

PERFORMANCE REPORT

STATE: Alaska

GRANT NO.: F-10-33

GRANT TITLE: Sport Fish Investigations in Alaska

PERIOD COVERED: July 1, 2017- June 30, 2018

STUDY NO. AND TITLE: E-3-1 Region III Evaluation of Stocked Waters

STUDY OBJECTIVES AND TASKS:

Project objectives for stocking evaluation studies, E-3-1, were to:

Fish Population Sampling

1. Test the null hypothesis that mean length of rainbow trout within defined length/age categories does not differ from the management value;
2. Survey selected stocked lakes to determine fish species present, characterize the size range of the fish captured, and describe the overall appearance and condition of captured fish.

Limnology / Bathymetric Maps and Other Lake Characteristics

3. Describe select physical and chemical properties during fish sampling (June, August, or September).
4. Measure water clarity, temperature, dissolved oxygen, pH, total dissolved solids, specific conductivity, and alkalinity.
5. Survey the lake bottom to obtain depth, longitude, and latitude data for producing bathymetric maps;
6. Describe the lake watershed and the immediate surroundings, such as tree/shrub cover, and inlets and outlets; and,
7. Photograph the lake and surrounding area from north and south locations and, if flown into a lake, take aerial photographs of the lake and surrounding area.

RESULTS/DISCUSSION:

Fish Population Sampling – Objectives 1-2

Fish populations in 8 lakes in the Tanana River drainage were evaluated from July 1, 2017 through June 30, 2018 (Figure 1, Tables 1 and 2).

Fishery managers needed information about the population length/age structure for stocked rainbow trout populations in Ken's Pond, Koole Lake, Lisa Lake, Quartz Lake, Rainbow Lake, Rich 81 Mile Pond, and Triangle Lake. For Little Harding Lake managers were only interested in basic information to determine if stocked fish were present and to crudely estimate their length distributions. All captured fish were visually

examined for external signs of disease, parasites, and body condition (robust or thin). Data entry has been completed for lakes sampled during this evaluation period and summaries have been completed for lakes sampled during the 2017 field season. Stocked fish species were captured in all 8 study lakes and native fish species were captured in three lakes (Little Harding Lake, Quartz Lake, and Triangle Lake). Capture information along with ancillary information about dissolved oxygen levels were used to modify current stocking schemes.

Analyses comparing collected data to management criteria are currently being conducted. Management criteria for these populations were defined by mean lengths and relative abundances that were calculated for specific length categories and age cohorts. These parameters were developed from population models that were based on generalized growth curves, survival rates, and current stocking strategies.

All fish data collected during this performance period will be stored in the Alaska Lake Database (ALDAT) which can be accessed by the public at:
<http://www.adfg.alaska.gov/index.cfm?adfg=fishingSportStockingHatcheries.lakesdatabase>.

Limnology / Bathymetric Maps and Other Lake Characteristics-Objectives 3-7

Physical and chemical data were collected at 8 stocked lakes during this performance period. A YSI Incorporated ProDSS sonde was used to measure temperature, pH, dissolved oxygen, percent dissolved oxygen, specific conductivity, and total dissolved solids at two stations in each lake. A 1 L sample of lake water was taken above the deepest basin at 0.3 m (1 ft) beneath the surface and later titrated at room temperature to determine total alkalinity. Water clarity was measured using a Secchi disk and air temperature, cloud cover, and precipitation was recorded.

A minimum of two photographs, one from the south shore looking north and one from the north shore looking south, were taken at each of the eight study lakes listed in Tables 1 and 2.

Photographs and bathymetric maps are stored in ALDAT and physical and chemical data are stored in an electronic file at the Fairbanks ADF&G office.

FINAL REPORT STATUS:

This performance report is the final report for these objectives during the grant period. 2017 results have been summarized and are included in an FDS report containing 2014-2017 lake evaluations:

Mansfield, K and A. Behr. *In prep.* Lake evaluations in Region III, 2014-2017. Alaska Department of Fish and Game, Fishery Data Series No. XX-XX, Anchorage.

Sample results for 2018 will be included in an FDS report containing 2018-2019 lake evaluations. This report is scheduled to be finalized in 2020.

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DATE: September 1, 2018.

