

# AN AERIAL CENSUS OF WOLVES IN THE NELCHINA WOLF STUDY AREA<sup>1</sup>

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## Abstract

Between 1948 and 1955 a Fish and Wildlife Service control program resulted in the removal of slightly over 200 wolves from the 20,000 square mile Nelchina wolf study area of southcentral Alaska. Estimates of the wolf population during and just after the control measures were: not more than 12 in 1953, 35 in 1955, and 120 in 1958. On February 24, 1962, a census of wolves was conducted in this study area. This complete-cover type census was a joint effort of the Alaska Department of Fish and Game and the U. S. Fish and Wildlife Service. Nine light aircraft and 21 personnel participated. Supplemental non-duplicated information was secured during a caribou census of the same area on February 25 and 26. Tracking and sighting conditions were good; 33 wolves were observed. Another 102 wolves were represented by 27 track sightings comprising 1 to 10 animals each and averaging 3.8 wolves per observation. The combined non-duplicated sightings (animal and track) indicated a minimum population of 135. Of the 45 carcasses of big game animals located during this census, 17 had been fed upon by wolves. Wolf sign was scanty in the Talkeetna Mountains but otherwise was spread randomly throughout the study area. The 1962 data, although not directly comparable to a census conducted in 1961, suggest approximately equal wolf populations for both years.

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### Introduction

The Nelchina wolf study area of southcentral Alaska abuts the Alaska Range on the north from Mount McKinley National Park to Mentasta Pass; borders the Copper River and includes the Slana River drainage on the east; travels the Chugach Mountains' divide between Miles Glacier and Mount Marcus Baker on the south; and on the west includes the Chickaloon River water-course, follows the Kashwitna River to the Susitna River, travels north along the Susitna and takes in the Chulitna River drainage. About 20,000 square miles are encompassed within these boundaries which comprise Game Management Unit 13 and that portion of Unit 14 north of the Kashwitna River.

Wolf control was initiated on the study area by the Fish and Wildlife Service in 1948<sup>1</sup>. Intensive control procedures lasted through 1951 by which time 200 wolves had been removed. During the next three years (1952, 1953, and 1954) a policing action accounted for approximately 12 more animals. In addition, bounty hunters took an undetermined number of wolves concurrent with the seven year long Fish and Wildlife Service control program. In 1957 the area was closed to the taking of wolves and has remained so to the present time; however, light poaching is known to have occurred.

Burkholder (1) has estimated the total wolf population on the study area for three different years following the repressive measures as: not more than 12 in 1953, 35 in 1955, and 120 in 1958. To more precisely measure the population status of these wolves concerted attempts were made to census them in 1961 and 1962. This paper discusses the 1962 census and provides a comparison with the results of the 1961 census.

### Objectives

The primary objective of the 1962 census was to determine the number of wolves in the study area. Secondary objectives included recording pack sizes and color combinations, and noting the numbers and kinds of prey and carrion species fed upon by wolves.

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<sup>1</sup> All information in this paper relative to the Fish and Wildlife Service's wolf control program was contributed by Mr. Bob L. Burkholder, Acting Regional Supervisor, Branch of Predator and Rodent Control, U. S. Fish and Wildlife Service, Anchorage, Alaska.

### Techniques

Through the combined efforts of the Alaska Department of Fish and Game and the U. S. Fish and Wildlife Service, a census of the entire study area was conducted on February 24, 1962. Additional wolf data were accrued incidental to a caribou census carried on by the same personnel during February 25 and 26 (2).

Twenty-one men in nine light aircraft participated in the operation. The area was divided into nine segments and one aircraft was assigned to census each section. All sections were systematically censused by individual drainages, until the area was completely covered. The aircraft used were: five two-place "150" Piper supercubs, one two-place "150" Aeronca champion and three four-place "180" Cessnas. Two observers were used in each of the Cessnas and one in each of the Supercubs and the Champion. Other than maps, emergency gear, and winter clothing, no specialized equipment or materials were utilized in the aircraft.

