ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

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DEER REPORT

by

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Volume X
Project Segment Report
Federal Aid in Wildlife Restoration
Project W-17-1, Work Plan J, Jobs 1, 2, 3 and 4

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WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO.: W-17-1 TITLE: Big Game Investigations

TITLE: Deer Studies

WORK PLAN: J

JOB NOS.: 1, 2, 3 and 4

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

ABSTRACT

Deer populations have declined in Southeast Alaska and Prince William Sound since 1964. The decline is attributed to a series of rather severe winters resulting in higher than average deer losses. Populations on Kodiak Island are increasing and expanding their range.

The wolf population on Coronation Island has declined to one animal. The deer population is low. Ground cover of forbs has increased rapidly, but woody plant species, including the key browse species Vaccinium ovalifolium are slow in reestablishing. Young V. ovalifolium plants evidence little annual growth.

Protein content of the forb Cornus canadensis ranged from 9.84 percent to 13.16 percent. C. canadensis is an important winter food species for deer.

Past timber cuts for all areas of Southeast Alaska were plotted on timber type and topographic maps. Recommendations were submitted for leave areas on important deer winter range.

Snow depth measurements on deer winter habitat showed about twice the depths in open areas as was found beneath a timber canopy. About 18 inches of snow appeared to limit deer movements.

An application of two pounds per acre of the herbicide 2-4-D resulted in complete defoliation of the deer browse species V. ovalifolium. Little immediate affect was noted on most forbs utilized by deer.

In spite of lower deer populations, hunting was good in most areas of Southeast Alaska in 1968. The average hunter took 2.0 deer with an effort of 2.4 days per deer. Seventy-two percent of the actual deer hunters took at least one deer. The estimated total deer kill was 12,800.

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OBJECTIVES

To evaluate the status and trends of deer populations in Alaska.

To study the impact of wolf populations on deer populations.

To monitor changes in deer range condition and to determine the effects of logging and other human initiated changes on deer habitat. To determine the relationship between snow depth and food availability for deer.

To determine the magnitude of the deer harvest including information on age and sex composition, location of kills and hunter success and effort.

