

1993 Report

Deer Pellet-Group Surveys
in Southeast Alaska

by

Mark J. Kirchhoff

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

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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 1993. The reader is referred to Kirchhoff and Pitcher (1988) for a more detailed discussion of objectives, sample design, and field methodology of this program.

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. A word of caution is advised when interpreting these data. First, comparisons over time, or from area to area, are most valid when weather conditions are similar. Pellet groups tend to decompose more rapidly with increasing precipitation and warmer temperatures, potentially confounding comparisons. Secondly, there is a notable lag between the time a deer dies, and the time the pellet groups it has been depositing disappear (pellets persist for 6-11 months). When significant over-winter mortality occurs (commonly in March), pellet groups counted in April and May will not reflect that decline.

With those caveats in mind, the 1993 results are presented below.

RESULTS

During 1993, 34 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 up region-wide compared to previous years. Sixteen VCUs showed increases, twelve showed decreases, and six were 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 and Prince of Wales Island. North of Ketchikan pellet-group densities were moderate and stable at Helm Bay and Port Stewart on the Cleveland Peninsula, but much lower at Traitors Cove on Revilla Island. On Prince of Wales Island pellet-group densities were up at Port Refugio and 12 Mile in the Craig Ranger District, but down at Snakey Lakes and Luck Lake in the Thorne Bay District.

Unit 3 - Central Southeast Alaska. In the Wrangell and Petersburg area every VCU measured was up except for Woronkofski Island, which was down dramatically. Wrangell residents attribute the decline of deer on Woronkofski to increased wolf predation.

Unit 4 - Northern Southeast Alaska - Results in the Hoonah Ranger District were a mixed bag, with three VCUs showing increases and three showing decreases. The Sitka Ranger

District also showed mixed results. Deer pellet-group densities increased at Sealion Cove, Nakwasina, and Finger River; however, all four VCUs sampled in Tenakee Inlet had lower densities.

Subunit 1C - Juneau and Mainland. Deer pellet-group densities were higher on Shelter Island this year and lower on Douglas Island. New transects were established at Pt. Couverden on the mainland and deer pellet-group densities there were low.

Unit 5 - Yakutat. Only one transect was run at Yakutat in 1993 on Kriwoi Island. A different route was taken across the island this year which may account for the higher deer pellet-group density than normal. It's believed that Yakutat's deer population is stable at about three to four hundred deer (est.) Most of these deer are found on the islands in Yakutat Bay.

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 mid-volume hemlock stands. Deer pellet-group densities were low, less than one pellet group per plot.

Couverden (VCU 117) - Three new transects were established at Pt. Couverden in 1993. Transect #1 runs through low elevation brush along the length of Couverden Island. Transects #2 and #3 run a mile and a quarter inland on the mainland. Timber volume on transects #2 and #3 was sparse. More deer sign was found on the island than the mainland, but deer pellet-group densities there were still low. Green-up was far advanced by the time these transects were run on May 12, and may account somewhat for the low counts and the extremely rough travel. Eight-foot high brush presented a formidable obstacle on all three transects.

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 the late 1980s showed declines. In 1993, pellet-group density on Shelter Island

improved, to 2.00 pellet groups per plot. Transect #7 was aborted this year due to a skiff pounding on the rocks.

Pleasant Island (VCU 185) - Pleasant Island is located in Icy Strait close to the community of Gustavus. The island is a main source of deer to Gustavus residents, and in response to local's concerns about winterkill in 1990, the ADF&G decided to establish transects there in 1991. Pleasant Island is a low-lying island with extensive muskeg; the highest point on the island is a 600-foot knob. Most of the good timber (volume class 5) is found along the beach fringe and creeks. Deer pellet-group densities in 1993 were higher than previous years at 1.77 pellet groups per plot.

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. 1993 deer pellet-group density was about the same in Port Althorp as previous years.

Idaho Inlet (VCU 190) - Three transects were established in Idaho Inlet on northern Chichagof Island in 1988. This is a cold, steep-walled inlet, and all three transects sometimes have snow at higher elevations. 1993 results showed deer pellet-group density in this drainage at their lowest levels ever. * Note - The team that ran Transect #1 this year said the marked tree on the beach is not where the transect is marked on the map, but further south by the stream. They felt a new starting point was in order, one that more closely matches the line drawn on the map (i.e further north). This would make for much less side-hill walking and more gentle topography.

Suntaheen Creek (VCU 209) - Three transects were established in Whitestone Harbor on northern Chichagof Island in 1988. These transects traverse a lot of muskeg; most timber in the VCU is found along the beach fringe and creeks. Pellet-group densities dropped to low levels in 1993.

Point Augusta (VCU 211) - This small, uniformly forested VCU on Chichagof Island was intensively sampled in 1983 with 11 transects and 757 total plots. The shoreline is exposed to Chatham and Icy straits, and access can be difficult in some weather conditions. In 1993, Point Augusta was revisited by a crew of six and three transects run on the same bearing as those in 1983. The transects were characterized as roly-poly with good deer sign up to 1,000 feet elevation. Pellet-group density was similar to 1983 results - 2.08 pellet groups per plot. Point Augusta had the highest deer pellet-group density of any VCU sampled on northern Chichagof Island.

Upper Tenakee (VCU 223) - Three transects were established in this VCU in upper Tenakee Inlet in 1988. Since that time considerable roading and logging operations have taken place. Deer pellet-group densities were low at 0.47 pellet groups per plot.

Saltery Bay (VCU 231) - Three transects were established at Saltery Bay on Chichagof Island in 1988. Transect #2 requires a long walk through estuarine meadow to reach the starting point at the edge of a riparian spruce stand. Many deer were observed in the extensive meadows in 1988, but none were seen in 1992, and deer pellet-group density was the lowest ever in 1993, at 0.76 pellet groups per plot.

Kadashan (VCU 235) - Three new transects were established at Kadashan Bay on Chichagof Island in 1988. (Transects had previously been run at Kadashan in 1981, but locations are unknown.) In addition to these three 1988 transects, two more were added by the Forest Service in 1992 to make comparisons between the mostly unlogged Kadashan drainage and the nearby logged drainage of Corner Bay (VCU 236). In 1993, pellet-group densities were down at Kadashan.

Corner Bay (VCU 236) - A deer pellet transect was run at Corner Bay on Chichagof Island in 1981 but the transect location is missing. In 1992, the Forest Service established five new transects at Corner Bay to make comparisons with the neighboring Kadashan drainage. Most transects at Corner Bay traverse leave strips between clear-cut units. Deer pellet-group density in 1993 was found to be moderate, between one and two pellet groups per plot.

Finger Mountain (VCU 247) - The Finger River drainage, in lower Hoonah Sound, has consistently exhibited some of the highest deer pellet-group densities in all of Southeast. Three transects were established here in 1983, and they have been surveyed almost every year since. Transect #1 is a nice hike to an 1100-foot knob, then it undulates up and down from there. Transect #2 parallels the Finger River and usually has a tremendous amount of deer sign. Transect #3 is short and steep to 1500 feet elevation. Deer pellet-group densities remained high at Finger Mountain in 1993.

Soapstone (VCU 254) - Three transects were established in Soapstone Cove on northern Yakobi Island in 1988. This is a favorite hunting ground for Pelican and Elfin Cove residents. The habitat surveyed in this VCU is mostly low-volume old growth or scrub. In 1993, pellet-group densities were moderate, at 1.88 pellet groups per plot.

Nakwasina (VCU 300) - This VCU, north of Sitka, is a popular local hunting area which has been sampled almost every year since 1984. Typically, deer pellet-group densities have been very high at Nakwasina. Numbers dipped in 1992, but were again very high in 1993, at 3.15 pellet groups per plot the highest in Southeast.

