Detecting Canada Lynx in Glacier National Park, Montana [TWS]

Steve Gniadek, Amy Edmonds and Rick Yates
USDI National Park Service, Glacier National Park, West Glacier, MT 59936

Katherine Kendall
USGS, Glacier Field Station, Glacier National Park, West Glacier, MT 59936

Historic records of Canada lynx (*Lynx canadensis*) sightings and tracks in Glacier

National Park were summarized in 1994. A pilot snow-track survey for forest carnivores was also begun in 1994, and winter track surveys have been repeated annually since then, supplemented with a few remote camera stations. These surveys and anecdotal reports provided useful information on the distribution of lynx in the park, but little information on the status of the lynx population. Initial efforts to apply emerging detection techniques using DNA analysis of hair samples were undertaken during the late summer of 1999. A 100 mi^2 (259 km^2) area in the North Fork drainage, 86 percent in the park, was sampled using the protocol developed by John Weaver. No lynx were detected during this survey of a remote area with few previous lynx track records. During summer/fall 2000, we tested the USFS National Lynx Detection Protocol (NLDP) (KcKelvey et al. 1999) to 1) determine its effectiveness in the variety of habitats and topography that characterize the park, 2) assess the feasibility of conducting surveys with dense sympatric populations of grizzly bears and black bears, 3) obtain a minimum population estimate and additional information on lynx distribution, and 4) compare the systematic positioning of transects to a subjective approach to detection station placement. Using the NLDP, we established 87 transects with 433 stations in 3 study areas in Glacier National Park. This sampling effort yielded 76 hair samples: 8 lynx, 2 bobcat, 3 grizzly bear, 47 black bear, and other samples not yet identified to species. Five of the 6 lynx samples analyzed to individual to date were unique individuals. All lynx were detected in mixed conifer-aspen-meadow and treeline habitats; none were detected in the continuous coniferous forest habitats sampled. Twenty-nine percent of stations were disturbed (primarily by wind, bears, and/or elk), and at 13 percent of stations the visual lure was removed by the end of the sampling period. Twenty transects with 100 stations were placed subjectively in areas sampled with the NLDP. Three hair samples were collected from these stations, of which 2 were lynx – a comparable rate per station to the NLDP. These methods were successful in detecting lynx in areas where they were known to occur.