

**PROGRESS REPORT OF  
WOLF POPULATION MONITORING IN  
WISCONSIN FOR THE PERIOD  
October 1999-March 2000**

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**ABSTRACT**

The monitoring of gray wolf populations in Wisconsin has been ongoing since Fall 1979. Gray wolves are listed as a state threatened species (1999) and federally endangered species (1967, 1974) in Wisconsin. The 1999 Wisconsin wolf management plan reinforced the need to continue intense monitoring of the state wolf population well into the future. Wisconsin wolves have been at the reclassification goal of 80+ for six years and are approaching the state delisting goal (250 wolves outside of Indian reservations). A minimum count of 248-259 wolves was found in 66 packs and as 13 loners. A total of 239-249 wolves were counted outside of Indian Reservations. The mean "winter" territory size of 17 adults was 39 square miles, the smallest mean territory recorded, probably due to very high deer populations throughout the state. Total area occupied by territorial wolves was about 3600 square miles at a density of 1 wolf/15 square miles. An estimated 72 to 98 pups survived to late winter for an average survival rate of 31%.

**INTRODUCTION**

Wolves recolonized Wisconsin in the mid 1970's after being extirpated from the state for about 15 years. Active monitoring of wolves in the state by the Wisconsin DNR began in Fall 1979 using livetrapping, radiotracking, winter snow track surveys, and summer howl surveys (Wydeven et al 1995). Population monitoring was identified as key management strategies in the 1989 recovery plan (Wisconsin DNR, 1989) and the 1999 wolf management plan (Wisconsin DNR, 1999). The 1989 recovery plan set a goal of reclassification from state endangered to threatened once 80+ wolves were maintained for 3 years. Because the state wolf population had been at 80+ since 1995, the wolf was reclassified to a state threatened species on 1 October, 1999. The 1992 Federal Recovery plan established the same criteria for federal downlisting from endangered to threatened, and set goals of 100 wolves in Wisconsin and Michigan for five years, along with a stable population in Minnesota, as criteria for complete federal delisting (U.S. Fish and Wildlife Service 1992). The U.S. Fish and Wildlife Service will start a federal reclassification effort in late spring 2000, and hope to have Wisconsin wolves reclassified as federally threatened by spring 2001.

The 1999 Wisconsin wolf management plan established a state delisting goal of 250 wolves outside of Indian reservations, and a management goal of 350 wolves outside of Indian reservations. The present report covers wolf monitoring activity from 15 September, 1999 through 14 April 2000, and will be the first population count since the completion of the 1999 wolf management plan.

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## **METHODS**

Radio telemetry surveys were conducted as described by Mech (1974), and were used to determine territory distribution and wolf numbers for collared packs (Fuller and Snow 1988). Aerial locations were obtained about one per week per collared wolf/pack. The highest count in mid or late winter was generally considered the pack size for population determination. Home range area for the winter period (15 September – 14 April) was calculated using the minimum convex polygon (Mohr 1947); radio locations over 5 km from other points were considered extra-territorial moves (Fuller 1989). Home range area was calculated only for animals that occupied stable areas, and did not include dispersing wolves.

Snow tracking and sign surveys (Thiel and Welch 1981, Wydeven et al. 1996) were used to supplement surveys of packs without collared wolves, or in collared packs where few visual observations were made from the air. Presence of double raised-leg urinations (RLU's) were generally used to determine breeding activity, especially when estrus blood was also present (Rothman and Mech 1979); breeding status was surmised for some packs based on regular breeding history in the past or large pack size. Pack size was determined by tracking wolves as

far as possible along snow covered roads by vehicles, or off roads on foot. Separations of packs were determined by distance between observations, as well as directions of movements, and timing of observations. Only track observations from experienced trackers, or well documented observations were used to obtain the state wolf count. Observations reported by the general public or volunteers were used to focus survey activity, and usually only observations that were verified by experienced trackers were included in the state count. Packs along the borders with Michigan or Minnesota were included with the Wisconsin count only if 50% or more of the territory appeared to be in Wisconsin.

The winter of 1999-2000 was the fifth year that we used volunteer carnivore trackers to supplement DNR track surveys. All the heavily forested portions of northern and central Wisconsin were subdivided into 126 survey blocks averaging about 200 square miles each (Appendix 3). During the current winter, 89 survey blocks were assigned to volunteer trackers and useable data was returned on 54 blocks. Volunteers were asked to conduct at least 3 "good" surveys per block, and track about 60-100 miles of snow covered roads. Volunteer trackers included personnel from: DNR, Wildlife Management, US Forest Service, US Army, National Park Service, Tribal biologists, university students, and private citizens.

## **RESULTS AND DISCUSSION**

A total of 66 packs/groups were detected in 20 Wisconsin counties (Figure 1). Eleven packs were found in six central Wisconsin counties, and 55 packs were found in 14 northern counties. Two packs were again detected in northeast Wisconsin, but no new packs had developed since 1999. Radio collared wolves were monitored in 30 of the packs during portions of the winter. DNR wolf trackers surveyed over 2318 miles in 49 survey blocks.

Thirty-two radio collared wolves were monitored during portions of the winter period in 30 different packs; 1 wolf appeared to be mainly a loner (280M), and 2 additional wolves became loners by late winter (229F and 309F)(Table 1). Four wolves went off the air during the period including 1 mortality (210F) and 3 signals lost (290M, 303M, 307M). Two wolves were added to the list of collared wolves during the period because they were caught in coyote traps, and then collared by DNR (309F and 316F). During winter 1999-2000, monitoring occurred on 12 adult males, 13 adult females, 2 yearling males, 1 yearling female, 2 male pups and 2 female pups.

Mean winter home range for 23 wolves located 20 times or more was 37 square miles and average home range for 17 adults located 20 times or more was 39 square miles. The largest territory was the Frog Creek Pack at 70 square miles and the smallest was 9 square miles for the Chase Brook Pack. These were the smallest average winter territories ever found; probably due to the presence of a large deer population that affects the size of wolf territories (Wydeven et al 1995). Deer densities in northern Wisconsin wolf range averaged 29 deer per square mile, and were about 73% above population goals. Average deer density in central Wisconsin wolf range was 40 deer per square mile, and was about 52% above population goals.

## **WOLF PACK AND LONE WOLF SUMMARIES**

(Nicknames for radio-collared wolves are listed in Appendix 1)

### **Sterling Barren Area - Polk & Burnett Counties - Block 14:**

1 wolf; detected by DNR workers from the area, but no wolf tracks detected along 119 miles of

surveys by volunteers.

**Crex Meadows Pack - Burnett County, Block 13:**

2 wolves; detected by DNR workers from the area; no wolf tracks found in 2 surveys of 66 miles by volunteer; possible breeding activity.

**Chase Brook Pack - Burnett & Douglas Counties - Block 11:**

3 wolves; wolf 724F (adult female) observed on 5 of 15 radio locations; 9 square mile territory; no pups produced or none survived; possible breeding activity.

**Totagatic River Pair - Burnett, Washburn & Douglas Counties - Block 10:**

2 wolves; wolf 294M (adult male) from the Frog Creek Pack, and 295F (yearling female) from the Stuntz Brook Pack met and formed a pair after 4 February, 2000; a 12 square mile area was initially occupied by them in late winter.

**Moose Road Pack - Douglas and Pine Counties - Block 11:**

2 wolves; wolf 155M (adult male) observed on 4 of 15 radio locations with one other wolf; 40 square mile winter territory; no pups survived, but breeding probably again occurred.

**Truck Trail Pack - Douglas & Pine Counties - Block 2:**

3 wolves; wolf 268M (adult male) observed 5 times of 15 radio locations in winter; with 2 other wolves, but seen with 4 other wolves prior to winter; 43 square mile winter territory; possibly 1 pup survived; breeding activity suspected.

**North Empire Pack - Douglas County - Block 3:**

3 wolves; wolf 267M (adult male) seen on 4 of 15 radio locations, and wolf 298M (yearling male) seen on 3 of 15 locations; one additional wolf in pack; 28 square mile territory by wolf 267M and 37 square mile home range by wolf 298M; no pups apparently survived; breeding activity suspected; 14.5 miles surveyed in survey block by volunteers.

**South Empire Pack - Douglas County - Blocks 3 & 10:**

5 wolves; wolf 297M (adult male) seen on 5 of 15 radio locations with up to 4 other wolves; 60 square mile winter territory; probably 3 pups survived from last year; breeding activity apparently occurred; volunteer trackers surveyed 14.5 miles in Block 3.

**Moose Lake Pack - Douglas County - Block 4:**

4 wolves; 5 wolves seen in midwinter from tracking and observations, but a yearling male killed by other wolves was found dead in this pack on 31 March, 2000; the alpha female (210F) of this pack was killed by other wolves sometime before 6 November, 1999; a new female may have joined the pack; possibly 2 pups survived from last year; volunteer trackers surveyed 34.5 miles in this block.