Sealion Cove (VCU 305) - Located on northern Kruzof Island, this VCU has been sampled almost every year since 1984. In the past, very heavy browsing pressure was observed on all three transects. Pellet-group densities dipped in 1991 and 1992, but increased to 1.70 pellet groups per plot in 1993.

South Kruzof (VCU 308) - Three new transects were established at the SE tip of Kruzof Island in 1993. This is a favorite hunting spot for many Sitka hunters. The topography of all three transects was gentle and rolling - the highest elevation reached was 200 feet. Vegetation was mostly low-volume cedar and pine interspersed with muskeg. Deer pellet-group density was moderate at 1.62 pellet groups per plot.

Yakutat Islands (VCU 368) - This VCU incorporates many of the islands found in Yakutat Bay: Krutoi, Kriwoi, Khantaak, and Dolgoi. One or two transects were established on each island in 1991. Habitat is generally mid-volume hemlock with a blueberry understory. While the islands are not ideal deer habitat, the maritime influence and lack of wolves probably explains the persistence of deer on these islands. In 1993, only one transect was run on Kriwoi Island. A different route was taken across the island which may have resulted in a higher pellet count than has previously been recorded for the Yakutat area - 1.07 pellet groups per plot.

Point Barrie (VCU 431) - This VCU, on the SW corner of Kupreanof Island, was first surveyed in 1988. Access by skiff can be difficult due to high winds and it's recommended that this VCU only be done when there are calm seas. Habitat along the three transects is mostly muskeg, scrub, and low-volume old-growth. Deer pellet-group density in 1993 was 0.77 pellet groups per plot.

Portage Bay (VCU 442) - Three new 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 clear-cut. A bearing change was 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 was low 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 mid-volume hemlock-spruce forest. 1993 deer pellet-group density was moderate at 1.06 pellet groups per plot.

Blind Slough (VCU 452) - Three transects were established at Blind Slough near Petersburg in 1990. All three transects are accessed from the Mitkof Island road system. In 1993, Transect #3 was incorporated into neighboring VCU 454, and a new transect added to make up for it. The new transect #3 starts at Milepost 9.85 of the Woodpecker Cove Road (Rd. 6245) and climbs uphill to 1500 feet through a lot of blowdown. Blueberry was very scarce and what was present was heavily hedged. Deer pellet-group density for the VCU was moderate at 1.28 pellet groups per plot.

Dry (VCU 454) - Located on southeastern Mitkof Island, this VCU was lightly sampled in 1981 with 91 plots. Pellet-group densities were in the low range. The transect

location is unknown. In 1993, the USFS established three transects in this VCU. Transect #1 is the old #3 from VCU 452. Transect #2 starts at 29.0 Mile Mitkof Highway and is very steep to 1500 feet. Lots of devil's club and cliffs make running a straight line difficult. Transect #3 starts at 30.5 Mile Mitkof Highway and is also steep to 1500 feet. Ravines were reported as a problem and a compass course change to 332 degrees suggested. Pellet-group density was moderate at 1.44 pellet groups per plot.

Woronkofski (VCU 461) - This island VCU, located near Wrangell, was first sampled in 1985. Twelve transects were run that ringed the island, but it was found that the transects on the south side of the island offered the most agreeable terrain and snow-free conditions; consequently, after 1985 only transects 10, 11, and 12 have been run. These three transects run to 1500 feet elevation through mid- to high-volume old-growth forest. Deer pellet-group density on Woronkofski was high in the late 1980s, but has plummeted since then to 0.22 pellet groups per plot in 1993. Biologists believe the root cause for the decline to be increased wolf predation.

Onslow (VCU 473) - This VCU, on southern Etolin Island, has been sampled since 1984. One transect is actually on Onslow Island itself, the two others are on Etolin. Deer pellet-group densities have always been in the low range in this VCU, and 1993 was no exception. Fifty elk were introduced to Etolin Island in 1987 and the herd has grown since then. Because the Etolin Island area is unique in Southeast Alaska for its combination of elk and deer, this VCU will continue to be sampled in the future to determine how these two species are interacting.

Mosman (VCU 479) - Three new transects were established at Mosman Inlet on Etolin Island in 1993. Transect #1 starts opposite Mosman Island and traverses low- to mid-volume timber up to a hill 750 feet high. No deer sign was seen until past the half-way mark; there was also a lot of blowdown at the end of the line. Transect #2 starts at the head of Mosman Inlet and leads to a 500-foot ridge. Much of the transect entailed side-hill walking and not a single deer pellet was found. Transect #3 starts at the old cannery site at the mouth of Burnett Inlet and traverses low- to mid-volume timber to 1500 feet. There was plenty of forbs and blueberry in the understory, but no deer sign was seen until 1,000 feet. Overall, deer pellet-group density in this VCU was very low, only 0.07 pellet groups per plot.

Snakey Lakes (VCU 578) - This interior VCU, in the Thorne River drainage, is located in the central portion of Prince of Wales Island. The Forest Service established four transects here in 1986. Since then, roads and clear-cuts have drastically altered the landscape and 1993 crews reported that it was difficult to find the starting point for Transects 3 and 4. A new starting tree for these transects was flagged 100 feet from the outlet of Snakey Lake. Deer pellet-group densities were low in 1993 at 0.77 pellet groups per plot.

Luck Lake (VCU 581) - Four transects were established in this Prince of Wales Island drainage by the Forest Service in 1986. The transects are located from 2.5 to 4 miles

inland from the Clarence Strait coast and are accessed by logging road. Much logging has taken place here since 1986 and the 1993 crews reported the starting point to Transects 1 and 2 was obliterated. A new starting point was flagged as near the original as could be guessed. Moderate pellet-group densities were found at Luck Lake in 1993.

12 Mile (VCU 621) - This VCU, located near Kasaan Bay on Prince of Wales Island, has been sampled by the Forest Service since 1985. Deer pellet-group density in this VCU has always been low until 1991, when it shot up to 1.84 pellet groups per plot. In 1993, pellet-group density declined to more typical levels of the past.

Port Refugio (VCU 635) - This VCU is located on Suemez Island off the west coast of Prince of Wales Island. Pellet groups have been counted here every year since 1985. Initially, deer populations were high, but pellet-group density dropped off in 1987 and sunk to their lowest levels in 1992. In 1993, deer pellet-group density rebounded to moderate levels at 1.35 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. 1993 results were also moderate.

Port Stewart (VCU 719) - Three new 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 were in low elevation, mostly non-commercial, brushy forest. The last forty plots up a steep hillside to 1500 feet were in mid- to high-volume forest and this is where most of the deer sign was found. 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 were side-hill walking through Class 4 and 5 timber. The remainder of the transect traversed a mixed conifer forest with blueberry understory. Most of the deer sign was found at higher elevations. Transect #3 started in the southeastern most corner of the bight on the east side of the bay. Scrubby non-commercial forest was the predominant habitat type with a few large cedar found along the way. Deer use was moderate throughout. Overall, deer pellet-group density was moderate in Port Stewart.

Spacious Bay (VCU 722) - Three new transects were established at Spacious Bay on the Cleveland Peninsula in 1993. Transect #1 started on the north side of the bay about 200 yards west of a large stream. The transect ran to 1500 feet through a low-volume cedar forest first and then a mid-volume hemlock-spruce forest. Deer sign was scarce. Transect #2 also started on the north side of Spacious Bay at the mouth of a six-foot wide stream. The transect ran to 1500 feet through a mid-volume forest with a brushy blueberry understory. Most deer sign was found at higher elevations. Transect #3 started on the north shore of Spacious Bay at the head of the first sizeable cove west of Bluff Point. The transect went over a low pass to Yes Bay and traversed low- to mid-volume cedar stands. The crew suggested the bearing be changed to 358 or 359 degrees instead

of 357 to avoid some side-hill walking and cliffs. Overall, 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. Pellet-group densities were low. The VCU has been sampled many times since then and pellet-group densities have remained low. 1993 recorded the lowest density yet at 0.31 pellet groups per plot.

