

THE STATUS OF THE TIMBER WOLF IN WISCONSIN — 1975

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ABSTRACT:

Wisconsin's breeding population of timber wolves (*Canis lupus*) was exterminated in the late 1950's. The results of a summer and winter search and a review of reported observations indicates that wolves are present, at least sporadically, in Wisconsin. Wolves currently existing in this state are believed to be immigrants from the Minnesota population. Human activity apparently prevents wolves from successfully reestablishing themselves in Wisconsin. Wolf populations in the Upper Peninsula of Michigan and in Wisconsin are extensions of the Minnesota peripheral wolf range.

INTRODUCTION

The eastern timber wolf (*Canis lupus lycaon*) is classified as an endangered species under the Endangered Species Act of 1966. The only viable populations existing in the conterminous United States are in northern Minnesota and in Isle Royale National Park, Michigan (Hendrickson, et al, 1975).

The native wolf population in the state of Wisconsin declined rapidly during the early 1950's (Keener, 1970) and was probably eliminated by 1960. However, periodic sign of these animals has been noted in the state since 1960. This study was made to determine the status of the timber wolf in Wisconsin in 1975. Field searches were conducted in three northern Wisconsin areas to determine if wolves were present during the summer of 1974 and winter of 1974-75. All three areas (Fig. 1) are located within the northern highlands geographical region (Martin, 1932) and are dominated by aspen (*Populus tremuloides*), sugar maple (*Acer saccharum*), and red maple (*A. rubrum*) on the well drained sites, and by balsam fir (*Abies balsamea*), white spruce (*Picea glauca*), and black spruce (*P. mariana*) in the lowlands. The field work in 1974 was funded by the University of Wisconsin-Stevens Point (UWSP) and the United States Forest Service (USFS).



- ▨ Present range of timber wolf in Michigan (Hendrickson, et. al., 1975)
- ▧ Consistent use areas of timber wolf in Wisconsin
- 1946-48 timber wolf range, Wisconsin (Thompson, 1952; Thiel, unpubl. notes)

Fig. 1. Timber wolf range in Wisconsin and Upper Peninsula of Michigan — 1975.

METHODS

Data on Wisconsin wolf activity had been collected between 1969 and 1974. Thirty-one individuals (trappers, permanent residents in areas of former wolf activity, and professional biologists) were contacted and 132 responses were received from the surveys. Reports were reviewed and accepted as valid only if the person reporting had a professional wildlife background or was considered a reliable observer.

A method of using broadcast howls is accepted for censusing wolves in heavily forested regions (Pimlott, et al., 1969). Joslin and Pimlott (1968) were also successful with this method in establishing the presence of red wolves (*Canis rufus*) in the southcentral United States. Broadcast howls were used to search for timber wolves in this study.

Tape-recorded howls were obtained from a recording of wolf howls produced by the US Museum of Natural History and were tested on captive wolves at Eagle, Wisconsin. The broadcasting equipment included an amplifier (20 watts); two high fidelity speakers (tweeter and woofer) mounted on top of an automobile; HF Control/crossover network (1000 cycles); and a Wollensac tape recorder. The system was powered by a 12-volt battery with a DC to AC converter. A second tape recorder (Soni) was equipped with a recording parabola to record wolf response. Broadcast howls had a minimum range of 1.6 km (1 mi.) in dense conifer cover with little or no wind. Human imitations of howls had a minimum range of 1.2 km (0.75 mi.) under the same conditions. Howls were broadcast at

1.2 to 2.0 km (0.75 to 1.25 mi) intervals, depending on wind. Human imitation of howls were used twice in areas inaccessible by automobile. Howls were broadcast for a period of two minutes and were followed by a listening period of four to five minutes. Howls were broadcast on 28 days between 16 July and 21 August, 1974; a time designated as a period of peak responsiveness (Joslin, 1967; Harrington, personal communications). Most howling was broadcast between sunset and midnight, the daily peak in responsiveness (Joslin, 1967). Additional howling was conducted between midnight and 0700 Central Standard Time (CST).

Track searches were made in the three study areas between 19 December, 1974 and 6 January, 1975. Roads in the study areas were traveled by slow moving automobile while an observer watched for tracks near the road.

All scats greater than 28 mm were collected for analysis. Tracks over 76 mm in diameter were considered potential wolf tracks; the arrangement and shape of the track aided in differentiating between large dog (*Canis familiaris*) and wolf.

RESULTS

Eighty-three observations of wolves or their sign were reported between 1 January, 1968 and 31 December, 1975. A minimum of 83 wolves were involved. Numbers of wolves were not reported in 19 instances. Single wolves were reported 50 times (60 percent) two wolves 12 times (29 percent); and trios on three (11 percent) occasions (Table 1).

Table 1. Reported observations of timber wolves in Wisconsin.

