

Revitalising Geographe Waterways

2015–2019

Final Report to the Community

Revitalising Geographe
Waterways

VASSE
task**FORCE**



Foreword

It is with a great sense of achievement that I bring to you the final report for the first four years of the Revitalising Geopraphe Waterways program. Having Chaired the Vasse Taskforce for the last 2 ½ years, I continue to be impressed by the way our partner agencies work together to find innovative and practical solutions to a challenging problem.

I would like to acknowledge my fellow Taskforce members for their ongoing commitment to overseeing the management of Geopraphe waterways, with the Taskforce now set to continue until 2022.

It is also important that I acknowledge the enormous contribution of the community to the Revitalising Geopraphe Waterways program, who have remained dedicated and passionate about achieving real

outcomes for our waterways over the past four years through involvement in collaboration groups and high attendance at community events.

The successes of Revitalising Geopraphe Waterways as a stand-out program have been demonstrated through a recent independent evaluation highlighting the collaborative approach between organisations, scientists and the community as a defining feature of the program. The evaluation is a tribute to the hard work and dedication from the project delivery team and partners.

The task of improving water quality in Geopraphe waterways is ongoing and I look forward to continuing as the Chair of the Vasse Taskforce on the next step of the journey to Revitalise Geopraphe Waterways.

■ **Dr Sally Talbot MLC – Chair of the Vasse Taskforce**

The Revitalising Geopraphe Waterways program is an ambitious program that aims to improve water quality, waterway health and management of Geopraphe Waterways. Over the last four years nearly \$15 million dollars has been invested by State Government, Taskforce and industry partners and the local community to achieve this aim. Investment has focused on science, modelling, catchment management and collaborative

planning to accelerate reductions in nutrients, improve water quality and build capacity and knowledge in waterway managers and the community to better manage Geopraphe waterways. This report highlights some of the key achievements of the Revitalising Geopraphe Waterways program 2015-2019 with a focus on the Lower Vasse River, Vasse Wonnerup wetlands, Catchment waterways, and Toby Inlet.

Revitalising Geopraphe Waterways is overseen by the Vasse Taskforce, chaired by the Member for South West region the Honourable Dr Sally Talbot, with representatives from local and state government agencies, water service providers and catchment groups. The Vasse Taskforce provides strategic direction and support to the lead agencies responsible for delivering on projects under Revitalising Geopraphe Waterways and reports to the community on outcomes of activities undertaken to improve waterway health.



Lower Vasse River

The Lower Vasse River flows through the centre of Busselton and is highly valued by the local community. Historically the river has been an iconic feature of the town and focal point for recreational and social events. In recent decades the river has been characterised by annual toxic algal blooms occurring over summer months that greatly impact on the social values of the river.

Improving the visual amenity and water quality of the Lower Vasse River is a priority for the wider community and the Revitalising Geographie Waterways program.

Actions to improve water quality in the Lower Vasse River have focussed on identifying opportunities to increase flows, treating algal blooms in-situ and clarifying future management. The Department of Water and Environmental Regulation and the City of Busselton led the delivery of these actions.

Key achievements for the Lower Vasse River include:

- Successful trial of a phosphorous binding clay reducing harmful algal blooms in the Lower Vasse River over summer months
- Development of the Reconnecting Rivers model resulting in the planned installation of a second culvert in the Vasse Diversion Drain in 2020 that will double winter flows into the Lower Vasse River reducing nutrient concentrations at the end of spring
- Investigations into the invasive Mexican water lily and development of a management strategy by the City of Busselton to control and reduce further spread of the lily
- Development of the Lower Vasse River Waterway Management Plan May 2019, by the City of Busselton with input from the local community, guiding future management of the River



Mexican water lily investigation 2017



Applying phosphorus binding clay in the Lower Vasse River 2017/18



Floating curtains separate treatment areas in clay trial 2017/18

Vasse Wonnerup Wetlands

The Vasse Wonnerup wetlands are recognised on a local, state, national and international level for their conservation, social and cultural values. In 1990 they were recognised as Ramsar wetlands of international significance, providing habitat for over 80 species of waterbirds. The wetlands are also the most nutrient enriched wetlands in Western Australia characterised by large macro algal blooms and frequent fish kill events.

Protecting and maintaining the conservation values of the wetlands and improving water quality is a priority for the local community, government agencies and the Revitalising Geographie Waterways program.

