Science & Waterways Project REPORT



PHCC General Meeting – 10 December 2020 Steve Fisher, Program Manager, Science & Waterways

RLP – Wetlands and people: A community restoring the ecological character of the Peel-YalgorupRamsar 482 Wetlands (The Ramsar Project)Nov 2018 – June 2023\$4,996,221Ramsar Component 1: Science and Collaborative Management

Managed by Rick James, Coordinator Wetlands Science and Management

- Yalgorup Lakes Surface Water Quality Monitoring (YLSWQM) Program
 - **19 sites are being assessed** covering the 17 discrete waterbodies that comprise the Yalgorup Lakes system.
 - **Regular monthly monitoring continued** (October & November). Sampling team included volunteer Sebastian Jones, Jennie Beeson, Mike Venarsky (DBCA) and Heidi Bucktin (DBCA).
 - See also <u>https://peel-harvey.org.au/lake-pollard-where-have-all-the-swans-gone/</u> and <u>https://peel-harvey.org.au/swans-return-to-myalup-lagoon/</u> for stories from Wattle and Quoll Edition 11 regarding the observed occurrence of swans at the Yalgorup Lakes



Rick James and Mike Venarsky at Myalup Lagoon with black swans in the background

- The Lake Clifton thrombolites: Assessing groundwater flows and thrombolite health
 - Assessing the flow of fresh / brackish groundwater to the thrombolites is important as this flow is fundamental to their ecology.
 - A workshop with personnel from DBCA, DWER, PHCC & UWA has been proposed for January 2021 to discuss the design and implementation of research projects to form the foundation of a future monitoring program for the thrombolite community at Lake Clifton.

Establishing monitoring regimes - Fish Community Index sampling

- Health indices for the Peel-Harvey Estuary including the estuarine components of the Serpentine and Murray Rivers will be established based on the structure and function of the fish community and the benthic invertebrate community. These indices are calculated by sampling present day fish and benthic invertebrate communities and comparing against historical data. In this way, a report card showing a decline, improvement or no change in the condition of the estuarine portions of the rivers and the Peel-Harvey Estuary will be produced. This was previously measured in the Peel-Harvey Estuary in 2018 as part of the ARC-Linkage Project 'Balancing estuarine and societal health in a changing environment'.
- The Fish Community Index monitoring program will commence in the Peel-Harvey Estuary in December and help us achieve a medium-term outcome #7 of the project to "....fill priority knowledge gaps for at least five previously unmonitored components / processes" (See Alcoa Foundation: Connecting Corridors and Community: Restoring the Serpentine Rive below).

Ramsar Component 2: Wetlands & People (Community Engagement)

Managed by Charlie Jones, Coordinator, Ramsar Community Engagement

- Summary
 - Well **on track to deliver commitments** of 28 workshops/ events and 1 conference in Year 3 (2020-21).
 - To date this financial year we have delivered 21 engagements that are claimable as workshops/ events
 - Our support for the World Wetlands Day conference in February 2021 will meet our commitment to deliver one conference as well as several engagement events. Most importantly, our events have been very successful ion showcasing the Ramsar 482 site and capturing the hearts and minds of our community.
 - Communications: two Wattle & Quoll articles about the Wetlands Weekender (see <u>https://peel-harvey.org.au/festival-celebrates-wonderful-wetlands/</u>) and Shorebird Monitoring (see <u>https://peel-harvey.org.au/our-feathered-global-tourists-check-in/</u>).

- Completed: Ramsar 482 Presentations

- On 4 December Charlie Jones presented about the Wetlands and People project at Australian Association for Environmental Education's annual Sustainable Educators Forum in Perth.
- On 6 December Charlie Jones presented to Youth Engaged in Wetlands Forum (East Asia Australasia Flyway Partnership) attended by approximately 87 young people from more than 26 countries, on the topic of enabling conditions for youth participation in wetland governance.
- Through a series of five presentations to two Rotary Clubs, the Association of Independent Retirees, Landholders from the Shire of Murray and TAFE students, since 22 October (our previous report) we reached a total of 166 community members, increasing their knowledge of Ramsar 482 and the Wise Use of Wetlands. (See 1FTE Science Advisor project report below for details).
- Complete: Greenfields & Mandurah Primary School Excursions
 - This year (2020-21) we have completed four excursions with Greenfields and Mandurah primary schools reinforcing the Wise use of Wetlands message to a total of 274 students and more than 30 adults (See 1FTE Science Advisor project report below for details).

