

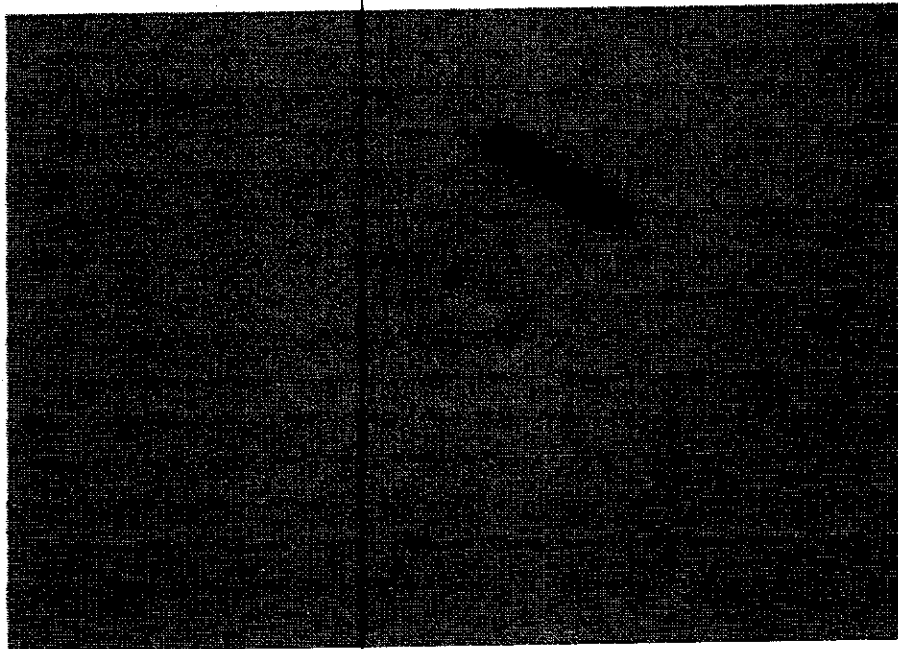
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Wolf and lynx detection surveys in northwestern Maine

Final Report

Grant 982-3-2

Maine Outdoor Heritage Fund



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Abstract. During 1999, the USFWS will likely propose changing the status of gray wolves in the northeastern US from Endangered to Threatened under the Endangered Species Act. The Canada Lynx is currently proposed to be listed as Threatened in 16 states, including Maine. These actions are focusing national attention on the status of both species in Maine. Little information has been collected on the presence of wolves and lynx in the State. During the winter of 1999, MDIFW directed a field survey to detect the presence/absence of both wolves and lynx in northwestern Maine. The project was funded through a grant from the Outdoor Heritage Fund along with funds from the Maine Wolf Coalition and in-kind support from MDIFW and Project Timber Wolf. Observers on snowmobiles covered 1,296 kilometers of survey routes within 33 townships. They encountered dog-like tracks large enough to have been made by wolves on 2 occasions. One set of tracks was determined to belong to a domestic dog. On the second occasion, the tracks were made by 2 large animals that had killed a beaver. Attempts to photograph these animals with baited infra-red triggered cameras over a 30-day period were unsuccessful. Lynx tracks were encountered on 1 occasion. Efforts to detect both wolves and lynx in Maine should continue on an annual basis, at least until the proposed federal protection actions have been completed.

Introduction

Under the Federal Endangered Species Act (ESA), gray wolves are currently listed as Endangered in all contiguous United States, except for Minnesota, where they are listed as Threatened. During 1999, the US Fish and Wildlife Service (USFWS) plans to change the status of gray wolves in the Northeast to Threatened. This reclassification will be followed by new wolf recovery planning effort for the Northeast (Ken Carr in lit.). The new plan will include a review of the feasibility of a range of management options designed to repopulate the region with wolves. Maine contains most of the potential habitat identified as suitable for wolves in the Northeastern US (USFWS 1992, Harrison and Chapin 1997, Mladendorf et al. 1998). Despite recurrent reports of wolf sightings, the shooting of a wolf in northwestern Maine in 1993, and the trapping of a large wolf-like canid in eastern Maine in 1996, no packs of wolves are

known to exist in the State. If wolves do occur in Maine, their presence will limit the options of any future recovery plans, and may also affect management activities for other wildlife species within the State.

In July of 1998, the USFWS proposed listing Canada lynx in 16 of the contiguous United States as Threatened under the ESA. According to the federal proposal, Maine is one of only four of states that were identified as supporting lynx populations, and is the only Northeastern state known to contain lynx (USFWS 1998). Lynx have always been present in Maine, but they have never been considered common (Hunt 1976). Although lynx have been fully protected in the State since 1967, their distribution and status are not well documented.

This study was designed to provide data on the presence or absence of both wolves and lynx, and therefore improve MDIFW's ability to respond to conservation issues in Maine. It was funded by a grant of \$11,220 from the Maine Outdoor Heritage Fund, supplemented by \$2,500 from The Maine Wolf Coalition, \$6,600 in matching support from the MDIFW, and \$750 in in-kind support from Project Timber Wolf (Table 1). The study encompassed a single 3-month field season during the winter of 1999, and extended MDIFW's efforts to detect wolves and lynx that started in 1995.

