

3 3755 000 75590 0



ALASKA DEPARTMENT OF FISH AND GAME  
JUNEAU, ALASKA

STATE OF ALASKA  
Keith H. Miller, Governor

DEPARTMENT OF FISH AND GAME  
Wallace H. Noerenberg, Acting Commissioner

DIVISION OF GAME  
James A. Harper, Director

STATEWIDE WOLF POPULATION STUDIES

by

Robert A. Rausch

Volume X  
Annual Project Segment Report  
Federal Aid in Wildlife Restoration  
Project W-17-1, Work Plan O

Persons are free to use material in these reports for educational or informational purposes. However, since most reports treat only part of continuing studies, persons intending to use this material in scientific publications should obtain prior permission from the Department of Fish and Game. In all cases tentative conclusions should be identified as such in quotation, and due credit would be appreciated.

(Printed November, 1969)

**ARLIS**  
Alaska Resources  
Library & Information Services  
Anchorage, Alaska

WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

SK  
367.2  
.W6  
1452-61

STATE: Alaska

PROJECT NO: W-17-1 TITLE: Alaska Wildlife Investigations  
Big Game Investigations

WORK PLAN: 0 TITLE: Wolf and Wolverine

JOB NO: 1 TITLE: Statewide Wolf Population Studies

PERIOD COVERED: July 1, 1968 to June 30, 1969

ABSTRACT

The reported kill of wolves, 1714, reached a modern high in 1967-68. Increased harvests were noted in Southeast and Arctic Alaska while the kill in game management Unit 20 decreased. The reduced kill in Unit 20 probably reflects over-exploitation. Studies of breeding biology suggest increased fecundity in Arctic wolves concurrent with population expansion and increased exploitation. The addition of the 1967-68 information on wolf food habits did not show any major changes.

RECOMMENDATIONS

A system for recording the magnitude of the annual kill should be implemented. Aerial hunting for wolves, particularly in the Arctic and Southcentral areas, should be closely regulated or eliminated.

3 3755 000 75590 0

ARLIS

Alaska Resources Library & Information Services  
Library Building, Suite 111  
3211 Providence Drive  
Anchorage, AK 99508-4614

WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO: W-17-1 TITLE: Alaska Wildlife Investigations  
Big Game Investigations

WORK PLAN: 0 TITLE: Wolf and Wolverine

JOB NO: 1 TITLE: Statewide Wolf Population Studies

PERIOD COVERED: July 1, 1968 to June 30, 1969

OBJECTIVES

To determine productivity, survival, population composition, and population identities of wolves. To determine wolf population levels and factors influencing these levels.

To obtain information pertinent to physical characteristics of animals killed by wolves.

PROCEDURES

Characteristics of the annual kill of wolves were determined through analysis of the bounty information form which is completed whenever a wolf is presented for bounty payment. Using the epiphyseal ossification technique on the radii and ulnae, which must be on hides presented for bounty, age determinations were made on 1700 wolves. Additional insight into wolf population characteristics and their food habits was based on necropsies of 278 carcasses.

Efforts to assess physical characteristics of wolf-killed prey species and to determine wolf population levels in Game Management Unit 13 were thwarted by an unusual absence of snow cover.

Department employees who contributed to the collection and analysis of these data include the following: Dick Bishop, Pat Crow, Julius Reynolds, Jean Ernest, John Trent, and Bea Faber.

FINDINGS

Harvest

The bountied kill of wolves reached a modern-day high in 1967-68 (Table 1). This take follows the previous high which occurred in 1966-67 (Rausch, 1968).

Table I. Statewide wolf bounty analysis, 1967-68.

| Game<br>Mgt.<br>Unit | Total<br>Wolves<br>Taken | Class of Hunter |               |                 |            | Sex |     |     |     |     |      |    |     |     | Color |     |     |     |     | Method of Take |  |  |  |  |  |  |
|----------------------|--------------------------|-----------------|---------------|-----------------|------------|-----|-----|-----|-----|-----|------|----|-----|-----|-------|-----|-----|-----|-----|----------------|--|--|--|--|--|--|
|                      |                          |                 |               |                 |            |     |     |     |     |     |      |    |     |     |       |     |     |     |     |                |  |  |  |  |  |  |
|                      |                          | 1. Professional | 2. Incidental | 3. Recreational | 4. Unknown | ♂   | ♀   | Unk | BL  | BR  | GR   | W  | Unk | (1) | (2)   | (3) | (4) | (5) | (6) | (1-2)          |  |  |  |  |  |  |
|                      |                          | (1)             | (2)           | (3)             | (4)        |     |     |     |     |     |      |    |     |     |       |     |     |     |     |                |  |  |  |  |  |  |
| 1                    | 53                       | 29              | 18            | 5               | 1          | 29  | 21  | 3   | 11  | 22  | 19   |    |     | 22  | 30    |     |     |     |     | 1              |  |  |  |  |  |  |
| 2                    | 78                       | 45              | 27            | 3               | 3          | 40  | 31  | 7   | 3   | 51  | 20   |    |     | 28  | 46    | 1   |     |     |     | 3              |  |  |  |  |  |  |
| 3                    | 82                       | 66              | 16            |                 |            | 47  | 35  |     | 21  | 8   | 53   |    |     | 20  | 45    | 17  |     |     |     |                |  |  |  |  |  |  |
| 5                    | 6                        | 1               | 1             | 4               |            | 2   | 4   |     | 2   | 1   | 1    | 2  |     | 6   |       |     |     |     |     |                |  |  |  |  |  |  |
| 9                    | 24                       | 20              | 4             |                 |            | 12  | 12  |     |     | 1   | 23   |    |     | 12  | 6     |     |     |     | 6   |                |  |  |  |  |  |  |
| 11                   | 40                       | 30              | 2             | 7               | 1          | 21  | 18  | 1   | 9   |     | 31   |    |     | 6   | 12    |     |     |     | 22  |                |  |  |  |  |  |  |
| 12                   | 57                       | 35              | 4             | 18              |            | 32  | 24  | 1   | 16  | 1   | 34   |    |     | 12  | 32    | 8   |     |     | 5   |                |  |  |  |  |  |  |
| 13                   | 120                      | 44              | 6             | 69              | 1          | 67  | 52  | 1   | 45  | 4   | 69   |    |     | 9   | 22    | 11  |     |     | 70  |                |  |  |  |  |  |  |
| 14                   | 17                       | 6               | 1             | 10              |            | 7   | 10  |     | 10  |     | 7    |    |     | 5   | 4     |     |     |     | 8   |                |  |  |  |  |  |  |
| 16                   | 66                       | 37              | 5             | 24              |            | 32  | 34  |     | 22  | 2   | 33   |    |     | 6   | 3     |     |     |     | 57  |                |  |  |  |  |  |  |
| 17                   | 24                       | 24              |               |                 |            | 13  | 11  |     | 8   |     | 16   |    |     | 1   |       |     |     |     | 23  |                |  |  |  |  |  |  |
| 18                   | 3                        |                 | 2             |                 | 1          | 1   | 2   |     |     | 2   | 1    |    |     | 2   | 1     |     |     |     |     |                |  |  |  |  |  |  |
| 19                   | 17                       | 8               | 6             | 3               |            | 10  | 4   | 1   | 4   | 7   | 4    |    |     | 11  | 4     |     |     |     | 1   | 1              |  |  |  |  |  |  |
| 20                   | 265                      | 168             | 28            | 67              | 2          | 120 | 108 | 30  | 72  | 5   | 186  |    |     | 52  | 89    | 70  |     |     | 48  | 6              |  |  |  |  |  |  |
| 21                   | 105                      | 72              | 18            | 14              | 1          | 57  | 35  | 13  | 33  | 13  | 59   |    |     | 39  | 7     | 4   |     |     | 55  |                |  |  |  |  |  |  |
| 22                   | 28                       | 24              | 2             | 2               |            | 13  | 12  | 3   | 7   | 1   | 17   |    |     | 21  | 1     |     |     |     | 4   | 2              |  |  |  |  |  |  |
| 23                   | 177                      | 150             | 17            | 8               | 2          | 71  | 76  | 27  | 42  | 1   | 127  | 4  |     | 118 | 5     |     |     |     | 59  | 3              |  |  |  |  |  |  |
| 24                   | 276                      | 215             | 22            | 16              | 23         | 114 | 95  | 67  | 92  |     | 171  | 6  |     | 62  | 9     | 3   |     |     | 202 |                |  |  |  |  |  |  |
| 25                   | 145                      | 118             | 10            | 16              | 1          | 64  | 60  | 19  | 33  | 2   | 89   | 1  |     | 17  | 16    | 7   |     |     | 104 | 1              |  |  |  |  |  |  |
| 26                   | 83                       | 72              | 6             | 3               | 2          | 40  | 32  | 8   | 12  | 1   | 66   | 4  |     | 35  | 33    |     |     |     | 9   | 6              |  |  |  |  |  |  |
| Unk.                 | 45                       | 45              |               |                 |            | 26  | 19  | 8   | 1   |     | 11   | 3  | 94  |     |       |     |     |     | 45  |                |  |  |  |  |  |  |
| TOTALS               | 1714                     | 1209            | 195           | 269             | 38         | 818 | 695 | 188 | 443 | 117 | 1037 | 20 | 94  | 484 | 365   | 121 |     |     | 718 | 23             |  |  |  |  |  |  |

An abundance of wolves, increased demand for pelts, increased human activity in the Arctic, reopening Game Management Unit 13 to legal hunting and good conditions for aerial hunting facilitated the large harvest.

While the kill is only slightly higher than that of 1966-67, 1679 vs 1714, the areas of kill changed somewhat. Increased harvests were noted in Southeast and Arctic Alaska. The kill dropped in Game Management Unit 20, which had been the highest producing unit for the past five years. Often such fluctuations are caused by local climatological conditions that can materially alter the success of hunters and trappers. However, I believe the reduced harvest in Unit 20 represents the effects of over-exploitation, although I cannot rule out the possibility that natural factors also exerted a depressing effect upon the population.

The harvest estimate for 1968-69, which was compiled in late July 1969, shows a marked reduction in most Interior and Arctic Units (Table 2). The data for 1968-69 do not represent the total kill for the report period because a new bounty law, effective July 21, 1968, provided that the claimant must be a resident of the Unit where the wolf was killed in order to qualify for the bounty and that the Board of Fish and Game could designate bounty Units. Units 7, 13, 14 and 15 were declared non-bounty units. Nevertheless, with the exception of Southeast Alaska, the kill is clearly reduced, with a lowered wolf population the most probable reason.

The chronology of the harvest is presented by Unit in Table 3.