LITERATURE CITED

Kirchhoff, Matthew D., and Kenneth 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, 1981-93.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
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
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
94	Sullivan Island	3,985	78%	1990	250	1.39	1.17-1.62
117	Couvierden	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
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

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
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
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
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
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
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
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

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
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
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
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
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
246	Broad Island	17,145	38%	1981	209	1.41	1.18-1.63

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
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
249	Lisianski	19,677	24%	1988	255	0.97	0.79-1.14
				91	170	1.53	1.22-1.84
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
271	Chichagof	20,680	10%	1991	301	1.39	1.19-1.58
275	Cobol	14,618	49%	1984	224	1.15	0.92-1.37
				91	185	2.96	2.37-3.54
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

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
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
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
308	South Kruzof	71,158	25%	1993	345	1.62	1.41-1.83
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
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
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
403	Pillar Bay	28,227	65%	1988	337	0.16	0.10-0.22

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
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
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
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
448a	Woewodski Island	20,931	53%	1991	461	1.86	1.66-2.05

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
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
461	Woronkofski (All Transects)	14,500	63%	1985	646	1.63	1.45-1.81
461	Woronkofski (Trans. 10,11,12)			1985	218	2.01	1.62-2.39
				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
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
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
539	Exchange Cove	10,406	74%	1988	266	1.39	1.15-1.64
				92	125	1.10	0.83-1.38

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
554	Sarkar	32,183	60%	1988	298	1.28	1.06-1.50
				92	245	0.53	0.41-0.66
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
575	Thorne Lake	17,970	68%	1992	334	1.20	1.03-1.37
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

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
679	Kitkun Bay	15,359	75%	1988	240	0.31	0.20-0.42
				89	273	0.89	0.71-1.07
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
719	Port Stewart	21,482	55%	1993	289	1.22	1.03-1.42
722	Spacious Bay	31,461	44%	1993	300	0.54	0.43-0.64
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
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

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
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
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
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
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
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

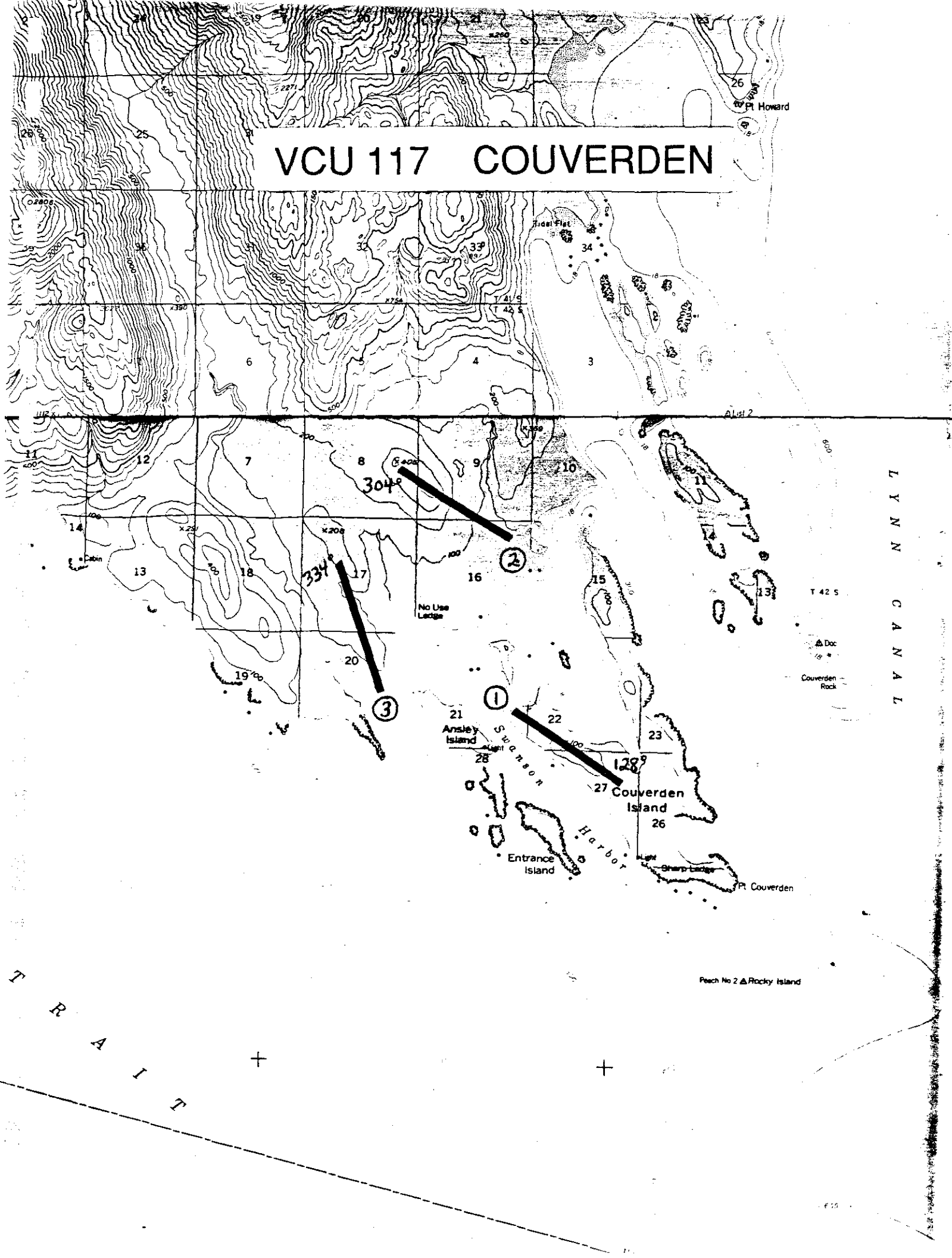
VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group	
						Mean	95% CI
999	Gravina (Trans. 1,2,3)			1984	376	0.88	0.73-1.03
				85	224	1.44	1.20-1.67
				86	346	1.62	1.43-1.81
				87	334	1.63	1.41-1.84
				88	278	2.06	1.78-2.35
				89	182	1.13	0.86-1.41
				90	279	1.40	1.12-1.68
				91	154	1.12	0.80-1.43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