Methods

During January-March 1999, we attempted to detect the presence of wolves and lynx in northwestern Maine, using snow tracking techniques established for assessing bobcat population trends (MDIFW 1995), and camera-monitored baits. Observers on snowmobiles traveled survey routes along unplowed roads, trails, and frozen stream beds, and identified animal tracks in the snow. The survey routes were distributed over

Table 1. Proposed and actual expenditures incurred during wolf and lynx detection surveys in northwestern Maine, winter 1999.

Item	Outdoor Heritage Fund Request	The Maine Wolf Coalition Match	Project Timber Wolf Match	MDIFW Match	Total Project Costs	Actual Expenditures*
Personnel						
Salaries of observers	\$9,200.00	\$2,500.00			\$11,700.00	\$12,000.00
Salary of biologist completing data analysis:				\$1,000.00	\$1,000.00	\$1,000.00
Administration:				\$1,500.00	\$1,500.00	\$1,500.00
Equipment and Supplies						
Maps, field sheets, photographic film and developing, track cast materials:				\$250.00	\$250.00	\$221.89
Cameras (2@500):	\$1,000.00				\$1,000.00	\$950.00
Vehicle expenses - trucks (2@0.35/mi*3,000 mi)				\$2,100.00	\$2,100.00	\$2,100.00
snowmobiles (4@500/winter)			\$500.00	\$1,500.00	\$2,000.00	\$2,000.00
Camp costs (heat,maintenance)			\$250.00	\$250.00	\$500.00	\$500.00
Subtotal Direct Costs	\$10,200.00				\$20,050.00	20271.89
Indirect Costs						
Overhead @ 10 percent:	\$1,020.00				\$1,020.00	\$1,020.00
Total:	\$11,220.00	\$2,500.00	\$750.00	\$6,600.00	\$21,070.00	\$21,291.89