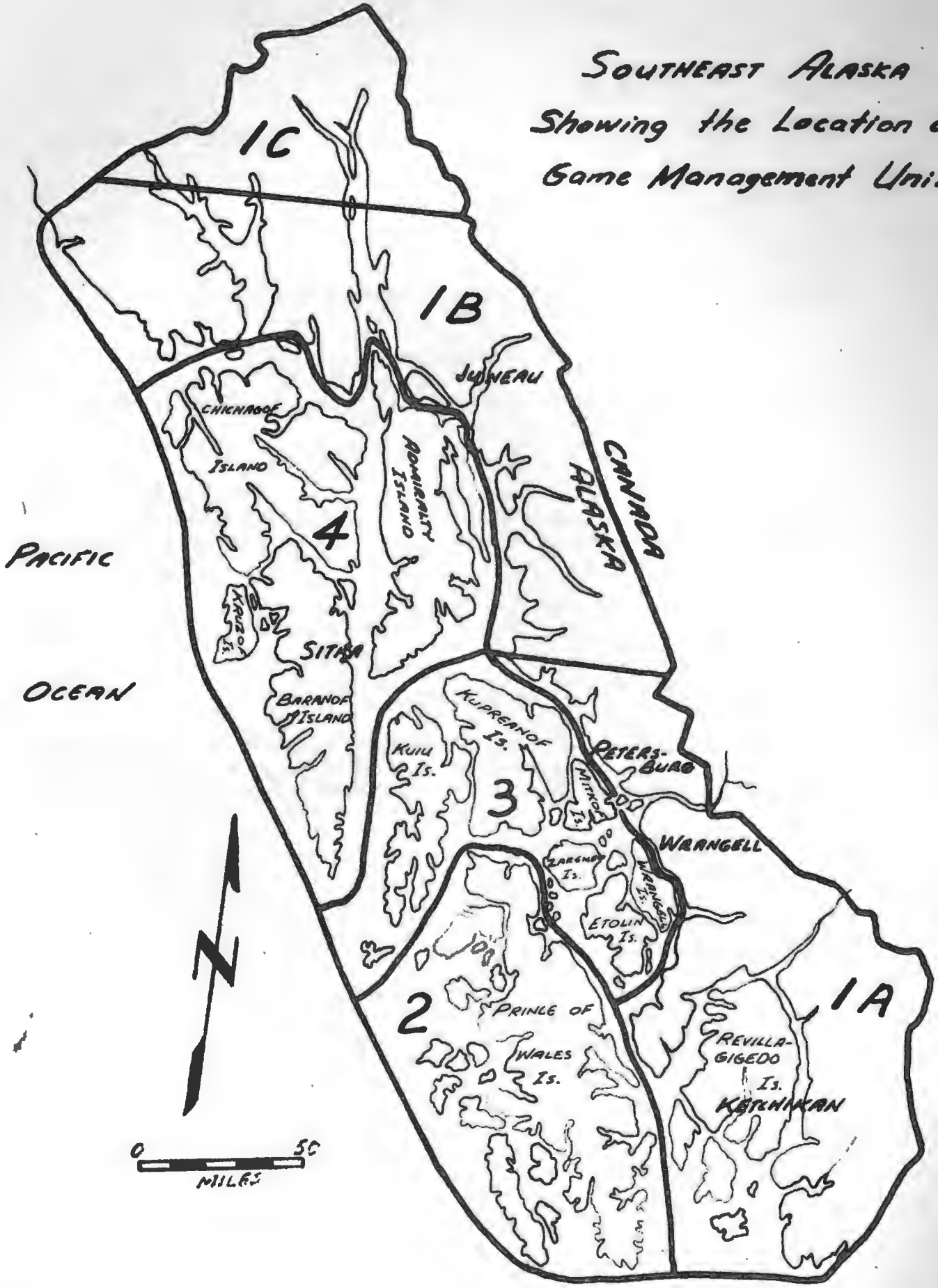
TECHNIQUES

Deer population status and trends were evaluated by correlation of range condition, hunter success per unit effort, age composition of harvested deer, natural mortality, aerial surveys and general field observations.

Winter losses for 1968 were reported in Project No. W-15-R-3. Predator-prey relationships between wolves and deer were studied on Coronation Island. Reconnaissance surveys were made to evaluate wolf and deer population status. Wolf scats were collected for content analysis and range trends were determined by occular surveys and measurements on established line transects.

Deer utilization of winter browse species in 1968 is reported in Project No. W-15-R-3. Protein content of forbs utilized by deer on winter range was determined by the "Improved Kjeldahl Method."

Ten milacre plots were established in the Nakwasina River drainage (near Sitka) prior to application of two pounds per acre of the herbicide 2-4-D for eradication of red alder Alnus rubra. All vegetation on each plot was recorded prior to spraying. A photographic record of each plot was also obtained prior to and after spraying.


SOUTHEAST ALASKA
Showing the Location of
Game Management Units
1C
1B
1A
2
3
4
JUNEAU
CHICHAGOF
ISLAND
ADMIRALTY ISLAND
KRUZOF I.
SITKA
BARANOF ISLAND
KUIU Is.
KUPREANOF Is.
PETERS-BURG
MITKOF Is.
WRANGELL
CLARENCE Is.
WRANGELL Is.
ETOLIN Is.
PRINCE OF WALES Is.
REVILLA-GIGEDO Is.
KETCHIKAN
CANADA
ALASKA
PACIFIC
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Location and size of timber cuts for Southeast Alaska were plotted on topographic and type maps. Information on cuts was obtained from U. S. Forest Service records.

Deer harvest information was obtained through post-season hunter interviews. Hunters were queried regarding the number of deer killed, number of days hunted and sex, date and location of kills. Approximately 10 percent of individuals purchasing hunting licenses were sampled.

FINDINGS

Southeast Alaska

Population Status and Trends

Deer populations in Southeast Alaska were slightly higher in the spring of 1968 than in 1967; however, populations have shown a general downward trend since 1964. Population levels appear to show a direct relationship with winter weather conditions. Other factors including range condition and predation are also involved; however, no matter how good range is, it is of little value to deer when snow depths preclude its use. Fig. 1 graphs average winter temperature, winter deer losses and hunter success from 1955 through 1968. Since 1964, the average winter temperature has been lower than for many preceding years, deer losses were higher and hunter success poorer. The winter of 1967-68 was mild, resulting in good deer survival and improved hunter success in the fall of 1968.

