

December 2018, Report 2 of 6



Alcoa Foundation invests where Alcoa has a presence, partnering with communities to address local needs in a sustainable manner. With our nonprofit partners, we contribute to environmental excellence, economic success and social responsibility around the globe.

Outcomes:

Increased participation by community in cultural and environmental activities along and adjacent to the Serpentine River and facilitating the adoption and implementation of management change practices to improve riparian and terrestrial health and linkage, cultural knowledge and engagement including social and enterprise outcomes.

Engaging the community in improving the health of the Serpentine River by increasing social engagement while reducing threats and improving and increasing riparian assets and corridors.

Outcomes identified for the Serpentine River project will include:

1. Improved ecological health of the Serpentine River and surrounds
2. Increased community environmental and cultural knowledge, awareness and capacity
3. Increased vegetation connectivity to improve aquatic, riparian and terrestrial habitats
4. Enhanced relationship with the Noongar community including the provision of skills and training for future employment opportunities
5. Increased stakeholder networks and connections
6. Increased knowledge and capacity of private landholders, groups and organisations to deliver projects
7. A River Action Plan for the mid and upper reaches of the Serpentine River to guide future restorations actions

Objectives:

1. By 2020 increased knowledge and awareness of the cultural and environmental assets, threats and management options for the Serpentine River
2. By 2020 increase knowledge and engagement in activities, research and management information
3. By 2020 increase the number of people participating in beneficial activities along the Serpentine River
4. By 2020 40 local landholders engaged in events and activities linked to this project
5. Build capacity of the broader community through a number of knowledge sharing events including hands on training, field days, workshops and information sessions
6. By December 2020 reduce some of the identified threats to the health of the Serpentine River and its riparian zone
7. By December 2020 increase the linkages and corridors along the Serpentine River through an effective communications strategy
8. Build relationships with project partners and funding bodies
9. Engage the Alcoa community in project activities as appropriate

Measurable Outcomes:

Output	Target Unit	Oct'17-Jun'18	Jul'18-Dec'18	Jan'19-Jun'19	Jul'19-Dec'19	Jan'20-Jun'20	Jul'20-Dec'20	Total Actual Unit
No. Communities impacted by the initiative	6	6	8					14
No. individuals trained	30	2	24					26
No. individuals engaged	45	105	>385					>490
No. Alcoa employees trained	20	-	3					3
No. events (forums, cultural, community, workshops, field days, training)	12	3	8					11
Meetings (cultural, stakeholders, Steering Committee)	-	6	7					13
No. Media posts	40	8	18					26
No. Media releases	6	2	-					2
No. Video (you tube)	1	-	commenced					-
No. Radio broadcasts	3	-	1					1
No. Newsletters	6	-	2					2
No. Case Studies	3	-	-					-
Ha land restored	150	-	66ha					66
Km of Fencing	4	-	commenced					-
Ha Weed control	60	-	commenced					-
Ha of Revegetation	36	-	66					66
No. stems planted	32,000	-	10,227					10,227
Ha Feral animal control	145	-	commenced					-
Km Bank stabilisation	1	-	commenced					-
River Action Plan	1	commenced	draft					.5
NVIS sites monitoring sites	3	commenced	4					4
River Health Assessments	4	4	-					4

Summary:

This project aims to “Fill the Gaps” and add value on a strategic level creating landscape scale achievements. Through this project there are now great links to other projects such as Regional Estuaries Initiative, Department of Water and Regulations Transform Peel, The Three Rivers One Initiative projects and more. The River Action Plan being produced through this project is already providing guidance for onground activities and will do for years to come. The learnings from this project will be taken to other projects into the future.

Currently funding for this period is underspent, however, the project is on track and funds committed. Through a lengthy community engagement and consultation process, targeted landholders living in the project area have shown a very keen interest. Through an accomplished Community Environment Grant round, funds have now been committed for landholders and community groups within the ‘Restoring the Serpentine River’ project to carry out on-grounds works. These activities will also achieve almost all the required project deliverables.

Deliverables:

Measure for primary participants

Over the last six months we have worked with 4 State and 4 Local Government Agencies, 2 Community groups, 3 Noongar communities, 60 students and teachers, 14 local farmers and 2 not-for-profit organisations; engaging through events, workshops, landholder site visits, field days, forums, M&E training days, cultural consultation and site visits. Landholders along the Serpentine River have been engaged through a devolved grant round, created using the projects: Activities-On-ground budget, which are aimed to assist with on-ground delivery of the project as outlined in Milestone 4. These landholders and others have also helped inform the River Action Plan, through the events (detailed below), comprising community consultation, and including storytelling and individuals’ recollection and feelings held for the Serpentine River.

Below are some of the participants involved in the project:

- Local Farmers along the Serpentine River
- Local Government Agencies: Shire of Murray & Serpentine-Jarrahdale, Cities of Rockingham & Mandurah
- Landcare Groups: Landcare SJ, Harvey River Restoration Taskforce
- Schools: Greenfields Primary School, Baldivis High School
- Noongar Groups: Winjan, Mandurah (Mandjoogoordap) Dreaming
- Not-for-profit organisations: Growing Towards Wellness, Mandurah Volunteer Dolphin Rescue Group
- Department of Biodiversity, Conservation and Attractions
- Department of Planning, Heritage and Lands; Dept of Aboriginal Affairs
- Department of Water and Regulation
- Water Corporation
- Local businesses: Alcoa of Australia, Nuts about Natives, Mandurah Bus Hire, Snap Printing Mandurah, etc.

Governance and Due Diligence

Steering Committee Meetings

1. Initial Steering Committee meeting for the project was held on the 7th May to oversee and (6 attendees comprising, PHCC staff, board members and State Government Department representatives).
2. Steering Committee Meeting – 2 was held on 26th of July (6 attendees comprising, PHCC staff, board members and State Government Department representatives).
3. Steering Committee Meeting – 3 was held on 15th of November (8 attendees comprising, PHCC staff, board members and State Government Department representatives), and in part formed a Grant Assessment Sub-Committee Panel to work through grant application process.
4. Grant Assessment Sub-Committee Panel was held on 29th of November (5 attendees comprising of PHCC staff, board member and State Government Department representative). A further three out of session meetings were held including all 5 participants to finalise applications.

Milestone 1: *Community engagement and information sharing events, media posts and releases, other communication tools and initiatives will be embedded in the project as per the PHCC communication and engagement plan. Events, media posts and articles and promotional signage will be delivered to increase knowledge and engagement and promote Connecting Corridors and Community project deliverable and outcomes. Greater than 60 people will be better informed and engaged in project delivery.*

Community engagement and information sharing events

July 2018 - Community event Stall at National Tree Day - Riverside Gardens and tree planting day

The PHCC and City of Mandurah shared a stall to promote the Alcoa Foundation 'Restoring the Serpentine River' project and target interested landholders living along the lower reaches of the Serpentine River. 7000 seedlings were planted into a Core Conservation Area adjacent to the river by community members attending the event. Working together with the City Rivercare team, the PHCC also hosted a stall to showcase the project. It was delivered in an interactive way, sharing information on project activities; past, present and planned for the future, and more importantly getting information from community participants, on what connects them to the Serpentine River. The data collected on the day is being used to inform the River Action Plan. More information on the River Action Plan can be seen in Milestone 3.