*All expenses have been paid - final
expenditures subject to reconciliation

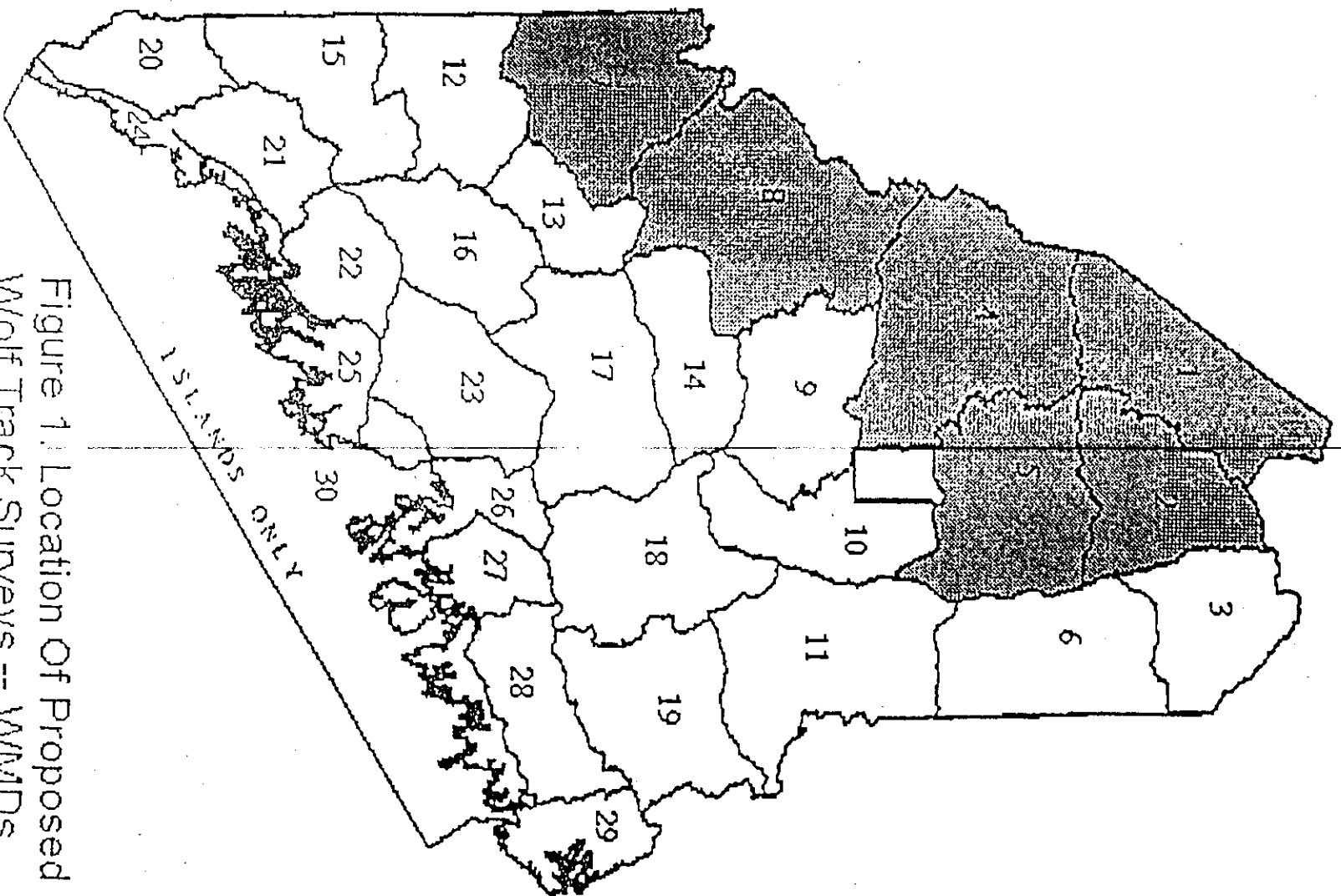


Figure 1. Location Of Proposed
Wolf Track Surveys -- WMIDs

MDIFW's Wildlife Management Districts (WMD) 1, 2, 4, 5, 7, 8, 9 and 14 (Figure 1). We used township boundaries to define our sampling units, and selected townships based upon reports of wolf sightings made during 1998 (MDIFW file data), potential wolf dispersal corridors from Quebec as identified by Harrison and Chapin (1997) (Figure 2), past winters' snow-tracking efforts (Figure 3), and historical records of lynx sign.

Each township was divided into quarters, and we attempted to survey 10 kilometers of transect within each quarter-township. All survey routes were mapped as they were surveyed. If weather conditions permitted, each route was surveyed twice during the winter. Whenever practical, survey routes were located near the perimeter of known deer wintering areas. Observers had prior experience in snow track identification, and were trained in survey protocol at the beginning of the survey period by Wildlife Division biologists. Wildlife Division biologists maintained weekly contact with each observer, to provide guidance and to ensure timely response to encounters with wolf and lynx sign.

Surveys were run at least 24 hours after a snowfall or wind that covered previous sets of tracks, and when snow conditions were suitable for identifying tracks. Written records were maintained for all large canid and lynx tracks encountered, including the species making the tracks, their location, and measurements, photographs, and casts of tracks (Appendix I). Survey routes were drawn on photocopies of Delorme Atlas maps, with 1-kilometer segments defined for each transect. Segments where no tracks are encountered were also identified and tallied. Infrared triggered cameras were set overlooking baits placed near kill sites of deer,

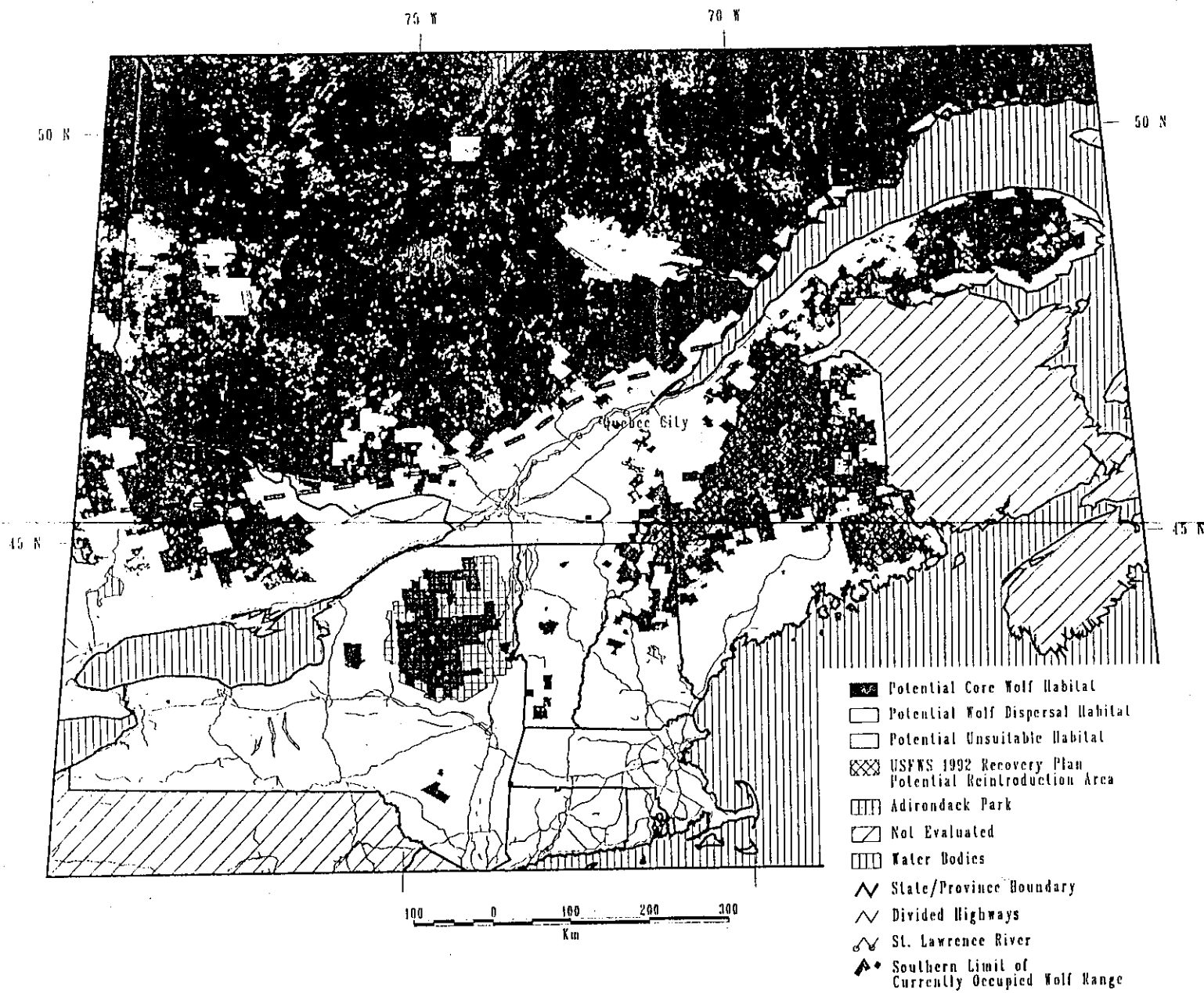


Figure 2. Potential Habitat for Eastern Timber Wolves in the Northeastern United States (from Harrison and Chapin, 1997)

