

## REGULAR AND HOMEWARD TRAVEL SPEEDS OF ARCTIC WOLVES

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Single wolves (*Canis lupus arctos*), a pair, and a pack of five habituated to the investigator on an all-terrain vehicle were followed on Ellesmere Island, Northwest Territories, Canada, during summer. Their mean travel speed was measured on barren ground at 8.7 km/h during regular travel and 10.0 km/h when returning to a den.

Key words: *Canis lupus arctos*, den, speed, travel, wolf

Wolves (*Canis lupus*) travel extensively both within their territories and when dispersing. Over a 31-day period, a pack of wolves on Isle Royale covered 443 km (Mech, 1966), and on Ellesmere Island, a pack traveled 48 km in 1 day (Mech, 1991). Such extensive travel is necessary for wolves to locate enough prey that is vulnerable enough for them to kill (Mech, 1970). Single wolves have dispersed >800 km straight-line distance (Fritts, 1983; Ream et al., 1991). Because travel is so important to survival of wolves, it is of interest to know the rate of travel by wolves. The only measured speed of wolves during their regular travel was for wolves on Isle Royale timed at 8.0 km/h from an aircraft as they headed across open stretches of ice (Mech, 1966). I document the regular travel speed of Arctic wolves (*C. l. arctos*) on Ellesmere Island, Northwest Territories, Canada (80°N, 86°W) on barren ground during summer.

### METHODS

The wolves in this study were thoroughly habituated to me and my Suzuki Quadrunner all-terrain vehicle (Mech, 1988; National Geographic Society, 1988). As they traveled, I either followed at a distance of ca. 100 m or paralleled them. When I followed the alpha pair, often

yearling wolves would travel alongside or behind me, and there was no indication that the speed of any wolf was affected by my presence. When the alpha pair stopped to scent-mark, I stopped. If the pack stopped longer than just to scent-mark, I discontinued with the sample. Time and odometer readings were made at the beginning and ending only of routes when it was possible for me to travel approximately where the wolves traveled or parallel with them. Most routes along which I measured the speed of the wolves were primarily on old roads or gravel beds along creeks.

Three single-wolf-travel samples were measured in June and August 1989, and eight travel samples of the pair or the entire pack were measured in July 1993. All were wolves from the same pack. Mean travel speeds were computed, and data also were analyzed by weighting each sample for distance traveled.

### RESULTS

Eleven segments of travel from 0.9 to 4.9-km long were measured, including three samples of individual wolves returning to dens and eight of the alpha pair or a pack of five during regular travel (Table 1). Speeds varied from 9.6 to 13.1 km/h for wolves returning to dens (weighted mean = 10.0 km/h); during regular travel, speeds varied from 6.6 to 9.6 km/h (weighted mean = 8.7 km/h). Simple mean and standard er-

TABLE 1.—Travel speeds of wolves, Eureka area, Ellesmere Island, Northwest Territories, Canada.

Date	Distance (km) followed	Animal	Speed (km/h)	Remarks
27 June 1989	1.7	Alpha female	12.0	Returning to den
27 June 1989	4.0	Alpha female	9.6	Returning to den
2 August 1989	1.8	Yearling male	13.1	Returning to den
11 July 1993	1.3	Pack of five	9.6	Regular travel
11 July 1993	1.2	Pack of five	7.8	Regular travel
11 July 1993	0.9	Pack of five	6.6	Regular travel
13 July 1993	1.2	Pack of five	9.0	Regular travel
13 July 1993	1.8	Pack of five	9.6	Regular travel
16 July 1993	1.4	Alpha pair	9.3	Regular travel
16 July 1993	4.0	Alpha pair	9.6	Regular travel
20 July 1993	4.9	Alpha pair	7.9	Regular travel

ror for regular travel was  $8.3 \pm 0.4$  versus  $11.6 \pm 1.0$  for travel of single wolves returning to dens.

#### DISCUSSION

Most speeds were measured on level, regular terrain, although speed of the alpha female returning to the den (Table 1) was measured over irregular terrain including hummocks, hills, and valleys. Gait used by the alpha pair and pack during the samples of regular travel appeared typical of that of their usual travel over uneven terrain. Consequently, such measurements probably represent a reasonable estimate of regular speed of travel. However, at times, packs often break into an easy run for short distances when excited or exuberant and increase their speed. I was unable to measure this increased rate.

The speeds measured during this study in summer on barren ground compared closely with those measured in winter on open ice ( $8.0$  km/h—Mech, 1966), and they excluded both periods of stopping devoted to extensive olfactory investigations and of exuberant periods of above-average speed. Thus, the weighted-mean estimate of regular travel ( $8.7$  km/h) probably represents a reasonable average speed for general travel by wolves on roads, trails, frozen lakes and rivers, tundra, and other open terrain except deep snow.

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