**Sanctuary Pack - Douglas County - Block 9:**

6 wolves; wolf 266F (adult female) was seen on 5 of 16 radio locations with up to 5 other wolves; she occupied a winter territory of 19 square miles; probably 3-4 pups survived from 1999; breeding again was suspected.

**Crotte Creek Pack - Douglas County - Blocks 9 & 10:**

4 wolves; wolf 296M (yearling male) was observed on 5 of 15 radio locations with up to 3 other wolves; his winter territory covered 31 square miles; possibly 1 pup survived from 1999; breeding was again suspected.

**Buckley Creek Pack - Douglas & Washburn Counties - Blocks 9 & 10:**

3-4 wolves; wolves detected by track surveys only; possibly 1 or 2 pups survived from last year; volunteer conducted 11.2 miles of survey in Block 10; possible breeding activity.

**Chain Lake Pack - Douglas County - Blocks 8 & 23:**

5-6 wolves; wolf 291M (adult male) seen on 5 of 15 radio locations with up to 2 other wolves, and 5 others prior to winter; track surveys indicated up to 5-6 wolves in pack; 14 square miles winter territory; probably 3-4 pups survived; volunteer tracker conducted 32.1 miles of survey in Block 8.

**Shoberg Lake Pack - Douglas County - Blocks 6 & 8:**

3 wolves; wolves detected by track surveys; possibly 1 pup survived from 1999; breeding activity suspected this winter (RLU's); 32.1 miles of survey by volunteers in Block 8.

**Frog Creek Pack - Washburn & Douglas Counties - Blocks 22 & 23:**

10 wolves; wolf 293F (adult female) was observed 8 of 16 radio locations with up to 9 other wolves; the pack contained 11 wolves in early winter prior to dispersal by wolf 294M (adult male); the winter territory of the pack included 70 square miles; probably at least 6 pups survived from last year; volunteer trackers examined 120.9 miles in 5 surveys of Block 22.

**Tranus Lake Pack - Washburn County - Block 22:**

3 wolves; wolf 292M (yearling male) was observed 5 times out of 16 radio locations and was with 2 other wolves; his winter territory covered 18 square miles; no pups probably survived in this pack; volunteer trackers surveyed 120.9 miles in this block.

**Stuntz Brook Pack - Washburn County - Block 12:**

4 wolves; wolf 295F (yearling female) occupied a 17 square mile home range in this pack territory before dispersing after 9 December, 1999; wolf count was obtained by track surveys; apparently 2 pups survived from 1999; breeding activity was again suspected; volunteers surveyed 11.7 miles in this block; wolf 199M (7+ year old male) no longer transmitting, was found dead on 20 January, 2000 with mange and bite marks from other wolves.

**Lake Nabagamon Loner - Douglas County - Block 6:**

1 wolf; Trapper Buck Follis reported tracks of a single wolf north of Lake Nabagamon on 30

December, 1999, and DNR biologist Greg Kessler reported other reports of a wolf in the area.

**Oriente Falls - Douglas & Bayfield Counties - Blocks 7 & 31:**

2 wolves; 1 wolf was found by 13.8 miles surveyed by DNR; Trapper Buck Follis found tracks of 2 wolves in this area on 16 December, 1999.

**Flag River Pack - Bayfield County - Blocks 31 & 32:**

2 wolves; no wolves were detected in a DNR survey of 35.7 miles in this area, but wildlife technician Jeff Wilson saw 2 wolves in this area on 31 January, 2000, and saw wolves markings with RLU; no pups apparently survived from last year.

**Rainbow Lake Pack - Bayfield County - Blocks 27 & 28:**

4 + 1 wolf; 4 tracks found along 103.4 miles of surveys in Block 27 by DNR, and 1 loner found on 21.1 miles of block 28 and eastern part of 27; estrus blood found on 27 January, 2000 and it appears 2 pups survived from 1999.

**Smoky Hill Pack - Bayfield & Sawyer Counties - Block 25:**

5 wolves; tracks of 5 wolves found along 4 track surveys by DNR and estrus blood found on 12 January, 2000; 2-3 pups survived from 1999.

**Porcupine Lake Pack - Bayfield County - Blocks 29 & 35:**

3 wolves; tracks of 2 to 3 wolves were detected north of the Porcupine Lake Wilderness Area in 1 survey of 14.1 miles in Block 29 and 8 surveys of 176.3 miles in Block 35 by DNR; estrus blood was detected on February 6, 2000 near Porcupine Lake Wilderness; a volunteer tracker found sign of 2+ wolves in Block 29 along 32.6 miles.

**Ghost Lake Pack - Bayfield & Sawyer Counties - Blocks 24 & 29**

2 wolves; wolf 241F (adult female) was seen on 4 of 14 radio locations with one other wolf; the wolf covered a winter home range of 51 square miles; a single DNR survey along 16.4 miles detected RLU's, but no estrus blood; volunteers also conducted 65.9 miles of survey in Block 24; no pups were apparently produced or survived from last year.

**Hellhole Creek Pack - Bayfield & Ashland Counties - Block 35:**

4 wolves; 8 DNR surveys covering 176.3 miles indicated that at least 4 wolves occurred in this pack; probably 1 or 2 pups survived from last year and breeding probably again occurred; volunteer trackers covered 158.0 miles of survey in this Block.

**Chippewa Flowage Area - Sawyer County - Block 42:**

1+ wolf; one DNR track survey on 12 February, 2000 found sign of 1 or more wolves, but marginal tracking conditions did not allow careful assessment; the area is south of the Chippewa Flowage and the wolf probably also roams across the south part of Lac Courte Oreilles Indian Reservation.

**Tupper Creek Pack - Sawyer County - Block 43:**

2 wolves; 5 DNR surveys covering 167.6 miles in Block 43; tracks of 2 wolves in Tupper Creek area with raised leg urinations; breeding probably occurred; no pups survived from 1999.

**Hay Stack Corner Pack - Sawyer & Rusk Counties - Block 43:**

3 wolves; 167.6 miles survey by DNR in Block 43; tracks of 3 wolves, possibly 1 pup survived from 1999; breeding probably again occurred.

**Thornapple River Pack - Sawyer County - Block 41:**

2 or more wolves; DNR surveys covering 36.5 miles in Block 41; probably no pups survived from 1999; estrus blood found on 12 January, 2000.

**Price Creek Pack - Price & Sawyer Counties - Block 41:**

7 wolves; 36.5 miles covered in block, but only one survey on 29 December, 1999 in this block; apparently 4-5 pups survived and breeding again was suspected.

**Brunet River Pack - Sawyer & Ashland Counties - Block 40:**

2 wolves; Wolf 286F (adult female) observed 5 times in 15 radio locations, and seen with 1 other wolf; winter range of 286F covered 45 square miles and extended into Log Creek Pack area to the east; 9 DNR surveys covering 189.5 miles in Block 40, and found mainly 2 wolves but possibly a third in the Brunet River area; no pups were probably produced in 1999, but breeding probably occurred in 2000; volunteers surveyed in 112.0 miles in this block.

**Log Creek Pack - Sawyer, Ashland & Price Counties - Block 40:**

4 wolves; 189.5 miles surveyed in block by DNR and 112.0 miles by volunteers; possibly 1 or 2 pups survived from last year; breeding apparently again occurred.

**Torch River Pack - Ashland County - Blocks 37 & 38:**

4-5 wolves; 4 DNR surveys covering 108.9 miles; estrus blood found on 25 January, 2000; tracks of at least 4 and possibly 5 wolves; probably 2 or 3 pups survived from last year; the pack apparently is using both sides of County Highway GG; volunteers conducted 236.1 miles of tracking in this block.

**Shanagolden Pack - Ashland County - Block 38:**

2 wolves; possibly as many as 3; this is the eastern edge of the Torch River area but seemed to have a new breeding pair; 108.9 miles of DNR survey and 236.1 miles of volunteer surveys in this block.

**Black Lake Pack - Ashland & Sawyer Counties - Block 37:**

2 wolves; 4 DNR surveys covering 95.6 miles; estrus blood found on 25 January, 2000; no pups apparently survived from last year; volunteers conducted 148.3 miles of survey.

**Brush Creek Pack - Ashland County - Block 36:**

4 wolves; wolf 310M (adult male) was seen on 3 of 15 radio locations with up to 3 other wolves; his winter territory covered 37 square miles; apparently 2 pups survived from 1999; 4 DNR surveys along 111.4 miles were conducted in this block, and estrus blood was found in the territory on 19 and 26 January, 2000; 62.7 miles of survey were conducted in this block by volunteers.

**Dingdong Creek Pack - Ashland County - Block 36:**

3 wolves; the western part of block 36 was occupied by a group separate from the Brush Creek Pack as determined by 111.4 miles of DNR survey and 62.7 miles of survey by volunteers; estrus blood was found on 2 February, 2000.

**West Firelane Pack - Iron County - Block 39:**

2 wolves; the alpha female radio collared in this pack by biologist Tom Doolittle died sometime about 27 January, 2000 from mange related conditions; wolf 229F(7 year old female) from the Augustine Lake Pack joined this pack in February, but left in early March; 2 wolves remained in the pack in late winter.

