



# The Gardens' Bulletin

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## A STRANGE PROJECT - FOR A BOTANICAL GARDEN

The project is carp control; the location, Cootes Paradise Marsh within the Royal Botanical Gardens, Hamilton.

Goldfish, a close relative of the carp is a desirable and ornamental species used in the pools of parks and botanical gardens around the world. Carp itself is a much appreciated fish in its native land and in some other areas of the globe to which it has been introduced. The carp ponds of Japan, China and Europe produce tons of protein-rich food for a hungry population. There is on record a carp raised in a pond in Switzerland that weighed 90 pounds. Such a creature would have had a greater dressed weight than a sheep, most goats and even a large calf. This serves to illustrate how the carp could make a real contribution to the diet of a people living in a land where each acre is intensively cultivated to grow food and where range to graze cattle is simply not available.

It was due to this great potential as an easily caught and rapidly growing food that carp was introduced to North America in 1876. Within four years the original shipment of breeding stock numbering a few hundred, had increased to between fifty and one hundred thousand. Unfortunately, either due to accident or intent some of the carp-raising ponds in North America were allowed to spill their fish

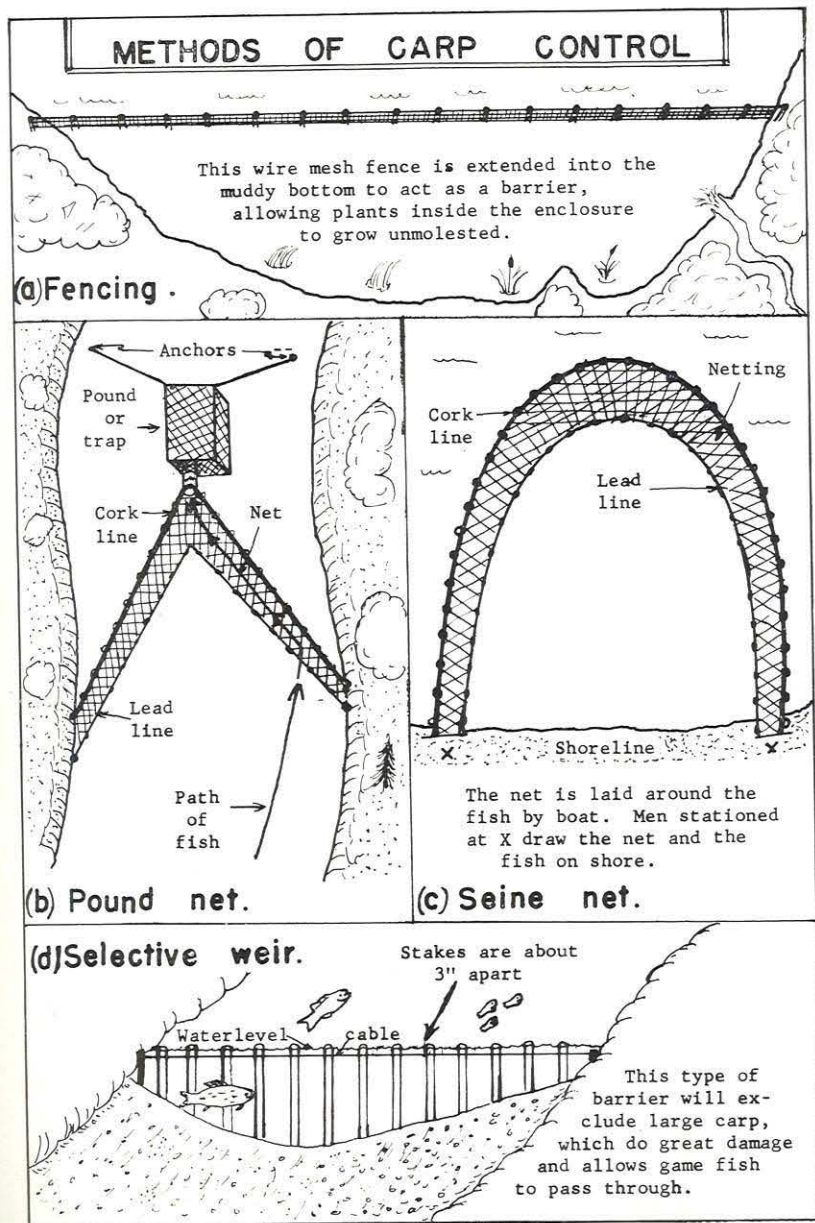
into the streams and lakes of our land where they promptly set out to explore and conquer.

