

**PROGRESS REPORT OF
WOLF POPULATION MONITORING IN
WISCONSIN FOR THE PERIOD
APRIL -SEPTEMBER 1999**

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Eighteen wolves (including 1 recapture) were caught during spring and summer 1999, and 17 were fitted with radio collars in Wisconsin. Thirty-eight radio-collared wolves were monitored during the six month period, signals were lost on 5 wolves and 3 died, leaving 30 wolves by early Fall 1999. Howling sweeps were conducted in 44 of 55 state wolf packs, and pups were verified in 22 packs. Reports of wolf observations were received for 13 counties during summer. Two wolves were livetrapped in depredation situations; one was euthanized and one was translocated, but died from shooting within two weeks.

INTRODUCTION

Wolves recolonized Wisconsin in the mid-1970's after being extirpated from the state for about 15 years (Wydeven et al. 1995). Livetrapping and radiotelemetry tracking of wolves as well as howl and snow track surveys were initiated by the Wisconsin Department of Natural Resources in Fall 1979 (Wydeven et al. 1995). Population monitoring of wolves has been an ongoing activity since that time, and the 1989 recovery plan (Wisconsin DNR 1989) and the recently completed wolf management plan (Wisconsin DNR, 1999) reinforce the need to maintain such surveys. The present report covers wolf monitoring activity from April through September 1999.

ACKNOWLEDGEMENT

Many people have assisted with wolf population monitoring in Wisconsin. Ron Schultz conducted livetrapping, howl surveys, and ground telemetry surveys across northern Wisconsin with assistance from Stephanie Manning, Natassia Conillard, Chris Schultz, Sheri Buller, and Rich Wissink. Bruce Kohn completed work on the Highway 53 wolf study with help from Paul Keenlance, David Unger, and Lori Shimek. Dick Thiel and Wayne Hall coordinated wolf survey work in central Wisconsin with help from Cindy Mueller. Sarah Boles conducted howl surveys in northwest Wisconsin. USDA-Wildlife Service personnel investigated and verified wolf depredations, and conducted livetrappings for wolves under the direction of Kelly Thiel, including Jim Rollman, Ed

Zydzik, Buck Follis and Mike Haen. Randy Jurewicz and Ken Jonas assisted with surveys, wolf carcass transport, and depredation control activities. DNR pilots who radio tracked wolves included Phil Miller, Joe Sprenger, John Bronson, Paul Anderson, and Mike Weinfurter. Kerry Beheler coordinated disease testing on wolves, and dead wolves were necropsied at the National Wildlife Health Lab in Madison by Dr. Nancy Thomas. Sam Merrill, Minnesota DNR and Dave Mech, U .S. Geological Survey, provided information on movement of 503F through Wisconsin. Lesa Skuldt of Madison conducted a study of road use by central Wisconsin wolves. Tom Doolittle livetrapped and monitored wolves on the Bad River Reservation. Volunteers who assisted on howl surveys included the following: Tim and Ruth Lewis and Wittenberg University students, Chris Giese, Mike Reczynski, Ken Novak, Gary Milanowski, Norm Poulton, Rachel Tilseth, Carla Zirnnerman, Nancy Warren, and Timber Wolf Alliance volunteers.

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METHODS

Wolves were livetrapped and radio collared following procedures of Mech (1974). Attempts were made to collar about half the packs in the state. Collared wolves were generally located about once per week, although dispersing wolves, and wolves in the Highway 53 study were located more frequently.

Home range area for the summer period (15 April-14 September) was determined with the minimum convex polygon (Mohr 1947). Radio locations over 5 km from other points were considered extraterritorial moves (Fuller 1989). Home range area were calculated only for wolves that occupied stable areas, and did not include dispersing wolves.

Howl surveys (Harrington and Mech 1982) were used to determine pup production, location of rendezvous sites, summer locations of noncollared packs, and determine presence of new packs.

RESULTS AND DISCUSSION

Eighteen wolves were livetrapped during spring and summer 1999 by DNR and USDA-Wildlife Service, and 17 were radio collared (Table 1). Two wolves were captured by Wildlife Service in a deer farm, an adult female was euthanized, and an adult male

(313M) was radio collared, but unfortunately was shot two weeks after being relocated. Captured wolves included 7 adult males (mean weight 79.6 lbs for 5); 3 adult females (mean weight 74 lbs for 2); 4 yearling males (mean weight 79.0 lbs for 3); 1 yearling female (74 lbs); 2 male pups (each 55 lbs), and 1 female pup (26. lbs). A total of 889 trap nights were used by DNR to trap 5 wolves outside the Highway 53 Study for an average of 178 trap nights per wolf.

Figure 1 illustrates the 54 wolf packs located across the state last winter. The School House Pack identified in Douglas County last winter was found to actually be part of the Shoberg Lake Pack, but 3 new packs were found in the area. The Empire Pack was split into 2 packs, the North and South Empire Pack. A new pack was found south of the Crotte Creek Pack called the Buckley Creek Pack, and the Chain Lake Pack was found north of the Frog Creek Pack. Tom Doolittle found no evidence of the Morrison Creek Pack during the summer on the Bad River Indian Reservation. Therefore, total pack count in summer was probably 55 packs.

During the summer period 38 wolves were monitored with radio telemetry in 29 different state wolf packs (Table 2). Three loner/dispersing wolves were also monitored during the period. Collared wolves included 13 adult males, 17 adult females, 4 yearling males, 1 yearling female, 2 pup males, and 1 pup female. Eight wolves went off the air during the period, including 3 dying (240F, 299M, and 313M) and 5 signals lost (237F, 275F, 279F, 284M, and 503F). At the end of the summer period 30 wolves were on the air in 27 packs and no loners were being monitored.