- Ongoing: Clean Waterways Working Group

 Participation in a working group established with the intention to develop a community campaign in response to plastic pollution and associated wildlife entanglements. Group includes City of Mandurah Environment Team staff, Tackle World, Mandurah Cruises. This group likely to develop resources e.g. targeted campaign videos and flyers to support the campaign.



Greenfields PS students exploring waterbugs on Coodanup foreshore, 5th November.

- Ongoing: Shorebird Mentoring Program with BirdLife WA
 - Supporting BirdLife WA program to up-skill a group of 20 volunteers to participate in the National Shorebird Monitoring Program. Participants are a mix of locals and Perth based volunteers and a mix of ages. Most have previously participated in the Shorebirds 2020 annual counts, and the mentoring program is designed to up-skill these volunteers towards becoming team leaders and independent counters to manage attrition of experienced birders from the volunteer base.
 - PHCC have supported **two classroom sessions delivered by BirdLife WA** Shorebird Coordinator Jeremy Ringma on 30 October and 27 November at PHCC Shed with venue and catering.
 - **Volunteer mentors** including Bill Russell, Alfred and Hidi Lau, and Jim Campbell have been supporting the program, especially through the field visits.
 - The program includes **field visits to sites around the PYS** every 2 weeks Charlie joined the visit to Austin Bay on Saturday 28th November with many shorebirds sighted.



Shorebird Mentoring Program field visit to Austin Bay on Saturday 28 November.

- Upcoming: National Shorebird Monitoring Program 2021

- Annual shorebirds count as part of BirdLife Australia's National Shorebird Monitoring Program (formerly Shorebirds 2020) is scheduled for **31 January 2021**.
- PHCC has performed a coordinating role to facilitate teams of volunteers conducting the count in the PYS since 2008. Preparations are underway for the 2021 count which includes an introductory training workshop for new volunteers (scheduled for 15 & 16 January 2021) and coordination of approximately 60 volunteers across 14 count sites.
- Upcoming: World Wetlands Day Conference (2 February 2021)
 - World Wetlands Day on 2 February 2021 will celebrate the 30th Anniversary of the listing of the PYS as Ramsar 482 (in 1990) and the 50th Anniversary of the Ramsar Convention (1971).
 - PHCC is the major sponsor for the Wetlands Management Conference 2021 organised by the Cockburn Wetlands Centre. This is usually held in Perth but will be held at Mandurah Performing Arts Centre on this occasion.
 - PHCC Science & Waterways team will be supporting a day of pre-conference tours (including boat tours) on Monday 1 February 2021, and will deliver 4 presentations and co-deliver a workshop with BirdLife WA team at the conference on Tuesday 2 February (see also 1FTE Science Advisor Report below).
- Upcoming: 2021 events (see also Events: PHCC sponsoring or presenting below)
 - Dolphin Watch Training (supporting role with DBCA, Estuary Guardians + Mandurah Cruises) likely February or March 2021
 - Clean Up Peel Waterways Month (coordination role working with various community groups) March 2021

Ramsar Component 3: On-Ground

Managed and delivered by Mike Griffiths, Wetlands Restoration Officer with support from Rick James and Steve Fisher

- Access Control
 - Plans finalised for supplying heavy-duty gate in Yalgorup National Park at northern end of Lake Clifton to manage problems with illegal four-wheel-drive vehicles and motor bikes. Gate will address access and damage to bushland in adjacent private property (subject to planned Landholder Works Agreement) as well as revegetation work completed in the national park.
- Landholder Works Agreements
 - Landholder Works Agreement signed with owner of **property adjoining Coodanup Nature Reserve** to cover **control of watsonia, Cape Tulip and South African Pigface**, complementing on-going weed control work and revegetation within the reserve.
- Project planning
 - Project planning undertaken following discussions with stakeholder organisations/agencies and community groups to establish potential Ramsar on-ground projects to 2023; including DBCA, City of Mandurah, Shire of Murray, Shire of Waroona and Shire of Harvey. Additional stakeholders and individuals with key knowledge were also consulted for additional input on weed prioritisation and distribution, including Peel Harvey Biosecurity Group. Approximately 50 potential Ramsar Onground projects have been mapped.
 - Planning meeting with Shire of Harvey and DBCA held with site visit for **potential joint projects in** vicinity of Myalup Beach, Lake Josephine and southern shores of Lake Preston. Discussions

involved several potential projects including Community Engagement, Weed Control, Access Control and Debris removal works.



