ENDEAVOR WILDLIFE RESEARCH FOUNDATION

THE GREATER YELLOWSTONE LYNX STUDY
2004/2005 ANNUAL REPORT

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Introduction

Canada lynx (*Lynx canadensis*) were officially listed in March 2000 as a threatened species in the contiguous United States under the Endangered Species Act in response to "lack of adequate management and regulatory mechanisms in national forest plans" to protect this native North American cat (U.S. Fish and Wildlife Service 2000). During winter 2003/04, biologists found probable lynx tracks on the Bridger-Teton National Forest (B-TNF) in Wyoming on three occasions (N. Berg, B. Gathercole, and S. Patla, pers. obs). Due to potential implications of lynx presence or absence in existing habitats, we found it critical that further study of this forest carnivore be conducted to assess its current status in the southern portion of the Greater Yellowstone Ecosystem (GYE).

Many find the Canada lynx to be of particular interest due to its elusive nature, close association with snowshoe hares, and unique physical adaptations to its environment (Murphy et al. 2004). The Canada lynx is an indicator of human influence on habitat due to its limited distribution in the contiguous 48 states and association with specific environmental parameters (Murphy et al. 2004). Assessing the presence of lynx is an essential part of determining the health of the southern GYE (Zielinski and Kucera 1995).

Lynx were present in Wyoming both prehistorically (Kurten and Anderson 1980) and historically (McKelvey et al. 1999). Lynx presence in Wyoming was most recently documented in the Wyoming Range in 2001 (Squires et al. 2003), and in Yellowstone National Park in 2004 (Murphy et al. 2004). Despite search efforts, no evidence of lynx was found during winter 2002 in the Wyoming Range (Squires et al. 2003), leading some to question whether this threatened species still remained on the Bridger-Teton National Forest (B. Oakleaf pers. obs).

Inventory and population trend data are critically important in determining and avoiding the negative effects on wildlife that may be associated with forest management or human development actions, and in determining those actions having positive effects. We formally initiated the Greater Yellowstone Lynx Study on the B-TNF during winter 2004/05, in order to provide decision-makers with current information concerning Canada lynx in this region. We hope to support joint conservation planning efforts among federal and state agencies.

Study Area

The study area for the Greater Yellowstone Lynx Study encompasses the Bridger-Teton National Forest in the southern Greater Yellowstone Ecosystem, and includes parts of the Teton and Gros Ventre Wilderness Areas. The terrain is mountainous, with elevations ranging from 6,800 ft to greater than 10,000 ft. Trees found in mixed conifer forests throughout the study area include subalpine fir (*Abies lasiocarpa*), Engelmann spruce (*Picea engelmannii*), lodgepole pine (*Pinus contorta*), whitebark pine (*Pinus albicaulis*), Douglas-fir (*Pseudotsuga menziesii*), and quaking aspen (*Populus tremuloides*) (Squires et al. 2003). Sage-grasslands and willow-wetland communities also exist throughout the study area. Wet or seasonally moist areas are typically dominated by subalpine fir and

Engelmann spruce, while drier sites are dominated by lodgepole pine; however, spruce-fir forests are often co-dominant with lodgepole pine (Squires et al. 2003). For our own tracking and organizational purposes, we divided the B-TNF into 5 geographic areas, including Togwotee Pass, Gros Ventre, Wind River, Salt River, and Wyoming Range/Hoback Rim Sectors.

Study Objectives

The primary objective of the Greater Yellowstone Lynx Study is to document the occurrence, distribution, and demographic characteristics of lynx in the B-TNF 2004-2008. A second objective is to combine information from past lynx research with our current data to further design and evaluate a standardized survey methodology that will be applicable in future surveys elsewhere in the Yellowstone Ecosystem. A third objective is to use this initial study to determine whether a future capture effort is feasible and/or needed.

Methods

We patterned the methods for our preliminary 2004/05 field season after those developed for the Yellowstone National Park Lynx Project (Murphy et al. 2004). The methods listed below will be adjusted and more thoroughly executed in future winters as we learn more about Canada lynx and their ecology specific to the B-TNF study area. Rather than attempt to apportion survey efforts equally throughout the study area, we focused on areas of recent lynx sighting reports, prime potential habitat (PPH), and past research in the study area conducted by Wyoming Game and Fish Department (WGFD) and the US Forest Service Rocky Mountain Research Station (RMRS).

