

ABSTRACT

This study was initiated to expand our understanding of spawning locations, seasonal distribution, and movements of sheefish or inconnu *Stenodus leucichthys* in the Kuskokwim River drainage. During late summer/early fall 2007 and late spring 2008, 119 sheefish were captured throughout the Kuskokwim River drainage and surgically implanted with radio transmitters. Radio-tagged sheefish were tracked using a combination of 8 stationary receiving stations and 3 aerial tracking flights that were conducted annually during July, late September, and mid-October. Through fall 2009, 52 radio-tagged sheefish travelled to 3 spawning areas. The majority travelled to a 7 km section within the Big River, where spawning activity had been previously documented. Much smaller proportions migrated to areas on the Middle and Slow Forks of the Kuskokwim River, previously undocumented for spawning activity. Migratory timing profiles illustrated that sheefish arrived at their spawning areas during late July through mid-September and spawned during late September through early October. Post-spawning outmigration occurred during a 1 to 1.5 week period in mid-October. The majority of sheefish, spawners and non-spawners, migrated downstream to the Lower Kuskokwim River to overwinter. A much smaller proportion of sheefish overwintered in the middle to upper portions of the Kuskokwim River drainage. During the summer, sheefish traveled to and between mouths of major Kuskokwim River tributaries to feed on outmigrating salmon smolt and other species of fish. We will continue to track the radio-tagged sheefish in 2010 and 2011 and to document spawning locations, monitor migrations, and identify summer feeding areas.

Key words: Kuskokwim River, Holitna River, Big River, Middle Fork, aerial tracking flight, sheefish, seasonal movements, spawning areas, *Stenodus Leucichthys*, radio transmitter, stationary receiving stations.

Stuby, L. 2010. Spawning locations, seasonal distribution, and migratory timing of Kuskokwim River sheefish using radiotelemetry, 2007-2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-47, Anchorage.