## ABSTRACT

This study was initiated in 2007 to expand our understanding of spawning locations, seasonal distribution, and movements of sheefish or inconnu *Stenodus leucichthys* in the Kuskokwim River drainage. Radio transmitters were surgically implanted into sheefish during 2007 (9) and 2008 (110), and are expected to transmit throughout 2011. The project was originally funded through 2009, but the Office of Subsistence Management provided funding for a 2-year project extension to maximize information gathered from these fish. Radio-tagged sheefish were tracked using a combination of 7 stationary tracking stations and 3 aerial tracking flights that were conducted during July, late September, and mid-October. During fall 2010, 30 radio-tagged sheefish migrated to 3 spawning areas. The majority (24) were located in a 20 km section within the Big River where spawning activity had been previously documented. Much smaller numbers migrated to areas on the Middle and East Forks of the Kuskokwim River, areas previously undocumented for spawning activity. Similar to previous years, 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 number of sheefish overwintered in the Holitna River. 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. An attempt was made to sample sheefish at the Big River and mouth of Highpower Creek in mid-September to verify the spawning readiness (condition) of sheefish in these implied spawning areas. Due to record high temperatures, we were unsuccessful at capturing sheefish; however, basic environmental and habitat data were recorded and compared with other studies in Alaska and Canada. The radio-tagged sheefish will continue to be tracked during 2011.



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