1990 Report

Deer Pellet-Group Surveys in Southeastern Alaska

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PREFACE

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 1990. It is intended as an addendum to the Pellet Group Survey Reports for 1981-1989, where one can find the objectives, methods, and discussion for this project.

During 1990, 24 watersheds (or value comparison units - VCU's), 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 last year. Twelve VCU's showed slight increases, while only three VCU's (Barlow Cove, Pybus Bay, and George Inlet) showed slight decreases. (The remaining transects were new in 1990.) This data leads me to believe that the 88-89 winter had little effect on Southeast Alaska's deer populations.

NARRATIVES

Sullivan Island (VCU 94) -Three new transects were established on Sullivan Island in 1990. Located in upper Lynn Canal, the island is the northern-most point of Subunit 1C. Deer occur in small numbers further north on the Chilkat Peninsula and the mainland coast east of Lynn Canal in Subunit 1D; however; Subunit 1D is closed to hunting. Thus, Sullivan Island, only 15 miles south of Haines, supports the only huntable population within easy reach of that community. According to the latest deer hunter survey, in 1989, four deer were harvested from the island.

Sullivan Island represents the first in a series of new transects to be established on northern Unit 1C mainland and island sites. Transect #1 was established on the east side and about midway up the eight mile long island. This transect runs sidehill to the highest point on the island (1030 feet) through mid- to high-volume open timber. The line crests a knoll at about the halfway point and continues through a series of unique grass/alder meadows. Transects #2 and #3 are located at the heads of the two bays situated on the southern end of the island. Both lines traverse a fair amount of lowland brushy habitat before climbing into heavier timber. The highest point on Transect #3 is less than 400 feet.

Although none of the transects were completed due to time constraints, results suggested moderate deer usage and the mean number of pellet groups per plot was similar to that found on Douglas and Shelter islands during the previous year's

survey. The higher volume timber of Transect #1 seemed to harbor the greatest amount of deer sign including pellets and beds. Deer sign also increased on Transect #2 after leaving the lowland brush and entering the more heavily timbered portion of the line. Bear scat was encountered on two of the 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 through 1986 with an average of 738 plots, but this practice was discontinued because most of the south end of the island is private property. In 1987, only Transects 4,5,6,7,8, and 18 on the north end of the island were 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 densites on Shelter Island have traditionally been high (over 2 pellet groups per plot), but 1989 showed a drastic decline. The low number may have been due to the unusually late date these transects were run in 1989. Sampling was performed on May 24 and there was advanced leaf-out limiting visibility. The 1990 survey was meant to see whether the 1989 data was an aberration or not. The results showed that deer populations are indeed lower on the island; still moderate in number, but lower than the peaks seen in the mid-eighties. The island will be continue to be monitored frequently in the future.

Barlow Cove (VCU 125) -Located on the northern tip of Admiralty Island, this VCU is a popular destination for Juneau hunters. Virtually the entire VCU is below 500 feet elevation and within 2.5 km of the beach; it is dominated by low-volume, scrub timber. The VCU was intensively sampled in 1982 with 30 transects (2,567 plots) running completely across the peninsula between Barlow Cove and Lynn Canal. Sampling has been limited to three transects in subsequent years, and was last done in 1985. Deer pellet group densities have been found to be moderate in all years sampled, including the 1990 survey.

Hawk Inlet (VCU 128) - Hawk Inlet, on the NW shore of Admiralty Island, is a good baseline VCU for deer pellet sampling as it has been surveyed almost continuously since 1982. Access to Hawk Inlet is easy from Juneau by either plane or large vessel. 1990 data indicate that deer populations have rebounded in Hawk Inlet, with pellet group densities of 2.19 pellet groups per plot. This VCU will continue to be sampled frequently in the future.

Hood Bay (VCU 171) - Three transects were established at Hood Bay, on the SW coast of Admiralty Island, in 1987. Hood Bay is an important deer hunting area for the residents of nearby Angoon. Transects #1 and #2 sample south-facing slopes to

1500 feet elevation. Transect #1 passes through a portion of 60 year old second growth at the start, and #2 is fairly brushy. Transect #3 samples riparian habitat in the south arm of Hood Bay and passes through one of the finest stands of big trees in Southeast Alaska. Overall, deer pellet group densities remained moderate in 1990, just a little higher than in 1989.

