GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Cyprinus carpio***

Cyprinus carpio 简体中文 正體中文 **System:** Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae

Common name escarpo (French, France), fancy carp (English), German carp (English), Japanese domesticated carp (English), Europäischer Karpfen (German), grass carp (English, Russian Federation), king carp (English), grivadi (Greek), feral carp (English, Australia), ikan mas (Malay, Indonesia), kapoor-e-maamoli (Farsi), Oriental carp (English, Australia), kapor (Slovak), karp (Afrikaans), karp (Polish), karp (Russian), karp (Swedish), kapr obecný (Czech), sharan (Bulgarian), karpfen (German), lei ue (Cantonese, Hong Kong), karp (Ukrainian), karp dziki a. sazan (Polish), karpa (Tagalog, Philippines), karpar (Icelandic), karpe (Danish), Karpe (Norwegian), karpen (German), karper (Dutch), karpion (Hebrew), karppi (Finnish), kerpaille (French), koi (English), korop (Ukrainian), krapi (Albanian), kyprinos (Greek), lauk mas (Malay), leather carp (English), leekoh (Malay), mas massan (Malay), mirror carp (English), olocari (Romanian), pba ni (Lao), pla nai (Thai), ponty (Hungarian), punjabe gad (Kashmiri, India), rata pethiya (Sinhalese), saran (Romanian), Saran (Serbian), sazan (Russian), sazan baligi (Turkish), scale carp (English), soneri masha (Marathi), spejlkarpe (Danish), suloi (Romanian), tikure (Amharic, Ethiopia), trey carp samahn (Khmer), trey kap (Khmer), ulucari (Romanian), wild carp (English), European carp (English), koi carp (English), wildkarpfen (German), sulari (Romanian), pa nai (Lao), carpa (Spanish), carpat (French, France), carpe (French, Switzerland), carpe (French, Canada), carpe commune (French, France), carpeau (French, France), carpo (French, France), ciortan (Romanian), ciortanica (Romanian), carp (English), weißfische (German), ciortocrap (Romanian), ciuciulean (Romanian), crapcean (Romanian), cyprinos (Greek), cerpyn (Welsh), common carp (English), Cá Chép (English, Vietnam), skælkarpe (Danish), læderkarpe (Danish), sarmão (Portuguese)

Synonym
Carpio flavipinna , Valenciennes, 1842
Cyprinus vittatus , Valenciennes, 1842
Cyprinus angulatus , Heckel, 1843
Cyprinus thermalis , Heckel, 1843
Cyprinus fossicola , Richardson, 1846
Cyprinus acuminatus , Richardson, 1846
Cyprinus atrovirens , Richardson, 1846
Cyprinus conirostris , Temminck & Schlegel, 1846
Cyprinus flamm , Richardson, 1846
Cyprinus haematopterus , Temminck & Schlegel, 1846
Cyprinus melanotus , Temminck & Schlegel, 1846
Cyprinus sculponeatus , Richardson, 1846
Carpio vulgaris , Rapp, 1854
Cyprinus chinensis , Basilewsky, 1855
Carpio carpio gibbosus , (Kessler, 1856)
Cyprinus bithynicus , Richardson, 1857
Cyprinus acuminatus , Heckel & Kner, 1858
Cyprinus carpio elongatus , Walecki, 1863
Cyprinus carpio monstrosus , Walecki, 1863
Cyprinus tossicole , Elera, 1895
Cyprinus carpio oblongus , Antipa, 1909
Cyprinus carpio anatolicus , Hanko, 1924
Cyprinus carpio aralensis , Spiczakow, 1935
Cyprinus carpio fluviatilis , Pravdin, 1945
Cyprinus carpio brevicirri , Misik, 1958
Cyprinus carpio longicirri , Misik, 1958
Cyprinus nordmannii , Valenciennes, 1842
Cyprinus festetitsii , Bonaparte, 1845