LYNX AND WOLF TRACK TRANSECTS 1995-1998

- WINTER 1995
- WINTER 1996
- WINTER 1997
- WINTER 1998
- WINTER 1995+1996
- WINTER 1995+1998

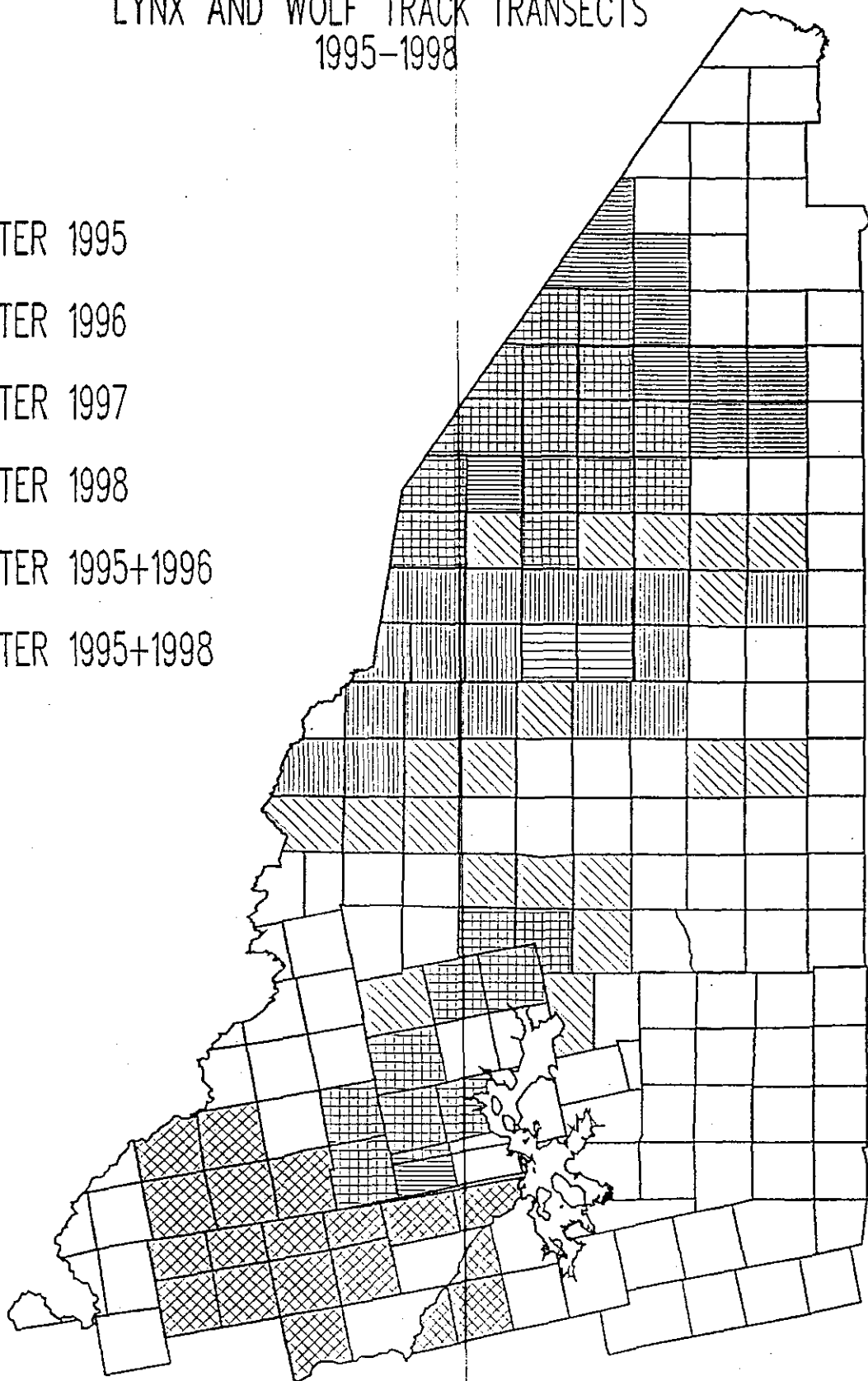


Figure 3.

moose or other wildlife with accompanying sign of large canids to obtain photographs of any animals using the site, and to aid in species identification.

Data were entered into a computer database and summarized by township and WMD. Measurements of canid tracks, casts, and photographs were compared to standards of wolves, dogs, and coyotes, to assign a level of confidence to their origin. Lynx track casts and photos were compared to known standards. The location and number of wolf and lynx tracks provided an index to their presence and distribution. Photographs of large canids were used to help identify species.

