ABSTRACT

During 1984 and 1985, to help assess the effectiveness of restrictive fishing regulations on lake trout stocks, lake trout hooking mortality was measured in lakes Michigan, Huron, and Superior. Fish were collected by charter boat operators and sport fishermen. Short-term mortality was measured using an aerated, chilled tank system on board the boat. Long-term mortality was estimated by returning hooked fish back into the water, tethered to a line-buoy system. Overall hooking mortality was determined to be 14.9%. Significantly higher mortalities were noted in fish not immediately discovered to have been hooked. In addition, lake trout hooked in internal regions produced a mortality of 71.4% while those hooked in the upper or lower jaw exhibited a mortality of only 6.9%. A significant difference was also seen in the mortality between length classes of fish, with the smallest size class producing the highest mortality. The depth from which the fish was caught, the temperature differential from this depth to the surface, gear type, and handling times had no significant effect on survival. These results appear to support the use of size limits, creel limits, and season restrictions as effective methods to reduce sport harvest of lake trout.