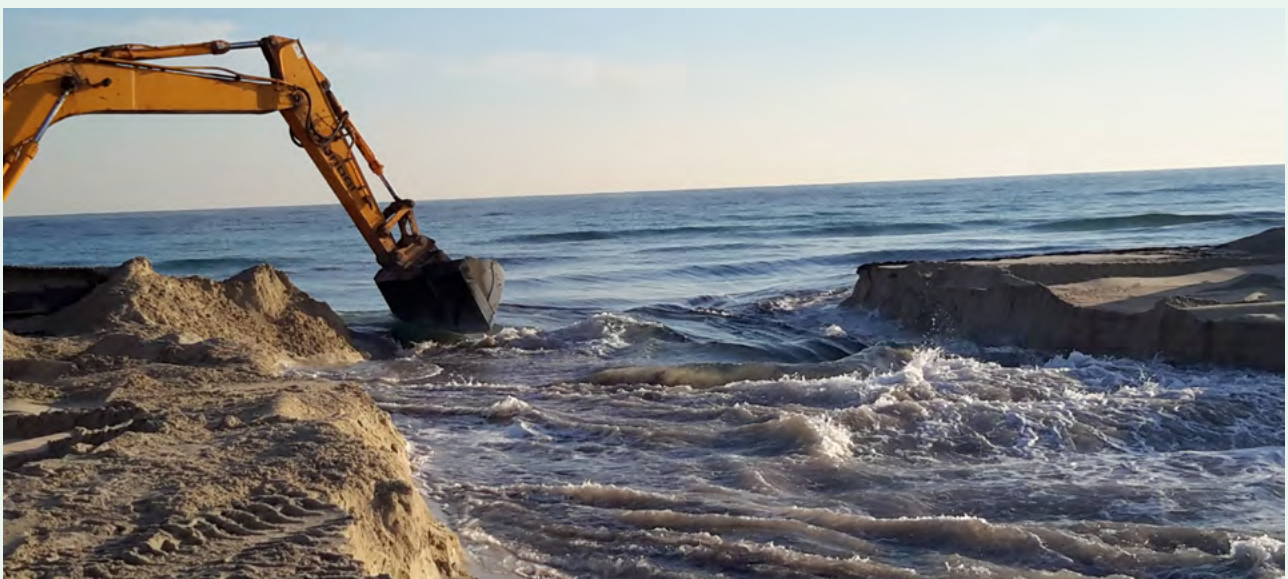
Actions to improve water quality in the Vasse Wonnerup wetlands have focused on reducing algal blooms and fish kills in the Vasse Estuary channel, better understanding the ecology of the wetlands and clarifying their future management. The Department of Water and Environmental Regulation, Department of Biodiversity, Conservation and Attractions and Murdoch University led the delivery of these actions.



Migratory species the Wood Sandpiper



Vasse Wonnerup Science Advisory Group



Opening the Wonnerup sand bar



Sampling macroinvertebrates in the Wonnerup estuary



Monthly water quality monitoring



School children help fish for black bream as part of the tagging project

Key achievements for the Vasse Wonnerup wetlands include:

- Four year seawater inflow trial into the Vasse Estuary resulting in updated procedures for operating the Vasse surge barrier, reduced incidence of harmful phytoplankton and improved conditions for fish in the Vasse Estuary channel over summer months
- Trial of a mini oxygenation plant showing oxygenation could be added to the suite of future management options to reduce the risk of fish kills
- Sediment investigation in the Vasse Estuary channel and subsequent removal of 300 m² of sediment upstream of the Vasse surge barrier by the Water Corporation
- Fish movement and Black bream recruitment studies contributing to updated procedures to optimise fish movement through the surge barriers
- Development of an estuary model for the Vasse Wonnerup wetlands informing surge barrier management of the wetlands
- Monthly water quality and waterbird monitoring and seasonal ecological monitoring (aquatic plants, invertebrate, fish and waterbirds) providing a greater understanding of the ecology of the wetlands and interactions between water regime and ecology
- Development of the Vasse Wonnerup Operational Plan: guidance for managers 2019 by the Department of Biodiversity, Conservation and Attractions, with input from the Vasse Wonnerup wetlands Collaboration, guiding future management of the wetlands



Toby Inlet

Toby Inlet is a small estuary to the east of Dunsborough with important ecological and social values. The Inlet is highly valued by the local community as a recreational area. Water quality in the Inlet has deteriorated over recent decades and is characterised by sediment build-up and nuisance macro algal blooms over summer months.

