

ABSTRACT

Radiotelemetry methods were used to determine steelhead *Oncorhynchus mykiss* spawning locations, stock-specific run timing profiles, overwintering areas, and the magnitude of the total return to the Upper Copper River (tributaries north of the Chugach Mountains). Steelhead were captured with fish wheels and dip nets in the mainstem Copper River below Wood Canyon. A total of 53 steelhead were fitted with radio tags in the fall of 2005 and 42 were fitted in the fall of 2006. Radio-tagged fish were tracked using a combination of ground-based receiving stations and aerial tracking techniques. Overwintering areas included their natal rivers such as the Gulkana and Hanagita Rivers, the Tazlina Lake outlet, and the turbid mainstems of the Copper, Chitina, and Tazlina rivers. Steelhead in the Upper Copper River spawned in the Gulkana, Tazlina, and Chitina river drainages. The estimated proportion of steelhead spawning in the Dickey and Hanagita lake spawning areas was 0.08 (SE=0.06) in 2006 and 0.22 (0.09) in 2007. Based on stock assessment work in these two areas conducted in previous years, the total run of steelhead in the Upper Copper River drainage is likely within the range of 1,000–45,000. The large range reflects a large annual variation in the proportion spawning in these areas, and poor precision of the annual estimates. The estimated spawning proportions by drainage in 2006 were 0.54 (SE=0.11) for the Tazlina, 0.14 (SE=0.07) for the Chitina, and 0.31 (SE=0.10) for the Gulkana. In 2007, the estimated spawning proportions by drainage were 0.39 (SE=0.10) for the Tazlina, 0.38 (SE=0.11) for the Chitina, and 0.22 (SE=0.09) for the Gulkana. In 2005, the mean date of passage past the capture site was 22 September for steelhead bound for the Tazlina drainage and 24 September for steelhead bound for the Chitina and Gulkana drainages. In 2006, the mean date of passage past the capture site was 25 August, 23 August, and 18 August for steelhead bound for the Tazlina, Chitina, and Gulkana drainages, respectively. Outmigration dates from the Tazlina, Gulkana, and Chitina rivers ranged from 20 May to 24 June in 2006 and 4 May to 20 June in 2007.

Savereide, J. W. 2008. Relative abundance, migratory timing, and overwintering and spawning distribution of steelhead in the Copper River Drainage. Alaska Department of Fish and Game, Fishery Data Series No. 08-56, Anchorage.