#### Productivity

The ecology of wolf reproduction was the subject of a paper presented in the American Zoologist (Rausch, 1967). The data presented here resulted from the techniques reported in the aforementioned paper, and those interested in the details of technique are referred to it. The additional data, though substantial, do not materially alter earlier conclusions regarding reproduction and productivity of Alaskan wolves (Tables 4, 5, 6, and 7).

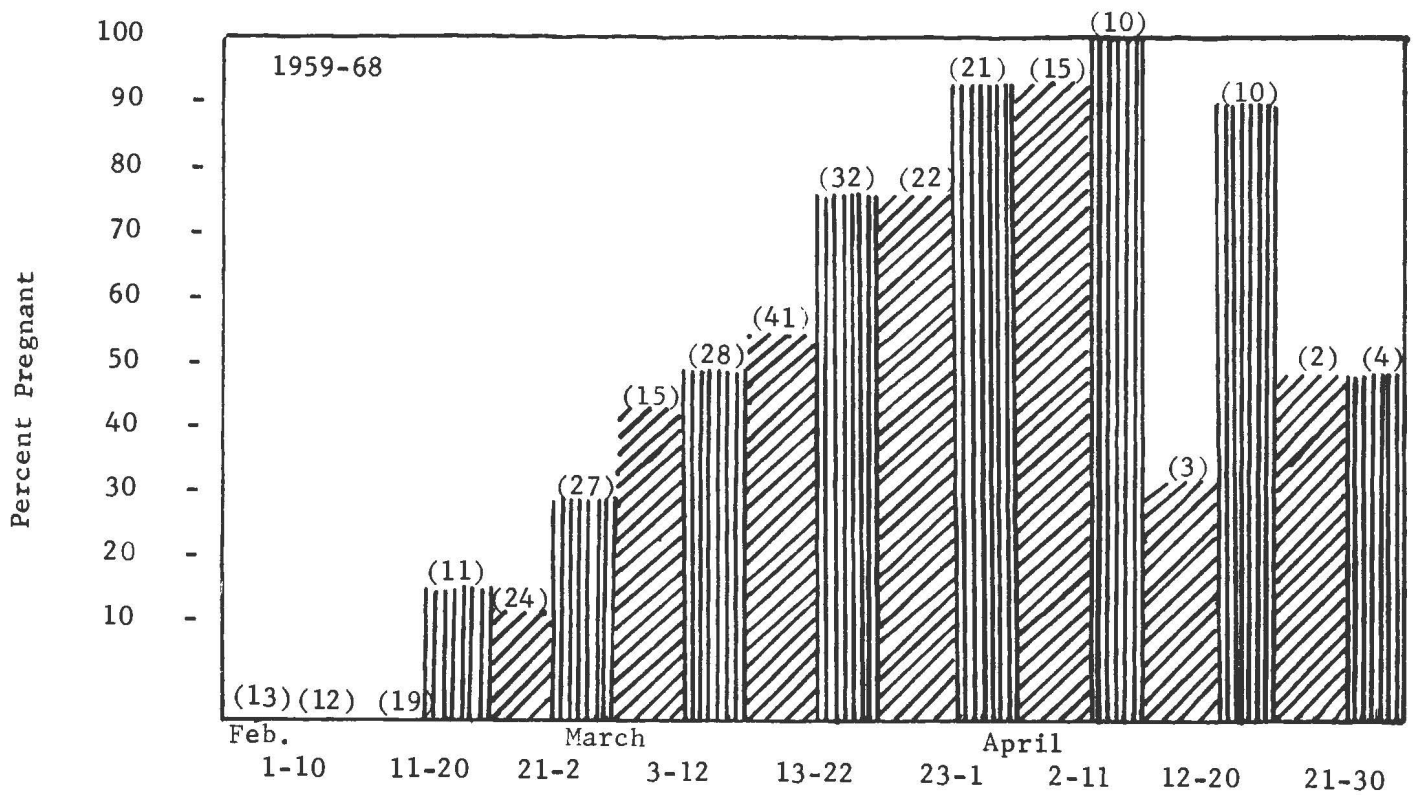
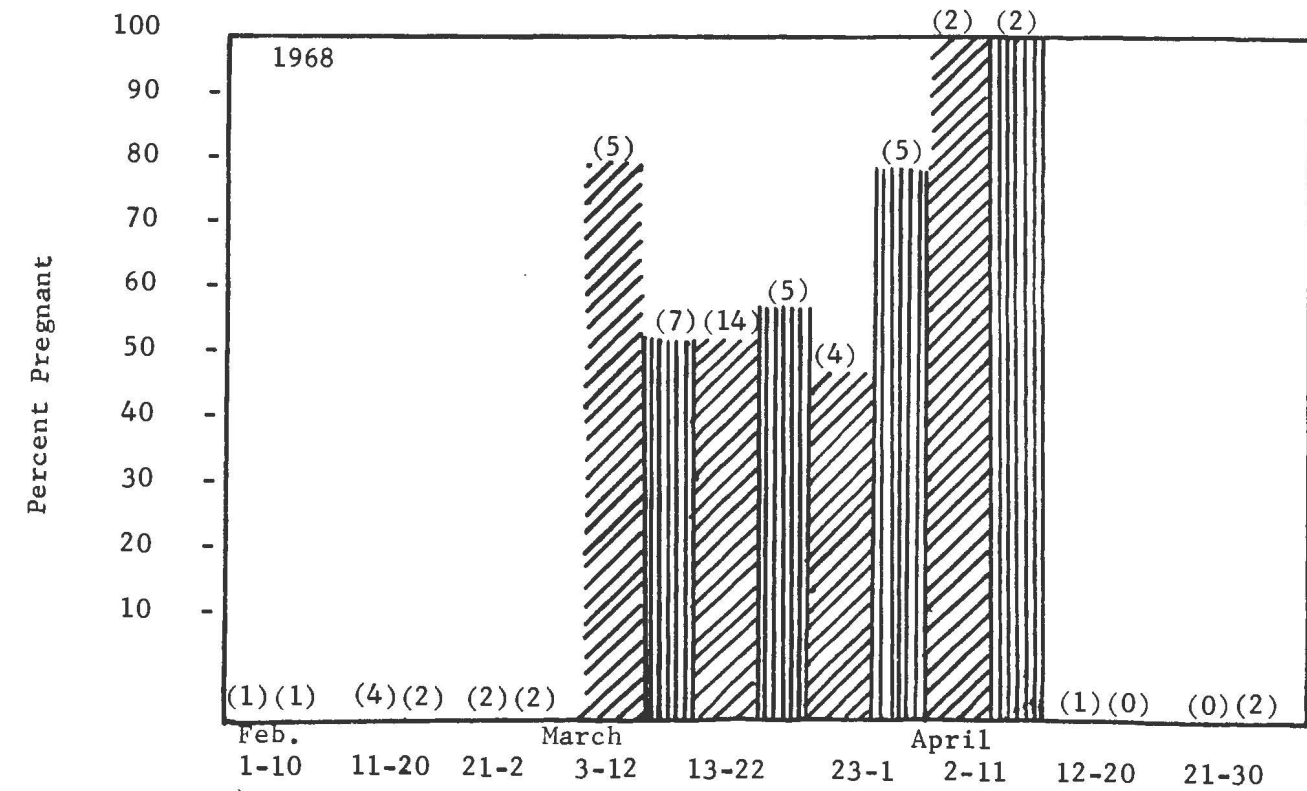
In the Arctic there is a reasonably strong suggestion that fecundity was greater during 1967 and 1968 than during previous years (Tables 8, 9, 10, 11, and Rausch, 1967). The samples, although reasonably large considering the species, are too small to verify the thesis that productivity did increase in the Arctic during the recent increase in wolf numbers.

Chronology of estrus, as evidenced by the development of corpora lutea of pregnancy, is presented in Fig. 1. These data complement those presented earlier (Rausch op. cit.).

#### Food Habits

A summary of wolf food habits data collected since 1959 was presented in 1968 (Rausch, 1968). Results from the 1968 carcass collection program are presented in Table 12. The 1968 sample represents a substantial increase in the amount of data available, but analyses showed that wolves were using essentially the same prey species as previously reported. The period from April through November needs to be examined in order to evaluate wolf-prey relationships during the period wolves are rearing pups.

Figure 1. Progression of Pregnancy of Alaskan Wolves.



2-Year Old Females

Adult Females

( ) Sample size

Table 2. Statewide wolf bounty analysis, 1968-69 (through July 18, 1969).

