State of California
The Resources Agency
Department of Fish and Game

WOLVERINE, FISHER, AND MARTEN OCCURRENCE AND WINTER MOVEMENTS IN NORTHWESTERN CALIFORNIA[1]

by

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ABSTRACT

Two transect routes were established during the winter of 1972-1973 in Northwestern California to estimate the activities of mustelids, especially wolverine. Trails of marten were identified on both transects; those of fisher and wolverine were observed on only one transect. Observations are described and movement patterns are discussed.

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INTRODUCTION

Yocom (1973) has reviewed the state of knowledge regarding the wolverine (Gulo luscus) in California, Oregon, and Washington, including general tracking observations. Since his review only one additional sighting record in Northern California has been recorded. On 23 August 1972 a wolverine was observed by Thomas Greener, Crescent City High School Instructor, in the headlights of his car along Patricks Creek Road, 12 miles northeast of Gasquet, Del Norte County.

The extent of wolverine occurrence as well as information regarding habitat requirements of this animal are presently needed to insure survival of wolverines in this relatively undeveloped portion of California.

This investigation, conducted from November 1972 to March 1973, used sightings of animal tracks in snow as an information base. The intent of this study was to verify wolverine occurrence. Secondarily, estimates of movement patterns and habitat relationships were estimated for fisher (Martes pennanti) and marten (Martes americana) as well as wolverine with available information.

We thank Dave Garber, Wildlife Biologist from Six Rivers National Forest, for formulating the study program and coordinating the field work. Gary Monroe and Bob Mapes, California Department of Fish and Game, contributed with field work.

STUDY AREA

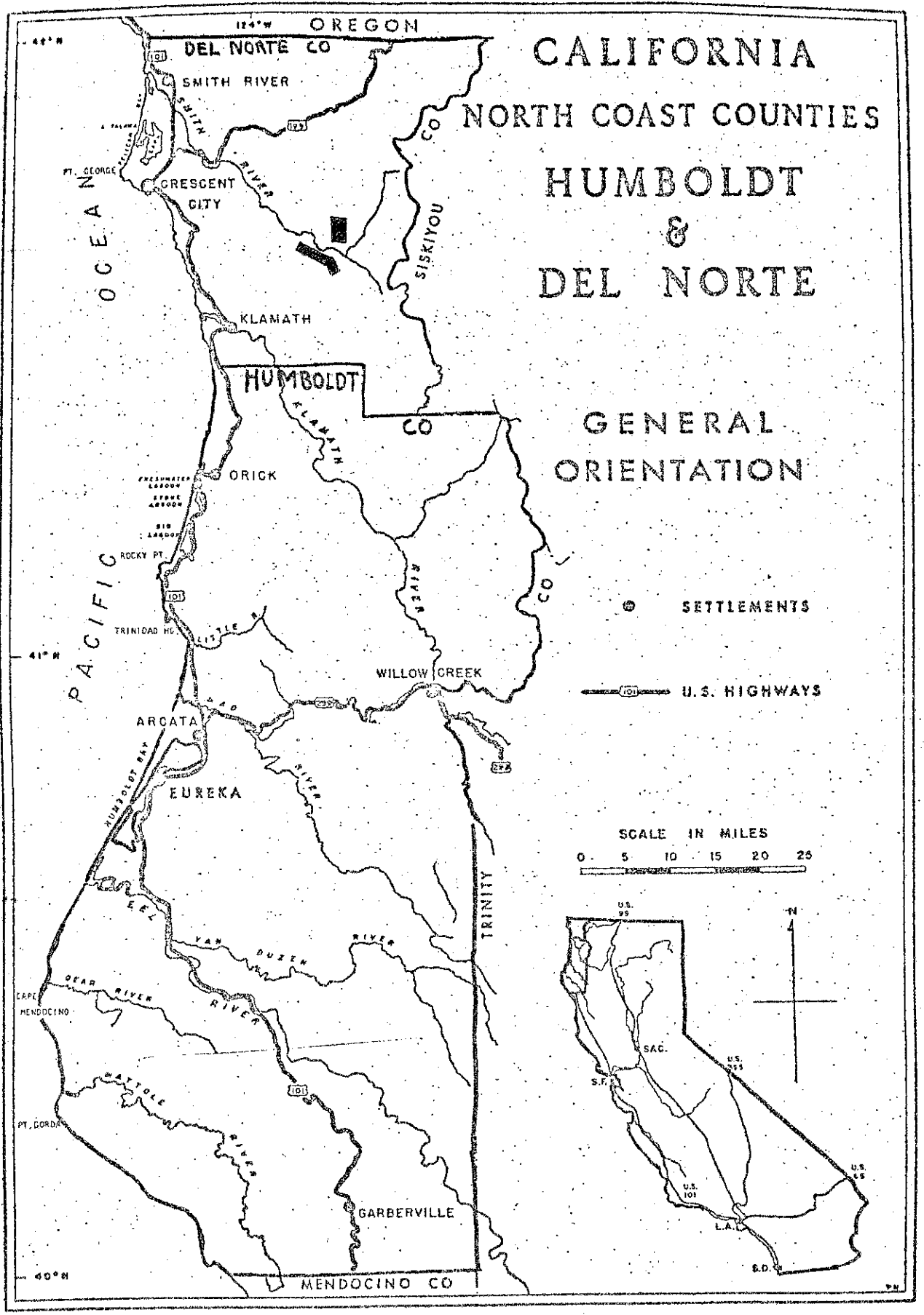
Drainages of the South Fork of the Smith River, located on the Six Rivers National Forest, were selected for study (Figure 1). Selection of this general area and specific transect locations was prompted by sighting records and the comparative ease of access in this area during the winter.

