

MMCP Collaboration

The effects of changing flows on basal resource productivity and quality



This project, is one of five research themes that make up MMCP. This research theme investigated the biofilm succession patterns and ecosystem dynamics in the Edward-Wakool River system.

Biofilm

Biofilm is a community of microorganisms that form a thin layer adhered to hard surfaces, and are an important food source, providing the base for higher order consumers, e.g. invertebrates, fish and water birds.

We investigated

Microbial processing of dissolved organic carbon (DOC), successional patterns of biofilms following inundation and stream metabolic dynamics in three adjacent lowland rivers during a high flow period. Information surrounding basal food quality under such scenarios is of particular applied interest, since a better understanding of how biofilm quality and ecosystem function changes through time could help inform decision making by water managers for optimisation of flow duration.

Key findings and Management implications

Key Findings	Management implications
<ul style="list-style-type: none"> Biofilms respond to environmental drivers. Inundation duration of up to 11 weeks provides high quality biofilms. 	<ul style="list-style-type: none"> Consideration of flow duration to optimise biofilm quality. Maintain 5-11 weeks of substrate submersions.

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.

MMCP Collaboration Final report:
doi.org/10.26181/5d19927544b20

Biofilm report: doi.org/10.26181/5d19904d570e9

Other biofilm factsheets:
doi.org/10.26181/5d199fdd48383

Project team

Paul McInerney - La Trobe University, Wodonga Victoria.

Michael Shackleton- *La Trobe University, Wodonga Victoria.*

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

Aleicia Holland- *La Trobe University, Wodonga Victoria.*

Chris Davey- *La Trobe University, Wodonga Victoria.*

Rochelle Petrie- *La Trobe University, Wodonga Victoria.*

Contact

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