APPENDIX I

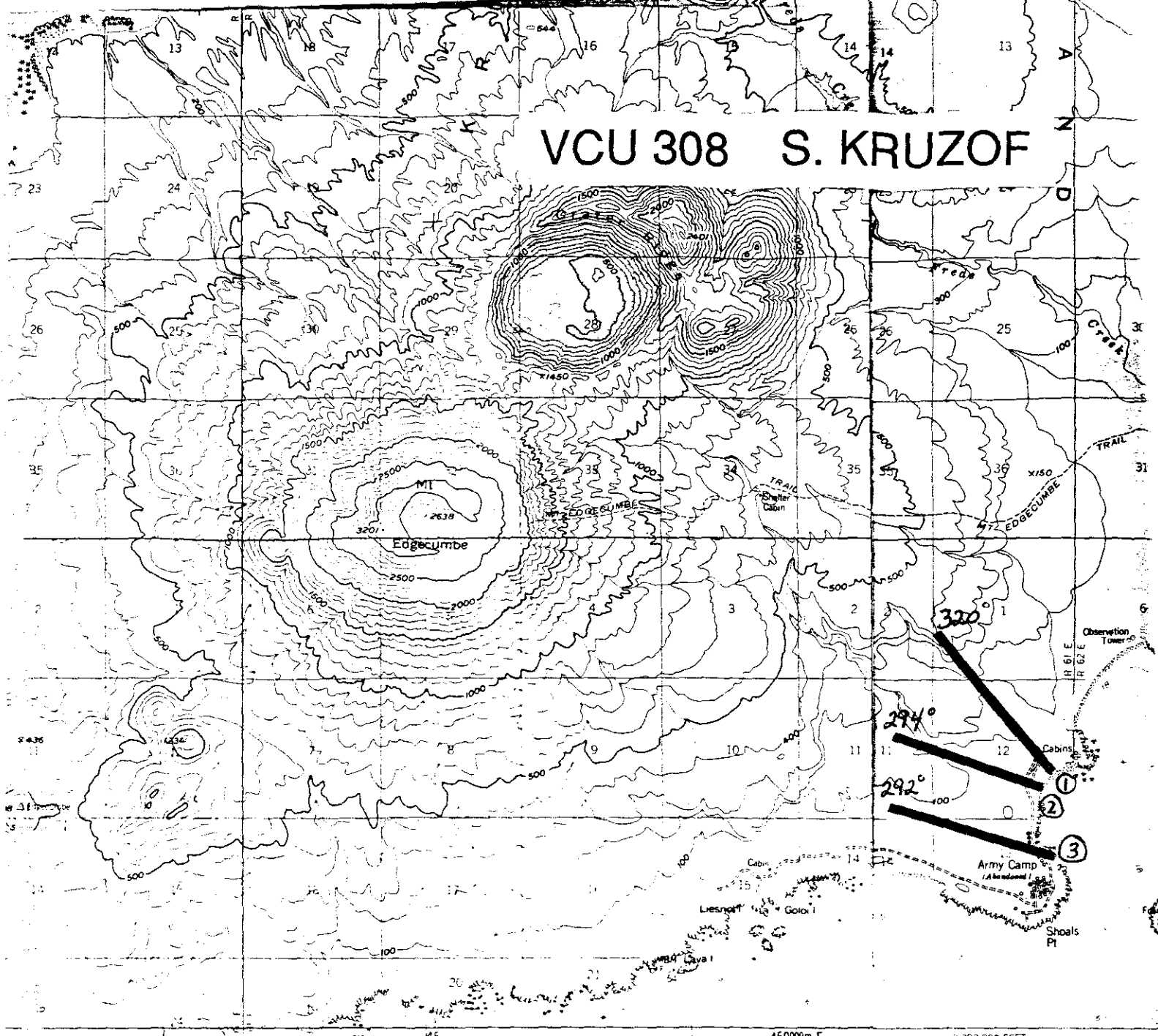
New VCU's Sampled in 1993^a

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

VCU 117 COUVERDEN



VCU 308 S. KRUZOF



mapped, edited, and published by the Geological Survey of the USC&GS

photographed by photogrammetric methods from aerial photos taken 1942. field annotated 1951. Map not field checked. selected hydrographic data compiled from USC&GS Charts 144 (1943), 8255 (1948), and 8261 (1953). This info not intended for navigational purposes

Universal Transverse Mercator projection, 1927 North American Datum. Grid based on Alaska coordinate system. zone 600 metre Universal Transverse Mercator grid ticks. C & B shown in blue

and lines represent unsurveyed and unmarked locations determined by the State of Alaska. Division of Lands and Resources

most land area is within the Tongass National Forest and is not in the National Forest