| Game<br>Mgt.<br>Unit | Total<br>Wolves<br>Taken | Class of Hunter                                                   |     |     |     | Sex |     | Color |     |    |     |    |     | Method of Take                                                                                        |     |     |     |     |     |
|----------------------|--------------------------|-------------------------------------------------------------------|-----|-----|-----|-----|-----|-------|-----|----|-----|----|-----|-------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|
|                      |                          | (1)                                                               | (2) | (3) | (4) | ♂   | ♀   | Unk   | BL  | BR | GR  | W  | Unk | (1)                                                                                                   | (2) | (3) | (4) | (5) | (6) |
|                      |                          | 1. Professional<br>2. Incidental<br>3. Recreational<br>4. Unknown |     |     |     |     |     |       |     |    |     |    |     | 1. Ground Shooting<br>2. Trapping<br>3. Snaring<br>4. Digging Out<br>5. Aerial Shooting<br>6. Unknown |     |     |     |     |     |
| 1                    | 41                       | 12                                                                | 20  | 9   |     | 20  | 19  | 2     | 15  | 8  | 15  | 1  |     | 23                                                                                                    | 15  | 1   |     | 2   |     |
| 2                    | 113                      | 74                                                                | 21  | 12  | 6   | 57  | 56  |       | 10  | 45 | 58  |    |     | 30                                                                                                    | 82  | 1   |     |     |     |
| 3                    | 15                       | 5                                                                 | 9   |     | 1   | 12  | 3   |       | 1   | 1  | 13  |    |     | 9                                                                                                     | 6   |     |     |     |     |
| 5                    | 8                        | 1                                                                 | 2   | 5   |     | 1   | 7   |       | 3   |    | 3   | 1  |     | 7                                                                                                     |     |     |     | 1   |     |
| 9                    | 22                       | 19                                                                | 2   | 1   |     | 5   | 4   | 13    | 10  |    | 8   |    |     | 2                                                                                                     | 2   |     |     | 17  | 1   |
| 11                   | 7                        | 3                                                                 |     |     | 4   | 6   | 1   |       | 1   |    | 6   |    |     |                                                                                                       | 7   |     |     |     |     |
| 12                   | 31                       | 15                                                                | 5   | 11  |     | 21  | 10  |       | 10  |    | 21  |    |     | 11                                                                                                    | 19  | 1   |     |     |     |
| 13                   | 1                        |                                                                   | 1   |     |     |     | 1   |       | 1   |    |     |    |     | 1                                                                                                     |     |     |     |     |     |
| 14                   | 1                        | 1                                                                 |     |     |     |     | 1   |       |     | 1  |     |    |     |                                                                                                       | 1   |     |     |     |     |
| 16                   | 6                        | 6                                                                 |     |     |     | 5   | 1   |       | 3   |    | 3   |    |     | 2                                                                                                     | 4   |     |     |     |     |
| 17                   | 15                       | 2                                                                 | 5   | 8   |     | 6   | 8   | 1     | 10  | 1  | 4   |    |     | 4                                                                                                     | 1   |     |     | 10  |     |
| 19                   | 18                       | 6                                                                 | 6   | 5   | 1   | 11  | 7   |       | 5   |    | 13  |    |     | 14                                                                                                    | 4   |     |     |     |     |
| 20                   | 134                      | 42                                                                | 10  | 50  | 32  | 75  | 53  | 6     | 36  | 7  | 86  | 1  |     | 35                                                                                                    | 37  | 14  |     | 26  | 22  |
| 21                   | 26                       | 21                                                                | 5   |     |     | 12  | 7   | 7     | 10  | 2  | 8   |    |     | 13                                                                                                    | 5   | 2   |     | 6   |     |
| 22                   | 6                        | 6                                                                 |     |     |     | 2   | 2   | 2     | 1   |    | 4   | 1  |     | 5                                                                                                     | 1   |     |     |     |     |
| 23                   | 134                      | 98                                                                | 20  | 7   | 9   | 78  | 41  | 15    | 22  | 2  | 83  | 2  |     | 92                                                                                                    | 5   |     | 2   | 25  | 10  |
| 24                   | 58                       | 56                                                                | 1   | 1   |     | 37  | 21  |       | 10  |    | 33  |    |     | 3                                                                                                     | 2   | 2   |     | 44  | 7   |
| 25                   | 61                       | 34                                                                | 8   | 4   | 15  | 39  | 20  | 2     | 19  | 2  | 36  | 2  |     | 15                                                                                                    | 20  | 17  |     | 2   | 7   |
| 26                   | 67                       | 55                                                                | 4   |     | 8   | 42  | 24  | 1     | 10  | 2  | 48  | 5  |     | 37                                                                                                    | 26  | 1   |     |     | 3   |
| Unk.                 |                          |                                                                   |     |     |     |     |     |       |     |    |     |    |     |                                                                                                       |     |     |     |     |     |
| TOTALS               | 766                      | 456                                                               | 121 | 113 | 76  | 430 | 287 | 49    | 177 | 71 | 444 | 13 |     | 305                                                                                                   | 237 | 39  | 2   | 133 | 50  |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska, 1968.

| Game Management Unit | Month | Method of Take     |             |            |                |                    |            | Total |
|----------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|-------|
|                      |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |       |
|                      |       | 1                  | 2           | 3          | 4              | 5                  | 6          |       |
| 1                    | Sept. | 1                  |             |            |                |                    |            | 1     |
|                      | Oct.  | 3                  |             |            |                | 1                  |            | 4     |
|                      | Nov.  | 4                  | 11          |            |                |                    |            | 15    |
|                      | Dec.  | 2                  | 1           |            |                |                    |            | 3     |
|                      | Jan.  | 4                  | 5           |            |                |                    |            | 9     |
|                      | Feb.  | 2                  | 8           |            |                |                    |            | 10    |
|                      | March |                    | 4           |            |                |                    |            | 4     |
|                      | April | 1                  | 1           |            |                |                    |            | 2     |
|                      | May   | 1                  |             |            |                |                    |            | 1     |
|                      | June  | 6                  |             |            |                |                    |            | 6     |
|                      |       | 24                 | 30          |            |                | 1                  |            | 55    |
|                      |       |                    |             |            |                |                    |            | Total |
| 2                    | Aug.  | 5                  |             |            |                |                    |            | 5     |
|                      | Sept. | 3                  |             |            |                |                    |            | 3     |
|                      | Oct.  | 1                  | 4           |            |                | 1                  |            | 6     |
|                      | Nov.  | 3                  | 1           |            |                |                    |            | 4     |
|                      | Dec.  | 5                  | 10          |            |                |                    |            | 15    |
|                      | Jan.  | 1                  | 7           |            |                |                    |            | 8     |
|                      | Feb.  | 3                  | 5           |            |                |                    |            | 8     |
|                      | March | 3                  | 15          | 1          |                | 2                  |            | 21    |
|                      | April |                    | 3           |            |                |                    |            | 3     |
|                      | May   | 3                  | 1           |            |                |                    |            | 4     |
|                      | July  | 2                  | 1           |            |                |                    |            | 3     |
|                      |       | 29                 | 47          | 1          |                | 3                  |            | 80    |
|                      |       |                    |             |            |                |                    |            | Total |
| 3                    | Aug.  | 4                  |             |            |                |                    |            | 4     |
|                      | Oct.  | 1                  |             |            |                |                    |            | 1     |
|                      | Nov.  | 3                  | 7           |            |                |                    |            | 10    |
|                      | Dec.  | 1                  | 16          | 1          |                |                    |            | 18    |
|                      | Jan.  |                    | 3           | 1          |                |                    |            | 4     |
|                      | Feb.  | 2                  | 4           | 1          |                |                    |            | 7     |
|                      | March | 3                  | 10          | 5          |                |                    |            | 18    |
|                      | April |                    | 5           | 9          |                |                    |            | 14    |
|                      | May   | 2                  |             |            |                |                    |            | 2     |
|                      | June  | 1                  |             |            |                |                    |            | 1     |
|                      |       | 17                 | 45          | 17         |                |                    |            | 79    |
|                      |       |                    |             |            |                |                    |            | Total |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska, 1968 (continued).

| Game<br>Management<br>Unit | Month | Method of Take     |             |            |                |                    |            | Total    |
|----------------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|----------|
|                            |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |          |
|                            |       | 1                  | 2           | 3          | 4              | 5                  | 6          |          |
| 5                          | Sept. | 2                  |             |            |                |                    |            | 2        |
|                            | Oct.  | 2                  |             |            |                |                    |            | 2        |
|                            | Nov.  | 1                  |             |            |                |                    |            | 1        |
|                            | May   | 1                  |             |            |                |                    |            | 1        |
|                            |       | 6                  |             |            |                |                    |            | 6        |
|                            |       |                    |             |            |                |                    |            | 6 Total  |
| 9                          | Sept. | 8                  |             |            |                |                    |            | 8        |
|                            | Oct.  | 2                  |             |            |                |                    |            | 2        |
|                            | Nov.  |                    | 2           |            |                |                    |            | 2        |
|                            | Dec.  | 1                  | 4           |            |                |                    |            | 5        |
|                            | Jan.  |                    |             |            |                | 4                  |            | 4        |
|                            | April | 1                  |             |            |                | 2                  |            | 6        |
|                            |       | 12                 | 6           |            |                | 6                  |            | 24       |
|                            |       |                    |             |            |                |                    |            | 24 Total |
| 11                         | Sept. | 4                  |             |            |                |                    |            | 4        |
|                            | Oct.  | 1                  |             |            |                |                    |            | 1        |
|                            | Nov.  |                    | 1           |            |                | 1                  |            | 2        |
|                            | Dec.  |                    |             |            |                | 9                  |            | 9        |
|                            | Jan.  |                    | 5           |            |                | 7                  |            | 12       |
|                            | Feb.  | 1                  | 4           |            |                | 1                  |            | 6        |
|                            | March |                    | 2           |            |                | 4                  |            | 6        |
|                            |       | 6                  | 12          |            |                | 22                 |            | 40       |
|                            |       |                    |             |            |                |                    |            | 40 Total |
| 12                         | Aug.  | 2                  |             |            |                |                    |            | 2        |
|                            | Sept. | 1                  |             |            |                |                    |            | 1        |
|                            | Oct.  | 1                  | 3           |            |                |                    |            | 4        |
|                            | Nov.  | 1                  | 7           | 2          |                | 1                  |            | 11       |
|                            | Dec.  |                    | 5           | 2          |                |                    |            | 7        |
|                            | Jan.  |                    | 6           | 1          |                | 1                  |            | 7        |
|                            | Feb.  | 1                  | 5           |            |                |                    |            | 6        |
|                            | March |                    | 6           | 3          |                | 3                  |            | 12       |
|                            | April | 1                  |             |            |                |                    |            | 1        |
|                            | May   | 2                  |             |            |                |                    |            | 2        |
|                            | June  | 4                  | 1           |            |                |                    |            | 5        |
|                            |       | 13                 | 33          | 8          |                | 5                  |            | 59       |
|                            |       |                    |             |            |                |                    |            | 59 Total |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska 1968 (continued)

| Game Management Unit | Month | Method of Take     |             |            |                |                    |            | Total     |
|----------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|-----------|
|                      |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |           |
|                      |       | 1                  | 2           | 3          | 4              | 5                  | 6          |           |
| 13                   | Oct.  | 3                  |             |            |                |                    |            | 3         |
|                      | Nov.  | 1                  | 6           | 4          |                |                    |            | 11        |
|                      | Dec.  |                    | 2           | 6          |                |                    |            | 8         |
|                      | Jan.  |                    | 8           | 1          |                |                    |            | 9         |
|                      | Feb.  | 1                  | 5           |            |                | 31                 |            | 37        |
|                      | March | 4                  | 1           |            |                | 47                 |            | 52        |
|                      |       | 9                  | 22          | 11         |                | 78                 |            | 120 Total |
| 14                   | Sept. | 2                  |             |            |                |                    |            | 2         |
|                      | Nov.  |                    | 1           |            |                |                    |            | 1         |
|                      | Dec.  |                    | 1           |            |                |                    |            | 1         |
|                      | Jan.  |                    |             |            |                | 1                  |            | 1         |
|                      | Feb.  |                    |             |            |                | 7                  |            | 7         |
|                      | March | 3                  | 2           |            |                |                    |            | 5         |
|                      |       | 5                  | 4           |            |                | 8                  |            | 17 Total  |
| 16                   | March | 2                  | 2           |            |                |                    |            | 4         |
|                      | Dec.  |                    |             |            |                | 3                  |            | 3         |
|                      | Jan.  |                    |             |            |                | 4                  |            | 4         |
|                      | Feb.  | 1                  |             |            |                | 23                 |            | 24        |
|                      | March |                    | 1           |            |                | 20                 |            | 21        |
|                      | April | 2                  |             |            |                | 7                  |            | 9         |
|                      | May   | 1                  |             |            |                |                    |            | 1         |
|                      |       | 6                  | 3           |            |                | 57                 |            | 66 Total  |
| 17                   | Dec.  |                    |             |            |                | 2                  |            | 2         |
|                      | Jan.  |                    |             |            |                | 10                 |            | 10        |
|                      | Feb.  | 1                  |             |            |                | 11                 |            | 12        |
|                      |       | 1                  |             |            |                | 23                 |            | 24 Total  |
| 18                   | Aug.  | 1                  |             |            |                |                    |            | 1         |
|                      | Oct.  | 1                  |             |            |                |                    |            | 1         |
|                      | Feb.  |                    | 1           |            |                |                    |            | 1         |
|                      |       | 2                  | 1           |            |                |                    |            | 3 Total   |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska, 1968 (continued).