Age classes of hunter-killed deer continue to indicate a high proportion of older age animals in the population. Age class data are shown in Table 1. Hunting is not considered sufficiently intensive to control deer populations in Alaska. Many areas receive little or no hunting, yet populations fluctuate in these areas similar to those which receive higher hunting pressure.

Hunter success was best in the northern and southern portions of Southeast and poorest in the central section near Petersburg and Wrangell. In spite of lower deer populations, the average hunter took two deer, indicating deer were reasonably available.

Mortality Factors

Deer winter losses were very low during the winter of 1967-68. Only one dead deer was located on 68 transects. These mortality data are reported in Project No. W-15-R-3.

The study of wolf-deer relationships was continued at Coronation Island. Previous data are reported in Project No. W-15-R-3. This study was initiated in 1960 when two male and two female wolves were placed on a 30 square mile island which had no known previous history of predator occupancy. The habitat evidenced extreme use by deer which were about 20 percent smaller than

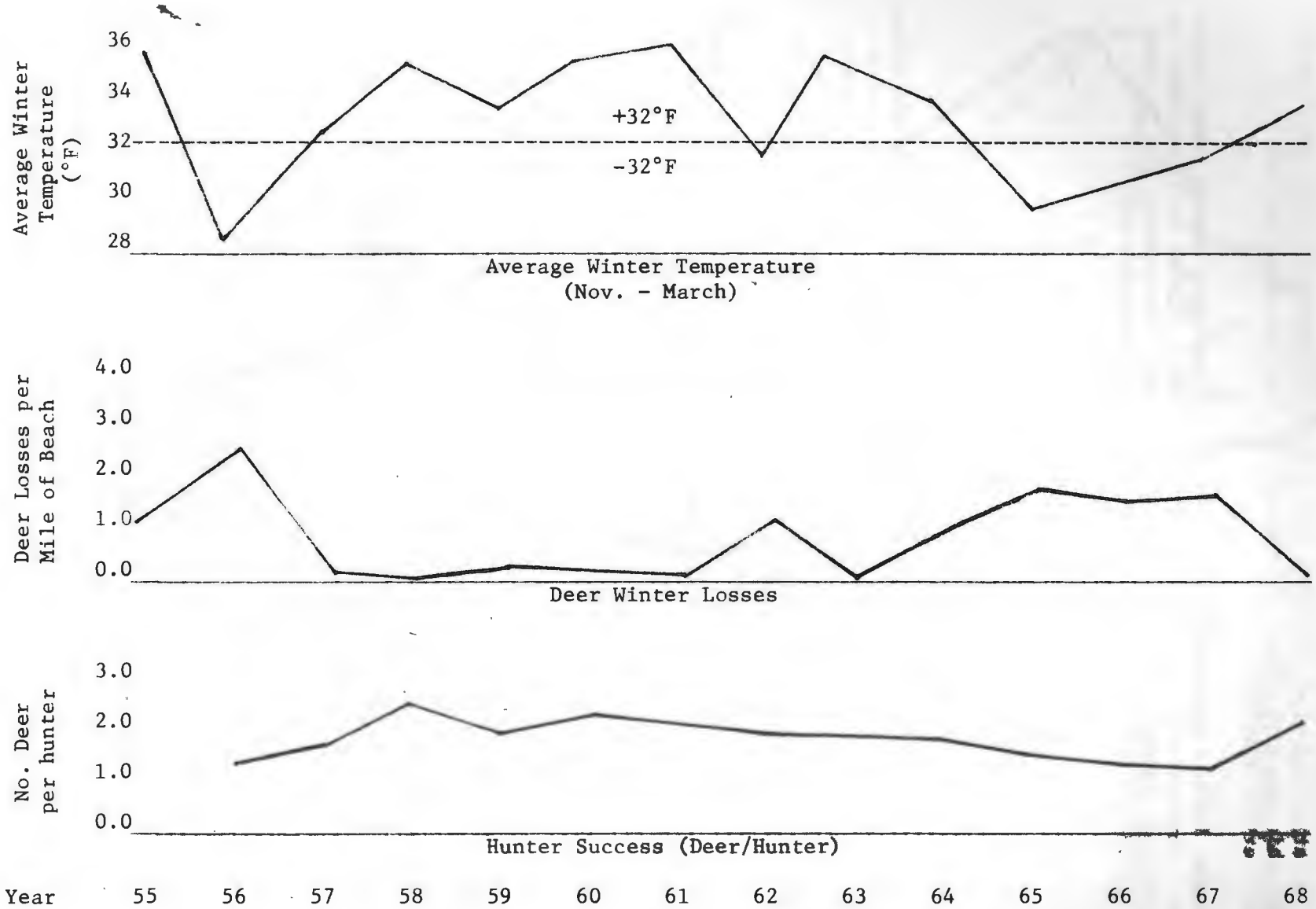

Figure 1. Comparison of average winter temperature, deer winter losses and hunter success in Southeast Alaska, 1955-1968.

