

STATE OF ALASKA

William A. Egan, Governor



Annual Progress Report for

DISTRIBUTION, ABUNDANCE AND NATURAL
HISTORY OF THE ARCTIC GRAYLING IN
THE TANANA RIVER DRAINAGE

by

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ANNUAL REPORT OF PROGRESS

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Job R-I-E Experimental Stocking of Arctic Grayling.

Objectives

1. To determine the growth and survival of grayling in various lake types.
2. To investigate interspecific and intraspecific competition in the Arctic grayling.

No grayling were stocked in 1971 because the egg take was unsuccessful.

Eight lakes stocked in previous years were test netted to determine survival through the winter of 1970-71 (Table 9). Grayling survived in Otto's Lake, Big Lake, and Engineer Hill Lake, but the capture of only one grayling in Engineer Hill Lake indicates a sharp decline from the previous year. Conditions seem good for survival through the 1971-72 winter in Engineer Hill Lake and also Big Lake, but Otto's Lake was anoxic on March 18, 1972 (Table 10).

Grayling stocked in Bear Lake (Eielson AFB) probably migrated out by way of the inlet. A weir on the inlet and possibly a rehabilitation will be needed before this lake can support grayling.

FAA Pond has good overwintering capabilities but grayling do not seem to compete favorably with existing fish species. The water level in Left O. P. Lake was very low at freezeup and experienced low oxygen (0.4 ppm on March 30, 1971) during the winter. Many dead grayling were seen in the spring. This lake's water level remained low during the summer, 1971, and the lake was completely anoxic on April 6, 1972. Until the water level rises, this lake will probably remain unsuitable. No grayling were captured in Sergeants' Pond or Bailey Pond. Both are old borrow pits containing northern pike, Esox lucius.

<u>Water</u>	<u>Lowest Measured D. O. (ppm)</u>	<u>Date</u>	<u>Fish Captured*</u>	<u>Date Sampled</u>	<u>Length (mm)</u>		<u>Years Stocked</u>
					<u>Range</u>	<u>Mean</u>	
Bailey Pond			1 NP	6/29		475	1968, 1969
Bear Lake	0.5	3/25	2 HWF 5 LCi	6/25	380 - 380 195 - 205	380 200	1970
Big Lake	0.0	3/30	30 GR	5/26	120 - 314	217	1967, 1970
Engineer Hill Lake	0.75	3/25	1 GR 3 SF 11 LC	6/25	290 - 320	230 305 120	1968, 1970
FAA Pond	4.0	4/10	1 NP 1 RWF 2 HWF	7/1	--- --- ---	-- -- --	1970
Left O. P. Lake	0.4	3/30	None	5/26			1967, 1970
Otto's Lake	1.5	4/10	6 GR	7/1	190 - 264	203	1967, 1968 1969, 1970
Sergeants' Pond	0.0	3/18	1 NP	6/29		445	1967, 1970

* NP-Northern Pike
 HWF-Humpback Whitefish
 RWF-Round Whitefish
 LCi-Least Cisco
 GR-Arctic Grayling
 LC-Lake Chub

TABLE 10 Dissolved Oxygen in Grayling Stocked Waters, 1972.

<u>Water</u>	<u>Date</u>	<u>Sample Depth (Ft.)</u>	<u>Dissolved Oxygen (ppm)</u>	<u>Ice Depth (In.)</u>	<u>Snow Depth (In.)</u>	<u>Total Depth (Ft.)*</u>
Big Lake	4/ 6	4	0.6	35	4	7
Engineer Hill Lake	3/15	3 10	6.5 2.5	26	10	10
FAA Pond	3/18	3 15	13.0 1.5	36	16	15
Left O. P. Lake	4/6	5	0.0	30	8	10
Otto's Lake	3/18	5	0.0	48	8	5

*Total depth at sample site.

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