Total participants attending the event: 350

Landholders engaged in consultation: 6

August 2018 - Community event at SJ Fair

The PHCC engaged with community from the Mid-Serpentine catchment. Using a catchment model and interactive maps, officers worked with visitors to connect them more closely to the Serpentine River, through community participation. Visitors shared stories, values and other parts of their life on the river. As per the previous event held in the lower reaches of the Serpentine River, this offered the opportunity for the Rivercare officers to update and share all that is happening on the river and to help increase the connection of community living in the upper parts of the Serpentine River. Again, the data collected on the day is being used to inform the River Action Plan (Milestone 3).

Total participants attending the event:

Visitor numbers to stall were not officially recorded due to the extremely high numbers. The average annual numbers of people attending the SJ Community Fair and exhibition are up to 20,000/annum, so reach is far greater than recorded.

Landholders engaged in consultation: 2

September 2018 – Community field day at local landholder's farm

The Serpentine River reaches running through Lowlands Nature Reserve remain mostly unchanged, unlike the downstream reaches of the river. For this reason, it is referred to as the reference point for the project. The river runs through one of the only pristine pieces of remnant bushland remaining on the Swan Coastal Plain, and hosts many flora and fauna communities, some of threatened status. Current research being undertaken by managers (Department of Biodiversity, Conservation and Attractions), on one particular flora species, *Lepidosperma persecans*, has produced an opportunity for the PHCC, through the 'Restoring the Serpentine River' project to assist.

L.persecans local provenance seed was collected from Lowlands Nature Reserve by the Department of Biodiversity, Conservation and Attractions (DBCA), and cultivated at a local nursery for two years. Through this project, 1000 seedlings were purchased and planted along the banks of the river of a neighbouring private property. Together the local farmer, PHCC officers and volunteers, as well as the Growing Towards Wellness (not-for-profit organisation) team planted the seedlings over two days. Future seed collection and propagating of this local species will be investigated, as there is the potential to expand the range, where suitable, of this species which has become reduced in its range.

This activity has helped increase riparian corridors and connectivity, stabilised banks and reduced nutrient run-off. It will also help increase habitat for riparian and instream fauna for the Serpentine River reaches within the project site. This local farmer attended the SJ Community Fair stall and has contributed to the consultation process which is helping to inform the River Action Plan. He also attended the Community Forum and has since applied for a Community Environment Grant, to restore and repair parts of his river instream, and to carry out weed control. He is also working with a local high school through their science program, in the hope to provide his knowledge and methods in Natural Resource Management of his farm and the river. If this proceeds the students will gain a hands-on experience in environmental management of systems in the field.

Participants: 12

October 2018 – Community Forum

This Forum focused on local networks and connections with an aim to increase the awareness of Serpentine River condition and activities taking place. Presenters included Partners; Greening Australia and The Nature Conservancy from the 'Three Rivers, One Estuary project', as well as local Noongar elder Harry Nannup, who opened the forum with a Welcome Ceremony. Partners and PHCC officers presented on their projects and other project activities currently being undertaken, in particular those that are adding value to the 'Restoring the Serpentine River' project. The PHCC officers discussed future projects, including the newly created Community Environment Grant (CEG) round, which is helping the project's targeted landholders to carry out on ground activities on the river and surrounding areas. The Forum had a strong focus on the CEG round, with considerable time spent engaging with the landholders, assisting them in applications and providing guidance in the grant process.

A survey was undertaken to measure the forum's success and to gauge the delivery process of the CEG round. In summary, of the 31 participants attending the Forum, 12 responded to the survey. Eleven of these were from landholders who had expressed interest in the grants. The survey showed that most responders had a greater awareness of the projects underway along the river and in surrounding areas after attending the event.

Since the Forum, PHCC Officers have assisted 14 landholders expressing an interest and/or applied for the CEG. Further details on this can be read in Milestone 4 and in the on-grounds component of this Report.

Participants: 31

October 2018 National Information System (NVIS), monitoring and evaluation training

On October 30, as part of Milestone 2, and the 'Restoring the Serpentine River' projects Monitoring and Evaluation deliverables, a training event was held for PHCC staff and volunteers at two existing sites in the lower reaches of the Serpentine River, within the local government boundary of the City of Mandurah. Monitoring at these two sites has been undertaken annually for some time. This training event presented an opportunity to not only refresh skills of previously trained officers but to include new officers and volunteers to take part. At the same time, it meant the data collected from the monitoring survey will add and build on the existing database.

Through this field-based training event, officers and volunteers were skilled and taught valuable techniques in ecological survey monitoring, using the National Vegetation Information System methodology. This method is used widely and is accepted as the standardised monitoring methodology across the State of Western Australia and Nationally. The NVIS Information Hierarchy is a system for describing the structural and floristic patterns of groups of plants in the landscape. It provides a comprehensive means of describing and representing vegetation information based on establishing relationships between structural and floristic data. This method in monitoring will be used at various sites within the 'Restoring the Serpentine River' project area over the next two years.

Participants: 5

October 2018 - Three Rivers One Estuary Initiative, Partnership Planting event

On October 25th PHCC officers joined Alcoa Australia employees, Greening Australia and the Shire of Murray, to assist at a planting day in the George Brook reserve. This was a great opportunity to work alongside Greening Australia (GA), as part of their ‘Three Rivers One Estuary’ Alcoa Foundation project, and to get to know the GA and Alcoa Australia teams.

December 2018 - Engage Alcoa community in M&E training, including plant communities and ID.

In December, a two-day training workshop/field day was held by expert botanist Bronwen Keighery.

Day 1 consisted of presentations on the methodology of vegetation surveying and illustrated plants and bushland from the Swan Coastal Plain, focusing on the natural values - flora and vegetation of Lowlands (our project reference site). Previously sampled quadrats (1992, 2008), from Lowlands were used in the presentation and for in-class learning. Participants gained a theoretical knowledge of flora and vegetation communities within the terrestrial and riparian zones of the Serpentine River at Lowlands before heading out in the field.

Day 2 was carried out in the field, with the practical component starting with a bus tour and commentary of the flora communities of the Swan Coastal Plain. Participants were given an overview of the natural values - flora and vegetation and Ecological Communities as they made their way to Lowlands. Once there, previous NVIS sites were used as the training locations, and participants were trained in plant ID and NVIS methodology as described above.

