

**Catch and Mortality of Non-Target Species in Lake Whitefish Trap  
Nets in Michigan Waters of Lake Superior**

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*Abstract.*—Trap nets have been promoted as an efficient means for harvesting lake whitefish *Coregonus clupeaformis* in the Great Lakes while limiting mortality to other (non-target) species. All state-licensed fisheries for lake whitefish in Michigan waters of Lake Superior use trap nets. During 1983-1989, these fisheries were sampled annually to estimate catch and mortality of non-target species. The samples represented 9% of the total trap-net effort by these fisheries. Non-target fishes killed annually by state-licensed trap nets in Michigan waters of Lake Superior, with mean annual catch in parentheses, were estimated as: 131 (19,721) sublegal lake whitefish, 414 (11,341) lake trout *Salvelinus namaycush*, 26 (37) coho salmon *Oncorhynchus kisutch*, 6 (15) chinook salmon *O. tshawytscha*, 6 (11) rainbow trout *O. mykiss*, 12 (55) brown trout *Salmo trutta*, 41 (143) lake herring *Coregonus artedii*, 39 (67) round whitefish *Prosopium cylindraceum*, and 0 (48) lake sturgeon *Acipenser fulvescens*. All dead fish were gilled in the pot portion of trap nets. The only non-fish species observed in trap nets was the common loon *Gavia immer*. The estimated annual catch of common loon was 263, with 86% of these caught in trap-net hearts. The mortality rate for loons in trap nets was 100%. No modifications of trap nets or fishing restrictions were recommended to reduce catch and mortality of non-target fishes in Lake Superior. However, we recommend that mesh size in the top of the hearts be increased to 14-in stretch mesh to reduce catch and mortality of common loons.

The lake whitefish *Coregonus clupeaformis* has been the most important commercial species in Michigan waters of Lake Superior for more than a decade. Lake whitefish catch and effort have increased since the 1960's for traditionally exploited stocks (Rakoczy 1983), and exploitation of new stocks is planned or already started under research permits issued by the Michigan Department of Natural Resources (MDNR). Fisheries for other species such as lake trout *Salvelinus namaycush*, lake herring

*Coregonus artedii*, or chubs *Coregonus* spp. have either been closed by regulation or greatly reduced by depressed markets.

MDNR has been concerned with mortality of non-target species, particularly lake trout, in all of its state-licensed fisheries. Assessment of incidental catch of trout and salmon in gill nets during the late 1960's indicated that use of this gear to harvest lake whitefish would greatly hinder efforts to rehabilitate lake trout populations and develop sport fisheries in Michigan waters.