

Evaluation of the Relative Growth and Survival of Assinica, Nipigon, and Iron River Strains of Brook Trout Stocked into Two Small Inland Lakes

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Abstract.—We stocked fall fingerling Assinica, Iron River, and Nipigon strain brook trout *Salvelinus fontinalis* into two Michigan lakes and estimated the survival and growth of each strain to age 4. Survival of the Assinica and Iron River strains from stocking to age 4 was similar in East Fish Lake. First-year survival of Nipigon strain brook trout in East Fish Lake was only 4% as compared to 24% for Assinica strain and 18% for Iron River strain. Survival of all three strains after age 1 was similar, averaging 52% per year through age 4. In Fuller Pond, Iron River strain brook trout survived better than the Assinica strain the first year but by age 4 numbers of both strains were similar. Nipigon strain survival, as estimated from electrofishing and netting catches, was very low in Fuller Pond. Both Assinica and Iron River strain fish were slightly larger than the Nipigon strain when they were stocked in fall 2004. One year later Assinica strain fish were larger than fish from either of the other strains. By two years after stocking the lengths and weights of Assinica and Nipigon strain brook trout were similar and both strains were larger than the Iron River strain. By the end of the study Iron River strain brook trout were substantially smaller than either of the other two strains. The Assinica brook trout strain appears to be the most suitable of the three strains tested for Michigan trout lake management.

The Michigan Department of Natural Resources (DNR) currently stocks a total of approximately 240,000 brook trout *Salvelinus fontinalis* into inland lakes and streams on an annual basis, primarily in Michigan's Upper Peninsula (DNR fish stocking records 2008). While hatchery-produced brook trout have been stocked for many years to augment wild populations in streams where natural recruitment is insufficient to maintain desirable fisheries, the stocking of approximately 75 inland lakes provides both put-grow-take brook trout fisheries and trophy angling opportunities. Michigan has historically reared many different strains of brook trout based upon availability of eggs and broodstock. Some strains have been reared and stocked for short periods of time to assess survival and growth of strains that had produced good angler fisheries in other states.

Currently two brook trout strains, Assinica and Iron River, are stocked by the DNR. The Assinica strain is generally regarded as being genetically adapted to perform well in lakes. The original broodstock were collected from Assinica Lake in Quebec, and Michigan developed its first Assinica strain broodstock from gametes obtained from the State of New York in the 1970s. Michigan has continued to rear and stock the Assinica strain for waters where a larger-sized fish is targeted for harvest and thus attributes of fast growth and greater-than-usual longevity are needed. This strain is primarily stocked into small inland lakes, although some streams are stocked with Assinica strain brook trout when managers desire fish that are relatively large at the time they are stocked. In past

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