Pybus Bay (VCU 182) - Pybus Bay, on the SE coast of Admiralty Island, is another one of those VCU's that provides benchmark pellet group density information. The bay is important to Juneau, Petersburg, and Kake hunters, and has been surveyed almost continuously since 1981. All three transects are fairly easy, although snow can sometimes be a problem at higher elevations. The last three years this VCU was surveyed (1986, 1987, and 1989), pellet group densities were the same - 2.0 pellet groups per plot. The 1990 survey came in a little lower, 1.72 pellet groups per plot.

Finger Mt. (VCU 247) - The Finger River drainage, in lower Hoonah Sound, has consistently exhibited some of the highest deer pellet 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 a 1100-foot knob, then it undulates up and down from there. Persistent snow is sometimes a problem on this transect. Transect #2 parallels the Finger River, has lots of deer sign, and the walk back along the river is very scenic. Transect #3 is short and steep to 1500 feet elevation. Deer pellet group densities in Finger River remained high in 1990.

Portage Arm (VCU 296) - Three new transects were established in Portage Arm in Kelp Bay in 1990. The area was surveyed jointly by the Forest Service and A.D.F.&G. in anticipation of a 100 million board foot timber sale in 1992. (A small first entry has already been made in Kelp Bay). Because of the imminent timber sale, and because Kelp Bay is important to Southeast Alaska deer hunters (including Angoon subsistance hunters), it was decided to sample Kelp Bay extensively.

Portage Arm is the the narrow body of water which separates Baranof Island from smaller Catherine Island to the NE. Transects #3 and #4 were established on opposite sides at the head of the arm; Transect #5 is at the mouth of the arm at Echo Cove. Portage Arm is steep and rugged, and transects #3 and #4 climb to 1500 feet quickly. The crew comments on Transect #3 mentioned "miserable gullies and devil's club chutes." Deer use was nevertheless high. Transect #4 was somewhat better to hike, though still steep and brushy; it also had high deer use, over 2 pellet groups per plot. Transect #5 covers a low rolling bench. The line parallels the beach fringe somewhat and minor adjustments may need to be made to avoid beach cliff faces. Otherwise the transect was categorized as brushy, with a tremendous amount of deer sign, over 4 pellet groups per plot, and with some very nice viewpoints along the way.

Middle Arm/Kelp Bay (VCU 298) - Four new transects were established on Middle Arm in Kelp Bay in 1990. Surveys were conducted jointly by the Forest Service and the Fish and Game Department in anticipation of a large timber sale in 1992. Some parts of Middle Arm have already been logged.

Transect #1 in Middle Arm is located near the head of the bay on the north side. It is very steep in places, and contains a lot of yellow cedar. Deer pellet group density was moderate. Transect #2 follows a ridge along the south side of the bay. The overstory is almost all low-volume, or non-CFL, yet deer pellet group density was very high, over 4 pellet groups per plot. Transect #3 climbs to 1500 feet on the south side of the arm; some parts of it are steep, with no other remarkable characteristics. Deer use was high, over 2 pellet groups per plot. Transect #4 is another hike to 1500 feet on the north side of the arm, somewhat brushy, and deer pellet group density was again high, over 2 pellet groups per plot. Crew notes indicate it is important to follow the ridgeline on this transect.

Nakwasina (VCU 300) - If there is such a thing as a perfect VCU to sample, then this one's it. Access is easy by skiff from Sitka, and all three transects are easy to walk with fine views at the end. Nakwasina was originally sampled in 1984 with 12 transects. Afterwards, three representative transects were picked out, and these are the ones we continue to survey today (#'s 2,3, and 8). In 1990, deer pellet group densities remained steady and high, although there is some concern that the vegetation may be overbrowsed.

Sealion Cove (VCU 305) - Three transects were established at Kalinin Bay on the north end of Kruzof Island in 1984. They have been run just about every year since. Transects #1 and #3 on the east side of the bay are relatively short and steep and reach alpine quickly. Transect #2 at the head of the bay is longer and aims for a 1500-foot knob to the SW. Timber volume on all three transects is moderate and the views at the top are spectacular. 1990 pellet group data shows an increase in deer pellet group density, even though much of the vegetation observed was severely overbrowsed. Fish and Game will continue to monitor this VCU to see what kind of trend is developing.