Similar species *Carassius auratus, Ctenopharyngodon idella, Cyprinidae*

Summary *The introduction of fish as a source of protein for human consumption into tropical and subtropical lake systems is continuing apace. The common carp (Cyprinus carpio) has been cultured for 2500 years and is also a popular angling and ornamental fish; is the third most frequently introduced species in the world. Its method of feeding churns up the sediments on the bottom of the water and uproots macrophytes, making it an keystone ecosystem engineer that altering habitats for native fish and other native aquatic species.*

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Species Description
Carp can grow up to 120 cm in length and weigh up to 60 kg (Allen 1989, in Pinto *et al*. 2005), however in Australia they commonly reach 3 to 5 kg (Brumley 1996, in Pinto *et al*. 2005). The common carp (*Cyprinus carpio*) may be recognised by its small eyes, thick lips, two barbels at each corner of the mouth, large scales, and strongly serrated spines in the dorsal and anal fins (NSW Department of Primary Industries 2005). The colour of carp varies; in the wild, they are usually olive green to bronze or silvery in colour with a paler underside (NSW Department of Primary Industries 2005). Koi carp are an ornamental strain which are brightly coloured with orange, yellow, white and black markings; if they escape into the wild, however, koi carp soon revert to the wild colouring (NSW Department of Primary Industries 2005). Some variants, known as mirrored carp, are only partly scaled, with a few very large scales in patches or along the midline; all strains belong to the same species (*Cyprinus carpio*) (NSW Department of Primary Industries 2005).
\"Dorsal spines (total): three to four; Dorsal soft rays (total): 17 to 23; Anal spines: two to three; Anal soft rays: five to six; Vertebrae : 36 to 37. Pharyngeal teeth 1, 1, 3:3, 1,1, robust, molar-like with crown flattened or somewhat furrowed. Scales large and thick. `Wild carp ' is generally distinguished by its less stocky build with height of body 1:3.2 to 4.8 in standard length. Very variable in form, proportions, squamation, development of fins, and colour. Caudal fin with three spines and 17 to 19 rays. Last simple anal ray bony and serrated posteriorly; four barbles; 17 to 20 branched dorsal rays; body grey to bronze.\" (FishBase 2003)

Notes
The common carp (*C. carpio*) is one of the first fish species whose distribution was widely extended by human introduction; in the first centuary AD carp gradually spread across Europe with the assistance of the Romans, who would have found carp in the Danube River (Koehn, Brumely & Gehrke 2000; Balon 1995, in Saikia & Das 2009). Other Cyprinids that have been introduced outside their natural range include goldfish (*Carassius auratus*), roach (*Rutilus rutilus*) and tench (*Tinca tinca*).
The common carp is divided into two subspecies, *C. c. carpio* from Europe and *C. haematopterus* from Asia, as reviewed by population genetic data (Flajšhans & Hulata 2007); populations of the Asian subspecies may be further subdivided into Central Asian and East/Southeast Asian ones.
Carp can typically be found in small schools, although larger carp often lead a solitary existence (Smith 1991, in Chumchal 2002).\n\n\n\n

Lifecycle Stages
Hatching of carp eggs is rapid (2 days at 25°C) and larval growth is very\nrapid, enabling them to quickly escape predation pressure (Adamek 1998, in Koehn 2004). Over portions of its native range, common carp may be sexually mature as early as by the end of its first year, but three to four years is more common. Male carp mature before female carp (Pinto *et al*. 2005). They have a typical lifespan of 13 to 20 years in the wild with a reported specimen of 47 years in captivity (Chumchal 2002; Kuliyev & Agayarova 1984). The largest fish collected on one Australian study was (765 millimeters FL and 8.5 kg) and was estimated at 29 years old, which is consistent with the known life-span for common carp in Australia (Brown *et al*. 2005, in Jones & Stuart 2009). Over their natural range, carp live up to 15 years, with reports of individuals living up to 24 years. Males live longer than females.