Table 1. Age composition of deer taken in Southeast Alaska, 1968.

Age	Male		Female		Sex Unknown	Both Sexes	
	No.	%	No.	%	No.	No.	%
Fawn	8	6	14	14	2	24	9
1+	22	16	23	22	6	51	19
2+	23	17	11	11	6	40	14
3+	28	20	13	12	9	50	18
4+	38	27	20	19	2	60	22
5+	20	14	23	22	6	49	18
Total	139	100	104	100	31	274	100

deer on better ranges in Southeast Alaska. From 1960 to 1965, the wolf population increased to about 12 animals. During this period the deer population decreased rapidly and in 1965 it was difficult to locate evidence of deer. In early 1966, a decline in wolf abundance was noted and in August, 1966, evidence of only two or three wolves was located and no denning activity noted. In May, 1967, there were still two or three wolves on the island but in January, 1968, only one wolf was located.

Two trips were made to the island during this report period; one in July and a second in December. On both trips evidence of only one wolf was noted and very little sign of deer located. No wolf scats were observed in July but three were found in December. One scat contained deer, one hair seal and the third rodent and chiton.

Woody shrub species, which at the time of the wolf transplant showed extreme use by deer, now have good annual growth, but are slow to fill in voids. Forb cover, which was very sparse in 1960, has increased rapidly. The reduction in deer numbers has resulted in improved range condition, but we have also learned that browse species are very slow to reestablish after range has been over-used. We also know that approximately one wolf per three square miles of deer habitat was sufficient to reduce the deer herd to a point where hunting is unproductive. When deer became scarce, the wolf population also dropped, but there is no noticeable increase in deer in the two years since only one wolf has been on the island. The deer population may have been reduced to a level where one wolf utilizes the annual increment.

Wolf-deer relationships pose many questions, all facets of which are not fully understood. Past records indicate at least five major deer cycles in Southeast Alaska since 1900. Deer have cycled in areas which do and do not support wolves. Winter weather condition, rather than wolves, appears the primary controlling factor on deer populations, but when deer numbers are low, the wolf unquestionably slows building deer populations. We have shown, that on small islands, wolves can reduce deer to a point where hunting is non-productive. On larger islands (over 100 square miles in area) natural factors appear to limit wolf populations to a reasonable balance with deer numbers. In these areas deer increase, under favorable climatic conditions, in spite of predation by wolves.

Habitat

Alaska is the northern limit of deer populations in North America and within Alaska, deer are limited to coastal regions adjacent to the Pacific Ocean. As with many species near the limit of their range, deer populations in Alaska are subject to rather extreme fluctuations. The major contributing factor to these fluctuations is probably food availability as controlled by winter snow depths. Quality of available food is also important and a portion of our habitat study has been devoted to determining the quality of key deer food species. During each season of the year, the major portion of a deer's diet consists of a few plant species. In spring and early summer skunk cabbage Lysichitum americanum is probably most important. As summer progresses, most deer move to alpine ranges where deer heart Fauria crista-galli is the major food species. During winter months, the forb ground dogwood Cornus canadensis is utilized extensively when available,

but when snow covers this species deer must use browse species of which blueberry Vaccinium ovalifolium is most important. Protein analyses show that of these four major food species, only blueberry (during winter months) is of low nutrient quality. The average protein content of skunk cabbage is over 35 percent, of deer heart - 18 percent, of ground dogwood - 12 percent and of blueberry - 4 percent. A comparison of these protein levels is demonstrated by young alfalfa which averages 27 percent and oats (dry grain) averaging 14 percent. During the summer months, food is never a limiting factor for deer in Alaska; high quality food plants are abundant. Even in winter, if deer have access to ground dogwood and other ground forbs, they remain in good condition. It is only after long periods of snow cover, when deer must depend primarily on blueberry, that deer losses occur. During extreme snow conditions, dry grass and sedges on beaches may be the only available food for deer. Deer range condition is normally not a limiting factor, but the availability of the higher quality food species on the range is limiting.