The Basin/Kelp Bay (VCU 315) - Two new transects were established in the Basin, Kelp Bay, in 1990. The investigation was conducted jointly by the USFS and ADF&G in anticipation of a large timber sale in 1992. Transect #1 traverses Pond Island. The entire transect is wet and marshy, and what little commercial timber there is contains a lot of defect. Deer use was low. Transect #2 runs up to a 1400-foot knob on Baranof Island. A lot of yellow cedar is present, as is considerable brush. Deer pellet group density was high, almost 3 pellet groups per plot.

Port Malmesbury (VCU 408) - Two new transects were established at Port Malmesbury on Kuiu Island in 1990. Originally three transects were planned, but due to the length of the charter flight from Petersburg, weight became a factor, and only four passengers were allowed on board. The two transects chosen at Malmesbury both traverse a southerly slope to 1500 feet.

Spring comes early to the outside coast of Kuiu, and Malmesbury was well greened up by our April 23rd arrival. Deer forage was abundant, a literal carpet of five-leafed bramble, ground dogwood, skunk cabbage, and blueberry. Close to the beach, however, there was not a single sign of deer use.

The first 500 feet of both transects is low-volume timber and brush; the very few deer pellets observed were found in the thickest tangles. After a bench is reached at 500 feet, timber volume improves dramatically. On Transect #1, a few stands over 50,000 board feet per acre were encountered as well as one spruce tree over seven feet in diameter. Timber volume remains high to the 1100 foot mark, and the occasional deer pellet group was observed all the way up to snowline. Transect # 3, located further in towards the head of the bay, runs through more inferior timber, and contained a lot fewer deer pellet groups; only two being recorded the whole day.

E. Duncan (VCU 437) - Three new transects were established on the east side of Duncan Canal in 1990. Previous work on the west side of the canal had revealed little deer use, but continued reports of deer sightings by Petersburg and logging camp residents on the east side convinced A.D.F.&G biologists to examine the area.

Transect #1 is a low elevation transect which runs up to a 500-foot knob opposite the Castle Islands. Timber volume is mostly low, but deer pellet density was moderate, between one and two pellet groups per plot. The crew reported it as a nice walk. Transect #2 runs up a SW facing slope to 1500 feet elevation. It was characterized as brushy with some blowdown but altogether not a bad transect. Deer pellet group density was again moderate, with over one pellet group per plot. Transect #3 also runs up a SW facing slope to 1500 feet elevation. The transect is gradual at first, but then becomes very steep. Timber volume is moderate, as was deer pellet group density. Overall, the three transects in this VCU showed more deer use than any other VCU sampled on Kupreanof Island in the past. (i.e. Castle River, Rocky Pass, and Pt. Barrie).

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. In 1988 and 1989, a fourth and fifth transect were added; #4 on Woewodski Island and #5 near Woodpecker Cove on Mitkof Island.

In 1990, the Woodpecker Cove transect was dropped and incorporated into the Blind Slough or Sumner VCU 452; the other four continue as transects in VCU 448. 1990 results indicate that deer populations are stable on Mitkof Island, with moderate deer pellet group densities.

Frederick (VCU 449) - This VCU on Mitkof Island was first sampled from the beach in 1981. Deer pellet group density then was extremely low, only 0.08 pellet groups per plot, probably because the LeConte Glacier makes this NW corner of Mitkof Island colder than the rest of the island. Since 1981, timber harvest and roading activity has increased in this VCU. Further, more deer sightings have been reported. Because a deer season is being contemplated on Mitkof Island next year, biologists decided to again sample this corner of the island.