Year	Number of Observations	Number of wolves	Singles	Pairs	Trios
1968	6	10	5	1	1
1969	7	8	6	1	
1970	6	7	5	1	
1971	7	11	4	2	1
1972	9	10	8	1	
1973	16	21	12	3	1
1974	9	10	8	1	
1975	4	6	2*	2	
Total	64	83	50	12	3
Average/yr.	8	10.3			

*includes one car-killed animal.

Reports were clustered in four areas of which three were studied. Seventeen observations of wolves were reported from the Willow Flowage area (Willow Area) of west-central Oneida and east-central Price Counties. There were 31 observations reported from the northern portion of the Nicolet National Forest (Alvin Area) of eastern Vilas and northern Forest Counties, and nine observations in the No Mans Lake area of northeastern Iron and northwestern Vilas Counties. The fourth area in northeastern Washburn County (Fig. 1) was not studied although reports indicated occasional wolves.

Howling

Howls were broadcast for a total of 956 minutes over a distance of 1228 km (763 mi.). Listening time totaled 2811 minutes. A single timber wolf responded to human imitated howls on 16 August, 1974 at 1947 hours CST in the Alvin Area. This was the only wolf response elicited during the study. Coyotes (*Canis latrans*) replied to broadcasts of timber wolf howls on 39 occasions.

Winter tracking

The search for tracks covered 917 km (570 mi.) of road from 19 December to 21 December, 1974 in the Alvin, Willow and No Mans Lake Areas. From 2 January through 5 January, 1975, 1012 km (629 mi.) were traveled in the three study areas. Wolf tracks were not seen in any of the study areas during the survey.

Scat analysis

Five scats were collected from the Alvin Area during July and August, 1974. All scats were collected from roads and the diameters ranged from 29-40 mm. Red-backed vole (*Clethrionomys gapperi*) and meadow vole (*Microtus pennsylvanicus*) remains were found in 100 percent and 80 percent of the five scats respectively. Snowshoe hare (*Lepus americanus*) and insects each occurred in 60 percent of the scats. Grasses, balsam fir, and spruce fragments appeared in 100 percent, 40 percent, and 40 percent, respectively. Although scat volumes were not measured, voles were the primary and hare the secondary food items.

DISCUSSION

Distribution of wolves

Definite patterns in wolf activity are apparent from the distribution of observations in the northern counties. Random, sporadic activity is evident throughout northern Wisconsin. A report of a wolf wandering through a particular locality typifies such activity. Most areas do not possess adequate space secluded

from human habitation and wolf activity is transitory.

In contrast, consistent use occurs in one northwestern and three north-central Wisconsin localities. Wolf activity is most intense in these areas where dispersing animals have the greatest amount of secluded habitat. Three of these areas lie within those that were the last to be inhabited by small family groups of wolves in the 1950's. Similar activity was also noted in Michigan's Upper Peninsula in recent years (Hendrickson, et al., 1975).

The Alvin Area, in the northern Nicolet National Forest, was the only area where timber wolf sign was located during the summer field work. Tracks of a pair of wolves were located on 9 March, 1975 less than 0.4 km (0.25 mi.) from the August, 1974 howl response. Wolves were not evident in the Alvin Area during the winter track survey suggesting that wolves using this region are probably wanderers and occasional visitors.

The Alvin Area wolf activity should be classified as contiguous with a range in Iron County, Michigan (Hendrickson, et al., 1975). Since the 1940's, Don Lappala has kept records of timber wolf activity in the Iron River, Michigan region. His reports since 1960, coupled with my findings during the past seven years, indicate that Wisconsin shares a small, unstable wolf population with the Upper Peninsula of Michigan (Fig. 1, Table 2).

Table 2. Yearly fluctuations in numbers of wolves reported from the Willow and Alvin, Wisconsin consistent use areas, and from southern Iron County, Michigan.¹

Year	Number of wolves		
	Willow	Alvin	Southern Iron Co., Mich. ¹
1967	-	3	-
1968	3	1-2	1
1969	1	0	1
1970	1-2	1	1
1971	1-2	1	4 ²
1972	1-2	1	3
1973	1-2	1-3	1
1974	1	1	2
1975	0	2	2
Total (9 yrs.)	9-13	10-13	16

¹ Data supplied by Don Lappala, Iron River, Michigan.

² Two different pairs.

Developments in the Upper Peninsula of Michigan since the work of Hendrickson, et al., (1975) support the wolf distribution data from Wisconsin. In Menominee County, Michigan hunters shot a male wolf in November, 1974 and a female wolf in March, 1975. Of particular interest was a wolf, identified as a pup (Hendrickson, personal communications), killed by a deer hunter in the same county in November, 1966. Van Ballenburgh, et al. (1975) reported that pups in Minnesota were capable of extensive movements in late October, but that such movements were confined to the respective pack ranges. Kuyt (1972) studied a migratory Canadian wolf population and reported the recovery of a wolf pup 25.7 km (16 mi.) from its original point of capture in November, 1965. It is improbable that the Michigan pup dispersed from Ontario or Minnesota; it was more likely born in Michigan. Although sporadic breeding may help to maintain Michigan's small wolf population, Hendrickson, et al. (1975) overlooked this incident (Robinson; Hendrickson, personal communications). These recent occurrences east of Marinette County, Wisconsin, indicate the possibility of occasional use of northeastern Wisconsin by wolves.