Identifying Prime Lynx Habitat---We used GIS and remote sensing-based analyses in addition to scientific literature (Sullivan and Sullivan 1988, Koehler 1990, Mowat et al. 1999) to identify habitats such as Engelmann spruce-subalpine fir, lodgepole pine, and moist Douglas fir forests which have the highest potential to support snowshoe hares and lynx. Our snow tracking, hair-snare, and prey-based surveys were concentrated in these PPHs.

Ski-based snow tracking surveys---Canada lynx were documented during ski- or snowshoe-based surveys for tracks, bed sites, hairs, and scats. Track surveys were focused in areas with higher PPHs to promote the likelihood of encountering lynx tracks and/or sign.

Surveys were classified as "formal" or "informal," depending on the type of data being collected and amount of time elapsed since the most recent snowfall. Formal data collected included information regarding Canada lynx tracks and their prey (snowshoe hares, red squirrels, grouse, etc.). Data associated with forest cover types and the local snow tracking conditions were also collected. Formal surveys were always conducted along designated transect lines. Formal surveys were initiated between 12 and 24 hours after a snow event, thus allowing for only tracks made within the last 24 hours to be included in the survey. The 24-hour rule also limited counts to a short, standardized time frame. The minimum12-hour rule allowed for sufficient animal movement and track accumulation following a snow event. We initiated informal surveys when the 12-24 hour rule precluded us from conducting a formal survey. During winter 2004/05, we primarily conducted informal surveys to maximize search efforts in areas where lynx tracks were found during the previous winter, sightings had been reported, or in areas of high PPH.

Snowmobile-based snow tracking surveys---We often used snowmobiles to maximize the geographic coverage of our snow tracking effort when conducting formal and informal surveys. Snowmobiles were utilized both on and off groomed trails, similar to the technique used in YNP to monitor Canada lynx (K. Murphy, pers. comm.).

Air-based snow tracking surveys---On one occasion an airplane was used to survey northern portions of our study area for Canada lynx tracks and to investigate unexplored potential habitat. This technique was successfully used to detect lynx tracks in YNP (Murphy et al. 2004). The flight occurred at least 24 hours after a new snowfall, mainly over areas that were too remote to visit using other techniques, or where snowmobiling was not permitted. In addition to the pilot, two experienced observers were present to document findings.

Documenting carnivore sign---Upon detection of Canada lynx tracks and/or sign we recorded habitat characteristics, local environmental conditions, prey sign, and Universal Transverse Mercator (UTM) location. Measurements of all possible sets of lynx tracks were taken, including stride, straddle, and track length and width. Photographs of all tracks were taken, and when possible plaster casts of tracks were made. Canada lynx tracks were classified as "definite, probable, or possible" depending on snow tracking conditions, track details and characteristics, and verification of DNA tests from biological collected samples. Biological samples are hair, scats, or urine, which we preserved in vials with desiccant (urine was frozen) for genetic identification (Mills et al. 2000) at the Carnivore Conservation Genetics Laboratory, University of Montana, Missoula.

Track identification training---EWR biologists and technicians received twelve hours of classroom training and 6 hours of field training from Dr. James Halfpenny in December 2004, relating to track and sign identification of Canada lynx. Portions of this class also focused on proper handling of samples and data collection techniques. In January 2005, EWR provided a hands-on training course on Canada lynx track identification and field protocol to all parties participating in our 2004/05 winter field season.

Camera-based detection of forest carnivores---During winter 2004/05, three camera stations were deployed at opportunistically selected sites (previous sightings had occurred in these areas) in the Togwotee Pass and Wyoming Range/Hoback Rim Sectors to detect possible Canada lynx. The success of these stations was evaluated to determine the potential for continued use in other areas. Camera stations were constructed near visual (pie tins) and olfactory (beaver castorium, and catnip) attractants. Olfactory attractants were also associated with hair snares (see below). Infrared beams from cameras were placed at approximately chest height of an average Canada lynx. Photographs were taken when an animal disrupted the beams while investigating one of the attractants. Stations were investigated by biologists every 2-4 weeks to replace film, search for lynx tracks, and collect any biological samples from hair snares.

Hair-snare surveys---Hair snares were used to detect Canada lynx presence in a localized section of the Wyoming Range/Hoback Rim Sector. We followed the National Lynx Detection Protocol (NLDP) guidelines for constructing snares and attractants (McKelvey et al. 1999), but had only one transect with opportunistically-placed stations rather than the recommended 25 minimum transects with stations at 100 m intervals. Our transect consisted of 6 stations subjectively chosen to increase the probability of detecting Canada lynx, based on higher PPH and history of previous lynx sightings. Stations were deployed for a four-week period.