PHCC's Mike Griffiths and Shire of Harvey's Samantha Pickering inspect vehicle and motorbike damage in Yalgorup National Park. Photo courtesy of DBCA's Robert Jordan.



Dense infestation of Wild Fig straddling Yalgorup National Park and Shire of Harvey reserve on southern shores of Lake Preston

- Community Engagement – Onground works

- Pest contractor engaged to control foxes and other feral animals on community-owned bushland at Lake Mealup with support of Lake Mealup Preservation Society (property owners). Work is now under way at the bush property, complementing concurrent feral animal control in DBCA-managed nature reserves in surrounding area.
- Order for nest boxes at Samphire Cove Nature Reserve finalised in consultation with Friends of Samphire Cove. Four nest boxes for targeted bird species including Regent Parrots and Sacred Kingfishers are to be built, along with two nest boxes for phascogales.
- See also <u>https://peel-harvey.org.au/on-ground-collaboration-protects-ramsar-482-wetlands/</u> for story from Wattle and Quoll Edition 11)

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Alcoa Foundation: Connecting Corridors and Community: Restoring the Serpentine River Oct 2017 – Oct 2020 US\$ 750,000

Managed by Jo Garvey, Coordinator Healthy Waterways, supported by Jesse Rowley

- Communications & Events
 - Two articles featured in Edition 11 of Wattle and Quoll
 - Three short films are in the final stages of edits and are due for release mid-Dec.
 - Karu Bilya interpretive signage for the Karu Bilya Wetlands Restoration site to inform and showcase the work achieved through the Restoring the Serpentine River project is currently being designed by Mandurah Graphics.
 - **Celebration and launch** for this project and the **Healing Bilya Project** is well underway, with the **Three Rivers, One Estuary Partners** meeting regularly over the last month to design the event planned for February 2021.
 - As part of an excursion, on 5 November the Rivercare Team conducted a Macroinvertebrate activity with 60 students and 10 adults from Greenfields Primary School on their excursion to the Creery Wetlands and the Coodanup Foreshore with George Walley (see also 1FTE Science Advisor report below).
- Karu Bilya Wetlands Restoration Project
 - No progress
- Hymus Creek Restoration Project planting and cultural knowledge sharing event, Lowlands Farm
 - No progress
- Serpentine Concept Plans
 - Draft Concept Plans for two sites along the Serpentine River; Karnup Road and Wilkinson Road are currently being reviewed by the PHCC, developed from the River Action Plan. A further three consultation workshops will be held on 7 & 8 December, where landholders, Bindjareb Community representatives and other key stakeholders can provide input into the Concept Plans.
- Dung Beetle Project
 - The project is **now acquitted**.
 - An event to release the beetles was held on 25 November. **Dung beetle expert**, John Allen from Coodanup College, along with **students from North Dandalup Primary School** released **500** *Onthophagus gazella* onto adjacent farmland. An additional 500 *O.gazella* beetles were added to the existing constructed breeding boxes, allowing the **continuation of students learning** about the important role dung beetles play in innovative agricultural practices through a hands-on approach at the school. (see also <u>https://peel-harvey.org.au/unleash-the-dung-beetles/</u>)

- Dolphin Monitoring Program – surveillance cameras

- DBCA are progressing, with the **footings for the tilt up poles constructed.** The installation of the **cameras should be completed in mid- December** (weather permitting).
- Water Hyacinth
 - The team is continuing to work closely with Landcare SJ, Envirapest (weed contractor) and the Department of Communities to maintain the highly aquatic weed invasive water hyacinth.
 - **Local canoe and kayaking groups** have recently been out on the river, with no sightings of the water hyacinth sighted or reported.
- Community Environment Grants
 - The Rivercare team is currently acquitting the final two grants, for Landcare SJ and Lowlands Conservation Association.
- River Health Assessments Serpentine River
 - The **Draft Report** has been provided by **Murdoch University** and is currently being reviewed by the Rivercare team.

