Assessing Grizzly Bear Population Status At An Ecosystem Scale[TWS]

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We describe preliminary results from a 2004 study to estimate the size and describe distribution of the grizzly bear (*Ursus arctos*) population from hair samples found on 31,400 km2 (7.75 million ac) in northwestern Montana. Microsatellite analysis of the hair will be used to identify individual bears for use in a mark-recapture population model. We employed two methods concurrently to sample bear hair. We used a 7x7-km grid to systematically distribute 2564 baited hair snag stations. The second approach included repeated hair collection visits to a network of 4750 bear rub trees, sign and fence posts, and power poles along trails and roads. No lure was used to attract bears to rub objects. During 4- to 14-day capture sessions, we collected 20,782 hair samples from baited sites. Collections from rub objects yielded 12,906 hair samples. Extensive fieldwork and logistical planning were required the previous year to prepare for the large sampling effort. Dedicated quality assurance staff worked with field crews to ensure consistent application of field protocols. We describe strategies for working at large scale, such as that 1) methods of coordinating

activities among the federal, state, tribal, and private entities involved with an ecosystem-scale project, and 2) procedures used during data collection and genetic analysis prevent, detect, and/or correct errors. We also discussed challenges and recommendations for directing 200 widely dispersed field employees and conducting fieldwork on extensive tracts of private property in remote areas where communication is often limited.