Topography is extremely steep with frequent canyons along tributaries of the Smith River. Elevation ranges from 700m to 1700m with a snow line above 130m from mid-December through April. Vegetation is dominated by a douglas fir (Pseudotsuga mensiesii) overstory and tan oak (Lithocarpus densiflorus) understory with brush fields occurring infrequently on eastern exposures. The Siskiyou Mountains, 8 kilometers east of the study area, dominate the landscape and constitute the nucleus of a large, relatively undisturbed ecosystem.

METHODS

Two transecting routes, approximately 10 kilometers apart were established (Figure 2). Transect A enabled us to travel a circular route of approximately 11 kilometers along by 1.8 kilometers wide. Transect B was established along approximately 20 kilometers of road from snow level to 1700 meters, requiring return over the same route. Of 15 trips made to traverse these routes, only three resulted in completion of the transect routes; two on transect A and one on transect B. Travel was accomplished primarily by snowmobile and on snowshoe.

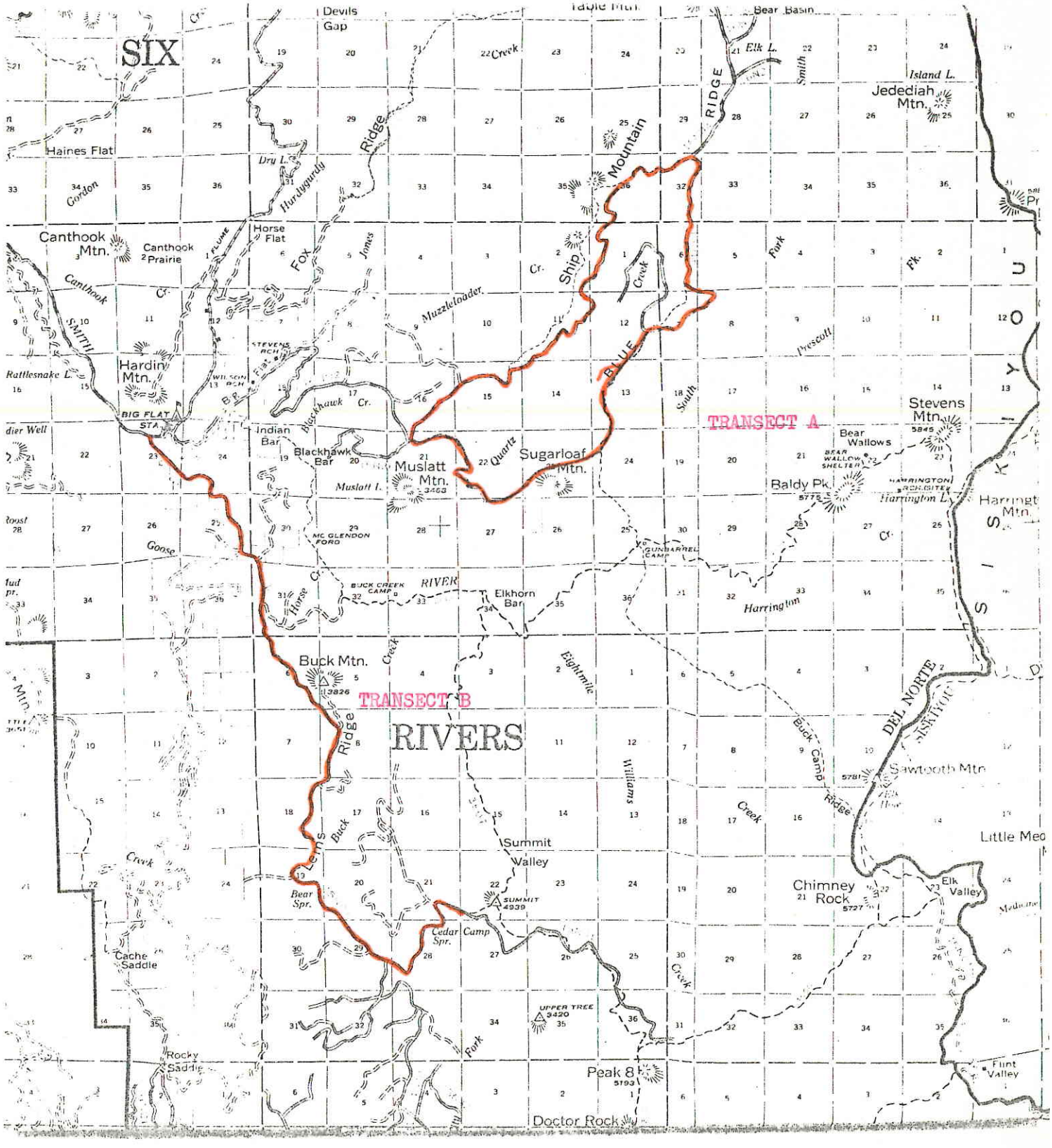
Figure 1



LOCATION OF MUSTELID STUDY AREA, DEL NORTE CO., CALIF.
SPECIFIC LOCATION IN ORANGE

Figure 2

STUDY AREA TRANSECTS



Techniques to attract mustelids to transect locations where they might be more easily studied, including, baiting with carcasses of domestic livestock, and the use of scent posts, proved unnecessary and were abandoned early in the study. Mustelid tracks occurred naturally on transects with enough frequency for study.

RESULTS AND DISCUSSION

Wolverine

Transect A - wolverine tracks were observed on only two of the trips made into this area. On 4 February 1973 four individual trails moved eastward crossing into the area enclosed by this transect, and out again continuing eastward toward the higher Siskiyou Mountains (Figure 3). Prints in these four trails were in varying degrees of freshness suggesting that they had been made on different occasions, probably over a seven to ten day period based upon snowfall patterns. All trails crossed roads within the same vicinity of approximately 1000 kilometers, suggestive of an established travel route of an individual or a natural crossing area for several individuals.

