Life-history Characterstics of an Adfluvial Population of Bull Trout in a Northern Idaho Stream[AFS]

Christopher C. Downs
Idaho Department of Fish and Game
1402 E. Spring Creek Rd., Clark Fork, ID 83811
cdowns@sandpoint.net

Robert Jakubowski
Avista Corporation
P.O. Box 1463, Noxon, MT 59853
jak@sandpoint.net

We utilized a rotary screw trap and weirs to capture migrating bull trout (*Salvelinus confluentus*) in Trestle Creek, Idaho, from 2000 through 2002, in order to estimate their abundance, understand basic life-history characteristics, and to evaluate survival rates in the tributary and lake environment. Age-0 outmigrants accounted for greater than 85 percent of the total annual catch of juvenile bull trout in Trestle Creek in all years. We believe this is largely due to density-dependent competition for rearing habitat, rather than a successful life-history strategy. Age-2 and age-3 outmigrants accounted for the majority of the outmigration of age-1 and older juveniles. We estimated 1276, 1094, and 1147 age-1 and older juvenile bull trout outmigrated from Trestle Creek in 2000, 2001, and 2002, respectively. Annual outmigration of juvenile bull trout occurred primarily at night in two pulses, one occurring in the spring and the other in the fall. The median distance moved downstream per night by juveniles captured in the fall was 315 m (n = 40) and 295 m (n = 17), in 2001 and 2002, respectively. Adult bull trout also migrated primarily at night, with 92 percent of the detections (n = 631) at the PIT tag weir in 2001 and 2002 occurring between sunset and sunrise. Of those PIT tagged adults marked in 2000 that returned to spawn in either 2001 or 2002, 92.6 percent (n = 224) returned annually versus 7.4 percent (n = 18) returning in alternate years. We detected a total of 224 of the 393 (56.9%) adult bull trout originally marked in Trestle Creek in 2000, in Trestle Creek in 2001. Based on juvenile outmigration and adult escapement data, we speculate juvenile rearing habitat currently represents a population bottleneck in Trestle Creek. We marked 889 outmigrating juvenile bull trout with PIT tags and will be using their return to estimate lake survival over the next several years.