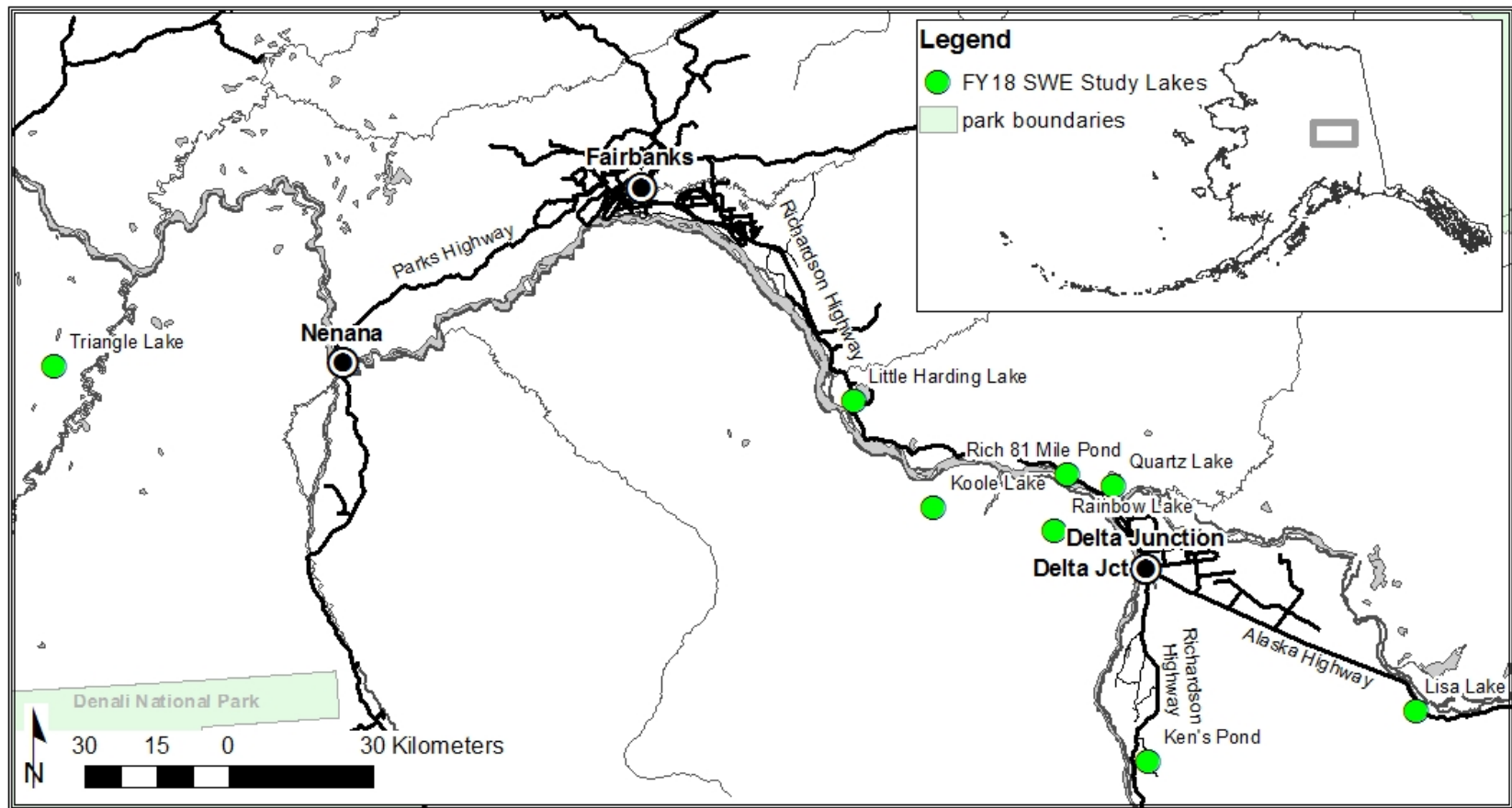


Figure 1.-Stocked lakes sampled for fish population information in FY18 in the Tanana River drainage.

Table 1.-Stocked lakes sampled for fish population information in FY18 during the 2017 field season.

Fishery	Hectare (Acre)	Management Category	Stocking Frequency	Date Sampled	Information Needed
<i>Tanana Management Area</i>					
Ken's Pond	2.5 (6)	Regional	Alt Years	Aug 2017	Length Age
Lisa Lake	18.7 (46)	Regional	Alt Years	Aug 2017	Length Age
Rich 81 Mile Pond	0.9 (2)	Regional	Annual	Aug 2017	Length Age
Triangle Lake	44.1 (109)	Regional	Alt Years	Aug 2017	Length Age

Table 2.-Stocked lakes sampled for fish population information in FY18 during the 2018 field season.

Fishery	Hectare (Acre)	Management Category	Stocking Frequency	Date Sampled	Information Needed
<i>Tanana Management Area</i>					
Koole Lake	85.6 (211.5)	Conservative	Annual	June 2017	Length Age
Little Harding Lake	20.7 (51.2)	Regional	Annual	May 2017	Basic
Quartz Lake	590 (1,457.9)	Regional	Annual	May 2017	Length Age
Rainbow Lake	35 (86.5)	Regional	Alternate	May 2017	Length Age