, coordinate and implement rehabilitation and management activities across 17 project areas covering 34 hectares in the 2011-12 financial year. These projects include Roleystone's Roleypool, John Okey Davis Park, Mary Carrol Park Wetlands in Gosnells, and Palomino Reserve in Seville Grove. AGLG Volunteers contributed an impressive 5800 hours.

Chairman Cam Clay, a former banker with more than 60 years of volunteering under his belt, said as well as managing a range of projects directly, AGLG works closely with volunteer friends groups to lend expertise and advice.

"We were really set up to coordinate and assist the community to develop their patch," he says. "We act as an agent, and being part of the community ourselves we can talk to them. These volunteers are giving their time and they want to achieve something. When the community is looking after their own reserves, they start to take real ownership for them."

Cam says volunteers, play a pivotal role to the success of the group. He has voluntarily acted in the role of chairman for 13 years.

"When we started out, many of our members were volunteers - and the bulk still are," he says. "Members represent community groups, the Cities of Gosnells and Armadale, friends

groups and the Swan River Trust and we work closely with friends groups and schools."

AGLG was established with support from the Trust in 1998 in response to community concern about the declining health and degradation of the upper Canning, Southern and Wungong rivers. The group works in the cities of Armadale and Gosnells to implement key rehabilitation projects, mostly in the riparian zones of the Canning, Southern and Wungong Rivers.

Armadale and Gosnells councils both contribute funds to employ two AGLG officers, along with cash and in-kind support to numerous projects. In return, AGLG attracts grant funding - including from the Trust's Riverbank and Swan River Trust and Alcoa Landcare Program - and provides thousands of voluntary hours for projects within the cities. In 2011-12, this voluntary catchment restoration work totalled more than \$350,000.

"The two cities have been the backbone of why we've been successful," Cam says. "The community is the driving force but without the cities we wouldn't be where we are."

AGLG secretary Pat Hart understands the value of volunteers and how local government can contribute to the environment. She has more than 30 years of involvement in community organisations including as councillor for the City of Armadale, board member of the Trust, Perth Region NRM and the Botanic Parks and Gardens Authority, and chair of the South East Regional Centre for Urban Landcare (SERCUL).

Pat has been part of AGLG for 15 years and is very proud of the group's achievements.

"You would find it hard to locate such a formal and supportive arrangement between a catchment group and local governments anywhere in this state," she says.

"IT'S A GREAT PARTNERSHIP **AND IT'S WORKED SO WELL** FOR ALL THESE YEARS."





new report released by the Swan River Trust applies a Fish Community Index as a barometer of estuary condition. The report, prepared by Murdoch University, summarises the results of sampling fish communities over the summer and autumn of 2012 and uses the newly developed ecological index that is based on the fish communities to give a score of estuary condition.

Trust Principal Scientist, Kerry Trayler said this is an exciting report that shows the estuary scoring well as a whole, based on the fish communities and suggests an overall improvement in estuarine conditions since the mid 2000's.

"We can't be absolutely certain, but those improvements might be attributed to better habitat conditions. such as less severe algal blooms than in the mid 2000s, as well as improved oxygen conditions due to the expanded oxygenation program in the Riverpark."

The Fish Community Index was developed by Murdoch University over a five year period, with sponsorship from the Swan River Trust and the Departments of Water and Fisheries. The Index draws on a 30-year record of fish communities in the river system and is the first time an index of this kind has been applied in West Australian estuaries.

The index uses a suite of fish metrics, including diversity, number of species and feeding category, to characterise the fish community and provide a score of estuarine condition. Condition is scored for the estuary as a whole, and for key zones within the system.

Dr Chris Hallett, who was instrumental in the development of the Fish Community Index, said that "these kinds of indices are used elsewhere in the world, but it took some time to tailor one specifically for the Swan Canning".

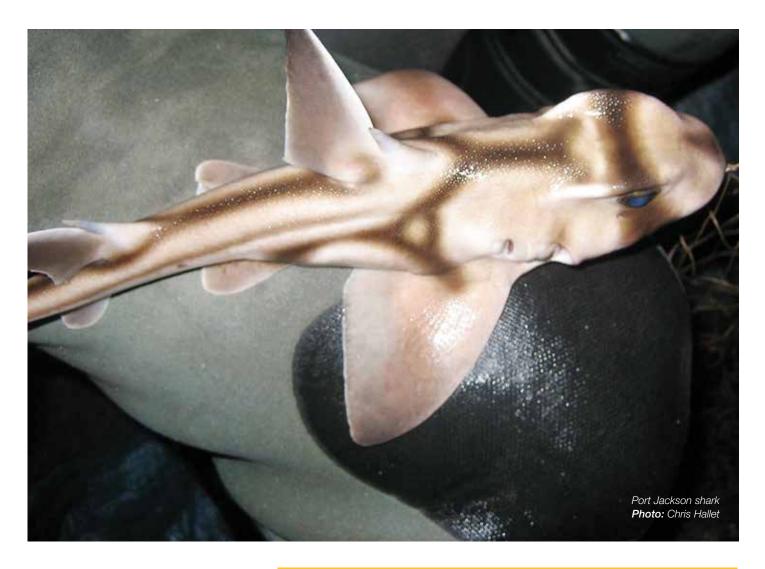
"The index provides a tool to complement traditional water quality monitoring approaches. Fish communities respond to their habitat conditions, so if those habitat conditions change, we can expect to see a change in the fish communities".