ROAD CLASSIFICATION

Unimproved dirt

SITKA (A-6), ALASKA

N5700 - W13540/15x20

1951
LIMITED REVISIONS 1977

AL 100 FEET
DATA DATUM OF 1929
MEAN LOWER LOW WATER
MEAN LINE OF MEAN HIGH WATER
MEAN LINE OF MEAN LOW WATER

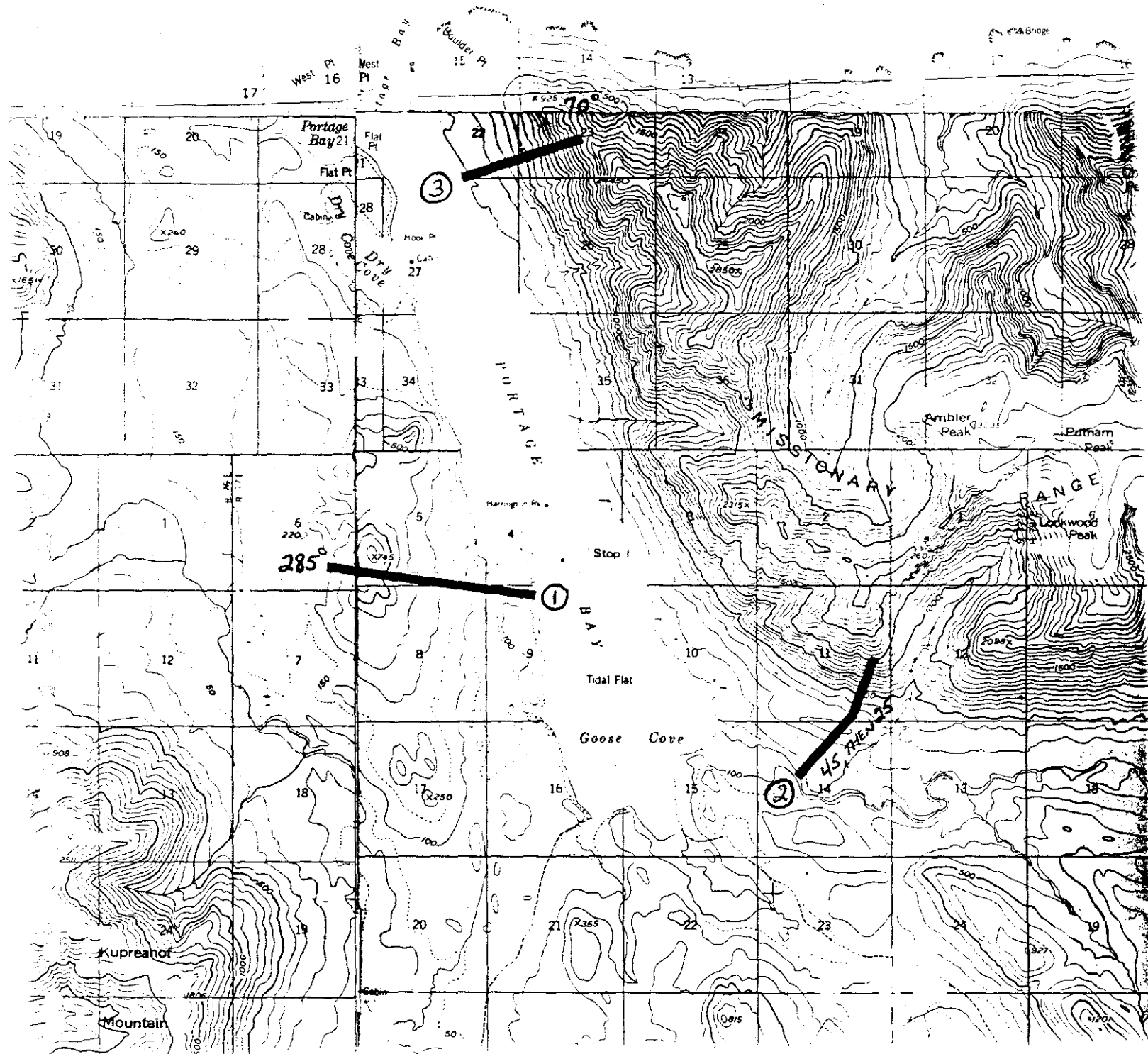
GEOLOGICAL SURVEY
JUL 30 1975 OF RESTON, VIRGINIA 22092
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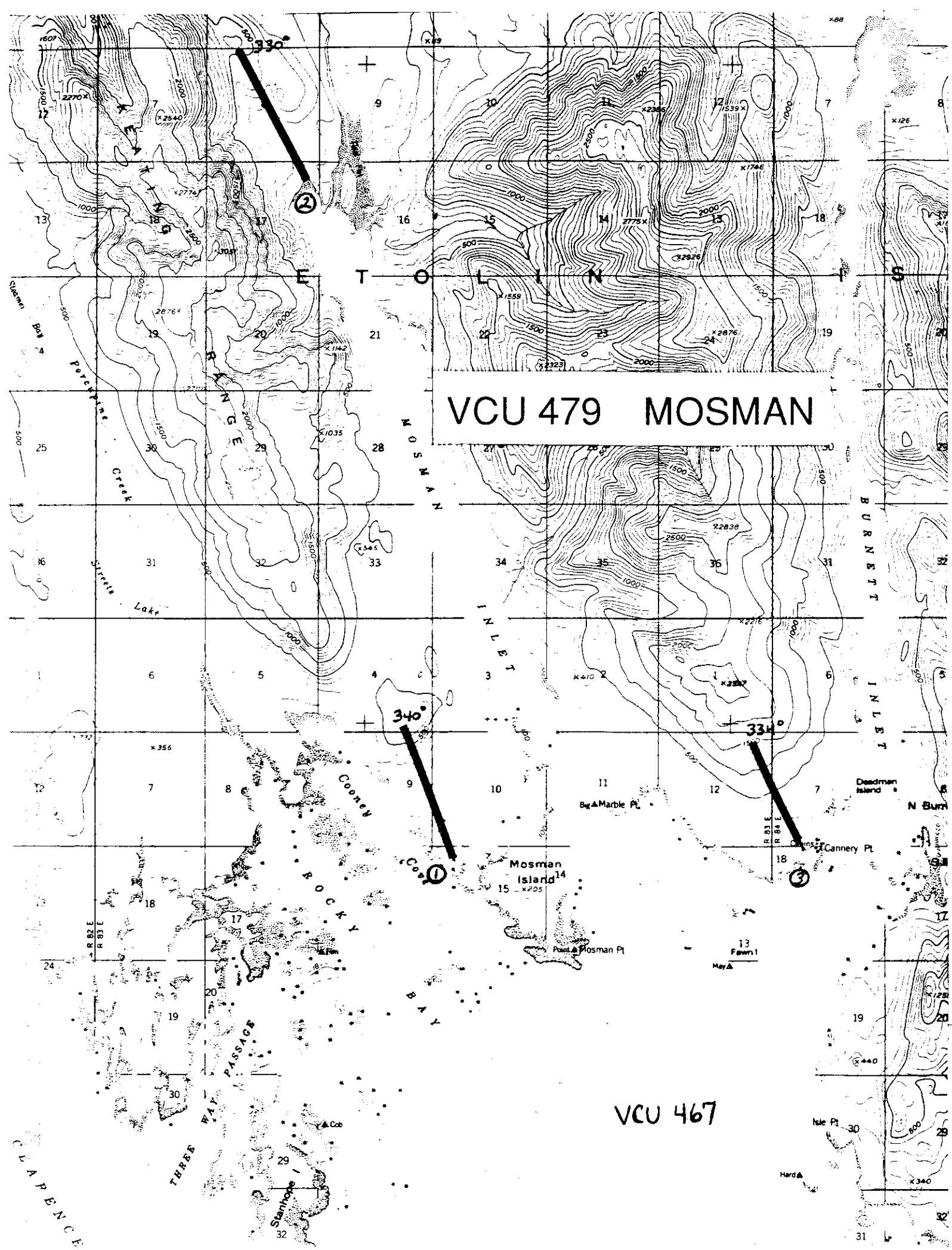
QUADRANGLE LOCATION



VCU 442 PORTAGE BAY

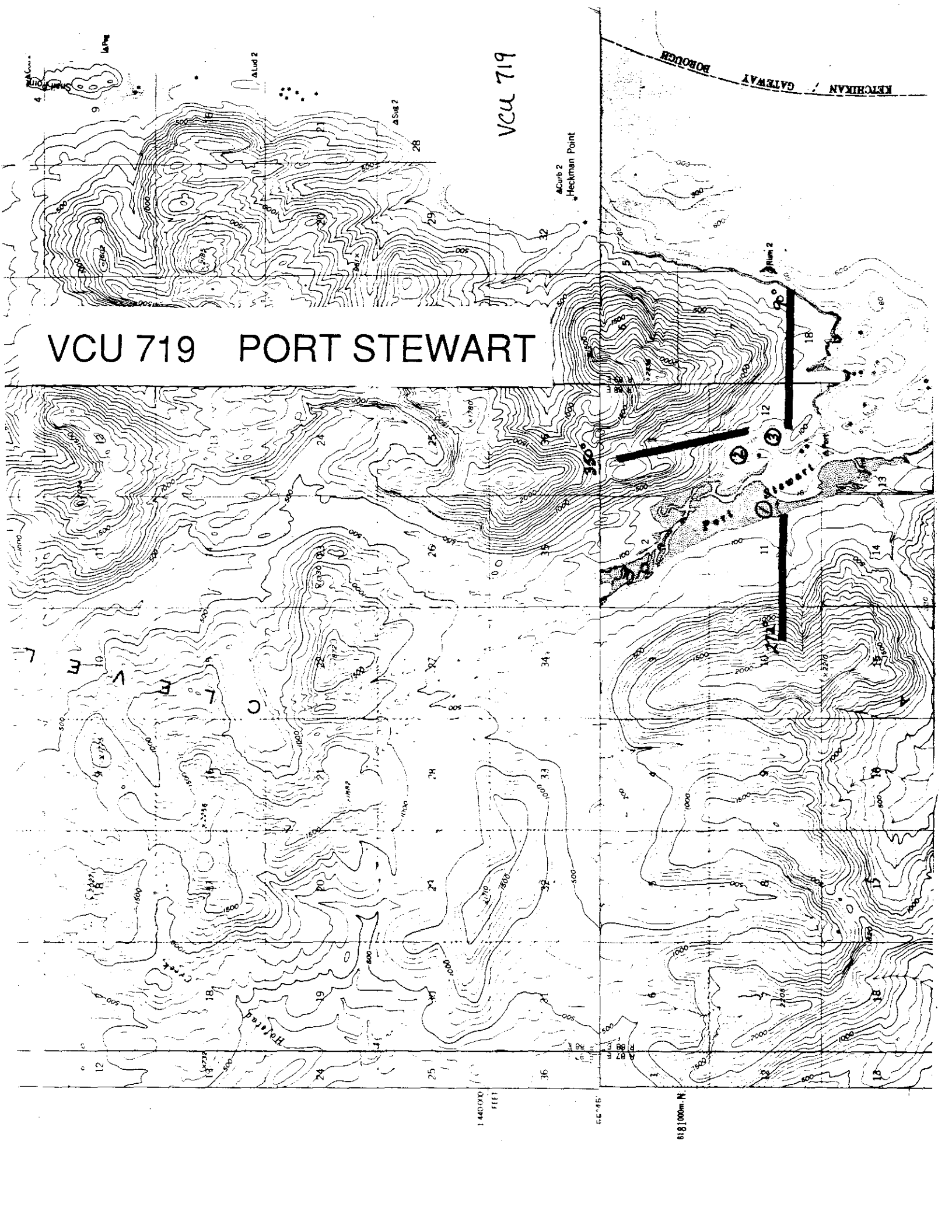
Portage Is. A





VCU 719 PORT STEWART

VCU 719



1 440 000
FEET

62°45'