Two holes 50 centimeters in diameter had been dug through the snow, 75 centimeters deep, to the roadbed on a logging spur in the interior of transect A (Figure 3). Deer bones lying near these holes evidently had been extracted and chewed by a wolverine based upon track patterns around the holes.

On 22 March 1973 a single wolverine trail was located (Figure 3). Movement was downhill, across the transect route in a southeasterly direction.

Transect B - Three transecting efforts all attempted during relatively poor tracking conditions failed to reveal positive evidence of wolverines. On 28 February 1973 a poorly defined mustelid trail was located which was suggestive of wolverine but absolute identification was not possible.

Fisher and Marten

Because of the difficulty in distinguishing between marten and fisher tracks, many of the observations were recorded as either (Figure 4). These, totaling 13, all crossed the road except on one occasion where a set followed the road. The direction of travel was primarily northwest to southeast.

Fisher tracks were recorded on four occasions along transect A (Figure 5). On 4 February 1973 a trail proceeded southward along the eastern side following the road for approximately 0.5 kilometers. Two trails were recorded on the western side of the transect 50 meters apart on 18 March 1973. One crossed the road heading northward, while the second trail moved eastward into the center of the transect. On 22 March 1973 fisher tracks were again observed, this time crossing the road twice. At one point a hole was dug in the snow 30 centimeters in diameter and 8 centimeters deep. General movement of this animal was from north to south.