Results

Five individuals conducted track surveys between January 5 and March 21, 1999. Extended periods of unusually rainy weather in late January and in early March restricted the number of days that snow conditions were suitable for running surveys. Regardless, the observers were able to survey 1,296 kilometers of transects located within 33 townships in WMDs 1, 2, 4, 5, 7, 8, 9 and 14 (Figure 4). Surveys were concentrated in 4 regions: a) a group of 13 townships located just southeast of Moosehead Lake, b) 8 townships in the Rangely region, c) 8 townships near the Maine-Quebec border northwest of Moosehead Lake, and d) a group of 4 townships near First and Second Musquacook Lakes in northern Maine.

Wolves. Canid tracks large enough to be made by a wolf (greater than 3.5 inches long, stepping over 20 inches) were encountered in 2 instances. One set of large canid tracks was observed near a very active snowmobile trail on February 9 in Rangeley Plantation. These tracks appeared from the snowmobile trail, running 100 m uphill, then returned directly to the trail, and did not reappear for considerable

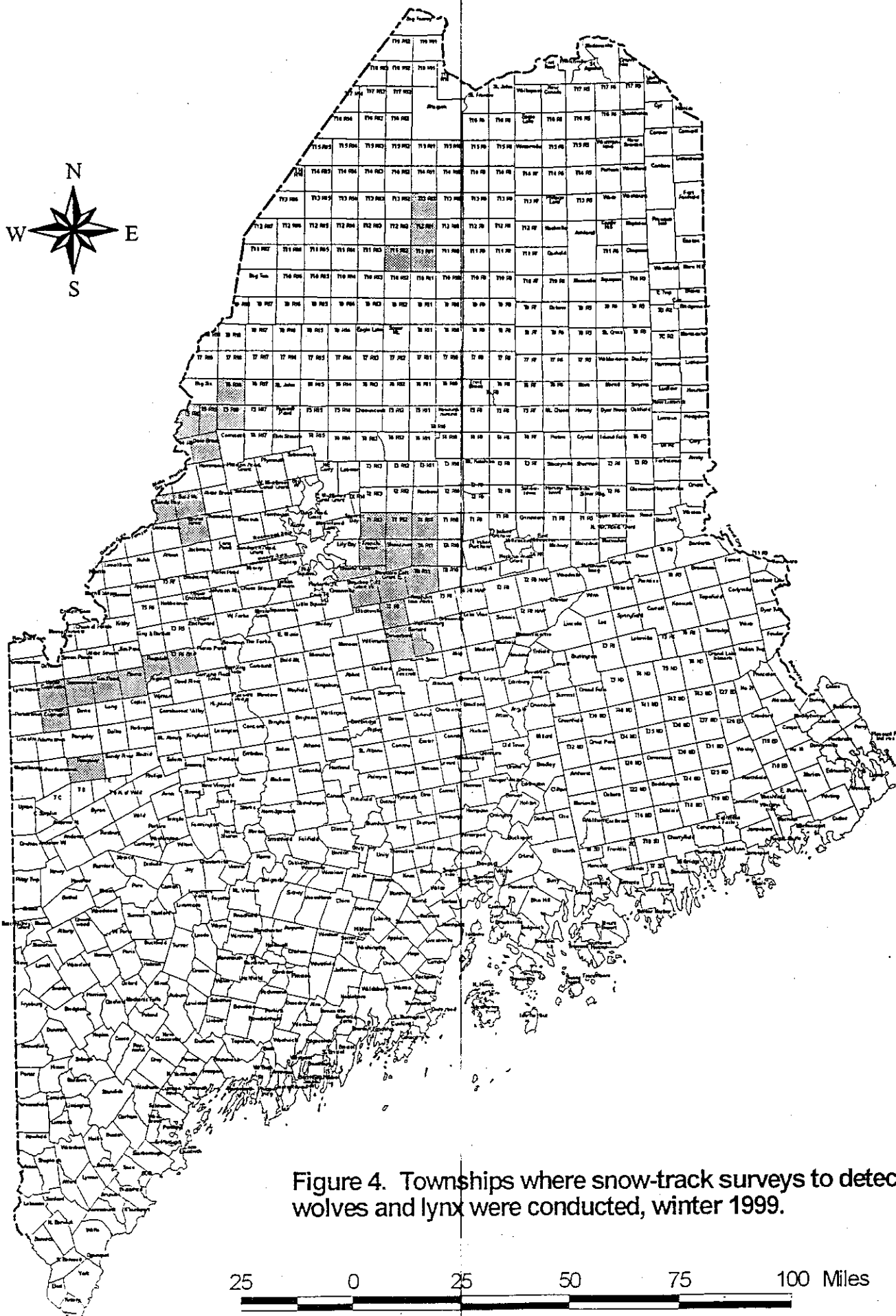


Figure 4. Townships where snow-track surveys to detect wolves and lynx were conducted, winter 1999.

distances in either direction. Because of their close association with the snowmobile trail, and their circling pattern, the tracks were determined to be made by a domestic dog.