**Morrison Creek Area - Iron & Ashland Counties - Block 39:**

1 wolf; Tom Doolittle found evidence of only 1 wolf in this territory on the north side of the Bad River Reservation.

**Augustine Lake Pack - Iron & Ashland Counties - Block 57:**

5-6 wolves; wolf 229F (adult female) dispersed from this pack in late December, 1999, but revisited the pack in March 2000; 1 track survey of 43.4 miles was conducted in this territory; apparently 2-4 pups survived in the pack and breeding was again suspected.

**Wolf 229F Loner - Ashland & Iron Counties - Blocks 39, 57 & 60:**

1 wolf; this wolf spent early winter in the Augustine Lake Pack, West Firebreak Pack in February and early March 2000, back in Augustine Lake Pack in mid-late March 2000, and as a loner between and at the end of winter.

**O'Brien Lake Pack - Iron County - Blocks 57 & 59:**

2 wolves; no DNR track surveys in area, but reports from loggers and foresters indicated at least 2 wolves occurred in the area; probable breeding activity; apparently no pup survival from 1999; volunteers conducted 66.7 miles of survey in Block 59.

**Pine Lake Pack - Iron County - Block 58:**

3 wolves; no DNR track surveys in the area, but several reports of foresters and biologists track observations; volunteers surveyed 43.2 miles in this block; probably breeding activity.

**Chippewa River Pack - Iron & Ashland Counties - Blocks 56, 57 & 58:**

4 wolves; DNR conducted 50.3 miles of track survey in Block 56; possibly 1 or 2 pups survived from last year; breeding probably occurred; volunteer trackers covered 93.8 miles.

**Eastside Firelane Pack - Ashland County - Block 56:**

2 wolves; DNR surveyed 50.3 miles in this block; a new breeding pair seemed to have split off the west side of the Chippewa River territory; volunteers tracked 93.8 miles in this block.

**Hoffman Lake Pack - Price, Ashland & Iron Counties - Block 55:**

5 wolves; wolf 245F (adult female) was observed 5 times of 21 radio locations, and was seen with 4 other wolves; 2 or 3 pups apparently survived from last year; the female wolf occupied a 40 square mile winter territory; breeding probably occurred; 51.3 miles of tracking were done by volunteers in this block.

**Miles Lake Pack - Price, Ashland & Vilas County - Block 54:**

2 wolves; 2 surveys of 16.5 miles completed by DNR in area where 3 counties come together; this group apparently overlaps onto the Lac du Flambeau Indian Reservation; no pups survived from 1999; volunteers conducted 97.0 miles of survey in this block.

**Wintergreen Lake Pair - Price County - Block 54:**

2 wolves; adult female 316F was caught 10 miles east of Park Falls on 20 October, 1999 in a coyote trap; she remained in a 61 square mile area mainly between State Highways 182 and 70; wolf 316F was observed on 5 of 24 radio locations and seen with one other wolf each time; breeding probably occurred.

**Wilson Flowage Pack - Price County - Blocks 52 & 53:**

5 wolves; 2 surveys conducted by DNR along 42.1 miles in Block 52; probably 2-3 pups survived from last year, and breeding was again suspected; volunteers surveyed 40.2 miles in the block.

**Bootjack Lake Pack - Price & Oneida Counties - Block 53:**

6 wolves; wolf 315M (adult male) was trapped in this pack last summer, but went off the air after 13 November, 1999; 2 DNR surveys covering 60.4 miles were conducted in Block 53; estrus blood was found on 25 January, 2000; probably 3-4 pups survived from 1999.

**Scotchman Lake Pair - Oneida County - Block 65:**

2 wolves; 1 DNR survey north of the North Willow Pack found a new breeding pair along 9.8 miles of survey on 12 January, 2000, and estrus blood was found; volunteers conducted 242.0 miles of survey in the block and at least 1 person detected this group as separate from the North Willow Pack.

**North Willow Pack - Oneida County - Block 65:**

11 wolves; wolf 244F (adult female) was observed 12 of 21 radio locations with up to 10 other wolves; this was the largest pack in the state; wolf 244F occupied a winter territory of 41 square

miles; probably 6-7 pups survived from 1999; breeding apparently again occurred; volunteer surveys along 242.0 miles in this block.

**Little Rice River Pack - Oneida County - Block 67:**

5 wolves; wolf 282F(adult female) was observed on 2 of 24 radio locations with 4 other wolves; she occupied a winter territory of 57 square miles; a total of 11.7 miles of survey were conducted by DNR and 107.2 miles were surveyed by volunteers; possibly 2 or more pups survived from 1999, and breeding apparently again occurred in 2000.

**Clifford Pack - Oneida & Price Counties - Block 51:**

2 wolves; 2 DNR surveys covering 26.7 miles were done in this block and estrus blood was found on 2 February, 2000; volunteers had initially found this pair and covered 84.0 miles in this block.

**Johnson Creek Loner - Oneida County - Block 67:**

1 wolf; a lone female roamed a 900 acre fenced deer farm since September 1999; USDA-Wildlife Service agents conducted intermittent live-trapping at this site in fall and winter; the deer farm was located along the Tomahawk River south of Hazelhurst; the wolf was finally caught off the site after the winter period was over on 26 April, 2000 and was translocated to the Nicolet National Forest.

**Somo River Pack - Lincoln County - Block 68:**

2 wolves; no wolves were detected along 2 DNR surveys along 20.8 miles, but 2 wolves were detected by volunteers along 71.8 miles; DNR forestry technician saw 2 wolves in this area on 6 April, 2000, including a pregnant female; loggers and other DNR workers also reported wolf tracks in the area.

**Ranger Island Pack - Lincoln County - Block 67:**

3 wolves; wolf 285F(adult female) was observed 10 times out of 19 radio locations, and 4 wolves were detected in December, but all observations after December were of 3 or less; 3 wolves were detected by Rich Wissink along 17.6 miles of survey; wolf 285F covered a winter territory of only 12 square miles; breeding was again suspected.

**Averill Creek Pack - Lincoln County - Blocks 48 & 70:**

3 wolves; wolf 315F(female pup) was observed on 5 of 21 radio locations with up to 2 other wolves; 6 wolves were observed in October, but all counts in winter were of 3 or less; a female wolf pup was killed by a vehicle collision on 26 January, 2000; the alpha female of this pack was shot in August 1999; wolf 315F occupied a small winter home range of 13 square miles on the very southern edge of the packs traditional territory; wolf 315F was perhaps the last surviving pup, and it was unclear if breeding had occurred in 2000.

**Kidrick Swamp Pack - Taylor County - Block 47:**

2 wolves; 2 DNR surveys covering 35.2 miles were done through this block; initially tracks were

found of 3 wolves, but a wolf was found dead on 11 April, 2000 in this territory; the unknown sex/age wolf was found dead weeks after it was wedged between 2 stems of a forked maple tree; breeding was suspected in this pack, but apparently no pups survived from 1999.

**Nineweb Lake Pack - Vilas County - Block 81:**

3 wolves; 2 DNR surveys along 35.1 miles were done in this block; breeding was not detected, but suspected; possibly 1 pup survived from 1999; volunteers surveyed 25.5 miles in this block.

**Giant Pine Pack - Forest County - Blocks 84 & 85:**

2 wolves; 7 DNR surveys covering 151.9 miles were done in Block 85, and estrus blood was found on 10 March, 2000; volunteers conducted 42.5 miles of surveys in adjacent Block 84 and found sign of 4 wolves in mid December 1999; possibly mortality or dispersal had occurred by mid to late winter.

**Lost Lake Loner - Florence County - Block 98:**

1 wolf; 2 DNR surveys were done in this area of western Florence County along 53.9 miles; a lone wolf was detected on 11 March, 2000.

**Whisker Lake Wilderness - Florence County - Block 99:**

0 wolves; up to 3 wolves were reported in the area in late fall, and a DNR survey on 27 December, 1999 detected 1 wolf; a male wolf died from mange related conditions prior to 21 January, 2000; DNR surveys in late January and early March 2000 detected no wolves in the area; total miles surveyed by DNR was 55.2 miles.

**Dunbar Loner - Marinette County - Blocks 107 & 110:**

1 wolf; 3 surveys were done by DNR in northern Marinette County covering 32.4 miles in these 2 survey blocks, but no wolves were detected; a depredation occurred last summer on a calf northeast of Dunbar; volunteers reported lone wolf for survey block 107 (51.3 miles surveyed); a landowner southeast of Dunbar also reported a wolf observation.

**Rock Dam Pack - Eau Claire & Clark Counties - Block 117:**

2-3 wolves; no DNR surveys, but several observations of tracks by biologists; volunteer trackers conducted 119.7 miles of survey; appears to be 2-3 wolves, but possibly 4.

**Noch Hanai Pack - Jackson County - Block 119:**

3-4 wolves; 3 DNR surveys covering 28.9 miles; estrus blood found on 20 January, 2000; a volunteer surveyed 7.7 miles in this pack area.