Today this species is public enemy number one of fishland, partly because of its great reproductive ability and also due to the fact that it is not subjected to enough fishing pressure. This latter is probably our fault since native North Americans are inclined to regard the carp as repulsive. This does not make for a good market.

In 1949 the staff of the Royal Botanical Gardens first joined combat against the wily and persistent carp which inhabit the waters of Cootes Paradise. This first encounter coincided with the initiation of a programme to study the failing supply of aquatic plants which provide the natural food for waterfowl in this area. It became apparent early in the study that carp played a major role in the destruction of plants which have a frail root system, for example, wild rice. The destruction caused by a rooting, lashing 20 pound carp can be visualized if the reader thinks of the damage a rolling, prancing dog can do to your favourite flower bed.

The first method of carp control which the staff employed, was a pound net. This consisted of a funnel-shaped net placed as a barrier across the Desjardins Canal at the High Level Bridge thus sealing the connecting link between Cootes Paradise Marsh and the carp source—Lake Ontario. The *modus operandi* of a pound net is simple, in that the fish are led along the wings of the net until they reach the neck of the funnel. Here they enter the trap or pound, a box of net contrived in such a way that the fish finds it easy to enter but very hard to escape. In general the pound net worked well for all fish other than carp. Great quantities of game fish, perch and herring were taken, counted and released each time the pound was lifted. The failure of the pound net to catch carp made it clear that carp would not lead, that is, as soon as they encountered the net they turned and headed back out into the Bay.

The pound net did exclude carp from Cootes Paradise Marsh but it was too expensive to maintain on a spring to fall basis and after use in the spring of 1950 and 1951 it was discontinued.



Then came the spring of 1952. Record high water levels in Lake Ontario were reflected in the level of the Marsh. Carp had free access to areas which were well covered with aquatic plants and the splashing and churning of spawning carp could be heard from dawn to dusk. Presently great floating islands of plant material began to appear; here was evidence that aquatic plants were being rooted out and destroyed on a huge scale.

With the approach of fall and the lowering of the water level, great barren mud flats appeared where in springtime birds had nested in the rushes. Except in small areas which had been fenced off from carp, the plants established by the duckfood study programme suffered the same fate as the rest of the plants which could be reached by the rooting carp.

One of the basic objectives of Cootes Paradise Sanctuary is to shelter and feed migrating water fowl. But of what use is such a sanctuary devoid of aquatic plants? To begin the reclamation work, two commercial fishermen using seine nets were licensed for carp fishing in Cootes Paradise Marsh in 1954. They were allocated specific operating areas to make sure that the abraiding action of their heavy nets would be localized. During the summer of 1954 about 10,000 carp were taken; in 1955, 50,000 and in 1956, 70,000. Then, in 1958 the number taken in the Marsh declined sharply partly due to low water levels, but also because large carp were scarce for the first time in years. Since this time, the fishermen have had to extend their operations to Hamilton Bay as well, to maintain a volume of carp which their market demands. Yields have been about 50,000 for 1959 and 1960 but only about 2000 per year are taken from the waters of the Sanctuary.

It may be worthwhile to mention the market for carp at this point. The fish are kept alive from the time of netting, through a short storage period and during transport. The principal market is in Toronto with some large loads going to Buffalo and beyond. This utilization of so called coarse fish is, we feel, a worthwhile conservation project, since it conforms to the creed regarding wise use of our natural resources.

There are still many thousands of small carp in Cootes Paradise Marsh and a few large ones, but our aim is not extermination, rather it is control. As anyone who is familiar with the Sanctuary today will realize, the aquatic vegetation is flourishing once more. There is abundant food for water birds and muskrats, and nesting birds can find excellent cover again. Any carp control programme to be effective must be a continuous one, because if the pressure on the fish is lowered the natural vegetation of the Sanctuary is bound to suffer.

The new Chedoke Expressway has obliterated the base of operations for both of the fishermen who are taking part in the control programme and there is a good chance that their activities will be suspended.

The selective weir as illustrated in sketch (d) has possibilities as a replacement for seine netting. Such a weir erected across the Desjardins Canal should be quite effective at screening out the large carp that seek to enter the Marsh. Fortunately this type of weir can be constructed in such a way that boats can pass over it without damage. In this way, the right to navigate the Canal will not be abridged.

Cootes Paradise Marsh is a legacy to the wild things that live therein and a valuable property in the heart of the Royal Botanical Gardens. Its vegetation is the basis of support for the wildlife population, both resident and migrant. It is therefore the obligation of a botanical garden to protect and even supplement the aquatic plant life. It is this objective which led to a strange project—the control of coarse fish population.

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