Participants: 17, including 3 Alcoa Australia employees

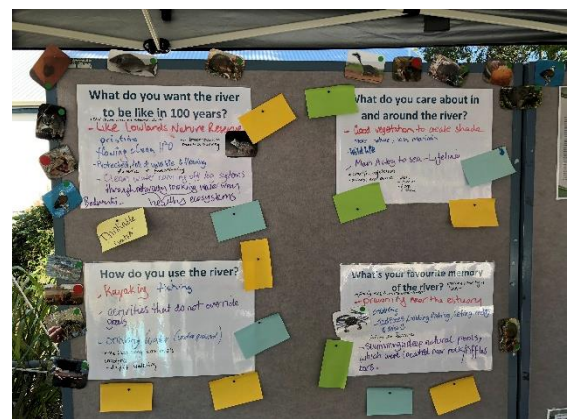
Community event Stall at National Tree Day - Riverside Gardens and tree planting day



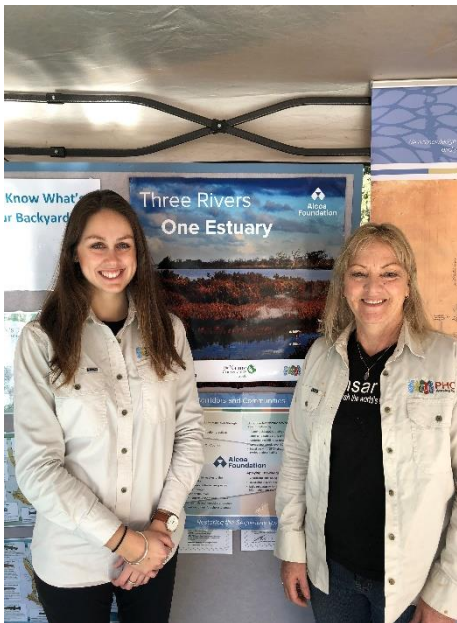
Community event Stall at National Tree Day - Riverside Gardens and tree planting day



Community event at SJ Fair



Community event at SJ Fair



Community field day at local landholder's farm



Community Forum



Community Forum



National Information System (NVIS), monitoring and evaluation training



National Information System (NVIS), monitoring and evaluation training



Three Rivers One Estuary Initiative, Partnership Planting event



Newsletter Articles

July – 1 newsletter

First edition Newsletter for the Alcoa Foundation project was circulated to landholders targeted through the project, other community members, PHCC board-staff-volunteers, Alcoa Australia employees.

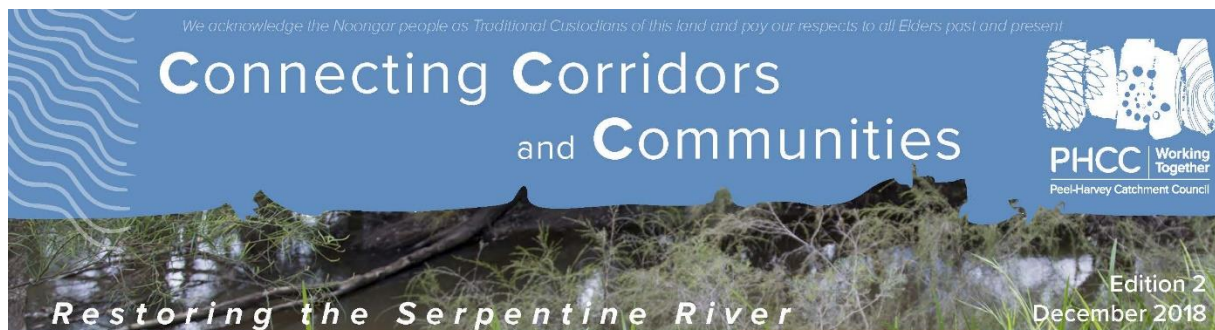
Reach: 109

https://peel-harvey.org.au/wp-content/uploads/2018/09/Edition-1_JR_FINAL.pdf

December 2018 - 1 newsletter

Second edition Newsletter for the Alcoa Foundation project was circulated to landholders targeted through the project, other community members, PHCC board-staff-volunteers, Alcoa Australia employees.

Reach: 149



Welcome to the second edition of *Connecting Corridors and Communities* - an update on the project and on Natural Resource Management (NRM) in our Peel-Harvey Catchment. NRM refers to the management of natural resources such as land, water, soils, plants and animals. It brings together landuse planning, water management, biodiversity conservation and the future sustainability of industries such as agriculture, mining, tourism, fisheries and forestry.

Serpentine Community Comes Together

On October 13, PHCC hosted a Community Forum where stakeholders and landholders came together to share stories about the Serpentine River. This included listening to our *Three Rivers, One Estuary Initiative* partners Greening Australia and The Nature Conservancy, as well as the City of Mandurah, Local Noongar Elder Harry Nannup and

some local Serpentine landholders. We were lucky enough to have Uncle Harry give an insight to what life was like growing up on the Serpentine and how much it has changed over most of his life. Other presenters shared valuable information about their individual projects occurring not only along the Serpentine, but also in the Murray and

Harvey river systems. It is through these conversations that we can appreciate the values of, and learn the true keys to success to improving the health and biodiversity of our rivers including the Serpentine. At the end of the workshop, we assisted interested landholders in applying for our Community Environment Grants.



Connecting Corridors and Communities

Restoring the Serpentine River

NRM Receives Training from Renowned Botanist

Earlier this month, partners and stakeholders took part in an *Introduction to Native Vegetation Assessment* training with renowned expert botanist Bronwen Keighery. Bronwen has a passion and love for local wildflower species in WA. Through her career, she studied botany and zoology, taught biology, researched vegetation and flora of the Swan Coastal Plain and applied these studies (and others) to the Conservation Plan for Perth (Bush Forever). She has been involved in multiple not-for-profit and community organisations such as the Wildflower Society of WA. Bronwen now works as a consultant botanist and volunteer.

The training ran over two days: Day One involved a master class on how to correctly

perform a vegetation assessment. On Day Two we put our skills to the test on how to correctly perform a vegetation assessment at Lowlands Conservation Reserve. This site was chosen as a test site because several botanical studies have been undertaken there against which we could compare our results. It is also the reference site for our Alcoa Foundation project.

With people from various organisations, including Alcoa team members, it gave the opportunity to share and exchange vital knowledge in vegetation assessment and best practise methodology. We look forward to taking learnings and implementing them into our upcoming projects.



What's that bug?



PHCC officers Rick James and Jesse Rowley recently took part in *WaterBug Identification Training* as part of the National WaterBug BioBlitz led by renowned freshwater ecologist John Gooderham. The team learnt how to correctly sample and identify macroinvertebrates within river and estuarine systems.

This training will be put into action in autumn when River Health Assessments get underway to help determine the health of the Serpentine River. Macroinvertebrates are key indicator species of river health that respond to contaminants such as metals, pesticides, bacteria and nutrients and threatening process such as increasing salinity and decreasing flows.

Planting Success for Local Landholders Farm



PHCC, local landholders and the not-for-profit group Growing Towards Wellness recently came together just down stream

of Lowlands Reserve to plant 1000 *Lepidosperma persecans*, a riparian sedge that naturally occurs in our region and forms a major part of the understorey along the Serpentine River. It is no secret that western grey kangaroos love to eat this species for supper, therefore seriously impacting the establishment of these plants.

Potential sites were inspected prior to commencing planting to ensure this species had a chance at growing to full capacity. The sites chosen are protected from kangaroos and livestock through a fenceline that runs adjacent to the river that includes the surrounding riparian bushland.

The landholder is also currently working with the Dept of Biodiversity, Conservation and Attractions and volunteers to estimate kangaroo numbers to inform future management strategies. Once these plants establish, they will create shade and habitat for other fauna species as well as having the ability to displace weed species in the area.

We would like to wish our Community, project partners and volunteers a safe and Merry Christmas. We look forward to continuing to work with you all in 2019.