Uses
China began cultivating carp for human consumption 3000 years ago and in 1997 produced more than 250 000 tonnes of Carp for human consumption (Li & Moyle 1993, in Koehn, Brumley & Gehrke 2000; Environment ACT Undated). At least 80 species of cyprinids are used as a fishery resource today, and many species are now exploited as a source of protein around the world. *C. carpio* production is the second highest farmed fish production in the world, mainly in Asia (Milstein 1992, in Saikia & Das 2009). Carp have long been the main aquaculture production system used in southern Asia and are often cultured in rice fields (Miah *et al*. 1997, Kanak *et al*. 1999, Reddy *et al*. 2002, in Rahman *et al*. 2008; Saikia & Das 2009).
Cyprinids are important in aquarium culture as companion or show species, including ornamental varieties known as \"koi\" which fetch high prices on the market (Balon 1995, in Saikia & Das 2009).
Cyprinids are also important for commericial wild harvesting and as recreational fishing species. Common carp are highly appreciated by many recreational fisheries, particularly in Europe including the United Kingdom, the Czech Republic and Germany (Linfield 1980, Vacha 1998, Wedekind *et al*. 2001, in Arlinghaus & Mehner 2003). For catch and aquaculture statistics for the common carp in Europe please see GenImpact.

Habitat Description
Carp are usually found in still or slowly flowing waters, lakes and permanent wetlands, commonly with silt bottoms (Environment ACT Undated). They are found at low altitudes (up to 500-m elevation; Reynolds 1983, Driver *et al*. 2005, in Jones & Stuart 2006), especially in areas where there is abundant aquatic vegetation; they are also found in brackish lower reaches of some rivers and coastal lakes (NSW Department of Primary Industries 2005). Common carp occupy many microenvironments (Pflieger 1975, in DeVaney *et al*. 2009); they typically inhabit the benthopelagic zone of fresh to brackish waters within a pH range of 7.0 to 7.5 and temperates of 3°C to 32°C within latitudes of 60°N to 40°N. For global potential ecological niche models for the common carp see DeVaney and colleagues (2009).
Part of the reason why common carp are successful freshwater invaders is their ability to exploit a range of available habitats (Jones & Stuart 2009) and take advantage of degraded habitats. They have a greater tolerance of low oxygen levels, pollutants and turbidity than most native fish, and are often associated with degraded habitats, including stagnant waters (NSW Department of Primary Industries 2005). They are most abundant in streams enriched with sewage or substantial runoff from agricultural land and are rarer in clear, cold waters and streams of high gradient. In fact, they are cultured in rural southern Asia in rice fields, which are reported to be the richest habitats of aquatic organisms (Saikia & Das 2009). Changes to water flows, declining water quality and other changes to river habitats over the past few decades have negatively affected many native fish while favouring carp (NSW Department of Primary Industries 2005). Gehrke and colleagues (1995, in Brown *et al*. 2005) have suggested that exotic species such as carp benefit from floodplain inundation.
Although stenohaline, carp are tolerant of relatively high salinities. They are known to make excursions to brackish water (up to 17 500 mg L–1) throughout the world including Australia, Canada and southern France (Kuliyev & Agayarova 1984; Barraclough and Robinson 1971, Geddes 1987, Crivelli 1981, in Whiterod & Walker 2006). Adult carp from the Lower Murray are known to survive direct transfer to a salinity of 12 500 mg L–1, or 15 000 mg L–1 with acclimation (Geddes 1979, in Whiterod & Walker 2006). Similar limits are implied by tests on acclimated carp in Iraq, and by reports of carp from estuaries in Canada and France (Al-Hamed 1971, Barraclough and Robinson 1971, Crivelli 1981, in Whiterod & Walker 2006). Larvae and juvenile fish are less tolerant (e.g. Hassan *et al*. 1998, Karimov and Keyser 1998, in Whiterod & Walker 2006), however, and sub-lethal effects on carp of all ages are apparent at comparatively low salinities (e.g. De Boeck *et al*. 2000a 2000b, in Whiterod & Walker 2006). Under experimental conditions, feeding rates and growth rates of fingerlings decline at higher salinities (Wang *et al*. 1997).

