

Tolerance by Denning Wolves, *Canis lupus*, to Human Disturbance

by

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Wolves are considered to be intolerant of human activity, especially near dens and pups. In recent years range extensions of the species in the upper Great Lakes region have brought Wolves in closer contact with humans. We report observations of Wolves tolerating human activity in close proximity to dens and rendezvous sites with pups. These include moss harvesting work in the Black River State Forest, Wisconsin; military maneuvers at Camp Ripley Military Reservation, and road construction work in the Superior National Forest in Minnesota.

Key Words: Gray Wolf, *Canis lupus*, dens, pups, human activity, tolerance.

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Table of Contents

- [Main Article](#)
- [Acknowledgments](#)
- [Literature Cited](#)

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Main Article

Until recently, the Gray Wolf (*Canis lupus*) survived primarily in wilderness areas, and came to be seen as a symbol of the wilderness (Theberge 1975). The main reason for this was that Wolves had been persecuted and exterminated in all nonwilderness areas (Young and Goldman 1944; Mech 1995). However, during the past two decades, Wolves have been returning to many areas where they have not lived for many years (Mech 1995). As they have done so, they have been adapting to human activities and disturbances. For example, they have crossed large expanses of nonforested areas (Licht and Fritts 1994) and even four-lane highways (Mech et al. 1995). In Europe, they enter villages at night to seek garbage (Zimen

and Boitani 1975), and in North America, they frequent the outskirts of villages, sometimes killing dogs (Fritts and Paul 1989).

When Wolves lived only in wilderness, they were thought to have a low tolerance for human disturbance near their dens and pups, and this may be true in wilderness settings. For example, in open tundra of northern Alaska, Wolves seemed to be intolerant of humans approaching to less than 0.8 km (Chapman 1979). However, when protected from human exploitation, for example in Denali National Park, Alaska, Wolves sometimes tolerate humans close to dens and pups. In 1988, an East Fork pack female during a natural move, carried her pups one by one down the park road several km from one den to another. In 1989, another female kept her pups for $\cong 27$ days within 100 m of this road and tolerated humans taking close-up pictures of her pups (Mech et al. 1998).

As Wolf populations recover in areas of higher human activity, land and resource managers are faced with whether or not to place land-use restrictions in areas where Wolves are recovering. One commonly proposed restriction is prohibiting various types of human activity within certain distances of Wolf den and rendezvous sites. For example, Denali National Park maintains closures around Wolf dens and rendezvous sites, including some rendezvous sites that have not been used in many years (L. D. Mech, T. J. Meier, J. W. Burch, unpublished). Regulations governing Wolf reintroductions in Yellowstone National Park allow closing areas to human visitation for 1.6 km around active dens from 15 March to 1 July (Fritts et al. 1994). The Wisconsin Department of Natural Resources recommends closing areas within 100 m of dens and restricting use from 100 to 800 m from dens from 1 March to 31 July (Wydeven and Schultz. 1992. Management policy for wolf den and rendezvous sites. Unpublished Report. Wisconsin Department of Natural Resources. 11 pages).

However, land-use restrictions are highly controversial and are opposed by many local residents more than the restoration of Wolves itself (Tucker and Pletscher 1989; Thiel and Valen 1995). Thus it is important to document the degree of adaptability of Wolves to human activity around dens and pups. We report on recent anecdotal observations of tolerance displayed by Wolves towards humans in proximity to dens and pups.

Wolves became established in west-central Wisconsin in the early 1990s. The Wildcat pack denned at a contract-operated sphagnum-moss drying bed site in the Black River State Forest in 1993, 1994 and 1995. The den is located within 0.8 km of an intensively utilized ATV trail, and within 2 km of Interstate Highway 94.

The 1993 and 1994 den entrance was located on the edge of the drying bed. Early during the 1994 denning season (early April to mid May), sometime after the litter was believed to have been born, the bed was bladed free of vegetation to prepare the site for drying moss. In the process the entrance was buried. The Wolves moved 150 m into the forest and dug a new den. Despite this level of disturbance, the Wolves re-excavated the site in winter 1994-95 (Thiel et al. 1997) and raised a litter there in 1995.

Over a two-week period in 1995 the moss pullers daily parked their trucks within 100m of the den, and frequently observed Wolves. On most occasions the Wolves appeared unconcerned by the people's presence. Once a Wolf walked past a parked truck, and on another occasion a Wolf sat down on a hillside and watched the men pulling moss in the marsh. On one occasion the men heard a Wolf barking. In late April the Forest Superintendent was apprised of the men's presence at the den site, and the activity was temporarily suspended.

In Montana, a pack of Wolves kept its pups in a rendezvous site 0.8 km from a helicopter logging operation during summer 1994. Helicopters lifted 6500 tons of logs from the cutting over a 3-month period while the Wolves occupied the site (Jimenez 1995).

Wolves breeding on Camp Ripley Military Reservation in Minnesota demonstrate a high level of resilience during the breeding season (Merrill 1996). Camp Ripley trains nearly 40000 troops annually, primarily during summer. Most of these activities are concentrated in

the Wolves' territory. This has resulted in numerous encounters between Wolves and humans involving vehicles as well as sounds from artillery, and shells exploding in impact zones.

In late July 1995 the alpha pair and their four pups used a rendezvous site in a sand-pit that was surrounded by a battalion of troops in training. About 300 soldiers and 100 large military vehicles were located within 0.5 km of the pack. At any one time, roughly 20 vehicles were running, and it was impossible not to hear their engines and the yelling of troops. At one point a group of soldiers and five large armored vehicles set up an ambush station in the sand-pit. The Wolves retreated 50 m into the woods.

One of the pack's rendezvous sites was inside an artillery impact site. Though this area was devoid of human activity, the Wolves were 0.2 to 1.9 km from several target locations for high explosive rocket and rifle fire. A similar situation occurred when numerous heavy artillery howitzers were engaging in live-fire exercises within 0.3 km of the Wolves.

In 1996 the alpha pair at Camp Ripley produced another six pups. Three rendezvous sites were found between July and September, and two of them were on the edges of active firing ranges. In July, troops reported seeing adults and pups in a culvert less than 100 m from active tank firing stations. After several days the adults were observed moving the pups off the range. A few days later the next rendezvous site was found 500 m away in a different part of the same firing range.

Since 1995, one or more Wolves have frequently been observed crossing or standing on a road and sometimes do not move until a vehicle approaches within 10 m. After three years of relatively close contact with human activity, the Ripley Wolves have become less fearful of humans than wild Wolves are normally thought to be.

In northeastern Minnesota, where wolves were legally protected in 1974, some packs are also becoming highly tolerant of human disturbance. A pack of at least three adults and five pups occupied a rendezvous site from at least 15 July to 15 August, 1997 within 100 m of an active gravel pit, where a noisy stone crusher operated day and night, and where large trucks and bull dozers worked daily. At night both pups and adults frequented the pit itself.

These observations indicate the degree of tolerance some Wolves display towards humans close to their dens and offspring, and how easily they can habituate to human caused disturbances. While it is true that Wolves may move their pups in response to human disturbances, our observations suggest that Wolves do not move pups long distances, and as Ballard et al. (1987) observed, pup survival is not decreased by these disturbances.

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