# **Clearer Waters**

Cleaning up Australia's Waterways Information about Australia's carp biocontrol program





Department of Primary Industries







Image is courtesy of Tom Rayner

## How big is the carp problem in the Murray-Darling Basin?



Common carp are a major pest that comprises around 80% of the fish biomass in Australia's biggest river system, the Murray-Darling Basin, and up to 93% in some areas. They muddy the waters and damage the ecosystems in many Australian waterways. Eight years of research conducted by the CSIRO with funding from the Invasive Animals Cooperative Research Centre has helped to confirm that an integrated control strategy built on a backbone of biological control using a species-specific virus is the best plan for success in controlling carp.

#### Time to go fishing for some answers.



#### 1. How can we be sure that the virus will only affect carp?

Eight years of testing confirms that the virus is safe for native Australian species. The virus only replicates in carp, and so will not cause disease in other species. This is not surprising, as herpesviruses are generally specific to a single host species, but it's reassuring to see the research confirm this.

International case studies have demonstrated that under the right conditions, the virus will kill 70-100% of carp in a population that has not been exposed to the virus before.

#### 2. How can we be sure that the carp herpesvirus is safe for humans?

A report to the European Commission by the Scientific Committee on Animal Health and Animal Welfare stated that there is no evidence for ANY fish virus causing disease in humans. Researchers have also tried to culture the carp herpesvirus on human cell lines and cell lines of other primates without success. Fish farmers in many countries around the world including Israel and the United Kingdom have been in close contact with the carp herpesvirus on a daily basis now for decades, without a single documented human health concern.

### 3. Will the carp herpesvirus eradicate carp from Australian waters?

It is possible to significantly reduce the impacts of a species by dramatically reducing their numbers – and this has always been the objective of Australia's carp biocontrol program. To achieve this, it will be important to combine implementation of the carp herpesvirus with the strategic application of a range of measures to control carp and promote recovery of native fish communities.



#### 4. How do we know that carp won't just become immune and repopulate our rivers again?

It will be important to target the wetlands which contribute the vast majority of juvenile carp to the Murray-Darling Basin. Releases of the virus in these areas just after the spawning season will hit them when they are most vulnerable, thereby helping to prevent successful carp recruitment.

Work to investigate a more virulent strain of the virus will help to overcome any future immunity. The release of the carp herpesvirus will also provide an opportunity to simultaneously restore native fish habitats, improve water quality and restore migratory pathways for native fish, to help ensure that native fish thrive once carp are removed. This, in turn, will help ensure that carp numbers don't recover.



#### 5. Can't we just keep using the control methods that we have been using to control carp?

Over the last two decades there has been millions of dollars and many hours invested exploring an exhaustive list of measures to try and control carp in Australia. These include: commercially fishing for carp, installing screens to exclude them from areas containing their preferred types of habitat, trapping them and many others.

Despite this, carp persist as a dominant force in the aquatic landscape. The carp herpesvirus offers the most promising option at this time for the control of carp due to the fact that it is highly effective in killing carp, and is safe for non-target species, including humans.

### 6. If the virus is released it will kill a lot of carp. Won't that impact on water quality, and so risk our native species?

It is vitally important that we protect water quality to ensure ongoing access to clean water for human use. This will be managed by using appropriate methods to effectively remove dead carp from the waterways.

Detailed research and modelling is currently being undertaken in collaboration with researchers from Water NSW to inform planning for the clean-up strategy. This work will identify carp biomass thresholds that impact on water quality, which can then be used to work out how much carp needs to be removed from the system to prevent negative impacts.

International case studies from places like Japan and North America where large-scale clean-up efforts have been successfully employed have also been investigated to help with formulating our approach.

This is an initiative of the Clearer Waters campaign - to find out more or to get in touch visit clearerwaters.org.au









