

Weeds and the Murray

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(PhysOrg.com) -- A new study has revealed that human-induced changes in the flow of the Murray River has led to mass weed invasion and reduced biodiversity in wetlands along the riverbank, highlighting the need for a review into how we manage the river's flow.

The study, led by Dr Jane Catford from the University of Melbourne's School of Botany, provides valuable information on how best to guide the delivery of water to combat environmental problems.

"We have always thought that the huge problem of weed invasion along the Murray River had something to do with the changes in flow but this is the first time we have been able to identify what kind of flow alterations have had most impact," Dr Catford said.

The control of the Murray's flow by dams and weirs has meant that floods that would have occurred every 10 years are now occurring every 24 years, Dr Catford said.

"And we found that altered flooding patterns, and particularly the reduction in the size of natural floods, has provided conditions that favour alien plants at the expense of native ones," she said.

"The introduction of alien plants has dramatically changed the structure and function of these wetlands, which provide crucial habitat and food for a range of birds, fish, turtles and other animals and also play a critical role in filtering water.

"These functions contribute to an estimated \$2.1 billion dollars annually

for local regions and such changes to wetland flora has impaired these functions.”

Dr Catford surveyed plants in 24 wetlands between Albury and Echuca and then modeled the [wetlands](#)’ flood histories, and assessed the effect of river regulation on the flora.

“I also examined the effect of human-mediated weed dispersal, grazing, soil and water characteristics, but flow regulation was the clearly the main factor driving weed invasion,” Dr Catford said.

As a result of the evidence, the scientists are now calling for a change in how we manage the flows that are allocated to go back into the environment.

“Environmental flows will help redress the balance between native and alien species,” Dr Catford said.

“Given that environmental water allocations are typically limited, it is essential that release decisions are science-based. We recommend that environmental water be used to augment natural floods that typically occur in spring.

“Increasing the size of mid-range floods in particular will kill most of the weeds and will encourage growth and reproduction of native plants.”

Provided by University of Melbourne

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