

Willow removal equals water savings

December 1 2010



Weeping willows lining the banks of the Murray River at Mannum, South Australia Copyright Tanya Doody, CSIRO

Removing willows growing in the stream bed of creeks and rivers could return valuable water resources to river systems, new CSIRO research has found.

A CSIRO study into the water use of willows found more than five and a half megalitres of water could potentially be saved annually per hectare of willow canopy area removed, where trees were in-stream with permanent access to water.

"One megalitre is one million litres – the volume of water used by three average households in a year. So the evaporative loss of one hectare of willows is enough for about 17 households each year," says project



leader, Tanya Doody.

"A comparative study of native vegetation water use lining the same watercourse, showed willows could be replaced with native vegetation and the annual water savings would be maintained."

Funded by Water for <u>Rivers</u> – a public company established by the Commonwealth, New South Wales and Victorian governments to recover water for the Snowy and Murray Rivers – the project results have now been published in the *Journal of Environmental Management*.

Water for Rivers Project Director Phil Deamer says that an estimated 170 hectares of in-stream willows in rivers in northeast Victoria – and a further 50 hectares in the Yanco Creek, Murrumbidgee, Yass and Murray rivers – have been permanently removed so far.

"This removal has returned 1200 megalitres of water per year that was previously lost to willows," Mr. Deamer said.

"At an average market price for high security water of \$2,000 per megalitre in NSW and Victoria, the five and a half megalitres per hectare per year used by willows is worth over \$2.4m of water entitlement."

Willow removal programs have been in place in south eastern Australia for many years with removal commencing in the upper Snowy and the East Gippsland and lower Snowy area around 1999 with an aim to improve water quality, reduce willow roots obstructing water ways, and improve flows.

According to Ms. Doody, the removal of willows leaves more water in streams, and replacing them with native vegetation like red gums, which have a lower evaporative loss and are more ecologically suited to



Australian riparian areas, enables most of the <u>water</u> savings to be maintained.

"However, if the net overall benefit of <u>willow</u> removal from creeks and streams is to be properly evaluated, the various other benefits and disadvantages of removal must also be understood and included in decision making," Ms. Doody said.

Provided by CSIRO

Citation: Willow removal equals water savings (2010, December 1) retrieved 28 April 2024 from <u>https://phys.org/news/2010-12-willow-equals.html</u>

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