1995 Report

Deer Pellet-Group Surveys in Southeast Alaska

by

Mark J. Kirchhoff

Alaska Department of Fish and Game
Division of Wildlife Conservation
Douglas, Alaska

1995

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MEMORANDUM
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STATE OF ALASKA

TO: Distribution

DATE: June 13, 1995

PHONE NO: 465-4329

FROM: Mark Kirchhoff
Wildlife Biologist
Div. Wildlife Conservation
Douglas

SUBJECT: 1995 Deer Survey
Results (preliminary)

1995 Deer Pellet Survey Results

VCU	NAME	PLOTS	1995 MEAN (PG/PLOT)	PREVIOUS YEAR SURVEYED	PREVIOUS MEAN (PG/PLOT)
35	North Douglas	306	0.86	1994	0.91
36	Inner Point	254	1.36	1992	2.05
124	Shelter Island	297	1.37	1993	2.00
182	Pybus Bay	205	1.43	1992	1.13
189	Port Althorp	98	2.12	1994	1.31
235	Kadashan	195	2.64	1994	1.39
249	Lisianski	317	0.70	1991	1.53
254	Soapstone	283	1.48	1994	1.34
271	Chichagof	303	0.98	1991	1.39
275	Cobol	218	1.45	1991	2.96
300	Nakwasina	216	1.75	1994	1.46
305	Sealion Cove	210	1.30	1994	1.29
400	Security Bay	268	0.26	1989	0.25
442	Portage Bay	277	0.57	1993	0.43
448	Woewodski	157	1.38	1994	1.14
575	Thorne Lake	299	1.27	1994	0.76
625	Trocadero	235	1.74	New	
679	Kitkun Bay	263	0.41	1989	0.89
716	Helm Bay	284	1.29	1993	1.37
719	Port Stewart	278	1.60	1993	1.22
722	Spacious Bay	283	0.45	1993	0.54
738	Margaret	304	0.70	1993	0.31

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INTRODUCTION

This report summarizes the deer pellet-group survey work conducted by the Alaska Department of Fish and Game and the United States Forest Service in Southeast Alaska during 1995. Pellet-group data are used by biologists to monitor deer population trends in specific watersheds throughout the region. The data also permit general comparisons of deer numbers from area to area within the region. The reader is referred to Kirchhoff and Pitcher (1988) for a more detailed discussion of objectives, sample design, and field methodology of this program.

RESULTS

During 1995, 22 watersheds, (or value comparison units - VCUs), were surveyed. For each VCU, transect locations, physiographic information, deer population density, and trend are described. Overall, deer pellet-group densities were slightly higher region-wide compared to previous years. Ten VCUs showed increases, six showed decreases, five were almost the same, and one was new. Complete results for each VCU are found in Table 1. A brief summary of deer population trend by game management unit follows:

Subunit 1A and Unit 2 - Southern Southeast Alaska. According to Doug Larsen, ADF&G area biologist in Ketchikan, deer densities continue to vary within and between drainages in Subunit 1A and Unit 2. Historically, southern Southeast has supported far fewer deer than areas further north, especially Unit 4's Admiralty, Baranof, and Chichagof islands. Wolf predation, which is present in southern Southeast but absent from Unit 4, likely contributes to this disparity.

Of the four pellet-group surveys completed in Subunit 1A during 1995, two contained more sign and two others contained less sign than when they had been previously surveyed. In Unit 2, one survey contained more sign and one other contained less sign than when previously surveyed. A third survey was completed in an area not previously sampled and no comparative data are available. Overall, we believe deer numbers in southern Southeast remained relatively stable during the past year.

Unit 3 - Central Southeast Alaska. Ed Crain, ADF&G's Petersburg biologist, believes deer populations in most of Unit 3 are stable at low levels. This is based on the pellet-group surveys and on informal observations. At the high end, Zarembo Island seems to have an abundance of deer right now based on aerial surveys and hunter's reports. Mitkof Island, on the other hand, might be experiencing a decline. According to the latest deer hunter survey, only 24% of hunters were successful on Mitkof Island in 1994. This compares to a 32% success rate in 1993 and a 53% success rate in 1992. The 1995 success rate is being tabulated this spring and should give a better indicaton of deer population trend on the island.

Unit 4 - Northern Southeast Alaska. Jim Faro, ADF&G's Sitka biologist, believes that deer populations in Unit 4 have declined somewhat but are still abundant. Faro blames

the decline on the winter of 94-95 which he believes was hard enough to eliminate the spring (1995) fawn crop. The harder than normal winter also stressed pregnant does and probably will have an effect on the recruitment of yearlings into the population in 1996. Nevertheless, Unit 4 contains some of the finest deer habitat in Alaska and Faro believes there are still plenty of deer in the unit, with the possible exception of a few select drainages near the larger communities. There, high hunting pressure may have further reduced deer density to lower levels than normal.

Subunit 1C - Juneau and Mainland. Data from the regional deer harvest survey indicate that during the 1994 hunting season 365 hunters out of a total of 1017 took deer within Unit 1C, for a success rate of almost 36%. A total of 659 deer were killed (427 bucks and 232 does). Record snow accumulations during November 1994 increased deer vulnerability to hunters and contributed to heavy harvest, especially in areas near Juneau such as Douglas Island. Much of the snow accumulation was melted by rains in December, and conditions thereafter were relatively mild. The effects of the deep early winter snow upon overall winter survival is unknown, although fawns were likely negatively affected. As a result, the moderately dense deer populations in the subunit probably declined.

Pellet group surveys were completed in Spring 1995 on Shelter Island and on Douglas Island. This year's pellet group densities were lower than the most recent results for all areas surveyed. Matt Robus, ADF&G's Juneau Area Biologist, believes the deer herd may have had a chance to rebound in numbers during the winter of 1995-96, since high winds and cold temperatures probably reduced hunter effort. Low snow accumulation allowed deer access to habitat at all elevations, making the hunter's job even harder than usual. The one area where effort may have been as heavy as usual is Douglas Island, since road access allowed hunting throughout the season when other areas could not be reached via boat or airplane.

Unit 5 - Yakutat. According to the regional deer harvest survey, 5 of 24 deer hunters were successful during the 1994-95 season, a rate just under 21%. A total of 5 bucks were taken. Yakutat deer pellet surveys are normally conducted by the Forest Service's Yakutat Ranger District, but in 1995 no pellet group surveys were completed due to the unavailability of personnel. A concerted effort is planned during the spring of 1996 to give a better estimate of the area's deer population.

Anecdotal evidence indicates that wolves may be affecting deer numbers on the islands in Yakutat Bay (Knight Island, Khantaak Island, etc.) Since these are the only relatively snow-free habitats in the area, heavy predation pressure on the islands may well cause a significant decline in this introduced deer population. During the 1995 deer season there were reports of illegal harvest of does, although no enforcement action was taken (the local FWP trooper position has been left vacant.) The Federal Subsistence Board authorized the issuance of a special "ceremonial deer permit" for a funeral potlatch in 1995 and will consider a proposal for a federal regulation authorizing the taking of deer for ceremonial purposes at its spring 1996 meeting.

NARRATIVES

North Douglas (VCU 35) - Douglas Island is located immediately opposite the City of Juneau and is heavily used by local hunters. Three transects were established at the end of the road system in 1991. The transects rise to over 1,000 feet in elevation and traverse low to moderate volume hemlock stands. Deer pellet-group densities in 1995 remained low at less than one pellet group per plot.