Please note: Our office will be closed from 21st December and will re-open on the 7th of January.

Radio Broadcast

Sept 2018 – 1 radio broadcast

PHCC’s Science Advisor Dr Fisher was a special guest on Mandurah’s local radio show “Focus on the Peel” to discuss the ‘Restoring the Serpentine River’ project. Dr Fisher gave an overview of this project and how it links with the Three Rivers One Estuary Initiative as well as other projects that are underway in the Serpentine catchment. Important stories were communicated to the public, such as how important projects like this are for the rivers and Peel Estuary. He spoke of the aim of the project, which is to assist in restoring the health and condition of the Serpentine River, by working with private landholders to improve the condition of the vegetation along the river, stabilise river banks, exclude feral animals and livestock and improve habitat for fish.



Link to Podcast: <https://peel-harvey.org.au/6mm-focus-on-the-peel-with-steve-fisher/>

Develop & print promotional signage, banners and leaflets

This promotional material was created to be a tool at all events, meetings and workshops

Promotional Leaflets/Handouts

- Pull-up Banner of Alcoa Foundation Serpentine River project (general information)
- Pull-up Banner of historic Serpentine River map
- Alcoa Foundation Serpentine River project handout (general information including outputs)

Promotional Signage

- Alcoa Foundation Serpentine River project poster outlining outcomes and outputs

Connecting Corridors and Communities

COMMUNITY

Working Together to restore the Serpentine River through:

- funding opportunities
- sharing of cultural values and conservation practises
- building skills and knowledge
- workshops, training and field days
- opportunities for Noongars to work On-Country

ON GROUND

Undertake **Restoration Works** along the Serpentine River foreshore by:

- planting 32,000 seedlings over 32 ha
- stabilising banks along 2 km of the project site
- undertaking 145 ha of feral animal control
- controlling weeds over 60 ha
- installing 4 km of fencing to manage stock access and protect natural habitat

RESULTS

What **Success** will look like:

- River Action Plan for the lower-mid reaches of the Serpentine to guide future works
- banks stabilised to improve habitat for native species
- stock access to the river is managed
- community has connection to the River
- community has ability to undertake long term monitoring
- biosecurity threats (feral animals and weeds) are reduced
- reconnection of river banks and river foreshore to create ecological corridors

KNOWLEDGE

Applying Knowledge to measure our success by:

- prioritising sites using scientific methods
- assessing in-stream and vegetation condition
- building capacity for community to continue collecting information into the future

Alcoa Foundation

Restoring the Serpentine River

Reach > 385 (*The SJ Fair numbers are not included. The average annual numbers of people attending the SJ Community Fair and exhibition are 20,000 so reach of promotional material is far greater than recorded).

<https://www.grantrequest.com/Login.aspx?ReturnUrl=%2faccountmanager.aspx%3fsid%3d207&sid=207>



Connecting Corridors and Communities Restoring the Serpentine River

\$750,000 USD
December 2018-2020 (3 yrs)

Through a collaborative approach to improve the health, biodiversity, ecosystem function and ecosystem services of the Serpentine River and the estuary, the Peel-Harvey Catchment Council (PHCC) will work with local community, focusing on private landholders and the Noongar community, to improve the health of bushland and riparian zones as well as connectivity and function of these zones to improve water quality, habitat, breeding and food resources for native species.

The proposed works complement other initiatives in which PHCC is involved in partnership with State Government: the Regional Estuaries Initiative and the Transform Peel Program, both focused on improving the water quality of the Peel-Harvey Estuary and in particular the Serpentine River and catchment.

The proposed initiative will aim to link significant Noongar (local aboriginal) sites and private landholders works with existing restoration projects undertaken by government agencies and community groups. It aims to bring all parties together to share knowledge and experiences and to identify opportunities to develop a continuous wildlife corridor along the Serpentine River and its receiving water bodies. By doing so it aims to "fill the gaps" and implement on-ground activities that minimise biosecurity impacts on existing bushland and riparian zones while improving native vegetation connectivity.

Alcoa Foundation will also fund two additional environmental projects across the Peel-Harvey Catchment. The partnerships with Greening Australia and The Nature Conservancy will help deliver on-ground and In-water environmental actions.

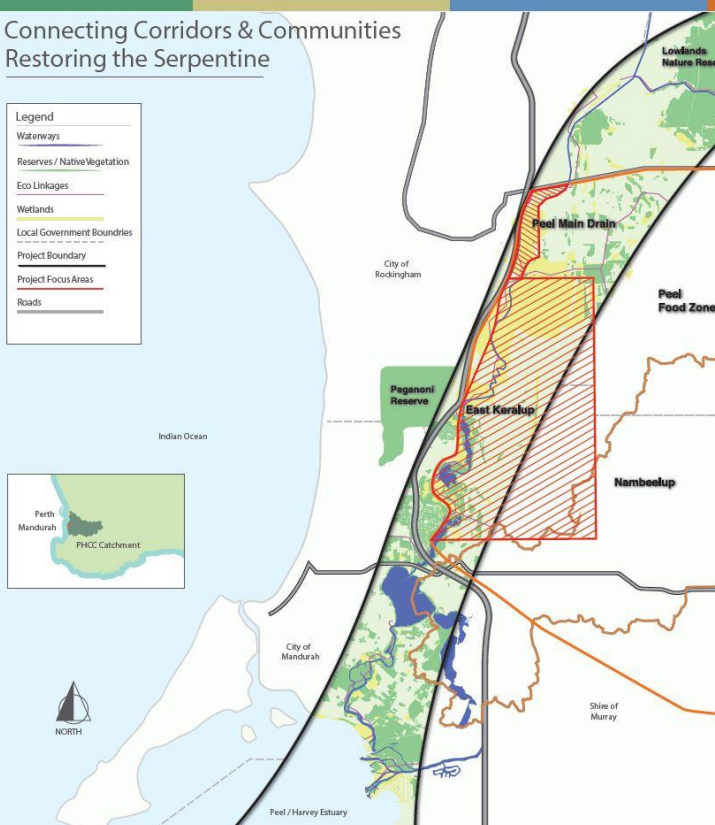
OUTCOMES

- Improved ecological health of the Serpentine River and surrounds
- Increased community environmental and cultural knowledge, awareness and capacity
- Increased vegetation connectivity to improve aquatic, riparian and terrestrial habitats
- Enhanced relationship with the Noongar community including the provision of skills and training for future employment opportunities
- Increased stakeholder networks and connections
- Increased knowledge and capacity of private landholders, groups and organisations to deliver projects
- A River Action Plan for the mid and upper reaches of the Serpentine River to guide future restoration actions
- Mitigate impacts of climate change – vegetation along a waterway provides nutrient stripping potential, shade to reduce water temperature and evaporation which in turn increases dissolved oxygen levels

Connecting Corridors & Communities Restoring the Serpentine

Legend

- Waterways
- Reserves / Native Vegetation
- Eco Linkages
- Wetlands
- Local Government Boundaries
- Project Boundary
- Project Focus Areas
- Roads



OUTPUTS

Here we propose improving the health, biodiversity, ecosystem function and ecosystem services of the Serpentine River through collaboration with private landholders and the Noongar community by engaging the following on-ground activities:

