Hair Snaring and DNA Identification [TWS]

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In 1999 we developed and implemented a nationwide survey for lynx based on DNA identification of hair. In 1999 over 6000 hair snares were placed in 40 National Forests, and 1 National Park. In 2000 we expanded efforts to 44 National Forests, 3 National Parks, and the Salish-Kootenai Nation; over 7500 hair snares. We tested the efficacy of baited hair-snares, developed DNA primers to separate felids, ursids, canids, and mustelids and designed a protocol that could be implemented consistently by Forest Service employees and contractors across the US. Hair snaring proved effective for surveying lynx. In Kulane N.P., Yukon, a mixture of beavor castorium and catnip oil was twice as effective as 4 other lures tested. Lynx hair was found on 39 percent of the snares baited with this lure. For species-level identification, published mitochondrial DNA primers proved unreliable for amplifying DNA from hair samples. We therefore developed primers that amplified shorter sequences within the D-loop region of the cytochrome b gene, allowing positive identification of felids from very small samples. Surveys were designed to representatively sample relatively large areas while maintaining high probabilities of detection, and four "test" areas with known lynx populations were included to estimate probabilities of detection. In the first year, we obtained over 600 hair samples from the initial survey. While the 2000 samples have not been fully analyzed, we have documented lynx occurrence on 2 areas in northern Washington, in the Seeley Lake area of Montana, the east side of Glacier National Park, and in the Boise and Shoshone National forests. Additionally we identified a Eurasian lynx in the Ashley National Forest.