Inner Point (VCU 36) - This drainage, located on the west side of Douglas Island, is popular with Juneau deer hunters. It is a small VCU containing mostly low-volume forest; it is also brushy, particularly at lower elevations. Access is sometimes difficult because of high wind and sea conditions in Stephens Passage. Pellet-group densities measured since 1985 have usually been moderate, between one and two pellet groups per plot, and 1995 was no different at 1.41 pellet groups per plot.

Shelter Island (VCU 124) - Located north of Juneau in lower Lynn Canal, this VCU is composed of Shelter and Lincoln islands and is a popular destination for Juneau hunters. Shelter Island, the larger of the two, is primarily forested, while Lincoln Island contains more muskeg. The maximum elevation is 1,170 feet on the northern end of Shelter Island. This VCU was intensively sampled from 1984 to 1986 with an average of 738 plots, but this practice was discontinued because most of the south end of the island is private property. Starting in 1987, only transects 4,5,6,7,8, and 18 on the north end of the island have been sampled. These six transects are the easiest to access and can all be done in one day with a six-person crew. Some of the transect starting points are hard to see from a skiff, but most can be located by crews walking along the shore. Pellet-group densities on Shelter Island have traditionally been high (over 2 pellet groups per plot), but in the last few years have declined to more moderate levels. In 1995, pellet-group density on Shelter Island was 1.37 pellet groups per plot.

Pybus Bay (VCU 182) - Pybus Bay, on the SE coast of Admiralty Island, is important to Juneau, Petersburg, and Kake hunters, and has been surveyed frequently since 1981. All three transects are fairly easy, although snow can sometimes be a problem at higher elevations. 1995 pellet-group counts were up slightly from the last time this bay was surveyed.

Port Althorp (VCU 189) - This VCU, on the NW corner of Chichagof Island, is an important deer hunting area for Elfin Cove residents. Three transects were established here in 1988. Transect #1 starts at the head of Salt Chuck Bay and ascends a south-facing slope to 1500 feet. Transect #2 starts near the old Port Althorp cannery and ascends a north-facing slope to 1200 feet. Transect #3 starts at the entrance to Salt Chuck Bay and travels along a ridge through mid-volume old growth. 1995 deer pellet-group density was up in Port Althorp from previous years, but the data is skewed somewhat because very few plots were run, and all of those at lower elevations. The reason only a few plots were run is because the Sitka Ranger was delayed in Hoonah getting fuel and could not reach the bay until late afternoon.

Security Bay (VCU 400) - Three transects were established at Security Bay, on northern Kuiu Island, in 1984. Transect #1 starts in Band Cove and follows a ridge through good volume timber. Transect #2 starts at Pt. Lookout and goes up a steep hill. Transect #3 starts at the mouth of the bay and runs east through heavy brush at the start - then into an open cedar forest. Pellet-group density was very low in Security Bay the last two times this bay was visited and 1995 results were also low at 0.22 pellet groups per plot.

Portage Bay (VCU 442) - Three transects were established at Portage Bay on the north end of Kupreanof Island in 1993. Transect #1 starts on the west side of the bay opposite Stop Island and traverses low-volume mixed forest to 640 feet elevation. Transect #2 starts at the head of the bay and traverses mid- to high-volume hemlock and a young clearcut. A bearing change is made at plot 49 from 45 degrees to 25 degrees. Transect #3 starts on the east side of the bay near the mouth and traverses low to mid-volume hemlock on a steep slope up to 1500 feet. Deer pellet-group density in 1995 was the same as in 1993 at 0.43 pellet groups per plot.

Woewodski (VCU 448) - Three transects were located on southwestern Mitkof Island in 1984. They are all well-marked and easily accessible by skiff from Petersburg. All climb to 1500 feet through moderate volume timber. 1995 deer pellet-group density was slightly higher than in 1992. Only two transects were done in 1995 because of a lack of personnel.

Thorne Lake (VCU 575) - Four transects were established along the Thorne River drainage in 1992. All four transects start along Road 3015 and are accessed by vehicle from Thorne Bay. The vegetation on Transect #1 is mostly a red cedar-western hemlock overstory and a blueberry understory. Transect #2 starts in a muskeg and low volume forest, but soon encounters the edge of a clearcut. Timber is mostly low to mid-volume with muskegs scattered throughout. Towards the end of the line there is some high volume timber. Transect #3 is an easy transect through mostly moderate to high-volume hemlock. Transect #4 is a steep steady climb to 1500 feet. The first half is dominated by western red cedar, the second half is spruce-hemlock forest. Volume class is 5 and 6 all the way. Overall, deer pellet-group density was moderate in the drainage, up from 1994.

Trocadero (VCU 625) - Three new transects were established at the head of Trocadero Bay in 1995. This particular VCU was chosen because it is popular with Craig deer hunters. Transect #1 heads up a south-facing slope to 1500 feet elevation. There are about five plots of blowdown; otherwise the forest is mostly low volume western red cedar. Deer sign was plentiful with lots of trails and browsing. Transect #2 also heads up a south-facing slope to about 1,000 feet elevation. Timber volume is low throughout the transect and there is a lot of blowdown and rock outcroppings to overcome. Deer sign was good but the number of plots covered was limited because of the adverse conditions. Transect #3 heads up a north-facing slope to about 1,000 feet elevation. The start of the transect has a lot of blowdown and the timber volume is low. There is also a lot of cedar and salal which made counting pellets difficult. Deer sign was low. Overall, deer pellet group density in this VCU was moderate at 1.74 pellet groups per plot.

Kitkun Bay (VCU 679) - Three transects were established at Kitkun Bay on the east coast of Prince of Wales Island in 1988. The transects run through some very high volume stands, particularly Transect #1. Transect #2 has been heavily clearcut since 1988, and Transect #3 is plagued by blowdown. Deer pellet-group density in 1995 was low at 0.40 pellet groups per plot.

Helm Bay (VCU 716) - Helm Bay on the Cleveland Peninsula north of Ketchikan was intensively sampled by ADF&G crews in 1981. Three permanent transects were established in 1984. In the mid-1980s, deer pellet-group densities were low in Helm Bay, but since 1988 have been moderate. 1995 results were also moderate at 1.31 pellet groups per plot.

Port Stewart (VCU 719) - Three transects were established at Port Stewart on the Cleveland Peninsula in 1993. Transect #1 starts on the west side of Port Stewart at the mouth of a large stream. The first fifty plots traverse a non-commercial, brushy forest. The next forty plots ascend a steep hillside to 1500 feet through mid- to high-volume forest. Transect #2 starts at the mouth of a small stream located in the bight on the east side of the bay. The first 60 or so plots are side-hill walking through Class 4 and 5 timber. The remainder of the transect traverses a mixed conifer forest with blueberry understory. Transect #3 starts in the southeastern most corner of the bight on the east side of the bay. Scrubby non-commercial forest is the predominant habitat type with a few large cedar found along the way. Overall, deer pellet-group density was moderate in Port Stewart in 1995.

Spacious Bay (VCU 722) - Three transects were established at Spacious Bay on the Cleveland Peninsula in 1993. Transect #1 starts on the north side of the bay about 200 yards west of a large stream. The transect runs to 1500 feet through first a low-volume cedar forest and then a medium volume hemlock-spruce forest. Transect #2 also starts on the north side of the bay at the mouth of a six-foot wide stream. The transect runs to 1500 feet through a mid-volume forest with a brushy blueberry understory. Transect #3 starts on the north shore of Spacious Bay at the head of the first sizeable cove west of Bluff Point. The transect goes over a low pass to Yes Bay and traverses low to mid-volume cedar stands. Deer pellet-group density in Spacious Bay was low at 0.54 pellet groups per plot.