Murdoch scientists sampled and assessed fish communities in 48 nearshore and offshore locations across the Riverpark. Both seine nets and gill nets were used to collect fish, the majority of which were returned to the water alive after being identified and counted.

DR HALLETT SAID THAT **HISTORICALLY THERE WERE OVER 130 SPECIES** OF FISH RECORDED IN THE RIVERPARK AND THE **MURDOCH UNIVERSITY TEAM COLLECTED A SNAPSHOT OF THESE FISH DURING** THE STUDY.

"Overall, more than 29,000 fish were examined during the sampling period, with 29 species recorded in the nearshore waters. In offshore waters,





more than 20 species were recorded with numbers dominated by Perth Herring, Tailor, Yellow Tail Grunter and Black Bream".

Dr Trayler said the report scored the Swan Canning estuary as a whole, but also provided information on specific ecological zones and some zones did score poorly at times due to area specific conditions at the time of sampling. For example the upper Swan was recovering from a fish kill event in summer 2012, following widespread de oxygenation after a rainfall event.

Dr Trayler said the community treasure the opportunity to enjoy recreational fishing in the Riverpark and by providing a measure of how the estuary is faring based on fish communities is an important step in recognising these values.

The Trust continues to work with Murdoch University to report annually on fish communities as one indicator of estuarine condition within the Swan Canning Riverpark.

METRICS USED TO CALCULATE THE FISH COMMUNITY INDEX

NUMBER OF SPECIES

DIVERSITY

PROPORTION OF THE CATCH THAT ARE SPECIALIST FEEDERS

NUMBER OF SPECIES THAT ARE SPECIALIST FEEDERS

NUMBER OF SPECIES THAT ARE GENERALIST FEEDERS

PROPORTION OF THE CATCH THAT FEED ON DECOMPOSING PLANT AND **ANIMAL MATTER**

PROPORTION OF THE CATCH THAT ARE BOTTOM DWELLING

NUMBER OF BOTTOM DWELLING SPECIES

PROPORTION OF THE CATCH THAT REPRODUCE IN THE ESTUARY

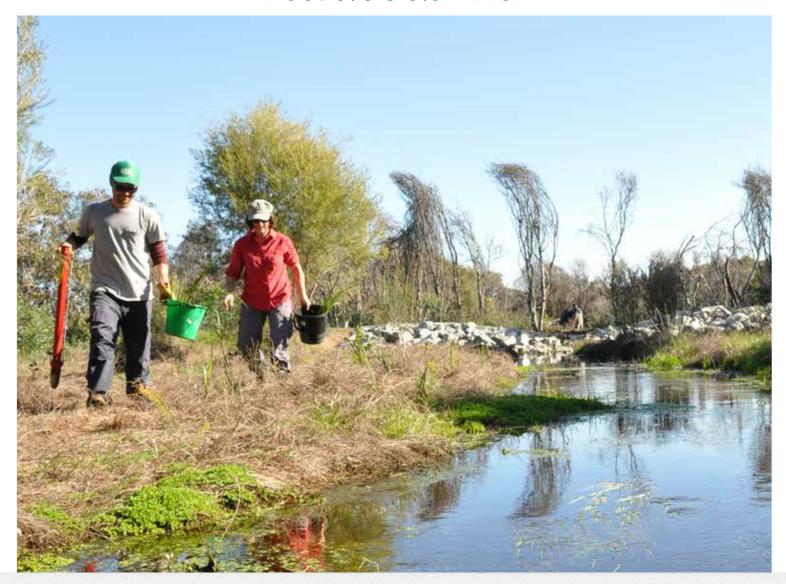
NUMBER OF SPECIES THAT REPRODUCE IN THE ESTUARY