In early June, 1968, the U. S. Forest Service treated a timber cutover in the Nakwasina River drainage (near Sitka) with two pounds per acre of the herbicide 2-4-D to control red alder Alnus rubra growth and release conifer reproduction. Prior to spraying a study area was selected within the spray zone to evaluate effects on deer food species. Ten randomly located milacre plots were established and plant species on each plot were recorded. Photographs were also taken of each plot. The plots were inspected in July and August after spraying was completed and a photo record was made. The application of 2-4-D effectively defoliated red alder less than 15 feet in height, but did not penetrate to the lower foliage on taller trees. Some wilting was noted on most forbs and shrubs, but skunk cabbage, blueberry, devil's club Oplopanax horridus and rusty menziesia Menziesia ferruginea all showed almost complete defoliation. Of the species showing complete defoliation, only blueberry is an important winter food species for deer. It is too early to determine whether defoliation will result in permanent plant damage. 2-4-D has been used on deer ranges in other states to stimulate new shoot growth of browse species utilized by deer.

In 1967, a study was initiated to evaluate the impact of clearcut logging on deer habitat. Time does not permit following a single cut through the several stages of succession until a mature forest is reestablished since rotation age is estimated at about 80 years. Therefore we attempted to locate past cuts dating to the late 1800's and evaluate successional stages at about ten year intervals. Areas were tentatively selected in 1967. These were revisited in 1968 and some changes made in locations. Very little time was available for this project, but general impressions were obtained from reconnaissance surveys. Much high quality deer food is produced on these cuts for a period of 10 to 30 years after cutting depending on site and rapidity of conifer restocking. During the next period (age 30-40 years), conifer reproduction is so dense that ground forbs and shrubs are shaded out and little or no deer food is available. At this stage, trees are not of sufficient height to reduce snow cover on the ground and the area is of little value for winter cover. At age 40-60, cover is available, but few plant species are present on the forest floor.

After age 60, shrubs and forbs begin to reestablish and the forest is again useful for both deer food and cover. Clearcutting on forests in most western states normally results in higher food production immediately following cutting stimulating increases in deer populations. A similar situation does not necessarily exist in Southeast Alaska because of deeper snow depths in winter. Clearcuts may produce a tremendous amount of food, but unfortunately most of it is unavailable to deer when snow depths reach 18 to 24 inches. In actuality therefore, deer may increase in clearcut areas during mild winters, but under severe winter conditions more deer are forced to use a lesser amount of cover. Most clearcuts in Alaska are very large, ranging up to 2,000 acres in size. It would be advantageous to deer if cuts were kept to a smaller size, thereby providing a better balance of food to cover and increasing the amount of fringe area which is particularly important to deer.

Snow depth measurements in relation to deer range use were initiated in 1967-68 and reported in W-15-R-3. Very little snow accummulated on the ground below 1,000 foot elevation during the present report period so little information could be obtained. Eight surveys were made along a ridge known to be good deer winter range. Snow depths were checked at 100 foot elevation intervals from sea level to 1,000 feet. Through the report period, most deer remained above the 1,000 foot elevation level. Most deer winter as high as food is available. About 18 inches of snow appeared to be the limit of deer use. Snow depths in timber cover were about one-half those found in areas without timber cover.

Work was continued plotting timber cuts on forest type maps for all of Southeast Alaska. All forest districts were visited and timber cutting records inspected. These maps are extremely useful for recommending areas which should be reserved for deer winter habitat.

Deer Harvest

Statistics for the 1968 deer harvest in Southeast Alaska are given in Tables 2 through 6. In 1968, the season in Units 1-4 was from August 1 through December 15 with a limit of four deer of either sex. The either-sex season was open from October 15 through December 15, but the season was extended in portions of Unit 3 and Unit 4 through December 31, allowing two additional deer to be taken.

The 1968 deer season was rather unusual. Deer populations had declined since a peak in 1964, but deer were still plentiful in many areas. Weather conditions through November were very mild and deer remained high. Heavy snows fell in early December, bringing deer to lower levels, resulting in unusually good hunter success, particularly in Unit 4. Most of the deer kill is usually in November, but in 1968 over 50 percent were taken in December. The final estimated kill for the season was 12,800 deer, more than for any year since 1958.

