

PROGRESS REPORT - November 1987

Fish Management Plan - Lake of the Woods

- Management plan adopted by the Commission 1982

- Status of meeting objectives:

- (1) We are having little success increasing angler effort.
- (2) We have discontinued fingerling stocking except kokanee. Yearling trout are being stocked. Beginning in 1988 we will release yearling plus Klamath rainbow in Lake of the Woods. They may prove to be an effective predator.
- (3) We still need additional time to spend with a depth finder and then relay information to the angling public.

L2-20/j

Adopted 1982

FISH MANAGEMENT PLAN

LAKE OF THE WOODS

Oregon Department of Fish and Wildlife

Fish Division

August 1982

FISH MANAGEMENT PLAN

LAKE OF THE WOODS

INTRODUCTION

Lake of the Woods lies near the crest of the southern Cascade Range at an elevation of 4,949 ft. Road access is via State Highway 140 about 32 mi from Klamath Falls and 42 mi from Medford, or via Dead Indian Road 38 mi from Ashland (Fig. 1). The lake is totally within the Winema National Forest. There are two large campgrounds and a day-use area, each with a developed boat ramp; a resort; three organization camps; and numerous summer homes - all administered by the Klamath Ranger District of the Winema National Forest. Angling, swimming, water skiing, canoeing, and sailing are all popular water sports at the lake. Snowmobiling and cross-country skiing are popular winter activities in the area.

In August 1982, the Oregon Fish and Wildlife Commission accepted the Department's recommendation to manage Lake of the Woods for wild and hatchery fish.

HABITAT

Lake of the Woods has a surface area of 1,113 acres, contains about 30,370 acre ft, averages 35 ft in depth with a maximum of 55 ft. Bottom types are as follows: detritus - 52%, sand - 19%, vegetation - 15%, rock - 11%, and mud - 3%. There is substantial shoal area, mainly on the north and south ends of the lake. The eastern shore has gravel beaches that provide spawning habitat for kokanee while the western shore is steep and rocky.

Three tributaries enter the lake. Rainbow Creek, a small perennial stream, enters from the south; Billie Creek, which usually flows year-round but in dry years may not reach the lake, enters from the north; and Dry Creek, an intermittent stream, enters from the west. Both Rainbow and Billie creeks have trout spawning potential.

The lake is relatively unproductive. Bottom sampling conducted from 1959 to 1976 showed an average benthic food production of 42 lb/acre.

FISH POPULATIONS

The lake was chemically treated with rotenone in 1955 to eliminate rough and spiny ray fish. At that time, the lake contained largemouth and warmouth bass, bluegill, pumpkinseed, yellow perch, carp, bullhead catfish, tui chubs, two species of suckers, and rainbow and brook trout. Since