The mean summer home range for 24 wolves was 26.4 mi² (Table 3). Last winter's territories averaged 41 mi². The mean summer home range size for adult females (23.0 mi²) was smaller than adult males (34.9 mi²), probably due to pup raising activities. Pack summaries are listed below; nicknames used for wolves in the field are listed in the appendix.

WOLF PACK AND LONE WOLF SUMMARIES

Crex Meadows Pack (Burnett County): 2 wolves in area last winter; no collared wolves in pack; one howl survey with only 2 adults responding.

Truck Trail Pack (Douglas & Pine Counties): 3-4 wolves last winter; alpha male 268M monitored in a 47 mi² territory during summer; 3 pups and 2 adults heard on howl survey 10 July.

Moose Road Pack (Douglas & Pine Counties): 3 wolves last winter; alpha male 155M monitored in a 28 mi² summer territory; no howl surveys but den and pup scats found.
North Empire Pack (Douglas County): North portion of Empire Pack that split this winter or spring; 6 wolves in Empire Pack last winter; alpha male 267F and yearling male 298M monitored in 36 mi² territory during summer; no howl surveys were conducted but pups were suspected.

South Empire Pack (Douglas): The south portion of the Empire Pack was occupied by adult male 297M who may be the alpha male of this new territory that covered 58 mi²; no pups were heard in a single howl survey, but pup production was suspected in this pack.

Crone Creek Pack (Douglas County): Yearling male 296M was monitored in a 31 mi² home range in this pack during summer; 4 wolves were in this pack last winter; no responses were heard on 3 howl surveys, but pups were suspected.

Moose Lake Pack (Douglas County): 4 wolves were in this pack last winter; adult female 210F occupied a 19 mi² territory during the summer; no responses were heard in 2 howl surveys but based on 210F's locations, she probably dened and raised pups again this year.

Bird Sanctuary Pack (Douglas County): 5 wolves were found in this pack last winter; adult female 266 occupied a small 10 mi² territory during summer; 5 pups were seen in the pack on 27 June, and 7 + wolves were heard howling on 12 July.

Shoberg Lake Pack (Douglas County): This pack apparently included the group called the Schoolhouse Pack last winter, and thus consisted of 5-7 wolves; adult male 290M covered a 31 mi² area during summer; 3 pups were observed in the territory on 10 July.

Buckley Creek Pack (Douglas and Washburn Counties): During spring trapping Bruce Kohn discovered this new pack in an area of jack pine barrens south of the Crone Creek Pack; an adult male (299M) was monitored in this pack from 30 June 1999 until 19 August 1999 when he covered an area of at least 36 mi²; 299M was found dead on 19 August, but cause has yet to be determined; no responses were received in 4 howl surveys, but apparent pup tracks were detected in late June.

Clam Lake Pack (Douglas County): Bruce Kohn found a new pack during spring trapping in an area southeast of Gordon and northwest of the Frog Creek Pack; an adult male (291M) covered a territory of at least 8 mi² in summer, but only 16 radio locations were obtained; responses were received on 2 of 4 howl surveys, but included only 1-2 adults and 1-2 yearlings; the pack killed one and injured another bear hunting dog on 20 August.

Oriente Falls Pack (Douglas and Bayfield County): 2 wolves were in this pack last winter; no surveys were conducted in this territory during summer, but reports were received of a lone wolf that wandered along Highway B near the Brule State Forest.

Chase Brook Pack (Burnett, Douglas and Pine County): 4 wolves were detected in this pack last winter; adult female 724F covered a 20 mi² home range during summer which included sorties into the nearby Riverside Pack; no pups were detected in this pack. This pack had previously been involved in livestock depredation, therefore female 724F was caught on 22 April 1999, and fitted with a dog shock collar. An automatic trigger device was set up on the farm where depredations had occurred, and sent shocks to the wolf if she approached within 0.75 miles. No livestock depredation was detected during the summer.

Riverside Pack (Burnett County): 2 wolves were detected in this pack last winter; adult male 280M occupied a 17 mi² home range in summer in this area; no howling surveys were conducted, but pups were not thought to be present.

Stuntz Brook Pack (Washburn County): 5 wolves were detected in this pack last winter; yearling female 295F covered a 20 mi² home range in the pack area during summer; no pups were heard on a single howl survey, but pup production was suspected; the pack was apparently responsible for depredation on one calf on 28 August 1999.

Tranus Lake Pack (Washburn County): 2 wolves were detected in this pack last winter; yearling male 292M occupied a 13 mi² home range in this pack during summer; 3 pups were detected along with 3-4 older wolves on a howl survey on 10 August 1999.

Frog Creek Pack (Washburn, Douglas and Sawyer County): 5 wolves were detected in this pack last winter; adult male 294M and adult female 293F occupied 33 mi² and 43 mi² home ranges respectively this summer; on 10 August 1999 2-3 pups were heard with 3-4 older wolves.

Flag River Pack (Bayfield County): 3 wolves were detected in this territory last winter; no surveys were done in the area during summer .

Rainbow Lake Pack (Bayfield County): 3 wolves were found in this pack last winter; 3 or more pups were heard in this pack area on 13 August, but it was not clear if these were wolf or coyote; at least 2 or 3 adults were heard on two nights of howling, but these were not associated with the pups.

Ghost Lake Pack (Bayfield and Sawyer County): 2 wolves were detected in this pack last winter; limited livetrapping was done in the territory , but no wolves were trapped, no howl surveys were conducted.