PROPORTION OF CATCH THAT ARE THE GOBY, PSEUDOGOBIUS OLORUM

TOTAL NUMBER OF THE GOBY, PSEUDOGOBIUS OLORUM

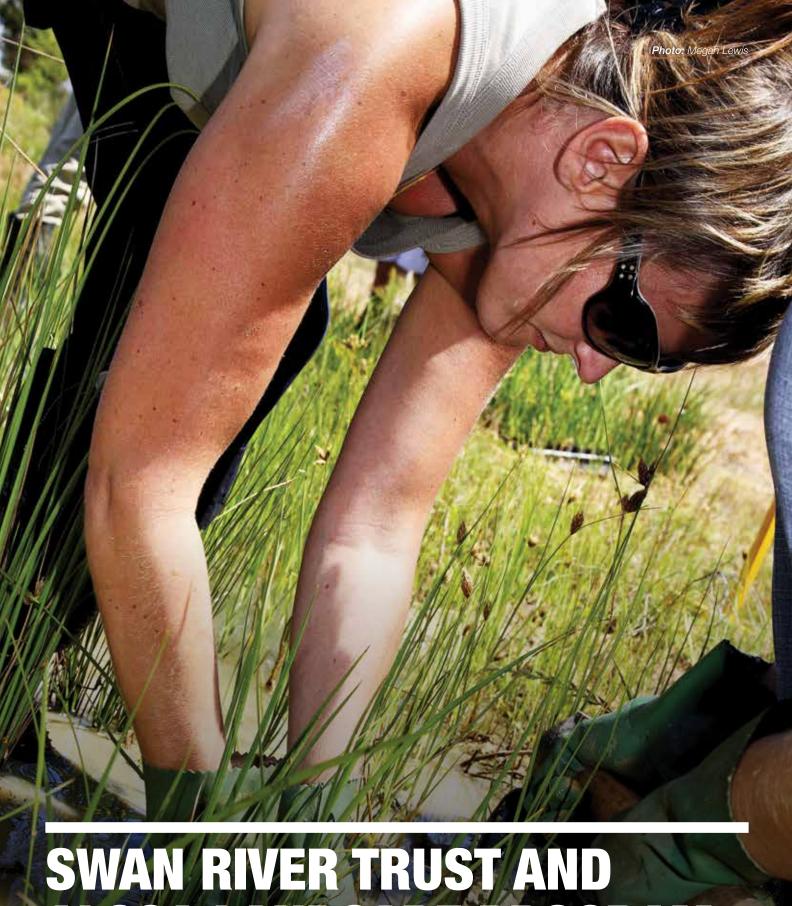


Australia's aluminium



Proudly supporting the Swan River Trust and Alcoa Landcare Program for 15 years





SWAN RIVER TRUST AND ALCOA LANDCARE PROGRAM CELEBRATES 15 YEARS

Landcare groups, partner organisations and the community have gathered to celebrate a major milestone in the Swan River Trust and Alcoa Landcare Program (SALP).

ne of Australia's longest running landcare programs SALP is jointly funded by the Swan River Trust and Alcoa and coordinated by Perth NRM. The program distributes funds to community groups with a focus on protecting and restoring foreshores, wetlands and bushland in the Swan Canning Catchment.

In February this year, SALP celebrated its 15 anniversary – a milestone marking the distribution of \$6.5 million in funding allowing 175 community groups to complete more than 1000 landcare projects throughout the catchment. It was also a celebration of the volunteers, who have contributed more than 155,000 voluntary hours worth approximately \$3 million over the program's 15 year history.

The value of the volunteers work to the Perth environment is priceless, says Perth Region NRM Chairperson Doug Hall.

"SALP volunteers have planted 2 million trees, revegetated over 1763 hectares of degraded land since the program's inception," Mr Hall said.

"The benefits of this funding are enormous as it is estimated each grant draws matching contributions of about 80 per cent through volunteer work and in-kind support. This has resulted in a further \$6 million of leveraged funds, mainly from local councils."

SALP funded projects help to retain and restore vegetation and protect and enhance the quality of streams, rivers and wetlands.

Swan River Trust General Manager Rod Hughes said the landcare program was a crucial part of the Trust's strategy to care for the health of the Swan Canning Riverpark.

"You can have all the plans and strategies you like, but in the end it's about the rivers," he said. "And this program is about getting money on the ground for a whole range of fantastic projects."

"Community engagement is essential to the work of an agency like the Swan River Trust. Clearly these things can't be achieved just by government.





Over 30 community groups attended the SALP celebrations. Photos: Doug Lim

They work because they're done in partnership with the community."

Better community engagement in metropolitan communities and recognition of the hard work of community groups are the keystones of the project, said Alcoa Australia Corporate Affairs General Manager Brian Doy.

"There are people working on their project - their patch of bush, their wetland, their part of the river - and they need to know they're supported and the work they're doing is appreciated," he said. "And they need to know there is a whole movement out there, a body of people that have the same ideals and are like-minded. SALP is the thing that binds them together."

SALP's 15 year anniversary was celebrated this year at Sandalford Winery and also included the announcement of \$313,500 in the next round of funding for 77 on-ground landcare projects.

Grant recipients for the 2014 SALP funding will be announced in October 2013.

Visit www.perthregionnrm.com for more information.

SALP AT A GLANCE

- **LAUNCHED IN 1988 SALP WAS** SHORTLISTED FOR THE 2013 PREMIER'S AWARDS (MANAGING THE ENVIRONMENT CATEGORY)
- \$6.5 MILLION FUNDS FOR 1000 LANDCARE PROJECTS
- **2 MILLION TREES PLANTED**
- 1763 HECTARES OF DEGRADED LAND REVEGETATED
- 1200 TONNES OF MULCH SPREAD
- 155,000 VOLUNTEER HOURS **WORTH \$3 MILLION**

RIVERPARK NEWS

Taking on feral fish

The Swan River Trust, Department of Fisheries and Murdoch University have been working hard to control feral fish in the Swan Canning Riverpark. Trust Senior Environmentalist Dr Jeff Cosgrove said feral fish posed a serious threat to the Riverpark by out competing native fish for food and habitat.

Pearl cichlids (a popular aquarium fish) populations have been identified in Altone Park lakes in Beechboro and the lakes in The Vines near Ellenbrook. In a recent blitz, Murdoch University's Fish Health unit captured 418 Pearl cichlids in the Altone Lakes and about 300 cichlids from the Vines Lakes while Department of Fisheries staff removed a further 512 Pearl cichlids from Lanius Drain.

United plan to eradicate Amazon frogbit

An outbreak of the highly invasive Amazon frogbit (Limnobium laevigatum), or South American spongeplant, has been identified and removed from Liege Street wetland in Cannington. The fast growing aquatic plant which is sold as a popular aquarium accessory was first discovered in WA in January 2013. At this stage, it has not spread beyond the wetland but Amazon frogbit has clogged many Queensland waterways and poses a serious threat to the Riverpark. To manage it, the Trust, Department of Parks And Wildlife, the Water Corporation, South East Regional Council for Urban Landcare, and the City of Canning have launched a coordinated management plan that includes regular assessments, field investigations and community and industry education campaigns.