Canada lynx sightings and follow-up investigations of tracks---To facilitate our ability to investigate the areas in the B-TNF with the greatest likelihood of encountering Canada lynx and/or sign, we designed information posters and distributed them throughout the study area. The posters gave detailed descriptions of Canada lynx and their track characteristics. They also included contact information for EWR and local collaborating agencies for reporting of potential tracks and/or sightings. We investigated any reports by directly contacting individuals involved and, when possible visiting locations where tracks and sightings occurred, to attempt to document tracks and collect biological samples. We also utilized articles in local newspapers and interviews with local radio stations to request information regarding Canada lynx sightings.

Results

Ski-based snow tracking effort---During winter 2004/05, we logged 13 formal ski- or snowshoe-based snow tracking surveys totaling 26 miles; individual survey distances ranged from 0.4-8 miles. We completed 27 informal ski- or snowshoe-based snow tracking surveys totaling 110 miles; individual informal survey distances ranged from 0.4-10 miles. Combined formal and informal surveys totaled 136 miles. Snow was of high enough quality during surveys to consistently reveal distinguishing animal track characteristics. Surveys were conducted during optimal snow conditions within PPH.

Snowmobile-based snow tracking effort---During winter 2004/05, we completed 3 formal snowmobile-based snow tracking surveys ranging from 2-16 miles long and totaling approximately 20 miles, and 105 informal snowmobile-based surveys totaling approximately 3,200 miles. Informal snowmobile-based snow tracking allowed us to survey relatively large geographic areas in a short time period. This method proved to be the most effective means of detecting Canada lynx during our first field season.

Aircraft-based snow tracking effort---One airplane-based snow tracking survey was completed over the Togwotee Pass, Wind River, and Gros Ventre Sectors, totaling approximately 60 miles; no lynx were detected during this survey.

Camera-based detection effort---We accumulated 180 total camera nights from 3 camera stations deployed near snowmobile and ski trails in the Togwotee Pass and Wyoming Range/Hoback Rim Sectors during winter 2004/05. Cameras detected snowshoe hare, American marten (*Martes americana*), and moose (*Alces alces*). One set of lynx tracks traveled directly towards and came within 15 meters of one camera station before abruptly changing course; this lynx was not detected on film. In addition, one bobcat left tracks under one of the camera station lures, but was not detected on film.

Hair-snare-based detection effort---We deployed and periodically revisited one "subjective" hair-snare transect consisting of 6 stations in the Wyoming Range/Hoback Rim Sector during winter 2004/05. We collected one hair sample, which did not amplify to species. Our hair-snare effort was very limited and deviated from standard NLDP.

Canada lynx detections---During winter 2003/04, we made four probable Canada lynx detections, including two independent sets of tracks in the Gros Ventre Sector, one set of tracks in the Togwotee Pass Sector, and one possible set of adult tracks with two kittens in the Wyoming Range/Hoback Rim Sector. Based on track, stride, and straddle measurements and geographic location we suspect that 4-5 Canada lynx were detected during winter 2003/04.

During winter 2004/05, we made twelve definite (DNA-based) Canada lynx detections; seven detections were in the Togwotee Pass Sector, four were in the Wyoming Range/Hoback Rim Sector, and one was in the Wind River Sector. Six of the twelve definite (DNA-based) Canada lynx detections amplified to two unique Wyoming individuals. One male lynx (YNP/FlagstaffM1) was documented on three occasions (12/20/04, 3/19/05, and 3/23/05) in the Togwotee Pass Sector. A second male lynx (WyomingRangeM1) was documented on two occasions (3/4/05 and 3/5/05) in the Wyoming Range/Hoback Rim Sector and a third time (3/23/05) in the Wind River Sector.

We suspect three of the remaining six definite (DNA-based) Canada lynx detections that did not amplify to individual may have been YNP/Flagstaff M1 and one may have been WyomingRangeM1 based on location, dates where samples were collected, and track measurements. Based on track, stride, and straddle measurements we suspect that the remaining two definite (DNA-based) detections that did not amplify to individual may have represented 1-2 separate individuals in the Wyoming Range/Hoback Rim Sector.