Smoky Hill Pack (Bayfield County): 2-3 wolves were detected in this pack last winter; no pups were heard on a single howl survey, but tracks were found at a traditional rendezvous site; no wolves were caught in limited livetrapping.

Hellhole Creek Pack (Bayfield and Ashland County): 4 wolves were detected here last winter; no pups were heard on a single howl survey, but pup production was suspected.

Brush Creek Pack (Ashland County): 4-5 wolves were in this territory last winter; adult male 310M occupied a 29 mi² home range in this pack territory during the summer; no pups were detected on two howl surveys, but pup production was suspected.

Torch River Pack (Ashland County): 3 wolves were detected in this pack last winter; limited livetrapping was conducted, but no wolves were caught; 3 howl surveys resulted with some distant responses, but were unable to confirm pups.

Black Lake Pack (Sawyer and Ashland County): 3 wolves in this pack last winter; no howl surveys and no captures in limited trapping .

Log Creek Pack (Sawyer, Ashland and Price County): 2-3 wolves in this pack last winter; no collared wolf but 286F from the Brunet River pair to west made several visits; she was originally from this pack; 3 howl surveys and 3+ pups were heard on 23 July.

Brunet River Pair (Pack?) (Sawyer County): 2 wolves in area last winter; adult female 286F occupied an 8 mi² main home range during summer, but she made several trips back to her home territory , the Log Creek area to the east; no pups were heard in 3 howl surveys, pup production was not suspected.

Thornapple River Pack (Sawyer County): 2 wolves in this area last winter; no pups heard on 1 howl survey, but could have been missed.

Tupper Creek Pack (Sawyer County): .2 wolves in this area last winter; 3-4 pups heard on 16 July along with 2-3 adults.

Price Creek Pack (Price and Sawyer County): 4 wolves in this pack last winter; adult female 237F was probably the alpha and occupied a territory of at least 14 mi², but she went off the air after 1 September; 3-6 pups were heard on 26 June, probably the first litter for 237F as a 5 year old female, and the first litter for this pack in 2-3 years.

Haystack Corner Pack (Sawyer and Rusk County): 3 wolves found in this pack last winter; no surveys conducted in this area during the summer period.

Kidrick Swamp Pack (Taylor County): 2 wolves were in this area last winter; 2-3 pups were heard on a howl survey in this pack area on 22 September .

West Firebreak Pack (Ashland County): 4 wolves were in this pack on the Bad River Indian Reservation last winter; Tom Doolittle caught an 81lb adult female in this pack on 17 August; only 1 pup was apparently produced in the pack, and only one other adult was present; the Tribe is monitoring this pack.

Morrison Creek Pack (Ashland and Iron County): 2 wolves were in this pack last winter, but no recent sign was found during the summer; the Michigan DNR monitored a pack in western Gogebic County that crossed the Montreal River into Wisconsin, and this perhaps might also be a member of the Morrison Creek Pack.

Augustine Lake Pack (Ashland and Iron County): 5 wolves were detected in this pack last winter; adult female 229F occupied a 24 mi² home range in summer, and pup production was suspected. O'Brien Lake Pack (Iron County): 5 wolves were located in this area last winter; no wolves were caught during livetrapping attempts in early summer; no howl surveys were completed.

Pine Lake Pack (Iron County): 3 wolves were located in this pack last winter; wolf 240F moved into this territory on 15 June, but was found dead on 21 July, possibly killed by the pack; no howl surveys were conducted.

Saxon Falls Pair (Iron and Gogebic Counties): 2 wolves were found in this group considered a Michigan Pair last winter; Michigan biologists detected considerable activity on the Wisconsin side of the Montreal River, and possibly the Morrison Creek Pack has moved into this area.

Chaney Lake Pack (Gogebic and Iron County): 4 wolves were located in this Michigan Pack last winter; a collared male from this pack was observed at a private residence on 20 July 1999 near North Turtle Lake in eastern Iron County.

Chippewa River Pack (Iron and Ashland County): 3-5 wolves occurred in this pack last winter; no wolves were caught during summer livetrapping; no wolves were heard during 1 howl survey; a logger did see 1 or more wolves at a logging operation in this area. Hoffman Lake Pack (Ashland, Iron and Price County): 5 wolves were detected in this area last winter; adult female 245F was monitored in an 18 mi² home range in this territory; no wolves were heard during one howl survey, but pup production was suspected.

Miles Lake Pack (Price and Iron Counties): 2 wolves were found in this area last winter; no wolves were caught during summer livetrapping; 2-3 pups were heard on a howl survey on 10 May 1999. Wilson Flowage Pack (Price County): 8 wolves were in this pack last winter; 2 or 3 pups were heard on a howl survey in this pack on 8 October 1999. Bootiack Lake Pack (Price and Oneida County): 6 wolves occurred in this pack last winter; adult male 314M was caught in this pack on 30 July 1999 and he occupied a home range of at least 5 mi² (only 6 radio locations); 2+ pups were heard in this pack on 20 July 1999.

North Willow Pack (Oneida County): 5 wolves were in this pack last winter; adult female 244F occupied a 24 mi² home range during summer; 2+ pups were heard in this pack on 31 July 1999.

Little Rice River Pack (Oneida County): 7 wolves occurred in this pack last winter; adult female 282F occupied a summer home range of 11 mi²; 2+ pups were heard in this pack on 24 September 1999; an adult male (313M) caught on a deer farm near Hazelhurst, may have been from this pack; this wolf was relocated to the Nicolet National Forest.

Somo River Pack (Lincoln County): This pack was not detected last winter, but may be an extension of the Little Rice River Pack; no wolves were caught livetrapping in this area; 2+ pups were heard in this pack on 25 August 1999, along with 3 or more older wolves.