Help monitor blue swimmer crabs

Following the Riverpark's best blue swimmer crab season in 10 years, the Department of Fisheries (DOF) needs your help! If you regularly crab in the Swan Canning estuary, Leschenault Inlet or Geographe Bay DOF require a total of at least 150 volunteers - a minimum of 50 from each fishery to keep a logbook recording the number and size of the blue swimmer crabs you caught and where you caught them. This will help DOF with vital research into the status of these beautiful and tasty crustaceans. Once you have signed up with DOF to send your crab catch data, you will receive a Recreational Angler Program logbook to complete whenever you go crab fishing in the areas above. This project is another way you can assist with fisheries research in our waterways, and help ensure there are fish for the future.

For more information on fisheries volunteering opportunities visit their 'About Us' page at www.fish.wa.gov.au.

Aquatic safety a **Riverpark priority**

Public safety across aquatic user groups remains a top priority in the Swan Canning Riverpark. Following extensive public consultation through the Aquatic Use Management Review Framework new safety measures at popular water skiing areas – which includes prohibiting ski tubes and jetskis in the Belmont ski area, and amendments to other water ski areas have been well received by the public.





REDUCED BOAT SPEEDS IN NARROW BOATING CHANNELS AND **ENVIRONMENTALLY FRAGILE RIVER SECTIONS WILL SOON** BE COMMUNICATED BY THE DEPARTMENT OF TRANSPORT.



MULLOWAY FIND NEW HOME IN THE RIVERS

Fisheries Minister Troy Buswell has helped release hundreds of tagged mulloway into the Swan River as part of a program to boost numbers of the prized angling species. Six hundred mulloway were released at the Coombe Reserve foreshore, Mosman Park during July 2013 as part of a three-year project. The eight-monthold fish were about 25cm long when released. The mulloway were bred by the Australian Centre for Applied Aquaculture Research at Challenger Institute in Fremantle. under a Western Australian Fish Foundation project, supported by \$280,000 in state government funding.



Kent St weir

The Swan River Trust removed the boards from the Kent Street weir on the Canning River following good rains in August 2013. The Kent St weir plays an important conservation role with the creation of a freshwater pool that extends more than five kilometres along the Canning River and separates this freshwater pool from the Canning River. The weir boards are traditionally removed in early July and during the weir's 86 year history, the boards have been removed every year with the exception of 2010.

But in the past decade, rainfall has been declining causing reductions in stream flows across the south west, including in the Swan Canning Catchment. This year the weir boards were removed in August before being replaced in October. The boards can only be removed when winter river flows are sufficient to prevent estuarine or salt water moving upstream from the Canning river. Removing the boards allows fish and other fauna to move into habitat zones upstream of the weir as part of their life cycle. It also allows fresh water flushing of the weir which is vital to maintain the health of the ecosystem.

Partnership to reduce non-nutrient contaminants

The Trust has joined forces with the South East Regional Centre for Urban Landcare (SERCUL) and the City of Gosnells to reduce non-nutrient contaminants.

THE BICKLEY BROOK WATER **OUALITY IMPROVEMENT PLAN IS FOCUSING ON IDENTIFYING DRAIN OUTFALLS IN LIGHT INDUSTRIAL AREAS THAT ARE UNLIKELY TO HAVE BEEN APPROVED.**

So far 11 suspected illegal outfalls have been identified. One was polluting the brook with a smelly green liquid. It has been removed. The Hydrocarbon Track and Trace Project in the Maddington Industrial Area tracks hydrocarbons in stormwater pits and found high levels in 15 of the 20 pits that were tested. The Trust is working with the City of Gosnells and Water Corporation to clarify legitimacy of the outfalls and to prioritise further investigations and audits.



Report trapping of turtles

The Department of Parks and Wildlife (DPaW) is asking the public to report people trapping native turtles in Perth's lakes and rivers. At least 30 oblong, or long-necked, turtles (Chelodina oblonga) have been found dead in nets over the past 12 months. Removing protected fauna such as oblong turtles can attract fines of \$4000 per offence. To report trapping of turtles contact the DPaW Wildcare Helpline on 9474-9055.



BREAMING WITH KNOWLEDGE Research scientists from Murdoch University's Centre for Fish, Fisheries and Aquatic Ecosystems have launched a three-year study to better understand the biology and movement patterns of Western Australia's black bream. The project, funded by the Recreational Fishing Initiatives Fund and supported by Recfishwest and the WA Department of Fisheries, will involve researchers sampling the Swan and Canning rivers, as well as the Moore estuary, Murray river, Walpole-Nornalup inlet, Wilson inlet, Wellstead inlet and Culham inlet. There has been a significant increase in black bream numbers throughout the Swan and Canning rivers. **Photo:** Kasia Mazurkiewicz



2013 has been full of events and activities to help keep our rivers healthy. If you haven't had a chance to attend the events so far, don't worry because there are plenty more planned for the rest of the year. Our Spring series of free Great Gardens workshops will begin shortly where you can learn RiverWise gardening from the experts. Visit www.greatgardens.info for details.