In addition to the twelve definite (DNA-based) detections on the B-TNF and Shoshone National Forest (SNF) during winter 2004/05, we documented eight probable lynx tracks and two possible lynx tracks in the Togwotee Pass Sector, one probable lynx track and one possible lynx track in the Wyoming Range/Hoback Rim Sector, and one possible lynx track in the Gros Ventre Sector. Based on locations and track measurements, we suspect these thirteen additional track detections (not DNA-based) may represent 1-3 additional lynx (1-2 in the Togwotee Pass Sector and 1 in the Gros Ventre Sector).

We conclude that as many as 2-7 individuals were represented in the 25 combined DNA- and non-DNA-based Canada lynx track detections recorded during winter 2004/05. We believe there may have been at least 2 lynx in the Togwotee Pass Sector and 2 lynx in the Wyoming Range/Hoback Rim Sector. One of the lynx from the Wyoming Range/Hoback Rim Sector also spent time in the Wind River Sector (WyomingRangeM1).

Canada lynx food habits---While backtracking we found prey killed and consumed by lynx, including five snowshoe hares, four red squirrels (*Tamiasciurus hudsonicus*), one ruffed grouse (*Bonasa umbellus*), one weasel (*Mustela spp.*), and one mouse.

Detection of prey and other carnivores---We regularly encountered snowshoe hares, red squirrels, American marten (*Martes americana*), coyotes (*Canis latrans*), and short- and long-tailed weasels (*Mustela erminea, M. frenata*) during snow tracking surveys. The Wyoming Range/Hoback Rim and Togwotee Pass Sectors of the study area seemed to possess the highest encounter rates for snowshoe hares and red squirrels; however, high prey encounter rates were also documented in certain locations in the Wind River, Salt River, and Gros Ventre Sectors. Snowshoe hare activity in the drainages west of Merna Junction in the Wyoming Range/Hoback Rim sector appeared to be particularly high. On multiple occasions we documented young lodgepole pine saplings completely girdled by snowshoe hares, possibly indicating peak population densities (K. Hodges, pers. comm.).

The forest structure in the Wyoming Range/Hoback Rim Sector appeared to be somewhat unique when compared to other sectors on the B-TNF. The Wyoming Range seems to have a larger subalpine fir component, with perhaps a thicker understory than the other forest sectors. Future efforts will document differences in forest type, age, and structure, as well as preferred snowshoe hare and lynx habitat on the B-TNF.

Other animals detected during our surveys included nearly all small, medium, and large carnivores known to occur in the B-TNF [wolverines (*Gulo gulo*), gray wolves (*Canis lupus*), grizzly bears (*Ursus arctos*), black bears (*Ursus americanus*), bobcats (*Lynx rufus*), northern river otters (*Lutra canadensis*), and cougars (*Puma concolor*)].

Canada lynx sightings and follow-up investigations of tracks---Many people reported seeing lynx or and/or their tracks during 2004/05. Although we welcomed this anecdotal evidence, we recognized the possibility of misidentification by less-experienced people, and therefore conducted eleven interviews and made three field excursions to verify reports of Canada lynx or their tracks. Seven of the interviews (cougar hunter, Canadian trapper, bobcat trapper, wolverine tracker, photographer/backcountry skier, Buffalo Valley resident, and B-TNF snow ranger) produced convincing descriptions of Canada lynx and/or lynx track observations. In the remaining cases, we could not differentiate between Canada lynx or bobcat. Interestingly, five of the seven likely sightings were observed in areas where we documented Canada lynx during 2003/04 and/or 2004/05.

Long distance movements---We documented two long distance movements during 2004/05 through DNA based techniques used at the RMRS Carnivore Genetics Laboratory in Missoula, Montana (M. Shwartz, pers. comm.). We detected male lynx YNP/FlagstaffM1 in the Togwotee Pass Sector on 12/20/04. This same male lynx was detected on 01/13/04 by the Yellowstone National Park Lynx Project on the east side of Yellowstone Lake (Murphy et al. 2004). The detections of YNP/FlagstaffM1 were eleven months and approximately 50 straight-line miles apart. We detected male lynx WyomingRangeM1 in the Wyoming Range/Hoback Rim Sector on 03/04/05. This same male lynx was detected on 03/23/05 in the Wind River Sector in the Shoshone National Forest, approximately 50 miles from the first location.

To the best of our knowledge, both YNP/FlagstaffM1 and WyomingRangeM1 represent lynx unique to the Greater Yellowstone Ecosystem. Though the database is not complete, current records suggest these two animals are not associated with the Colorado lynx reintroduction efforts (M. Schwartz, pers. comm.).

