

Notes

A New Record Size Wolf, *Canis lupus*, Group for Ontario

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This report documents a group of 19 Wolves (*Canis lupus*) in northwestern Ontario. This is the largest group observed since record keeping in the Moose Aerial Inventory commenced in 1995. This large group may be a response to a high Moose (*Alces alces*) population in the Red Lake area.

Key Words: Gray Wolf, *Canis lupus*, social organization, pack size, Moose, *Alces alces*, Ontario.

The close association between Gray Wolves (*Canis lupus*) and their ungulate prey greatly influences the ecology of this cursorial predator, which is capable of killing prey much larger than itself (Kolenosky and Standfield 1975). Pack size is believed to be influenced by numerous factors. Pack sizes do not necessarily differ among Wolf populations whose major prey species are different. For example, average sizes of Wolf packs mainly depredating on Moose (*Alces alces*) are not necessarily larger than those feeding on White-tailed Deer (*Odocoileus virginianus*), but Wolf packs tend to be largest where Wolves prey on the largest ungulates (Fuller et al. 2003). This note documents one large group of Wolves observed in Ontario, Canada.

Observation

A group of 19 wolves was observed on 15 February 2005 between 1300 and 1400 hours on a frozen lake west of the settlement of Red Lake, Ontario, at approximately 51°05N and 94°05W. Red Lake (51°04N, 93°47W) is a settlement located in the boreal forest of northwestern Ontario. This sighting took place during

a transect flight to map areas of Woodland Caribou (*Rangifer tarandus caribou*) habitat activity. The aircraft, a De Havilland Turbo Beaver, was flying at a speed of 90 knots and an altitude of 400 feet when the group was observed. Ontario Ministry of Natural Resources (OMNR) pilot Carl Hansson, Trent University graduate student Liv Vors, Sir Sanford Fleming College Fish and Wildlife Technologist graduate Philip Wilson, and Red Lake OMNR employee Claire Quewezence observed and counted the Wolves.

The aircraft made several circles over the animals, which were loosely congregated near the western shore of the lake. The Wolves ran around the ice, evidently disturbed by the aircraft, but made no attempts to flee into the neighbouring forest. No kill was visible. The animals were counted and confirmed by all observers. After about two minutes of observation, the aircraft resumed its transect flight.

Discussion

We believe this group to be the largest on record for Ontario, and possibly all of Canada east of the Rocky

TABLE 1. Records of maximum Canadian Wolf pack sizes west of the Rocky mountains, 1969-2005.

Location	Size	Source
Riding Mountain National Park, Manitoba	16	Carbyn (1980)
Jasper National Park, Alberta	14	Carbyn (1974)
Southeastern Quebec	10	Potvin (1988)
Northwestern Alberta	10	Bjorge and Gunson (1985)
Algonquin Provincial Park, Ontario	9	K. Mills, personal communication, 2005
Southwestern Quebec	8	Messier (1985)
Parry Sound Forest District, Ontario	8	Kolenosky (1972)
Pukaskwa National Park, Ontario	6	Forshner (2000)

Mountains. Wolf pack records are kept in the Moose Aerial Inventory Database 1995–2006*. Before this sighting the largest pack on record was 13, and was sighted in WMU (Wildlife Management Unit) 15A in 1998. Reported average pack sizes in Ontario range from 3.8 (Bergerud et al. 1983) to 5.9 (Pimlott et al. 1969) to 6.0 (Forbes and Theberge 1996), with maximums of 7, 9 and 13, respectively. Our observation of 19 wolves is significantly higher than most packs reported in Canada (Table 1).

Gray Wolves found in the North American landscape represented in their northern Ontario range predominantly prey upon ungulates and Beaver (*Castor canadensis*) (Carbyn 1987; Gauthier and Theberge 1987). Large packs likely provide increased hunting efficiency when prey is scarce, or may alternatively be a response to abundant prey (Schmidt and Mech 1997). We suggest the large group we observed is a response to the latter. Since 1975, Moose populations in the Red Lake area have increased from a density of 0.059–0.209 animals/km² to 0.359–0.509 animals/km² (McKenney et al. 1998). Current Moose densities in the Red Lake area are lower than McKenney's estimates. Moose in the Red Lake WMU were estimated to be 0.265 animals/km² in 2004 (unpublished data, Ontario Ministry of Natural Resources, Bracebridge, Ontario). White-tailed Deer are also expanding their range northward, providing additional prey (Red Lake OMNR, personal communication). Wolf density is positively correlated with ungulate numbers (Fuller 1989; Messier 1994). Although Moose density has declined since 1998, the ungulate biomass may still be high enough to support a large Wolf population.

The relationship between pack size and prey size, however, is imperfectly understood. While food acquired per Wolf may be positively correlated with pack size (Nudds 1978), this relationship is not consistent. A review of prey use by Wolves in several geographic areas suggested a negative relationship between pack size and food acquisition (Schmidt and Mech 1997). In addition, prey size and pack size may not be closely linked. Mech (2000) observed a pack of 22–23 wolves in Minnesota, and this group preyed primarily on White-tailed Deer. Consequently, prey size and food acquisition are unlikely to be the only factors explaining the large group we observed. An additional caveat is the group we observed may have consisted of several packs that converged at the time of observation.

An additional point of interest was the colour of the wolves. All were dark brown or black, with the exception of one silvery-white individual. Most wolves in eastern Canada are gray, with black and white individuals constituting approximately four and less than one per cent of the population, respectively (Gipson et al. 2002).

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