81°10'00" N

VCU 722 SPACIOUS BAY

NATIONAL

TONGASS

FOREST

SPACIOUS BAY

VCU 722

Square Island

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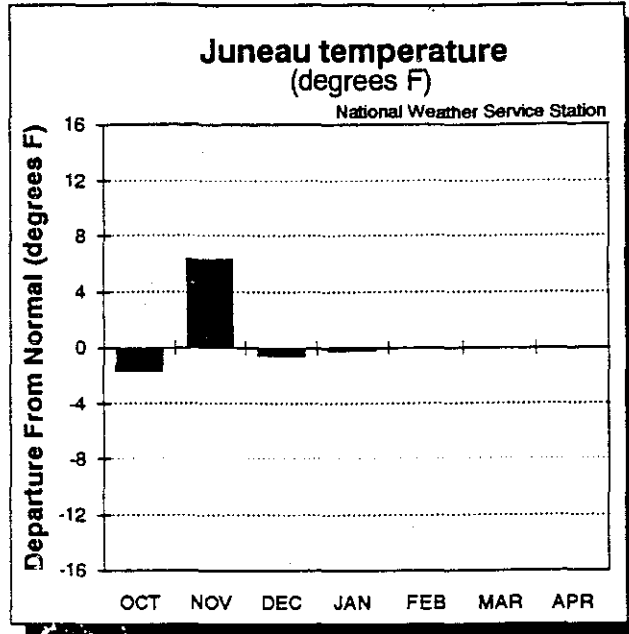
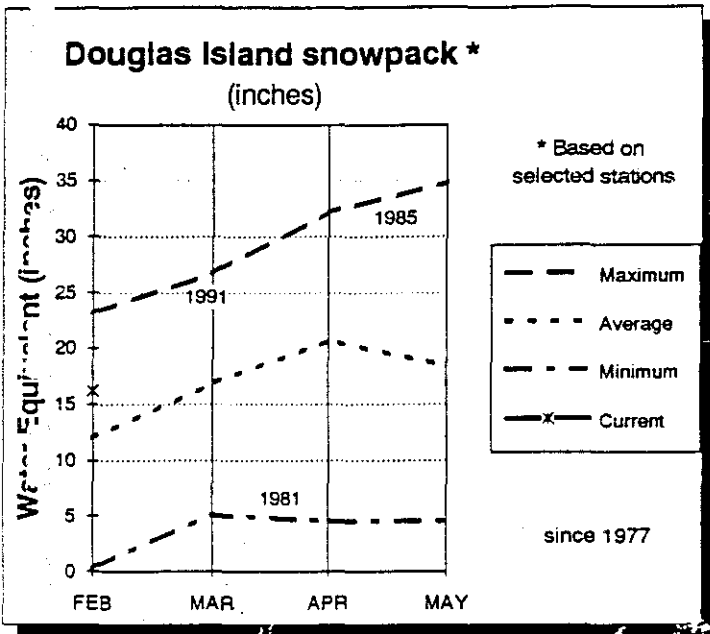
APPENDIX II

Winter Weather Conditions

1993

Southeast

February 1, 1993



SNOWCOVER:

Winter started slow in the region. A relatively dry early-winter period combined with a much warmer than normal November resulted in very meager, if any at all, snow accumulation reported on December 1st. However, major snow storms in both December and January produced huge increases in the snowpack throughout the region, with the exception of the northernmost area where only small increases were recorded over the last two months. As a result, high elevation snowcover has caught up to near normal for February 1st; but percentages increase dramatically with decreasing elevations. The snowpack at an elevation near 500 feet is now two to three times normal. The picture changed dramatically again when a warm rainstorm over the last two or three days of January virtually eliminated a two to four foot snowcover at sea level.

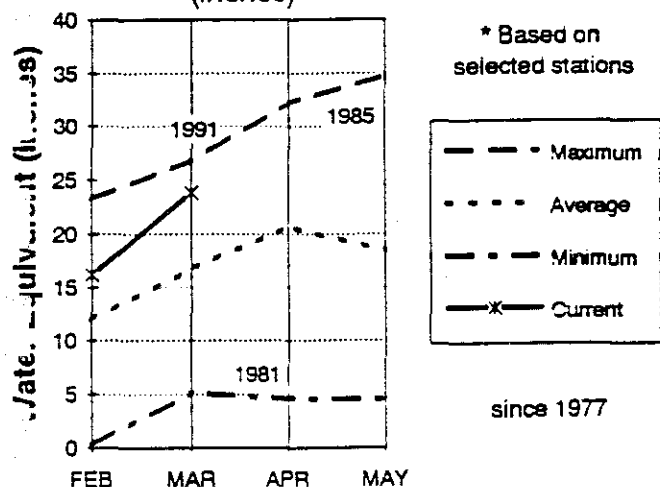
For more information, contact your Soil Conservation Service office in Anchorage, 271-2424.

Southeast

March 1, 1993

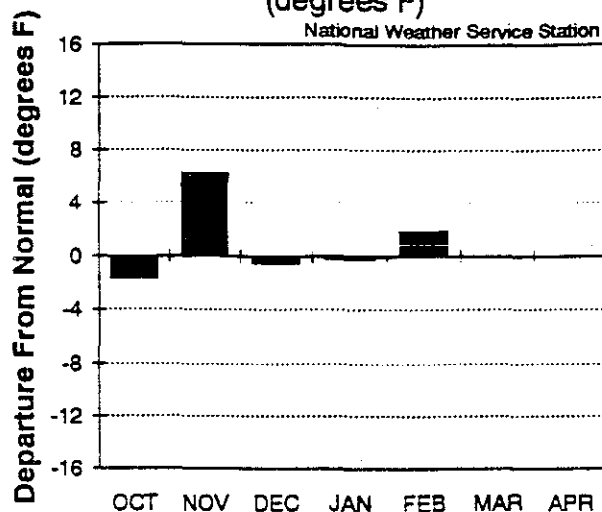
Douglas Island snowpack*

(inches)



Juneau temperature (degrees F)

