

1954
1859

Work Plan (a)
Job No. 1

Moose Surveys in the Susitna
and Copper River Valleys
By: Gordon W. Watson

During the month of November a series of moose herd composition counts were made in the Susitna Valley and the Nelchina Basin-Copper River Valley areas. The moose were placed in the various sex and age categories as noted in Tables I and II which include similar data for prior years. A total of 1,700 moose were tabulated in the Nelchina-Copper River area and 610 in the Susitna Valley. Statistical analysis for the Nelchina-Copper counts is shown in Table III.

No attempt was made to count all the animals in the area but each animal noted was identified as to sex and age. The changes in calf production between the two areas is shown in Charts I and II. Chart I shows the calf percentage in relationship to the total moose population while Chart II shows the calf production per 100 cows.

Calf-cow ratios and calf percentages for the Nelchina-Copper area are essentially the same as in 1953. Two years information is not sufficient to draw conclusions as to trends in populations. In the case of the Susitna, adequate samples have been gathered on which to base definite conclusions, i.e., moose production in the Susitna is on the decrease.

Table IV lists moose kills as determined by Hunter Reports compiled by the Branch of River Basin Studies.



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TABLE I

Moose Herd Composition Counts
SUSITNA VALLEY

| | <u>Yg.</u> <u>Males</u> | <u>Adult</u> <u>Males</u> | <u>Total</u> <u>Males</u> | <u>Females</u> <u>Females</u> | <u>Females</u> <u>1 Calf</u> | <u>Females</u> <u>2 Calves</u> | <u>Total</u> <u>Females</u> | <u>Total</u> <u>Calves</u> | <u>Total</u> <u>Moose</u> | <u>Bull-</u> <u>Cow</u> <u>Ratio</u> | <u>Calf-</u> <u>Cow</u> <u>Ratio</u> | <u>Per</u> <u>Cent</u> <u>Calves</u> |
|--------------|----------------------------|------------------------------|------------------------------|----------------------------------|---------------------------------|-----------------------------------|--------------------------------|-------------------------------|------------------------------|--|--|--|
| Jan. 1950 | | | | | | | | 188 | 1,140 | | | 16 |
| Nov. 1951 | 145 | 369 | 514 | 403 | 385 | 60 | 848 | 505 | 1,867 | 61:100 | 60:100 | 27 |
| Nov. 1952 | 86 | 232 | 318 | 457 | 278 | 30 | 765 | 338 | 1,421 | 42:100 | 44:100 | 24 |
| Nov. 1953 | 96 | 595 | 691 | 927 | 481 | 40 | 1,448 | 561 | 2,700 | 48:100 | 39:100 | 21 |
| Nov. 1954 | | | 196 | 221 | 88 | 2 | 311 | 94 | 601 | 63:100 | 30:100 | 16 |

TABLE II

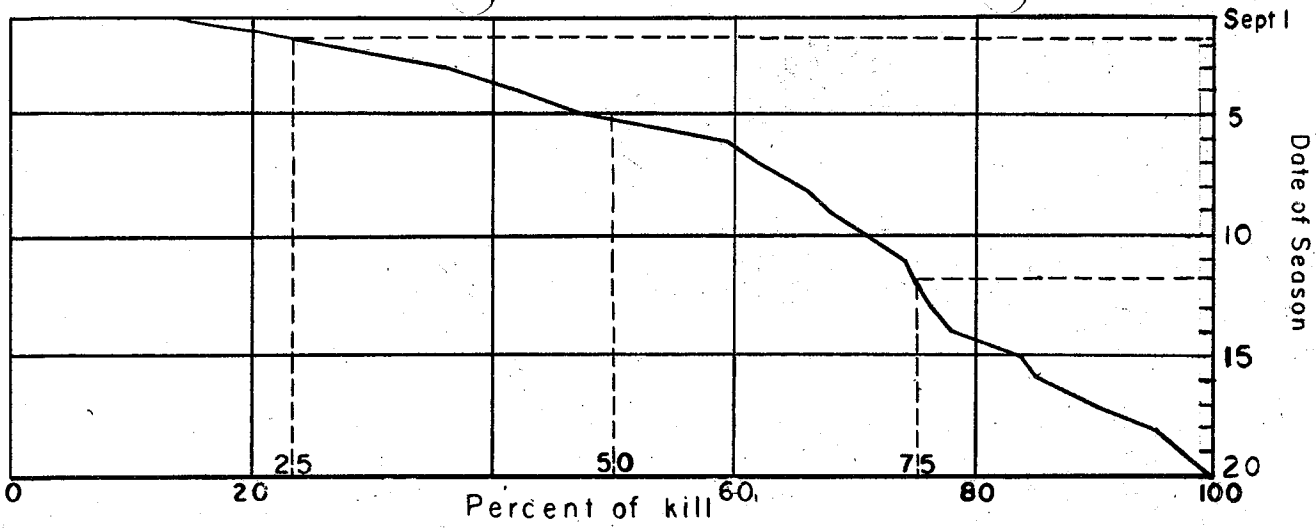
Moose Herd Composition Counts
NELCHINA BASIN - COPPER RIVER VALLEY

