Seasonal And Diel Distribution Of Lake Trout In Lake Mcdonald, Glacier National Park[AFS]

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Bull trout have suffered a dramatic population decline since the establishment of non-native lake trout in Lake McDonald, Glacier National Park (GNP). In an attempt to prevent further decline of this population, GNP is considering implementing a lake trout suppression program. We used ultrasonic telemetry to examine the spatial and temporal distribution of lake trout, thus providing information critical to developing a successful suppression program. We relocated 36 lake trout 1137 times from June through November 2003 and March through November 2004. Tracking was conducted at all times during a 24-h period. Lake trout total length varied from 508-859 mm and averaged 629 mm (SE = 13.1). Mean depth of lake trout was shallowest (14.0 m, SE = 2.2) in May and deepest (25.2 m, SE = 1.03) in September.

Mean depth increased from May through September a thermal stratification became more pronounced. During stratification, lake trout occupied depths in the thermocline and upper hypolimnion where temperatures varied from 6-12 C and dissolved oxygen levels were ~9-12 mg/L. Additionally, lake trout were found in the pelagic zone more frequently during stratification than in spring and autumn. Spawning commenced in late-October (water temperature <11 C), and lake trout aggregated in shoreline habitats with clean cobble and rubble substrates. Mean fish depth during spawning was 16.1 m (S = 1.4). These data illustrate patterns in the spatial and temporal distribution of lake trout and will be useful for