Marion Lake Fish Management Plan

Introduction

Marion Lake, a natural 360 acre body of water, lies at an elevation of 4,109 feet on the west slope of the Cascades, about 60 miles east of Salem. Access from Highway 22 is via USFS road 2255 and a two mile hike from the trailhead (Fig. 1).

Marion Lake has long been a popular recreational area and had been planned for extensive development by the Forest Service as early as 1913. Most of the plans never materialized, although two summer cabins and a guard station were constructed by 1928 and a permit was issued to the Marion Lake Boatowners' Association for construction of a boat house in 1954. About 140 boats were being stored at Marion Lake when it was absorbed into the Mt. Jefferson Wilderness in 1968. Boats and structures have since been removed and the area left to return to its natural state.

Recreational and angler use remains heavy. According to Forest Service estimates, Marion Lake accommodates 22,000 visitor days/year, which is about 30 percent of the entire use in the Mt. Jefferson wilderness.

In November 1986, the Oregon Fish and Wildlife Commission accepted the Department's recommendation to manage Marion Lake for wild and hatchery trout.

Habitat

Description

Marion Lake is 180 feet deep (Fig. 2) with limited shoal areas. However, the lake is relatively rich, producing one or two heavy phytoplankton blooms each year. The resultant zooplankton production is abundant and contributes to the support of good populations of rainbow and brook trout.

There are several tributaries to the lake which provides some possible spawning areas, but most wild reproduction of rainbow occurs in the outlet which drains into Marion Creek.

Limitations

Shoal area acreage is limited. Vegetation is sparse and aquatic insect production light.

Fish Populations

Department records indicate that both cutthroat and rainbow were first officially stocked in 1946, but when the lake was originally surveyed in 1932 cutthroat were already present. Possibly the lake had been stocked with native trout from Marion Creek by early settlers.

