According to the limits imposed by distance, means of transportation, requirements for fish introduction and other factors, fish for release in Park waters vary in size from unhatched eyed eggs through several sizes of fingerlings to five pound adults. Where weight is a problem, as in transportation by air, the Canadian Wildlife Service has perfected a technique of anæsthetizing fish to reduce their requirement for dissolved oxygen and then transporting them packed in crushed ice without water. The saving in weight results in a substantial saving in cost and the fish can be transported long distances with no ill effects.

Based on modern ideas of hatchery use, the present game fish policy of the National Parks Service is to carry out stocking operations only where natural reproduction is limited or absent, where a population of fish is wiped out through winter-kill or other catastrophe, or where a species more adapted to local conditions is being introduced. The introduction and maintenance of populations of exotic species are carried on only under special conditions. A program of marking fish by tagging and fin clipping makes it possible to study the history of a fish from release to capture by anglers. Through this program it is possible to demonstrate the rapid growth attained in some waters and the high return to anglers from fish stocked under certain conditions. This information permits planning for the most satisfactory use of hatchery products. An increasing proportion of fish distributed from National Parks hatcheries consists of large fingerlings and yearlings, as experience has shown excellent survival for fish of this size.

In addition to the introduction of additional stock from hatcheries other methods of maintenance and improvement are used. In areas where no spawning grounds exist, artificial spawning areas are sometimes created by dumping loads of gravel in appropriate places on the ice of a lake during winter; when the ice melts, the gravel falls to the bottom.

In some waters food is scarce and fish are crowded and stunted. The removal by poison or nets of some of the fish reduces the competition for food and permits the remaining fish to grow to a size more attractive to the angler. Another way of improving conditions for a stunted fish population is either to increase the amount or to change the form of food available in the lake. This may be done by introducing forage fish which feed on microscopic animals and are themselves eaten by game fish. Where conditions are suitable the water may be fertilized thus permitting the increased growth of microscopic plants and the animals that feed on them. Competition for food between desired game fish and undesirable coarse fish may be controlled by removing or reducing the latter thus leaving more food available for the desired species. Competition with and predation by other species may be reduced by the introduction of desirable fish of suitably large size. Production of varieties of fish with new and useful characteristics is being carried on through cross-breeding. The "Splake" or "Wendigo" developed in the National Parks by crossing eastern brook and lake trout is now in successful use in the fish cultural programs of several provinces in Canada and in states of the USA as well as in the National Parks. Work is now in progress in National Parks hatcheries on the production of other varieties of hybrid trout more adaptable to certain conditions than species or hybrids now known.

Protection of forests in the National Parks from fire is an important part of fish management. Alteration of a watershed by fire results in a more rapid runoff and more serious flooding and silt problems in streams. Removal of forest cover also permits water temperatures to rise through exposure to the sun. This may render areas unsuitable for game fish.

Angling regulations offer an excellent means of managing fish populations. A wise choice of close season, minimum legal length and daily catch limit result in the best use of the available supply of game fish and its equitable distribution among the angling public.