Dolphin Watch training

We had a fantastic training evening at the Horizon Planetarium at Scitech. With more than 170 people attending, it was a busy night learning about the Indo-Pacific bottlenose dolphins that live in the Swan Canning Riverpark and surrounding waters. Dolphin experts Dr Hugh Finn from Murdoch University and Dr Chandra Salgado-Kent from Curtin University gave some insightful presentations.

We also heard from Swan River Trust Principal Scientist Dr Kerry Trayler about nutrients and what we can do to reduce their negative influence in the river system to better protect the health of dolphins and other fauna.

There are now 600 trained Dolphin Watch volunteers monitoring the Riverpark dolphins who have contributed more than 7181 reports since the inception of the project in April 2009. This is a fantastic effort by volunteers to assist the Coastal and

Estuarine Dolphin research project being conducted by Murdoch and Curtin universities.

Training for new volunteers is available once a year and for trained volunteers there are further opportunities to upskill and learn more about the dolphin species and research project during the year.

FinBook

FinBook is a catalogue of bottlenose dolphins (Tursiops aduncus) present in the Swan Canning Riverpark and is a valuable resource for Dolphin Watch volunteers, helping them to identify the dolphins they record.

The third edition includes 28 dolphins sighted in the Riverpark over the last year and features photos of each dolphin's unique 'fin prints' to help Riverpark users recognise individual dolphins, while also offering insights into their alliances or 'friendships' with other dolphins.

New to FinBook this year is a Dolphin Behaviour Guide to help Dolphin Watch volunteers and the community recognise and understand dolphin behaviours that they observe in the Riverpark.

Become a River Guardian

River Guardians are friends of the Swan and Canning rivers. Becoming a River Guardian gives members the opportunity to connect with the Swan and Canning Riverpark and the people and projects protecting our rivers. Free events, subscription to the Trust's online magazine RiverView, networking, volunteering and training opportunities and discounts with Riverpark businesses are all provided to members at no cost.

River Guardians membership is open to all ages. More information on upcoming events is available on the River Guardians website, www. riverguardians.com, including an online application form.



WORKSHOP PARTICIPANTS GET RIVERWISE

Being RiverWise in the garden and at home was the focus of a special training session hosted by the River Guardians team in May 2013. More than 50 participants attended a half day workshop on a Captain Cook Cruises boat, with a visit to gardening expert Chris Ferreira's house a highlight of the day.

Onboard, Trust Education Officer Joselyn Juraszek's *RiverWise Out There* session allowed participants to test water samples taken from around the catchment for salinity, turbidity and PH. Trust Principal Scientist Dr Kerry Trayler's *River Science* presentation explained how the river system works, the issues it faces and ways we can help reduce nutrients entering the waterways.

The lunch cruise ended in Fremantle with a wonderful social display by resident bottlenose dolphins in the harbour.

FOLLOWING A SHORT BUS TRIP FROM FREMANTLE, PARTICIPANTS VISITED THE GREAT GARDEN'S HOUSE IN HAMILTON HILL TO LEARN ABOUT SOIL AMENDMENTS AND GARDENING WITH RIVER FRIENDLY PRODUCTS. IT WAS THE PERFECT OPPORTUNITY TO SEE A SUSTAINABLE GARDEN.

Amy Krupa and Deb Taborda from South East Regional Centre for Urban Landcare (SERCUL) presented *RiverWise at Home*, making cleaning agents from household ingredients to save money and the environment by eliminating harsh chemicals that can affect our health and the rivers.

To register your interest for the next RiverWise training course email **guardians@swanrivertrust.wa.gov.au** or become a River Guardians member and receive our invitations. It's fun and free to join and you can help us protect the Riverpark for future generations.

RiverWise training is funded through a partnership between the Trust and the Australian Governments Caring for our Country Program to implement the Swan Canning Water Quality Improvement Plan.





TRAINING FOR THE FUTURE

he next generation of environmental leaders were recently put through their paces at the Swan Canning Riverpark Leadership Forum - Educating for the Future. The Swan River Trust joined forces with Millennium Kids and the Department of Communities, hosting the two day forum at the Canning River Eco Education Centre.

Trust Education Officer Joselyn Juraszek said seven River Ranger Schools and St Hilda's Anglican School for Girls were joined by students from Surabaya in Indonesia during the two day event.

The Indonesian students shared stories about the Kalimas River and this was complemented with presentations from leading scientists and practical activities to reinforce the learning component of the program.

"Students explored the meaning and value of sustainability and developed a 10-point plan to improve the Riverpark," Joselyn said.

"This will be followed up with on-going support from Millennium Kids and the

Trust with after school programs to provide opportunities for the students to become young leaders in their community."

Ardross Primary School teacher Catherine Bishop said it was a fantastic program that blended practical and theoretical lessons and reinforced valuable concepts such as field work, experiments and creative thinking.

is based on using their enthusiasm for sustainability to create plans for particularly based around river systems," she said.

"The forum is child-focused and it empowerment of their environment, Students also enjoyed the forum with many declaring a renewed commitment to protect the Riverpark and to ensure they cut down on plastic use.

Gosnells Primary School student Taylah Drazic said the Youth Forum was fun and educational.

"I have really enjoyed meeting new people, making new friends and learning about the environment," she said.

"We have learnt a lot of things such as how much worse littering is in Australia now than what it used to be. If we don't change our behaviour the litter could destroy our environment."