- Fish Community Index Sampling (see also Ramsar Science and Collaborative Management report above)
 - The Agreement with Murdoch University to undertake these works is finalized with sampling due to commence in **December**.
- Healing Bilya: Restoring the Murray and Serpentine Rivers' Project (2020-2023)
 - The project has kicked off with several **Murray River community members expressing interest** in future works as part of the Healing Bilya Project, whilst attending the Black Pygmy Mussel project event in Pinjarra on 24 November (See also Estuary Grants Fish Friendly Farms report below).



Black Pygmy Mussel event, Pinjarra Civic Centre

Dr Alan Cottingham (Murdoch University) is happy to find pygmy mussels on existing debris in the Murray River

Royalties for Regions: Peel-Harvey Estuary Grants Jun 2018 – Sep 2021 \$750,000

Managed by Jo Garvey, Coordinator Healthy Waterways, supported by Jesse Rowley

- Communications
 - No progress
- Stock Enhancement of Black Bream in the Murray River (see also 1FTE Science Advisor Report)
 - Very low survival rates of Black bream larvae due to delays in spawning will result in the release of
 < 100 fingerlings into the Murray River this year. The tentative release date is 14 December.
- Harvey River Demonstration Reach / Marron, more than a meal
 - The team is considering a request by the HRRT for a desktop study to perform HECRAS hydraulic modelling of the Harvey River Main Drain to simulate different scenarios including installation of instream habitat structures. The modelling will help reduce project risk and increase the success of re-snagging efforts into the future through improvements in design.
 - The HRRT Annual stakeholder meeting took place on 23 October in Harvey, in partnership with Greening Australia. It was largely attended by experienced practitioners, including the PHCC Rivercare Team. Presentations and a workshop provided the opportunity for all attendees to share their knowledge and inform a future framework for riparian restoration management for the catchment.

- Fish Friendly Farms

PHCC is continuing its support of several projects occurring in the Peel Catchment that align with the Fish Friendly Farms initiative:

- Partnering with **OzFish Unlimited Limited** on a new project aimed at engaging with the recreational fishing community to:
 - build skills and capacity in Natural Resource Management in the local recreational fishing community, focused particularly on marine and estuarine habitat outcomes.
 - in collaboration with other community, Landcare and farming system groups, support regional planning and prioritisation of marine and estuarine habitat restoration activities.
- Enhancing fish habitat (1) **supporting TNCs Shellfish Gardening Project** in the Peel-Harvey Estuary (Contract in draft)
- Enhancing fish habitat (2) investigating occurrence of black pygmy mussels in the Murray River. The project has commenced and an event held in Pinjarra to encourage residents residing along the Murray River to take part in a citizen science study. More than 20 residents have expressed their interest and will meet again on 17 December, where each person will collect a basket and 30 juvenile mussels to place underneath jetties at their properties. Residents will monitor the growth and survival over time of the mussels, which will help researchers gain an understanding of the ecology of Black Pygmy Mussels in the Murray River to help their recovery (see also https://peel-harvey.org.au/mussel-up-for-the-murray/).



Black Pygmy Mussels provide an important food source for black bream

- **Carter's freshwater mussels in farm dams** continuing to support Alan Lymbery (Murdoch University) No progress.
- Fish Community Index Sampling Contract is in place with Murdoch University's Fish Health Unit Team about to commence work. The sampling will help to calculate health indices for the

estuarine components of the **Murray River** based on the **structure and function of the fish community and the benthic invertebrate community**.

- River Health Assessments
 - The assessments will again be undertaken by Murdoch University, but this time tailored to incorporate training of PHCC staff in the field and in the classroom to enable us to perform river health assessments in-house in the future.