Potential Corridors---A collared male lynx crossed Highway 287 multiple times during multiple years (Squires et al. 2003), possibly in the same or similar area near Togwotee Pass each time; this area is relatively close to some of YNP/FlagstaffM1's detection locations. Likewise, WyomingRangeM1's 2004/05 winter locations were relatively close to an area where the above-mentioned collared lynx may have crossed Highway 189/191 near Hoback Rim. The vegetation that defines both the Togwotee Pass and Hoback Rim areas is mostly forested and differs sharply from the surrounding sagebrush/grassland habitats. We would like to further investigate common characteristics, if any, that determine where lynx choose to cross roads.

Conclusions and Recommendations

Canada lynx were positively (DNA-based) detected on three of the five identified forest sectors within our study area during winter 2004/05. In addition to DNA-based detections, probable Canada lynx tracks were located on four of the five identified forest sectors. Despite the relatively wide distribution of Canada lynx tracks within our study area, these detections likely only represented 2-7 individual lynx. The relatively low density of lynx detected may not be surprising for a species near the southern periphery of its continental range. However, these detections are an important addition to an ever-enlarging database of Canada lynx presence in the GYE. We consider the winter 2004/05 field season preliminary. Our ability to adequately survey the five identified forest sectors on the B-TNF that fall within our study area was limited by weather, insufficient time, lack of suitable equipment (snowmobiles, trucks, and trailers), and limited funding.

In the future, with increased support, we will broaden and strengthen our efforts on the B-TNF. We will continue our snow tracking efforts as outlined above but also include more consistent predator, prey, and habitat structure data collection relating to Canada lynx persistence. We strive to provide B-TNF and other agencies and organizations with current, valuable information that will facilitate long-term management efforts for Canada lynx persistence in the SGYE.

This preliminary study found that Canada lynx could be consistently located during the winter months on the B-TNF using non-invasive techniques. Similar to the conclusions of Murphy et al.(2004) for YNP, we believe a telemetry or GPS technology-based study in the B-TNF would dramatically increase the limited knowledge that currently exists regarding lynx habitat requirements, utilization, corridor use, and ecology in the SGYE. Information obtained could provide invaluable guidance to forest managers, policy makers, highway engineers, and oil and gas interests. In addition, we recommend that lynx/coyote research be initiated to better understand and document spatial and temporal interactions and potential competition between these two species in winter recreation use areas. We also recommend that lynx/snowshoe hare research be initiated to document predator-prey relationships, with particular emphasis on hare abundance, distribution, habitat preferences, and functional relationships with Canada lynx.

Literature Cited

Koehler, G. M. 1990. Population and habitat characteristics of Canada lynx and snowshoe hares in north central Washington. Can. J. Zool. 68:845-851.

Kurten, B. and E. Anderson. 1980. Pleistocene mammals of North America. Columbia Univ. Press, New York, 442 pp.

McKelvey, K. S., J. J. Claar, G. W. McDaniel, and F. Hanvey. 1999. National lynx detection protocol. U.S. Forest Service Northern Rocky Mountain Research Station, Missoula, MT.

McKelvey, K. S., K. B. Aubry, and Y. K. Ortega. 1999. Pages 207-264 *in* Ruggiero et al., eds. Ecology and conservation of lynx in the United States. General Technical Report, RMRS-GTR-30WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Mills, L. S., K. L. Pilgrim, M. K. Schwartz, and K. McKelvey. 2000. Identifying lynx and other North American felids based on mtDNA analysis. Conservation Genetics 1:285-288.

Mowat, G., K. G. Poole, and M. O'Donoghue. 1999. Ecology of lynx in northern Canada and Alaska. Pages 265-306 *in* Ruggiero et al., eds. Ecology and conservation of lynx in the United States. General Technical Report, RMRS-GTR-30WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Murphy, K., T. Potter, J. Halfpenny, K. Gunther, T. Jones, and P. Lundberg. 2004. The presence and distribution of Canada lynx (*Lynx canadensis*) in Yellowstone

National Park, Wyoming. Final Report, Yellowstone Center for Resources, Yellowstone National Park, WY.

Squires, J. R., N. J. DeCesare, S. Tomson, L. F. Ruggerio, and B. Oakleaf. 2003. Distribution of lynx and other forest carnivores in the Wyoming Range, Southcentral Wyoming. Final Report, U.S. Forest Service, Rocky Mountain Research Station, Missoula, MT.

Sullivan, T. P., and D. S. Sullivan. 1988. Influence of stand thinning on snowshoe hare population dynamics and feeding damage in lodgepole pine forest. Journal of Applied Ecology 25: 791-805.