**Two Korner Pack - Jackson & Clark Counties - Block 119:**

1-2 wolves; two DNR surveys covering 48.8 miles; no breeding activity detected.

**Pray Pack - Jackson County - Blocks 119 & 120:**

3 wolves; wolf 002 (adult female) was observed on 2 of 18 radio locations including 1 observation of her with 2 other wolves near the community of Pray; wolf 002 maintained a 37 square mile home range that straddled both sides of State Highway 54 and the northeast portion of the Wildcat Mound territory.

**Wildcat Mound Pack - Jackson County - Block 120:**

6 wolves; DNR survey covered 25.0 miles; breeding was again suspected and 3-4 pups survived from last year; volunteers conducted 119.4 miles of survey in this block.

**Bear Bluff Pack - Jackson County - Block 121:**

4-5 wolves; 3 DNR surveys covered 57.9 miles; breeding suspected; 2-3 pups probably survived from last year; wolf 303M (yearling male) was caught on 19 September, 1999 and disappeared after 15 November, 1999.

**South Bluff Area - Wood & Juneau County - Block 121:**

1+ wolves; one DNR survey of 6.5 miles in this pack area; no breeding suspected; volunteers surveyed 33.6 miles in block 121, but more to the south of South Bluff.

**Sandhill Loner - Wood County - Block 121:**

1 wolf; a lone male wolf continues to roam the fenced 13 square mile wildlife area.

**Beaver Creek Pack - Juneau County - Blocks 121 & 122:**

5-7 wolves; wolf 309F (pup female) was observed only once from the air, and she dispersed from this territory to the east after 4 February, 2000; she had occupied at least a 16 square mile home range before dispersing; 309F was originally captured in a coyote trap on 15 November, 1999; the alpha female of this pack was shot during the firearm deer season; volunteers conducted 64.6 miles of surveys in Block 122; probably 3-5 pups survived from 1999.

**Suk Cerney Pack - Juneau County - Block 122:**

7 wolves; 9 surveys were conducted on this pack on the Necedah Wildlife Refuge by DNR and Refuge staff; estrus blood was found on 5 February, 2000; volunteers surveyed 64.6 miles in this block; probably 4-5 pups survived from 1999.

**Dead Creek Pack - Jackson, Monroe & Juneau Counties - Blocks 121 & 122:**

8 wolves; 269M (male pup) and 307M (male pup) were two pups collared in this pack in September 1999; the signal was lost for 307M in late March; 269M was seen on 4 of 17 radio locations with up to 7 other wolves; 269M occupied a 43 square mile winter home range and 307M occupied a 37 square mile area; apparently pup survival had been good and 5 or 6 pups survived to winter; breeding probably again occurred.

**Yellow Creek Pair - Juneau County - Block 125:**

2 wolves; a possible new breeding pair were detected east of the Necedah Wildlife Refuge on 2 DNR track surveys of 12.0 miles.

### **Wolf 309F - Juneau County - Block 125:**

1 wolf; this female pup from the Beaver Creek Pack roamed areas east of the Necedah Wildlife Refuge and the Petenwell Flowage in late winter and early spring.

### **Fort McCoy Loner - Monroe & Jackson Counties - Block 23:**

1 wolf; Tim Wilder of Ft. McCoy conducted 7 surveys of 125.9 miles documenting the movements of a lone wolf on Fort McCoy from December 1999 through mid February 2000.

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### **WOLVES ON THE EDGE**

Several reports were received of wolves on or near the border of Wisconsin and Michigan or Minnesota. These animals are of interest to Wisconsin, but were not included with the State wolf count. Trapper Buck Follis reported track observation of a single wolf along the Nemadji River of western Douglas County on 17 December, 1999. Volunteer tracker Steve Schaub found tracks of wolves in extreme northern Forest County near Michigan on 11 March, 2000. Volunteer tracker Ron Vandervelden detected tracks of a lone wolf in eastern Marinette County near Michigan on 18 March, 2000. Three or four Michigan wolf packs lay close to the borders of Iron and Vilas County, Wisconsin, and some of these occasionally travel into the state. Unless wolf pack territories overlap the state by 50% or more, they are not included as part of the state wolf count.

### **DISPERSING WOLVES**

**Wolf 002F:** Wolf 002F was caught as a yearling female in the Wildcat Mound Pack of Jackson County on 10 May, 1998. The main portions of this pack territory seemed to occur south of Highway 54 and wolf 002F began spending time north of the highway last winter. During summer 1999 002F moved up to 3 miles north of the highway, but continued to spend most of her time in the traditional territory south of the highway. In winter 1999-2000 wolf 002F began to shift her home range north of the highway, and by late winter she was spending little time south of the road. It appeared that 002F had formed a new pack with 2 other wolves in the Pray area.

**Wolf 229F:** Wolf 229F was initially caught as a yearling female in the Log Creek Pack on 9 July, 1993 in northeast Sawyer County. She dispersed in January, 1994, and by July 1994 had settled into the Augustine Lake area in eastern Ashland and western Iron County. Wolf 229F had been the alpha female of this pack since 1994. On 13 January, 2000 she moved 9 miles north and north of highway 77, the first time she had crossed that highway. By 20 January, 2000, she had moved another 7 miles north, just west of Gurney and east of the Bad River Indian Reservation. Wolf 229F seemed to have joined the West Firebreak Pack on the reservation by 8 February, 2000 and remained with at least 1 member of that pack until 7 March, 2000. On 16 and 22 March, she seemed to rejoin her original pack 12 miles to the south, but by 29 March she had moved 4 miles south of the pack. She remained south and west of the Augustine pack the rest of the period.

**Wolf 280M:** Yearling male wolf was caught in the Crotte Creek Pack on 13 May, 1998, and moved south into the Riverside area of northern Burnett County on 25 January, 1999. It appeared that 280M paired up with a female, and appeared they may have denned. No pups were

apparently raised and perhaps something happened to the female. Wolf 280M remained in the Riverside area during summer 1999, but also made several visits to the Chase Brook area to the west. After 8 November, 1999, 280M moved west from the Riverside area, and by 29 November, 1999 had moved 23 miles west to an area north of Cloverdale in Pine County, Minnesota. He remained in the general area until late January, 2000, but on 25 January, 2000 was back in the home territory for one radiolocation. On 7 February, 2000 280M had moved 24 miles to the northwest near Kerrick, Minnesota. By 10 April, 2000 he had moved 9 more miles further to the northwest near Sturgeon Lake in the area of the Andrews State Forest.

**Wolf 294M:** Adult male 294M was caught in the Frog Creek Pack of northeast Washburn County on 23 May, 1999. He remained in the territory until late January, but did spend time to the southwest of the Frog Creek area, and northeast of the Tranus Lake Pack. On 4 February, 2000 wolf 294M had moved west 17 miles to join up with female 295F along the Totagatic River in northwest Washburn County. The two wolves settled in this area and portions of northeast Burnett County, including much of the area previously occupied by the Riverside Pack.

**Wolf 295F:** Wolf 295F was caught as a yearling female on 25 May, 1999 in the Stuntz Brook Pack. After 9 December, 1999, she left the pack and headed north and west. On 17 December, 1999 she had moved 13 miles north into southern Douglas County. Wolf 295F roamed the area of southern Douglas County, northeast Burnett and northwest Washburn Counties for the next month and a half before meeting wolf 294M from the Frog Creek Pack. The new Totagatic River Pack was formed 6 or more miles northwest of the Stuntz Brook Pack.

**Wolf 309F:** Female wolf pup 309F was caught on 15 November, 1999 in the Necedah National Wildlife Refuge in a coyote trap. The pup was apparently a member of the newly found Beaver Creek Pack that roamed northern parts of the refuge and portions of the Meadow Valley Wildlife Area to the west in Juneau County. The wolf left the Beaver Creek area and traveled to northeast Juneau County on 4 February, 2000. She remained in the northeast corner of Juneau County for the remainder of the period, 6 to 9 miles east of the Beaver Creek territory. The Petenwell Flowage along the Wisconsin River probably prevented 309F from dispersing further eastwards. Possibly the death of her mother by shooting in November 1999 may have caused early dispersal in this pup.

**Wolf 316F:** Wolf 316F was caught as an adult female in a coyote trap on 20 October, 1999, 9 miles east of Park Falls in Price County. She was initially thought to be a member of the Hoffman Lake Pack to the north, but remained south of that area after her capture. She roamed an area from just outside of Fifield in Price County to southwest Vilas County, 20 miles to the east. From 16 December, 1999, she was observed with one other wolf, and the two concentrated activity near Wintergreen Lake. It was not clear where 316F had originated from, but she probably had only recently moved into the area when captured in October.

**Wolf 017:** Wolf 017 (female pup) was caught in the Chaney Lake Pack of Gogebic County, Michigan by Michigan biologists on 2 August, 1999. The Chaney Lake Pack was located mainly in Michigan, but did also roam through portions of eastern Iron County, Wisconsin. The pup was lost by Michigan DNR after 18 November, 2000. On 15 January, 2000, wolf 017F was found shot to death near Spencer, Wisconsin in Marathon County, and 108 miles south of her last location in the Chaney Lake Territory.