Access in 1990 was by road rather than by skiff because it is much easier to reach the VCU this way. Three new transects were established in the vicinity of the old 1981 lines. Transect #1 starts near a borrow pit along the road and runs to 1500 feet elevation. There is some sidehilling, but all in all it is not a difficult hike. Deer pellet group density was low, less than one pellet group per plot, with most of the sign seen on a steep, SE facing slope with high-volume hemlock. Transect #2 starts by a creek along the road. The creek is large and difficult to cross; there is also an impassable canyon upstream. If this transect is run again, the bearing should be changed from 260 degrees to 272 degrees. Transect #3 starts 0.35 miles past the Mile 7 marker. It runs to 1500 feet elevation, but because of excessive snow, the crew only made it to 1100 feet. Deer pellet group density was low; the transect was judged to be an easy hike.

Although deer pellet counts on this VCU only measured a low 0.55 pellet groups per plot, this is still quite higher than 1981, signifying that deer populations on Mitkof Island might very well be on the rebound. If this VCU is done again in the future, it should be done as late in the season as possible as winter snowfall is persistent.

Blind Slough (VCU 452) - Three new transects were established in the Sumner or Blind Slough VCU in 1990. Fish and Game biologists were examining Mitkof Island deer populations more closely this year because a deer hunting season may be opened. The south part of the island is considered prime habitat, and indeed, seven deer were seen along-side the road the day of the transects.

All three transects in this VCU are accessed from the Mitkof Island highway system. Transect #3 is located at the mouth of Blind Slough and has been run previously in the past as Transect #5 in VCU 448. It is up and down hills with some rough going. Deer pellet group density was moderate. Transect #2 is located at the head of Blind Slough on the uphill side of Woodpecker Cove Road. It was characterized as a nice

line by the crew, with medium timber volume and moderate deer use. Transect #3 starts just south of a bridge on the Mitkof Road near Crescent Beach. It runs through a mix of habitat types, from high-volume timber in the beginning to muskeg and low-volume later on, and ascends up to 1500 feet elevation. Deer pellet group density was moderate. There were also four moose pellet groups observed on this transect, including one at 1200 feet elevation.

12 Mile (VCU 635) - This VCU, located near Kasaan Bay on Prince of Wales Island, has been sampled by the Forest Service every year since 1985. Pellet group densities have always been low in the past, but in 1990 the results showed deer pellet group densities are now moderate, over one pellet group per plot.

Port Refugio (VCU 635) - This VCU is located on Suemez Island off the west coast of Prince of Wales Island. The Forest Service has conducted pellet group counts here every year since 1985. Pellet group densities were high during 1985 and 1986, but decreased significantly in 1987. In 1988, they were lower still, and in 1989, even lower. 1990 results show a slight upward trend again. Biologists will continue to monitor this situation.

George Inlet (VCU 748) - This VCU is accessible by skiff from Ketchikan. Sampling has been conducted in 1981, 1984, 1985, 1989, and 1990. Deer pellet group density is currently at moderate levels.

Whitman Lake (VCU 752) - This roadside VCU south of Ketchikan was first sampled in 1981 and has occasionally been sampled since then when inclement weather prohibits airplane or skiff use. Such was the case in 1990. Deer pellet group density continues to be low, less than one pellet group per plot.

Gravina (VCU 999) - Northeastern Gravina Island was first sampled in 1981 and again in 1984, 1985, and 1986. Starting in 1987, sampling was reduced from ten transects to three transects (#'s 1, 2, and 3). All three of these transects are easily accessible via the Ketchikan airport ferry, and all are similar in terrain, timber volume, and elevation. In 1989, pellet group densities fell sharply from 2.06 to 1.13 pellet groups per plot. This could be due to increased wolf and black bear predation, severe winters, and/or a statistical error. In 1990, results were up from 1989, to 1.40 pellet groups per plot. Gravina Island will continue to be monitored frequently to determine trend.

Table 1. Pellet-group count statistics from southeast Alaska, 1981-90.