| Game Management Unit | Month | Method of Take     |             |            |                |                    |            | Total |
|----------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|-------|
|                      |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |       |
|                      |       | 1                  | 2           | 3          | 4              | 5                  | 6          |       |
| 19                   | Aug.  | 2                  | 1           |            |                |                    | 1          | 4     |
|                      | Oct.  | 1                  |             |            |                |                    |            | 1     |
|                      | Nov.  | 2                  | 1           |            |                |                    |            | 3     |
|                      | Dec.  | 1                  | 1           |            |                |                    |            | 2     |
|                      | Jan.  |                    | 1           |            |                |                    |            | 1     |
|                      | Feb.  | 1                  |             |            |                |                    |            | 1     |
|                      | March | 1                  |             |            |                |                    |            | 1     |
|                      | April | 1                  |             |            |                | 1                  |            | 2     |
|                      | June  | 3                  |             |            |                |                    |            | 3     |
|                      |       | 12                 | 4           |            |                | 1                  | 1          | 18    |
|                      |       |                    |             |            |                |                    |            | Total |
| 20                   | July  | 4                  |             |            |                |                    |            | 4     |
|                      | Aug.  | 4                  |             |            |                |                    |            | 4     |
|                      | Sept. | 11                 | 1           |            |                | 1                  |            | 13    |
|                      | Oct.  | 2                  |             | 19         |                |                    |            | 21    |
|                      | Nov.  | 7                  | 23          | 33         |                | 2                  |            | 65    |
|                      | Dec.  | 5                  | 28          | 7          |                | 4                  |            | 44    |
|                      | Jan.  | 1                  | 19          | 2          |                | 10                 | 5          | 37    |
|                      | Feb.  | 4                  | 8           | 1          |                | 14                 |            | 27    |
|                      | March | 4                  | 9           | 6          |                | 15                 |            | 34    |
|                      | April | 2                  | 1           | 2          |                | 3                  |            | 8     |
|                      | May   | 5                  |             |            |                |                    |            | 5     |
|                      | June  | 2                  |             |            |                |                    |            | 2     |
|                      | July  | 6                  | 1           |            |                |                    |            | 7     |
|                      |       | 57                 | 90          | 70         |                | 48                 | 6          | 271   |
|                      |       |                    |             |            |                |                    |            | Total |
| 21                   | July  |                    |             | 1          |                |                    |            | 1     |
|                      | Oct.  |                    | 1           |            |                |                    |            | 1     |
|                      | Nov.  | 1                  | 1           |            |                |                    |            | 2     |
|                      | Dec.  | 2                  | 1           | 2          |                | 30                 |            | 35    |
|                      | Jan.  | 1                  |             |            |                |                    |            | 1     |
|                      | Feb.  | 13                 | 1           |            |                |                    |            | 14    |
|                      | March | 11                 | 3           |            |                | 6                  |            | 20    |
|                      | April |                    |             |            |                | 19                 |            | 19    |
|                      |       | 27                 | 7           | 4          |                | 22                 |            | 93    |
|                      |       |                    |             |            |                |                    |            | Total |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska, 1968 (continued).

| Game<br>Management<br>Unit | Month | Method of Take     |             |            |                |                    |            | Total |
|----------------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|-------|
|                            |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |       |
|                            |       | 1                  | 2           | 3          | 4              | 5                  | 6          |       |
| 22                         | July  | 2                  |             |            |                |                    | 1          | 3     |
|                            | Aug.  |                    |             |            |                |                    | 1          | 1     |
|                            | Nov.  | 1                  | 1           |            |                |                    |            | 2     |
|                            | Dec.  | 4                  |             |            |                |                    |            | 4     |
|                            | Jan.  | 1                  |             |            |                |                    |            | 1     |
|                            | Feb.  | 7                  |             |            |                |                    |            | 7     |
|                            | March | 6                  |             |            |                | 2                  |            | 8     |
|                            | April |                    |             |            |                | 2                  |            | 2     |
|                            |       | 21                 | 1           |            |                | 4                  | 2          | 28    |
|                            |       |                    |             |            |                |                    |            | Total |
| 23                         | July  | 1                  |             |            |                |                    |            | 1     |
|                            | Aug.  | 2                  |             |            |                |                    |            | 2     |
|                            | Sept. | 8                  |             |            |                | 5                  |            | 13    |
|                            | Oct.  | 1                  |             |            |                |                    | 2          | 3     |
|                            | Nov.  | 26                 |             |            |                |                    |            | 26    |
|                            | Dec.  | 8                  | 1           |            |                | 13                 |            | 22    |
|                            | Jan.  | 10                 |             |            |                | 3                  |            | 13    |
|                            | Feb.  | 25                 | 1           |            |                | 5                  |            | 31    |
|                            | March | 15                 | 3           |            |                | 25                 |            | 43    |
|                            | April | 14                 |             |            |                | 6                  | 1          | 21    |
|                            | June  | 4                  |             |            |                |                    | 1          | 5     |
|                            |       | 114                | 5           |            |                | 57                 | 4          | 180   |
|                            |       |                    |             |            |                |                    |            | Total |
| 24                         | July  | 2                  |             |            |                |                    |            | 2     |
|                            | Aug.  | 10                 |             |            |                |                    |            | 10    |
|                            | Sept. | 7                  |             |            |                |                    |            | 7     |
|                            | Oct.  | 4                  |             |            |                | 14                 |            | 18    |
|                            | Nov.  | 8                  | 2           |            |                |                    |            | 10    |
|                            | Dec.  | 10                 | 3           |            |                | 2                  |            | 15    |
|                            | Jan.  | 7                  | 1           |            |                |                    |            | 8     |
|                            | Feb.  | 8                  | 3           | 1          |                | 47                 |            | 59    |
|                            | March | 3                  |             | 1          |                | 96                 |            | 100   |
|                            | April | 2                  |             | 1          |                | 43                 |            | 46    |
|                            |       | 61                 | 9           | 3          |                | 202                |            | 275   |
|                            |       |                    |             |            |                |                    |            | Total |

Table 3. The chronology and method of kill of wolves by Game Management Unit, Alaska, 1968 (continued).

| Game Management Unit | Month | Method of Take     |             |            |                |                    |            | Total     |
|----------------------|-------|--------------------|-------------|------------|----------------|--------------------|------------|-----------|
|                      |       | 1. Ground Shooting | 2. Trapping | 3. Snaring | 4. Digging Out | 5. Aerial Shooting | 6. Unknown |           |
|                      |       | 1                  | 2           | 3          | 4              | 5                  | 6          |           |
| 25                   | Aug.  | 5                  |             |            |                |                    |            | 5         |
|                      | Sept. | 1                  | 1           |            |                |                    |            | 2         |
|                      | Oct.  | 1                  |             | 1          |                | 1                  |            | 3         |
|                      | Nov.  | 1                  | 1           | 4          |                | 1                  |            | 6         |
|                      | Dec.  | 2                  | 4           |            |                |                    |            | 6         |
|                      | Jan.  |                    | 3           |            |                | 1                  |            | 4         |
|                      | Feb.  | 4                  | 3           | 2          |                | 11                 |            | 20        |
|                      | March | 1                  | 2           |            |                | 85                 |            | 88        |
|                      | April |                    |             |            |                | 7                  |            | 7         |
|                      | May   | 2                  |             |            |                |                    |            | 2         |
|                      | June  | 1                  |             |            |                |                    |            | 1         |
|                      |       | 18                 | 14          | 7          |                | 104                | 1          | 144 Total |
| 26                   | July  | 1                  |             |            |                | 1                  |            | 2         |
|                      | Aug.  | 2                  |             |            |                |                    |            | 2         |
|                      | Dec.  |                    | 1           |            |                |                    |            | 1         |
|                      | Jan.  | 2                  |             |            |                |                    |            | 2         |
|                      | Feb.  | 3                  | 8           |            |                |                    |            | 11        |
|                      | March | 14                 | 13          |            |                |                    |            | 27        |
|                      | April | 11                 | 7           |            |                | 9                  | 5          | 32        |
|                      | May   | 2                  | 2           |            |                |                    |            | 4         |
|                      | June  | 1                  | 5           |            |                |                    |            | 6         |
|                      |       | 36                 | 36          |            |                | 9                  | 6          | 87 Total  |
| Unknown              |       |                    |             |            |                | 45                 |            | 45        |
|                      |       |                    |             |            |                | 45                 |            | 45 Total  |
| TOTAL                |       | 476                | 369         | 121        |                | 724                | 24         | 1714      |

Table 4. Age composition of 6,661 wolves, based on the fusion of the epiphysis to the diaphysis of radius and ulna, 1959-1968.

| Year           | Adults     |             | Pups       |             | Totals       |
|----------------|------------|-------------|------------|-------------|--------------|
|                | Number     | Percent     | Number     | Percent     |              |
| 1959-60        | 195        | (63)        | 116        | (37)        | 321          |
| 1960-61        | 209        | (53)        | 183        | (47)        | 392          |
| 1961-62        | 311        | (61)        | 200        | (39)        | 511          |
| 1962-63        | 351        | (57)        | 263        | (43)        | 614          |
| 1963-64        | 289        | (55)        | 241        | (45)        | 530          |
| 1964-65        | 305        | (52)        | 284        | (48)        | 589          |
| 1965-66        | 671        | (55)        | 542        | (45)        | 1,213        |
| 1966-67        | 724        | (58)        | 521        | (42)        | 1,245        |
| <u>1967-68</u> | <u>721</u> | <u>(57)</u> | <u>535</u> | <u>(43)</u> | <u>1,256</u> |
| TOTALS         | 3,776      | (56.7)      | 2,885      | (43.3)      | 6,661        |

Table 5. Sex and age ratios of 1200 wolves killed in FY 1968; based on the ossification of radii and ulnae.