| | <u>Yg.</u> <u>Males</u> | <u>Adult</u> <u>Males</u> | <u>Total</u> <u>Males</u> | <u>Females</u> <u>Females</u> | <u>Females</u> <u>1 Calf</u> | <u>Females</u> <u>2 Calves</u> | <u>Total</u> <u>Females</u> | <u>Total</u> <u>Calves</u> | <u>Total</u> <u>Moose</u> | <u>Bull-</u> <u>Cow</u> <u>Ratio</u> | <u>Calf-</u> <u>Cow</u> <u>Ratio</u> | <u>Per</u> <u>Cent</u> <u>Calves</u> |
|------|----------------------------|------------------------------|------------------------------|----------------------------------|---------------------------------|-----------------------------------|--------------------------------|-------------------------------|------------------------------|--|--|--|
| 1952 | 46 | 161 | 207 | 224 | 96 | 20 | 340 | 136 | 683 | 61:100 | 40:100 | 20 |
| 1953 | 136 | 243 | 379 | 83 | 223 | 47 | 353 | 317 | 1,100 | 107:100 | 90:100 | 29 |
| 1954 | 168 | 476 | 644 | 195 | 331 | 65 | 591 | 465 | 1,700 | 109:100 | 79:100 | 27 |

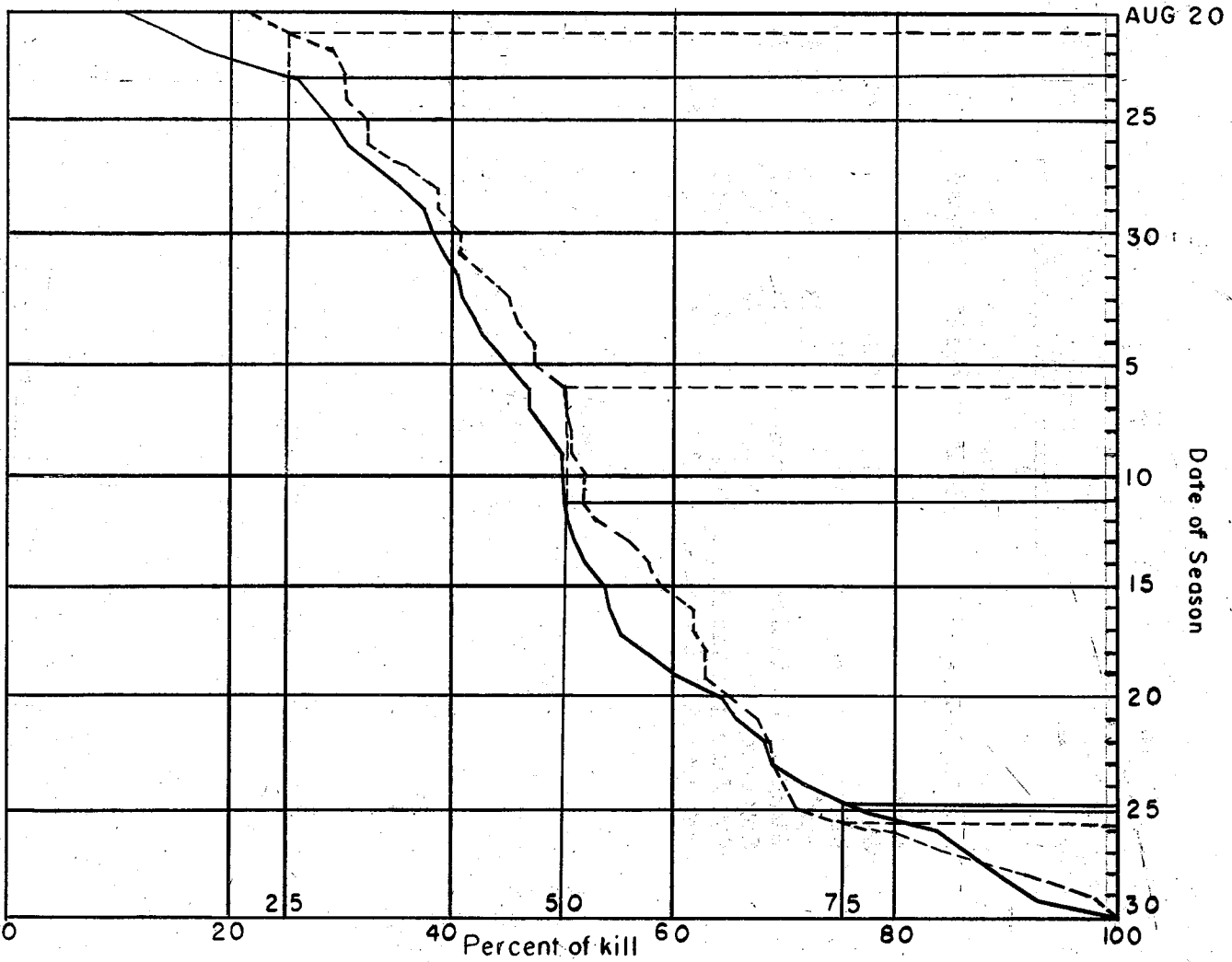
TABLE III

Analysis of Moose Herd Composition Data
NELCHINA BASIN - COPPER RIVER VALLEY, NOVEMBER, 1954

| | <u>Young Males</u> | <u>Adult Males</u> | <u>Total Males</u> | <u>Female</u> | <u>Female 1 Calf</u> | <u>Female 2 Calves</u> | <u>Total Females</u> | <u>Total Calves</u> |
|---------------------|------------------------|------------------------|------------------------|---------------|--------------------------|----------------------------|--------------------------|-------------------------|
| Mean | 10 | 28 | 38 | 11 | 19 | 4 | 35 | 27 |
| Sx ² | 128 | 798 | 998 | 302 | 94 | 36 | 428 | 227 |
| Degrees of Freedom | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Variance | 8.0 | 49.88 | 62.38 | 18.88 | 5.88 | 2.25 | 26.75 | 14.19 |
| Standard Deviation | 2.83 | 7.06 | 7.9 | 4.35 | 2.42 | 1.5 | 5.17 | 3.77 |
| Standard Error | 0.69 | 1.72 | 1.92 | 1.06 | 0.59 | 0.36 | 1.25 | 0.91 |
| 95% Fiducial Limits | 9-12 | 24-32 | 34-42 | 9-13 | 18-20 | 3-5 | 32-38 | 25-29 |
| 99% Fiducial Limits | 8-12 | 23-33 | 33-44 | 8-14 | 17-21 | 3-5 | 31-39 | 24-30 |