STUDENT PERSPECTIVES

Ardross Primary School

Fifty six River Rangers recently went on a Two Rivers Walk called Koodial Bilva Koorl and we covered over 5 kilometres. After the acknowledgement of Country at Deep Water Point on the Canning River, we set off in small groups. We translated Noongar words and identified different birds and tree species. We used our GPS sets to find the way and met guest speakers at parks along the track. They recited poems, sang songs, made jokes, told stories and gave us information about the river and the bush. Overall it was great fun but we were very relieved when we finally reached Alfred Cove on the Swan River.

Dale Christian College

River Rangers is going fantastically and we have the largest group of students this year. In the first term we had some water testing and a trip up to Churchman's Brook, surveyed and cleaned up the brook near our school and had a fantastic time kayaking at Champion Lakes. Here are some quotes from three students -

Yani Lotsos, River Rangers Leader

River Rangers has been great, we have tested water quality and I really enjoy learning while having fun with all my friends - Travis, Year 6

I loved going kayaking and the water testing, I have learnt a lot about the river system and keeping the environment safe and clean -Jodi, Year 6

Rossmoyne Primary School

The Rossmoyne River Rangers is in its first year of operation. The focus for the first part of the year has been to learn about the local river environment and identify areas for improvement. The students have carried out water quality testing, examined some aspects of recreational river use and taken photos of things they liked, disliked and want to change. In small groups they are developing Power Point presentations of actions they intend to implement to make improvements to the river environment -

Glen Cookson. **River Ranger Leader**

John Septimus Roe Anglican Community School River Rangers

The River Rangers at J.S.R. have been working at Bennett Brook with the Friends of Bennett Brook. They have been in documenting the area and looking for changes that have been occurring over the last year. They have also been involved with planting of seedlings, collecting rubbish and documenting it, water sampling and looking at what are edible native plants in the area. The cadets have learnt about working safely in nature, aquifers and what affect Bennett Brook has on the local aguifer, and the use of hand held radios as a means of communication whilst out in the field. They have been doing drills to improve self discipline and working with the Bush Ranger cadets to develop leadership skills - Carleen Edwards, **River Ranger Leader**

Gosnells Primary School

So far we have done badge making, discussions about our roles and ideas and we have walked around Mary Carroll Park (in Gosnells). There was a camera, a sketching board with a pencil and a notepad for recording things we wanted to improve and things we did and didn't like.

The reason I like River Rangers is that they are trying to help the environment. I have always loved helping animals and plants (I have a caring family). I think for our next lesson we should plant native trees (not seeds, just saplings). It would help Mary Carroll Park flourish again, making the park beautiful again -Zoey, Year 6

Mundaring Christian College

Using iPads, the students researched and created a Key Note presentation about a specific waterway in the world. They were given the opportunity to show these presentations to the rest of the class, creating opportunities to learn from each other.

STUDENTS REFLECTED ON THE WAYS THAT WE MANAGE **OUR ENVIRONMENT AND HOW IT CAN DIRECTLY** AFFECT RIVER SYSTEMS.

Students discussed a range of topics including fertilisers, litter and storm water runoff. Students went on a number of bush walks through the Black Cockatoo Reserve which surrounds the College. They thought carefully about the flora and fauna in this area and the ways that what people do on the surface eventually make its way into the water table and rivers. The students used their iPads to photograph points of interest on these bush walks and create a pictorial snapshot of the reserve.

Dion Farr. **River Ranger Cadets Unit Leader**





he annual NARC (Narcosis Dive Club) Land and Underwater Cleanup saw more than 70 divers and 40 land-based volunteers scour the Swan river and its banks around the Pier 21 jetties in North Fremantle during Autumn. .

In total, more than 9700 items were removed including push bikes, crab nets, boat parts, chairs and car tyres. Divers also removed 409 aluminium cans, 1038 glass bottles, 160 metres of hose, 65 metres of electrical wire, 45 metres of fishing line, 448 plastic bags, 180 plastic bottles and thousands of cigarette butts.

NARC president Chris Dodd said the most important outcome of the event was to remove potentially dangerous rubbish but it also provided a fantastic opportunity to build public awareness about the sensitivity of our rivers and pubic waterways and the need to protect them.

"It is imperative that future generations can enjoy and respect the beauty and wonder that our estuarine environment provides us today, both under and above the water," he said.

Swan River Trust Riverpark officers and supported divers during the clean-up and used patrol boats to remove large submerged objects that were too heavy for dive crews to extract. Senior Riverpark officer Stephen King said the Trust was eager to be involved because rubbish and debris can release contaminants and pollutants into the river system.

"A lot of these items pose a direct hazard to wildlife and river users," he said.

The popular event was professionally run and divers gathered at the Left Bank Hotel to celebrate a great weekends work. It is envisaged the NARC Underwater Cleanup will become an annual event in the Swan Canning Riverpark so watch out for next year's call for diver registrations.

"MORE THAN 9700 ITEMS **WERE REMOVED INCLUDING PUSH BIKES, CRAB NETS, BOAT PARTS, CHAIRS AND CAR TYRES."**







RiverView InterView

INGRID CUMMING

Story and photos: Mark Thornley

rom standup comedian to passionate educator Ingrid Cumming is an inspiration to all Australians. Speaking at a recent team building event in the Mundaring bushland, Ingrid captivated everyone, even the kangaroos that hopped from the trees and stopped metres in front of her as though precisely choreographed into her routine. A lesser speaker may have laid personal claim to this mastery of the supernatural but not Ingrid who guipped "thanks for letting them out of the back of the ute mate" to which of course no roadies replied.

