ABSTRACT

Young-of-the-year wild brown trout from four streams and domestic brown trout from Oden Hatchery were stocked in four experimental lakes to determine their relative growth and survival after 2 years of residence in the lakes. Some differences in growth were found, suggesting that these were genetically different strains. Gilchrist Creek trout grew significantly more in length than other strains; however, their weight gain was not significantly greater than that for Pigeon River or Sturgeon River brown trout. The Pigeon River and Sturgeon River trout grew better than Au Sable River or domestic trout. No consistent difference in growth was found between Au Sable River and domestic trout.

A habitat or lake effect on brown trout growth was evident. All trout strains grew best in North Twin Lake and second best in Hemlock Lake. There was little difference in trout growth between South Twin Lake and Ford Lake.

The survival rates of the various wild brown trout strains were similar within lakes but differed among lakes. The survival rates of the hatchery strain of brown trout were only about half those of wild fish.

Study results suggest that the intensity of angler exploitation may alter the genetic potential for growth of wild trout populations. The slower growing Au Sable River trout are believed to be exploited more than Gilchrist Creek trout. However, the reduction in Au Sable brown trout growth which occurred since 1963 is mainly due to reduced fertility caused by reduced input of sewage.