GRAPH SHOWING CUMULATIVE % OF MOOSE KILL - UPPER COPPER-NELCHINA



GRAPH SHOWING CUMULATIVE % OF MOOSE KILL

— SUSITNA - PALMER - - - - - ANCHORAGE - PORTAGE AREAS

CHART I

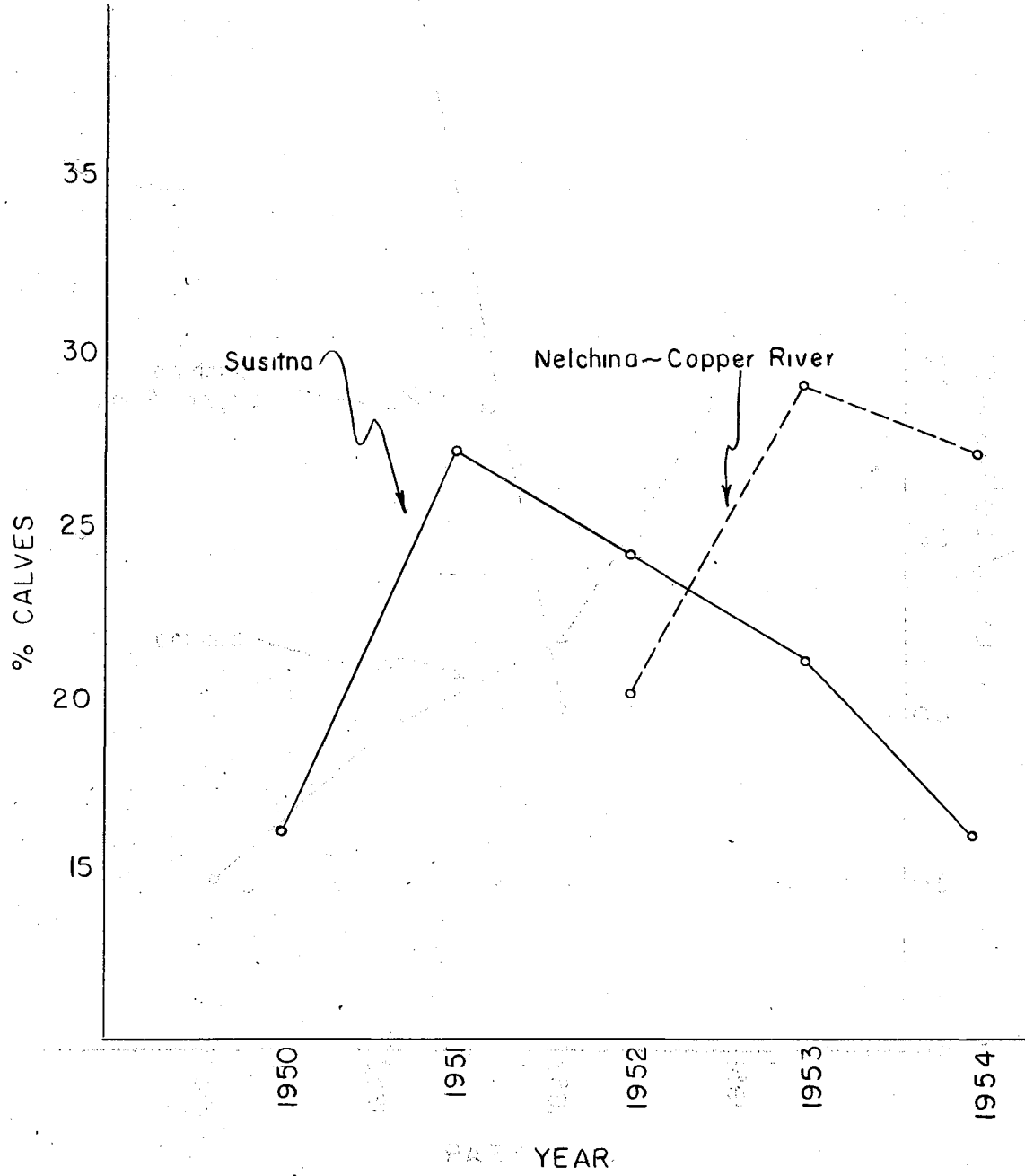
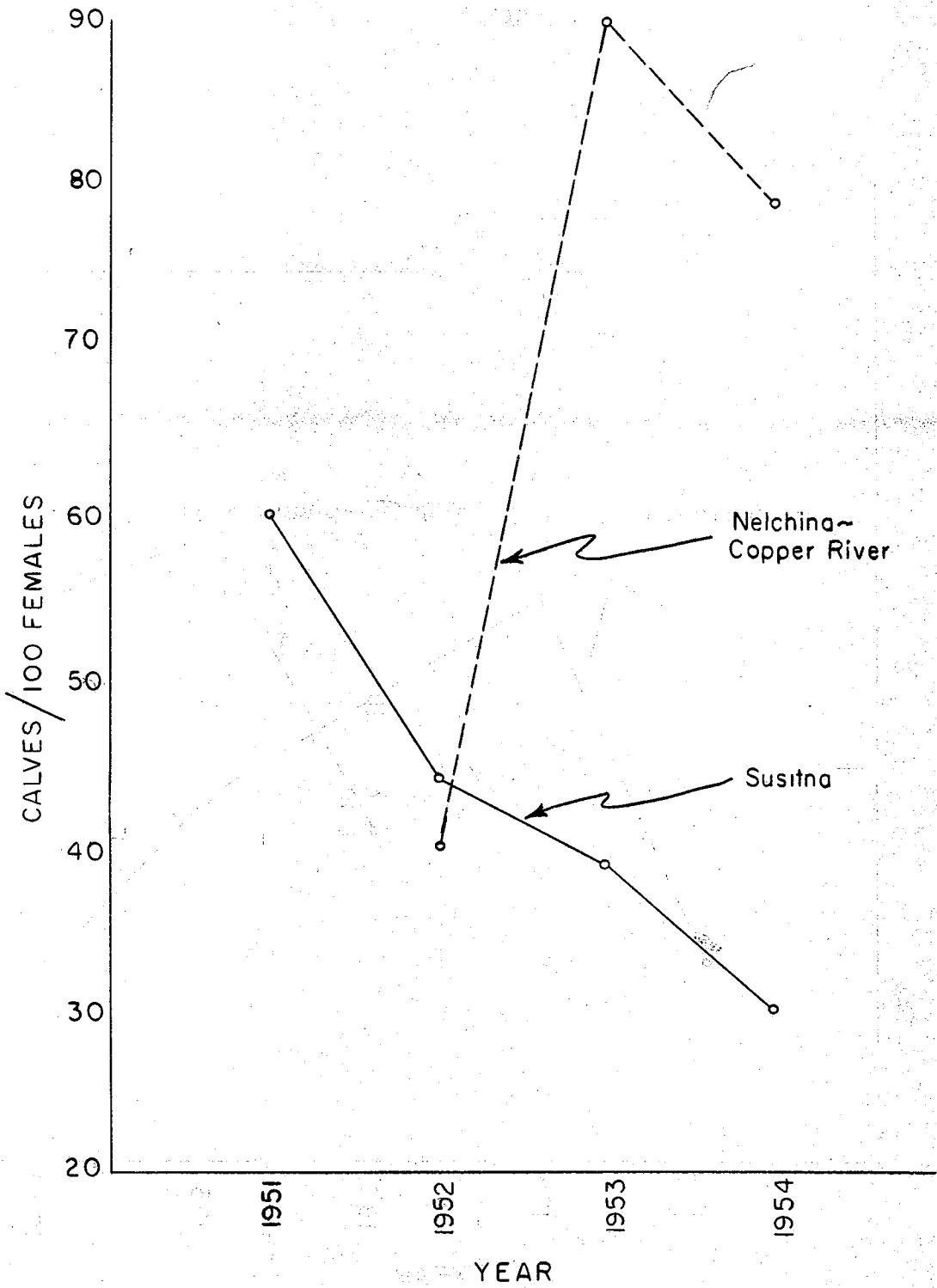