U.S. Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants; determination of threatened status for the contiguous U.S. distinct population segment of the Canada lynx and related rule. Federal Register 2000:16052-16086.

Zielinski, W. J. and T. E. Kucera, tech. eds. 1995. American marten, fisher, lynx, and wolverine: survey methods for their detection. Gen. Tech. Rep. PSW-GTR-157. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 163p.

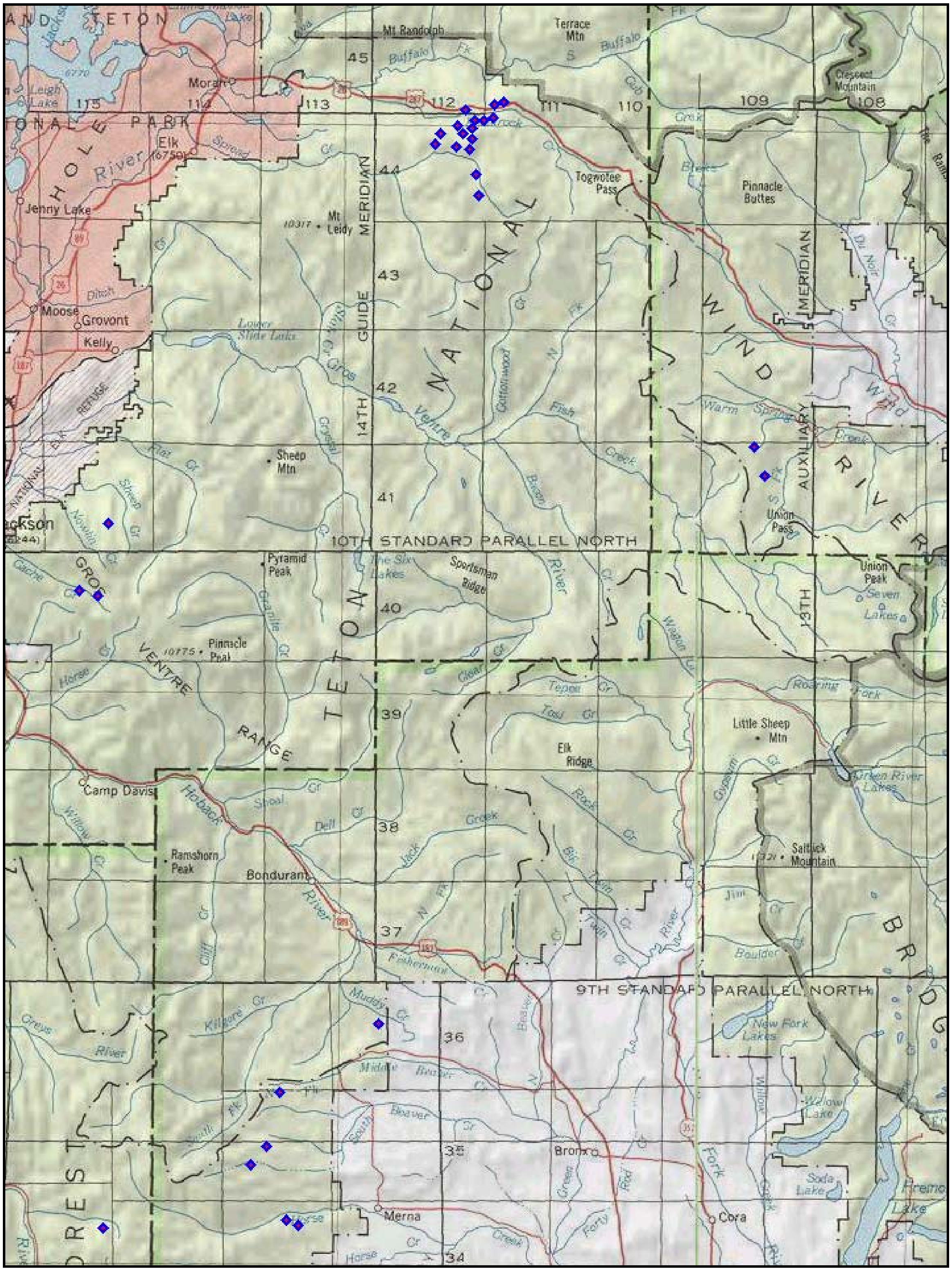

Figure 1. Jan 2004 – June 2005 Bridger-Teton National Forest
Canada lynx track locations.