Reproduction

The life-history of carp is one characterised by flexibility, with long breeding seasons (up to 9 months) and the ability to spawn multiple times each year (Smith & Walker 2004, in Jones & Stuart 2009). Common carp are portional spawners, spawning two or three times over a 14 day interval. Mating groups of one female and several males swim actively before spawning. Temperature required for spawning is 18 C (Cowx 2001, in Hickley *et al*. 2004) and the carp is not selective in its choice of substratum for attachment of eggs (Petr 2000, in Hickley *et al*. 2004). Floodplains, slow flowing pools, and other shallow habitats with dense macrophyte cover appear to be preferred sites. Males externally fertilize eggs and females spread them over aquatic plants. They spawn seasonally during the spring and summer in temperate conditions and year round in tropical conditions. Eggs vary from 1.2 to 1.4 millimeters in diameter, are yellowish-green in color and usually hatch within four days. They have a relative fecundity of 100 000 to 300 000 eggs per kilogram with reports of as many as 360 000 to 599 000 eggs per female and over a million eggs produced by a female in one season/ *C. carpio* has a polytypic plasticity that has resulted from genetic varieties, or "races" through selective breeding in response to environmental influences. In their native range they may reach sexual maturity within their first year (FishBase 2009, Chumchal 2002, Balon 1995, Aguirre and Poss 2000, Kuliyev & Agayarova 1984, Jones & Stuart 2009).

Nutrition

Adult common carp are benthivores, feeding in sediments to a depth of about 12 centimeters by sucking up mud from the bottom, ejecting it and selectively consuming items while they are suspended; the feeding galleries of carp are easily recognised in shallow waters as depressions in the sediment (Chumchal 2002; Driver *et al*. 2005; Saikia & Das 2009). Common carp are omnivores; their diet therefore varies between locations and from season to season, depending on food availability (Lammens and Hoogenboezem 1991, in Koehn Brumley & Gehrke 2000). In one study microcrustaceans, for example, were common in the water and diet in spring and summer; molluscs were only eaten when they were available in large numbers; aquarium experiments indicate that chironomids are a preferred food item(Hume *et al* 1983a, in Koehn Brumley & Gehrke 2000). Hume and colleagues (1983a in Koehn Brumley & Gehrke 2000) found that carp in aquaria preferred to feed on chironomids, and only ate plant material such as pieces of plant tissue, seeds and filamentous green algae in the absence of chironomids. Shifting to a planktivorous diet may occur if zooplankton is limited (Saikia & Das 2009). Rieradevall (1991, in Saikia & Das 2009) also observed a shift of feed items of common carp to amphipod and phantom ridge larvae from chironomids and molluscs due to their higher availability in lake systems. This plasticity in diet may account for some of the invasiveness of common carp. Introduced carp may feed upon food resources previously unexploited by the native fish community (Britton *et al*. 2007); the common carp's specialist feeding mechanism of sieving through the substrate allows them take advantage of potentially under-utilised resources, including detritus at a base level of the food chain (Koehn 2004). In studies, common carp were shown to feed mainly on algae and zooplankton as juveniles (<150 mm), on benthic insects, macroinvertebrates (e.g. chrionomids) and detritus as young fish (150mm to <400mm) and on the occasional extra plant matter as adults (400mm+) (Hume *et al*. 1983b, in Koehn Brumley & Gehrke 2000). The larvae of *C. carpio* forage on planktonic organisms, specifically zooplankton taxa (e.g. *Arcella*, *Diflugia*, *Colurella*, *Bosminopsis*, *Bosmina*, small rotifers (*Lecane* and *Monostyla*), copepods, diatoms (e.g. Bacillariophyceae) algae (e.g. Chlorophyceae) and Cyanobacteria (HHRI 1976, Li *et al*. 1995, in Jia *et al*. 2008; Saikia & Das 2009). Young common carp feed on a variety of macro-invertebrates including, aquatic insect larvae (chironomids, corixids/water boatman, caddis fly larvae), copepods, cladocerans, molluscs (e.g. snails), ostracods, microcrustaceans, tubificids, zooplankton and zooperiphyton (Sigler 1958, Matlak & Matlak 1976, Zur & Sarig 1980, Hume *et al*. 1983a, in Koehn Brumley & Gehrke 2000; Sibbing 1988, in Saikia & Das 2009). Adult common carp are known to eat a wide variety of organisms including, insects (e.g. beetles), crustaceans (cladocerans, copepods, ostracods, decapods) (Crivelli 1981, Vilizzi 1998, in Koehn Brumley & Gehrke 2000), annelids, mollusks, fish eggs, fish remains, aquatic plants and seeds. Seeds contain carbohydrates and carp feeding on seeds may be preferentially seeking carbohydrate-rich high-energy food (Koehn Brumley & Gehrke 2000). In studies, benthic insects are consistently important dietary items both in wild and cultured carp (USA: Sigler 1958; USSR: Guziur and Weilgosz 1975; Israel: Kugler and Chen 1968; Zur and Sarig 1980; Indonesia: Vaas and Vaas Van Oven 1959, in Koehn Brumley & Gehrke 2000). Common carp are also known to feed on the soft exposed roots of *Typha latifolia* and *Chara aspera* (Miller 2004, in Miller & Provenza 2007).

