



Carp

Cyprinus carpio

DESCRIPTION AND CHARACTERISTICS

Carp is native to Central Asia, but has been introduced to many regions of the world including Europe, North America, the Middle East, Canada and Australia. They are now one of Australia's most obvious and most despised alien fish species. Carp characteristically have small eyes, thick lips with two barbels at each corner of its mouth, large scales and strongly serrated spines in both the dorsal and anal fins. Their body is elongated with a moderate sized head. Carp have a single dorsal fin and a forked tail. They are most often olive green to silvery grey dorsally, with a silvery

yellow belly, however their colouring is variable.



Photo by Gunther Schmida. Sourced from the Murray-Darling Basin Commission.

BIOLOGY AND LIFE CYCLE

Carp inhabit still or slow-flowing waters comprising abundant aquatic vegetation. They can also be found in brackish lower reaches of some rivers and coastal lakes. They are tolerant to a wide range of temperatures, oxygen levels and salinities.

They have been reported to grow to over one meter in length and 60 kg in weight, however in Australia 4-5 kg in weight and 30-40 cm in length is more common. Their growth depends largely on the availability and type of food items eaten, water temperature and population densities.

At one year of age some carp become mature, and

by three years of age they are ready to breed. Females have high fecundity, able to produce up to one million eggs per kilo of body weight and can spawn several times in one year!!! Spawning occurs in spring when water temperatures reach 17 degrees Celsius. The eggs are laid among aquatic vegetation and the young grow quickly in warm plankton rich water.

Carp are omnivorous. They suck and strain mud from the bottom, and suck insects and plants from the surface. Juvenile Carp feed mainly on microscopic algae, rotifers and crustaceans.

ENVIRONMENTAL IMPACTS

Carp can create high levels of turbidity under certain conditions; increase erosion; and cause the dislodgement of aquatic plants due to their habit of sucking bottom sediments while feeding. Increases in turbidity reduce the ability of sunlight to penetrate the water, affecting plant growth and increasing nutrient levels. Damage to vegetation deprives native fish and invertebrates of vital food and habitat and prevents the disturbed vegetation

from re-establishing.

Since around the time that Carp were introduced, our river systems have undergone many changes including regulation and alteration of natural flows, farming, urban development and snag removal. Carp thrived under these disturbed conditions whilst native species suffered negative impacts.

HISTORY OF INTRODUCTION

There have been three strains of Carp introduced to Australia. An ornamental strain was introduced between 1850-1860, a Singaporean strain in 1876 in the Murrumbidgee, and a hybrid "Boolara" strain in Victoria in 1961. The latter two strains

have interbred, and this species is now a major pest in many inland streams of NSW. It was not until the 1960's that they became a nuisance, when illegally imported carp escaped into the Murray Darling River and spread rapidly.

LEGAL STATUS IN VICTORIA

Carp are an exotic introduced species and are considered a noxious pest. Across Australia it is an offence to return them to the water after capture. The implementation of strict measures to

prevent the return of this species to the water helps to diminish the abundance of this introduced pest species.

POSSIBLE CONTROL MEASURES

Scientists have investigated various methods to control carp dispersal, including direct assaults on carp through fishing and biological control and indirectly through river restoration. It is believed that an integrated approach using various techniques will be the most effective.

Commercial fishers in Victoria, South Australia and New South Wales have fished Carp since 1960 which has helped to significantly reduce their biomass. Electrofishing is another method used however this requires qualified operators. Drum nets and traps are effective in trapping Carp but are also a risk to native species and other aquatic animals. For fishing to be an effective technique of control it must be on-going whilst also ensuring the protection of other aquatic animals. Catch-a-Carp days are run throughout the year and are a fun and effective way to help reduce Carp numbers and raise awareness of their impacts on the environment.

Poisons have been used in some instances; however, due to the non-specific nature of this method, it is limited to special situations, such as small lakes and new introductions .

The use of the virus 'Spring viraemia' (as previously used in Europe the 1970's on farmed Carp) is not an acceptable option since it may have serious effects on native fish species and other unacceptable environmental impacts.

Restoring waterways by reversing human disturbances will help to reduce the effects of Carp, since they thrive in degraded river systems. Works such as improved river flows, implementation of fish ladders and fish ways, Carp traps, and riparian vegetation restoration are all effective ways to reduce the impacts of Carp. These types of works are already in place in most areas.

The daughterless carp project, developed by CSIRO, is a biological control technique used to block the development of young female Carp and produce exclusively males. It is predicted that this method will significantly reduce carp numbers in the Murray-Darling Basin within 20-30 years of release. This technology is thought to be most effective when used in conjunction with other methods of carp control. Although promising, the daughterless carp program is a high-risk and expensive long-term research project.