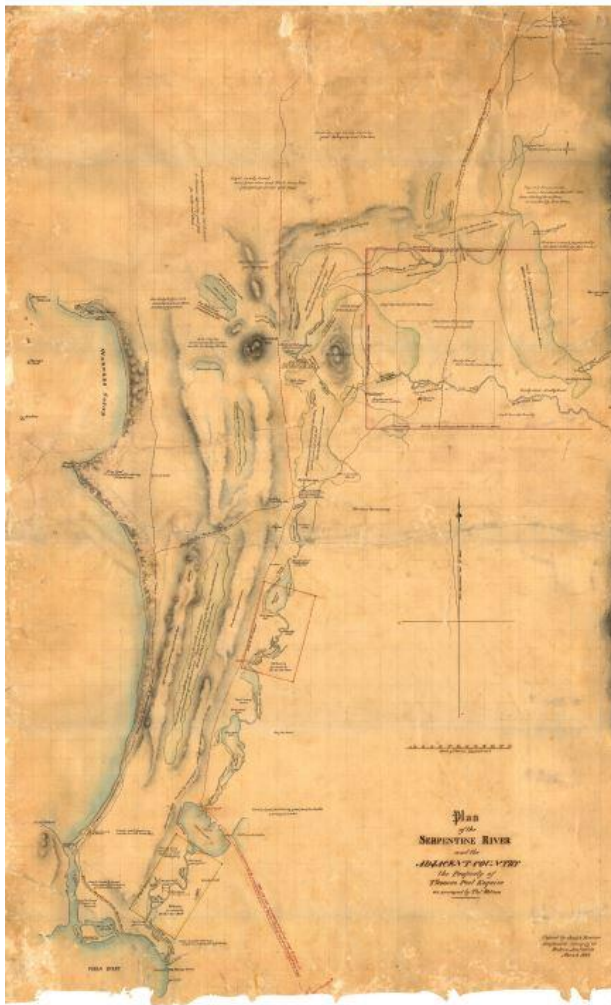
- Community engagement **events and field days**
- **Fencing** - Protect and conserve existing areas of riparian and bushland vegetation to maintain resilience in the landscape
- **Revegetation** - Reconnect areas of bushland, riparian zones and/or patches of remnant vegetation to create landscape scale ecological corridors
- **Bank stabilisation** to improve water quality and provide food and habitat for native invertebrates and finfish
- **Biosecurity** management – Feral animals, weeds and diseases will be removed to reduce impact and spread with the aim to improve ecological function
- **Consult** and engage the local **Noongar** community through all aspects of the project
- Develop a **River Action Plan** for the mid and upper reaches of the Serpentine River to guide restoration actions
- **Measurement and evaluation** of the activities using River Health Assessments, Ecological Monitoring and surveying of participants

“We are excited about this funding announcement. This significant grant enables three organisations to continue work on projects across the Peel-Harvey Catchment and PHCC is proud to be a part of the collaboration. It's a great acknowledgement of the Peel-Harvey region and its environmental significance.”

~ Andy Gulliver, PHCC Chairman ~

We acknowledge the Noongar people as Traditional Custodians of this land and pay our respects to all Elders past and present

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Restoring the Serpentine River

Connecting Corridors and Communities

Through a collaborative approach to improve the health, biodiversity, ecosystem function and ecosystem services of the Serpentine River and the estuary, the PHCC will work with the local community to improve the health of bushland and riparian zones to improve water quality, habitat, breeding and food resources for native species.



Connecting Corridors and Communities
Restoring the Serpentine River

A collaborative conservation initiative to improve the health, biodiversity and function of the Serpentine River. This innovative project works with private landholders, local Noongars and volunteers to restore the riparian vegetation and river banks of the Serpentine River.

Working Together to restore the Serpentine River through:

- funding opportunities
- sharing of cultural values and conservation practices
- building skills and knowledge
- workshops, training and field days
- opportunities for Noongars to work On-Country

Undertake **Restoration Works** along the Serpentine River foreshores by:

- planting 32,000 seedlings over 32 ha
- stabilising banks along 2 km of the project site
- undertaking 145 ha of feral animal control
- controlling weeds over 60 ha
- installing 4 km of fencing to manage stock access and protect natural habitat

58 Sullivan Street, Mandurah | P. 0818 9300 | www.peel-harvey.org.au
 This project is supported by PHCC, through funding from the Alcoa Foundation's Three Rivers, One Estuary Initiative.

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Media; Radio, media posts, articles and promotional signage

July to December Social media stories

- Post 09 - Discuss the values of Lowlands_Alcoa site visit (1 post)
- Post 10 – Serp Rv Cultural Tour_Elder (2 posts)
- Post 11 – Serp Rv Planning (3 posts)
- Post 12 – Serp Rv National Tree Day (12 posts)
- Post 13 - SJ Fair Event (10 posts)
- Post 14 – Landholder Site Visit (2 posts)
- Post 15 – River Health Assessments (1 post)
- Post 16 - Broadcast_6mm (2 posts)
- Post 17 – Field Day Planting (3 posts)
- Post 18 - Funding Rd Announcement (1 post)
- Post 19 - Community Forum (5 posts)
- Post 20 - Landholder site visits (7 posts)
- Post 21 – River Health Assessment Future Mgt Planning (1 post)
- Post 22 - National Waterbug Blitz Workshop (1 post)
- Post 23 - Native Vegetation and ID Training (3 posts)
- Post 24 – River Foreshore Condition Survey_Aerial (1 post)
- Post 25 – Excursion SerpRv_GreenfieldsPrimary (1 post)

Twitter Reach:

Jesse Rowley @Jesse_Rowley_

More valuable information from the SJ Fair that will help shape our ActionPlan for the #SerpentineRiver. Thanks to @AlcoaFoundation and @Alcoa for supporting this project. #PeopleWorkingTogether to #SaveOurSerp

Johanne Garvey @JohanneGarvey

Serpy River looking real good, thanks to a good winter, says long-time family farm manager Rupert Richardson, but we need to look at more innovative measures in #PlantManagementto take the future. @AlcoaFoundation & @Alcoa supporting our @PeelHarveyCC to #SaveOurSerp

Jesse Rowley @Jesse_Rowley_

No better way to celebrate #ScienceWeek than having a #HealthyRivers stall at the SJ Community Fair yesterday. Knowledge was shared and interest was gained to #SaveOurSerp through our #ThreeRiversOneEstuary @AlcoaFoundation @Alcoa project. Big thanks to all involved!

Jesse Rowley @Jesse_Rowley_

So lucky to have Thelma Crook come and teach all about Macro-invertebrates at our recent #HealthyRivers stall on #NationalTreeDay. I too learn something new every day from this inspirational lady #PeopleofNRM @PeelHarveyCC #SaveOurSerp

Johanne Garvey @JohanneGarvey

Day 2 of Native Vegetation Training kicked off with a view from a bridge at Lowlands, and spectacular views of our Serpy R & its instat riparian vegetation. Something truly rare in other parts of the river. #PeopleWorkingTogether to #SaveOurSerp

Johanne Garvey @JohanneGarvey

Day 1: Native Vegetation Training & all attending were keen to learn from renowned botanist Bronwen Keighley as she shared her knowledge of plants & the communities of the #SewarWorkingTogether through our #AlcoaFoundation #ThreeRiversOneEstuary Initiative.

