Australian Government
Commonwealth Environmental Water Office

Southern Spring Flow 2019 – Wrap-up

12 May 2020

The Southern Spring Flow is over

Objectives	Provide food and shelter for native fish and other animals along the River Murray, from Hume Dam to the Coorong.
Start date	1 August 2019
End date	30 November 2019
Volume	Approximately 330 gigalitres
Target sites	River Murray channel and key wetlands and creeks in Barmah-Millewa and Gunbower-Koondrook-Pericoota forests, Edward-Wakool, Lake Kramen (Hattah-Kulkyne Lakes), wetlands in Chowilla, Coorong and Lower Lakes.

'Trelly' (Steve Threlfall)—local Shepparton tackle store owner returning a healthy yellow-belly back to the River Murray. Photo: CEWO

Early outcomes

Waterbirds	- Bitterns at 12 sites in Millewa
Vegetation	- Improved river red gum and Moira grass health
Native fish	- Murray cod spawned - Congolli numbers increased - Hardyhead and southern pygmy perch expanded range
Food-chain	- Provided carbon and nutrients through floodplain to rivers - Plankton (fish food) increased
Habitat	- Re-wet 25% of Barmah-Millewa forest - Coorong salt levels reduced
Salt exported	- more than 100,000 tonnes
River distance	5,080 km's (4 rivers, 2 creeks)

Rivers still need water, even during dry times. Animals and plants that depend on water still need somewhere to live.

Water from the Southern Spring Flow was re-used multiple times along the River Murray all the way from Lake Hume to the Coorong.

Snapshot…

In August 2019 water managers used natural inflows (rainfall & snowmelt) as a signal to start the Southern Spring Flow. The first flow release started in August but was stopped when local rains delivered flows from the Kiewa and Ovens Rivers.The second flow release started in September and was timed to coincide with water delivered through the Goulburn River.

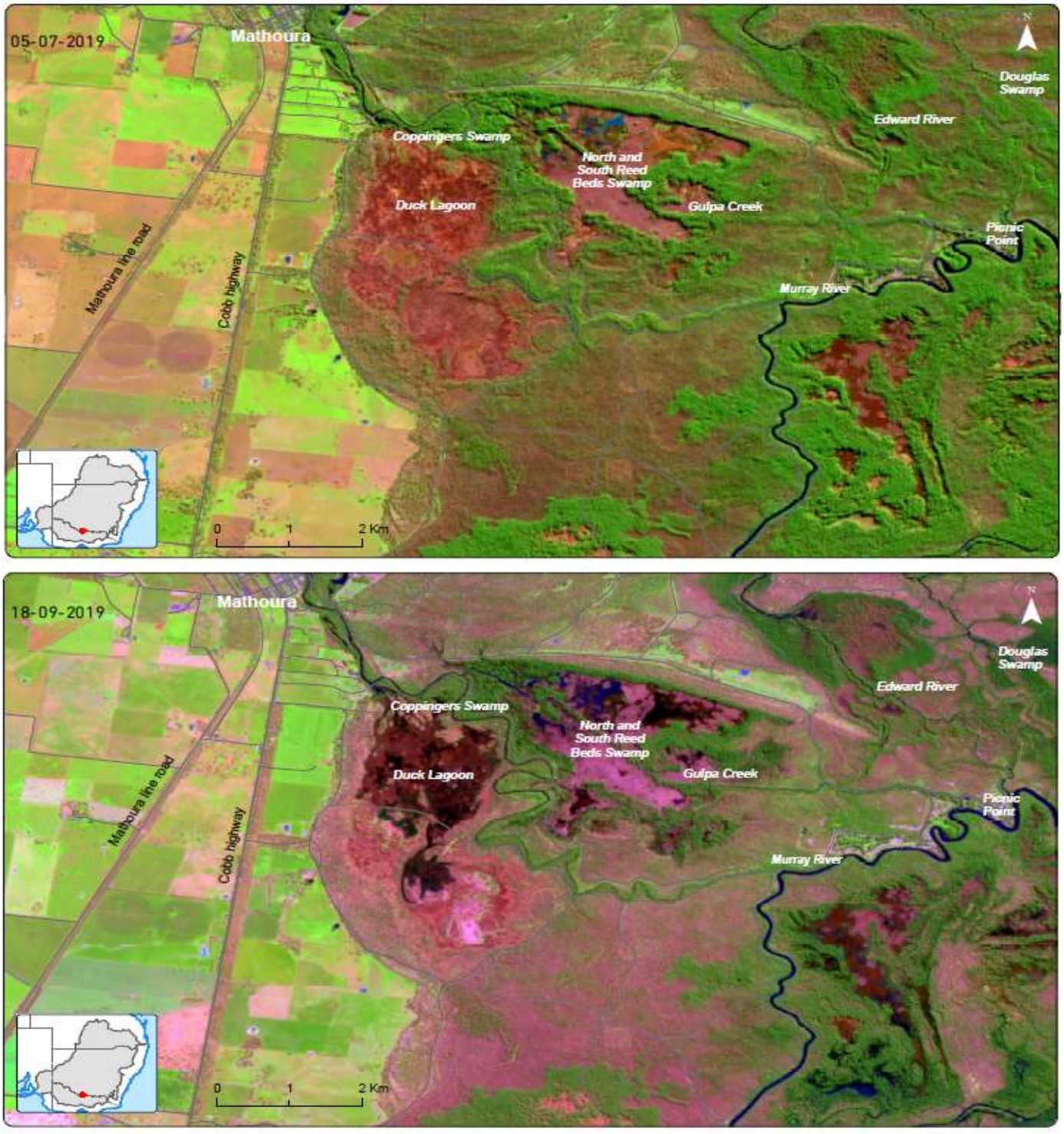
These flows were aimed at providing food and shelter for native fish and other aquatic animals along the River Murray, from Hume Dam to the Coorong in South Australia. Flows delivered through the forests and wetlands flushed organic matter off the floodplain during cooler weather. This provided

