Abstract

The experimental walleye-yellow perch community of Jewett Lake was subjected to public angling in 1979-82. The characteristics of the fishery and of the fish populations were monitored and compared to modeled responses.

Fishing quality was on a par with other relatively low-yield coolwater fisheries. Anglers were able to harvest only 1.3-3.8 walleyes per hectare per year, far short of the quota of 7.0 which had been allotted in the model. Exploitation rate was 8.9% and natural mortality was 9-19%. Anglers took 50.5-64.0 perch per hectare per year in 1979-81, but harvest dropped to 11.6 in 1982. Only about 6% of the perch died from fishing, but this rate may have been excessive because natural mortality was very high, 88% per year. Apparently, high mortality of both juvenile and adult perch was due to walleye predation.

Compared to model predictions, rates of walleye fishing and natural mortality were low, resulting in a high standing crop, slow growth, and excessive predation on perch. The perch population was turning over too rapidly but will probably recover as dominant year classes of planted walleyes are gradually replaced by smaller classes of native walleyes. The community could have supported higher densities of planktivors and benthivors.