

### MMCP Collaboration

### *Factors Contributing to the 2016 hypoxic blackwater event*

This synthesis paper is a response to a question posed by the Murray-Darling Basin Officials Committee (BOC) in 2017, in relation to a hypoxic blackwater event that occurred in 2016. The objectives of this theme within the MMCP is to help the BOC address specific questions as they arise. These question will have relevance to the on-going management of Basin Assets.

A major hypoxic blackwater event occurred in 2016 in response to large unregulated flood events in rivers of the southern Murray-Darling Basin.

- Caused by extensive overbank floods inundate floodplains where large quantities of organic matter (e.g. leaf litter/grass) had accumulated.
- Dissolved organic carbon (DOC) is leached from organic matter and a proportion of that DOC is consumed by bacteria which, at the same time also consume dissolved oxygen (DO).
- During the 2016 floods, consumption of DO by bacteria resulted in severe oxygen depletion (hypoxia) in rivers throughout the river system.

#### Management of future events

- Identify those areas of the floodplain that are likely to make the greatest contribution to organic matter loads (and hence blackwater).
- Implement more regular inundation of those areas to try and reduce organic matter loads on a more regular basis.
- Optimize strategies to mitigate impacts on biotic communities (e.g. fish, crayfish).
- Providing environmental water at locations that provide refuge.
- Timing of environmental water, to provide refuges for biota at appropriate locations in the Murray-Darling Basin.

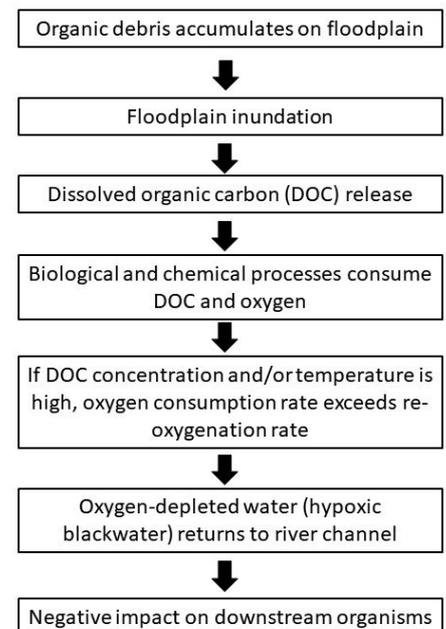
#### Further information

MMCP Collaboration (MMCP) is a project supported by the Joint State Governments and the Murray-Darling Basin Authority to generate and adopt freshwater ecological knowledge through collaboration, to maintain research capability and contribute supporting science to underpin the Basin-Wide Watering Strategy.

Full report: [doi.org/10.26181/5d199d3ce698a](https://doi.org/10.26181/5d199d3ce698a)



#### Causes of blackwater



#### Project team

**Gavin Rees - CSIRO Land & Water, Albury NSW**

#### Contact

Centre for Freshwater Ecosystems  
La Trobe University  
P: + 61 2 6024 9650  
E: [cfe@latrobe.edu.au](mailto:cfe@latrobe.edu.au)  
W: [latrobe.edu.au/freshwater-ecosystems](http://latrobe.edu.au/freshwater-ecosystems)