Ranger Island Pack (Lincoln County): 4 wolves were detected in this pack last winter; adult female 285F occupied a very small home range of 3 mi² in this territory; 3 pups were heard in the pack on 29 July 1999 along with 4 older wolves.

Averill Creek Pack (Lincoln County): 4 wolves were found in this territory last winter; adult male 284M was monitored until 28 June when his signal was lost, and a female pup was collared in this pack on 4 September 1999; only one pup was heard on a howl survey on 2 August; an adult female that was probably the alpha female of this pack, was killed while depredating on chickens in eastern Taylor County on 27 July.

Nineweb Lake Pair (Vilas County): 2 wolves were detected in this area last winter; no wolves were detected during a howl survey in the pack; several reports were received of wolf observations in the area.

Giant Pine Pack (Forest County): 3 wolves were detected in this pack last winter; no wolves were caught during summer livetrapping and no wolves were heard during summer howl surveys; a collared wolf apparently originally from the Bad River Pack was observed along Highway 32 west of this territory.

Rock Dam Pack (Eau Claire and Clark County): 2 wolves were detected in this territory last winter; no formal howl surveys were conducted here, but reports were received of adult howls.

Noch Hanai Pack (Jackson County): 2 wolves were detected here last winter; no wolves were heard during a single howl survey.

Two-Korner Pack (Jackson and Clark County): 2 wolves were found in this territory last winter; no wolves were caught during summer livetrapping and no wolves were heard on 2 howl surveys.

Wildcat Mound Pack (Jackson County): 4-5 wolves were detected in this pack last winter; adult female 002F occupied a 40 mi² home range during summer; as many as 5 pups were heard in this territory on 25 May 1999.

Sandhill Loner (Wood County): Lone male 501M continued roaming the Sandhill W .A.; no breeding apparently occurred in the fenced wildlife area.

South Bluff Pack (Wood and Juneau County): 2-3 wolves were found in this pack last winter; no wolves were caught in this pack during summer livetrapping; 4 or more pups were heard on 11 and 14 September 1999.

Bear Bluff Pack (Jackson and Wood County): 7 wolves were in this pack last winter; adult female 275F was monitored in this pack until she went off the air on 14 June 1999 and occupied a territory of at least 17 mi² (only 8 radio locations); a yearling male (303M) was captured in this pack on 19 September 1999; 3 pups were heard in this pack on 5 August 1999.

Dead Creek Pack (Monroe and Jackson County): 3-4 wolves were detected in this pack last winter; two male wolf pups were caught in this territory in late September (269M and 307M); 3 pups were heard in this pack on howl surveys on 8 and 14 September 1999.

Suk Cerney Pack (Juneau County): 2 wolves occurred in this area during winter; no wolves were heard during two howl surveys.

SUMMARY OF HOWLING SURVEYS

Over 60+ pups were heard from 21 different wolf packs across Wisconsin, average about 2.9 per pack (Table 4). No pups were heard in 22 packs. Pup production was probably considerably higher, because it's difficult to count pups beyond 3-4 howling wolf pups, and some of the unsuccessful surveys probably were unable to locate wolves. Last year 57-60 pups were heard from 20 different packs, therefore pup production was probably similar. Success rates on 66 surveys included responses at 40 stops of 430 howl stops or success rate of 9.3%. Surveys included 93.9 hours of 491 miles of surveys outside the Highway 53 Study area. Howl surveys were also conducted in 3 areas where no known wolf packs existed. Surveys included 14 miles with 13 stops in the Butler Rock area of Oconto/Marinette counties, 4 miles and 2 stops in an area north of Mosinee in Marathon County, and 10 miles with 5 stops south of Hawkins in Rusk County. No wolves were heard on these surveys.

DISPERSING WOLVES

Wolf 240F: Yearling female was caught in the Torch River Pack on 21 June 1997. She remained as a regular member of that pack until March 1998, when the alpha female of that pack died, and 240F seemed to be displaced from this territory. She spent most of the summer period 1998, and winter 1998-1999 in a small home range along Wisconsin Highway 77 between the Torch River and Brush Creek Pack. In late March 1999, 240F dispersed from this home range. She visited areas near the Chippewa River and Log Creek Packs during the next few months, but was lost during much of this period. On 15 June, 240F was found in the Pine Creek Pack, where she remained until her death sometime before 21 July. Specific cause of death was not determined, but she may have been killed by other wolves. Her last location was 32 miles east of her original capture site in the Torch River Pack.

Wolf 279F: Wolf 279F (yearling female) was caught on 13 May 1998 in the Stuntz Brook Pack. She spent time east of the Stuntz Brook Pack, in the Tranus Lake area from mid-November 1998 to mid-January 1999.

Wolf 279F returned to the Stuntz Brook area in midwinter, but after 15 February she moved westward and by 25 March was located 45 miles to the west along 135 near Hinckley, Minnesota. The wolf returned to Wisconsin on 18 May, when she was found in

the Crex Meadow Wildlife Area, where she remained for at least three days. Her last location was near the Kettle River in Minnesota on 24 May, 44 miles west of her original capture site; her signal was lost after location.