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	95% CI	K
27	Auke Bay	15,245	45%	1987	381	0.99	0.87-1.12	1.66
36	Inner Point	3,965	44%	1985	256	1.30	1.10-1.51	1.09
				86	235	1.97	1.68-2.25	1.29
				87	262	1.76	1.53-2.00	1.61
				88	200	1.21	1.02-1.39	2.27
				89	258	1.31	1.08-1.53	0.86
65	Sumdum	40,906	15%	1987	262	1.76	1.53-2.00	1.61
82	Negro Creek	12,212	31%	1989	312	0.21	0.13-0.29	0.17
94	Sullivan Island	3,985	78%	**1990**	**250**	**1.40**		
124	Shelter Island (all transects)	6,162	43%	1984	713	1.46	1.33-1.60	1.80
				85	774	1.82	1.67-1.97	1.24
				86	727	2.20	2.02-2.37	1.28
124	Shelter Island (Trans. 4-8,18)			1984	300	1.52	1.34-1.70	2.07
				85	296	2.52	2.24-2.81	1.78
				86	292	3.24	2.91-3.57	2.10
				87	288	2.91	2.57-3.24	1.49
				88	130	3.16	2.62-3.70	1.33
				89	300	1.43	1.23-1.62	1.37
				90	**300**	**1.60**		
125	Barlow Cove	13,712	24%	1982	2,567	1.07	1.01-1.12	0.75
				84	347	1.69	1.46-1.92	0.98
				85	347	1.55	1.35-1.76	1.05
				90	**270**	**1.40**		
127	Calm Station	4,941	66%	1982	1,054	1.65	1.53-1.77	1.30
128	Hawk Inlet	14,318	57%	1982	1,605	1.21	0.99-1.42	0.67
				84	339	1.42	1.22-1.63	0.96
				85	270	1.69	1.43-1.95	0.91
				86	286	1.92	1.64-2.19	1.00
				87	278	2.54	2.19-2.89	1.04
				89	364	1.82	1.56-2.08	0.83
				90	**250**	**2.19**		
140	Dorn Island	9,485	81%	1984	230	1.27	1.02-1.53	0.69
148	Lake Kathleen	14,693	57%	1987	207	2.13	1.76-2.49	0.91
150	Lake Florence	21,342	52%	1988	294	1.48	1.27-1.69	1.19

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	Pellet Group 95% CI	K
162	Thayer Lake	25,342	79%	1987	313	2.81	2.49-3.12	1.53
				89	283	2.04	1.75-2.32	1.09
171	Hood Bay	44,355	79%	1987	358	2.31	1.99-2.63	0.76
				89	366	1.77	1.54-2.00	0.92
				90	**375**	**1.85**		
182	Pybus Bay	41,501	62%	1981	390	1.34	1.16-1.52	0.93
				84	300	1.02	0.86-1.18	1.18
				85	269	1.86	1.60-2.12	1.22
				86	235	2.00	1.70-2.29	1.19
				87	242	2.03	1.69-2.37	0.78
				89	199	2.00	1.63-2.36	0.81
				90	**221**	**1.72**		
189	Port Althorp	8,040	27%	1988	195	1.80	1.47-2.13	0.87
190	Idaho Inlet	53,183	22%	1988	258	1.34	1.09-1.60	0.60
202	Port Frederick	16,619	52%	1988	242	1.87	1.62-2.13	1.50
208	First No. 2	6,613	32%	1983	1,155	1.12	1.01-1.22	0.63
209	Suntaheen Cr.	13,198	49%	1988	272	1.22	1.00-1.44	0.69
211	Point Augusta	4,688	63%	1983	757	1.78	1.62-2.01	1.08
218	Pavlof River	18,866	50%	1988	325	1.78	1.50-2.06	0.67
221	Whip Station	4,708	53%	1981	193	0.86	0.64-1.08	0.47
222	Sand Station	12,231	50%	1981	253	0.60	0.48-0.73	0.80
223	Upper Tenakee	3,833	54%	1988	253	1.47	1.24-1.70	1.04
231	Saltery Bay	18,478	31%	1988	256	2.02	1.69-2.35	0.99
234	Inbetween	6,002	62%	1981	35	0.49	0.08-0.89	0.23
235	Kadashan	33,641	53%	1981	96	0.54	0.32-0.76	0.43
				88	221	2.67	2.18-3.16	0.65
236	Corner Bay	10,930	66%	1981	60	0.35	0.17-0.53	0.73
246	Broad Island	17,145	38%	1981	209	1.41	1.18-1.63	1.39

