

ASSESSING GPS RADIOTELEMETRY RELIABILITY IN COUGAR HABITAT

TRISH GRISWOLD

JAMES BRIGGS

GARY KOEHLER

STUDENTS AT CLE ELUM-ROSLYN SCHOOL DISTRICT, Cle Elum, Washington

Abstract: Studies evaluating the effectiveness of GPS radiotelemetry have shown that the positional accuracy and rate of GPS fixes declines with increased forest canopy coverage (D'Eon, Serrouya, Smith, and Kochanny, 2002. Wildlife Society Bulletin, 30(2):430-439). Since GPS collars are being used to mark and monitor cougars (*Puma concolor*; Koehler and Nelson, 7th Mountain Lion Workshop), students, faculty, and volunteers at the Cle Elum-Roslyn Middle School, Washington, tested GPS location accuracy as part of Project CAT (Cougars and Teaching). We fitted domestic dogs (*Canis familiaris*) with the same GPS collars used to mark cougars and locational accuracy was measured in areas of known cougar habitat. GPS fixes were recorded and compared with UTM coordinates obtained from hand-held GPS receivers and 7.5-minute topographic maps. Environmental factors, vegetation types, and physiographic parameters were recorded. It was felt that the dogs would closely approximate cougar movement patterns and give an index of reliability of GPS fixes for free-ranging cougars. While previous studies have addressed the reliability of GPS collar fixes, none have tested reliability of data collected in the rapidly suburbanizing ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*) forests of the eastern Cascade Mountains. This project gives the middle school students an opportunity to participate in the school-wide educational effort of cougar ecology. Students proposed and tested hypotheses and analyzed the data.