

## Abstract

Harvest levels were calculated for six stocks of Lake Superior lake whitefish using data collected over a 4-year period (1977-1980). Growth rates between stocks did not differ when confidence limits were taken into account. Mean age of the harvested portion of the stocks fluctuated yearly. The only stocks to exhibit a mean age of 1.5 to 2.0 years greater than the mean age of first maturity were in the Keweenaw and Marquette areas. The mean age of first maturity was found to be 5.2 years for all stocks. Total instantaneous mortality rates ranged from 0.37 in the Marquette stock to 0.84 in the Brimley stock. Estimates of optimum yield were made for all stocks utilizing a modified Beverton and Holt model. An optimum instantaneous fishing rate of 0.23 was recommended for all Lake Superior whitefish stocks.

Commercial production of whitefish has averaged over 725,000 pounds during the last 6 years from these stocks. The recommended harvest level for all stocks combined was 573,000 pounds. Decreases in exploitation rates were recommended for the Munising, Whitefish Point, and Brimley stocks while increases were recommended for the Keweenaw, Marquette, and Grand Marais stocks.