The average deer hunter in Southeast Alaska took 2.0 deer with an effort of 2.4 man days per deer. Table 3 compares the success in 1968 with previous years. In 1968, 43 percent of the deer taken were does,

Table 2. Deer harvest statistics for Southeast Alaska, 1968.

	Juneau	Ketchikan	Petersburg	Sitka	Wrangell	Villages	All S.E.
% Hunter Success	77	64	58	92	53	80	72
Deer/Hunter	2.3	1.5	1.4	2.7	1.3	2.0	2.0
Days/Deer	2.0	3.0	4.2	1.5	5.0	2.0	2.4
% Kill Female	49	33	39	46	39	40	43
License Sales	2,700	2,100	850	1,200	550	550	7,950
% Who Hunted	81	83	92	78	73	90	82
Actual Hunters	2,190	1,740	780	940	400	500	6,550
Total Kill	5,040	2,610	1,090	2,540	520	1,000	12,800
Sample Size	100	100	150	100	90	150	690

Table 3. Summary of deer harvest statistics for Southeast Alaska, 1959-1968.

Year	License Sales	Actual Hunters	Hunter Success (%)	Deer/ Hunter	Days/ Deer	% Kill Female	Total Kill
1959	6,160	?	74	1.8	3.6	24	11,000
1960	6,460	5,800	83	2.3	2.9	21	12,400
1961	6,620	5,800	77	2.2	3.1	26	11,200
1962	6,900	5,800	74	2.0	3.2	34	11,000
1963	7,100	5,400	79	2.0	3.0	33	11,100
1964	7,100	3,500	80	2.0	2.4	31	10,000
1965	7,430	5,900	73	1.7	2.8	38	10,000
1966	7,970	6,100	73	2.0	2.6	40	12,300
1967	8,500	6,500	64	1.6	4.1	38	10,500
1968	7,950	6,550	72	2.0	2.4	43	12,800

Table 4. Summary of deer kill by Unit for Southeast Alaska, 1968.

Unit	Male		Female		Total	
	No.	%	No.	%	No.	%
1	1,805	25	837	15	2,642	21
2	510	7	327	6	837	6
3	1,198	16	715	13	1,913	15
4	3,742	52	3,666	66	7,408	58
Total	7,255	100	5,545	100	12,800	100

Table 5. Deer kill by residence and Unit for Southeast Alaska, 1968.

Town	Unit 1		Unit 2		Unit 3		Unit 4		Total Kill
	M	F	M	F	M	F	M	F	
Juneau	509	161			56	50	2,011	2,253	5,040
Ketchikan	1,240	652	282	175	175	21	44	21	2,610
Petersburg	26	17			554	378	80	35	1,090
Sitka	23						1,336	1,181	2,540
Wrangell	7	7			305	194	7		520
Villages			228	152	108	72	264	176	1,000
Total	1,805	837	510	327	1,198	715	3,742	3,666	12,800

Table 6. Chronological distribution of deer kill in Southeast Alaska, 1968.

Month	Percent of Total Kill		
	Male	Female	Both Sexes
August	5		5
September	3		3
October	8	3	11
November	19	12	31
Dec. 1-15	18	21	39
*Dec. 16-31	3	8	11
Total	56	44	100

*The season was extended from Dec. 16-31 with a bonus limit of two deer of either sex.

a higher percentage than for any year since either-sex hunting has been allowed. Many residents are still opposed to either-sex hunting, but there has been a consistent increase in the percentage of females taken.

Weather conditions during the hunting season have a great deal of influence on the number of deer taken. If weather is mild, most deer remain at higher elevations and few are taken. If a heavy snowfall occurs during the open season, deer move to lower elevations where they are more vulnerable to hunters.

Poorest hunting success in 1968 was in Unit 3. Winter losses in this Unit, combined with predation by wolves, have made hunting poorer than in most other areas. Predation does not appear to control deer numbers, as previously discussed, but the combination of winter losses and predation is apparently responsible for poorer success in Unit 3 than in other Units. Units 1(A) and 2 also support wolf populations, but winter losses have been much lower in these Units than in Unit 3.

At peaks of cycles, deer in Southeast Alaska are extremely abundant. It is not unusual to observe 50 to 100 deer during a day's hunt in the higher alpine areas in the fall. Populations of this magnitude far exceed the carrying capacity of winter range if deer are forced below the 500 foot elevation level. It is difficult to convince Alaskan hunters that years of lower abundance are actually beneficial to deer, allowing habitat to recover from periods of over-use.

