

Migration patterns and spawning site selection by Virginia Lake sockeye salmon and final conclusions for fishery management

Abstract: Some populations of Pacific salmon travel great distances to spawn, and successful migration through lotic corridors is paramount to the perpetuation of a given stock. Virginia Lake sockeye salmon migrate 1.2 km up Mill Creek to reach upstream spawning grounds where they were believed to be primarily tributary spawners. In addition, recent escapement data suggest a dramatic population decline over the last 10 years. To better understand the biology and dynamics of this stock, 100 adult sockeye salmon were tagged with esophageal-implant radio transmitters across the breadth of their run from 22 July to 5 September 2003. Fish were tagged in Mill Creek and followed through their migration into Virginia Lake and to subsequent spawning areas. Seventy-eight of the tagged fish successfully migrated into Virginia Lake but took an average of 4.1 days to travel through Mill Creek. Fish entering the system after 9 August were only moderately successful at migrating into Virginia Lake. Of the fish tracked through the season, approximately 60% appeared to spawn in a localized portion of the northeast section of the lake and approximately 15% were divided between the lower reaches of Porterfield and Glacier Creeks.

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