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	95% CI	K
247	Finger Mt.	15,918	38%	1983	2,145	1.17	1.11-1.24	1.09
				84	302	1.83	1.57-2.09	1.02
				85	279	3.23	2.79-3.67	0.96
				86	277	2.88	2.57-3.19	2.13
				87	236	3.11	2.71-3.52	1.35
				89	305	2.99	2.57-3.40	0.85
				90	**225**	**3.36**		
249	Lisianski	19,677	24%	1988	255	0.97	0.79-1.14	0.88
254	Soapstone	17,695	29%	1988	274	1.92	1.67-2.17	1.44
275	Cobol	14,618	49%	1984	224	1.15	0.92-1.37	0.78
279	Rapids Point	7,637	65%	1983	2,734	0.77	0.73-0.81	1.34
281	Ushk Bay	20,770	38%	1981	94	0.63	0.41-0.85	0.71
288	Range Creek	6,929	33%	1983	1,788	0.51	0.46-0.55	0.60
				84	303	0.71	0.61-0.92	0.60
				85	224	1.32	1.02-1.62	0.44
295	Lake Eva	12,362	65%	1987	172	1.81	1.46-2.15	0.94
296	Portage Arm	16,101	48%	**1990**	**214**	**3.03**		
298	M.A./Kelp Bay	28,424	21%	**1990**	**306**	**2.68**		
300	Nakwasina (all transects)	19,575	48%	1984	196	2.51	2.14-2.88	1.48
				85	1046	3.92	3.67-4.17	1.18
				86	715	3.50	3.26-3.76	1.15
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	1.90-2.72	
				89	244	2.32	2.00-2.65	1.19
				90	**255**	**2.99**		
305	Sealion Cove	9,293	69%	1984	320	1.36	1.15-1.58	0.77
				85	292	2.57	2.23-2.91	1.06
				86	235	2.87	2.44-3.29	1.01
				87	226	3.31	2.82-3.80	1.00
				89	303	1.75	1.50-2.00	0.98
				90	**227**	**2.03**		
315	Basin/ Kelp Bay	8,460	60%	**1990**	**151**	**1.87**		

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	95% CI	K
321	Redoubt Bay	9,045	58%	1989	304	2.17	1.88-2.47	1.00
339	C. Ommaney	13,725	32%	1988	172	1.74	1.43-2.05	0.82
348	West Crawfish	57,434	16%	1989	360	1.35	1.36-1.57	0.60
400	Security	28,040	79%	1984	360	0.02	0.01-0.04	
				89	304	0.25	0.16-0.34	0.16
403	Pillar Bay	28,227	65%	1988	337	0.16	0.10-0.22	0.15
408	Malmesbury	18,151	68%	**1990**	**206**	**0.11**		
417	Conclusion Is.	12,561	99%	1987	207	2.66	2.32-3.01	1.93
				89	200	0.95	0.72-1.18	0.51
428	Rocky Pass	49,403	35%	1989	298	0.40	0.27-0.53	0.45
431	Pt. Barrie	22,187	27%	1988	357	0.23	0.17-0.29	0.42
434a	Big Level Is.	727	61%	1981	399	1.54	1.45-1.63	
				83	336	1.56		
				86	382	1.66	1.41-1.90	0.66
				89	227	1.07		
434b	Little Level	263	92	1981	114	2.48	2.02-2.94	
				83	136	2.34		
				86	122	1.39	1.07-1.70	1.12
				89	137	1.52		
435	Castle River	32,724	36%	1984	312	0.19	0.12-0.26	0.20
				87	305	0.51	0.37-0.65	0.34
				89	312	0.40	0.25-0.56	0.21
437	E. Duncan	23,744	55%	**1990**	**227**	**1.11**		
448	Woewodski	20,931	53%	1984	295	0.88	0.69-1.08	0.43
				85	209	1.00	0.82-1.19	1.13
				87	195	1.65	1.36-1.94	0.94
				88	433	1.33	1.16-1.51	0.82
				89	417	1.35	1.24-1.73	0.60
				90	**355**	**1.46**		
449	Frederick	6,835	70%	1981	945	0.08	0.06-0.11	0.09
				90	**180**	**0.55**		
452	Blind Slough	30,655	55%	**1990**	**324**	**1.36**		

