

Carp

(*Cyprinus carpio*)

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INTRODUCTION

Carp is a declared noxious species in the Northern Territory. As such, its importation and/or possession is illegal and subject to a \$20,000.00 fine.

European, Koi and Mirror are all carp varieties (strains) of the same species, *Cyprinus carpio*, and all have the same environmental impact.

Although no known wild populations are established in the Northern Territory, carp is widespread in neighbouring States such as Queensland and are widely traded as ornamental species. Establishment of this species in Northern Territory waterways will threaten native freshwater species and habitats.

DESCRIPTION

- Size:** Large, heavy-bodied minnow, with arched backs and small triangular heads tapering to a blunt snout.
- Colour:** Usually bronze or olive-green with a pale yellow to ivory underbelly. Wild-form goldfish are often confused with carp as they revert to an olive-bronze colour in the wild (Queensland Department of Primary Industries and Fisheries, 2001).
- Features:** Carp can be identified by its two barbels (whiskers) on either corner of the upper lip. Goldfish do not have barbels. Other characteristic features are a forked tail, single dorsal fin and large round scales (Queensland Department of Primary Industries and Fisheries, 2001).

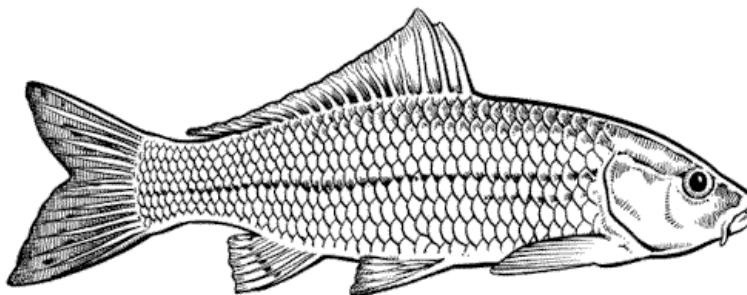


Figure 1. The European carp

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Figure 2. Mirror and Koi carp

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HABITAT

- Depth:** Carp prefer still to slow-flowing waters and are rarely found in clear, cool swift-flowing streams.
- Tolerance:** The biology and ecology of carp assist the fish to thrive in Australia. Carp have broad environmental tolerances and thrive in habitats which are disturbed by human activities, such as where river flows are altered, nutrients are enriched and streamside vegetation is cleared (Koehn J., 2003; Koehn J., 2004).
Carp survive in temperature ranges of 4-35°C and pH between 5 and 10.5. They are particularly tolerant of poor water quality including low oxygen concentration, high turbidity, moderate salinity and high toxic loads. In such conditions native species cannot prosper, giving carp a competitive advantage (Queensland Department of Primary Industries and Fisheries, 2001).
- Diet:** Carp feed by filtering water or by sieving bottom sediments. They suck up bottom silt and selectively remove insect larvae, crustaceans, snails and other small food items. Carp are omnivorous and opportunistic, consuming both plant and animal foods (Queensland Department of Primary Industries and Fisheries, 2001; Florida Fish and Wildlife Conservation Commission, 2005).

ENVIRONMENTAL IMPACT

Carp may have a number of detrimental effects on the environment. However, these are difficult to assess as they may be caused by several factors. Impacts may include:

Reduced water quality: Most of the damage attributed to carp may be caused through its feeding mechanism. Carp feeding behaviour increases turbidity and nutrient concentrations, and reduces light penetration. This may have a detrimental effect on native fish that rely on sight to feed.

A decline in native fish numbers: Some anecdotal evidence suggests carp may be displacing native fish although there is little scientific evidence to support this. Increased carp abundance may be the result of declining native fish numbers rather than the cause. Carp also carry a number of diseases.

A reduction in aquatic plants: Studies have indicated that the feeding activity of carp and the resulting increase in turbidity has a significant impact on aquatic plants. Feeding behaviour can uproot aquatic plants, especially those with soft stems and shallow roots. Such damage can threaten endangered species, alter ecological functions and destroy tourism and recreational values (Koehn J., 2003; Koehn J., 2004).

Erosion: Carp has been blamed for an increase in the erosion of banks, although there is no evidence to support this.

Recreational fishing: Carp is not a preferred fish for most anglers. High carp densities reduce the value of waterways as potential fishing sites (Queensland Department of Primary Industries and Fisheries, 2001).

REPRODUCTION

Carp can live for up to 17 years with females maturing between three and four years and males between one and three years.

Carp can spawn several times in a season, are highly fecund producing 80,000-1.5 million eggs and breed at lower water temperatures than most native species (Queensland Department of Primary Industries and Fisheries, 2001; Koehn J., 2003; Koehn J., 2004).

DISTRIBUTION

Carp is the most prominent freshwater fish pest species in many parts of Australia, being relatively large, visible in high numbers and caught by anglers. It has spread rapidly since the 1960s (Koehn J., 2003; Koehn J., 2004).

Carp were first recorded in Australia in Victoria in 1862. They have since spread to numerous waterways around the country, occurring throughout most of south-eastern Australia and now dominate many fish populations there, in addition to populations in Western Australia (Koehn J., 2003; Koehn J., 2004). In Queensland, carp are abundant in many waterways and in some cases comprise 20-30% of the total fish population (Queensland Department of Primary Industries and Fisheries, 2001).

Due to broad environmental tolerances, carp have considerable potential to spread throughout the rest of Australia (Queensland Department of Primary Industries and Fisheries, 2001).

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Published: Friday 7 April 2006.

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Department of Primary Industry, Fisheries and Mines

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ISSN 1035-008X

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