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### **WOLF TELEMETRY SURVEY SUMMARY**

A total of 97 different wolves were observed by WDNR pilots including 28 radio-collared wolves that were monitored from December through March (Table 3). Last year, pilots detected 80 wolves. The pilot count represented 39% of total wolves counted in the state by snowtracking and aerial surveys. Individual wolves were observed 30% of the time flown, which was an increase from last year (25%), but lower than the 42% observed in the snowy winter of 1996-1997. The largest groups observed were the North Willow Pack (11) and the Frog Creek Pack (10). Average group size observed by pilots was 4.1 wolves.

### **WOLF MORTALITY AND DISEASE**

Only one radio-collared wolf, actively being monitored by the WDNR, died during winter (Table 4). Three other collared wolves died including a wolf dispersed out of Michigan, a collared wolf monitored by the Bad River Chippewa Band, and a wolf with a nonfunctional collar. The low rate of loss of actively collared wolves suggests a very low mortality in Wisconsin wolves. The 9 wolves found dead during winter included 3 intraspecific strife, 2 shootings, 2 vehicle collisions and 2 mange. Three of these wolves were probably loners, while others were members of packs. Apparently some mange is persistent in the wolf population, but it seems to affect few animals. Overall mortality consisted of slightly more natural causes than human causes, but because only one wolf was actively monitored by radio collar, death observations were probably more biased toward human causes. Therefore more mortality was probably due to natural cause, but overall mortality was rather low.

### **WOLF DEPREDATION**

Wolf depredation from October 1999 through March 2000 included the following: 1 deer killed on a deer farm near Hazelhurst, Oneida County on 12 October, 1999, and at least one more deer killed during the winter; 3 calves and cow killed near Cumberland in Barron County on or near 18 November, 1999; 1 dog killed near a home outside of Danbury, Burnett County on 18 January, 2000; 1 husky dog killed near home southwest of Park Falls, Price County, 15 March, 2000. The two dog depredations were unusual in that both occurred within 100 yards of homes; most previous depredation on dogs by wolves in Wisconsin were on dogs roaming in wildland areas. Likely packs involved in the dog depredation were the Chase Brook Pack in Burnett County and the Log Creek or Price Creek Packs in Price County. The depredations on cattle in Cumberland were not near any known wolf packs, and the possibility of wolf-dog hybrid involvement could not totally be dismissed. One or 2 wolves again got into a deer farm near Hazelhurst that had similar problems in winter and spring 1999; at least 2 adult bucks were killed in the 900 acre deer farm. Intermittent live-trapping was conducted in fall and winter by USDA-Wildlife Services to attempt to capture and remove the wolf or wolves; none were caught during fall or winter.

### **REPORTED WOLF OBSERVATIONS**

A total of 50 reports of "possible" or "probable" wolf observations were received during the January-March 2000 quarter (Table 5). This was a little less than the previous quarter (62) and similar to the same quarter last year (49). Reports were received from 21 counties, including 17 of the 20 counties with known packs. Highest reporting was for Ashland County. In spring 1999, a satellite wolf from Minnesota traveled through 27 Wisconsin counties in less than 3 months, and traveled as far south as Columbia County, Wisconsin. Therefore wolf observations could

potentially occur in over two-thirds of the state. Because numerous wolf-dog hybrids have been observed in the wild and potential misidentification of coyotes, or mixed dog breeds, wolf reports still need to be carefully examined.

### **VOLUNTEER TRACK SURVEYS**

Surveys were returned for 54 survey blocks (61%) of 89 survey blocks assigned. This compared to 65% of 54 blocks surveyed last year. The average survey block was surveyed 3.6 times, along 73 miles, and covering 13.7 hours. The average survey covered 20.7 miles in 3.9 hours.

Volunteers detected 157-181 wolves in 54 blocks along 3942.2 miles of tracking, while DNR trackers detected 128-143 wolves along 2317.5 miles.

DNR and volunteers together detected wolves in 33 blocks where DNR found 186-201 wolves and volunteers found 129-152 (69%) wolves. Volunteers detected less wolves in 16 blocks, similar numbers in 10, and more wolves in 7 blocks. Although detection rates were sometimes lower, volunteers provided useful data on wolf abundance. DNR had the advantage of having both radio telemetry and snow track surveys in several blocks.

### **STATEWIDE WOLF POPULATION**

The Wisconsin wolf population in mid or late winter 1999-2000 consisted of a minimum of 248 to 259 wolves in 66 packs and 13 loners (Table 7). Last year 197-203 wolves were detected in the state in winter; subsequent spring and summer surveys indicated that at least 4 packs producing pups were missed in the survey. Therefore, at least 8 more individuals (4 pairs) probably existed in the population, and in the winter 1998-1999 a minimum of 205 wolves existed in the state. Using 205 as the 1999 count, the population increased 21.0% from last year, which is close to the average annual growth of 20% since 1985. The mean size of wolf packs was 3.6 wolves per pack. Nine or ten wolves were detected that apparently occur within Indian Reservations (West Firebreak 2, Morrison Creek 1+, Miles Lake 2, Chippewa Flowage 1, and Noch Hanai 3-4). The state count outside of Indian Reservations was 239 to 249 wolves, therefore the count was just slightly below the state delisting criteria of 250 wolves.

An estimated 77-98 pups survived from 1999. Using a midpoint of 88 pups, average annual survival for pups was 31% (88 pups/54 females x 5.2 pups). Of 54 potential packs with pups, 20 packs either failed to produce pups or had no survivors from 1999.

Area of wolf pack territories was determined by using current values for collared packs, using values from last year for previously collared packs, or using the winter average territory size (39 square miles) for uncollared packs. Wolf pack territories occupied about 2621 square miles this winter, and including area of interstitial area (37% from Fuller 1989), occupied wolf range covered 3591 square miles. The 235-246 territorial wolves occurred at a density of about 1 wolf/15 square miles. Although the 1999 wolf count suggested that population growth might be slowing down somewhat, the current survey would suggest that the population growth that started after 1985 is continuing at the same average rate of increase that has been observed over the 15 year period.

The system of counting wolves used by the WDNR probably undercounts lone wolves in the state. Two of the 9 wolves found dead in the state had not been previously detected (lone male near Eau Claire and 017 in Marathon County). We examined radio telemetry data on wolves monitored during the winter period since 1991, and determined how many animals were loners

throughout the period or died as loners in winter (Table 8). Percentage of loners in our radio-collared population should give a fairly unbiased estimation of loners in the population. Mean percentage loners was 8.2% for the 9 year period. This is lower than the value of 15% loners used for estimating the wolf population in Minnesota (Fuller et al. 1992, Berg and Benson 1998). The percentage of total loners counted in Wisconsin (radio telemetry surveys and snow tracking) was 6.5% of the wolf population. Although this figure is conservative and probably misses some wolves, it probably is a reasonable estimation of loners maintaining themselves in the state, and eventually contributing to the breeding population of wolves in the state. Loners are highly mobile, often suffer higher rates of mortality and probably vary in numbers considerably from time to time. Using too high a value of loners in the population could cause an over-estimation of the population, which could be detrimental in determining management actions for a small population.

### **PLANS FOR NEXT QUARTER**

Attempts to livetrapping and collar wolves will occur from May to mid September. Howl surveys will be done from late June to early October. Aerial surveys of all collared wolves will continue on a weekly basis, and summer home range use will be determined for the period 15 April through 14 September. Other aspects of the 1999 wolf management plan will also be implemented.

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### **Appendices.**

Note: This report is a preliminary progress report and should not be construed as a finalized publication. Some of the numbers of pack size, composition, population figures, and other information may change as more data becomes available. Persons wishing to cite figures within the report should consult with the author. Persons wishing to cite figures on the Highway 53 Wolf Study should contact Bruce Kohn directly.