Margaret (VCU 738) - This VCU on northern Revilla Island was first sampled by the Forest Service in 1985. The three transects traverse mostly low to mid-volume forest. Pellet-group density in 1995 was somewhat improved from the last year this VCU was sampled, but still low at 0.70 pellet groups per plot.

LITERATURE CITED

Kirchhoff, M. D., and K. W. Pitcher. 1988. Deer pellet-group surveys in Southeast Alaska, 1981-1987. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Progress Report Project W-22-6, Job 2.9. Juneau. 113 pp.

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
20	Comet	9,662	12%	1994	180	0.00	0.00-0.00
27	Auke Bay	15,245	45%	1987	381	0.99	0.87-1.12
35	North Douglas	4,430	49%	1991	300	0.80	0.65-0.96
				93	324	0.74	0.62-0.87
				94	315	0.91	0.74-1.09
				95	**306**	**0.86**	**0.70-1.02**
36	Inner Point	3,965	44%	1985	256	1.30	1.10-1.51
				86	235	1.97	1.68-2.25
				87	262	1.76	1.53-2.00
				88	200	1.21	1.02-1.39
				89	258	1.31	1.08-1.53
				92	204	2.05	1.75-2.36
				95	**254**	**1.41**	**1.21-1.60**
65	Sumdum Glacier	40,906	15%	1987	262	1.76	1.53-2.00
82	Negro Creek	12,212	31%	1989	312	0.21	0.13-0.29
89	Farragut Bay	na	na	1994	314	0.02	0.00-0.04
94	Sullivan Island	3,985	78%	1990	250	1.39	1.17-1.62
117	Couverden	9,933	10%	1993	350	0.35	0.27-0.44
124	Shelter Island (All Transects)	6,162	43%	1984	713	1.46	1.33-1.60
				85	774	1.82	1.67-1.97
				86	727	2.20	2.02-2.37
124	Shelter Island (Trans. 4-8, 18)			1984	300	1.52	1.34-1.70
				85	296	2.52	2.24-2.81
				86	292	3.24	2.91-3.57
				87	288	2.91	2.57-3.24
				88	130	3.16	2.62-3.70
				89	300	1.43	1.23-1.62
				90	300	1.60	1.37-1.82
				93	250	2.00	1.73-2.26
				95	**297**	**1.38**	**1.20-1.56**

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
125	Barlow Cove	13,712	24%	1982	2,567	1.07	1.01-1.12
				84	347	1.69	1.46-1.92
				85	347	1.55	1.35-1.76
				90	270	1.42	1.18-1.65
127	Calm Station	4,941	66%	1982	1,054	1.65	1.53-1.77
128	Hawk Inlet	14,318	57%	1982	1,605	1.21	0.99-1.42
				84	339	1.42	1.22-1.63
				85	270	1.69	1.43-1.95
				86	286	1.92	1.64-2.19
				87	278	2.54	2.19-2.89
				89	364	1.82	1.56-2.08
				90	250	2.24	1.94-2.53
				92	319	1.61	1.38-1.83
140	Dorn Island	9,485	81%	1984	230	1.27	1.02-1.53
148	Lake Kathleen	14,693	57%	1987	207	2.13	1.76-2.49
150	Lake Florence	21,342	52%	1988	294	1.48	1.27-1.69
162	Thayer Lake	25,342	79%	1987	313	2.81	2.49-3.12
				89	283	2.04	1.75-2.32
				94	282	2.27	1.98-2.56
171	Hood Bay	44,355	79%	1987	358	2.31	1.99-2.63
				89	366	1.77	1.54-2.00
				90	375	1.85	1.61-2.09
				92	360	1.91	1.64-2.18
				94	371	1.64	1.41-1.88
182	Pybus Bay	41,501	62%	1981	390	1.34	1.16-1.52
				84	300	1.02	0.86-1.18
				85	269	1.86	1.60-2.12
				86	235	2.00	1.70-2.29
				87	242	2.03	1.69-2.37
				89	199	2.00	1.63-2.36
				90	221	1.72	1.44-2.01
				92	236	1.13	0.97-1.30
				95	**205**	**1.48**	**1.23-1.74**

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
185	Pleasant Island	8,738	16%	1991	311	1.38	1.18-1.57
				92	210	1.34	1.09-1.59
				93	305	1.77	1.52-2.02
				94	356	1.22	1.04-1.40
189	Port Althorp	8,040	27%	1988	195	1.80	1.47-2.13
				91	223	1.92	1.55-2.29
				92	261	1.36	1.11-1.60
				93	248	1.39	1.15-1.62
				94	253	1.31	1.06-1.56
				95	**98**	**2.12**	**1.61-2.64**
190	Idaho Inlet	53,183	22%	1988	258	1.34	1.09-1.60
				92	219	0.94	0.69-1.19
				93	305	0.56	0.45-0.68
				94	294	0.71	0.58-0.84
202	Port Frederick	16,619	52%	1988	242	1.87	1.62-2.13
208	First No. 2	6,613	32%	1983	1,155	1.12	1.01-1.22
209	Suntaheen Cr.	13,198	49%	1988	272	1.22	1.00-1.44
				92	271	1.13	0.94-1.33
				93	265	0.73	0.58-0.88
				94	272	1.05	0.81-1.29
211	Point Augusta	4,688	63%	1983	757	1.78	1.62-2.01
				93	286	2.08	1.80-2.36
218	Pavlof River	18,866	50%	1988	325	1.78	1.50-2.06
				92	341	1.56	1.32-1.81
221	Whip Station	4,708	53%	1981	193	0.86	0.64-1.08
222	Sand Station	12,231	50%	1981	253	0.60	0.48-0.73
223	Upper Tenakee	3,833	54%	1988	253	1.47	1.24-1.70
				92	265	0.58	0.47-0.70
				93	249	0.47	0.36-0.58
				94	319	0.61	0.48-0.74

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
231	Saltery Bay	18,478	31%	1988	256	2.02	1.69-2.35
				92	256	0.96	0.79-1.14
				93	227	0.76	0.56-0.96
				94	193	0.97	0.79-1.15
234	Inbetween	6,002	62%	1981	35	0.49	0.08-0.89
235	Kadashan	33,641	53%	1981	96	0.54	0.32-0.76
				88	221	2.67	2.18-3.16
				92	282	1.62	1.38-1.86
				93	385	1.12	0.95-1.30
				94	294	1.39	1.18-1.60
				95	**195**	**2.64**	**2.20-3.07**
236	Corner Bay	10,930	66%	1981	60	0.35	0.17-0.53
				92	206	2.27	1.91-2.64
				93	50	1.72	1.25-2.19
				94	198	1.69	1.41-1.98
246	Broad Island	17,145	38%	1981	209	1.41	1.18-1.63
247	Finger Mountain.	15,918	38%	1983	2,145	1.17	1.11-1.24
				84	302	1.83	1.57-2.09
				85	279	3.23	2.79-3.67
				86	277	2.88	2.57-3.19
				87	236	3.11	2.71-3.52
				89	305	2.99	2.57-3.40
				90	225	3.36	2.99-3.74
				91	150	3.93	3.36-4.51
				92	207	2.85	2.48-3.22
				93	179	3.03	2.60-3.47
				94	275	2.29	1.96-2.62
249	Lisianski	19,677	24%	1988	255	0.97	0.79-1.14
				91	170	1.53	1.22-1.84
				95	**317**	**0.70**	**0.56-0.85**
254	Soapstone	17,695	29%	1988	274	1.92	1.67-2.17
				91	270	2.05	1.77-2.33
				93	243	1.88	1.59-2.16
				94	310	1.34	1.16-1.52
				95	**283**	**1.48**	**1.27-1.69**