General Impacts
For a detailed account of the impacts of *Cyprinus carpio* please read: *Cyprinus carpio* (Common Carp) Impacts Information. The information in this document is summarised below.
C. carpio is the third most frequently introduced species world-wide (Welcomme 1992, in Saikia & Das 2009). On every continent where it has been introduced it has reduced water quality and degraded aquatic habitats (McCrimmon 1968, Roberts *et al*. 1995, King *et al*. 1997, Koehn *et al*. 2000, in Jones & Stuart 2006).
Ecosystem Change: In shallow aquatic ecosystems, common carp can be considered “ecosystem engineers” or “keystone modifiers” (Jones *et al*. 1994, Mills *et al*. 1993, in Parkos Santucci & Wahl 2003) in that they have strong effects on benthic communities.
Aquatic macrophytes are integral to ecosystem functioning (Stansfield *et al*. 1997, in Nunn *et al*. 2007). Carp are known to damage aquatic macrophytes.
Macrophytes are keystone species in aquatic ecosystems (Scheffer 1998, Scheffer *et al*. 2001, in Shin-ichiro *et al* 2009). Shin-ichiro and colleagues (2009) found carp significantly influenced benthic macroinvertebrates.
Habitat Alteration: Carp may pose a threat to wetlands that are used by many fish as spawning and nursery habitats (Parkos Santucci & Wahl 2003).\n
Modification of natural benthic communities: Carp are believed to stimulate algal bloom formation by increasing nutrient release from sediments and decreasing algal grazing by cladocerans (which the juvenile carp prey upon) (Pinto *et al*. 2005).
Modification of nutrient regime: Carp increase nutrients in the water column in two ways: by sediment resuspension and by excretion (Lamarra 1975, Brabrand *et al*. 1990, in Chumchal 2002).
Reduction in native biodiversity: In California, USA, carp have been implicated in the gradual disappearance of native fishes (Moyle 1976a, in Nico Maynard & Schofield 2009).
Data from Miller and Crowl (2006) suggests that carp can significantly affect species abundance and diversity of macrophytes and some macroinvertebrates. Common carp negatively affected macrophyte abundance by reduction of light availability, increase of siltation rates, ingestion of plant matter and uprooting during feeding activity (Parkos Santucci & Wahl 2003).
The loss of rooted macrophytes due to carp activity is intuitively likely to lead to a decline in biological diversity, in endemic fish, amphibians, and reptiles in Mexico (Crowder & Painter 1991, in Zambrano *et al*. 1999) and elsewhere.
Physical disturbance: Carp stir up bottom sediments during feeding, resulting in increased siltation and bioturbidity (Arlinghaus & Mehner 2003; Parkos Santucci & Wahl 2003; Lee *et al*. 1980, in Nico Maynard & Schofield 2009).
Threat to endangered species: Non-native fish can drive native species to local extinction (Zambrano *et al*. 2006).Predation: Carp prey on macroinvertebrtes (Parkos Santucci & Wahl 2003). There is also evidence that common carp prey on the eggs of other fish species (Moyle 1976a, Taylor *et al*. 1984, Miller & Beckman 1996, in Nico Maynard & Schofield 2009).
Competition: Laird and Page (1996, in Nico Maynard & Schofield 2009) stated that common carp may compete with ecologically similar species such as carp suckers and buffalo fish.
Economic/Livelihoods: Growth rates and stocks of other fish may be impacted by competition with carp (Arlinghaus & Mehner 2003), including perch. Carp provide an important source of protein in some third world countries (FishBase 2009).
Human nuisance: By stirring up river substrate and reducing aquatic vegetation carp can makes waterways unattractive and can render the water unsuitable for swimming or for drinking by livestock (NIWA 2003).