Winter weather and its impact on food availability probably is the major controlling factor on deer abundance in Alaska. The correlation between average winter temperature, deer losses and hunter success the following fall is shown graphically in Fig. 1. From 1958 through 1964, winter weather was mild, deer populations remained high and hunter success was good. From 1965 through 1967, winters were more severe, deer losses were higher and hunter success was poorer. The winter of 1967-68 was mild, resulting in good deer survival and hunter success was better in the fall of 1968.

Prince William Sound

Deer populations in the Prince William Sound area were relatively high in 1968. Survival during the 1967-68 winter was excellent, resulting in a high proportion of yearling animals in the population. Both ground and aerial surveys were made in alpine areas in July and August. An average of 20 deer was observed on each ground survey made during early morning hours and an average of 118 deer was observed during each aerial survey. Most deer were seen on Hinchenbrook Island, where 200 deer were counted during one flight.

Excellent fawn survival during the winter of 1967-68 was reflected in an unusually high proportion of yearling deer in the 1968 harvest. Age data are given in Table 7. In Southeast Alaska, usually over 50 percent of deer taken are three years old or older; however, in 1968 in Prince William Sound, 66 percent were less than three years of age.

Table 7. Age distribution of deer taken in the Prince William Sound area, 1965-1968.

Age	Percent in Each Age Class			
	1965	1966	1967	1968
Fawn	21	18	41	22
1+	20	9	8	35
2+	17	20	6	9
3+	20	27	18	8
4+	13	18	13	10
5+	9	7	14	16
Sample Size	148	99	105	149

Table 8. Deer harvest statistics for Prince William Sound, 1966-1968.

	1966	1967	1968
% Hunter Success	69	69	63
Deer/Hunter	1.7	1.1	2.3
Days/Deer	2.3	2.7	2.0
% Kill Female	38	41	43
License Sales	630	600	600
Actual Hunters	520	460	460
Total Kill	880	680	1,060
Sample Size	100	100	100

Table 8 gives deer harvest statistics for the Prince William Sound area for the past three years. Hunter success was better than for many years; the average hunter taking 2.3 deer with an effort of 2.0 man-days per deer. The estimated kill for Cordova hunters was 1,060, but the total kill for the Sound area was probably double that figure.

Table 9 shows the location of deer taken, and Table 10 gives the chronological distribution of the kill. Most deer came from Hawkins and Hinchenbrook Islands and 38 percent were taken during December.

Kodiak Island

Deer populations were higher on Kodiak Island than in previous years. Deer continued to expand their range and hunter success was the highest in history.

Aerial surveys were flown on alpine ranges in July. Three flights were made on each survey area. Location of survey areas are shown in Fig. 2 and a summary of counts is presented in Table 11. In 104 minutes of observation time, 289 deer were sighted, of which 50 percent could not be classified by sex. The highest fawn-doe ratio was on Chiniak Peninsula which also receives the greatest hunting pressure.

During the 1968 season, hunter success was 74 percent and the average hunter took 0.94 deer. The estimated harvest of 2,120, plus 20 percent for crippling-illegal losses, makes the total estimated kill slightly over 2,400 deer. These figures are the highest ever recorded for Kodiak. The female portion of the harvest, indicated by hunter interviews and specimen collection, was 42.4 and 35 percent, respectively. Comparison of the harvest statistics for the years 1966-1968 are presented in Table 12. During 1968, nearly 2,000 licensed hunters spent 10,050 man-days in pursuit of deer. Fifty-six percent of these hunters used automobiles as a means of transportation, of the remainder, 35 percent used boats, 9 percent used aircraft and 2 percent utilized snow machines. Seventy-eight percent of those who hunted killed a deer.

The increased harvest of deer (57%) and number of females (37%) taken in December can be attributed to deep snow cover and generally good hunting conditions. Only 13 percent of the total harvest and 4 percent of the females were harvested in November. Table 13 gives the geographical distribution of the 1968 harvest.

Chiniak Peninsula yielded 50 percent of the total harvest; 24 percent came from Monashka-Whale Island areas and 26 percent from Kupreanof-Uganik areas. The increased kill from Monashka is the result of combining harvest information taken from Monashka and Anton-Larsen Bay areas. Harvest figures indicate a considerable decrease in the kill from 1967 on Uganik Island which is likely due to an excessively high estimate in 1967.

