



Research to support environmental watering: a collaborative approach in the Murray–Darling Basin

Relationship between Murray–Darling Basin projects

There are several large, long-term projects currently underway in the Murray–Darling Basin (Table 1). The Murray–Darling Basin Environmental Water Knowledge and Research (MDB EWKR) and MDBA–MDFRC Collaboration Project (MMCP) are primarily research projects that aim to improve our understanding of the influence of flow on the condition of the Basin’s water dependent ecosystems. These projects are designed to complement the outcomes of both the Basin Plan Monitoring and Evaluation (BP M&E) and the Long Term Intervention Monitoring (LTIM) projects which, in turn, will help support implementation of the Murray–Darling Basin Plan.



| PROJECT | AIM | ORGANISATION |
|--|---|---|
| Murray–Darling Basin Water Knowledge and Research (MDB EWKR) | Improve understanding of the influence of flow on the condition of the Basin’s water dependent ecosystems. | Coordinated by the Murray–Darling Freshwater Research Centre (MDFRC) and funded by the Department of Environment and Energy |
| MDBA–MDFRC Collaboration Project | Improving understanding of the relationship between flow, ecosystem function and biodiversity | Undertaken by MDFRC and funded by the MDBA |
| Basin Plan Monitoring and Evaluation (BP M&E) | Monitor the condition of the Basin’s water dependent ecosystems. | Collaboration between the Murray–Darling Basin Authority (MDBA) and State Governments |
| Long Term Intervention Monitoring (LTIM) | Monitor the outcomes of environmental flows and support evaluation of their contribution to achievement of Basin Plan objectives. | Commonwealth Environmental Water Holder (CEWO) |

Contact

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MDB EWKR Research The MDB EWKR project will develop new knowledge to

improve our understanding of flow outcomes by;

- Investigating how flow influences the condition of water dependent ecosystems
- Investigating how major stressors affect ecosystem responses to changes in flow

The MDB EWKR project will investigate flow's influence on;

1. Vegetation diversity
2. Fish recruitment (survival and growth of larval fish)
3. Waterbird recruitment (survival of chicks)
4. Food webs that support fish and waterbird recruitment

The MDB EWKR project will build on existing programs being undertaken by management agencies that will benefit both managers

Basin Wide Condition Monitoring The Basin Plan Monitoring and Evaluation (BP M&E) project will monitor the condition of the Basin's water dependent

ecosystems by;

- Investigating how Basin condition compares to the Basin objectives.
- Identifying trends in environmental condition across the Basin.

This will be undertaken through monitoring the condition of rivers, wetlands and floodplains across the Basin, building on past and current programs. The focus of the BP M&E project is on change in condition of the Basin ecosystem over time.

The MDB EWKR will help examine trends in condition over time through the development of new knowledge that will improve our understanding of the Basin's water dependent ecosystems.



MMCP Research The MDBA-MDFRC Collaboration Project (MMCP) will contribute supporting science to underpin the Basin-Wide Watering Strategy. It will do this by improving understanding of the relationship between flow, ecosystem function and biodiversity. The MMCP project will investigate flow's influence on;

1. Vegetation dispersal
2. Fish movement
3. Fish communities through modelling
4. Macroinvertebrate communities and their consequences

Each year, the MMCP will also provide a synthesis of our current understanding on two management questions of concern to the

Monitoring of Environmental Flows - LTIM The Long Term Intervention Monitoring (LTIM) project will monitor environmental flow outcomes and evaluate their

contribution to achieving Basin Plan objectives by;

- identifying the outcomes of environmental flows at a local scale
- Identifying the outcomes of environmental flows over 1-5 years at a Basin Scale

This will be achieved by monitoring environmental flow outcomes in relation to Basin Plan objectives. The outputs from this project will be evaluated at a local scale and at a Basin wide scale.

The MDB EWKR will help interpret the outcomes of these flows by improving our understanding of how flow related drivers (or processes) that link changes in flow to changes in the indicator. For example, fish population changes may be due to changes in habitat, connectivity, food or predation.

The next step

The MDB EWKR team will continue to work closely with managers and identify opportunities to achieve Basin Plan objectives throughout the duration of the project.



Keep in touch with MDB EWKR

- * EWKR Story space ewkr.com.au
- * latrobe.edu.au/centre-for-freshwater-ecosystems