CHART II



MOOSE KILLS, 1954

| AREA | REPORTED KILLS | | TOTAL | ESTIMATED* | |
|------------------------|----------------|------------|-------|-------------------|-------|
| | 1st Season | 2nd Season | | KILL NOT REPORTED | TOTAL |
| Anchorage | 78** | 0 | 78 | 39 | 117 |
| Portage | 15 | 0 | 15 | 7 | 23 |
| Palmer | 102 | 44 | 146 | 48 | 194 |
| Susitna (west of 148°) | 248 | 41 | 289 | 125 | 414 |
| East of 148° | | | | | |
| Nelchina | 81 | 4 | 85 | 43 | 128 |
| Tangle Lakes | 32 | 5 | 37 | 15 | 52 |
| Gulkana-Paxson | 17 | 6 | 23 | 11 | 34 |
| Copper-Chitina | 27 | 1 | 28 | 14 | 42 |
| Other | 33 | 0 | 33 | 16 | 49 |
| TOTAL (primary areas) | 633 | 101 | 734 | 319 | 1,053 |
| Other Areas | | | | | |
| King Salmon-Naknek | 8 | 0 | 8 | 10 | 18 |
| Lake Clark-Nushagak | 9 | 0 | 9 | 10 | 19 |
| Misc. | 11 | 0 | 11 | 24 | 35 |
| GRAND TOTAL | 661 | 101 | 762 | 363 | 1,125 |

* Including estimated mortality from Gunshot wounds.

** 7 taken by bow and arrow.