Fisher trails were not identified on transect B. This was contributed to

Figure 3

LOCATION OF WOLVERINE TRAIL SIGHTINGS

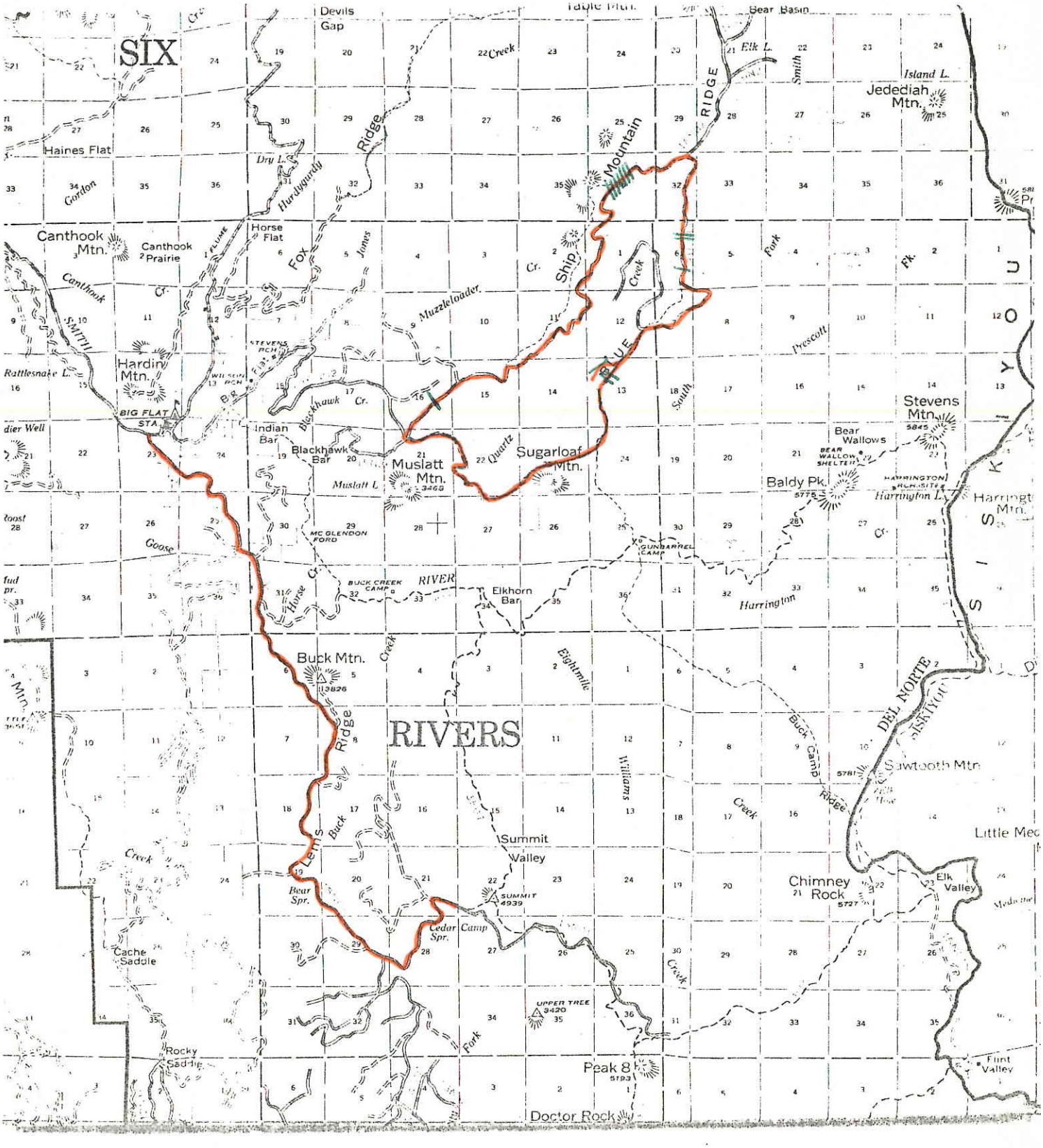


Figure 4

MARTEN-FISHER TRAIL SIGHTINGS