**Table 1**  
**Radio-collared wolves monitored in northern**  
**and central Wisconsin**  
**15 September 1999 – 14 April 2000.**

<b>Wolf Number</b>	<b>Age<sup>a</sup></b>	<b>Pack/Area</b>	<b>Counties</b>	<b>Date Captured</b>	<b>Last Date</b>	<b>Location<sup>b</sup></b>
002F	Y	Wildcat Mound/Pray	Jackson	10 May 98	Ongoing	100
155M	A	Moose Road	Douglas/Pine	6 May 97	Ongoing	252
210F	A	Moose Lake	Douglas	31 May 96	6 Nov 99 <sup>c</sup>	313
229F	A	Augustine Lake/Disperser	Iron/Ashland	17 June 98 <sup>d</sup>	Ongoing	335
241F	P	Ghost Lake	Bayfield/Sawyer	20 Nov 97 <sup>e</sup>	Ongoing	114
244F	A	North Willow	Oneida	23 Jul 97	Ongoing	130
245F	P	Hoffman Lake	Ashland/Iron/Price	30 Jul 97	Ongoing	142
266F	Y	Bird Sanctuary	Douglas	7 Aug 96	Ongoing	322
267M	A	North Empire	Douglas	28 Aug 96	Ongoing	312
268M	Y	Truck Trail	Douglas/Pine	11 Jun 97 <sup>f</sup>	Ongoing	241
269M	P	Dead Creek	Jackson/Juneau/Monroe	17 Sept 99	Ongoing	32
280M	Y	Riverside/Disperser	Burnett/Pine	13 May 98	Ongoing	133
282F	Y	Little Rice River	Oneida	10 May 98	Ongoing	105
285F	A	Ranger Island	Lincoln	24 Aug 98	Ongoing	84
286F	Y	Brunet River	Sawyer/Ashland	5 Sep 98	Ongoing	81
290M	A	Shoberg Lake?	Douglas/Bayfield	13 May 99	4 Nov 99 <sup>g</sup>	36
291M	A	Chain Lakes	Douglas/Washburn	27 Jun 99	Ongoing	47
292M	Y	Tranus Lake	Washburn	21 May 99	Ongoing	57
293F	A	Frog Creek	Sawyer/Washburn	23 May 99	Ongoing	56
294M	A	Frog Creek/Totagatic River	Burnett/Washburn	23 May 99	Ongoing	55

295F	Y	Stuntz Brook/Totagatic River	Burnett/Washburn	25 May 99	Ongoing	56
296M	Y	Crotte Creek	Douglas	28 May 99	Ongoing	55
297M	A	South Empire	Douglas	2 Jun 99	Ongoing	55
298M	Y	North Empire/Disperser?	Douglas/Pine	8 Jun 99	Ongoing	52
303M	Y	Bear Bluff	Jackson/Juneau	19 Sep 99	15 Nov 99 <sup>g</sup>	9
307M	P	Dead Creek	Jackson/Juneau/Monroe	23 Sep 99	28 Mar 99 <sup>g</sup>	29
309F	P	Beaver Creek/Disperser	Juneau	15 Nov 99	Ongoing	22
310M	P	Brush Creek	Ashland	2 Nov 97 <sup>h</sup>	Ongoing	57
314M	A	Bootjack Lake	Price/Oneida	30 Jul 99	13 Nov 99 <sup>g</sup>	14
315F	P	Averill Creek	Lincoln	4 Sep 99	Ongoing	36
316F	A	Wintergreen	Price	20 Oct 99	Ongoing	34
724F	A	Chase Brook	Burnett/Pine	26 April 99 <sup>i</sup>	Ongoing	248

<sup>a</sup> Age at time of capture (P=Pup, Y=Yearling, A=Adult)

<sup>b</sup> Total locations from the time of capture

<sup>c</sup> Mortality

<sup>d</sup> Recaptured; first captured as a Y in Sawyer Co. 9 Jul 93

<sup>e</sup> Recaptured; first captured as a P in Ashland Co. 23 Jun 97

<sup>f</sup> Recaptured; first captured as a P in Douglas County on 28 Aug 1996

<sup>g</sup> Signal lost

<sup>h</sup> Captured in Houghton Co., Michigan

<sup>i</sup> Recaptured; first captured in Douglas Co. 29 May 97

**Table 2**  
**Home range of wolves monitored during winter 1999-2000**

<b>Wolf Number</b>	<b>Age<sup>a</sup></b>	<b>Pack/Area</b>	<b>No. of Winter Locations<sup>b</sup></b>	<b>Winter Home Range (mi<sup>2</sup>)</b>
002F	A	Wildcat Mound/Pray <sup>c</sup>	32	37
155M	A	Moose Road	30	40
210F	A	Moose Lake	8	NE <sup>f</sup>
229F	A	Augustine Lake/Disperser	14 <sup>d</sup>	15
241F	A	Ghost Lake	27	51
244F	A	North Willow	34	41
245F	A	Hoffman Lake	34	40
266F	A	Bird Sanctuary	31	19
267M	A	North Empire	30	28
268M	A	Truck Trail	29	43
269M	P	Dead Creek	32	43
280M	A	Riverside/Disperser	6 <sup>d</sup>	NE
282F	A	Little Rice River	37	57
285F	A	Ranger Island	32	12
286F	Y	Brunet River	28	45
290M	A	Disperser	7	?
291M	A	Chain Lakes	31	14
292M	Y	Tranus Lake	31	18
293F	A	Frog Creek	30	70
294M	A	Frog Creek	19 <sup>d</sup>	26
		Totagatic River	10 <sup>e</sup>	10
295F	Y	Stuntz Brook	14 <sup>d</sup>	17

		<i>Totagatic River</i>	<i>11<sup>e</sup></i>	<i>12</i>
<i>296M</i>	<i>Y</i>	<i>Crotte Creek</i>	<i>29</i>	<i>31</i>
<i>297M</i>	<i>A</i>	<i>South Empire</i>	<i>30</i>	<i>60</i>
<i>298M</i>	<i>Y</i>	<i>North Empire</i>	<i>30</i>	<i>37</i>
<i>303M</i>	<i>Y</i>	<i>Bear Bluff</i>	<i>9</i>	<i>NE</i>
<i>307M</i>	<i>P</i>	<i>Dead Creek</i>	<i>29</i>	<i>37</i>
<i>309F</i>	<i>P</i>	<i>Beaver Creek/Disperser</i>	<i>13<sup>d</sup></i>	<i>16</i>
<i>310M</i>	<i>A</i>	<i>Brush Creek</i>	<i>28</i>	<i>37</i>
<i>314M</i>	<i>A</i>	<i>Bootjack Lake</i>	<i>8</i>	<i>NE</i>
<i>315F</i>	<i>P</i>	<i>Averill Creek</i>	<i>34</i>	<i>13</i>
<i>316F</i>	<i>A</i>	<i>Wintergreen</i>	<i>34</i>	<i>61</i>
<i>724F</i>	<i>A</i>	<i>Chase Brook</i>	<i>30</i>	<i>9</i>
<i>Mean Overall (20+ locations, n = 23)<sup>f</sup></i>				<i>37 mi<sup>2</sup></i>
<i>Mean adult (20+ locations, n = 17)<sup>f</sup></i>				<i>39 mi<sup>2</sup></i>
<i><sup>a</sup>Age during monitoring period (P=Pup, Y=Yearling, A=Adult)</i>				
<i><sup>b</sup>Total locations 15 September 1999 to 14 April 2000</i>				
<i><sup>c</sup>Transitional territory</i>				
<i><sup>d</sup>Locations before dispersal</i>				
<i><sup>e</sup>Locations after dispersal <sup>f</sup>No estimate</i>				

**Table 3**  
**Visual observation rates of radio-collared wolves by**  
**DNR pilots during December December 1999 - March 2000**  
**in Wisconsin and east-central Minnesota.**

<b>Wolf Number</b>	<b>No. of Locations</b>	<b>Other Collared Wolf<sup>a</sup></b>	<b>Visual Observations</b>	<b>Percent Visuals</b>	<b>Maximum Wolves Seen</b>	<b>Pack</b>
002F	18		2	11%	3	Wildcat Mound
155M	15		4	27%	2	Moose Rd
229F	14		4	29%	2	Disperser
241F	15		4	27%	2	Ghost Lake
244F	21		12	57%	11	North Willow
245F	21		5	24%	5	Hoffman Lake
266F	16		5	31%	6	Bird Sanctuary
267M	15	298M(1)	4	27%	3 <sup>b</sup>	N.Empire
268M	15		5	33%	3 <sup>c</sup>	Truck Trail
269M	17	307M(2)	4	24%	8 <sup>d</sup>	Dead Creek
280M <sup>c</sup>	7		3	43%	1	Disperser
282M	24		2	8%	5	Little Rice River
285F	19		10	53%	4	Ranger Island
286F	15		5	33%	2	Brunet River Pair
291M	16		5	31%	3 <sup>e</sup>	Chain Lakes
292M	16		5	31%	3	Tranus Lake
293M	16		8	50%	10	Frog Creek
294M	14	295F(8)	3/4	50%	6/2	Frog Creek/Totagatic River
295F	16	294M(8)	6	38%	2 <sup>f</sup>	Totagatic River

296M	15		5	33%	4	Crotte Creek
297M	15		5	33%	5	S. Empire
298M	15	267M(1)	3	20%	3	N. Empire
307M	18	269M(2)	3	17%	5	Dead Creek
309F	18		1	6%	1	Suk Cerney
310M	15		3	20%	4	Brush Creek
315F	21		5	24%	3 <sup>g</sup>	Averill Creek
316F	24		5	21%	2	Wintergreen Lake
724F	15		5	33%	3	Chase Brook
<b>Total</b>	<b>413</b>	<b>3 pairs</b>	<b>109</b>	<b>26%</b>	<b>60</b>	

<sup>a</sup>Number of times both wolves were located in parenthesis.