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
271	Chichagof	20,680	10%	1991	301	1.39	1.19-1.58
				95	**303**	**0.98**	**0.83-1.14**
275	Cobol	14,618	49%	1984	224	1.15	0.92-1.37
				91	185	2.96	2.37-3.54
				95	**218**	**1.45**	**1.16-1.74**
279	Rapids Point	7,637	65%	1983	2,734	0.77	0.73-0.81
281	Ushk Bay	20,770	38%	1981	94	0.63	0.41-0.85
288	Range Creek	6,929	33%	1983	1,788	0.51	0.46-0.55
				84	303	0.71	0.61-0.92
				85	224	1.32	1.02-1.62
295	Lake Eva	12,362	65%	1987	172	1.81	1.46-2.15
296	Portage Arm	16,101	59%	1981	213	0.53	0.39-0.68
				90	214	3.09	2.70-3.48
298	Middle Arm Kelp Bay	28,424	21%	1990	306	2.68	2.35-3.01
300	Nakwasina (All Transects)	19,575	48%	1984	196	2.51	2.14-2.88
				85	1046	3.92	3.67-4.17
				86	715	3.50	3.26-3.76
300	Nakwasina (Trans. 2,3,8)			1984	138	2.51	2.10-2.93
				85	218	3.65	3.13-4.17
				86	205	3.38	2.91-3.84
				87	195	2.31	1.90-2.71
				89	244	2.32	2.00-2.65
				90	255	2.98	2.56-3.40
				91	175	3.98	3.39-4.57
				92	223	1.64	1.37-1.90
				93	188	3.15	2.70-3.60
				94	230	1.46	1.24-1.68
				95	**216**	**1.75**	**1.48-2.10**

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	Pellet-Group 95% CI
305	Sealion Cove	9,293	69%	1984	320	1.36	1.15-1.58
				85	292	2.57	2.23-2.91
				86	235	2.87	2.44-3.29
				87	226	3.31	2.82-3.80
				89	303	1.75	1.50-2.00
				90	227	2.03	1.71-2.35
				91	219	1.63	1.36-1.91
				92	239	1.30	1.08-1.51
				93	198	1.70	1.38-2.02
				94	221	1.29	1.09-1.48
				95	**210**	**1.30**	**1.08-1.52**
308	South Kruzof	71,158	25%	1993	345	1.62	1.41-1.83
				94	370	1.71	1.52-1.90
315	Basin Kelp Bay	8,460	60%	1990	151	1.85	1.41-2.28
321	Redoubt Bay	9,045	58%	1989	304	2.17	1.88-2.47
339	Cape Ommaney	13,725	32%	1988	172	1.74	1.43-2.05
348	West Crawfish	57,434	16%	1989	360	1.35	1.36-1.57
361	Knight Island	10,419	40%	1991	100	0.81	0.61-1.01
				92	100	0.95	0.74-1.16
				94	90	0.44	0.25-0.64
363	Humpback	7,721	74%	1991	118	0.01	0.00-0.03
368	Yakutat Islands	1,021	99%	1991	415	0.32	0.24-0.39
				92	243	0.48	0.37-0.58
				93	106	1.07	0.81-1.32
				94	251	0.66	0.52-0.80
369	Ankau	---	---	1991	116	0.03	0.00-0.05
400	Security Bay	28,040	79%	1984	360	0.02	0.01-0.04
				89	304	0.25	0.16-0.34
				95	**268**	**0.22**	**0.15-0.29**
403	Pillar Bay	28,227	65%	1988	337	0.16	0.10-0.22

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
408	Malmesbury	18,151	68%	1990	206	0.11	0.05-0.18
417	Conclusion Island	12,561	99%	1987	207	2.66	2.32-3.01
				89	200	0.95	0.72-1.18
				91	200	0.71	0.53-0.88
427	Big John Bay	32,711	29%	1994	300	0.38	0.29-0.48
428	Rocky Pass	49,403	35%	1989	298	0.40	0.27-0.53
431	Point Barrie	22,187	27%	1988	357	0.23	0.17-0.29
				93	375	0.77	0.64-0.90
434a	Big Level Island	727	61%	1981	399	1.54	1.45-1.63
				83	336	1.56	
				86	382	1.66	1.41-1.90
				89	227	1.07	
				91	456	2.16	1.90-2.41
434b	Little Level Island	263	92%	1981	114	2.48	2.02-2.94
				83	136	2.34	
				86	122	1.39	1.07-1.70
				89	137	1.52	
				91	132	3.59	3.07-4.11
435	Castle River	32,724	36%	1984	312	0.19	0.12-0.26
				87	305	0.51	0.37-0.65
				89	312	0.40	0.25-0.56
				94	310	0.32	0.24-0.40
437	E. Duncan	23,744	55%	1990	227	1.12	0.92-1.32
				92	213	0.78	0.63-0.94
442	Portage Bay	11,269	49%	1993	282	0.43	0.31-0.56
				95	**277**	**0.43**	**0.33-0.53**

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
448	Woewodski	20,931	53%	1984	295	0.88	0.69-1.08
				85	209	1.00	0.82-1.19
				87	195	1.65	1.85-2.61
				88	433	1.33	1.16-1.51
				89	417	1.35	1.24-1.73
				90	355	1.46	1.28-1.64
				91	316	1.80	1.52-2.07
				92	248	0.79	0.62-0.97
				93	230	1.06	0.85-1.27
				94	152	1.14	0.82-1.46
				95	**157**	**1.38**	**1.08-1.67**
448a	Woewodski Island	20,931	53%	1991	461	1.86	1.66-2.05
				94	510	1.30	1.15-1.46
449	Frederick	6,835	70%	1981	945	0.08	0.06-0.11
				90	180	0.55	0.36-0.74
				92	227	0.54	0.42-0.65
452	Blind Slough	30,655	55%	1990	324	1.35	1.15-1.56
				92	114	1.04	0.77-1.30
				93	265	1.28	1.04-1.51
454	Dry	11,033	74%	1981	91	0.92	0.56-1.28
				93	210	1.44	1.17-1.72
455	Vank	8,437	99%	1981			
	a) Sokolof				900	1.73	1.61-1.85
	b) Rynda				281	0.25	0.18-0.32
	c) Greys				284	0.25	0.18-0.32
458	Snow Passage	31,572	46%	1994	345	0.58	0.45-0.70
461	Woronkofski (All Transects)	14,500	63%	1985	646	1.63	1.45-1.81
461	Woronkofski			1985	218	2.01	1.62-2.39
	(Trans. 10,11,12)			87	201	2.23	1.85-2.61
				89	223	2.52	2.18-2.85
				91	203	1.59	1.32-1.85
				93	225	0.22	0.13-0.31
				94	224	0.26	0.18-0.34

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
467	Mosman	25,573	54%	1993	304	0.07	0.03-0.11
473	Onslow	28,947	55%	1984	321	0.37	0.28-0.46
				85	334	0.59	0.48-0.70
				86	347	0.72	0.59-0.84
				87	336	0.42	0.31-0.55
				88	329	0.44	0.32-0.55
				91	322	0.66	0.51-0.80
				93	341	0.68	0.55-0.82
				94	340	0.88	0.74-1.02
480	Fools Inlet	30,906	44%	1994	194	0.54	0.38-0.70
524	Frosty Bay	17,959	41%	1991	266	0.70	0.55-0.86
528	Mt. Calder	9,232	83%	1988	252	2.14	1.78-2.49
532	Red Bay	15,145	66%	1987	177	0.32	0.18-0.47
				94	256	0.94	0.74-1.14
539	Exchange Cove	10,406	74%	1988	266	1.39	1.15-1.64
				92	125	1.10	0.83-1.38
554	Sarkar	32,183	60%	1988	298	1.28	1.06-1.50
				92	245	0.53	0.41-0.66
				94	292	0.92	0.77-1.07
549	Sarheen	11,875	52%	1989	310	1.73	1.44-2.01
561	Warm Chuck	12,348	85%	1984	326	1.02	1.02-1.38
				85	295	1.60	1.36-1.84
				89	302	2.21	1.91-2.50
				91	291	2.05	1.73-2.37
564	Coronation	19,107	69%	1983	696	1.20	1.04-1.36
				85	228	2.34	
				88	408	1.41	1.17-1.66
				89	293	1.63	1.28-1.98
569	Baker	31,802	68%	1991	256	0.08	0.04-0.12