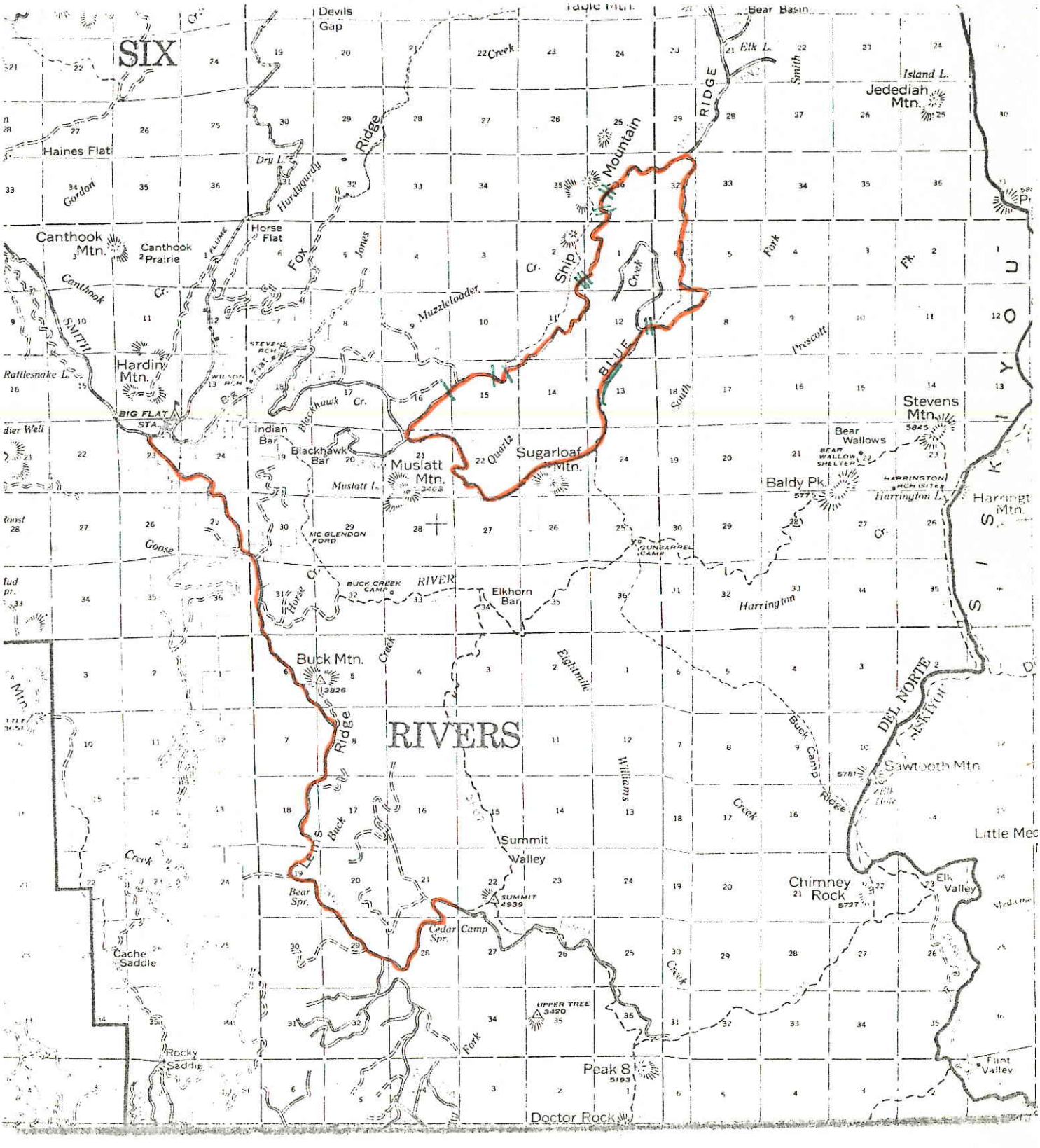
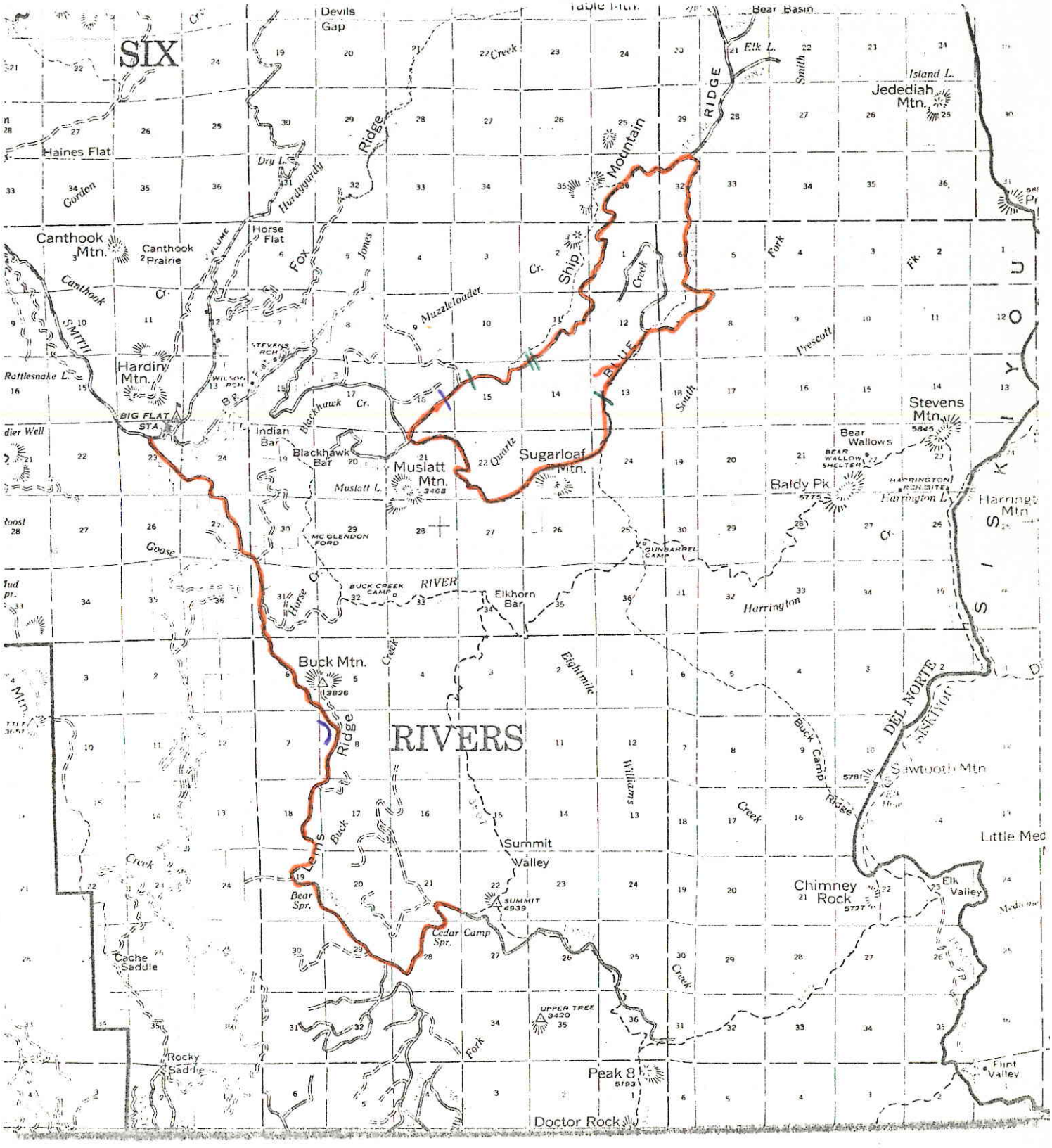