Wolf 503F: Wolf 503F (adult female - this is the number assigned by Wisconsin DNR, but not used by Minnesota DNR) was initially caught in Camp Ripley, Minnesota as a pup on 31 October 1997 and was collared with a traditional radio collar. She was recaptured on 4 February 1999 and fitted with a satellite collar. Soon after she began a major journey eastward. About 30 March she moved across the St. Croix River into Wisconsin near Danbury and 100 miles to the east of Camp Ripley. By 15 April 1999 503F had moved to eastern Shawano County, 220 miles to the southeast, and 22 miles northwest of downtown Green Bay. The wolf then went to the southwest and by 18 May was located in a swampy area of northeast Adams County in the Colburn Wildlife Area, 78 miles to the southwest of the Shawano County location. Between 18 May and 24 May, 503F roamed an area 67 miles north-south, and 40 miles east-west, being centered on the Colburn Wildlife Area. On 15 May 503F was located in downtown Portage at 0130; her previous location was 14 miles to the northwest in Lewiston Marsh, and her next location was located 4 miles to the north. After 24 May, 503F began traveling westward and tried several times to cross 190/194 before crossing north of Tomah in late May. The wolf traveled west to the Stevenston area of northern LaCrosse County; this location was 80 miles west of the Colburn Wildlife Area, and 16 miles north of the City of LaCrosse. From LaCrosse County, the wolf headed northward, traveled within 5 miles of downtown Eau Claire in early June, and about 20 June, left the state near Grantsburg, 154 miles north of the LaCrosse County location. The wolf traveled back into Minnesota and traveled extensively in the eastern part of the state south of Hinckley and north of the Twin Cities suburbs.

During the 82 days the wolf was in Wisconsin it criss-crossed the state and traveled through 27 of the 72 counties in the state. The most extensive movements of the wolf were within the area designated as Zone 3 in the state wolf plan (Wisconsin DNR 1999), a zone thought to lack habitat for pack establishment, but suitable for travel by dispersing wolves. Wolf 503F traveled through 26 of the 33 counties in Zone 3.

Wolf 313M: This wolf was captured by USDA-Wildlife Services on 28 April 1999 on a deer farm near Hazelhurst, and released 46 miles to the east into the Nicolet National Forest in northern Forest County on 3 May. The wolf was shot by a farmer near Stark in Oneida County on 16 May, 23 miles to the west, and 23 miles east of the deer farm. Wolf 313M may have been returning to the deer farm, or perhaps returning to his home territory, which may have been the Little Rice River Pack to the west of the deer farm.

Reported Wolf Observations: A total of 23 "probable" and "possible" wolf observations were reported for July-September 1999. This is a decline from 33 observations during the same period 1998 and 42 in 1997. Thirty-three observations were reported the previous quarter. Reports were received from 13 counties, with highest reports for Forest County where wolves had only recently established. It appears that as wolf numbers continue to increase, people are becoming less inclined to report observations.

Wolf Mortality and Health: Three collared wolves died from April through September 1999. Wolf 240F was found dead on 21 July 1999 in the area of the Pine Lake Pack shortly after joining the pack; cause of death was not detected, but movement of the carcass after death may indicate scavenging by other wolves. Wolves 299M was found dead in the Buckley Creek Pack area on 19 August 1999; cause of death has yet to be determined. Wolf 313M was shot to death on 15 May 1999 while crossing a farm field near Stark after being relocated to the Nicolet National Forest. Two non-collared wolves died during the period. An adult female was euthanized after being livetrapped on a deer farm near Hazelhurst on 31 May (see Wolf Depredation below). An adult female was shot and killed coming out of a chicken coop with a dead chicken in eastern Taylor County on 27 July.

Some evidence of mange was detected on 5 of 16 wolves livetrapped and radio collared. None had severe cases of mange. Blood samples were collected from all wolves and will be tested for various disease.

Wolf Depredation: Eight cases of wolf depredation on pets and livestock occurred during the period (Table 6). Depredations included 3 calves killed, 1 calf injured, 2 dogs killed, 2 dogs injured, 29+ chickens killed, and 19 deer killed on a deer farm. Number of depredations were down from last year when 14 cases occurred during the same period including 14 calves killed and 6 dogs killed. High losses only occurred on deer on a deer farm and chickens on a single farm. USDA-Wildlife Service also addressed 12 wolf complaints in which verified losses did not occur .

The most intense depredation during the period was due to a female wolf being caught inside of a deer farm near Hazelhurst in Oneida County from January to May 1999. Intermittent livetrapping was conducted by USDA Wildlife Service from 8 February through 31 May 1999. It was extremely difficult to livetrapped in the deer farm and the DNR requested authority from the U .S. Fish and Wildlife Service to euthanize the female wolf in April. On 28 April 1999 an adult male (313M), who probably had recently arrived at the deer farm, was livetrapped and was relocated to the Nicolet National Forest on 3 May. He was shot crossing a farm, half way back to the deer farm on 16 May.

The female wolf was finally caught on 31 May and was euthanized at the time because of fear she would escape and because she seemed unsuitable for translocating.

A wolf also entered a deer farm near Ashland during fence repair work. The farm had lost deer to a wolf the previous year. Limited livetrapping was done by USDA- Wildlife Services in June, but the wolf apparently left by the time the fence work was completed.

Adult female 724 of the Chase Brook Pack that has caused depredation on a farm near Danbury , was live captured on 26 April and fitted with a dog shock collar .An automatic command center was set up on the farm, that sent shocks to the wolf every time she approached within 0.75 mile. The shocker battery was expected to last for two months. No depredations on calves were reported on the farm, the first time since 1994. The home

range of wolf 724F included the farm, but no radio locations occurred in the core of the farm; the wolf only used heavily wooded areas along a creek on the west side of the Farm.