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
575	Thorne Lake	17,970	68%	1992	334	1.20	1.03-1.37
				94	293	0.76	0.62-0.91
				95	**299**	**1.27**	**1.09-1.45**
578	Snakey Lakes	6,431	84%	1986	279	0.62	0.51-0.73
				88	300	1.05	0.84-1.26
				89	200	1.56	1.26-1.86
				93	356	0.77	0.61-0.93
581	Luck Lake	19,818	67%	1986	178	1.74	1.41-2.07
				88	300	2.11	1.80-2.41
				93	175	1.10	0.87-1.32
584	Little Ratz	12,392	65%	1992	272	0.94	0.76-1.13
587	Tuxekan	12,129	77%	1988	300	1.06	0.84-1.28
621	12 Mile	23,344	59%	1985	196	0.31	0.19-0.43
				86	300	0.64	0.48-0.81
				87	370	0.65	0.49-0.81
				88	302	0.62	0.46-0.77
				89	235	0.78	0.59-0.98
				90	176	1.18	0.84-1.52
				91	231	1.84	1.48-2.21
				92	250	0.43	0.32-0.55
				93	258	0.84	0.63-1.05
				94	324	0.93	0.76-1.09
625	Trocadero	16,624	75%	**1995**	**235**	**1.74**	**1.41-2.06**
635	Port Refugio	9,118	50%	1985	317	2.69	2.27-3.12
				86	324	2.52	2.09-2.96
				87	369	1.76	1.46-2.07
				88	270	1.15	0.90-1.40
				89	507	0.80	0.68-0.93
				90	232	1.25	1.03-1.48
				91	367	1.13	0.95-1.32
				92	254	0.76	0.57-0.95
				93	213	1.35	0.98-1.71
				94	280	1.85	1.51-2.19

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	Pellet-Group 95% CI
679	Kitkun Bay	15,359	75%	1988	240	0.31	0.20-0.42
				89	273	0.89	0.71-1.07
				95	**264**	**0.40**	**0.28-0.52**
685	Nutkwa	17,079	73%	1988	234	0.09	0.02-0.16
716	Helm Bay	16,127	57%	1981	704	0.16	0.12-0.19
				84	302	0.54	0.44-0.65
				85	181	0.85	0.65-1.05
				88	247	1.66	1.38-1.95
				91	240	1.63	1.35-1.92
				92	169	1.25	0.96-1.53
				93	286	1.37	1.16-1.59
				95	**284**	**1.31**	**1.09-1.52**
719	Port Stewart	21,482	55%	1993	289	1.22	1.03-1.42
				95	**278**	**1.61**	**1.35-1.87**
722	Spacious Bay	31,461	44%	1993	300	0.54	0.43-0.64
				95	**283**	**0.45**	**0.35-0.54**
738	Margaret	19,286	67%	1985	515	0.57	0.47-0.66
				86	251	0.84	0.69-1.00
				88	110	1.31	0.96-1.67
				89	129	0.62	0.44-0.80
				90	274	0.56	0.44-0.68
				91	272	0.76	0.58-0.94
				93	281	0.31	0.23-0.39
				95	**304**	**0.70**	**0.56-0.84**
748	George Inlet	19,448	28%	1981	110	0.21	0.09-0.33
				84	344	0.27	0.19-0.35
				85	313	0.52	0.39-0.65
				89	169	1.41	1.08-1.75
				90	240	1.03	0.82-1.25
				91	168	1.49	1.15-1.84
				92	195	0.65	0.49-0.81
				94	309	0.95	0.79-1.11
752	Whitman Lake	6,015	38%	1981	45	0.18	0.02-0.33
				87	187	0.16	0.09-0.23
				90	193	0.46	0.32-0.59
				92	189	0.20	0.12-0.28

Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
758	Carroll Pt.	11,629	34%	1985	118	0.66	0.46-0.86
				86	118	0.75	0.56-0.95
				88	85	1.15	0.81-1.48
				92	87	0.28	0.14-0.41
				94	125	0.70	0.49-0.90
759	Moth Bay	7,652	23%	1985	140	0.59	0.42-0.74
				86	156	0.98	0.79-1.17
				88	78	0.71	0.46-0.97
				92	136	0.48	0.30-0.66
				94	136	0.94	0.71-1.17
760	Lucky Cove	12,377	43%	1985	335	1.16	1.00-1.33
				86	258	1.16	0.95-1.32
				88	65	1.01	0.68-1.34
				90	263	1.10	0.92-1.27
				91	271	1.39	1.07-1.70
764	Blank Inlet	3,640	19%	1981	108	1.24	0.89-1.59
765	Dall Head	4,803	63%	1981	69	0.52	0.31-0.74
769	Alava Bay	13,563	60%	1985	311	0.52	0.39-0.65
				86	326	0.85	0.68-1.01
				91	143	1.64	1.22-2.05
				94	326	0.79	0.64-0.94
772	Wasp Cove	4,882	90%	1985	271	0.41	0.31-0.51
				86	300	0.50	0.38-0.62
				89	145	0.58	0.39-0.77
				91	207	0.13	0.07-0.18
821	Winstanley Island	14,104	45%	1991	49	0.27	0.11-0.42
999	Gravina (All Transects)			1981	226	1.06	0.89-1.22
				84	1,087	0.86	0.78-0.94
				85	1,172	1.23	1.13-1.32
				86	1,267	1.40	1.30-1.50