Figure 5

DEFINITE MARTEN TRAILS

DEFINITE FISHER TRAILS



poor tracking conditions encountered during each effort to traverse this area, rather than actual scarcity of animals.

Marten tracks were observed on two occasions (Figure 5). On 22 March 1973 a trail moving eastward crossed the western boundary of transect A. On transect B, 20 March 1973, a trail proceeded up the western side of the road embankment, following under the guardrail for 10 meters and returned down the embankment without crossing the road.

SUMMARY

Movements of wolverine, fisher, and marten collectively were frequent in transect A during the winter of 1972-1973. All three species may occur in transect B, but due to poor tracking conditions, trails could not be positively identified.

Wolverine movement patterns suggest that the area within transect A (approximately 260 hectares) was but a small portion of the animals total range. Patterns of movement apparently were not influenced by roads or logging patterns; however, observations regarding logging relationships were limited. The movements trended along a northwest to southeast direction, traversing life zones from higher to lower elevations and back.

Fisher and marten movements revealed more intensive activity along transects than wolverine, suggesting a smaller range and possible local residency. Movements apparently did not relate to topographical or other physical elements including roads; however, they were grouped in specific areas suggesting well defined ranges rather than random movements.

RECOMMENDATIONS

1. Define wolverine habitat requirements, especially reproductive needs, for use in management programs.

2. Determine the effects of habitat modification on wolverine population longevity.

3. Evaluate population seclusion and possible relationships to other wolverine populations in the Northwestern United States.

4. Use this general area, as needed, for additional research on wolverine, fisher, and marten.

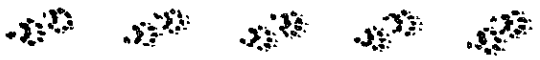
LITERATURE CITED

Yocom, C. F. 1973. Wolverine records in Pacific Coastal States and new records for Northern California. Calif. Fish and Game, 59(3) (in press).

sighting report on
wilderness travelers

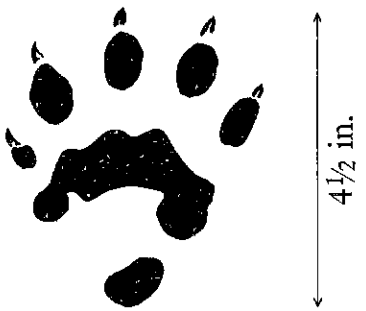
help is needed for protection and management

Have you seen any of these forest and wilderness travelers? Federal and state agencies need your sightings of these animals to establish programs of protection and management. Your cooperation and assistance is appreciated. Please report any sightings to the Wildlife Management Branch, Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814. Complete the form on the back of this page, fold and affix stamp and mail. Thanks for your help!



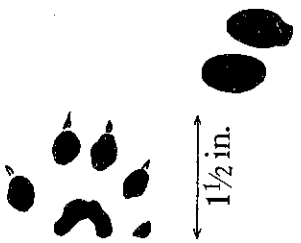
Wolverine

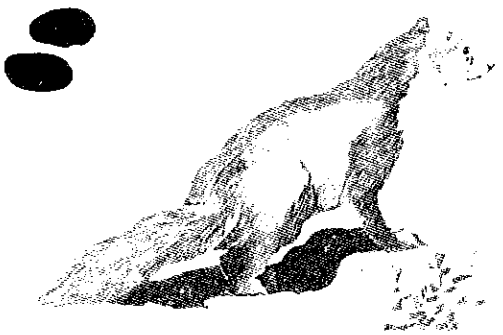
The wolverine is a small, bearlike animal with long, shaggy, dark brown to black fur and a yellowish-white band along its sides. It is also recognized by its broad head, small eyes, rounded ears and short, blunt tail. The wolverine carries its head and tail low, resulting in a humped-back appearance. Length, 3 to 3½ feet; shoulder height, 15 inches; weight, 20 to 35 pounds.



Marten

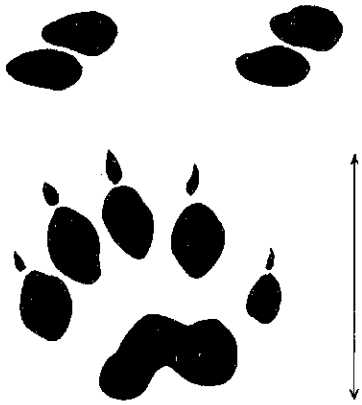
The marten is about the size of a slender, medium-sized house cat and has long, dark legs and fully furred feet. The overall color ranges from a dark honey to a rich brown. It has a characteristic yellowish-orange throat and chest patch. Although a ground dweller, it may be seen moving through trees like a squirrel. Length, 2 feet; shoulder height, 7½ inches; weight, 1½ to 4 pounds.





Fisher

Larger than the marten, the fisher has powerful legs and a long, plumed tail that tapers to its tip. The overall color ranges from a light to a dark rich brown, with the head and shoulders paler in color. Irregular white spots are sometimes seen on the throat. A ground dweller, the fisher can take to trees. Length, 3 feet; shoulder height, 10 inches; weight, 5 to 10 pounds.



FURBEARER OBSERVATION

SPECIES OBSERVED: _____

DATE: _____ TIME OF DAY: _____

PLACE SEEN: (Describe as precisely as possible, including miles to nearest landmark, elevation, county, and other information.)

_____

_____

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_____

DETAILS: (Include identifying factors and observed activity of the animal.)

_____

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NAME OF OBSERVER: _____

Address: _____

Phone: _____

California Department of Fish and Game
Special Wildlife Investigations
1416 Ninth Street
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