Johanne Garvey @JohanneGarvey

Good news @shireofsj Always look forward to this event, more so this year as we @PeelHarveyCC will be at #HealthyRivers stall, talking to SJ community about what they love about living around Serpentine River. #PeopleWorkingTogether to #SaveOurSerp @AlcoaFoundation @Alcoa

Jesse Rowley @Jesse_Rowley_

Meeting our local landholder champions discussing how they can play a pivotal role in saving our Serpentine River. #PeopleWorkingTogether to #SaveOurSerp through our @AlcoaFoundation #ThreeRiversOneEstuary project.

Jesse Rowley @Jesse_Rowley_

Stakeholders and landholders came together recently to hear about our @AlcoaFoundation #SerpentineRiver project. A great outcome for a great cause – to help improve the health and biodiversity of the Serpentine River #PeopleWorkingTogether to #SaveOurSerp

Johanne Garvey @JohanneGarvey

More valued info from people attending the #HealthyRivers stall recently in Coodanup. Informing our Action Plans for #SerpentineRiver Thanks for supporting @AlcoaFoundation @Alcoa #PeopleWorkingTogether to #SaveOurSerp

Jesse Rowley @Jesse_Rowley_

Had a fun time today learning from the #NationalWaterbugBlitz team about how to correctly sample and identify macroinvertebrates - the great indicators of #RiverHealth This training will be put into action through our @AlcoaFoundation project to #SaveOurSerp

Jesse Rowley @Jesse_Rowley_

Not a bad way to start your Friday morning! Speaking with local landholders about how they can #SaveOurSerp through our @AlcoaFoundation #ThreeRiversOneEstuary project. #PeopleWorkingTogether

Johanne Garvey @JohanneGarvey

Around 350 people attended this yrs #NationalTreeDay at #PeelHarveyCC. Great work @CityofMandurah and all those amazing people who helped to plant nearly 7000 seedlings along our #SerpentineRiver to #SaveOurSerp @PeelHarveyCC @AlcoaFoundation @Alcoa #ThreeRiversOneEstuary

Jesse Rowley @Jesse_Rowley_

Great to be celebrating #NationalTreeDay with the @CityofMandurah watersways team talking all things about the Serpentine River. Thank you to everyone who got involved in the conversation to #SaveOurSerp through our @AlcoaFoundation @Alcoa #ThreeRiversOneEstuary project

Jesse Rowley @Jesse_Rowley_

Discussing all things access control with local landholders as a way to help restore the health and biodiversity of the Serpentine River. #PeopleWorkingTogether to #SaveOurSerp through our @AlcoaFoundation #ThreeRiversOneEstuary project

Jesse Rowley @Jesse_Rowley_

Planting in the spring sunshine at private landholder properties on the Serpentine River. #PeopleWorkingTogether #ConservingCommunities to #SaveOurSerp funded through our #ThreeRiversOneEstuary @AlcoaFoundation project, helping @PeelHarveyCC to deliver #NRM in our catchment.

Johanne Garvey @JohanneGarvey

After a morning planting at #PeelHarveyCC the kids were still keen to assist @PeelHarveyCC officer Thelma, in collecting & identifying #HealthyRivers critters from nearby #SerpentineRiver #ThreeRiversOneEstuary @AlcoaFoundation @Alcoa #PeopleWorkingTogether to #SaveOurSerp

Jesse Rowley @Jesse_Rowley_

Getting prepared for our #HealthyRivers stall this Sunday July 29 for #NationalTreeDay. Come and chat with us about your favourite memories of the river, what native fauna you see in your backyard and learn how you can play a critical role to #SaveOurSerp

Johanne Garvey @JohanneGarvey

Working with the @CityofMandurah today to plan for this months National Tree Day #NTD event at #PeelHarveyCC Engaging our #RIVER community. @Alcoa and funders @AlcoaFoundation #PeopleWorkingTogether to #SaveOurSerp

Johanne Garvey @JohanneGarvey

Planting in the spring sunshine at private landholder properties on the Serpentine River. #PeopleWorkingTogether #ConservingCommunities to #SaveOurSerp funded through our #ThreeRiversOneEstuary @AlcoaFoundation project, helping @PeelHarveyCC to deliver #NRM in our catchment.

Jesse Rowley @Jesse_Rowley_

How do you use the Serpentine River? Come and tell us all about it at our #HealthyRivers stall this Saturday Aug 11 at the SJ Community Fair. Learn about how you can #SaveOurSerp by getting involved in our @AlcoaFoundation and @Alcoa Three Rivers, One Estuary project.

Johanne Garvey @JohanneGarvey

Good news @shireofsj Always look forward to this event, more so this year as we @PeelHarveyCC will be at #HealthyRivers stall, talking to SJ community about what they love about living around Serpentine River. #PeopleWorkingTogether to #SaveOurSerp @AlcoaFoundation @Alcoa

Johanne Garvey @JohanneGarvey

Planting in the spring sunshine at private landholder properties on the Serpentine River. #PeopleWorkingTogether #ConservingCommunities to #SaveOurSerp funded through our #ThreeRiversOneEstuary @AlcoaFoundation project, helping @PeelHarveyCC to deliver #NRM in our catchment.

Johanne Garvey @JohanneGarvey

Great day out with local Elder Uncle Harry who took us on country for a tour around the Serpentine River & the #REIPeel Drain project. A great insight into cultural values & links to other projects. Looking forward to working with our community & @AlcoaFoundation to #SaveOurSerp

Facebook Reach:

Milestone 2: A research, monitoring and data collection project implemented throughout the project involving experts, local community and school groups. Monitoring undertaken using proven methodology and standard process to ensure quality assurance and quality control including River Health Assessment surveys and ecological monitoring of condition indicators such including fringing vegetation, bank stability, fish and invertebrate abundances, and physical and chemical water quality parameters. Monitoring will provide baseline and follow up data against which changes in river and riparian health indicative outcomes can be measured in the longer term. The project will involve the broader community and school groups in training and data collection as a strategy to stimulate ongoing monitoring beyond 2020. The data will be used to inform this and other projects and for ongoing monitoring of the system. Seven sites will be established along the project area, 20 community members and school students will be engaged and trained in establishing monitoring sites, data collection and analysis to increase their knowledge and skills and to encourage future participation in monitoring events. This will in turn provide ownership of project outcomes.

Oct 2018 - Complete monitoring & training across the 7 sites identified in Report 1

NVIS sites (4) were identified in previous stage using the Australian Government’s National Vegetation Information Systems protocols (NVIS) methodology in ecological monitoring.

Monitoring was carried out this stage as part of two training sessions, for officers, Alcoa employees and volunteers. Surveys at the lower serpentine reach sites (1., 2.), were recorded by experienced officers and data collected stored on the online GRID database. The data collected during the Lowlands site surveys was not considered reliable and will be undertaken by Managers separate to this project. They will provide data once collected.