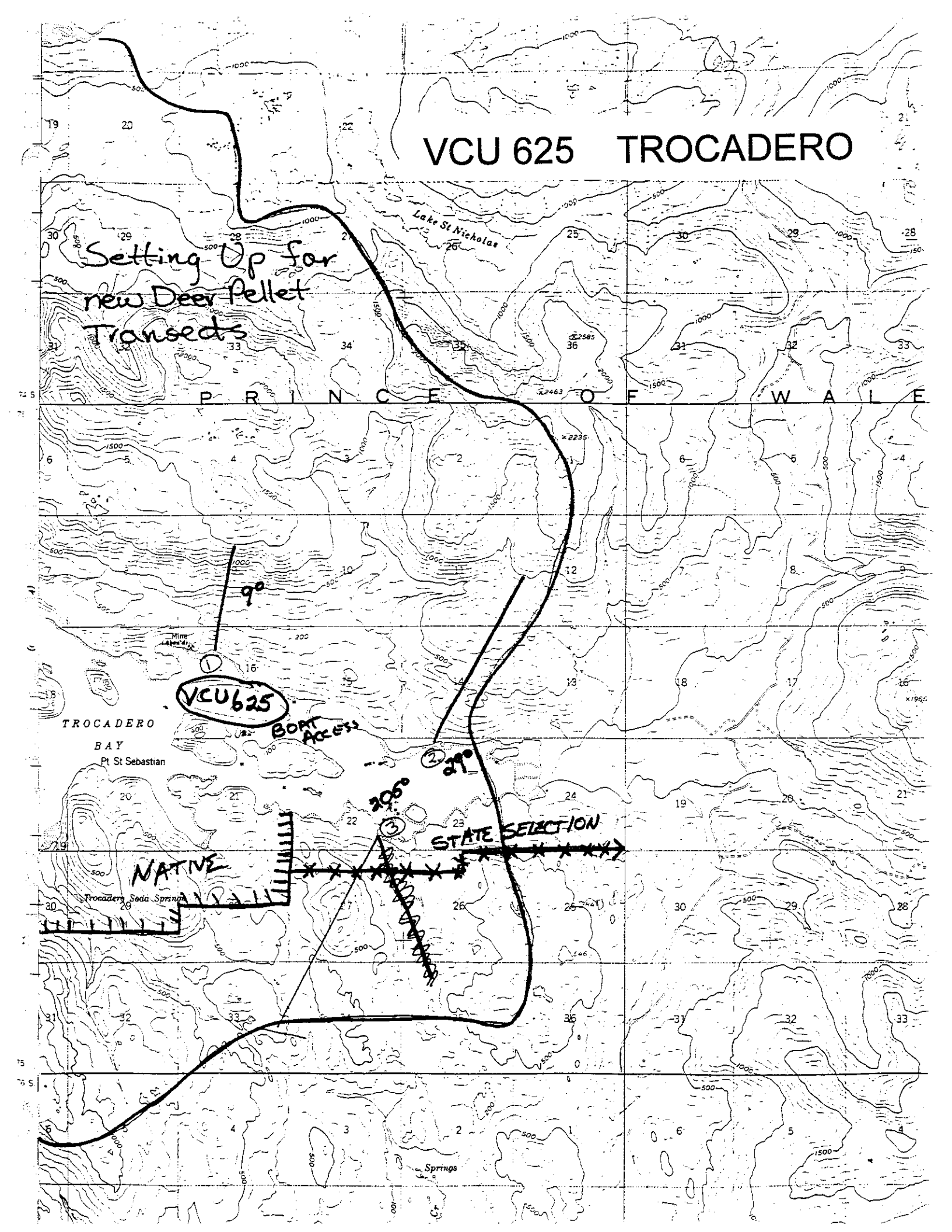
Table 1. Pellet-group count statistics from southeast Alaska, 1981-95.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
999	Gravina			1984	376	0.88	0.73-1.03
	(Trans. 1,2,3)			85	224	1.44	1.20-1.67
				86	346	1.62	1.43-1.81
				87	334	1.63	1.41-1.84
				88	278	2.06	1.78-2.35
				89	182	1.13	0.86-1.41
				90	279	1.40	1.12-1.68
				91	154	1.12	0.80-1.43
				92	302	1.22	1.05-1.38
				94	331	1.58	1.37-1.79

APPENDIX I

New VCU's Sampled in 1995[a]

[a] Transect location forms for these and all other VCU's are located in the ADF&G Southeast Regional Office, Douglas.


VCU 625 TROCADERO
Setting Up for new Deer Pellet Transects
Lake St Nicholas
PRINCE OF WALE
9°
VCU625
BOAT ACCESS
TROCADERO BAY
Pt St Sebastian
29°
206°
STATE SELECTION
NATIVE
Springs

APPENDIX II

Winter Weather Conditions

1995

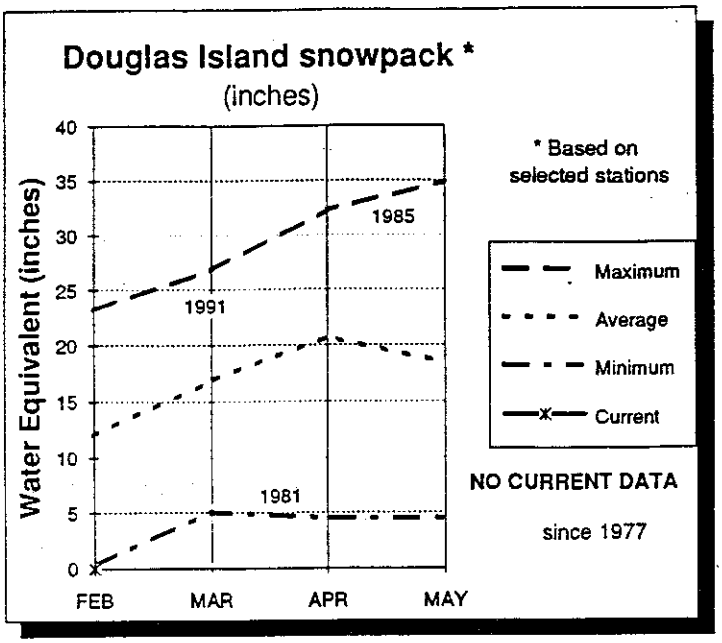
Winter Weather Conditions

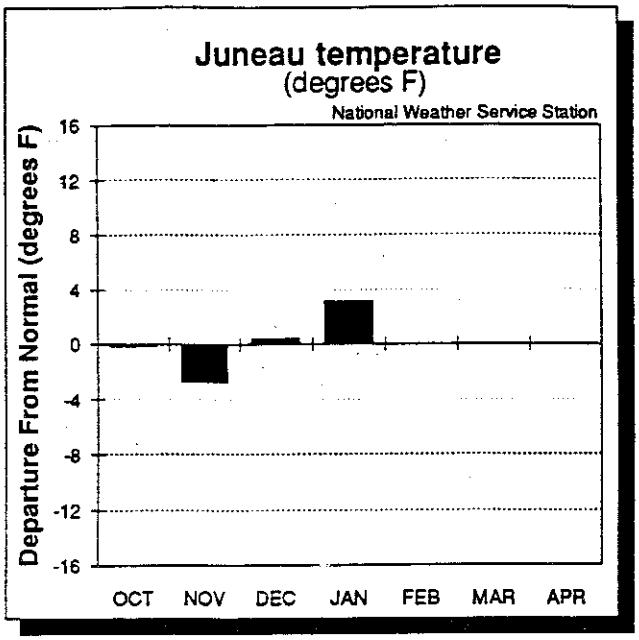
January - April 1995

Data from: Alaska Snow Surveys, USDA Soil Conservation Service, Anchorage, AK.
Monthly reports on file, ADF&G, Douglas.

Southeast

February 1, 1995





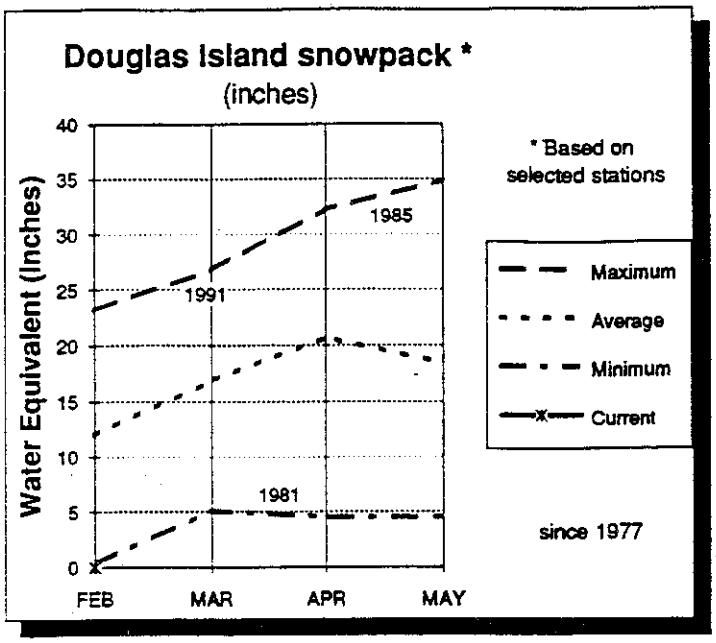
SNOWCOVER:

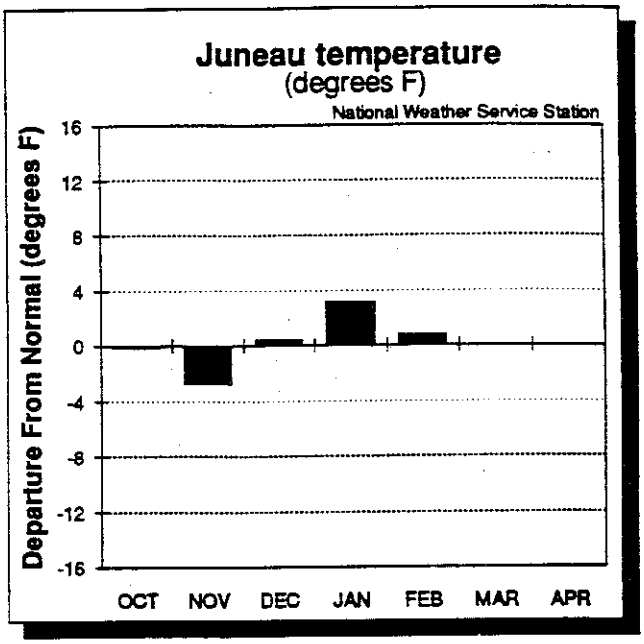
The southern half of the regions snowcover is above normal with a snow depth of 136 inches being reported the end of December at a new snow course near Ketchikan at the Swan Lake hydropower project. Also, in the last 15 years the Petersburg Reservoir course had only one year exceeding its snowpack accumulation for February 1st. To the north the snowpack appears to decrease with the Moore Creek Bridge snow course at 62 percent of last year.

For more information, contact your local Natural Resources Conservation Service office in Anchorage, 271-2424.

Southeast

March 1, 1995





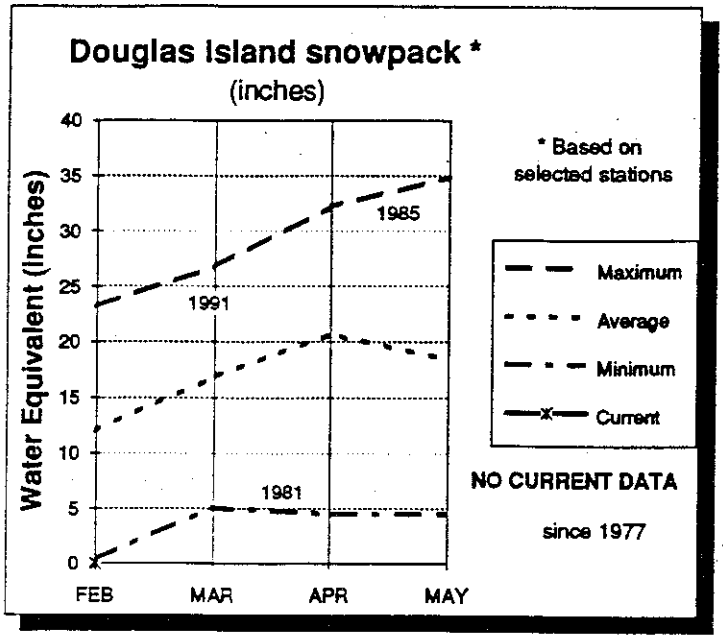
SNOWCOVER:

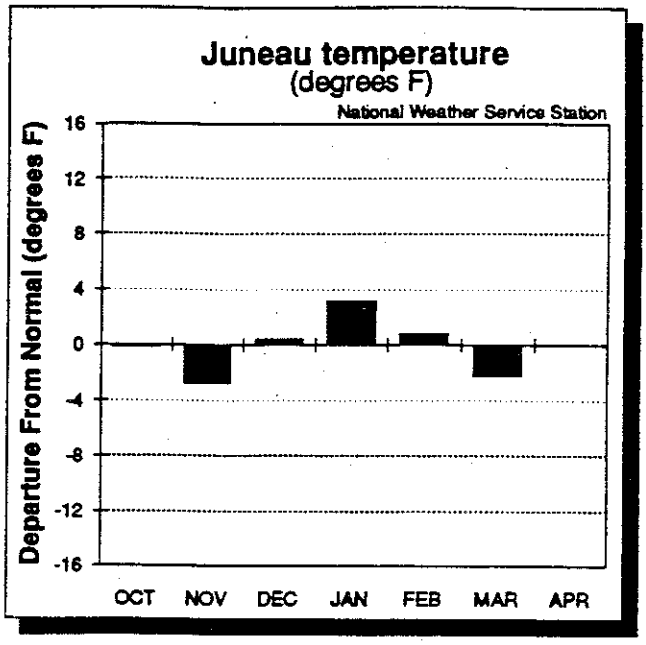
The lower snow course at Petersburg is 202 percent of normal with the upper one at 123 percent. The three snow course measurements at Eagle Crest Ski area have ceased due to lack of personnel. (Volunteers are accepted, see phone number below.)

For more information, contact your Natural Resources Conservation Service office in Anchorage, 271-2424.

Southeast

April 1, 1995





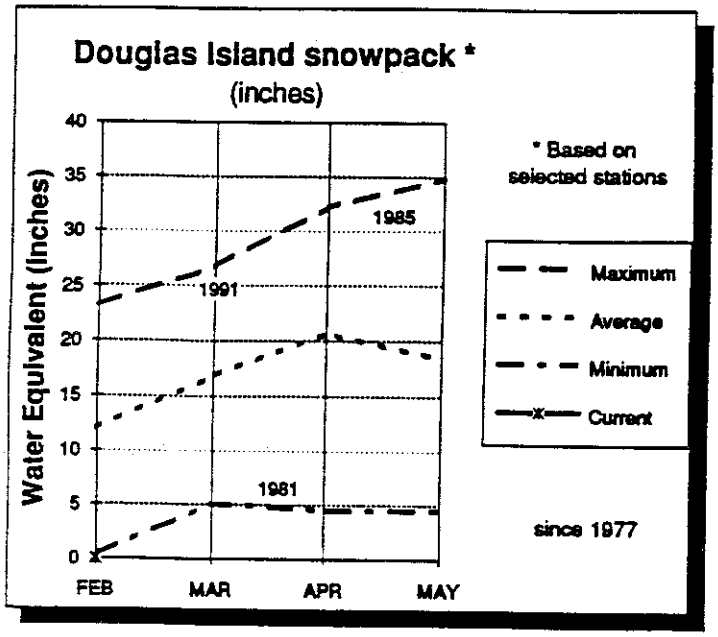
SNOWCOVER:

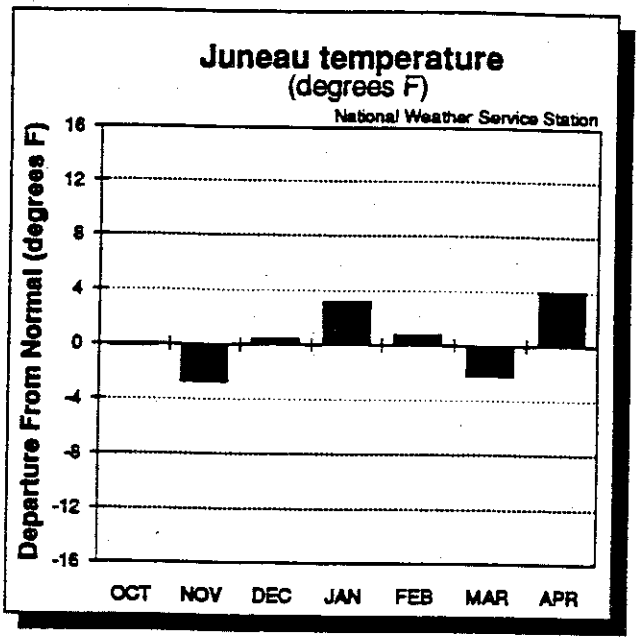
The Petersburg snow courses remained much above average at 139 percent of normal. The snowpack appears to be near normal in the Juneau area at high elevations decreasing to no snow at sea level at the end of March.