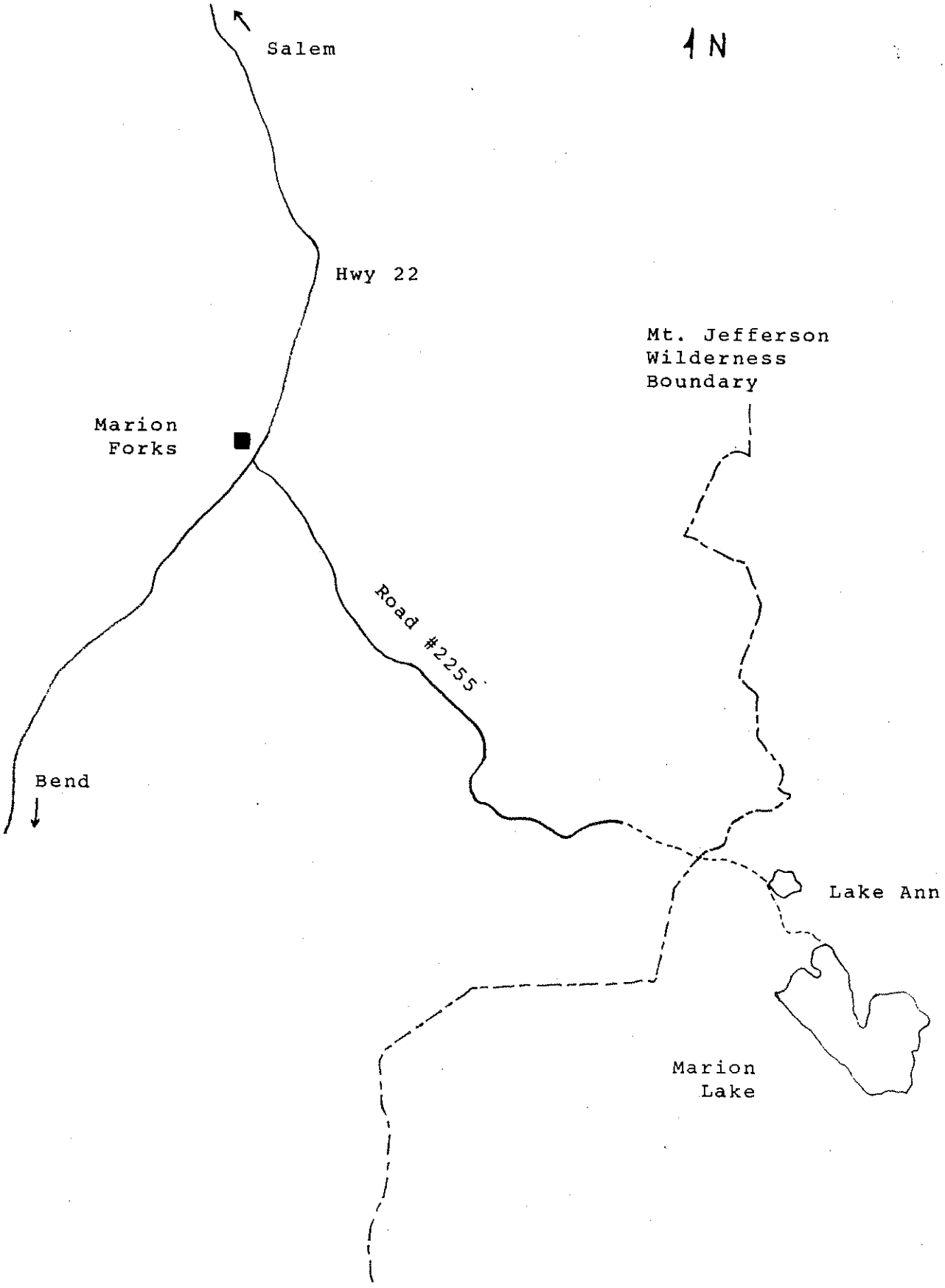

Fig. 1. Marion Lake Area Map

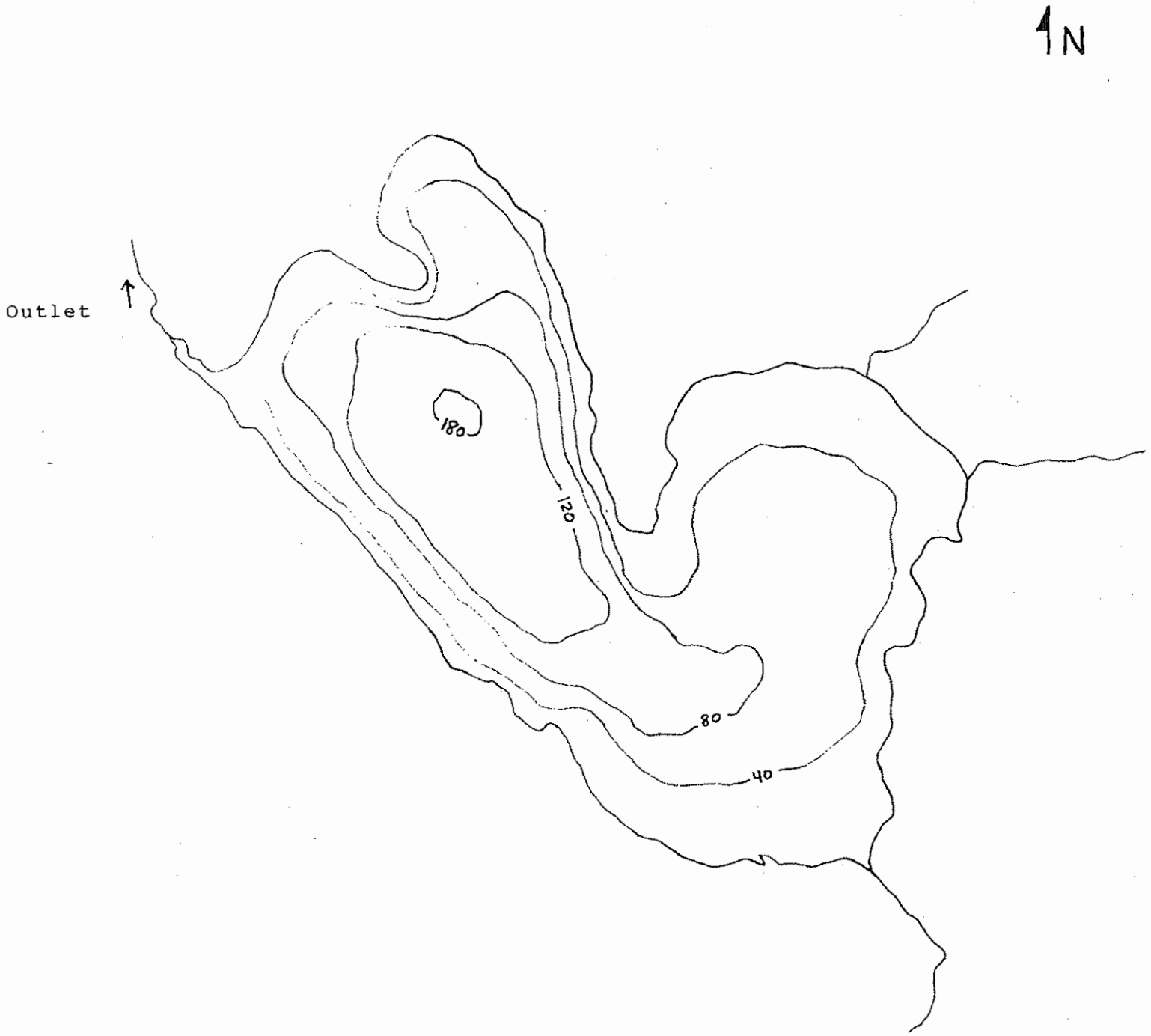

Fig. 2. Marion Lake

Rainbow fry or fingerlings have been stocked annually (except 1984 and 1986) since their original introduction and, as some wild production does occur, numbers stocked have been reduced from 30,000/year during the 1960's to 10-20,000 since 1970. Cutthroat were stocked in 1946 and 1956, and are represented now only by a small wild population.

Brook trout first appeared in the creel in 1960, origin unknown, and have become well-established through natural reproduction. No official stocking of brook trout has ever taken place.

Fishery

Marion Lake has traditionally sustained a good early-season fishery with some people hiking in over the snow to fish the lake on opening weekend. When Marion was opened to year-round angling in 1982, we didn't know how much additional pressure would be generated. However, according to our trailhead creek box, installed to allow anglers to voluntarily record their catch information and increase the data base, only 19 anglers reported having fished the lake from April 1 to May 21, 1984. Apparently, deep snow keeps most people from going in earlier.

In mid-to-late summer surface temperatures warm causing the fish to move into deeper, cooler water. As a result bank angling success drops off. Associated with the warmer temperatures is a heavy phytoplankton bloom which decreases visibility and further diminishes angler success.

Historically, fisheries have been supported by cutthroat, rainbow and brook trout. After rainbow trout were introduced, they provided the bulk of the fishery, with cutthroat being taken only infrequently. Brook trout first showed up in the creel in 1960 and within 10 years they provided half the catch. Since 1970 brooks have accounted for 61 percent of the fish caught. Most of the fish fall in the 8-12 inch range with only 3 percent of the brooks caught from 1983 through 1985 exceeding 14 inches. By comparison, rainbow greater than 14 inch long have represented 17 percent, 12 percent, and 27 percent of the species total for those years, respectively, and occasionally rainbow greater than 20 inches are taken.