Two additional sets of large canid tracks were encountered in Bowerbank on February 9 (Appendix I). Subsequent visits to the site confirmed that a pair of large canids was using the area, and had killed a beaver. A bait of moose and deer carcasses was placed at the site, and cameras were set up to monitor activity from March 3 through April 2. Several photographs were made, depicting visits to the site by ravens, a fisher, and one canid that was identified as a large coyote (Figure 5). Unfortunately, poor tracking conditions at the time the camera was checked precluded positive identification of the animal's tracks. The shape of its head, and measurements of background objects in the photo indicate that it is coyote-sized.

Lynx. One lynx track was located in T11 R12 WELS on March 21. This track was encountered near additional lynx sign observed by MDIFW biologists working on a separate telemetry study of lynx status, funded in late 1998 by the USFWS, Division of Federal Aid.

Recommendations

Wolves. Despite a concerted effort, we did not find conclusive evidence of the presence of wolves during the winter. **Because the presence of wolves in Maine would have a substantial influence on the recommendations of a recovery plan for the species in the Northeastern United States, annual wolf detection surveys should continue until the USFWS reclassification efforts and ensuing recovery plan are completed.** This process is expected to require another 1-3 years. MDIFW's

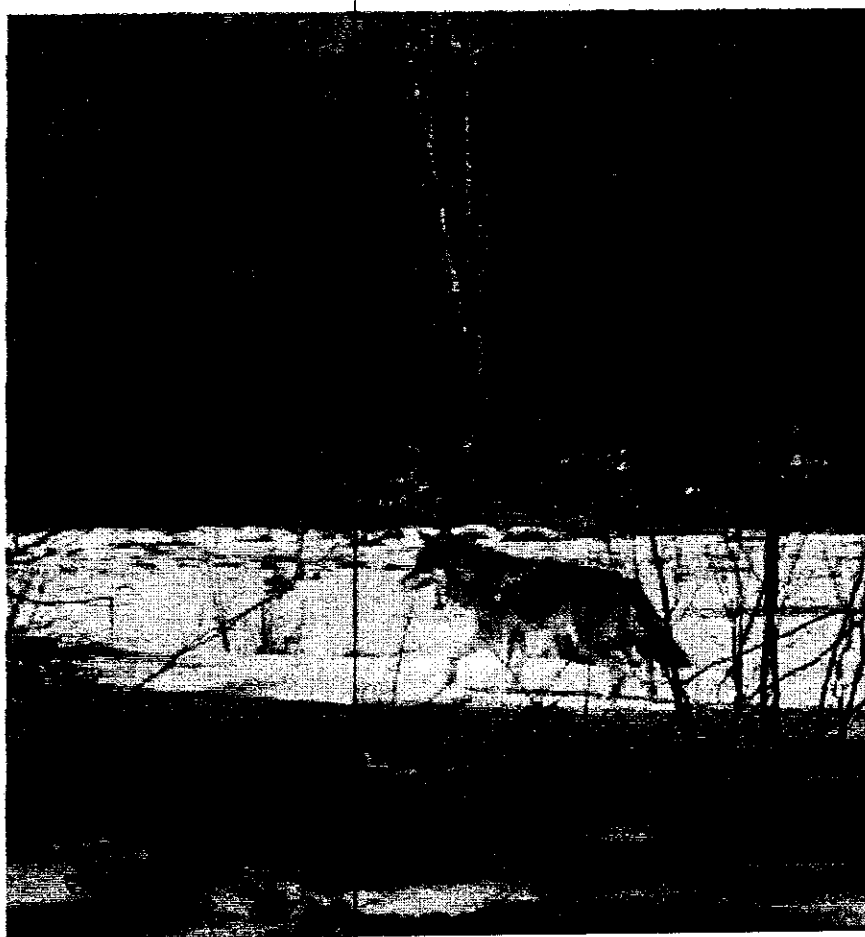


Figure 5. Coyote photographed with an infrared-triggered camera in Bowerbank, Maine during March, 1999.

long-term policy toward species, and need for ongoing detection efforts, will be a product of public debate over the prospect of wolf recovery in Maine. Snow tracking surveys appear to provide the most efficient means of detecting wolves, but other means of detection may be useful, including aerial surveys during winter months and howling surveys during the winter and summer seasons.

Lynx. Only 1 lynx track was detected during this study. However, greater numbers of lynx tracks have been encountered in recent winter tracking efforts. We need to continue to document lynx distribution and abundance through snow tracking efforts. MDIFW has just started a 5-year study in northwestern Maine to evaluate the efficiency of using several techniques to monitor lynx populations, including snow tracking, rubbing posts, and telemetry studies. Last winter, the study of monitoring techniques was conducted concurrently with this tracking study, and resulted in the detection of several lynx in T 11 R 12 WELS. As a result, an adult female was captured and radiocollared. Our knowledge of lynx ecology is improving as the telemetry study progresses, allowing the Department to improve field protocols for detecting lynx in other regions of the State. **We recommend continuing snow tracking for lynx until the proposed Federal listing action for the species is finished.**

Literature Cited

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- U.S. Fish and Wildlife Service. 1992. Recovery plan for the Eastern Timber Wolf. Twin Cities, Minnesota. 73 pp.
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Appendix I

Field survey forms used during wolf/lynx detection surveys, winter 1999

Bobcat Track Survey

Observer _____ Date _____ Number of nights of tracking conditions _____

Township _____

(Please record primary township for short transects - for long transects covering many towns please use a new sheet for each town)

Please describe animal travelling conditions (i.e. temperature, crusting conditions)

Please check if tracks are present on each 1 km segment and evaluate snowshoe hare abundance (none-rare-common).