| Unit   | PUP |     |      |       |       | ADULT |     |      |       |         |
|--------|-----|-----|------|-------|-------|-------|-----|------|-------|---------|
|        | ♂   | ♀   | Unk. | Total | % Pup | ♂     | ♀   | Unk. | Total | % Adult |
| 1-5    |     |     |      |       |       |       |     |      |       |         |
| 9      | 3   | 0   | 0    | 3     | 37.5  | 3     | 2   | 0    | 5     | 62.5    |
| 11     | 4   | 5   | 1    | 10    | 37.1  | 5     | 12  | 0    | 17    | 62.9    |
| 12     | 5   | 8   | 2    | 15    | 41.7  | 8     | 11  | 2    | 21    | 58.3    |
| 13     | 20  | 15  | 12   | 47    | 52.2  | 20    | 21  | 2    | 43    | 47.8    |
| 14     | 6   | 7   | 1    | 14    | 66.6  | 1     | 5   | 1    | 7     | 33.3    |
| 16     | 6   | 13  | 1    | 20    | 49.8  | 11    | 9   | 1    | 21    | 51.2    |
| 17     | 0   | 0   | 0    | 0     | -     | 2     | 1   | 0    | 3     | -       |
| 18     | 1   | 0   | 0    | 1     | -     | 0     | 0   | 0    | 0     | -       |
| 19     | 0   | 1   | 0    | 1     | -     | 0     | 0   | 0    | 0     | -       |
| 20     | 52  | 57  | 12   | 121   | 51.3  | 58    | 47  | 10   | 115   | 48.7    |
| 21     | 10  | 3   | 16   | 29    | 45.3  | 5     | 5   | 25   | 35    | 54.7    |
| 22     | 5   | 3   | 2    | 10    | 41.7  | 7     | 6   | 1    | 14    | 58.3    |
| 23     | 11  | 14  | 4    | 29    | 26.9  | 48    | 23  | 8    | 79    | 73.1    |
| 24     | 33  | 17  | 27   | 77    | 37.8  | 43    | 40  | 44   | 127   | 62.2    |
| 25     | 18  | 19  | 6    | 43    | 25.2  | 50    | 41  | 37   | 128   | 74.8    |
| 26     | 17  | 14  | 11   | 42    | 44.3  | 23    | 13  | 17   | 53    | 55.7    |
| Unk.   | 2   | 0   | 35   | 37    | 52.9  | 0     | 3   | 30   | 33    | 47.1    |
| Totals | 193 | 176 | 130  | 499   | 41.6  | 284   | 239 | 178  | 701   | 58.4    |

Table 6. Sex and age ratios of 278 wolves killed in 1967-68; based on carcass examination.

| Unit             | PUP |    |      |          |             | ADULT |    |      |          |             |
|------------------|-----|----|------|----------|-------------|-------|----|------|----------|-------------|
|                  | ♂   | ♀  | Unk. | Total    | % Pup       | ♂     | ♀  | Unk. | Total    | % Adult     |
| 1-5              | 9   | 8  | -    | 17       | 58.6        | 7     | 4  | 1    | 12       | 41.4        |
| 11               |     | 2  |      | 2        | 50.0        | 1     | 1  |      | 2        | 50.0        |
| 12               | 1   | 2  |      | 3        | 37.5        | 2     | 3  |      | 5        | 62.5        |
| 13               | 7   | 7  | 5    |          | 46          | 9     | 11 | 6    | 26       | 54          |
| 14               | 2   | -  |      | 2        | 66.7        | -     | 1  |      | 1        | 33.3        |
| 16               | 1   | 5  |      | 6        | 75.0        | 1     | 1  |      | 2        | 25.0        |
| 17               | -   | 1  |      | 1        | 50.0        | -     | 1  |      | 1        | 50.0        |
| 20               | 22  | 22 |      | 44       | 55.0        | 16    | 20 |      | 36       | 45.0        |
| 21               | 1   | 1  |      | 2        | 66.7        | -     | 1  |      | 1        | 25.0        |
| 22               | 2   | -  | 1    | 3        | 60.0        | 2     | -  |      | 2        | 40.0        |
| 23               | -   | -  | -    |          |             | 1     | 2  |      | 3        | 100.0       |
| 24               | 15  | 16 |      | 31       | 41.3        | 20    | 23 | 1    | 44       | 58.7        |
| 25               | 3   | 3  |      | 6        | 60.0        | -     | 4  |      | 4        | 40.0        |
| 26               | -   | -  | -    |          |             | 4     | 3  |      | 7        | 100.0       |
| McKinley<br>Park |     |    |      |          |             | 1     | 1  |      | 2        | 100.0       |
| Unk.             | 2   | 1  |      | <u>3</u> | <u>60.0</u> | -     | 2  |      | <u>2</u> | <u>40.0</u> |
| All<br>Units     |     |    |      | 134      | 48.2        |       |    |      | 144      | 51.8        |

Table 7. Age ratios of 146 female wolf carcasses collected during 1968.

| Unit             | Pup      | Pup         | Adult    | Adult       |
|------------------|----------|-------------|----------|-------------|
| 1-5              | 8        | 66.7        | 4        | 33.3        |
| 11               | 2        | 66.7        | 1        | 33.3        |
| 12               | 2        | 40.0        | 3        | 60.0        |
| 13               | 7        | 38.9        | 11       | 61.1        |
| 14               | -        |             | 1        | 100.0       |
| 16               | 5        | 83.3        | 1        | 16.7        |
| 17               | 1        | 50.0        | 1        | 50.0        |
| 20               | 22       | 52.4        | 20       | 47.6        |
| 21               | 1        | 50.0        | 1        | 50.0        |
| 23               | -        |             | 2        | 100.0       |
| 24               | 16       | 41.0        | 23       | 59.0        |
| 25               | 3        | 42.9        | 4        | 57.1        |
| 26               | -        |             | 3        | 100.0       |
| McKinley<br>Park |          |             | 1        | 100.0       |
| Unk.             | <u>1</u> | <u>33.3</u> | <u>2</u> | <u>66.7</u> |
| TOTAL            | 68       | 46.6%       | 78       | 53.4%       |

Table 8. Indicators of Productivity in Adult Wolves, 1957-68

| Area         | <u>Corpora albicantia</u> |                |      | <u>Placental scars</u> |                |      | <u>Corpora lutea</u> |                |      | <u>Fetuses</u> |                |      |
|--------------|---------------------------|----------------|------|------------------------|----------------|------|----------------------|----------------|------|----------------|----------------|------|
|              | No.                       | No.<br>Animals | Ave. | No.                    | No.<br>Animals | Ave. | No.                  | No.<br>Animals | Ave. | No.            | No.<br>Animals | Ave. |
| Southeast    | 111                       | 15             | 7.4  | 81                     | 15             | 5.4  | 13                   | 2              | 6.5  |                |                |      |
| Southcentral | 204                       | 27             | 7.5  | 101                    | 17             | 5.9  | 41                   | 7              | 5.8  | 8              | 1              | --   |
| Interior     | 1444                      | 196            | 7.4  | 491                    | 76             | 6.5  | 524                  | 78             | 6.7  | 141            | 21             | 6.7  |
| Arctic       | 331                       | 44             | 7.5  | 127                    | 20             | 6.4  | 225                  | 32             | 7.0  | 106            | 16             | 6.6  |
| Total        | 2090                      | 282            | 7.4  | 800                    | 128            | 6.3  | 803                  | 119            | 6.7  | 255            | 38             | 6.7  |

Table 9. Indicators of Productivity in Adult Wolves, 1967-68

| Area         | <u>Corpora albicantia</u> |                |      | <u>Placental scars</u> |                |      | <u>Corpora lutea</u> |                |      | <u>Fetuses</u> |                |      |
|--------------|---------------------------|----------------|------|------------------------|----------------|------|----------------------|----------------|------|----------------|----------------|------|
|              | No.                       | No.<br>Animals | Ave. | No.                    | No.<br>Animals | Ave. | No.                  | No.<br>Animals | Ave. | No.            | No.<br>Animals | Ave. |
| Southeast    | 7                         | 1              |      |                        |                |      | 7                    | 1              |      |                |                |      |
| Southcentral | 92                        | 9              | 10.2 | 23                     | 5              | 4.6  | 9                    | 2              | 4.5  |                |                |      |
| Interior     | 44                        | 6              | 7.3  | 27                     | 5              | 5.4  | 7                    | 1              |      |                |                |      |
| Arctic       | 102                       | 12             | 8.5  | 34                     | 6              | 5.6  | 66                   | 10             | 6.6  | 20             | 3              | 6.6  |
| Total        | 245                       | 28             | 8.75 | 84                     | 16             | 5.2  | 89                   | 14             | 6.3  |                |                |      |

Table 10. Indicators of Productivity in Two-Year-Old-Wolves, 1957-1968, Alaska.

| Area         | <u>Nonbreeders</u> | <u>Corpora lutea</u> |                |      | <u>Fetuses</u> |                |      |
|--------------|--------------------|----------------------|----------------|------|----------------|----------------|------|
|              | Number             | No.                  | No.<br>Animals | Ave. | No.            | No.<br>Animals | Ave. |
| Southeast    | 22                 | 29                   | 5              | 5.8  | 6              | 1              | --   |
| Southcentral | 24                 | 42                   | 9              | 4.6  | 10             | 2              | 5.0  |
| Interior     | 118                | 319                  | 54             | 5.9  | 51             | 10             | 5.1  |
| Arctic       | 23                 | 117                  | 21             | 5.6  | 33             | 6              | 5.5  |
| Total        | 187                | 507                  | 89             | 5.7  | 100            | 19             | 5.3  |

Table 11. Indicators of Productivity in Two-Year-Old-Wolves, 1967-68, Alaska.

| Area         | <u>Nonbreeders</u> | <u>Corpora lutea</u> |                |      | <u>Fetuses</u> |                |      |
|--------------|--------------------|----------------------|----------------|------|----------------|----------------|------|
|              | Number             | No.                  | No.<br>Animals | Ave. | No.            | No.<br>Animals | Ave. |
| Southeast    | 2                  | 7                    | 1              |      |                |                |      |
| Southcentral | 8                  | 30                   | 6              | 5.0  |                |                |      |
| Interior     | 11                 | 19                   | 3              | 6.3  | 1              | 1              |      |
| Arctic       | 6                  | 42                   | 8              | 5.25 | 7              | 1              |      |
| Total        | 27                 | 98                   | 18             | 5.4  | 8              | 2              |      |

Table 12. Wolf food data 1967-68, Alaska.