Age distribution by sexes, as determined by jaw collections, is given in Table 14. Yearlings and fawns constituted 57 percent of the specimens collected, indicating good production and survival of the 1967 fawn crop

Table 9. Distribution of 1968 deer harvest, Prince William Sound.

Area	% of Total Kill
Mainland	6
Hawkins Island	36
Hinchenbrook Island	37
Montague Island	19
Other	2

Table 10. Chronological distribution of deer kill in Prince William Sound, 1968.

Month	% of Total Kill
August	4
September	7
October	27
November	24
December	38

FIGURE 2: Location of alpine surveys

Table 11. Deer composition and trend counts made in alpine areas of Kodiak Island, 1968.

Area	Drainage	Flight Time/Min.	Male	Female	Fawns	Unknown	Totals
Chiniak Pen.	Middle Bay	17 min.		2	2	8	14
Chiniak Pen.	Kalsin Bay	9 min.		1	2	19	24
Chiniak Pen.	Sacramento R.	9 min.	8	10	5	7	29
Chiniak Pen.	Saltery L.	10 min.	—	8	4	13	25
	SUB TOTAL	45 min.	8	21	13	37	92
Kizhuyak	Kekur Pt.	12 min.	10	9	4	21	44
	Sharatin	5 min.	4	3	3	14	24
	Anton Larsen	19 min.	8	7	2	8	25
	SUB TOTAL	36 min.	22	19	9	43	93
Monashka	Monashka Mt.	7 min.	3	3	3	11	20
Whale Is.	Whale Mt.	9 min.	5	9	5	24	43
Uganik Is.	South End	7 min.	6	11	7	18	41
	TOTAL	104 min.	44	65	37	143	289

Table 12. Comparison of deer harvest statistics for Kodiak Island, 1966-1968.

% Hunter Success	1966	1967	1968
% Hunter Success	42	48	74
Deer/Hunter	0.6	.8	.94
Days/Deer	9.3	5.7	5.0
% Female Kill	40	31	42
License Sales	1,480	2,011	2,340
Actual Hunters	1,180	1,790	2,300
Total Kill	720	1,500	2,120
Sample Size	175	201	200

Table 13. Comparison of kill distributions, 1967-1968.

Areas	Percent Total Kill	
	1967	1968
Chiniak	45	46.8
Monashka	13	24.8
Kupeanof - Uganik	42	27.5

Table 14. Age composition of deer taken on Kodiak Island, 1968.

Age	Male		Female		Both Sexes	
	No.	%	No.	%	No.	%
Fawn	22	13	29	34	61	21
1+	68	40	24	28	99	34
2+	17	10	8	9	28	10
3+	26	15	5	6	35	12
4+	10	6	3	4	15	5
5+	27	16	16	19	52	18
Total	170	100	85	100	290	100

Table 15. Chronological age distribution of the Kodiak Island deer harvest, 1968.

Month	% of Kill by Month						Sample Size
	Fawn	1+	2+	3+	4+	5+	
August		37	18	18	4	22	27
September	6	52	5	13	9	16	31
October	9	50	3	17	2	17	42
November	10	35	10	15	2	33	40
December	34	27	11	9	6	14	150
						TOTAL	290

and good production again in 1968. The high percentage of deer in the five-plus age catagory is the result of collectively treating all animals five or more years of age as one group.

Thirteen percent of the male jaws collected were those of fawns, 40 percent were yearlings, 10 percent two-year-olds and 15 percent were three-year-olds. Thirty-four percent of the female jaws were fawn, 28 percent were yearlings and 9 percent were two years of age.

The percentage of female fawns taken appears to be considerably greater than the number of male fawns. On the other hand, percentage of female yearlings harvested is considerably smaller than percentage of male yearlings. This disparity could result from larger number of female fawns taken during the 1967 season.

The yearling age class was dominant through the hunting season except during December when fawns were prevalent. Chronological distribution of the 1968 deer harvest on Kodiak Island is given in Table 15. A large percentage of five-year-olds, and older were taken in August and November. The August high is likely due to hunter selectivity as the result of trophy hunting during good weather. The November high probably reflects the availability of older age animals during the rut and improved hunting conditions.

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