State Population

The evidence (i.e., Hendrickson, et al., 1975; Weise, et al., 1975; and that in this paper) suggests that northern Wisconsin and the Upper Peninsula Michigan should be considered as one wolf range contiguous with Minnesota's peripheral wolf area. The actual number of wolves in Wisconsin is not known, but is undoubtedly low (Table 1). The number of wolves recorded for each year of this study provide a rough indication of the magnitude of the unstable Wisconsin population.

Maintenance of numbers

The presence of wolves in Wisconsin appears to be a result of individuals immigrating from Minnesota rather than of breeding in Wisconsin. A lone radio-tagged wolf in Minnesota traveled 207 air km (129 mi.) after release before its signal was lost (Mech, et al., 1971). Since the northwestern tier of counties in Wisconsin is approximately 193 km (120 mi.) from the primary wolf range and borders the peripheral wolf range in Minnesota it is probable that dispersing wolves do enter Wisconsin. Keener (1970) reported that a wolf was killed by a car in Douglas County in 1966. A 26.3 kg (58 lb.) yearling female wolf was killed by a car in the same county on 3 August, 1975. It is likely that both wolves were dispersing from Minnesota.

Habitat in Wisconsin

In addition to large blocks of land where wolves can roam, good wolf habitat requires adequate ungulate densities and secondary prey populations. Current deer populations (*Odocoileus virginianus*) in northern Wisconsin are approximately 3.9/km² (10/mi²) (Wisconsin Department of Natural Resources, Unpubl. figures). This density can support wolves (Pimlott, 1967). Beaver (*Castor canadensis*) and snowshoe hare, considered secondary prey items of wolves in the Great Lakes region (Stebler, 1944; Mech, 1970), are present in northern Wisconsin. From the standpoint of food Wisconsin is capable of supporting wolves; however, large blocks of land where wolves can complete their normal life cycle unmolested are presently not available. Weise, et al. (1975) tabulated data on human densities occurring in several wolf ranges in the upper Great Lakes region. Wisconsin shows the highest densities with a rural population of 4.75 persons/km² (12.3 persons/mi.²). High human density reflects a large, well developed rural road system which exposes wolves to an unnaturally high mortality rate caused by man. Mech (1973) stated that in areas of Minnesota with high road densities, lone wolves and occasional pairs constituted the largest social units and full-sized packs seldom had the chance to develop (Table 2). He observed that small populations persisted in accessible areas since there was a recruitment of wolves “. . . from the reservoir packs in wilderness areas”.

A human density of 0.7 persons/km² (1.8 persons/mi.²) is found in the 466 km² (180 mi.²) Willow Area and in the 1093 km² (422 mi.²) Alvin Area. Although this low human density enhances wolf habitat, the quality of these quasi-wilderness blocks is diminished by recreational pressure exerted by surrounding areas of high human density.

Limiting factors

At this time, deer hunters and coyote trappers are the greatest threat to timber wolves in Wisconsin. Hendrickson et al. (1975) attributed current low wolf numbers in Michigan to mortality from hunting and trapping. Two of four wolves transplanted into Michigan were shot, one was trapped, and one was killed by a car (Weise, et al., 1975). In addition, three native wolves were killed by hunters and one by a snowmobiler in recent years (Michigan Department of Natural Resources files).

Deterioration of Wisconsin's present wolf habitat may accelerate in the near future. Increased emphasis on year-round recreation

and continued expansion of vacation home construction in northern Wisconsin may eventually destroy the last of Wisconsin's wild regions.

Recommendations

To reverse the deteriorating conditions which adversely affect the wolf, it is recommended that the Wisconsin Department of Natural Resources:

- 1) Require mandatory registration of coyotes taken in wolf activity areas. This may isolate the probable manner (i.e., trapping, sport and deer hunting) of wolf mortality.
- 2) Support effective zoning on federally or state owned lands to restrict the amount and type of human activity in the wilder regions.
- 3) Seek legislation that would allow farmers 100 percent unconditional reimbursement for depredations on livestock where coyotes and/or timber wolves were the proven cause of death (The current reimbursement is 80 percent of assessed value *if* the farmer's land is *not* posted against hunting).
- 4) Institute a public awareness program emphasizing the realistic, positive and negative aspects of the wolf.

If these steps are taken the final extirpation of the wolf in Wisconsin may be prevented. These actions may also enhance the possibility that wolves may be reintroduced successfully. Eventual reestablishment of a breeding stock of wolves is desirable. It is possible that northern Wisconsin will yet provide habitat for this unique wilderness species.

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