<sup>b</sup>Without 298

<sup>c</sup>5 observed on 10/4/99

<sup>d</sup>With 307

<sup>e</sup>6 observed on 10/13/99

<sup>f</sup>With 294

<sup>g</sup>6 observed on 10/27/99

**Table 4**  
**Wolf mortality in Wisconsin**  
**October 1999 - March 2000**

<b>Date</b>	<b>Wolf Number</b>	<b>Age/Sex</b>	<b>County</b>	<b>Cause</b>
11/06/99	210F	A/F	Douglas	Other Wolves
11/24/99		A/F	Juneau	Shooting
12/28/99		A/M	Eau Claire	Vehicle collision
01/15/00	017F <sup>a</sup>	P/F	Marathon	Shooting
01/20/00	199M	A/M	Washburn	Other wolves
01/21/00		A/M	Florence	Mange
01/26/00		P/F	Lincoln	Vehicle collision
01/27/00	BR2 <sup>b</sup>	A/F	Ashland	Mange
03/31/00		P/M	Douglas	Other wolves

<sup>a</sup>Original capture in Michigan 08/02/99.

<sup>b</sup>Bad River wolf monitored by Tom Doolittle.

**Table 5**  
**Wolf observations by the general public and**  
**resource agency personnel January - March 2000.**

<b>County</b>	<b>No. of Sightings</b>	<b>Wolves Seen</b>	<b>Track or Sign Observation</b>	<b>Total Wolf Observation</b>
Ashland*	2	2	6	8
Bayfield*	2	3	2	4
Clark*	0	0	1	1
Douglas*	1	2	2	3
Eau Claire*	0	0	1	1
Forest*	0	0	3	3
Iron*	3	3	2	5
Jackson*	0	0	5	5
Juneau*	1	1	0	1
Lincoln*	1	1	1	2
Marathon	1	2	0	1
Marinette	1	1	1	2
Oconto	1	1	0	1
Oneida*	1	1	1	2
Price*	1	1	1	2
Rusk*	0	0	1	1
Sawyer*	1	1	1	2
Shawano	0	0	1	1
Taylor	1	1	0	1
Washburn*	1	1	2	3
Wood*	0	0	1	1
<b>Totals</b>	<b>18</b>	<b>21</b>	<b>32</b>	<b>50</b>

\*Counties with known breeding packs. No observations from Burnett and Monroe Counties where breeding packs were known to exist.

**Table 6**  
**Track Surveys in survey block by volunteer vs.**  
**DNR Wolf Monitoring Team in northern**  
**and central Wisconsin in winter 1998-1999.**

Volunteer Surveys								DNR Surveys	
Survey Block	Main County	Wolf Est.	No. of Surveys	Miles	Hours	Bleed	Vol. Track	Miles	Wolf Pop.
1	Douglas							3.0	?
3	Douglas	3-4	2	14.5	6.0	Y	PRI	-- <sup>a</sup>	8
4	Douglas	0	2	34.6	7.5	N	PRI		
8	Douglas	5-8?	2	32.1	3.2	N	PRI	-- <sup>a&amp;t</sup>	5-6
10	Burnett	2	2	45.2	5.6	N	DNR	-- <sup>a</sup>	2+
11	Burnett	2	1	9.0	0.8	N	PRI	-- <sup>a</sup>	5
12	Burnett	4-8	3	41.1	10.4	Y	NSP	-- <sup>a</sup>	4
13	Burnett	0	2	66.4	9.7	N	PRI		
14	Polk	0	3	118.8	13.0	N	PRI		
22	Washburn	6-8	6	130.1	20.0	N	PRI	-- <sup>a&amp;t</sup>	15-16
23	Douglas	2	1	NA	NA	N	PRI	-- <sup>a&amp;t</sup>	15-16
24	Sawyer	3	3	65.9	11.6	N	PRI	16.4+	2+
25	Bayfield							41.2	5
27	Bayfield							103.4	5
28	Bayfield							21.1	1
29	Bayfield	2	2	32.6	8.5	N	PRI	14.1	3
31	Bayfield							13.8+	1
32	Bayfield							35.7	0
35	Bayfield	2	5	158.0	29.8	N	PRI	176.3	6

36	Ashland	6-11	3	62.7	21.5	Y	PRI	111.4	6-7
37	Sawyer	2+	7	148.3	32.0	N	USFS&PRI	95.6	5
38	Ashland	5-6	10	236.1	30.7	Y	PRI	108.9	4-5
39	Ashland							2.5	?
40	Price	6	5	112.0	11.5+	Y	DNR&PRI	189.5	9-11
41	Price	2	1	28.1	3.0	N	DNR	36.5	9
42	Sawyer							14.9	1+
43	Sawyer							167.6	5+
47	Taylor							35.2	3
51	Price	2	3	84.0	20.0	N	PRI	26.7	2
52	Price	2	2	40.2	12.8	N	PRI	42.1	5
53	Oneida							60.4	6
54	Price	2	4	97.0	21.5	N	PRI	16.5 <sup>a&amp;t</sup>	4
55	Iron	5-8?	2	51.3	12.0	N	PRI	- <sup>a</sup>	5
56	Ashland	1	4	93.8	9.1	N	DNR	50.3	4+
57	Iron	12	1	3.0+	1.0+	Y	DNR	43.4	3-5
58	Iron	7-8	15	43.2+	37.8	N	PRI		
59	Iron	1?	4	66.7	11.2	Y	PRI		
60	Iron	?	5	36.8	7.5	N	PRI	15.3	1
61	Iron	0	3	44.5	11.8	N	PRI		
65	Oneida	17	10	270.9	67.7	N	PRI	9.8 <sup>a&amp;t</sup>	13
67	Oneida	7	5	107.2	15.0	Y	PRI	11.7	5
68	Lincoln	2	3	71.8	6.5	N	PRI	20.8	0
69	Lincoln	2-3	5	36.7	10.2	N	DNR	- <sup>s</sup>	3
71	Lincoln							9.6	<fontsize="2"0
73	Marathon	0	3	125.7	18.5	N	PRI		

74	Langlade	0	1	14.6	3.5	N	PRI		
78	Oneida							20.1	0
79	Oneida	0	3	128.5	7.5	N	PRI		
81	Vilas	2	2	25.5	2.5	N	PRI	16.9	3
82	Vilas	0	3	37.0	3.5	N	PRI		
83	Vilas	2	3	75.3	11.4	N	PRI	29.3	0
84	Forest	4	4	79.1	17.7	Y	PRI	59.8	0
85	Forest	2	1	0.7	0.5	N	PRI	151.9	2
86	Forest							23.9	0
95	Forest	4-5	2	32.7	10.0	N	PRI	16.1	0
96	Forest							35.7	0
97	Forest							22.8	0
98	Florence							53.9	1
99	Florence							55.2	1
100	Florence	0	3	93.2	21.5	N	PRI	16.5	0
102	Forest	1	3	155.2	15.6	N	PRI		
104	Oconto	0	?	NA	NA	N	PRI	18.3	0
107	Marinette	1	2	51.3	12.2	N	PRI	16.3	0
110	Florence							16.1	0
112	Marinette	1	3	73.1	13.5	N	PRI		
117	Clark	4?	4	119.7	24.5	N	PRI		
118	Clark	7?	6	135.0	17.5	N	PRI	7.5	0
119	Jackson	2-4	1	7.7	6.0	N	PRI	77.7 <sup>a&amp;t</sup>	7-10
120	Jackson	4	4	120.4	22.8	N	PRI	25.0	6
121	Wood	9?	3	33.6	13.0	N	PRI	64.4	4-7
122	Juneau	10	3	64.6	15.0	N	PRI	96.4 <sup>a&amp;t</sup>	20-22

123	Monroe	1	7	125.9	20.6	N	US Army		
124	Wood	0	3	58.2	16.0	N	PRI		
<b>TOTAL</b>		<b>157-181</b>	<b>190</b>	<b>3942.2</b>	<b>742.2</b>			<b>2317.5</b>	<b>216-231</b>

<sup>a</sup> Survey total for Blocks 6 & 8 combined

<sup>b</sup> Count includes aerial observation

**Table 7**  
**Minimum estimation of Wisconsin's timber wolf**  
**population in winter 1999-2000.**

<b>Pack/Area/Wolf</b>	<b>Counties</b>	<b>Blocks</b>	<b>No. of Wolves</b>	<b>Evidence*</b>
Augusting Lake*	Iron/Ashland	57	5-6	T
Averill Creek	Lincoln	70	3	R/T
Bear Bluff*	Jackson	121	4-5	T
Beaver Creek	Juneau	122	5-7	T/R
Bird Sanctuary	Douglas	9	6	R
Black Lake*	Ashland/Sawyer	37	2	T
Bootjack Lake*	Price/Oneida	53	6	T
Bruent River*	Sawyer/Ashland	40	2	R/T
Brush Creek*	Ashland	36	4	R/T
Buckley Creek	Douglas/Washburn	9	3-4	T
Chain Lakes	Douglas/Bayfield	8	5-6	T
Chase Brook	Burnett/Douglas	1	3	R
Chippewa River*	Iron/Ashland	56 & 58	4	T
Clifford*	Oneida/Price	51	2	T
Crex Meadow	Burnett	13	2	T
Crotte Creek*	Couglas	9	4	R
Dead Creek*	Jackson/Monroe/Juneau	121	8	R
Ding Dong Creek*	Ashland	35 & 36	3	T
Eastside Fireland*	Ashland	56	2	T
Flagg River	Bayfield	31 & 32	2	T/O
Frog Creek	Washburn/Douglas	23	10	R
Ghost Lake	Bayfield/Sawyer	24	2	R/T