[illegible]

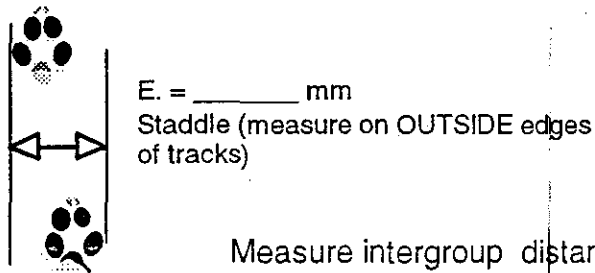
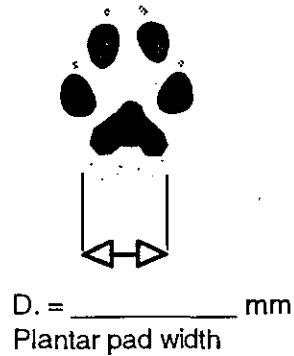
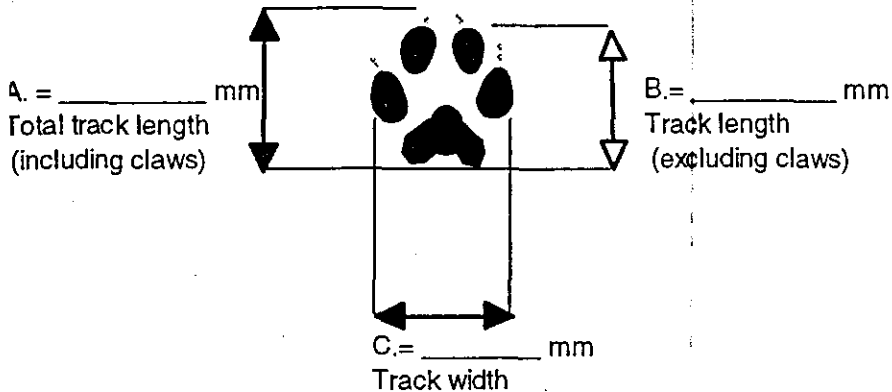
* N = no tracks R = 1-5 tracks C = 6-19 tracks A = ≥ 20 tracks

MDIFW TRACK MEASUREMENT FORM

Date: _____ Recorder: _____

Location: Township: _____ Locale: _____

ATTACH MAPPED LOCATION Species: _____



Measure intergroup distance
where animal is walking, if
possible. If not walking,
indicate gait under NOTES,
and sketch track pattern.

F. = Intergroup
(measure toenail to
toenail OR rear
pad to rear pad)

Take several intergroup
measurements:

F (1): _____ mm
F (2): _____ mm
F (3): _____ mm
F (4): _____ mm
F (5): _____ mm

G. = Track Sinking Depth
(take several measurements)

Take several intergroup
measurements:

G (1): _____ mm
G (2): _____ mm
G (3): _____ mm
G (4): _____ mm
G (5): _____ mm

Temperature: _____

Snow Condition: Granular, Loose
Granular, Powder, Nonsupporting Crust,
Partial Supporting Crust, Supporting
Crust, Wet New Snow:

Snow Depth: _____

Animal Behavior: _____

NOTES: _____

Appendix II

**Field report completed by William Noble, Assistant Regional Wildlife Biologist -
Greenville, after investigating site of large canid tracks discovered February 9,
1999 in Bowerbank, Maine.**

To File
From WRN
Date 2/12/99
Subject Field Notes

On 2/10/99 w Chas Davis I examined some possibly extra-large coyote tracks (or wolf or hybrid or whatnot) between Long Bog Brook and Mill Brook in Bowerbank. C Davis had first noticed the tracks the day before (while looking for extra-large canid tracks). From where the tracks intercepted the route to Mill Brook Pond we back-tracked to the South on snowshoes, eventually coming to a place where we were obviously passing a clearing to our left. We left the track and went out to the clearing which was (as we suspected) an open flowage behind an old beaver dam. Further south we could see several ravens circling a large pine. Eventually we could see upwards of a dozen ravens over there, so we went in their direction to investigate. Beneath the pine on the snow was a freshly dead beaver, not too large. Surrounding the carcass which was not at all stiff were coyote tracks and raven tracks. These tracks were on top of snow which had fallen about 7 or 8 that morning. At this point the beaver had been opened from just above the vent to the throat, most of flesh was gone, and the rib cage was exposed. The tail was intact. We could see where the beaver had emerged from a hole just below the dam, and been out cutting some alders. We also found what looked like the bedding place of a coyote, wolf, whatnot about 200 feet above the dam; and some walking then running tracks from that toward where the beaver had emerged from under the ice. I was back on the 11th to investigate further. Conditions were still good. I determined that the beaver was killed about 9 feet land ward of where it came out. There were several tufts of hair and some blood as well as a matted down area ~ 2X 3' all indicating a struggle. Apparently the beaver was moved from the kill site up the flowage about 500 feet to where we first saw it, without leaving much or any sign of that on top of the snow or ice!