Running her own successful small business Kart Kort Weiran (head, heart and spirit) Ingrid facilitates indigenous training, research and education and is a specialist indigenous consultant to some of Western Australia's largest organisations.

To say the least Mrs Cumming is an excitable character and it seems laughter is where Ingrid's real adventures began.

Can you tell us about your first indigenous comedy festival?

I performed in Perth with all these random people and somehow won a ticket to perform in front of some big crowds at the Melbourne Comedy Festival and finished 3rd funniest blackfella in the nation for 2009. People say death before standup comedy but I just got up and took the **** out of myself and that's what I do in my job today. Whether it's corporate training or my grass roots kids workshops it's always more powerful when you can educate and entertain at the same time.

As a Noongar woman what have been some of the biggest realisations for you?

My mum's a non indigenous woman and my father a Noongar man so when I was growing up I had a great dilemma of trying to choose if I was Aboriginal or not. But what I realised is that my spiritual ancestors don't discriminate and that it's really about just using all knowledges at your disposal to create a better future and a better world for everyone. I use culture as a catalyst to inspire and educate people about the environment and how we can work together to protect our rivers and heritage.

How important is storytelling in the modern world?

Prior to colinisation the only way the Aboriginal people could relay their stories was through aural history.



I HELP MAKE PEOPLE **AWARE THAT STORIES ABOUT 'COUNTRY' ARE JUST AS MUCH A PART OF AUSTRALIAN CULTURE AS** MATESHIP, THE FOOTIE AND THE BEACH.

So when we dance, paint and tell stories we are educating in the traditional way. I know I have a responsibility as a teacher and a mentor to carry on those traditions. I know it's bigger than me and it's not my intellectual property. I don't own this and have been given information to pass onto the next generation whether it be Aboriginal or non Aboriginal.

In terms of totems or animals you relate to. What defines you?

I was born in East Fremantle (Walyalup) and the cosmology creation story for that area is the dingo. The dingo is resilient, smart and is recognised as the protector of people. There is a big network of limestone caves around this area where the dingo once lived and at the time of 'creation' a big predator being the saltwater crocodile, was lying in

wait in the ocean (babylar) and was encroaching on the Beelair (lower Swan River).

The dingo was entrusted by the Wagyl to protect the river and after the crocodile kept pushing and testing the dingo he bit the tail of the crocodile. The tail snapped off and in the modern day landscape that story translates to the crocodile being Garden Island. From the Fremantle roundhouse you can clearly see the outline of the crocodile's form. The north end being Seal Island has some white sandhills being the teeth and you can see all the ridges on the back as you look south along Garden Island.

So it is ironic many years later that the 'Dingo' (Dingo Flour) was built looking out over the ocean and I am now working as an educator and protector of culture.

Is there a favourite location that you have in the Riverpark?

I've always loved Point Walter and walking out onto that beautiful big sandbar (Joondol -the hair of the spirit). As kids we used to catch crabs and fish along here and I eventually held my Noongar wedding ceremony on the spit.

Is Kart Kort Weiran a structure vou've created to inspire and provide opportunities for other indigenous people?

We work in partnership with other indigenous businesses to create opportunities and facilitate change that can offer all people a better life. We subcontract people who believe in the company vision whether they are Noongar, Yamatji, Naaru, Wajuk, Irish or Scottish. If you're passionate and good at what you do, we want you to join us.

I pinched this question from a colleague. What's the best thing about being Aboriginal?

You're always learning. There's no end point like doing an exam or degree. Knowledge is a learning journey now and into the future and that's exciting because you don't know what's around the corner.

SWAN RIVER TRUST RECONCILIATION **ACTION PLAN FACTS**

In 2012 the Swan River Trust developed and released a Reconciliation Action Plan (RAP), to help formalise how the Trust contributes to reconciliation in Australia.

The Trust recognises and respects the significance that Derbal Yerrigan (the Swan River) and Dyalgarro beelier (the Canning River) hold for Aboriginal people. Our vision for reconciliation is to provide opportunities for genuine partnerships with Aboriginal people that encompass all aspects of the Trust's business.

The Trust's major achievements in reconciliation during the past 12 months include:

- Creation of the Noongar Advisory Panel
- Successfully assisting Department of Aboriginal Affairs (previously Department Cabinet and South West Aboriginal Land and Sea Council to trial new Heritage Act processes
- Re-appointment of Ms Vanessa Davies Noongar representative to the Trust Board until December 2015
- Creation of a Noongar commitment in Noongar language which is now promoted on the back of the Trust business cards

Wild Life

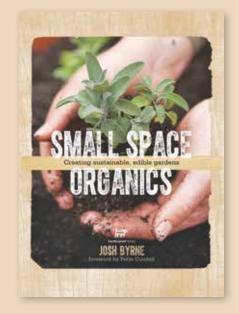
BOOKS, DVDS, MUSIC AND COMPETITIONS

Small space organics

Local gardening guru Josh Byrne shares the story of one backyard's transformation from bare block to productive oasis in his latest book, Small Space Organics. This intensely practical, down-to-earth and inspiring book is an instruction manual for creating your own productive, water-sensitive, organic oasis – however small your garden space might be.

