

Department of Biodiversity, Conservation and Attractions Department of Primary Industries and Regional Development Department of Water and Environmental Regulation

Vasse Wonnerup wetlands - Improving water quality Revitalising Geographe Waterways



The Vasse Wonnerup wetlands are recognised on a local, state, national and international level for their conservation, social and cultural values. The wetlands are recognised as Wetlands of International Importance under the Ramsar convention providing habitat to over 20 000 birds from 80 different species including international migratory species. The wetlands are also the most nutrient enriched wetlands in Western Australia suffering annual algal blooms and regular mass fish kill events. Neighbours of the wetlands also suffer from noxious odours and poor visual amenity over summer/autumn months.

Why is water quality poor?

The Vasse Wonnerup wetlands are highly modified. Water flow into and out of the wetlands has been significantly altered since European Settlement. Drainage networks have been built throughout the catchment and many rivers which once flowed into the wetlands have been diverted to Geographe Bay. Surge barriers were installed on the exit channels of both estuaries in 1908 to stop seawater inundation to surrounding agricultural land and protect the townsite of Busselton from storm surges. Excess nutrients off the catchment and from the sediment in the wetlands, combined with shallow warm water provide ideal conditions for algal growth. Algal

blooms lead to low oxygen levels, contributing to major fish kills. Dying algae and exposed sediments contribute to poor smells over warmer months.



What is being done to improve water quality?

A number of initiatives to improve water quality in the Vasse Wonnerup wetlands are being undertaken through the **Revitalising Geographe Waterways** program. These include:

Reducing nutrients off the catchment: working with farmers and gardeners to improve fertiliser management, upgrading dairy effluent systems and protecting riparian vegetation through fencing and revegetation.

Improving flow management: low nutrient flows off the catchment are being delivered to the Vasse estuary in spring and summer through two newly installed penstocks in the Vasse Diversion Drain Improving surge barrier management: Seawater is let into the Vasse and Wonnerup estuaries through the surge barriers in response to poor water quality or minimum water levels to reduce the risk of fish kills over summer/autumn

Removing sediment: exposed sediment alongside James Richardson Park is planned to be removed in winter 2023 to reduce noxious odours .

For more information see the Revitalising Geographe Waterways website https://rgw.dwer.wa.gov.au

Why don't you just let seawater into the estuary?

Seawater has been let into the Vasse and Wonnerup estuaries since 1988 to reduce the risk of fish kills. Since 2015 monitoring has been undertaken to assess the impact of seawater inflows. Results have shown an improvement in water quality but lower waterbird numbers over summer months coinciding with higher water levels. Higher, saltier water levels in the Vasse estuary combined with erosion of a levee in the Vasse Delta Wetlands also led to saltwater intrusion into the Lower Vasse River in 2020 resulting in the death of approximately 7000 Carter's Freshwater Mussels. Due to the potential impact on threatened species a S40 Authorisation under the Biodiversity Conservation Act has been required to allow seawater into the Vasse

estuary over the last two years.

The Authorisation allows seawater inflows into the estuary in response to poor water quality (based on dissolved oxygen and phytoplankton criteria) and defines maximum water levels of seawater inflows to protect waterbird habitat (0.0 mAHD). A sand barrier has also been installed between the Vasse estuary and Lower Vasse River along Ford Road to replace the eroded levee and stop salty water intruding into the Lower Vasse River. The criteria and actions outlined in the Authorisation allows a compromise between benefits of seawater inflows (water quality and reduced odour) and potential impacts to waterbirds and threatened species.

Who is managing the wetlands?

The wetlands are managed by the Vasse Wonnerup wetlands Partnership under the Vasse Wonnerup Operational Plan: guidance for managers 2019. The Partnership is made of the Departments of Biodiversity, Conservation and Attractions (DBCA), Water and Environmental Regulation (DWER), Primary Industries and Regional Development (DPIRD), the Water Corporation (WC) and City of Busselton (COB).

For further information on the wetlands			DBCA -	97525555	Operational Plan and
contact:					Ramsar values
DPIRD -	1800815507	Fish kills	DWER -	97810111	Water quality
CoB -	97810444	Mosquitos and amenity	WC -	131385	Flood or surge barriers







Revitalising Geographe Waterways

> VASSE ^{ask}FORCE