Highway 53 Wolf Study: The formal aspects of the Highway 53 wolf study ended in June. In May and June, Bruce Kohn, with help from Paul Keenlance and Dave Unger, livetrapped 10 wolves. Eighteen collared wolves were monitored in the study area during the study period (155M, 210F, 266F, 267F, 268M, 279F, 280M, 290M, 291M, 292M, 293F, 294M, 295F, 296M, 297M, 298M, 299M, 724F). Sixteen packs occurred within the study area, and collared wolves occurred in all packs during portions of the period. Two collared wolves were lost during the period including the dispersal of 279F into Minnesota and the death of 299M.

Bruce Kohn will be writing up the specific results of the Highway 53 Study over the next few years. Paul Keenlance will continue to study local wolf packs as part of his PhD dissertation out of Michigan State.

Plans for Next Study Period: Aerial telemetry will be used to obtain complete counts on collared packs, and snow tracking will be used to count wolves in noncollared packs. Intense monitoring of packs will occur during fall hunting seasons. A volunteer tracking program will be used for the 5th winter season to help supplement agency surveys. The DNR wolf plan will probably be approved, and will provide direction for future wolf monitoring activity .

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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. Wolves captured and radio-collared in Wisconsin April- September 1999.

Wolf Date Number	Sex/Age^a	Weight (lbs)	Pack/Area	County	Captured
269	M/P	55	Dead Creek	Monroe	17 Sep 99
290	M/A	74	Shoberg Lake	Douglas	13 May 99
291	M/A	80	Chain Lakes	Douglas	27 Jun 99
292	M/Y	76	Tranus Lake	Washburn	21 May 99
293	F/A	70	Frog Creek	Washburn	23 May 99
294	M/A	~80	Frog Creek	Washburn	23 May 99
295	F/A	74	Stuntz Brook	Washburn	23 May 99
296	M/Y	~75	Crotte Creek	Douglas	25 May 99
297	M/A	82	South Empire	Douglas	28 May 99
298	M/Y	74	North Empire	Douglas	8 Jun 99
299	M/A	72	Buckley Creek	Douglas	30 Jun 99
303	M/Y	87	Bear Creek	Jackson	19 Sep 99
307	M/P	55	Dead Creek	Monroe	23 Sep 99
313 ^b	M/A	82	Little Rice River?	Oneida	28 Apr 99
314	M/A	80	Bootjack Lake	Price/Oneida	30 Jul 99
315	F/A	26	Averill Creek	Lincoln	2 Sep 99
724 ^c	F/A	78	Chase Brook	Burnett	26 Apr 99
---- ^d	F/A	---	Loner	Oneida	31 May 99

^a Age at time of capture assuming birth date 1 April (P = Pup, y = Yearling, A = Adult)

^b Captured by Wildlife Services on game farm, relocated to Forest County 3 May 99

^c Recapture; initial capture 28 May 97 Douglas County

^d Captured by Wildlife Services on game farm, euthanized

Table 2. Radio-collared wolves monitored in northern and central Wisconsin April- September 1999.

Wolf Number	Age ^a	Pack/Area	Counties	Date Captured	Last Date	Locations ^b
002F	Y	Wildcat Mound	Jackson	10 May 98	Ongoing	74
155M	A	Moose Road	Douglas	6 May 97	Ongoing	225
210F	A	Moose Lake	Douglas	31 May 96	Ongoing	306
229F	A	Augustine Lake	Iron/Ashland ^c	17 Jul 98	Ongoing	313
237F	Y	Price Creek	Price	4 May 95	1 Sep 99 ^d	234
240F	Y	Disperser	Iron/Ashland	21 Jun 97	21 Jun 99 ^e	100
241F	P	Ghost Lake?	Bayfield/Sawyer ^f	20 Nov 97	Ongoing	91
244F	A	North Willow	Oneida	23 May 97	Ongoing	97
245F	P	Hoffman Lake	Iron/Price	30 May 97	Ongoing	109
266F	Y	Bird Sanctuary	Douglas	7 Aug 96	Ongoing	293
267M	A	North Empire	Douglas	28 Aug 96	Ongoing	284
268M	Y	Truck Trail	Douglas	11 Jun 97	Ongoing	214
269M	P	Dead Creek	Monroe	17 Sep 99	Ongoing	3
275F	A	Bear Bluff	Jackson	12 May 97	14 Jun 99 ^d	102
279F	Y	Disperser	Burnett	13 May 98	24 May 99 ^h	92
280M	Y	Riverside	Burnett	13 May 98	Ongoing	119
282F	Y	Little Rice River	Oneida	10 May 98	Ongoing	69
284M	Y	Averill Creek	Lincoln	23 Aug 98	28 Jun 99 ^d	35
285F	A	Ranger Island	Lincoln	24 Aug 98	Ongoing	53
286F	Y	Brunet River	Sawyer	5 Sep 98	Ongoing	57
290M	A	Shoberg Lake	Douglas	13 May 99	Ongoing	31
291M	A	Chain Lake	Douglas	27 Jun 99	Ongoing	18
292M	Y	Tranus Lake	Washburn	21 May 99	Ongoing	28
293F	A	Frog Creek	Washburn	23 May 99	Ongoing	28
294M	A	Frog Creek	Washburn	23 May 99	Ongoing	28
295F	Y	Stuntz Brook	Washburn	25 May 99	Ongoing	27
296M	Y	Crotte Creek	Douglas	28 May 99	Ongoing	28
297M	A	South Empire	Douglas	2 Jun 99	Ongoing	27
298M	Y	North Empire	Douglas	8 Jun 99	Ongoing	24
299M	A	Buckley Creek	Douglas	30 Jun 99	19 Aug 99 ^e	11
303M	Y	Bear Creek	Jackson	19 Sep 99	Ongoing	3
307M	P	Dead Creek	Monroe	23 Sep 99	Ongoing	2
310M	P	Brush Creek	Ashland	2 Nov 97 ^l	Ongoing	33
313M	A	Little Rice River?	Oneida/Forest	28 Apr 99 ^j	15 May 99 ^e	4
314M	A	Bootjack Lake	Price/Oneida	30 Jul 99	Ongoing	7
315F	P	Averill Creek	Lincoln	4 Sep 99	Ongoing	3
503F	A	Loner	C-WI & MN	4 Feb 99 ^k	29 Jun 99	16
724F	A	Chase Brook	Burnett	26 Apr 99 ^l	Ongoing	220