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	95% CI	K
454	Dry	11,033	74%	1981	91	0.92	0.56-1.28	0.80
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	0.70
461	Woronkofski			1985	218	2.01	1.62-2.39	0.77
	(Trans. 10,11,12)			87	201	2.23	1.85-2.61	0.94
				89	223	2.52	2.18-2.85	1.52
473	Onslow	28,947	55%	1984	321	0.37	0.28-0.46	0.45
				85	334	0.59	0.48-0.70	0.71
				86	347	0.72	0.59-0.84	0.90
				87	336	0.42	0.31-0.55	0.35
				88	329	0.44	0.32-0.55	0.28
528	Mt. Calder	9,232	83%	1988	252	2.14	1.78-2.49	0.73
532	Red Bay	15,145	66%	1987	177	0.32	0.18-0.47	0.22
539	Exchange Cove	10,406	74%	1988	266	1.39	1.15-1.64	0.68
549	Sarheen	11,875	52%	1989	310	1.73	1.44-2.01	0.62
554	Sarkar	32,183	60%	1988	298	1.28	1.06-1.50	0.65
561	Warm Chuck	12,348	85%	1984	326	1.02	1.02-1.38	1.01
				85	295	1.60	1.36-1.84	0.90
				89	302	2.21	1.91-2.50	1.02
564	Coronation	19,107	69%	1983	696	1.20	1.04-1.36	0.45
				85	228	2.34		
				88	408	1.41	1.17-1.66	0.39
				89	293	1.63	1.28-1.98	0.35
578	Snakey Lakes	6,431	84%	1986	279	0.62	0.51-0.73	1.39
				88	300	1.05	0.84-1.26	0.48
				89	200	1.56	1.26-1.86	0.76
581	Luck Lake	19,818	67%	1986	178	1.74	1.41-2.07	0.88
				88	300	2.11	1.80-2.41	0.84
587	Tuxekan	12,129	77%	1988	300	1.06	0.84-1.28	0.42

VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	95% CI	K
621	12 Mile	23,344	59%	1985	196	0.31	0.19-0.43	0.26
				86	300	0.64	0.48-0.81	0.28
				87	370	0.65	0.49-0.81	0.24
				88	302	0.62	0.46-0.77	0.28
				89	235	0.78	0.59-0.98	0.38
				90	**176**	**1.17**		
635	Port Refugio	9,118	50%	1985	317	2.69	2.27-3.12	0.59
				86	324	2.52	2.09-2.96	0.47
				87	369	1.76	1.46-2.07	0.44
				88	270	1.15	0.90-1.40	0.40
				89	672	0.92		
				90	**232**	**1.25**		
679	Kitkun Bay	15,359	75%	1988	240	0.31	0.20-0.42	0.22
				89	273	0.89	0.71-1.07	0.58
685	Nutkwa	17,079	73%	1988	234	0.09	0.02-0.16	0.08
716	Helm Bay	16,127	57%	1981	704	0.16	0.12-0.19	0.31
				84	302	0.54	0.44-0.65	1.18
				85	181	0.85	0.65-1.05	0.70
				88	247	1.66	1.38-1.95	0.78
738	Margaret	19,286	67%	1985	515	0.57	0.47-0.66	0.56
				86	251	0.84	0.69-1.00	1.07
				88	110	1.31	0.96-1.67	0.77
				89	129	0.62	0.44-0.80	0.74
				90	**274**	**0.56**		
748	George Inlet	19,448	28%	1981	110	0.21	0.09-0.33	0.21
				84	344	0.27	0.19-0.35	0.28
				85	313	0.52	0.39-0.65	0.37
				89	169	1.41	1.08-1.75	0.56
				90	**240**	**1.03**		
752	Whitman Lake	6,015	38%	1981	45	0.18	0.02-0.33	0.33
				87	187	0.16	0.09-0.23	0.47
				90	**193**	**0.45**		
758	Carroll Pt.	11,629	34%	1985	118	0.66	0.46-0.86	0.82
				86	118	0.75	0.56-0.95	1.33
				88	85	1.15	0.81-1.48	1.00
759	Moth Bay	7,652	23%	1985	140	0.59	0.42-0.74	0.99
				86	156	0.98	0.79-1.17	1.79
				88	78	0.71	0.46-0.97	0.84