1. Riverside Gardens (survey completed, and data collected)
2. St Ives (survey completed, and data collected)
3. Lowlands Reserve site 1 (bushland – surveys completed but data collected not recorded)
4. Lowlands Reserve site 2 (riparian - surveys completed but data collected not recorded)

Other targeted locations will be chosen once Final River Action Plan identifies priority areas



River Health Assessments (3 Serpentine Rv) The three assessments carried out at priority sites along the Serpentine River will provide baseline data for existing and future projects. These Assessments were undertaken earlier in the project by the Department of Water and Regulation (DWER) - Water Science Branch team, and final reports have now been provided to the PHCC. There will be further investigation into additional priority sites as the project progresses.

A series of meetings were held with the PHCC (including the Hotham-Williams team), Department of Water and Environmental Regulation (DWER) Water Science Branch, Murdoch University Fish and Fisheries research Unit, and Harvey River Restoration Taskforce (HRRT). The aim of the meetings was to evaluate how river health assessments can be carried out using a consistent methodology across multiple sites in the Peel-Harvey catchment.

August 2018 - River Health Assessment Planning Workshop (Phase 1)

The first of two workshops were held in August and included officers from the PHCC and the Water Science Branch team from the DWER. The session worked on a strategical plan for a consistent methodical approach due to the increasing demand for incorporating river health assessments into projects across the Peel-Harvey catchment.

The Water Science Branch team presented their framework and options on how the work could be carried out into the future. They gave an outline of the methodology in which the assessments should follow in the State of Western Australia, including an overview of the South West Index of River Condition (SWIRC) tool. Using this method, a range of indicators to assess condition are collected and together these indicators are drawn into a single tool for assessing river condition in south-west Western Australia.

Participants: 8

October 2018 – River Health Assessment Workshop (Phase 2)

To progress the Planning Workshop held in August with the Water Science Branch (DWER) and others, a second workshop was held with PHCC officers and Project Partners. Information collected at the first workshop, including that presented by the Water Science Branch team was tabled. Officers workshopped options for planning a consistent approach when carrying out river health assessments as part of the delivery of projects. In particular, the team worked through ways to ensure the standard methodology set by the Department and regarded highly on a State level, be used consistently in other Partner Projects throughout the catchment. The outcome from this meeting was positive, with all Project Partners agreeing to carry out river health assessments on the Harvey, Serpentine and the Hotham/Williams Rivers in a similar timeframe and with consistent methodology.

Participants: 10



November 2018 – Waterbug Identification training

On November 8th Rivercare Officers took part in Waterbug Identification training with freshwater ecologist John Gooderham as part of the National Waterbug Bioblitz. The team learnt how to correctly identify macroinvertebrates as they are key indicator species of river health. The Officers trained will put these skills learned in to practice whilst undertaking future project work, including the River Health Assessments along the Serpentine River that are scheduled for autumn 2019.

Participants: 2

Milestone 3: *Develop a River Action Plan (RAP) to set priority actions for now and into the future. The RAP is one step in engaging local landholders in the project. One RAP will be completed. Six private landholders will take part in the assessment on their properties. Four Noongar Elders and representatives will share cultural knowledge and values. A RAP of the Lower Murray River (also flowing into the Peel-Harvey Estuary) already exists and has been instrumental in the delivery of strategic actions along that section of the Serpentine River from Stakehill bridge to the delta. The RAP takes in the banks and riparian zones and includes cultural sites and values.*

Cultural and knowledge and awareness

July 2018 - Serpentine River Tour with local Elder

As part of the River Action Planning and future on-grounds works proposed, a cultural tour by local Elder Harry Nannup was undertaken to ensure all cultural knowledge and lore and are recognised and respected.

Elder Harry Nannup spent time to share stories of what life was like on the Serpentine years ago, and what he and his community value and see as threats to the Serpentine River and surrounding areas. He communicated the strong relationships he and the community has built overtime with some of the farmers living along the river and provided an insight of what drives them, and ideas on how these landholders could be approached to be part of the solution to improving the health and condition of the river.

Coordinator of the PHCC Peel Main Drain project also attended the site visit. The Officer gave a tour and overview on the project and activities, and how the State Government funded project closely links to the Alcoa Foundation project. The tour included showcasing the newly formed swales created on the lands adjacent to the drain. This project greatly supports outcomes in the 'Restoring the Serpentine River' project, as it aims to take nutrient enriched waters out of the system and filtering them through a series of vegetated swales for a length along the drain before diverting back into the drain and the Serpentine River.

The exchange in knowledge on the day was greatly received by local Elder, who said the work being done through collaborative projects is providing a significant benefit to the Serpentine River, surrounding areas and the Peel Estuary.

Participants: 4

November 2018 - Cultural Consultation – Yarn at the Shed with Local Elders

A cultural consultation meeting was held at the Peel-Harvey Catchment Council. In attendance were two local Elders, Department of Water and Regulation (DWER) Water Science Branch and PHCC Officers, including PHCC Noongar Participation Officer.

Discussed were Noongar Values and how they can directly link to components of the 'Restoring the Serpentine River' project. In particular, the cultural values being included in the River Action Plan being prepared by the PHCC and also the Estuary Protection Plan Draft being undertaken by the Water Science Branch (DWER). There were many synergies between the two projects and local Elders eager to be part of both. The learnings collected from this meeting will be used to inform sections within the River Action Plan.

Participants: 5

November 2018 - Cultural Consult Meetings as part of Approvals and Permissions

PHCC Noongar Participation Officer met with the Senior Heritage Project Officer-Department of Aboriginal Affairs (DAA), to discuss activities within the 'Restoring the Serpentine River' project, that pertain to culturally significant areas. The Serpentine River is registered as a site of Ceremonial, Mythological significance, and the to ensure due diligence when working on the Serpentine River officers met to discuss project works which may require approvals and/or permits under the legislation and traditional lore.

Participants: 3

Cultural and knowledge and awareness



Serpentine River Action Plan

Prior to field work and surveying, a desktop assessment has been carried out and is now in draft form. Processes included downloading databases from the SLIP porthole, Naturemap, and other online servers and loading them into a GIS program in order to create a map of the overlaid data. The layers, such as threatened flora/fauna, ecological communities, land use and tenure are all currently being taken into consideration when prioritising areas for future ground-truthing. Reaches have been identified with some areas identified as priority sites for future works.

The desktop analysis is being used to assist Officers during their site visits to the interested landholders seeking funding for on-ground actions. During October and December Officers undertook several ground-truthing fieldtrips, with 12 Foreshore Condition Assessments being carried out.

In December 2018 a helicopter flight for closer investigation of the Reaches was undertaken. It covered the entire length of the River, from the Lowlands Nature Reserve (reference site) to the Peel Estuary. The height was only 30 metres from ground level and imagery captured was of very high quality, encapsulating all of the river and its foreshore. This imagery will be used to inform the team working on the River Action Plan and influence their groundtruthing actions which are continuing at present and be in full swing by Autumn 2019.

The Draft Desktop Analysis forms the basis of the River Action Plan and will be finalised by June 2019.

In addition to the imagery being captured a GoPro was strapped to the helicopter and took video of the entire length of river. This will be used in the production of a promotional video in future stages.







