

MONTANA FISH AND GAME DEPARTMENT  
FISHERIES DIVISION

JOB COMPLETION REPORT  
INVESTIGATIONS PROJECT

State of Montana Name Helicopter Mountain Lake Survey  
Project No. F-32-R-5 Title Mountain Lake Survey - District 4  
Job No. V  
Period Covered July 1, 1968 to June 30, 1969

Abstract:

A fisheries survey was made on Grace Lake and Upper Baldy Lake in the Big Belt Mountains. A gill net set overnight in each lake caught no fish from Grace Lake and only one fish, a 3/4-pound rainbow trout, from Upper Baldy Lake. Both lakes appear to have fisheries potential if planted with trout. Four other lakes in the immediate vicinity were observed from the air and judged to be too shallow for fish management.

Recommendations:

Plant 1400 fingerling Yellowstone cutthroat trout in each lake. Test net in three to four years to determine success of the plants.

Objective:

The purpose of this survey is to investigate mountain lakes inaccessible to wheeled vehicles to determine their potential for sport fisheries.

Techniques Used:

A helicopter carrying a pilot and biologist was used in making the survey on September 9 and 10, 1968. One monofilament gill net 125' x 5' with graduated mesh, 3/4- to 2-inch square measure, was set overnight in each lake. The lakes were sounded with a hand line, temperatures were measured with a thermister thermometer and water samples were collected and analyzed by the State Department of Health chemical laboratory. Standard lake survey forms were filled out.

Findings:

No fish were caught in Grace Lake and only one, a 3/4-pound rainbow trout, was taken in Upper Baldy Lake. Both lakes were deep enough and appeared to be otherwise suitable for trout survival and growth. No areas suitable for trout spawning were observed. Both lakes were cold and infertile as might be expected of mountain lakes at this altitude. Temperature and chemical data are presented in TABLE 1.

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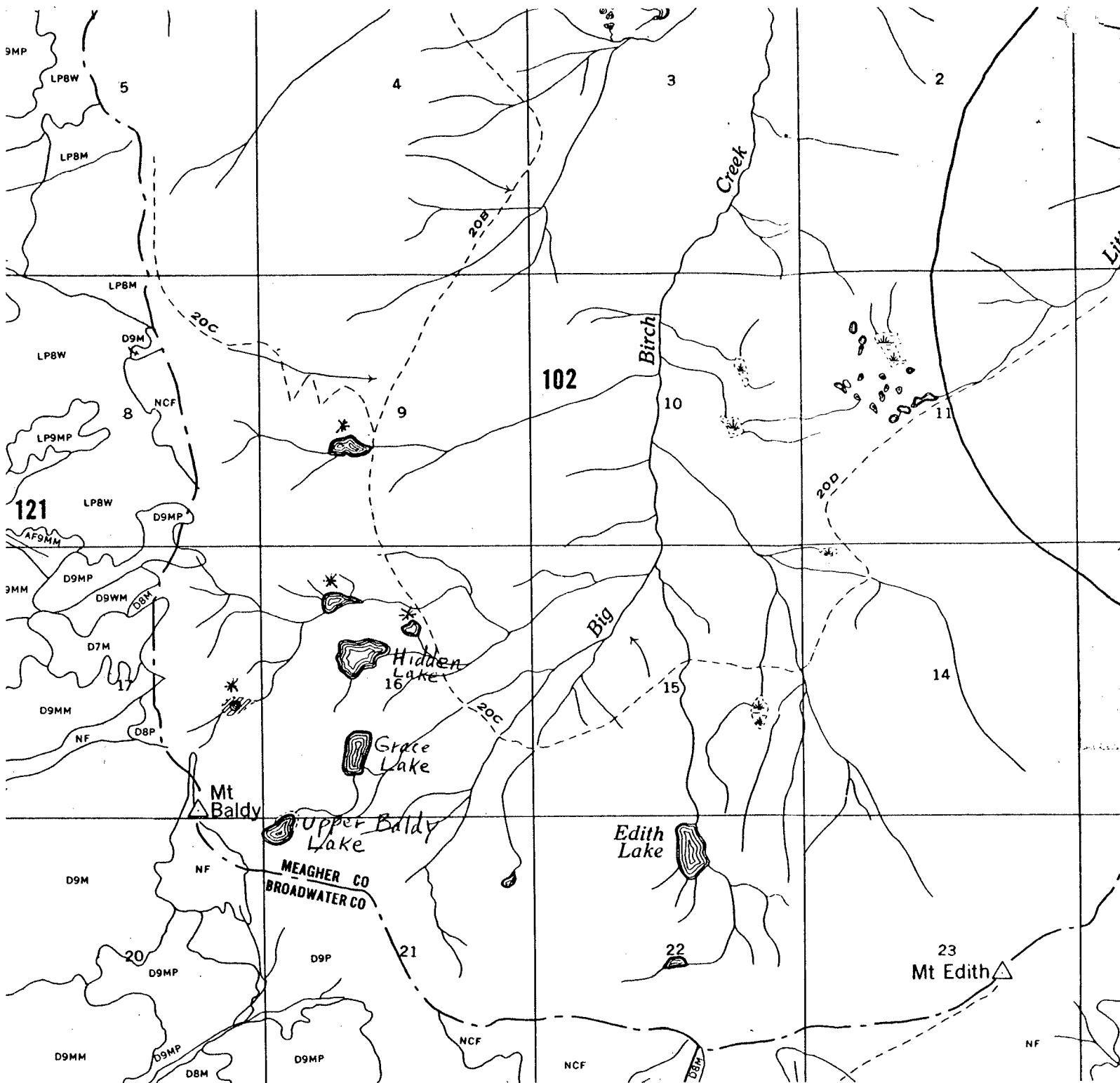


FIGURE 1. Map (U. S. Forest Service 1956 Timber Inventory Map) showing location of Grace Lake and Upper Baldy Lake. Lakes marked with an asterisk were viewed from the air and judged too shallow for fisheries management.

TABLE 1. Physical and chemical data collected from Upper Baldy and Grace Lakes, September 1968

|                                 | <u>Upper Baldy Lake</u> | <u>Grace Lake</u> |
|---------------------------------|-------------------------|-------------------|
| Surface area<br>(USFS Estimate) | 7 Acres                 | 7 Acres           |
| Max. depth (approx.)            | 41 Feet                 | 31 Feet           |
| ph-th alkalinity                | 0                       | 0                 |
| MO alkalinity                   | 12 ppm                  | 18 ppm            |
| pH                              | 6.6                     | 6.6               |
| Total dissolved solids          | 8 ppm                   | 12 ppm            |
| Water temperature:              |                         |                   |
| surface                         | 47°F                    | 49°F              |
| bottom                          | 46.5°F                  | 49°F              |

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The map (FIGURE 1) shows the location of the lakes surveyed and also the location of four nearby lakes observed from the air and judged too shallow for fisheries management.

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Waters referred to:

17-8985

17-9735