Management Info
Preventative measures: The use of potentially invasive alien species for aquaculture and their accidental release/or escape can have negative impacts on native biodiversity and ecosystems. Hewitt *et al*, (2006) Alien Species in Aquaculture: Considerations for responsible use aims to first provide decision makers and managers with information on the existing international and regional regulations that address the use of alien species in aquaculture, either directly or indirectly; and three examples of national responses to this issue (Australia, New Zealand and Chile). The publication also provides recommendations for a ‘simple’ set of guidelines and principles for developing countries that can be applied at a regional or domestic level for the responsible management of Alien Species use in aquaculture development. These guidelines focus primarily on marine systems, however may equally be applied to freshwater.
Copp *et al*, (2005) Risk identification and assessment of non-native freshwater fishes presents a conceptual risk assessment approach for freshwater fish species that addresses the first two elements (hazard identification, hazard assessment) of the UK environmental risk strategy. The paper presents a few worked examples of assessments on species to facilitate discussion. The electronic Decision-support tools- Invasive-species identification tool kits that includes a freshwater and marine fish invasives scoring kit are made available on the Cefas (Centre for Environment, Fisheries & Aquaculture Science) page for free download (subject to Crown Copyright (2007-2008)).
Please follow this link for detailed information on the management of *Cyprinus carpio*. The information in this document is summarised below.
Potential carp control techniques include harvesting, barriers, biomanipulation, exclusion with screens or barriers, poisoning, biological control, bioacoustics, bubble barriers, immunocontraception and genetic manipulation. The latter two approaches represent a range of options that may become more practical with advances in biotechnology.
Physical Control: Methods include barriers, harvesting, traps and water level manipulation. Electric barriers, bubble curtains and sonic barriers have been used in various countries to exclude fish from structures such as industrial cooling water intakes (Koehn Brumley & Gehrke 2000).
Harvesting may be useful where the common carp is appreciated by fisheries, such as in parts of Europe (Linfield 1980, Vacha 1998, Wedekind *et al*. 2001, in Arlinghaus & Mehner 2003). In other regions angling may not be a practical means of control and may not reduce numbers of carp sufficiently (to below 10% of pre-harvest levels) (Koehn Brumley & Gehrke 2000).
Chemical Control: Widespread use of pesticides is not possible in aquatic habitats because species-specific poisons for carp are not available (Marking 1992). Rotenone is a non-selective natural chemical that is relatively safe and has been used with success in the USA (Koehn Brumley & Gehrke 2000, Dawson & Kohlar 2003, in Sorensen & Stacey 2004, Fajt and Grizzle 1993 in Baldry, Undated).
Pheromones modulate behaviour of fish and are broken down in natural waters so that their application can be regulated (Sorensen & Stacey 2004). The acceptance of the use of pheromones is likely to be greater than that towards persistent toxicants (Sorensen & Stacey 2004). Migratory pheromones, alarm pheromones and sex hormones may all have roles in the integrated management of carp (Sorensen & Stacey 2004).
Biological Control: Bio-control of carp using the Spring Viraemia of Carp Virus (SVCV) (Rhabdovirus carpio) has been suggested since the 1970 however “*Intense scrutiny would be given to the release of viral control agents [in Australia], especially those which may be water-borne*” (Koehn Brumley & Gehrke 2000).
Biomanipulation (Koehn Brumley & Gehrke 2000): This is the concept of manipulating the interrelationships among plants, animals and their environment to achieve a new ecological balance, for example, reducing populations of zooplanktivorous fish to low levels and stocking the system with predators. This method is ecologically controversial.
Immunocontraception (Koehn Brumley & Gehrke 2000): This approach involves the delivery of a gene which blocks reproduction mechanisms when the host is infected by a recombinant virus.
Molecular approaches (Koehn Brumley & Gehrke 2000): Inducible Fatality Genes (IFG) involve breeding carp with a fatal genetic weakness to a trigger substance, such as zinc. The fatal gene technology appears to be a potentially viable and long-term strategy for the environmentally benign control of carp.
Sterile ferals (Koehn Brumley & Gehrke 2000): This concept is based on an inducible sterility gene that renders individuals within a population sterile.
Research: A broad investigation is underway to provide biological information on carp as a precursor to developing effective pest control strategies (Brown *et al*. 2005).
Integrated Pest Management (IPM): It is doubtful whether any single management approach on its own could eradicate established carp; the answer may lie in the use of integrated techniques (Sorensen & Wyatt 2001, in Sorensen & Stacey 2004).