Milestone 4: *Implement on-ground action to deliver priority outcomes to improve the health of the Serpentine River and its surrounds and to increase connectivity for wildlife. Four km of fencing will be completed, approximately 32,000 stems will be planted across 36ha to link existing vegetation riparian and bushland patches, over 60 ha of weed and 150 ha of feral animal control, 1 km of bank stabilisation activities completed to protect banks and riparian zone and improve health, connectivity and corridors along the Serpentine River.*

Implementation of on-ground actions are being delivered through methods such as:

- Working at priority sites identified in the River Action Plan
- Collaborative activities with community and partners
- Devolved grant opportunity to engage and build capacity in community living within the project area

Using this approach will help deliver on multiple objectives and outcomes for the project.

On-ground Activities - July to December 2018

Revegetation activities with City of Mandurah along the lower reaches of Serpentine River project site:

- 1652 stems planted across 0.5 ha Coodanup reserve, working with Natural Areas City of Mandurah team
- 850 stems planted across 0.12 ha Riverview reserve, working with Winjan Aboriginal Corporation
- 725 stems planted across 0.59 ha Riverside drive, working with Riverside Primary School
- 7,000 stems planted across 49 ha Frasers landing river reserve, National Tree Day local community

Revegetation activities with local landholder of the upper reaches of Serpentine River project site:

- 1000 stems planted across 15.5 ha private property, working with Growing Towards Wellness Group and volunteers

A total of 10,227 seedlings have been planted over more than 66 hectares of Serpentine River foreshore areas.

Community Environment Grants (CEG)

A devolved grant round was developed to engage and build capacity in targeted landholders and community groups of the Serpentine River project area, using funding made available through the Alcoa Foundation Activities' budget. The aim is to improve the health and biodiversity of the Serpentine River through collaboration with individuals (private landholders) and community groups by engaging in the following on-ground activities:

- Fencing - Protect and conserve existing areas of riparian and bushland vegetation to maintain resilience in the landscape
- Biosecurity - Feral animals, weeds and diseases will be removed to reduce impact and spread with the aim to improve ecological function
- Revegetation - Reconnect areas of bushland, riparian zones and/or patches of remnant vegetation to create landscape scale ecological corridors
- Bank Stabilisation - Decrease erosion and/or improve water condition
- Enhance Fish Habitat - Improve habitat, connectivity, breeding and food resources for fish species

An Invite to express an interest in the Grant opportunity was sent to 110 landholders living on the Serpentine River within project site. 14 Expressions of Interest were received from landholders and local community groups. Officers visited each property to meet with landholders and to carry out foreshore condition assessments (which were being done as part of the River Action Plan groundtruthing). As a result, eight Applications to request funding were submitted to the PHCC.

All Applications were required to fit with PHCC strategic directions and importantly the objectives and outcomes required of the 'Restoring the Serpentine River' project. To ensure a good standard of care and due diligence, an independent Assessment Panel was formed, made up of members from the Alcoa Foundation's Steering Committee.

The Panel consists of members with expertise in water resource management, biodiversity, conservation and environmental protection. They offer advice and guidance and make recommendations for funding. The Panel carefully assessed each Application on its merits, ranking each measure and scoring via a pre-determined criterium. Criteria was based on the PHCC and Alcoa Foundation project objectives, in-kind contribution, natural asset values and benefits to the outcome of the project if implementing the activities proposed.

As part of the Grant process the PHCC created standardised templates, checklists and flowcharts to ensure easy processes for Officers and recipients. Processes are as follows:

- Create project specific criteria and guidelines
- Announce and advertise grant opportunity
<https://peel-harvey.org.au/grants/connecting-corridors-and-communities-restoring-the-serpentine-river/>
- Receive expressions of interest and screen eligibility
- Provide eligible landholders Application and Guidelines
- Carry out site inspections and undertake foreshore condition assessments
- Assess Applications via criteria scoring and notify all applicants of outcome
- Create Landholder Agreements and other reporting requirements

In November 2018 the CEG Assessment Panel recommended eight projects for funding, some with special conditions attached before funding be approved. Conditions included such items as providing further information, gaining additional quotes, permissions/approvals, and adjusting activities to fit better with project objectives and outcomes. To date four applications have been approved and notified, three are pending approval and one Applicant has withdrawn.

Applications for Community Environment Grants propose to protect well over 900 hectares of Serpentine River, foreshore and surrounding area, through the Applicants proposed activities (pending approval). Activities include:

Fencing: 4.5 kilometres, Seedlings: 2924, Revegetation area: 17 hectares, Weed control area: 101 hectares, Feral animal control: 877 hectares, Bank stabilisation: 1.1 kilometres. Contributions of \$132,061 (AUD) are being sought through the 'Restoring the Serpentine River' project and \$67,500 (AUD) from Applicant in-kind.

The allocation of funds does not include approval costs that two landholders factored in to their grant applications. For instance, the Department of Aboriginal Affairs (DAA), could require costs of up to \$15,000 (AUD), per approval. At the present time the PHCC Noongar Participation Officer is in conversation with Officers from DAA to work out a collaborative method at a higher level, which aims to simplify the approval process and gain better outcomes for the project overall.

The table below shows proposed activities, committed funds and costs including the in-kind contributions from the Applicant.

Alcoa Foundation Community Environment Grants Committed Expenditure (AUD\$)

App/Project code	Area protected (ha)	Fencing (km)	Seedlings (No.)	Revegetation (ha)	Weed Control (ha)	Bank stabilisation (km)	Feral Animal Control (ha)	Structures (No.)	Recommendation *pending conditions met	Committee Ranking (out of 26)	Landholder contribution (ex GST)	PHCC (through Alcoa Foundation) contribution requested (ex GST)
Total	905	4.5	2924	17.1	101.3	1.1	877	7	0	145	\$67,579	\$132,061
CEG_02	24	2	-	-	58	-	24	-	Yes *	17	\$19,635	\$ 14,273
CEG_03	6	0.7	1000	2	2	-	6	-	Yes *	20	\$6,960	\$14,999
CEG_04	6.5	1.5	1424	4	-	0.65	-	-	Yes *	20	\$-	\$38,955
CEG_06	0.24	0.06	-	-	8	0.06	-	1	Yes	22	\$4,627	\$10,870
CEG_07	285	0.25	-	11	11	0.25	285	-	Yes	21	\$8,236	\$12,987
CEG_09	22	-	500	0.13	22	0.15	-	6	Yes	24	\$17,951	\$32,890
CEG_10	562	-	-	-	-	-	562	-	Yes	21	\$10,170	\$7,087

Through the Community Environment Grants (CEG) there are many on-ground activities proposed that will work towards connecting and increasing the corridors and communities along the Serpentine River and surrounding areas. Landholder and community engagement will also continue to expand through these grants.

The proposed on-ground activities, if delivered, will work towards improving the health of the Serpentine River, its surrounds and increase connectivity for wildlife.

Future on-ground works

Early discussions have started with some organisations in the planning potential future on-ground works, including Greening Australia. The River Action Plan once finalised in 2019 will reveal more projects and activities for on-ground works in priority sites within the project area.

Landholder site visits – Community Environment Grants

CEG_01_Karnup Road



02_Wilkinson Road



03_Caponi Road



04_Karnup Road



07_Lowlands Road



09_Furnissdale Road



