



Above
Female Western Carp Gudgeon, *Hypseleotris klunzingeri*
(Source - www.fishesofaustralia.net.au)

Fish, flows and food

Can environmental water deliver the food needed for native fish to grow?

Native fish play an important role in the environment of the Murray Darling Basin. They also have a large social and cultural value to many Basin communities. How we use water in our rivers has changed their natural flow patterns and impacted native fish communities. Deciding how we use water for the environment can therefore provide major benefits to sustaining our native fish.

Providing flows at the right time and place helps native fish swim to feed, grow and breed. But how do we know if there is enough food for the fish when they arrive? And can we deliver water to improve the chances of fish survival by providing high quality food sources that will help native fish larvae thrive?

In a recent study, the University of New England has researched the native Western Carp Gudgeon (*Hypseleotris klunzingeri*) to see whether these native fish grow bigger and stronger if they have a diet of high quality food. The native fish were placed in tanks with food webs grown on common green algae, cyanobacteria (blue-green algae), leaves and leachate from native river red gums and biofilms (the slimy stuff that grows on rocks and logs in rivers) (Figure 1).



Figure 1. Releasing the larval fish into the experimental tanks
(photo: Powders Vincent).

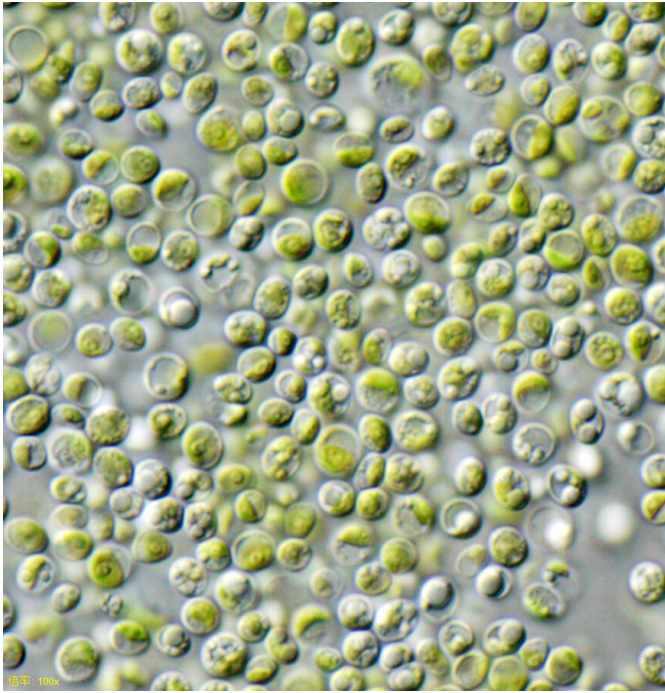


Figure 2. Tiny single-celled green algae are the preferred food of the filter feeding water fleas that burst into life following wetland flooding (Source: [Oregon State University](#)).



Figure 3. The water fleas then become a highly nutritious food source for native fish that helps them grow and thrive in floodplain wetlands. (Source: [Oregon State University](#)).

We found that [Water Fleas](#) were the best source of food for the native Carp gudgeons (Figure 3). Water fleas are small (1-5mm) filter-feeding crustaceans that live in the water column and spend their days grazing microscopic green algae. It was these green algae that had the essential fatty acids to promote fish survival and growth in this study (Figure 2).

Delivering water for the environment so that floodplain wetlands are inundated at the right time of year for the right amount of time to establish food webs that link green algae, water fleas and fish larve will increase the chance of these fish surviving and producing the next generation of native fish.

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