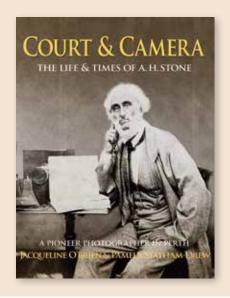
Visually the book is a delight, brimming with photographs of the project. But the real joy of Small Space Organics is its practicality. It provides a step by step guide to creating a beautiful productive garden in a small area, with a focus on sustainability and using garden spaces more cleverly.

The book includes dedicated chapters on water systems including greywater re-use, rainwater harvesting, garden habitat, soil building and organic pest and disease control. Packed with detailed technical and horticultural information, this



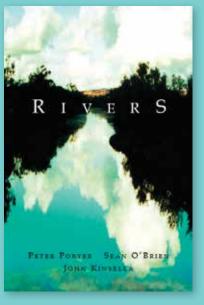
book is an essential reference for anyone looking to create a stylishly designed, sustainable and productive garden while facing the challenge of limited space.

WIN: We have two signed copies of Josh Byrne's new book, Small Space Organics, to give away. To enter, email miranda.holker@ swanrivertrust.wa.gov.au



Court & Camera: The life and times of A.H. Stone

This beautifully illustrated book by Jacqueline O'Brien and Pamela Statham-Drewe is the history of pre-gold rush Perth through the eyes of pioneer lawyer and photographer Alfred Hawes Stone. Court & Camera is a unique glimpse of Perth just three decades after its foundation. The books images talk to memory showing the emergence of landmark buildings alongside ordinary dwellings and scenes from everyday life.

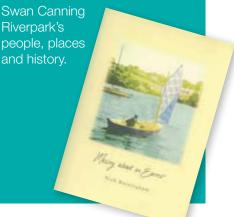


Rivers

A unique and thought provoking celebration of rivers by three of the most eminent voices in contemporary poetry - Peter Porter, Sean O'Brien and John Kinsella. This collection explores the interaction of humans with waterways, the way we use and abuse them, the conscious and unconscious roles rivers play in our daily lives, and in our mental and spiritual well-being.

Messing about in Earnest

Take a river journey in a small boat with Nick Burningham at the helm. Messing About in Earnest is a delightful blend of travel writing, history, geography and real-life adventure. Nick drifts down the Swan and Canning rivers in his trusty boat called Earnest. His book takes the reader on a Mark Twain style trip of a lifetime - offering whimsical, humorous and informative encounters with the Swan Canning



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Creature Feature

WESTERN SCHOOL PRAWN (RIVER PRAWN) (METAPENAEUS DALLI)



Western school prawns are a popular recreational fishing species in the Swan Canning Riverpark. Their abundance has declined since the 1950s but they still occupy a special place in the hearts and minds of Perth's people. Other prawn species found in the Riverpark include king prawns and tiger prawns.

Description

Small elongated prawn up to 190mm total length. Uniform grey colour, large eyes, rostrum extended beyond eyes, long and flexible antennae.

Distribution

Western school prawns occur in the Indo-Pacific from south-eastern Java, north western Australia and along the Western Australian coast.

Habitat

The stock in the Swan Canning Riverpark is considered estuarydependent because the river prawns' entire life-cycle is completed in the estuary. The prawns are restricted to the middle and lower Swan Canning estuary in winter, but spread to the upper estuary in summer as conditions in those areas become more saline.

Biology

The river prawns live for up to two years and reach maturity at approximately one year. Spawning is thought to occur in the mid to upper Swan Canning estuary from November through to March and where salinity is >30ppt. Fertilised eggs are thought to drop to the

bottom and hatch 12-24hrs later. The larvae are then considered to be pelagic and remain in plankton for up to two weeks before metamorphosing into juveniles and burying themselves in the sand. Western school prawns are omnivorous and will emerge at night to feed on small invertebrates and detritus.

Threats

Historically, both commercial and recreational fishers targeted this species in the Swan Canning Riverpark. Commercial landings peaked at 14 tonnes in 1959 but declined to 3 tonnes by 1975. The commercial fishery no longer targets western school prawns but recreational prawners still catch the species. Many fish, including bream, flathead and blowies also predate on this species.

Significant recreational catches of western school prawns were last reported in the late 1990s and available evidence suggests current river prawn numbers remain relatively low. Environmental factors, and not fishing pressure, are thought to be responsible for the decline in western school prawn abundance, although it needs to be acknowledged that the prawning season allows for prawns to be taken during their reproductive period.

Conservation

River prawning remains a popular past-time with many fishers in Perth and, while no license is required to fish for them, there are restrictions on their capture. Recreational fishers can catch prawns by hand-trawl nets or hand-scoop nets only and a personal daily bag limit of 9L applies. The Swan-Canning Riverpark is open to trawl netting for a limited season between 1 November and 31 July. Hand-scoop netting can occur year round.

To provide habitat protection, there are several areas permanently closed to prawn fishing. These include the waters of the Swan River within 100 metres of the Pelican Point Nature Reserve and the Milyu Nature Reserve (Como).

See our western school prawn factsheet on the Trust website www.swanrivertrust.wa.gov.au for more information.

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Riverpark Life it's yours to Live



For more information go to: www.swanrivertrust.wa.gov.au









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