National Weather Service Station



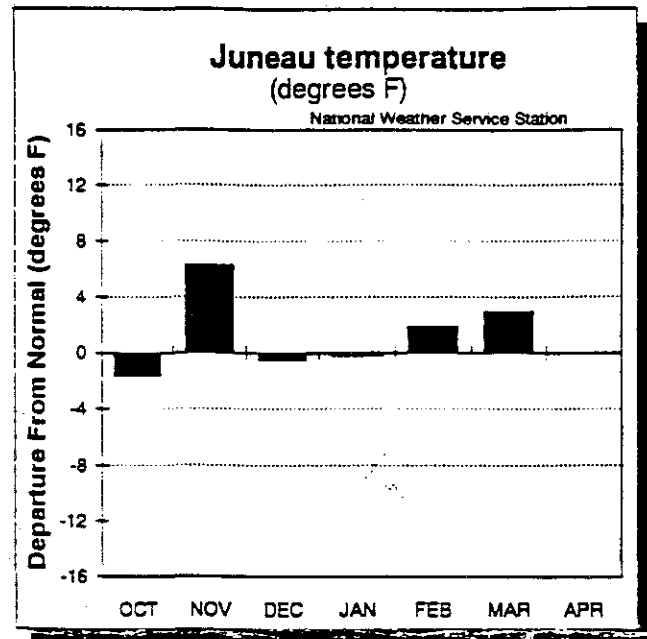
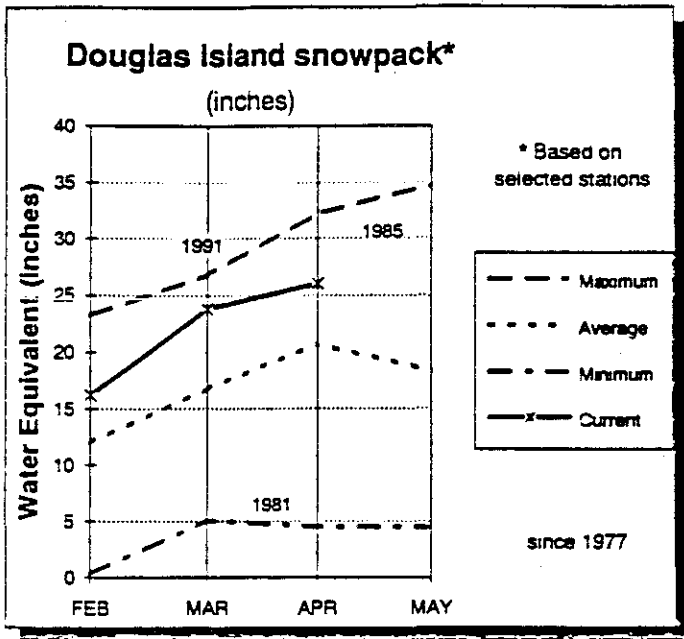
SNOWCOVER:

The snowcover is quite variable across the region. Mild temperatures have eliminated or seriously reduced a formerly heavy pack at or near sea level across much of the region. Only in the north and northeast mainland, generally, can snow still be found at sea level. However, with a little elevation or distance inland, quite heavy snow conditions were still found near March 1st. In addition, snow generally tapers off, percentagewise, with increasing elevations, while increasing, percentagewise, from south to north.

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

Southeast

April 1, 1993



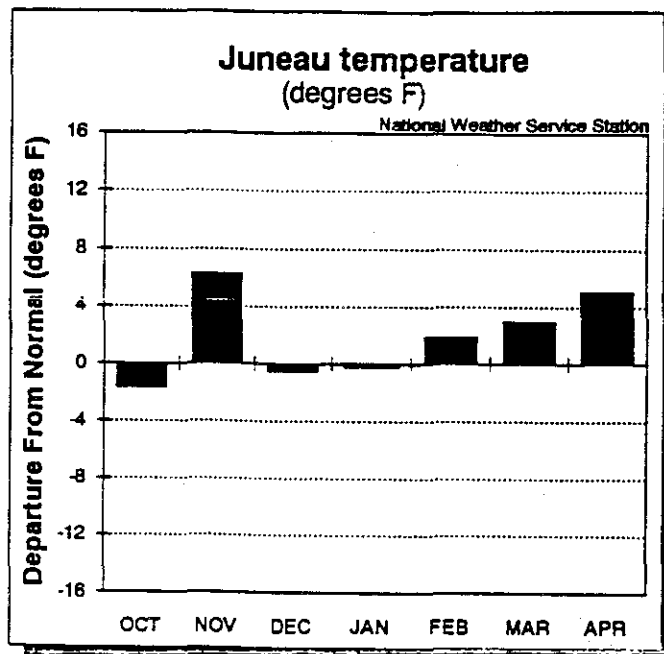
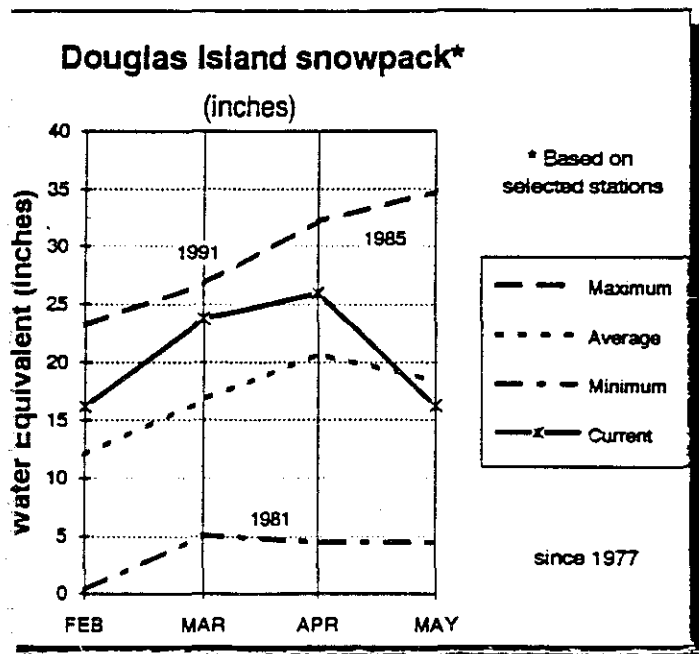
SNOWCOVER:

The region generally had a spring-like month -- milder than normal temperatures and below normal precipitation. Snowpack percentages are down from 10 to 15 percent compared to normal, from those reported a month ago. The mountain snowpack in the northern half of the region now ranges from 10 percent below normal at Speel River to still quite heavy at the Fish Creek site below Eagle Crest Ski Area near Juneau. There, the pack is the fourth heaviest in 17 years and 178 percent of normal.

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

Southeast

May 1, 1993



SNOWCOVER:

Much drier and warmer than normal conditions prevailed throughout the region during April. Thus, snowmelt has been accelerated and what little snow is left is considerably below normal throughout, except the northernmost portion. North from Taku River, near Juneau, the pack is near normal to slightly below for May 1st.

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 1993.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
TRANSECT		
1.....	.90	79
2.....	.56	120
3.....	.82	125
VCU 117 - COUVERDEN		
TRANSECT		
1.....	.62	125
2.....	.30	100
3.....	.13	125
VCU 124 - SHELTER ISLAND		
TRANSECT		
4.....	2.06	50
5.....	2.06	50
6.....	1.76	50
8.....	1.56	50
18.....	2.54	50
VCU 185 - PLEASANT ISLAND		
TRANSECT		
1.....	1.89	100
2.....	1.50	125
3.....	2.04	80
VCU 189 - PORT ALTHORP		
TRANSECT		
1.....	.93	74
2.....	.96	51
3.....	1.84	123
VCU 190 - IDAHO INLET		
TRANSECT		
1.....	.35	108
2.....	.41	88
3.....	.90	109
VCU 209 - SUNTAHEEN CREEK		
TRANSECT		
1.....	.42	125
2.....	.92	75
3.....	1.11	65

VCU 211 - POINT AUGUSTA

TRANSECT

1.....	1.53	100
2.....	3.00	86
3.....	1.84	100

VCU 223 - UPPER TENAKEE

TRANSECT

1.....	.51	78
2.....	.40	89
3.....	.50	82

VCU 231 - SALTARY BAY

TRANSECT

1.....	1.45	66
2.....	.10	103
3.....	1.16	58

VCU 235 - KADASHAN

TRANSECT

1.....	.68	94
2.....	1.01	75
3.....	.92	93
4.....	2.39	59
5.....	1.02	64

VCU 236 - CORNER BAY

TRANSECT

1.....	1.72	50
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VCU 247 - FINGER RIVER

