

IDENTIFYING LAKE TROUT SPAWNING LOCATIONS IN SWAN LAKE, MONTANA

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Knowledge of spawning locations is critical to the management of invasive lake trout (*Salvelinus namaycush*) populations by providing areas to efficiently target sexually mature fish. In Swan Lake, Montana spawning locations were identified using acoustic telemetry, short-set gill nets, and in-situ egg nets. Telemetry locations were recorded manually after dark with a directional hydrophone from mid-October to mid-November in 2007 and 2008. Two primary sites were identified as potential spawning areas based on kernel-density analysis of 2007 telemetry locations. In 2008, 30 in-situ egg nets were buried by SCUBA divers at each of the 2007 locations to confirm egg deposition. One gill net (274.2 m long X 2.4 m deep with 5.08-cm bar mesh) was set at each primary spawning location once weekly through the tracking period in 2008 to confirm the presence of ripe lake trout and to explore the efficacy of targeting adult lake trout for removal at these locations. Kernel-density analysis of telemetry data identified the same primary spawning locations in 2008. Catch per unit effort of adult lake trout was > 4 times greater at these locations versus lake-wide gill netting. Egg density varied from 38 eggs/m² to 114 eggs/m² at the two spawning locations. Lake trout spawning locations were confirmed in Swan Lake, Montana. We recommend targeting these areas as an effective option for removing adult fish from the population.