

DAYTIME ACTIVITY OF WOLVES DURING WINTER IN NORTHEASTERN MINNESOTA

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Intermittent aerial observations of 405 radiocollared wolves from November 1968 through March 1989 showed the following percentages of activity: sleeping, 34%; resting, 31%; traveling, 28%, feeding, 6%; other, 2%.

Key words: *Canis lupus*, activity patterns, Minnesota

Little quantified information has been published about the activity of wolves (*Canis lupus*) relative to time of day or season. Mech (1977) described the proportion of time one pack of Minnesota wolves spent in various types of daytime activities in winter during a 5-year period. Peterson et al. (1984) did the same for seven packs in Alaska during five winters.

METHODS

In the present study I summarize results of 11,137 observations of 405 wolves from ca. 30 northeastern Minnesota packs from 1 November 1968 through March 1989. The wolves and their packmates were livetrapped, anesthetized, radiocollared, and aerially radiotracked and observed from one to several times per week in the Superior National Forest of northeastern Minnesota (Mech, 1974). Although some wolves were alone during part or all of their study tenure, most were members of packs of from two to 17 individuals (Mech, 1986). Observations per radiocollared wolf ranged from 1 to 457, and study tenures varied from one to 11 winters per radiocollared wolf. Mean number of radiocollared wolves observed each winter was 22 (range, 5–36). Total radiocollared wolf-winters of data were 464 (one wolf-winter equals one radiocollared wolf studied for one winter). Because individual members of wolf packs usually were acting in concert, the proportions of activity described below also generally apply to noncollared pack-

mates as well (usually it was not possible to distinguish radiocollared from noncollared wolves from the air).

RESULTS AND DISCUSSION

Following are the percentages of time the wolves were observed at various activities: sleeping, 34%; resting (awake but lying or sitting), 31%; traveling, 28%; feeding, 6%; other (e.g., chasing prey, courting, fighting), 2%. These results indicate that during winter wolves in northeastern Minnesota generally were active during the day, but that they spent much of their time resting or sleeping. This conclusion supports the findings of Mech (1966) and Peterson (1977) on Isle Royale and Peterson et al. (1984) in Alaska who found: sleeping, 15%; resting, 24%; traveling, 50%; and feeding, not reported. Whether wolf-activity patterns differ at night or during summer must await application of more refined methods of study (Kunkel et al., 1991).

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LITERATURE CITED

- KUNKEL, K. E., R. C. CHAPMAN, L. D. MECH, AND E. M. GESE. 1991. Testing the Wildlink activity-detection system on wolves and white-tailed deer. *Canadian Journal of Zoology*, 69:2466–2469.
- MECH, L. D. 1966. The wolves of Isle Royale. National Parks Fauna Series, United States Government Printing Office, 7:1–210.
- . 1974. Current techniques in the study of elusive wilderness carnivores. Pp. 315–322, in *Proceedings of the XIth international congress of game biologists* (I. Kjerner and P. Bjurholm, eds.). National Swedish Environment Protection Board, Stockholm, Sweden, 631 pp.
- . 1977. Population trend and winter deer consumption in a Minnesota wolf pack. Pp. 55–83, in *Proceedings of the 1975 predator symposium* (R. L. Phillips and C. Jonkel, eds.). Montana Forestry and Conservation Experiment Station, Missoula, 268 pp.
- . 1986. Wolf numbers and population trend in the Superior National Forest, 1967–1985. United States Department of Agriculture, Forest Service, North Central Forest Experiment Station, St. Paul, Minnesota, Research Paper, NC-270:1–6.
- PETERSON, R. O. 1977. Wolf ecology and prey relationships on Isle Royale. National Park Service Scientific Monograph Series, United States Government Printing Office, 11:1–210.
- PETERSON, R. O., J. D. WOOLINGTON, AND T. N. BAILEY. 1984. Wolves of Kenai Peninsula, Alaska. *Wildlife Monographs*, 88:1–52.

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