For more information, contact your Natural Resources Conservation Service office in Anchorage, 271-2424.

Southeast

May 1, 1995





SNOWCOVER:

The snow courses in the Swan Lake project varied from no snow at Lost Lake, elevation 425 feet, to 118 inches of snow and 54.0 inches of water at Lake Grace Pass, elevation 1900 feet. The Speel River snow course, near Juneau, was 95 percent of normal while Petersburg Ridge snow course had a 74 percent of normal water content.

For more information, contact your Soil Conservation Service office in Anchorage, 271-2424.

APPENDIX III

Pellet-Group Densities Reported by Transect and Elevation

Table 2. Mean pellet-group density, by VCU, by transect, spring 1995

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
TRANSECT		
1	1.10	79
2	0.78	125
3	0.78	102
VCU 36 - INNER POINT		
TRANSECT		
1	1.53	53
2	1.41	125
3	1.32	76
VCU 124 - SHELTER ISLAND		
TRANSECT		
4	1.50	50
5	0.94	50
6	1.38	50
7	1.34	47
8	1.60	50
18	1.50	50
VCU 182 - PYBUS BAY		
TRANSECT		
1	1.20	50
2	1.03	88
3	2.28	67
VCU 189 - PORT ALTHORP		
TRANSECT		
1	2.03	30
2	3.40	30
3	1.18	38
VCU 235 - KADASHAN		
TRANSECT		
3	2.39	88
4	4.35	52
5	1.42	55
VCU 249 - LISIANSKI		
TRANSECT		
1	1.38	45
2	1.64	55
3	0.36	80
4	0.22	94
5	0.47	43
VCU 254 - SOAPSTONE		
TRANSECT		
1	2.22	96
2	1.15	115
3	1.01	72

Table 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 271 - CHICHAGOF		
TRANSECT		
1	1.04	83
2	0.99	95
3	0.94	125
VCU 275 - COBOL		
TRANSECT		
1	0.93	80
2	1.92	79
3	1.53	59
VCU 300 - NAKWASINA		
TRANSECT		
2	1.37	57
3	2.01	75
8	1.76	84
VCU 305 - KALININ BAY		
TRANSECT		
1	1.05	57
2	1.62	103
3	0.92	50
VCU 400 - SECURITY BAY		
TRANSECT		
1	0.39	90
2	0.05	58
3	0.18	120
VCU 442 - PORTAGE BAY		
TRANSECT		
1	0.22	125
2	0.39	82
3	0.86	70
VCU 448 - WOEWODSKI		
TRANSECT		
2	1.56	77
3	1.20	80
VCU 575 - THORNE LAKE		
TRANSECT		
1	1.64	83
2	1.18	94
3	0.83	88
4	1.76	34
VCU 625 - TROCADERO		
TRANSECT		
1	2.46	85
2	2.10	60
3	0.81	90

Table 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 679 - KITKUN BAY		
TRANSECT		
1	0.52	97
2	0.39	67
3	0.30	100
VCU 716 - HELM BAY		
TRANSECT		
1	1.58	125
2	1.37	73
3	0.86	86
VCU 719 - PORT STEWART		
TRANSECT		
1	1.02	93
2	1.55	94
3	2.27	91
VCU 722 - SPACIOUS BAY		
TRANSECT		
1	0.44	78
2	0.52	110
3	0.37	95
VCU 738 - MARGARET		
TRANSECT		
10	0.91	80
11	0.62	125
25	0.64	99

Table 3. Mean pellet-group density by VCU, by elevation, spring 1995.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
0-500 FT.....	0.76	113
501-1000 FT.....	0.89	126
1001-1500 FT.....	0.99	67
VCU 36 - INNER POINT		
0-500 FT.....	1.40	189
501-1000 FT.....	1.75	44
1001-1500 FT.....	0.71	21
VCU 124 - SHELTER ISLAND		
0-500 FT.....	1.42	237
501-1000 FT.....	1.25	57
1001-1500 FT.....	0.33	3
VCU 182 - PYBUS BAY		
0-500 FT.....	1.42	161
501-1000 FT.....	2.35	31
1001-1500 FT.....	0.23	13
VCU 189 - PORT ALTHORP		
0-500 FT.....	2.28	78
501-1000 FT.....	1.50	20
VCU 235 - KADASHAN		
0-500 FT.....	3.09	111
501-1000 FT.....	2.39	44
1001-1500 FT.....	1.65	40
VCU 249 - LISIANSKI		
0-500 FT.....	0.95	173
501-1000 FT.....	0.40	143
1001-1500 FT.....	0.00	1
VCU 254 - SOAPSTONE		
0-500 FT.....	1.71	222
501-1000 FT.....	0.54	52
1001-1500 FT.....	1.22	9
VCU 271 - CHICHAGOF		
0-500 FT.....	0.95	214
501-1000 FT.....	1.10	63
1001-1500 FT.....	1.00	26
VCU 275 - COBOL		
0-500 FT.....	2.58	62
501-1000 FT.....	1.35	85
1001-1500 FT.....	0.58	71
VCU 300 - NAKWASINA		
0-500 FT.....	2.05	93
501-1000 FT.....	2.09	47
1001-1500 FT.....	1.16	76

Table 3. Continued

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 305 - KALININ BAY		
0-500 FT.....	1.63	108
501-1000 FT.....	0.94	62
1001-1500 FT.....	0.98	40
VCU 400 - SECURITY BAY		
0-500 FT.....	0.23	229
501-1000 FT.....	0.21	39
VCU 442 - PORTAGE BAY		
0-500 FT.....	0.35	191
501-1000 FT.....	0.44	59
1001-1500 FT.....	1.00	27
VCU 448 - WOEWODSKI		
0-500 FT.....	1.44	61
501-1000 FT.....	1.89	35
1001-1500 FT.....	1.02	61
VCU 575 - THORNE LAKE		
0-500 FT.....	0.80	151
501-1000 FT.....	1.68	120
1001-1500 FT.....	2.04	28
VCU 625 - TROCADERO		
0-500 FT.....	1.84	149
501-1000 FT.....	1.48	67
1001-1500 FT.....	1.84	19
VCU 679 - KITKUN BAY		
0-500 FT.....	0.32	219
501-1000 FT.....	0.88	33
1001-150C FT.....	0.58	12
VCU 716 - HELM BAY		
0-500 FT.....	1.26	221
501-1000 FT.....	2.00	40
1001-1500 FT.....	0.57	23
VCU 719 - PORT STEWART		
0-500 FT.....	1.61	195
501-1000 FT.....	1.71	49
1001-1500 FT.....	1.47	34
VCU 722 - SPACIOUS BAY		
0-500 FT.....	0.38	177
501-1000 FT.....	0.63	71
1001-1500 FT.....	0.37	35
VCU 738 - MARGARET		
0-500 FT.....	0.66	264
501-1000 FT.....	0.40	20
1001-1500 FT.....	1.55	20