food for aquatic animals and helped to reduce the risk of hypoxic (low-oxygen) blackwater over summer.

Only 25% of Barmah-Millewa wet

At a maximum flow rate of 15,000 ML/d, satellite images show that only 25% of Barmah-Millewa forest was wet as a result of the Southern Spring Spring flow.

If Hume Dam hadn't captured upstream flows this season, the forest would have naturally received a flow



Before (top) and after (bottom) satellite images compare forest areas that were wet before and after the flow. Dark brown areas on bottom image show water reaching Reed Beds Swamp, Coppingers Swamp and Duck Lagoon.

of around 30,000 ML/d. This larger flow rate would have naturally wet a much larger area of the forest.

Fish loved this FLOW (Fish Love Our Water)

Scientific monitoring recorded Murray cod larvae (baby cod) in November 2019 in the Lower Murray. This is fantastic evidence of spawning activity. The Spring Flow has hopefully provided the right conditions (food and shelter) for these iconic native fish to thrive!

Fish monitoring undertaken by the University of Adelaide in the Lower Lakes in late spring has recorded the native congolli as the most abundant fish species for the first time since surveys began in the mid 2000's!

Murray Cod larvae collected in the Lower Murray River towards the end of the Southern Spring Flow. Photo: SARDI

Congolli are unique a native fish that need to spend different parts of their lifecycle in both freshwater and saltwater.

This is great news because congolli numbers dropped drastically in the Millenium Drought with no freshwater flows between 2007 and 2010.

High congolli numbers in the Lower Lakes are a direct result of the delivery of water for the environment in recent years.

Good numbers of the endangered Murray hardyhead and Southern pygmy perch were also detected in Lake Alexandrina and numerous other sites. Both of these species expanded their range this spring. Some Murray hardyhead were found at sites where they had not been detected since before the Millennium Drought.

Congolli being returned to the River Murray after fish survey. Photo: CEWO

Murray hardyhead being returned to the lake after fish survey. Photo: Nick Whiterod

Bitterns Booming in Barmah-Millewa!

Bird surveys recorded Australasian bitterns booming at 12 of 16 sites in the Barmah-Millewa forest. This is an important result for this endangered and elusive wetland-dependent waterbird.

As dry conditions continued, it seems wetlands in the Barmah-Millewa forest were one of the most important sites in the country for bitterns this season.

Australasian Bittern takes flight in Millewa Forest. Photo: Ted Ripon, NSW NPWS

Healthy food factory

Early monitoring results show the amount of food for baby fish—called zooplankton—increased during the Southern Spring Flow. These increases in water bugs are crucial food for baby yabbies, crays and small fish and means the River Murray food chain got a much-needed boost.

While the full results are not all in, data shows a clear rise in zooplankton numbers immediately downstream of Barmah-Millewa Forest. This jump in plankton suggests that carbon was being flushed into the river during the August flow. Large numbers of very small water bugs (called rotifers) were also detected at lower Murray survey sites when the Spring Flow peaked in South Australia.

Outcomes at mutiple sites

This summary provides only a simple wrap-up of the entire flow. Flows were delivered to six major sites and through 5,000 km's of rivers during this water delivery event.

Results for specific sites that received water will be published as more information comes in from field surveys.

Follow this link for more information about the six Living Murray sites:

https://www.mdba.gov.au/discover-basin/environment/significant-environmental-sites/icon-sites-along-river-murray

Map of southern Murray-Darling Basin with dark blue lines showing pathway of Southern Spring flow.

Working together

The Southern Spring Flow was made possible with strong collaboration from the following partners

- Victorian Environmental Water Holder
- NSW Department of Planning, Industry and Environment
- Victorian Department of Environment, Land, Water and Planning
- SA Department for Environment and Water
- NSW National Parks and Wildlife Service, Parks Victoria
- Murray-Darling Basin Authority
- Goulburn-Broken CMA, North Central CMA, Mallee CMA
- WaterNSW, Goulburn Murray Water, SA Water

Feeback wanted!

Feedback and information from local community, landholders and managers is always welcome.

Contact us

- ewater@awe.gov.au
- 1800 803 772
- www.environment.gov.au/water/cewo

More information about Southern Spring Flow www.environment.gov.au/water/cewo/catchment/southern-spring-flow-2019