^a Age at time of capture (P = Pup, y = Yearling, A = Adult)

^b Total locations from the time of capture

^c Recaptured wolf; first captured as a yearling in Sawyer County on 9 July 1993

^d Signal lost

^e Mortality

^f Recaptured wolf; first captured in Ashland County on 23 Jun 1997, 19 lb pup too small to collar

^g Recaptured wolf; first captured as a pup in Douglas County on 28 Aug 1996

^h Dispersed to Minnesota

Table 2. Continued

ⁱ Captured in Houghton County, Michigan

^j Captured by Wildlife Service on deer farm in Oneida County and relocated to Forest County

^k Recaptured MN wolf; first captured as a pup in Minnesota 31 Oct 1997; satellite monitored by MN DNR, located 1-4 times daily

^l Recaptured wolf; first captured in Douglas County 28 May 1997

Table 3. Home range of radio-collared wolves monitored in the summer period (15 April - 14 September 1999) in Wisconsin.

Wolf # & Sex	Age ^a	Pack/Area	Number of Summer Locations	Summer home Range (mi ²)
002F	A	Wildcat Mound	25	40
155M	A	Moose Road	35	28
210F	A	Moose Lake	32	19
229F	A	Augustine Lake	20	24
237F	A	Price Creek	15	14
240F	A	Disperser	6	NE ^b
241F	A	Ghost Lake	21	56
244F	A	North Willow	21	24
245F	A	Hoffman Lake	23	18
266F	A	Bird Sanctuary	31	10
267M	A	North Empire	35	36
268M	A	Truck Trail	34	47
275F	A	Bear Bluff	8	17
279F	A	Disperser	11	NE
280M	A	Riverside	34	17
282F	A	Little Rice River	21	11
284M	A	Averill Creek	5	1
285F	A	Ranger Island	21	3
286F	A	Brunet River	21	8
290M	A	Shoberg Lake	28	31
291M	A	Chain Lakes	16	8
292M	Y	Tranus Lake	26	13
293F	A	Frog Creek	26	43
294M	A	Frog Creek	26	33
295F	Y	Stuntz Brook	25	20
296M	Y	Crotte Creek	26	31
297M	A	South Empire	25	58
298M	Y	North Empire	22	15
299M	A	Buckley Creek	11	36
310M	A	Brush Creek	21	29
313M	A	Disperser	4	NE
314M	A	Bootjack Lake	6	5
315F	P	Averill Creek	2	NE
724F	A	Chase Brook	35	20

Mean overall (20+ locations, n=24) 26.4 mi²

Mean adult (20+ locations, n=20) 27.8 mi²

Mean adult female (20+ locations, n=12) 23.0 mi²

Mean adult male (20+ locations, n=8) 34.9 mi²

Mean yearling (20+ locations, n=4) 19.8 mi²

^a Age during monitoring period

^bNE = No Estimate

Table 4. Howl surveys and pup production in Wisconsin wolf packs spring-summer 1999.

Pack/Area	No of Howl Surveys	Miles Surveyed	Hours Howled	No. of Howl Stops	No. of Stops w/ Wolves	Est. No. of Pups	Pups Observed
Averill Creek	1	ND	1.5	6	2	1+	1
Bear Bluff	5	33	8.5	38	2	3	-
Bootjack Lake	2	11	3.0	12	1	2+	-
Brunet River	3	15	2.0	13	0	0	-
Brush Creek	2	28	3.3	8	0	0	-
Buckley Creek	5	ND	ND	ND	ND	0	*
Chain Lake	4	ND	ND	ND	ND	?	*
Chase Brook	1	12	3.2	11	0	0	-
Chippewa River	1	11	2.0	12	0	0	-
Crex Meadow	1	ND	ND	ND	ND	0	-
Crotte Creek	4	ND	ND	ND	ND	0	-
Dead Creek	5	21	4.5	18	4	3	2
Frog Creek	1	ND	ND	ND	ND	3+	-
Ghost Lake	1	5	1.4	5	0	0	-
Giant Pine	4	42	8.3	38	0	0	-
Hellhole Creek	1	8	1.1	7	0	0	-
Hoffman Lake	1	7	0.7	4	0	0	-
Kidrick Swamp	1	10	1.0	7	1	2+	-
Little Rice River	5	8	2.1	9	5	2+	-
Log Creek	3	25	3.8	23	3	3+	-
Miles Lake	2	6	2.0	7	1	2+	-
Moose Lake	2	ND	ND	ND	ND	0	-
Moose Road	-	-	-	-	-	-	*
Nineweb Lake	1	16	4.0	17	0	0	-
Noch Hanai	1	5	0.5	5	0	0	-
North Willow	1	2	1.0	2	1	2+	-
Price Creek	1	3	0.6	1	1	3+	-
Rainbow Lake	2	14	3.2	12	3	3+	-
Ranger Island	2	9	2.5	12	3	3+	-
Sanctuary	3	ND	ND	ND	ND	3+	5
Shoberg Lake	3	ND	ND	ND	ND	3	3
Smoky Hill	1	18	2.7	8	0	0	*
Somo River	1	3	0.3	2	2	2+	-
South Bluff	5	33	7.2	24	5	4+	-
South Empire	1	ND	ND	ND	ND	0	-
Stuntz Brook	1	ND	ND	ND	ND	0	-
Suk-Cerney	2	29	4.5	24	0	0	-
Thornapple River	1	15	2.5	13	0	0	-
Torch River	3	40	5.1	35	2	?	-
Tranus Lake	1	ND	ND	ND	ND	3+	-
Truck Trail	1	ND	ND	ND	ND	3	-
Tupper Creek	2	12	2.1	9	3	3+	-
Two Korner	2	31	4.0	34	0	0	-
Wildcat Mound	2	ND	ND	ND	ND	5+	-
Wilson Flowage	3	37	9.8	33	1	2+	-