Shire of Murray Annual Funding (July 2019 – June 2024)

Managed by Jo Garvey, Coordinator Healthy Waterways

- We are well into our second year of funding and to date have carried out weed control at the Massacre Site over the course of two years following recommendations of the "Management Plan Massacre Site by H. Adamson" and "Massacre Concept Preliminary by GP Forestry in July 2020". Both documents were undertaken as part of the project.
- Massacre Site: Weed control was carried out in November by GP Forestry, who targeted blackberry and fumitory.
- Jo Garvey convened a meeting with Shire of Murray's Leanne McGuirk (Director of Place and Community Development) and Tom Lerner (Environmental Officer) to discuss strategies and potential projects to engage the local Bindjareb community. As a result a Concept Plan is being prepared to develop a 'Murray River Interpretative Flora Trail, Bush tucker and Waterwise Garden' on the bank of the river in the town site. The project will engage the Bindjareb Middars in onground works and cultural consultation and input by the broader local community.

State NRM: Saving Lake McLarty Phase 1: addressing acidification, hydrology and habitats March 2019 – June 2022 \$350,859

Managed by Rick James, Coordinator Science and Management, supported by Jennie Beeson

- The **Request for Tender** for the "Lake Bed Sediment & Groundwater Investigations: Lake McLarty, Birchmont" was advertised in The West Australian on 25 November with a due date for submissions of 15 January 2021. To date four consultants have indicated an interest in submitting a proposal.
- This key piece of work will reveal the **extent and nature of Acid Sulfate Materials** and help us to develop **management strategies to mitigate the risks these materials pose** to the ecological character of the lake, in particular the habitat of wading shorebirds. A lot of **thought and diligence** was taken in the **preparation of the tender documents**, in particular the scope of works.
- Urbaqua continued to work on the **flow augmentation study**. LiDAR data was purchased from **DWER** to support this component of the project.
- Friends of Lake McLarty (FoLM) met in the PHCC Shed on 18 November. Rick James presented an update on the projects and introduced Jenny Beeson who attended the meeting to gain familiarity with some of the other issues at the lake.
- Steve Fisher submitted the annual progress report to the State NRM Office on 7 December.

Managed by Steve Fisher, Program Manager, Science and Waterways (in addition to oversight of the projects above)

Attended the following key meetings with:

- The Steering Group of Peel Bright Minds on 22 October.
- **Pinnacle Training** who provided a **Work Health and Safety training course** for Supervisors and Managers implement and monitor WHS policies, procedures and programs to meet legislative requirements (9 November)
- Partner organisations in the Three Rivers, One Estuary Initiative i.e. Suellen Jerrard (Alcoa); Richard Campbell (TNC); Ruth Cripps (Greening Australia) and Jo Garvey in a series of meetings fortnightly from 11 November to plan an event to launch of the second phase of the Initiative (tentatively around 15 19 February 2021 see Events below).
- Jane Merewether (Edith Cowan University) and Charlie Jones on 19 November to discuss potential collaboration on early childhood learning programs.
- Approximately 30 representatives of various industries and scientists from the ChemCentre WA at the ChemCentre's Research & Innovation Future Directions Event on 24 November. I used this opportunity to:
 - ask questions about the ChemCentre's provision of advice and expertise in designing and implementing water and soil quality investigations in addition to fee-for-service analytical chemistry. As a result, I invited ChemCentre staff to provide a proposal to our Lake McLarty Acid Sulfate Soils and groundwater investigation tender (see also Saving Lake McLarty above).
 - Learn more about ChemCentre's involvement in the development of Waste Derived Materials regulations.
- Students and teachers from North Dandalup Primary School, John Allen (Coodanup High School and dung beetle expert), Sally Lloyd (C.Y. O'Connor Research Institute) on 25 November where the students released 100 dung beetles into the wild.
- Jen Stritzke (DWER) with Jane O'Malley and Jo Garvey on 26 November to discuss PHCC's role in delivering the **Healthy Estuaries Initiative.**
- Dolphin Incident Support Group i.e. Mark Cugley and Benson Todd (DBCA), Myri Riddy (Mandurah Cruises), Sally Kirby (Mandurah Volunteer Dolphin Rescue Group), Krista Nicholson (Dolphin Researcher - PhD Candidate) weekly since 15 October to progress the rescue of River and more recently Jemo, Peel-Harvey resident dolphins entangled in fishing line. Jemo was rescued 27 November, River is yet to be rescued.
- Mike Lambert (Eclipse Soils) and members of the Science Steering Committee on a site visit to
 Nambeelup Business Park to see how soil amendments have been incorporated into the drainage infrastructure to reduce export of phosphorous into waterways (9 December with).
- Made the following presentations
 - Presentation to approximately 65 members of the Association of Independent Retirees on 26
 October about the ecological values of, and threats to, the Ramsar 482 site and some of the projects
 PHCC is undertaking to protect or restore our waterways.