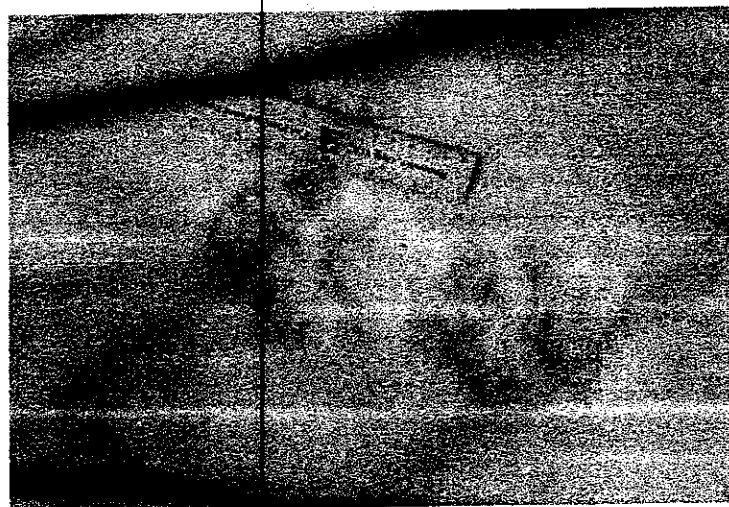
Length width measurements of the track set C Davis found on 2/9, measured by me on 2/10, for some of the clearer tracks were 4 x 4 w claws and 3 1/2 X 3 also w claws. This track set appeared to be of 2 and sometimes possibly 3 animals moving together; one animal somewhat larger than the other(s). The track was fairly direct. The animals often broke thru a crust to say 4" and sometimes spread their feet to stay afloat. None of the stride measurements exceeded 26 1/2" and were probably all under 24. Together we measured one straddle of 7".

I also measured the freshly made, same day, tracks on the flowages where there was a lite dusting of snow on ice, probably of the same individuals. The largest tracks were 4 1/4 x 2 5/8, 3 7/8 x 2 3/4, and 3 3/4 x 2 1/2. All these measurements made on the 10th; all are where walking.

On the 11th I made additional measurements nearby w conditions as above. Plaster casts, too. Many lengths on one individual were between 3 1/2 and 4".



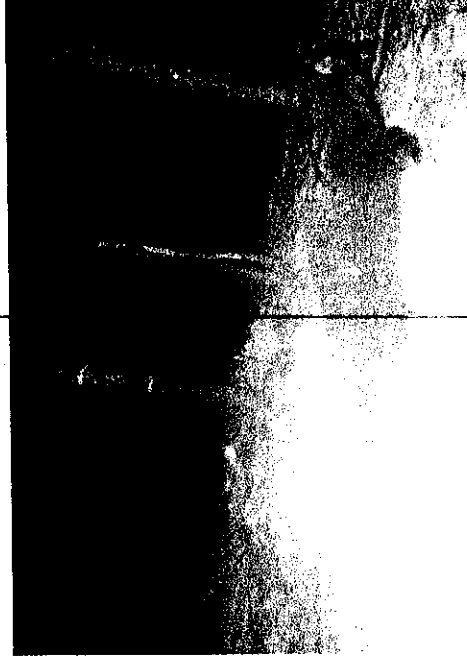
Lynx and red squirrel tracks, winter 1999



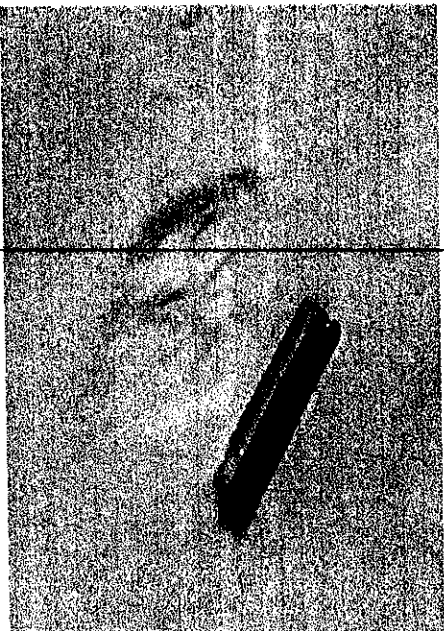
Lynx tracks, winter 1999



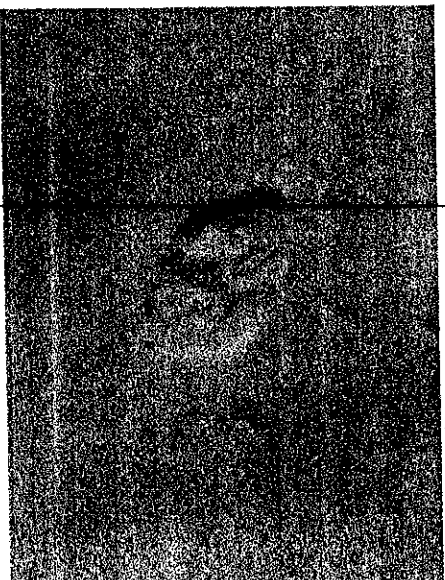
Ravens on bait in Bowerbank, March 1999.



Fisher captured on film at Bowerbank bait, March 1999.



Large Coyote tracks, February 1999



Large Coyote tracks, February 1999