| Area                                                     | Method<br>of<br>Take | Total<br>No.<br>Stom. | Empty | %    | Total<br>No.<br>Food<br>Org. |     |      |    |      |   |       |    |      |    |      |   |     |               |
|----------------------------------------------------------|----------------------|-----------------------|-------|------|------------------------------|-----|------|----|------|---|-------|----|------|----|------|---|-----|---------------|
| Interior Units,<br>11, 12, 13, 14,<br>16, 17, 20, 21, 25 |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      |   |     |               |
|                                                          | Aerial<br>Shooting   | 76                    | 29    | (38) | 51                           | 34  | (67) | 9  | (17) |   |       | 5  | (10) | 1  | (-)  | 1 | (-) | raven quills  |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | grass         |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | bird          |
|                                                          | Ground<br>Shooting   | 6                     |       |      | 6                            | 4   | (67) |    |      |   |       | 2  | (-)  |    |      |   |     |               |
|                                                          | Trapping             | 86                    | 30    | (35) | 61                           | 28  | (46) | 8  | (13) | 2 | (-)   | 3  | (-)  | 15 | (25) | 1 | (-) | equisetum     |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | muskrat       |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | bread wrapper |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | unident, bird |
|                                                          |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      | 1 | (-) | raven         |
|                                                          | Snaring              | 10                    | 4     | (40) | 7                            | 2   | (28) |    |      | 1 | (-)   | 2  | (-)  | 2  | (-)  |   |     |               |
|                                                          | Unknown              | 5                     | 1     | (20) | 4                            | 2   | (50) | 1  | (-)  |   |       |    |      | 1  | (-)  |   |     |               |
| ALL METHODS                                              |                      | 183                   | 64    | (35) | 129                          | 70  | (54) | 18 | (14) | 3 | (2)   | 12 | (9)  | 19 | (-)  | 8 | (6) |               |
| Arctic Coastal<br>Units 22, 23,<br>24, 26                |                      |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      |   |     |               |
|                                                          | Aerial<br>Shooting   | 96                    | 32    | (33) | 64                           | 45  | (70) | 13 | (20) |   |       | 6  | (9)  | 1  | (-)  | 1 | (-) | fish          |
|                                                          | Ground<br>Shooting   |                       |       |      |                              |     |      |    |      |   |       |    |      |    |      |   |     |               |
|                                                          | Trapping             | 4                     | -     |      | 4                            | 1   | (25) | 2  | (75) |   |       | 1  | (-)  |    |      |   |     |               |
|                                                          | Unknown              | 1                     | -     |      | 1                            |     |      | 1  | (-)  |   |       |    |      |    |      |   |     |               |
| ALL METHODS                                              |                      | 101                   | 32    | (32) | 69                           | 46  | (67) | 16 | (23) |   |       | 7  | (10) | 1  | (-)  | 1 | (-) |               |
| TOTAL ALL AREA                                           |                      | 284                   | 96    | (34) | 198                          | 116 | (59) | 34 | (17) | 3 | (1.5) | 19 | (9)  | 20 | (1)  | 1 | (-) | 9 (4)         |

A start was made on this difficult aspect of wolf food habits and the results are presented under Job 3, W-17-1, of this report.

### Discussion

Recent investigations into the behavior, productivity and population dynamics of wolves have provided the basis for formulating a management program that could realize benefits from this large carnivore while insuring its preservation (Pimlott et. al., 1969; Haber, 1968 and Pulliainen, 1965). Nevertheless, a considerable amount of research needs to be done, particularly on the aspects of den ecology, behavior, social organization, fidelity of packs, and summer foods. Many of these studies must be accomplished in Alaska and Canada because only in these areas will it be possible to obtain adequate samples.

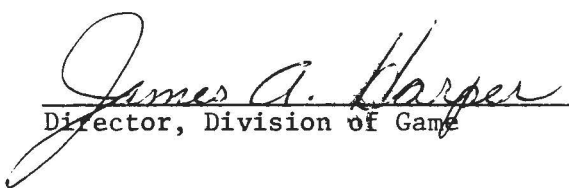
# LITERATURE CITED

- Haber, Gordan. 1968. The social structure and behavior of an Alaskan wolf population. Unpub. M.S. thesis, Northern Mich. U., Marquette, Mich., 1968. 181 pp.
- Pimlott, D. H. 1961. Wolf control in Canada. Canad. Audubon Mag. Nov. - Dec.: 145-152.
- \_\_\_\_\_, J. A. Shannon, and G. B. Kolenosky. The ecology of the timber wolf in Algonquin Provincial Park. Ont. Dept. Laws and Forests Res. Rep. (Wildlife) No. 87.
- Pulliainen, E. 1965. Studies on the wolf (Canis lupus, l.) in Finland. Ann. Zool. Penn. 2:215-259.
- Rausch, R. A. 1967. Some aspects of the population ecology of wolves, Alaska. American Zool. 7(2):253-265.
- \_\_\_\_\_. 1968. Wolf studies. Federal Aid in wildlife Rest. Proj. W-15-R-2, work plan 0. 51 pp.

PREPARED AND SUBMITTED BY:

APPROVED BY:

Robert A. Rausch  
Project Leader

  
Director, Division of Game

WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

|                 |                                      |        |                                                                         |
|-----------------|--------------------------------------|--------|-------------------------------------------------------------------------|
| STATE:          | <u>Alaska</u>                        | TITLE: | <u>Alaska Wildlife Investigations</u><br><u>Big Game Investigations</u> |
| PROJECT NO:     | <u>W-17-1</u>                        | TITLE: | <u>Wolf and Wolverine</u>                                               |
| WORK PLAN:      | <u>0</u>                             | TITLE: | <u>Wolf Summer Food Habits</u><br><u>and Den Studies</u>                |
| JOB NO:         | <u>3</u>                             |        |                                                                         |
| PERIOD COVERED: | <u>July 1, 1968 to June 30, 1969</u> |        |                                                                         |

ABSTRACT

Field activities directed toward locating wolf dens revealed six active dens in five locations during the summer of 1968 and spring 1969. In 1968 only 3 of 13 dens checked were active. Summer food habits based on analysis of scats collected around den sites showed that moose calves and caribou were the principal summer foods.

RECOMMENDATIONS

Successful management of wolf populations can only be effected after gaining an understanding of what comprises a wolf population. Further insight into this aspect of wolf life history is dependent to a large degree upon gaining an understanding of the fidelity and inter-relationships of identified packs. Continued and expanded research on the ecology of wolf dens is necessary to obtain the required information.

WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

|                 |                                      |        |                                                                         |
|-----------------|--------------------------------------|--------|-------------------------------------------------------------------------|
| STATE:          | <u>Alaska</u>                        | TITLE: | <u>Alaska Wildlife Investigations</u><br><u>Big Game Investigations</u> |
| PROJECT NO:     | <u>W-17-1</u>                        | TITLE: | <u>Wolf and Wolverine</u>                                               |
| WORK PLAN       | <u>0</u>                             | TITLE: | <u>Wolf Summer Food Habits</u><br><u>and Den Studies</u>                |
| JOB NO:         | <u>3</u>                             |        |                                                                         |
| PERIOD COVERED: | <u>July 1, 1968 to June 30, 1969</u> |        |                                                                         |

OBJECTIVES

To assess food habits of wolves during spring and summer and to assess den site selection in relationship to the availability of prey species.

PROCEDURES

Aerial searches for dens were made by Sam Snyder and Robert Rausch from light aircraft in March and April, when a snow cover still remained. This is probably the best technique for locating new den sites, but it must be noted that signs of activity around dens (food, tracks, fresh mounds of earth) before the pupping period does not necessarily indicate the den will be active. After I arrived in Fairbanks on July 1, I checked as many dens as possible on the ground. Since most dens were in remote locations, aircraft or tracked vehicles were used for access.

Scats were dried twelve hours at 100°C to decontaminate the feces, and in particular to destroy the eggs of Echinococcus granulosus, a cestode infectious to man. Ungulate hair was identified by scale patterns under a binocular scope. Identification of rodent teeth was confirmed by comparison with specimens at the University of Alaska Museum.

## FINDINGS

Of thirteen dens checked, three were active in 1968 (see Footnote). Two other dens reported by ADFG personnel on the Arctic Coast were not checked. Numerous other reports of dens were received and these reports are tabulated in this report for future reference, but the probability that any of these will yield an active den is quite low.

One of the active dens was located on the Alatna River, 450 miles northwest of Fairbanks. The second was in the Tanana Flats south of Clear Creek Buttes, 20 miles south of Fairbanks, and the third was near Sinona Lake, 150 miles south-east of Fairbanks. Possibly a fourth site contained an active den, a ridge on the Ladue River 225 miles east of Fairbanks, but it was not checked on the ground.

Analyses of scats indicated that moose calves were the principal prey taken around dens. Other food items included caribou (Rangifer tarandus), hare (Lepus americanus), and voles and lemmings (Clethrionomys, Microtus, and Lemmus). Birds, fish, beavers (Castor canadensis), and muskrats (Ondatra zibethica) were relatively rare food items.

### Dens Checked

#### Dens visited in the Fairbanks-Tanana Flats region

##### "Bishop Den"

Access: Helicopter can land on ridge.

Topography: Slightly elevated ridge perhaps ten feet higher in elevation than surrounding spruce-muskeg flats.

Elevation: 525 feet.

Distance to nearest water: 50 yards. Surrounding terrain swampy in places.

---

In late fall 1968, another active den was located in the Talkeetna Mountains of Unit 13. The den was reported by a guide who operates a lodge near the den. It has been active for a number of years.

In spring 1969, a partial check of den locations in Unit 20 and 13 revealed two active dens. These were the Sinona Lake den and a den in the Gulkana drainage that had not been located previously. Thus, a total of five active dens were located.

The exact location of each den visited is recorded on base maps stored in Department files. Since wolf dens are often excavated by bounty hunters, the den site locations cannot be published except in a general way.

Soil: Fine sand - light orange.

Vegetation: Spruce and larch (Larix) to 40 feet tall dominate vegetation around ridge. Salix to 20 feet is common. Around dens at northern end of trail, aspen (Populus tremuloides) to 2.5 feet tall and grass (Calamagrostis canadensis) predominate. Dominant vegetation around dens to south is bearberry (Arctostaphylos uva-ursi), Rosa, Equisetum, and Viburnum edule.

The northern den consists of four holes, one of which is small enough to suggest it may originally have been a fox (Vulpes fulva) den. These holes showed sign of recent use on July 16 and numerous pup scats were present. Fresh tracks were found on July 16, and on July 17 an adult (tawny in color) was seen 200 yards from the den. The southern den has two holes on a slight hill and opens to the southwest. Both holes had been cleaned out this year, but lack of scats around them suggested they were not used much.