Improving water quality in the Inlet is a priority for the local community and the Revitalising Geographie Waterways program.

Actions in the Toby Inlet have focused on identifying options for increasing flushing in the Inlet, reducing nutrient contributions from septic tanks and clarifying future management. The Water Corporation, Department of Water and Environmental Regulation and the City of Busselton were key deliverers of these actions.



Key achievements for the Toby Inlet include:

- Development of the Reconnecting Toby Inlet model, resulting in new procedures to open and monitor the Toby Inlet sandbar over summer months to increase tidal flushing and improve water quality
- Deep sewage connection in Quindalup for 206 properties resulting in an estimated reduction of 94kg phosphorous (P) and 267kg of nitrogen (N) per year entering the Inlet
- Fish and macroinvertebrate study of the Toby Inlet providing baseline data of the ecology of the Inlet
- Development of the Toby Inlet Waterway Management Plan May 2019 by the City of Busselton with support from the Toby Inlet Catchment Group and local community, guiding future management of the Inlet.



Catchment Waterways

Sixteen waterways flow across the Geographe catchment directly into Geographe Bay or via coastal wetlands and estuaries. The waterways have important ecological, social and cultural values. The health and water quality of Geographe waterways varies greatly, with some waterways in good condition with intact riparian vegetation and good water quality, while others are characterised by degraded riparian vegetation and poor water quality.

Building resilience and improving water quality in Geographe waterways is a priority for the community and the Revitalising Geographe Waterways program.

Actions to improve water quality and health of Geographe waterways have focused on reducing nutrients entering waterways, protecting and enhancing riparian vegetation and monitoring water quality and ecological values of the waterways. GeoCatch, the Department of Water and Environmental Regulation and Western Dairy were key deliverers of these actions.

Key achievements in Geographe waterways and catchment include:

- Protection and enhancement of 130 ha of riparian vegetation through the installation of 40km stock exclusion fencing and establishment of 11 ha of riparian vegetation
- Soil testing and nutrient mapping across 62 farms (11,333 ha) resulting in an estimated reduction of 537kg of phosphorus per year entering Vasse Wonnerup wetlands and Geographe Bay
- Enhancing the lower section of the Vasse Diversion Drain through bank reshaping, weed control and revegetation to improve liveability and environmental values
- Fortnightly water quality monitoring at 22 sites across the catchment showing a reduction in nutrients entering over 75% of catchment waterways
- River health assessments of five waterways providing baseline ecological data of the waterways
- Update of the Geographe Catchment model to direct future nutrient reduction works in the catchment
- Roll-out of the Bay OK program including 12 gardening workshops to over 600 community members reducing nutrients from urban gardens
- Review of over 80% of dairies in the catchment and development of 10 dairy effluent plans that will be implemented in 2020 reducing an estimated 1.4 tonnes of phosphorus and 8.8 tonnes of nitrogen from dairy sheds from dairy sheds





Geographe Community

A broad community survey undertaken in 2017 found that over 95% of the Geographe community value Geographe Bay, Vasse Wonnerup wetlands and Geographe Waterways, with nearly 30% of those surveyed concerned about the management of those waterways.

Improving awareness, collaboration and confidence in the community in the management of Geographe Waterways has been a priority for the Vasse Taskforce and Revitalising Geographe Waterways program.

GeoCatch and the Department of Water and Environmental Regulation were key deliverers of the communication activities of the program.

Key achievements in communication and collaboration include:

- Establishment of the Vasse Wonnerup wetlands, Toby Inlet and Sustainable Agriculture collaboration groups to bring together managers, scientists and community members to guide projects and develop management plans
- Delivery of over 140 community updates and events reaching over 1500 community members increasing awareness of Geographe waterways and actions being taken to protect them
- Establishment of the Revitalising Geographe Waterways website as a one-stop-shop for information on Geographe waterways and the program
- Development of over 160 media releases and two annual reports highlighting key achievements of the program
- Publication of 19 project factsheets and 12 technical reports to ensure information gained from the program is accessible to the community

Where to Next?

The Revitalising Geographe Waterways program has been extended to December 2020 with an additional \$1.6 million in funding from the State Government. Over the next 12 months projects will focus on consolidating science and research on the Vasse Wonnerup wetlands, working with farmers to reduce nutrients off grazing properties, implementing key actions in waterway management plans and keeping the community updated. The Vasse Taskforce will continue to oversee the program and seek future funding to continue actions to Revitalise Geographe Waterways.



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