Pathway
Carp have been introduced into Australia both deliberately, in an attempt to imitate the European environment, and accidentally, through the escape of ornamental or aquaculture fish (NSW Department of Primary Industries 2005). The importation of carp was probably because of the desire of some of the colonists to imitate a European environment in Victoria. The Acclimatisation Society of Victoria (1861) which was established from the short-lived Zoological Society of Victoria (1857) aimed to offer salmon, trout, carp and other fish for anglers (Gillbank 1980, in Koehn Brumley & Gehrke 2000).It has been introduced as a food fish, into temperate freshwaters, throughout the world. (Aguirre and Poss, 2000)Introduced into many places for angling/sport. (FishBase, 2003)It has been introduced as an ornamental fish, into temperate freshwaters, throughout the world. (Aguirre and Poss, 2000)Carp have been introduced into Australia both deliberately, in an attempt to imitate the European environment, and accidentally, through the escape of ornamental or aquaculture fish (NSW Department of Primary Industries 2005). The importation of carp was probably because of the desire of some of the colonists to imitate a European environment in Victoria. The Acclimatisation Society of Victoria (1861) which was established from the short-lived Zoological Society of Victoria (1857) aimed to offer salmon, trout, carp and other fish for anglers (Gillbank 1980, in Koehn Brumley & Gehrke 2000).

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ALIEN RANGE

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[1] SWITZERLAND
[1] SYRIAN ARAB REPUBLIC
[1] TAIWAN
[1] TAJIKISTAN
[1] TANGANYIKA LAKE
[1] TANZANIA, UNITED REPUBLIC OF
[4] THAILAND
[1] TIMOR-LESTE
[1] TOGO
[1] TUNISIA
[1] TURKEY
[6] TURKMENISTAN
[1] UGANDA
[3] UNITED KINGDOM
[58] UNITED STATES
[1] URAL RIVER
[3] URUGUAY
[1] VENEZUELA
[2] VIET NAM
[1] ZAMBIA
[1] ZIMBABWE

Red List assessed species 20: EX = 1; CR = 2; EN = 9; VU = 4; NT = 1; DD = 1; LC = 2;

Barbus andrewi **EN**
Batasio sharavatiensis **EN**
Cambarellus montezumae **LC**
Cherax cuspidatus **LC**
Crossocheilus periyarensis **EN**
Cyprinus fuxianensis **CR**
Cyprinus qionghaiensis **CR**
Galaxias rostratus **VU**
Garra periyarensis **VU**
Glyptothorax sinensis **DD**
Hypselobarbus curmuca **EN**
Hypselobarbus periyarensis **EN**
Lepidopygopsis typus **EN**
Nemacheilus menoni **VU**
Nemacheilus periyarensis **VU**
Oxyura australis **NT**

Puntius exclamatio **EN**
Tor khudree **EN**
Salmo pallaryi **EX**
Travancoria jonesi **EN**

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La lista de especies del Sistema de informaci�n sobre especies invasoras de m�xico cuenta actualmente con informaci�n aceca de nombre cient�fico, familia, grupo y nombre com�n, as� como h�bitat, estado de la invasi�n en M�xico, rutas de introducci�n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p�gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci�n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci�n novedades, para conocer los cambios.
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