Results of scat analyses for this den are given in Table 1.

Table 1. Analysis of 10 adult and 21 pup wolf scats collected July 16 and August 23, 1968, at "Bishop" denning site.

| Item                      | Percentage Occurrence | Number of Scats |
|---------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (calf) | 96                    | 30              |
| <u>Lepus americanus</u>   | 3                     | 1               |
| <u>Clethrionomys</u>      | 3                     | 1               |
| Unident. hair             | 9                     | 3               |
| Unident. bird             | 3                     | 1               |

#### "Wood River Butte Den"

Access: Helicopter can land on butte.

Topography: Isolated butte rising 500 feet above surrounding spruce-muskeg flats.

Elevation: 800 feet.

Distance to nearest water: 500 yards to lake at base of butte.

Soil: Clay - light orange.

Vegetation: Upper hole on one of many bald slopes where bunch-grasses, soapberry (Shepherdia canadensis), and Artemesia are dominant. Lower holes in dense aspen forest to 25 feet tall with understory of Rosa, Viburnum edule and scattered grasses.

When examined on August 23, neither the upper nor lower dens showed sign of recent use; both being littered with old porcupine (Erethizon dorsatum) droppings.

#### "Totchaket Den"

Access: Cessna 180 can land on Linder Lake one mile from den.

Topography: Den near top of 100-foot-high bluff overlooking muskeg containing Carex, Betula glandulosa and Vaccinium uliginosum.

Elevation: 350 feet.

Distance to nearest water: 50 yards, at base of bluff.

Soil: Silt loam - gray.

Vegetation: Den surrounded by aspen forest of trees 2-3 inches DBH and 20-30 feet tall. Ground cover consists of Rosa, soapberry, and grass (Calamagrostis).

Den examined on July 26. Apparently the den was cleaned out this year and tracks were abundant around it this spring, but was not used for pupping. This entire bluff could be a potential denning area, and in walking it for a distance of 2.5 miles to the north I found a fox den and a set of four holes that may have been wolf dens but were rather small (holes averaged 16 inches by 16 inches). The dens of both these sites were within 10 feet of the top of the bluff and were littered with old porcupine scats. Sign of wolves in the form of old scats was rare along the entire bluff.

#### "Olmes Den"

Access: Walk in from Olmes or land helicopter in oxbow.

Topography: Low ridge rising 15 feet above surrounding spruce-muskeg flats.

Elevation: 550 feet.

Distance to nearest water: 200 yards to stream to west.

Soil: Clay.

Vegetation: Ridge covered with birch woodland of trees to 35 feet tall and Salix to 15 feet. Ground cover mostly Rosa, Equisetum, and fireweed (Epilobium).

On May 19, 1966, two adult wolves and four or five pups were using the den. On July 16, 1968, no sign of activity was found, and it probably has not been used since 1966. Den consists of three large holes with two smaller holes that may suggest it was a modified fox den. Fifty feet north of these holes is another hole which is much older than the others. Analysis of scats collected in 1966 is given in Table 2.

Table 2. Analysis of six adult wolf scats collected June 27, 1966, at "Olmes" denning site.

| Item                         | Percentage Occurrence | Number of Scats |
|------------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (calf)    | 83                    | 5               |
| <u>Lepus americanus</u>      | 50                    | 3               |
| <u>Canachites canadensis</u> | 17                    | 1               |
| Microtine bones & fur        | 17                    | 1               |

#### "Upper and Lower Tatlanika Dens"

Elevation: 1700 and 1300 feet.

Sam Snyder and Robert Rausch checked these dens this spring and found no sign of activity.

Upper den is on a ridge about 200 feet high. Lower den site six miles downstream is 200-300 yards east of the indicated creek.

#### "Alder Creek Den"

Access: Walk in from Steese Highway.

Topography: Spruce-birch covered hills 1000 feet below timberline. Den in valley about 500 feet deep.

Elevation: 1500 feet.

Vegetation: Slope vegetated with dense black spruce (Picea mariana) and birch forest to 30 feet tall. Heavy understory of Betula glandulosa to 5 feet tall in some areas.

Den faces west. Lack of sign in area (one wolf track found in creek bottom) suggested no active den was in the area this year.

#### Dens visited in the Nelchina Basin

##### "Sinona Lake Den"

Access: Land float plane on Sinona Lake.

Topography: Picea glauca woodland to 50 feet tall in broad valley dotted with numerous small lakes.

Elevation: 3000 feet.

Distance to nearest water: 20 feet to lake for first den and 50 yards for second set of dens.

Soil: Fine sand, light orange in color for both dens.

Vegetation: Picea glauca is the dominant tree around both denning areas, with understory plants being Betula glandulosa, Calamagrostis, and Vaccinium uliginosum.

According to Cleo McMahan, pups were reared in the den on the SE edge of the lake in 1965, 1966, and 1967. He had not seen wolves there this spring, but it appeared to have been recently cleaned out, and a few scats were found around it on July 30, 1968. Numerous fresh pup scats were found at the other dens on the SW side of the lake. I assume these dens were active this spring, but wolves had abandoned site by late July. In past years, wolves had stayed around den into September.

The den on SE edge of lake consists of one hole. On the SW side of the lake were five holes varying in size from fox dens to wolf dens. Most of these had porcupine scats in them, so despite numerous wolf scats, I suspect whelping occurred in the other den on SE edge of lake.

The bones and fur of a wolf pup were found 100 yards from the single-holed den. Aging by canine root closure indicated the animal died between January 1 and June 1, 1968.

Results of scat analyses indicated moose were the principal prey taken around the den (Table 3). The skull of a beaver was also found at the dens.

Table 3. Analysis of 6 adult and 11 pup wolf scats collected July 30, 1968, at "Sinona" denning site.

| Item                              | Percentage Occurrence | Number of Scats |
|-----------------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (calf)         | 64                    | 11              |
| <u>Alces alces</u> (adult)        | 35                    | 6               |
| <u>Clethrionomys dawsoni</u>      | 6                     | 1               |
| Unident. hair                     | 12                    | 2               |
| (One beaver skull found at dens.) |                       |                 |

#### "Tyone River Den"

Access: Float plane can be landed on lake about 1/2 mile long.

Topography: Picea mariana muskeg dotted with numerous lakes. Den is on an isolated hill about 400 yards in diameter and rising 75 feet above flats.

Elevation: 2500 feet.

Distance to nearest water: 200 yards to nearest lake.

Soil: Silt loam.

Vegetation: Den within clump of aspen trees that are 30 feet tall and cover an area about 30 yards in diameter. Understory mostly Betula glandulosa to 4 feet tall.

The den consists of a single hole facing south. Four other fox-sized holes surround the wolf den. The wolf den was littered with porcupine scats and apparently had not been used since September, 1967, when it was first found. At that time it was active, and the scats collected on July 31, 1968, probably represented the autumn diet of wolves in that region (Table 4), which apparently was mostly caribou.

Table 4. Analysis of 11 pup wolf scats collected July 31, 1968, at Tyone River denning site.

| Item                         | Percentage Occurrence | Number of Scats |
|------------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (adult)   | 9                     | 1               |
| <u>Rangifer tarandus</u>     | 77                    | 7               |
| <u>Lepus americanus</u>      | 27                    | 3               |
| <u>Clethrionomys dawsoni</u> | 45                    | 5               |
| <u>Microtus</u> sp.          | 27                    | 3               |

(One Ondatra jaw found at den.)

#### Dens visited near the Taylor Highway

##### "Ladue River Dens"

Access: Float plane could be landed on small lake about four miles to the SW.

Topography: Bluff 800 feet high and about three miles long. Dens overlook river valley about one mile wide.

Elevation: 2300 feet.

Distance to nearest water: Approximately 1/4 to 1/2 mile.

Soil: Probably light-colored clay.

Vegetation: Bluff vegetated mostly with aspen:birch forest. Grass dominant around den.

It was not possible on August 6 to tell from the air whether or not the den was active, but it appeared to have been recently cleaned out. Mr. Warbelow said wolves have been known to den on this ridge in the past. An Indian's cache is located about two miles upriver, and Mr. Warbelow said he used to fly native trappers in to it.

### "Taylor Creek Dens"

Access: Walk in from Taylor Highway, a distance of 3.5 miles.

Topography: Ridge about 400 feet high tapering out into black spruce flats in a SE direction.

Elevation: 2200 feet.

Distance to nearest water: 200 feet to seeps.

Soil: Silty clay with 30-40 percent decomposing granite particles 2-5 mm in size.

Vegetation: Most recently active den surrounded by aspen for a distance of 10-15 feet and farther away spruce begins to predominate. Also a few cottonwoods (Populus sp.) within aspens. Ground cover 90 percent bunchgrass, with some Epilobium and Galium. Den 100 yards NE and uphill is in 30-foot-diameter clearing surrounded by aspen. Ground cover 90 percent Arctostaphylos uva-ursi and 10 percent grass. Third den 200 yards to the east is very old and has spruce trees to 30 feet tall growing 6 feet below its entrance, with some aspen above and around den. Ground cover grass, cranberry (Vaccinium vitisidaea) and Arctostaphylos uva-ursi.

Den most recently active was found in August of 1967 when wolves seemed to be using it. Not used since then. Consists of one wolf-size hole and a fox-size hole one foot away, and another wolf-size hole 10 yards downhill. Den 100 yards to the NE is one hole, filled with old porcupine scats. Third den to east many years old, consisting of one hole that is mostly caved in. The series of dens may suggest the ridge has been a preferred denning area for a number of years.

Scats collected on August 13, 1968, represent diet of wolves at this den during summer of 1967 (Table 5).

Table 5. Analysis of 7 adult wolf scats collected August 13, 1968, at Taylor Creek, Alaska, denning site.

| Item                       | Percentage Occurrence | Number of Scats |
|----------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (adult) | 8                     | 1               |
| <u>Lemmus</u>              | 43                    | 3               |
| <u>Lepus americanus</u>    | 8                     | 1               |
| Unident. mammal            | 43                    | 3               |

### "Mosquito Fork Den"

Access: Winter trail passes below bluffs, 15 miles west of Mile 50, Taylor Highway.

Elevation: 2200 feet.

Vegetation: Points of 100-feet-high bluffs tend to be forested with aspen. The more mesic sites are vegetated with white spruce (P. glauca) or sphagnum mosses and black spruce.

Sign of wolves between Ketchumstuck and the highway was rare, only an occasional track being seen, and lack of sign on bluffs leads me to believe no active dens were there this year.