Table 4. Continued

Totals	95 surveys (44 packs)	509 miles (30 packs)	98.4 hours (31 packs)	449 stops (31 packs)	40 resp. (17 of 31 packs)	60+ pups (22 of 44 packs)	11 pups observed
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*ND = No Data

* = Pups reported by observers or sign detected

Table 5. Wolf observations in Wisconsin by the general public and resource agency personnel July-September 1999.

County	No. of Sightings	Wolves Seen	Track or Sign Observations	Total Wolf Observations
Ashland*	1	1	0	1
Bayfield*	1	1	0	1
Burnett*	1	1	0	1
Douglas*	2	2	0	2
Forest*	3	3	1	4
Langlade*	1	1	0	1
Lincoln*	2	9-10	0	2
Marathon*	1	1	0	1
Oneida*	1	1	1	2
Price*	1	1	1	2
Sawyer*	2	2	0	2
Vilas	2	4	0	2
Washburn*	2	2-3	0	2
Totals	20	30-32	0	23

*Counties with known breeding packs. No observations from Clark, Eau Claire, Iron, Jackson, Juneau, Monroe, Rusk, and Wood Counties where breeding packs are known to exist.

Table 6. Wolf depredation cases on livestock and pets in Wisconsin, April- September 1999.

Date	Animal Lost	Pack Involved	County	Payments	Other Actions
2/1	+ 19 deer	Loners?	Oneida	Pending	2 wolves livertrapped, 1 wolf euthanized, 1 wolf translocated
5/27	1 calf	Unknown?	Marinette	Pending	None
6/6	1 calf	Loner, Hybrid?	Marathon	Pending	Attempted livertrap
7/1	1 dog (mix breed)	Loner, Hybrid?	Taylor	\$162	None
7/23	29+ chickens	Averill Creek	Taylor	Pending	Attempted livertrap, illegal kill on female
8/7	1 hound killed 1 hound injured	Kidrick Swamp	Taylor	Pending	None
8/20	1 hound killed	Chain Lake	Douglas	Pending	None
8/28	1 calf killed 1 calf injured	Stuntz Brook	Washburn	Pending	None
8 cases	53+ animals killed 3 animals injured 3 calves killed 1 calf injured 2 dogs killed 2 dogs injured 29+ chickens killed 19 deer killed	4+ packs 4+ loners 1 unknown	6 counties 4 farms		2 livertrapped 1 translocated 1 illegal kill 1 euthanized

Nicknames used for radio-collared wolves

Wolf No.	Sex	Age ^a	Status	Nickname
002	F	A(2yrs)	Subordinate	Miva
155	M	A(4yrs)	Subordinate?	Woody
210	F	A(>5yrs)	Alpha	Sitka
229	F	A(7yrs)	Alpha	Shelby
237	F	A(5yrs)	Alpha	Tumbles
240	F	A(3yrs)	Subordinate	Hannah
241	F	A(2yrs)	Subordinate	Marry
244	F	A(6yrs)	Alpha	Maggie
245	F	A(2yrs)	Subordinate?	Jody
266	F	A(4yrs)	Alpha	Luna
267	M	A(>5yrs)	Alpha	De Brock
268	M	A(3yrs)	Alpha	Barker
269	M	P<1yr	Subordinate	Mike
275	F	A(>4yrs)	Alpha	Michelle
279	F	A(2yrs)	Subordinate	Vixen
280	M	A(2yrs)	Alpha?	Tagg
282	F	A(2yrs)	Subordinate	Sheri
284	M	A(2yrs)	Subordinate?	Jerry
285	F	A(>2yrs)	Subordinate?	Shelli
286	F	A(2yrs)	Alpha?	Raven
290	M	A(>2yrs)	Alpha?	Manawa
291	M	A(>2yrs)	Alpha?	Sase
292	M	Y(1yr)	Subordinate	Daniel
293	F	A(>2yrs)	Alpha	Terra
294	M	A(>2yrs)	Alpha	Joseph
295	F	Y(1yr)	Subordinate	Jesse
296	M	Y(1yr)	Subordinate	Wag
297	M	A(>2yrs)	Alpha?	Albert
298	M	Y(1yr)	Subordinate	Max
299	M	A(>2yrs)	Alpha?	Sigmund
303	M	Y(1yr)	Subordinate	Craig
307	M	P(<1yr)	Subordinate	Bruce
310	M	A(2yrs)	Alpha?	Cayuga
313	M	A(>2yrs)	Alpha?	Randy
314	M	A(>2yrs)	Alpha?	Tracker
315	F	P(<1yr)	Subordinate	Melanie
503	F	A(2yrs)	Loner	Wayward
724	F	A(>4yrs)	Alpha?	Kara

^a Age as of 1 May 1999