TRANSECT

1.....	2.52	50
2.....	3.89	80
3.....	2.16	49

VCU 254 - SOAPSTONE

TRANSECT

1.....	2.30	97
2.....	2.19	84
3.....	.79	62

VCU 300 - NAKWASINA

TRANSECT

2.....	3.47	47
3.....	3.27	70
8.....	2.82	71

VCU 305 - KALININ BAY

TRANSECT

1.....	1.86	51
2.....	1.53	99
3.....	1.88	48

VCU 308 - SOUTH KRUIZOF

TRANSECT

1.....	2.56	100
2.....	1.33	125
3.....	1.14	120

VCU 368 - YAKUTAT ISLANDS

TRANSECT

1.....	1.07	106
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VCU 431 - POINT BARRIE

TRANSECT

1.....	.86	125
2.....	.83	125
3.....	.61	125

VCU 442 - PORTAGE BAY

TRANSECT

1.....	.37	125
2.....	.45	87
3.....	.53	70

VCU 448 - WOEWODSKI

TRANSECT

1.....	1.48	79
2.....	.88	72
3.....	.81	79

VCU 452 - BLIND SLOUGH

TRANSECT

1.....	1.23	110
2.....	1.35	107
3.....	1.23	48

VCU 454 - DRY

TRANSECT

1.....	1.18	106
2.....	1.30	40
3.....	1.97	64

VCU 461 - WORONKOWSKI

TRANSECT

10.....	.29	85
11.....	.12	51
12.....	.21	89

VCU 467 - MOSMAN

TRANSECT

1.....	.07	103
2.....	.00	110
3.....	.16	91

VCU 473 - ONSLOW

TRANSECT

1.....	.41	110
2.....	1.00	115
3.....	.63	116

VCU 578 - SNAKEY LAKES

TRANSECT

1.....	.41	108
2.....	.42	125
3.....	1.35	51
4.....	1.51	72

VCU 581 - LUCK LAKE

TRANSECT

1.....	1.16	37
3.....	1.36	73
4.....	.77	65

VCU 621 - 12 MILE

TRANSECT

1.....	1.48	80
2.....	.55	113
3.....	.57	65

VCU 635 - PORT REFUGIO

TRANSECT

1.....	.56	73
2.....	2.90	70
3.....	.61	70

VCU 716 - HELM BAY

TRANSECT

1.....	1.77	125
2.....	.88	66
3.....	1.20	95

VCU 719 - PORT STEWART

TRANSECT

1.....	.98	91
2.....	1.51	103
3.....	1.15	95

VCU 722 - SPACIOUS BAY

TRANSECT

1.....	.35	77
2.....	.73	118
3.....	.46	105

VCU 738 - MARGARET

TRANSECT

10.....	.31	70
11.....	.25	111
25.....	.37	100

Table 3. Mean Pellet-group density by VCU, by elevation, spring 1993.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
0-500 FT.....	.52	103
501-1000 FT.....	.76	120
1001-1500 FT.....	.95	101
VCU 117 - COUVERDEN		
0-500 FT.....	.35	350
VCU 124 - SHELTER ISLAND		
0-500 FT.....	2.04	202
501-1000 FT.....	2.03	39
1001-1500 FT.....	.89	9
VCU 185 - PLEASANT ISLAND		
0-500 FT.....	1.78	291
501-1000 FT.....	1.57	14
VCU 189 - PORT ALTHORP		
0-500 FT.....	1.69	164
501-1000 FT.....	.95	66
1001-1500 FT.....	.22	18
VCU 190 - IDAHO INLET		
0-500 FT.....	.64	208
501-1000 FT.....	.41	83
1001-1500 FT.....	.36	14
VCU 209 - SUNTAHEEN CREEK		
0-500 FT.....	.72	218
501-1000 FT.....	.70	40
1001-1500 FT.....	1.29	7
VCU 211 - POINT AUGUSTA		
0-500 FT.....	2.66	123
501-1000 FT.....	1.80	137
1001-1500 FT.....	.85	26
VCU 223 - UPPER TENAKEE		
0-500 FT.....	.52	175
501-1000 FT.....	.36	50
1001-1500 FT.....	.33	24

VCU 231 - SALTARY BAY		
0-500 FT.....	.61	146
501-1000 FT.....	1.58	45
1001-1500 FT.....	.36	36
VCU 235 - KADASHAN		
0-500 FT.....	1.53	201
501-1000 FT.....	.86	83
1001-1500 FT.....	.52	101
VCU 236 - CORNER BAY		
0-500 FT.....	2.41	17
501-1000 FT.....	.63	16
1001-1500 FT.....	2.06	17
VCU 247 - FINGER RIVER		
0-500 FT.....	3.61	116
501-1000 FT.....	2.29	45
1001-1500 FT.....	1.17	18
VCU 254 - SOAPSTONE		
0-500 FT.....	2.07	191
501-1000 FT.....	1.06	50
1001-1500 FT.....	4.00	2
VCU 300 - NAKWASINA		
0-500 FT.....	2.83	127
501-1000 FT.....	3.73	26
1001-1500 FT.....	3.89	35
VCU 305 - KALININ BAY		
0-500 FT.....	1.99	104
501-1000 FT.....	1.39	54
1001-1500 FT.....	1.35	40
VCU 308 - SOUTH KRUF		
0-500 FT.....	1.62	345
VCU 368 - YAKUTAT ISLANDS		
0-500 FT.....	1.07	106
VCU 431 - POINT BARRIE		
0-500 FT.....	.80	279
501-1000 FT.....	.51	51
1001-1500 FT.....	.87	45
VCU 442 - PORTAGE BAY		
0-500 FT.....	.22	203
501-1000 FT.....	.90	50
1001-1500 FT.....	1.10	29

VCU 448 - WOEWODSKI		
0-500 FT.....	.79	76
501-1000 FT.....	1.20	51
1001-1500 FT.....	1.19	103
VCU 452 - BLIND SLOUGH		
0-500 FT.....	2.08	71
501-1000 FT.....	1.06	125
1001-1500 FT.....	.83	69
VCU 454 - DRY		
0-500 FT.....	1.38	73
501-1000 FT.....	1.28	69
1001-1500 FT.....	1.68	68
VCU 461 - WORONKOWSKI		
0-500 FT.....	.09	115
501-1000 FT.....	.32	59
1001-1500 FT.....	.41	51
VCU 467 - MOSMAN		
0-500 FT.....	.04	215
501-1000 FT.....	.05	59
1001-1500 FT.....	.33	30
VCU 473 - ONSLOW		
0-500 FT.....	.56	275
501-1000 FT.....	1.43	44
1001-1500 FT.....	.77	22
VCU 578 - SNAKEY LAKES		
0-500 FT.....	.46	247
501-1000 FT.....	1.45	75
1001-1500 FT.....	1.53	34
VCU 581 - LUCK LAKE		
0-500 FT.....	1.45	49
501-1000 FT.....	1.49	47
1001-1500 FT.....	.65	79
VCU 621 - 12 MILE		
0-500 FT.....	.84	258
VCU 635 - PORT REFUGIO		
0-500 FT.....	1.35	213
VCU 716 - HELM BAY		
0-500 FT.....	1.51	224
501-1000 FT.....	.74	31
1001-1500 FT.....	1.00	31

VCU 719 - PORT STEWART

0-500 FT.....	.87	184
501-1000 FT.....	1.92	64
1001-1500 FT.....	1.73	41

VCU 722 - SPACIOUS BAY

0-500 FT.....	.46	186
501-1000 FT.....	.62	78
1001-1500 FT.....	.75	36

VCU 738 - MARGARET

0-500 FT.....	.30	247
501-1000 FT.....	.24	17
1001-1500 FT.....	.59	17