

Spawner abundance of rainbow trout in the Negukthlik River, Togiak National Wildlife Refuge, Alaska, 2004

Abstract: This project estimated the total abundance and potential spawner abundance of rainbow trout *Oncorhynchus mykiss* on the lower eight river miles of the Negukthlik River. A multiple capture event study design consisting of six four-day capture events was employed. Fish were captured, measured, sexed, given unique marks, and released during each capture event. Secondary sexual characteristics were recorded as evidence of spawning. Heterogeneity of capture probability was investigated with RELEASE test 2 and 3 and the model fit functions of program CAPTURE. Population closure was investigated with a chi-square based test for time-specific mark-recapture data. Abundance was estimated using a model incorporating temporal heterogeneity of capture probabilities. A total of 377 unique rainbow trout were sampled during the study. Approximately 20% of fish sampled showed evidence of spawning. Minimum fork length of spawners was 362mm. The estimated total abundance of rainbow trout in the study area was 816 (95% CI = {709 - 958}, SE = 63.19, CV = 7.74) and the estimated abundance of rainbow trout of minimum spawning size was 467 (95% CI = {385 - 592}, SE = 52.20, CV = 11.18).

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