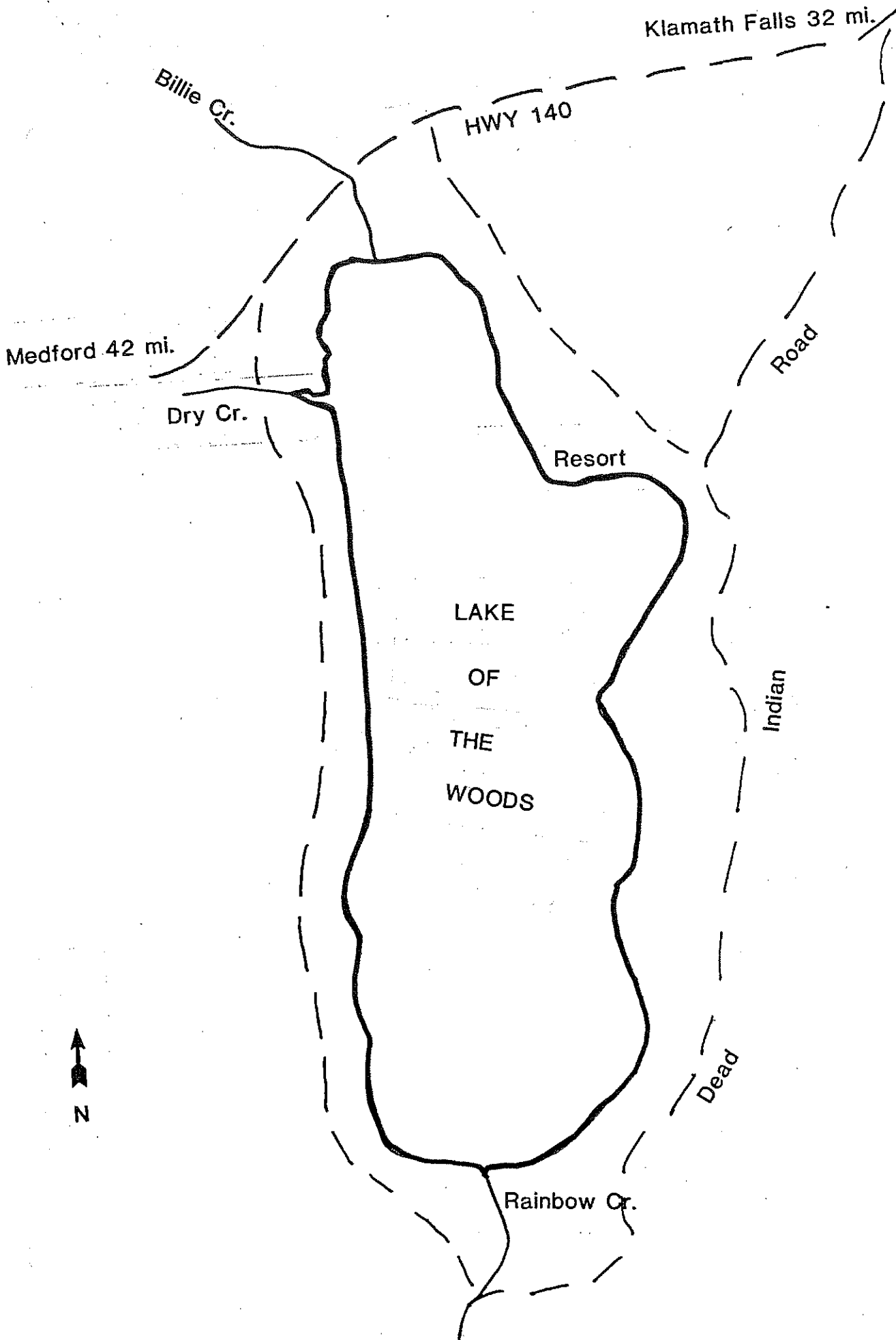


Fig. 1 LAKE OF THE WOODS

1955, several species of fish have been introduced officially and illegally. Rainbow trout have been stocked every year except from 1967 to 1969. Recently rainbow and brook trout fingerlings totaling 25,000-38,000/yr and surplus Eagle Lake rainbow brood trout have been stocked. In 1981, the stocking level was increased to 75,000 rainbow and 25,000 brook trout. Kokanee were stocked until 1978 when natural production was found to be adequate to use the lake productivity for that species.

Brown bullhead first appeared in the lake in 1961 and their numbers have increased to the point that they are now the most abundant species present. Tui chubs appeared in 1973, but their numbers have not increased as expected. The Klamath speckled dace is also present.

FISHERY

Since 1967, Lake of the Woods has been open to angling the entire year. The current catch limit is 10 trout, 6 inches or over per day, not more than 5 of which may be over 12 inches, and of those no more than 2 over 20 inches.

Interest in kokanee grew rapidly after their introduction and comprised 71% of the total angler pressure by 1965 and 86% by 1971. In 1967, when ice fishery began, mature kokanee were the target species and thousands were caught each year. Angling success for kokanee was good early each season up through 1976, but poor to fair thereafter.

Brook trout contributed to the fishery at a small but steady rate until the early 1970's, when they essentially disappeared from the catch. Many brook trout were caught in the ice fishery.