Giant Pine*	Forest	85	2	T
Haystock Corner*	Sawyer/Rusk	43	3	T
Hellhole Creek	Bayfield/Ashland	35	44	T
Hoffman Lake*	PRice/Ashland	55	5	R
Kidrick Swamp*	Taylor	47	2	T
Little Rice River*	Oneida	67	5	R
Log Creek*	Sawyer/Ashland	40	4	T
Miles Lake	Price/Ashland/Vilas	54	2	T
Moose Lake	Douglas	4	4	T
Moose Road*	Douglas/Pine	2 & 11	2	R
Nineweb Lake*	Vilas	15	3	T
Noch Hanai*	Jackson	119	3-4	T
North Empire*	Douglas	3	33	R
North Willow	Oneida	65	11	R
O'Brien Lake*	Iron	59	2	T
Oriente Falls	Douglas/Bayfield	7 & 31	2	T
Pine Lake*	Iron	58	3	T
Porcupine Lake*	Bayfield	29	3	T
Pray	Jackson	119	3	R
Price Creek*	Price/Sawyer	41	7	T
Rainbow Lake*	Bayfield	27	4	T
Ranger Island*	Lincoln	69	3	R
Rock Dam	Eau Claire/Clark	117	2-3	T
Scotchman Lake*	Oneida	65	2	T
Shanagolden*	Ashland	38	2	T
Shoberg Lake*	Douglas	6	3	T
Smokey Hill*	Bayfield/Sawyer	25	5	T

Somo River*	Lincoln	68	2	T
South Empire*	Douglas	3	5	R
Springbrook	Washburn	22	2-3	T
Stuntz Brook*	Washburn	12	4	R
Suk-Cerney*	Juneau	122	7	T
Thornapple River*	Sawyer	41	2	T
Torch River*	Ashland	37 & 38	4-5	T
Totagatic River	Burnett/Washburn/Douglas	10	2	R
Tranus Lake	Washburn	22	3	R
Truck Trail*	Douglas/Pine	2	3	R
Tupper Creek*	Sawyer	43	2	T
Two Korner	Jackson/Clark	119	1-2	T
West Fireland	Iron	49	2	T
Wildcat Mound&	Jackson	120	6	T
Wo;spm f;pwage*	Price	52	5	T
Wintergreen Lake*	PRice	54	2	R
Yellow River*	Juneau	125	2	T
<b>Total Pack Members</b>			<b>235 - 246</b>	

**66 packs = 3.6 - 3.7 wolves/pack**

<u>Pack/Area/Wolf Dispersers &amp; Loners</u>	<u>Counties</u>	<u>Blocks</u>	<u>No. of Wolves</u>	<u>Evidence*</u>
W229	Ashland/Iron	56 & 57	1	R
W309	Juneau	125	1	R
Bibbon Swamp	Bayfield	27	1	T
Chippewa Flowage	Sawyer	42	1+	T

Dunbar	Marinette	107	1	T
Ft. McCoy	Monroe/Jackson	123	1	T
Jackson Creek	Oneida	67	1	T
Lost Lake	Florence	98	1	T
Morrison Creek	Iron/Ashland	39	1	T
Sandhill Loner	Wood	121	1	T
South Bluff	Wood/Juneau	121	1+	T
Sterling Barrens	Polk/Burnett	14	1	T/O
<b>Total Loners</b>			<b>13</b>	

**Grand Total All Wolves: 248 - 259**

**Indian Reservation Wolves: 9 - 10**

**Wolves Outside Reservations: 239-249**

**<sup>a</sup>Evidence: R = radio-telemetry surveys**

**T = track and sign surveys**

**O = observations**

**\*Pack with breeding activity**

**Appendix 1.**  
**Nicknames used for radio-collared wolves**

<b>Wolf No.</b>	<b>Sex</b>	<b>Age<sup>a</sup></b>	<b>Status</b>	<b>Nickname</b>
002	F	A (2 yrs)	Subordinate	Miva
155	M	A (4 yrs)	Subordinate?	Woody
229	F	A (7 yrs)	Subordinate	Shelby
241	F	A (2 yrs)	Alpha	Marry
244	F	A (6 yrs)	Alpha	Maggie
245	F	Y (2 yr)	Alpha	Jody
266	F	A (4 yrs)	Alpha	Luna
267	M	A ( $\geq$ 5 yrs)	Alpha	DeBrock
268	M	A (3 yrs)	Alpha	Barker
269	M	P ( $\leq$ 1 yr)	Subordinate	Mike
280	M	A (2 yr)	Subordinate?	Tagg
282	F	A (2 yrs)	Alpha?	Sheri
285	F	A ( $\geq$ 2 yrs)	Alpha?	Shelli
286	F	A (2 yrs)	Alpha?	Raven
290	M	A ( $\geq$ 2 yrs)	Alpha?	Manawa
291	M	A ( $\geq$ 2 yrs)	Alpha?	Sase
292	M	Y (1 yr)	Subordinate	Daniel
293	F	A ( $\geq$ 2 yrs)	Alpha	Terra
294	M	A ( $\geq$ 2 yrs)	Alpha	Joseph
295	F	Y (1 yr)	Alpha	Jesse
296	M	Y (1 yr)	Subordinate	Wagg
297	M	A ( $\geq$ 2 yrs)	Alpha?	Albert
298	M	Y (1 yr)	Subordinate	Max

303	M	Y (1 yr)	Subordinate	Craig
307	M	P ( $\leq$ 1 yr)	Subordinate	Bruce
309	F	P ( $\leq$ 1 yr)	Subordinate	Ann
310	M	A (2 yrs)	Alpha?	Cayuga
314	M	A ( $\geq$ 2 yrs)	Alpha?	Tracker
315	F	P ( $\leq$ 1 yr)	Subordinate	Melanie
316	F	A ( $\geq$ 2 yrs)	Alpha	Jane
724	F	A ( $\geq$ 4 yrs)	Alpha?	Kara

<sup>a</sup>Age = Age as of May 1999

## Appendix 2 1999-2000 Volunteer Trackers

Survey Block	Name	Survey Block	Name
003	Geri Jeardeau-McClain	067	Norm Poulton, Bud Smith
004	Alice, John & Chanda Droske	068	Jodi Wolff, Danielle Zaeling
008	Kelly Jones	-69	Chris Giese, TWIN
010	Bob Gould, Lisa Pollack	069	Rich Wissink, Amber Roth
012	Robin Maercklein, Terry O'Halloran	073	Laurie Kalmbacher
013	Ronald Harris	074	Dave & Jenni Seibel
014	Greg Harer	079	Joe & Millie Tuttle
014	Paul Kooiker	081	Jo Putnam Paquette, Nancy Warren
022	Ann, Bekah, & Sarah Roser, Bob Gould	082	Steve & Bill Schaub
023	Ann Roser	083	Steve & Bill Schaub
024	Andy & Jennifer Pils	084	Bryan & Gail Pierce
029	Terry & Judy Valen	084	Chris Giese
035	Pam Troxell	095	Dan Traas
035	Ursula Tutland	100	Roy Engles
036	Monica & Jerry VanCleve	102	Joanne Finnell
037	Bob & Sandy Hoffman, Andy & Tracy Wallace	104	Carla Zimmerman
037	Kathy Moe, WCC	107	Dave & Sue Seymour
038	Bob & Karen Schmidt	112	Ron Vander Velden, Mike Frost
038	Stephanie Douglass, Ryna Brady	117	Lisa Nelson
038	Pam Troxell	117	Larry & Emily Scheuneman
040	Lowell & E. Tesky, D. Hoefl	118	Jean Hopkins
040	Gerry Templin	119	Lowell Andreesen

041	Jane Wiedenhoeft	120	Adam Fetting, Lesa Skuldt
051	Karl Pich, Marie Erickson	120	Judy Ettenhoffer, Gilbert Williams
052	Mike, Katie, Chris, & Sarah Tyrrell	120	Dan Mautz
054	Dick & June Schmidt	121	Jill & Ron Winker, Ryan Sorenson
055	John & Elizabeth Alberts	122	Mary Brusewitz, Fritz Knoebel
056	Nancy Warren, Jane Wiedenhoeft	123	Tim Wilder
056	Dave BeBeau	124	Curt Ruesch
057	Nancy & Al Warren		
058	Nancy & Al Warren, Jane Wiedenhoeft		
059	Nancy & Al Warren		
059	Terry Daulton, Amanda Meyer		
060	Leslie Kolesar		
060	Colleen Matula		
061	Stewart Bentley		
065	Amber Roth		
065	Roger Belohlay		
065	Mark & Carl Mesman, Heidi Gilbertson, Wendy Vredenburgh		