Of the 21 persons taking part in the census, 13 had had previous experience tracking wolves from the air. The estimated experience varied from 20 to 2,500 hours per person and when two estimations, one of 1,500 and one of 2,500 hours, were deducted from the totals the average experience of the 11 remaining men was 101 hours. Personnel were assigned to aircraft in such a manner that at least one member of each crew had had prior wolf tracking experience.

Sightings of wolves and tracks, color combinations, direction of travel, and carcasses fed on by wolves were noted as to specific locality. All pertinent data were plotted by symbol on a 1/250,000 scale U. S. Geological Survey map of the area.

The base of operations was Paxson Lodge at mile 185 on the Richardson Highway.

### Findings

Tracking and sighting conditions were good. Snow depths varied from two to four feet and the surface snow was loose and not so old as to allow an accumulation of confusing tracks. A few ridges were windblown and snow free. Little or no turbulence hindered the pilots and observers.

A total of 57 flight hours was expended in actual census. Eighty-eight tracks and 24 wolves, representing 112 individual animals, were observed during the February 24th survey. An average of two wolves was seen per hour of flying. Other wolves and track sign sighted during a caribou census conducted on February 25 and 26 and which did not duplicate observations of the 24th, were included in the following computations which were used to derive a population estimate.

Eight sightings, ranging from one to 10 wolves, totaled 33 animals (19 blacks and 14 grays) for an average of 4.1 wolves per sighting. When the locations of the 33 wolves actually seen were checked against the locations of 154 track sightings, 52 sets of tracks were believed to have been duplicated either by other track or animal sightings. Thus, track sightings of 27 non-duplicated groups accounted for 102 wolves. The number of tracks at each sighting ranged from one to 10 and averaged 3.8. The minimum total population for the study area, determined through the combination of tracks and animals, was then 135.

Throughout the course of the survey the remains of 45 animals (18 moose, 17 caribou, 1 sheep, and 9 unidentified carcasses) were observed. Time and the configuration of the terrain made it impossible to land and inspect sufficient moose and caribou carcasses to allow a meaningful analysis of how these animals died. Wolf tracks or wolves were noted at 17 of these carcasses, indicating that eight moose, eight caribou, and one unidentified animal had probably been fed upon by wolves. An additional wolf was seen carrying a ptarmigan in its mouth.

Evidence of wolf activity was scattered over most of the study area but was less frequently observed in the Talkeetna Mountains than in other portions of the tract censused. Wolves were often observed to travel along river beds, occasionally making forays into the short adjacent drainages. In seven instances tracks were seen within 10 miles of a main highway; otherwise, wolves refrained from frequenting areas where contacts with humans were likely.

While not directly comparable, it is interesting to compare the results of the 1961 census of March 6 through the 10th with those of 1962. In 1962, five times as many

men (21 vs. 4) in four and one-half times as many aircraft (9 vs. 2) spent one and one-half times the effort (57 hours vs. 38 hours) in locating slightly less than twice as many wolves (33 vs. 19) as well as wolf tracks (154 vs. 87) than during the 1961 census. The average pack size, less any duplicate track or animal sightings, was 4.7 in 1961 and 3.9 in 1962. Two and one-tenth wolves were accounted for per hour of flying in 1961 and 2.0 per hour in 1962 (figured from data collected on February 24 only). The minimum population figure in 1961, based on the combination of track and animal sightings less duplications, was 79 wolves. In 1962, with much better tracking and sighting conditions, the total was 135 animals.

When it is considered that the 1961 census was confined to the more promising locations because of poor sighting conditions, it may be appreciated that the surveys' data suggest approximately equal wolf populations for both 1961 and 1962.

Viva Voce Reference

1. B. Burkholder, Acting Regional Supervisor, Branch of Predator and Rodent Control,  
U. S. Fish and Wildlife Service, Anchorage, Alaska, (1963).

Reference Cited

2. R. Skoog, Proc. Alaskan Sci. Conf. 13, 30 (1962).