- Presentation to approximately 50 members of the Rotary Club Mandurah Districts and Rotary Club
 Como on 27 October about the ecological values of, and threats to, the Ramsar 482 site and the
 Stock enhancement of black bream in the Murray River project.
- A guided walk and talk with 60 Year 6 students and 10 adults from Greenfields Primary School on their excursion to the Creery Wetlands and the Coodanup Foreshore with George Walley, Sarah Way, Jo Garvey, Charlie Jones and Jesse Rowley on 5 November. Activities included a waterbugs activity and catchment model activity facilitated by the PHCC team.
 - This year group has been on at least **one excursion each year of their primary school education** (Year 1 to Year 6) with PHCC. Since this was the last excursion these students will experience with PHCC, we engaged a videographer to capture video from the excursion including interviews with 6 students, George Walley and Lee-Anne Walley which we will combine with previous footage into a **short film showcasing the value** of taking learning outside of the classroom.
 - Together with the previous three excursions with Greenfields and Mandurah primary schools in 2020 we reinforced the Wise use of Wetlands message to a total of 274 students and more than 20 adults.
- With Charlie Jones, a tutorial for Leanne Broomfield (lecturer) and 5 students from South Metropolitan TAFE on 20 November. The students, who have English as a Second Language, are completing an Additional Language course including written and oral assignments to improve their English literacy with Ramsar 482 as the subject matter and using resources available from PHCC's website.
- A short presentation to 45 landholders adjacent to the Murray River describing the Ramsar 482 Site and its ecological character at the 'Mussel up for the Murray' community event on November 24 to provide context for the Black Pygmy Mussel project (see also Peel-Harvey Estuary Grants report above.
- Provision of Advice / driving projects to assist in the restoration of Peel Waterways
 - Contributed to PHCC's submissions to the Shire of Murray
 - supporting proposed amendment to the Town Planning Scheme (Planning Scheme Amendment No 314) to remove discretion for planning approval of a marina from the Point Grey Marina Development and (30 October).
 - expressing our concerns about and recommending conditions to the Planning Application for Proposed Sand Extraction at Lot 226 Paterson Road, Nambeelup
- Other highlights
 - World Wetlands Day Conference, to be held in Mandurah on 2 February 2021
 - The Science and Waterways team, submitted five abstracts for consideration as oral presentations showcasing the values of, threats to and restoration projects were undertaking to protect the Ramsar 482 Site. All were accepted into the program as one Keynote presentation (two abstracts combined) and three Plenary presentations.
 - We will also support BirdLife in delivering a shorebird identification workshop.
 - The team will also be supporting the conference through pre-conference estuary and catchment tours
 - We are planning an event on 1 February to celebrate World Wetlands Day and the 50th anniversary of the Ramsar Convention, bringing conference delegates and members of our community together to share stories as an icebreaker to the conference. The working title for the event is "The Ramsar Soapbox".

Events (PHCC sponsoring or presenting - see also Wetlands & People Community Engagement)

- Previous events (23 October to 10 December):

- 24 & 25 October 2020 Reel it In Clean-Up
- 30 October 2020 Shorebird Mentor Program Workshop #2
- 10 &11 November 2020 **Dung Beetle Release, North Dandalup Primary School**
- 24 November 2020 Mussel up for the Murray
- 27 November 2020 Shorebird Mentor Program Workshop #3

- Future events (after 10 December)

- 30 & 31 January 2021 National Shorebird Count
- 1 February 2021 Pre- World Wetlands Day Conference Tours
- 1 February 2021 'Ramsar 482 Soapbox'
- 2 February 2021 World Wetlands Day Conference
- 15 19 February 2021 Three Rivers. One Estuary Launch (TBC)

Clean Up Peel Waterways Month

- February / March 2021 Dolphin Watch Training (TBC)
- March 2021

Work Health and Safety

No incidents or near-misses to report

