

Wetland Management and Restoration

Date: Thursday, 6 September 2018
Time: 10:00am – 3:15pm (Registration from 9:30am)
Venue: The Atrium Theatrette, Level 4, 168 St Georges Terrace, Perth
Cost: \$66.00 (Incl GST) professional organisations; \$40.00 (Incl GST) community groups

ABOUT THE FORUM

Please join us for this fantastic opportunity to hear about interventions to address wetland water quality issues, such as algal blooms and aquatic weeds, as well as successful wetland restoration techniques that have transformed degraded sites into thriving ecosystems.

Expert speakers include representatives from the Department of Biodiversity, Conservation and Attractions, the Department of Water and Environmental Regulation, the Department of Health, Local Government, NRM organisations and catchment groups. The event will include morning tea, a lunch break where attendees can network with others in their field, and question sessions with all presenters.

PROGRAM

- 10:00am** **Welcome and introduction**
Melanie Davies, Biodiversity and Sustainability Project Officer, WALGA
Ingrid Sieler, Sustainable Communities Manager, Perth NRM
- 10:05am** **Welcome to Country and Aboriginal Traditional Knowledge in Wetland Management**
- 10:30am** **Improving water quality in urban lakes and wetlands**
Helen Brookes, Director, Urbaqua
- 11:00am** **Reducing phosphorus in wetlands and waterways – a 20 year perspective**
Malcolm Robb, Branch Manager Aquatic Science, DWER
- 11:30am** **Constructed feature lakes – health issues, guidance and management**
Jared Koutsoukos, Senior Scientific Officer (Water Unit), Department of Health
- 12:00pm** **Trial of a solar powered nutrient stripping basin at Yangebup lake**
Adam Harris, Environmental Officer, City of Cockburn
- 12:30pm** **Lunch**
- 1:15pm** **Transformation of a degraded wetland at Eric Singleton Bird Sanctuary**
Jeremy Maher, Manager Sustainability and Environment, City of Bayswater;
Simon Cleary, Technical Director, GHD
- 1:45pm** **Addressing the challenge of managing local lake water quality**
Dr Jeff Cosgrove, Senior Environmental Officer (River Science) DBCA
- 2:15pm** **Amazon frogbit – a weed to watch out for**
Amy Krupa, Chief Executive Officer, SERCUL
- 2:45pm** **Protecting, repairing and creating wetlands in the Ellen Brook and Brockman River catchments**
Rosanna Hindmarsh, Executive Officer, Ellen Brockman Integrated Catchment Group
- 3:15pm** **Close of Event**

PRESENTATION OVERVIEW

Helen Brookes, Director, Urbaqua, will provide an overview of various wetland water quality improvement strategies, from catchment management, intervention at the wetland scale, and acceptance. Helen will also discuss reasons for choosing one strategy versus another, based on considerations of cost, community preference and environmental conditions. Wetland managers also undertake monitoring of various physical, nutrient and heavy metal parameters of water and soil, to measure wetland health and condition. Helen will provide insights into commonly measured indicators, the required frequency of data collection, and useful analyses to assess and inform particular management actions. Helen will also present case studies of recent work with the City of Bayswater to develop a suite of strategies aimed at improving water quality in Maylands lakes, and with the City of Gosnells to develop a targeted water quality monitoring program. The outcomes and lessons learnt from these two projects will be discussed.

Malcolm Robb, Branch Manager Aquatic Science, Department of Water and Environmental Regulation, specialises in the science and practicalities of algal bloom management in wetlands and waterways in Western Australia. Across the state, our natural and urban waterways are extremely nitrogen limited with respect to algal growth, which paradoxically means that reducing phosphorus is essential to reducing unwanted phytoplankton blooms. For over twenty years Malcolm has examined, tested and trialled a number of techniques to reduce phosphorus concentrations in waters in agricultural and urban environments. Malcolm will discuss the benefits and limitations of Phoslock, and trials of a new nanoclay product being developed in conjunction with CSIRO. Malcolm will also refer to other technologies frequently promoted for algal bloom management, such as aeration, enzyme treatments and ultrasonic sound waves.

Jared Koutsoukos, Senior Scientific Officer, Water Unit, Department of Health, will discuss the health issues associated with irrigation water from constructed feature lakes, and the proposed guidelines and management for use in public open space. Jared will focus on poor water quality resulting from algae and sewage contamination of feature lakes, and the risks to human health from direct and indirect exposure to affected irrigation water. Preventative strategies, and case studies of feature lakes within the Perth metropolitan region will be provided.

Adam Harris, Environmental Officer, City of Cockburn will discuss the Yangebup Lake nutrient stripping trial. Yangebup Lake is a eutrophic wetland located within the Beeliar Regional Park. The 80 hectare wetland has been subject to historical poor land use practises and is a major stormwater receiving environment for the surrounding suburbs of Yangebup. The lake was regularly experiencing algal blooms and high numbers of nuisance midge. In response, the City adopted a long-term integrated management system, part of which utilises solar power to pump water through a purpose built nutrient stripping system. Adam will describe the collaborative design process with the Water Corporation and Murdoch University, the construction process, and the learnings following the first three years of operation of the trial.

Jeremy Maher, Manger Sustainability and Environment, City of Bayswater and Simon Cleary, Technical Director, GHD, will discuss the transformation of a degraded wetland at Eric Singleton Bird Sanctuary. The \$3 million civil reconstruction of the sanctuary was completed in 2015 in partnership with the (then) Department of Parks and Wildlife. Jeremy and Simon will discuss the creation of a thriving wetland through the construction of a sedimentation basin, a horseshoe waterway to slow flow, deep and shallow areas for denitrification and planting of native vegetation. The project also secured a sustainable water source for the sanctuary through the harvest of stormwater from Bayswater Brook, which has eliminated the need to supplement the wetland with groundwater to maintain water levels. Many ecological benefits have already been confirmed through monitoring programs, such as increased biodiversity and improved water quality.

Jeff Cosgrove, Senior Environmental Officer, River Science, Department of Biodiversity, Conservation and Attractions (DBCA), will discuss some common pressures on local lakes that need active management so that water quality is maintained. Jeff will focus on the management of nuisance and toxic algal and cyanobacterial blooms, and discuss the measures and interventions that can be used, together with factors that can influence the choice of treatment.

Amy Krupa, Chief Executive Officer, South East Regional Centre for Urban Landcare (SERCUL), will discuss how Amazon frogbit (*Limnobium laevigatum*) has emerged as a serious aquatic weed that is in the process of being listed as a declared pest in Western Australia. It is sold as an easy-to-maintain plant for use in aquariums and ponds, but is a highly invasive species when allowed to populate waterways. SERCUL have been controlling outbreaks of this weed since 2013 and are now embarking on a management and education campaign about the serious threat it poses to our waterways. Amy will also discuss SERCUL's new Aquatic Weed Management Training Manual that will be used to provide training about the management of Amazon frogbit and other aquatic weeds.

Rosanna Hindmarsh, Executive Officer, Ellen Brockman Integrated Catchment Group, will provide an overview of the different types of wetlands in the catchment and the management methods that the Ellen Brockman Integrated Catchment Group have employed over the years. Rosanna will also provide an overview of a three-year project being undertaken through DBCA's Community Rivercare Grants, which involves works ranging from the removal of feral fish species, providing fish habitat, and foreshore restoration.