The angler success rate remained fairly constant through the 1960's and 70's at about 0.61 fish per hour. The reduction in stocking rates beginning in 1970 had little effect on angler success rate. Catch rates have increased over the last three years to 0.74 fish per hour.

Discussion

Some wild production of rainbow trout does occur, but supplementation with hatchery fingerlings is necessary to maintain an adequate population. It was expected that angler success would be down in 1985 since no fish were stocked in 1984, but that was not reflected in the data we collected. The number of rainbow caught less than 10 inches--those that might have resulted from 1984

production--was down from the previous two years, but not as much as expected. The percentage of rainbow in the total catch was also down somewhat from '83 and '84, but not significantly. Comparison of these records to catch data collected in 1986, after stocking in 1985, and 1987, after not stocking in '86, should provide a clearer picture of the effects of not stocking rainbow trout.

Tributaries to the lake have been closed to angling since the late 1970's and Marion Creek from the outlet to Marion Falls (about 1/2 mile) has been closed since stocking of rainbow began. The purpose of the closures has been to protect spawning rainbow trout.

Sufficient spawning habitat is available to brook trout to allow that species to perpetuate itself in acceptable numbers, so no stocking of brooks is anticipated.

Forest Service data indicated that recreational use of the Mt. Jefferson Wilderness has been increasing at 2-3 percent in recent years and is expected to remain fairly constant in the foreseeable future. A corresponding increase in angler use will require continued regular monitoring of the fish populations to determine changes in catch ratio, fish size, and success rate. The volunteer creel box at the trailhead will assist us in a monitoring program.

Recommendations

Management Option: Manage Marion Lake for wild and hatchery trout.

Objectives:

1. Determine the contribution to the fishery made by the stocked fingerling trout. Since no fingerlings were stocked in 1986, all yearling trout caught in 1987 will be the result of wild production.

2. Continue to stock rainbow trout on an annual basis and adjust stocking ratio if necessary.

3. Continue to monitor the catch to observe any changes in species ratio, average size, or success rates. Gillnet periodically for comparison to creel data.