In recent years, the return of rainbow to the angler has been relatively poor and inconsistent. The stocked brood trout have contributed best. Rainbow were also caught in the ice fishery in substantial numbers; however, since 1976 the ice conditions have been poor and that fishery has not developed.

There is essentially no fishery for brown bullheads. The fish are stunted, usually 6 inches in length and skinny.

Collection of survey census data over the years has been sporadic, differing in intensity, sometimes including the ice fishery, and therefore, the data are not comparable. In the years 1960-76, anglers averaged 2.7 fish/trip and caught 0.8 fish/hr. Within that period, the average for years when there was a substantial ice fishery was 4.0 fish/angler and 1.3 fish/hr. For the years without the ice fishery, the average was 2.1 fish/angler and 0.6 fish/hr. Creel data are not available for 1977 or 1978. In 1979 and 1980, a combination of Oregon State Police and volunteer creel information showed an average catch of 0.9 fish/angler and 0.4 fish/hr.

DISCUSSION

Angling success at Lake of the Woods has been poor to fair during the past few years. The causes of this problem are not clear, but low lake productivity, competition, and predation are undoubtedly factors influencing fish survival and growth. Although some trout are attaining adequate size and condition, it appears the poor survival of trout fingerlings is being caused mainly by predation or some other unknown factor. Natural production and survival of fingerlings at current stocking levels has not been adequate to maintain a trout fishery. Assuming predation is the problem, in order to improve the trout fishery, it will be necessary to stock at a higher rate or stock legal-sized fish.

Creel records indicate angling for rainbow was better prior to the treatment than it is now; however, this was probably the result of annually stocking up to 40,000 legal-sized trout. It is currently not possible to stock at this level.

Brook trout nearly disappeared from the lake population after stocking of this species was discontinued in 1969. The two small tributaries, Rainbow and Billie creek, were not accessible for spawning because of beaver dams. The tributaries have not been cleared and provide limited potential for natural production. Brook trout stocking resumed in 1978, although it has been limited by availability of fingerlings. Full allocations should be available in future years.

Lake of the Woods is not an ideal lake for kokanee production, yet these fish have been an important part of the fishery. Anglers are blaming the poor kokanee success since 1976 on lack of stocking. We do not agree with this assessment. Although fish were not stocked in 1975, which would have produced maturing fish for the 1977 season, fish were stocked in 1976 and should have contributed to the 1978 fishery. However, there was little contribution from this release. In addition, the fall net sampling inventory in 1977 indicated good natural reproduction was occurring.

Based on the net sampling, kokanee was discontinued after 1978. In the 5 years prior to 1977, the fall net inventory catch averaged 230 kokanee. Since 1977, the catch has averaged 955 kokanee. The length of maturing female kokanee has averaged 9.2 inches since 1961; however, in the past 5 years length at maturity has averaged only 8.7 inches. The decline in size at maturity is probably a result of the large numbers of kokanee present. The fish are available for harvest, but they are not being taken in large numbers by anglers. Efforts should be made to locate the fish and keep anglers informed of their distribution.

Large numbers of small brown bullheads are not being utilized or controlled, yet they do utilize part of the lake's food production. It is probably not possible to stimulate a fishery to crop the bullheads because of their small size.

RECOMMENDATIONS

Management Option:

Manage Lake of the Woods for wild and hatchery trout.

Objectives:

1. Increase angler effort and catch for kokanee:
 - a. Conduct frequent sampling with depth finder to locate kokanee concentrations.
 - b. Publicize kokanee locations and depths in angling reports.
2. Improve the current trout catch rate.
 - a. Attempt to improve numbers of surviving fingerling by:
 1. Increasing the annual stocking rate.
 2. Increasing the size of fingerlings.
 3. Stocking with a planting boat for better distribution.
3. Improve the trout and kokanee overall catch rate to 2 fish/angler day and 0.6 fish/hr.