Table 6. Analysis of 9 adult wolf scats collected August 15, 1968, at rocky point on Mosquito Fork River west of Taylor Highway.

| Item                       | Percentage Occurrence | Number of Scats |
|----------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (calf)  | 33                    | 3               |
| <u>Alces alces</u> (adult) | 77                    | 7               |
| Unident. hair              | 22                    | 2               |

### "Pingo Den"

Access: Walk from Taylor Highway 4 miles to the east.

Topography: Hill rising about 40 feet above surrounding spruce muskeg and about 200 yards in diameter. Small lake in crater on top of hill.

Elevation: 2500 feet.

On August 6, 1968, Doug Jones, Marvin Warbelow, and I flew over this den, which apparently is a single hole. Apparently not active this year. We were looking for a den reported to Doug Jones several years ago. Possibly we should have been looking at the "pingos" 8 miles south and 1 mile west of this pingo. It is even possible the den we saw was not large enough to be that of a wolf.

## Dens in the Arctic

### "Alatna River Den"

Access: Can land Cessna 180 float plane on Alatna River in front of den or land on lakes within one mile of den.

Topography: Den on river bank in broad valley (2 miles wide) surrounded by steep rocky mountains (sheep habitat).

Elevation: 900 feet.

Distance to nearest water: 125 yards to Alatna River.

Soil: Fine sand - gray in color.

Vegetation: White spruce woodland to 45 feet tall. Scattered Salix bushes to 4 feet tall covering 40 percent of area. Grass covers 80 percent of ground around den.

Bill Griffin and I visited den on September 4, 1968. Location mentioned to me by Hal Waugh, who shot four of nine pups on the sand bar in front of the den on August 9, 1968. Scats and cleaned out appearance suggested den used this summer, but I am not positive whelping occurred in the den. Dens consist of two holes about 20 yards apart with a fox-size hole in between. An open sandy area 20 yards away had been used intensively as a bedding site. Fresh tracks abundant on sandbar in front of dens.

Scat analysis (Table 7) indicates moose calves were the principal prey taken near den this summer.

Table 7. Analysis of 23 adult and 6 pup wolf scats collected September 4, 1968, at Alatna River, Alaska, denning site.

| Item                       | Percentage Occurrence | Number of Scats |
|----------------------------|-----------------------|-----------------|
| <u>Alces alces</u> (calf)  | 93                    | 27              |
| <u>Alces alces</u> (adult) | 6                     | 2               |
| <u>Rangifer tarandus</u>   | 6                     | 2               |
| Fish - unidentified        | 6                     | 2               |
| Unident. mammal            | 3                     | 1               |

### "Seward Den"

Access: Landing strip two miles to SW.

Dave Roseneau, ADFG temporary biologist, found the den on July 21, 1968, at which time a few old scats were lying around den. Den faces west and is a single hole 50-75 feet up from a small stream. Am not sure how accurate my plotted map location is as I never visited the den. Probably not active this year.

### "Wainwright Den"

John Burns, ADFG biologist in Nome, knows of a den that has recently been active somewhere near Wainwright, SW of barrow.

### Areas Reported to Have Dens

Following is a list of den location reports, some of which might be worthwhile checking in late spring while snow still remains. An attempt has been made to omit some of the really doubtful reports, and anyone interested in these can check my original notes in the Fairbanks ADFG files.

### Possible denning areas reported in the Fairbanks-Tanana Flats region

#### "Wood River Drainage"

Fairbanks A-2. Al Wright, Fairbanks pilot, has seen a large hole on the west bank of the lower Wood River. Other reports indicate this is a bear (Ursus americanus) den.

Fairbanks A-2. A number of reports suggest a wolf den may be on the west side of the Wood River between Coal Creek and a set of four lakes in Section 13, 4 miles downriver, or between Coal Creek and Mystic Creek (Healy D-2) 3 miles upriver. In this latter area Robert Rausch and Sam Snyder found several areas where wolves had been digging in the spring of 1968, but the wolves may have been seeking marmots (Marmota caligata). Doug Jones, in flying the area on August 6, 1968, thought a set of trails on a ridge in the SW corner of Section 12 could have been converging on a den. In flying down the Wood River on August 9, I saw a trail on a steep ridge about 1/2 mile above and west of the river (SW corner of Section 18, R1E, T10S) that could have lead to a den. None of these areas was checked on the ground.

Healy D-2. Bill Waugaman, Fairbanks guide, believes a den may be located close to Wood River 2 miles downstream from Kansas Creek and on the east bank of the river. For the past few years tracks and trails have been abundant on sandbars here.

Healy D-2. Bill Waugaman found what he believes was an inactive wolf den several years ago on Wood River, south of Grizzly Creek, on the east side of the river about 1.5 miles up a canyon at about the 4000 foot level. Canyon is one of two traversing Section 22 of R2W, T13S.

#### "Clear Creek Butte and Vicinity"

Fairbanks C-3. Bill Waugaman and Al Wright report a den on the west face of Clear Creek Butte near its south end and about one-half way up the Butte. Dick Bishop suggested it may be a bear den.

Fairbanks C-3. Dick Bishop has seen a wolf den between Clear Creek Buttes and Wood River Buttes in the spruce flats but was unable to locate it in 1968.

Fairbanks C-2. Dick Bishop has seen a wolf den in the edge of a crater somewhere in the featureless flats near R2E, T3S.

#### "Dry Creek"

Healy D-1. A fox den is located on one of the upper forks of Newman Creek near a small stand of aspen. Bob Busby, Fairbanks guide, supposedly knows of a wolf den on Dry Creek, and it is possible this is the den he believes is a wolf den. Den has been checked by Robert Rausch.

#### "Savage River"

On August 22, I discussed wolves with Paul Elbert, local anti-wolf citizen. In the past five years he has found several dens near timberline in the Savage River drainage but would not tell me how many or where they were located.

#### "Birch Creek"

Circle Quadrangle. Several reports indicate wolves are abundant along Birch Creek in summer, from the point where the South Fork comes in to about 15 miles downstream. Doug Jones worked this country in 1957 and found tracks and trails particularly abundant on the south bank of Birch Creek about 6 miles upstream from where it breaks out of the hills. In late August of 1968, Pete Berrie, ADFG biologist, saw a pack of 23 wolves on Birch Creek about opposite of Medicine Lake.

#### "Bedrock Creek"

Circle B-3, C-3. Tom Kennedy, Department of Highways employee at Central, reported he found two dens on Bedrock Creek some years ago. I looked over the country and am inclined to believe the report is dubious. First den supposedly 1/2 mile up Bedrock Creek from the Steese Highway, on the east side of the creek, 100-200 yards uphill from the creek. Second den reportedly 4 miles up the creek near the two tall columns of rock that can be seen from the Steese Highway.

### "Deadwood Creek"

Circle B-2. Deadwood Creek drainage. Pete Berrie suspected a den was on Switch Creek this year, about 1/2 mile up the creek from Deadwood Creek and on the east-facing slope. A wolf was shot in this area on August 14, 1968. I checked the area and found no sign of den. Dave Hatler, former ADFG employee, had a report on two den locations many years ago. One was at mouth of Sixteen Pup Creek, and other was on south face of ridge at head of Tommy's Pup Creek.

### "Tolovana River"

Livengood A-5. Warren Latvala, B.L.M. surveyor, reported an inactive wolf den on indicated finger-like ridge. I checked area on August 31 and found only fox dens. One den on the point of the ridge is very conspicuous, and the other dens were about 200 yards north on the east slope. Fox seen nearby on August 31, 1968.

### "Tatalina River"

Livengood B-4. Warren Latvala reported he landed in a helicopter on ridge and found a trail that went downhill to the SE toward the flats. Wolf scats were reportedly found along the trail. He heard a group of wolf pups howling on June 11, 1968, at base of hill in direction of Tatalina River but did not go into area. Thought den would be 1/2 mile SE of heliport. When I went in to check area, he had given me incorrect directions that took me to the next ridge south.

### Possible denning sites in the Nelchina and Taylor Highway regions

#### "Twin Lakes"

Gulkana D-4. Dick Bishop reported a den is located on the south slope of indicated mountain. Six miles to the north, Cleo McMahan reported seeing wolves lying on ridgetops in past years. We searched area from air and saw some small holes but no wolf dens.

#### "Alphabet Hills"

Gulkana D-4. Leland Glenn, ADFG biologist, and Robert Rausch know of a den near timberline in this general area. Found several years ago.

#### "Tazlina-Klutina Lakes"

Valdez Quadrangle. Jack Didrickson, ADFG biologist, saw den in 1957 or 58 "between Tazlina and Klutina Lakes, off the north end of St. Anne's Lake." He is not sure he could currently find the den.

### "Suslotina Creek"

Tanacross Quadrangle. June Moore, Fairbanks guide, saw a wolf near a den in fall of 1967, and in previous fall saw eight wolves in general area. I think the directions she gave me were wrong. I suspect she meant Suslotina Creek southeast of Mentasta Lake. Her directions were: "Den on right side of Suslotina Creek, which drains into Slana River. About 10 miles up this creek from its confluence with the Slana River is an old placer mine. Do not follow creek any further after reaching mine, but go up the mountain to the right of the mine. Den almost on top of mountain in sand and shale."

### "Dennison Fork"

Eagle A-2. On August 6, 1968, Doug Jones and I made an aerial search for a den he had seen from the air in 1957-58. Could not find it. Den faced east and was 100 yards below a set of fox dens which were in an opening. Den about 2 to 7 miles SE of Chicken and 1/4 mile west of the Dennison Fork. Doug thought it was north of lake in Section 24.

### "Mankomen Lake"

Gulkana D-1. Lauren Smith, Mankomen Lake resident, reported a den was located in an old beaver house in a drained lake at point 8 miles east of Mankomen Lake. Also, a pregnant female was reportedly coming to his cabin this spring, and he suspected a den was in hills to the north. I looked around for sign in foothills 2 miles to the north without finding anything. Reports by other people indicate Mr. Smith is not too reliable.

### Possible denning area on Junjik River

### "Portage Lake"

Arctic Village Quadrangle. Ave Thayer, USFWS employee in Fairbanks, was told of a den while he was checking sheep hunters in August of 1968. Hunters believed den to be active. Den probably faces south and is on a ridge 100-200 feet high about one mile south of lakes in Portage Lake series. Ridge on west side of valley.

ARLIS

Alaska Resources

Library & Archives

PREPARED BY:

APPROVED BY:

Robert A. Rausch  
Project Leader

James G. Harper  
Director, Division of Game

Larry Ellison  
Game Biologist

SUBMITTED BY:

Robert A. Rausch  
Project Leader

**ARLIS**  
Alaska Resources  
Library & Information Services  
Anchorage, Alaska