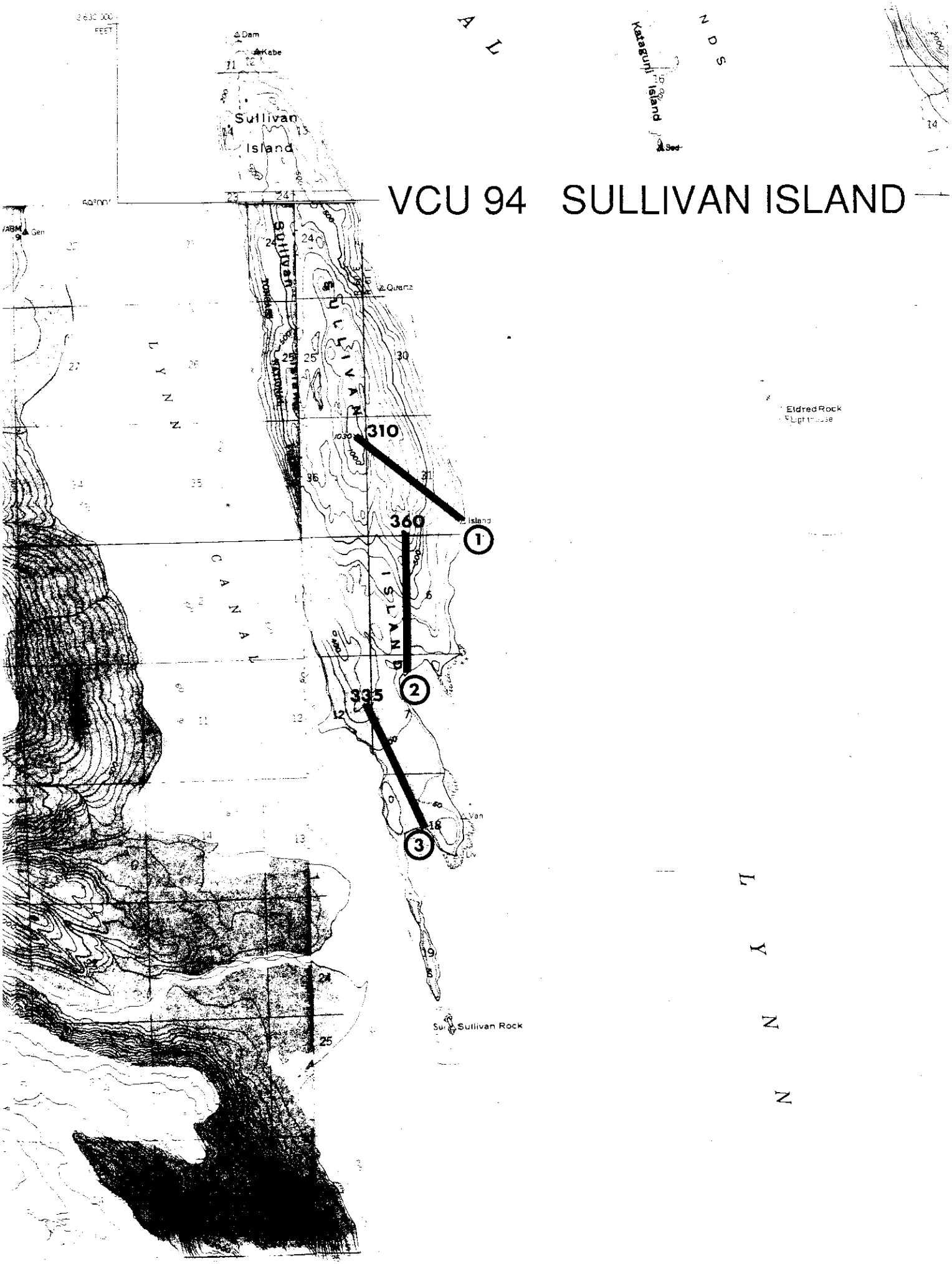
VCU	Name	Land acres	% CFL	Year	N	Pellet Group Mean	Pellet Group 95% CI	K
760	Lucky Cove	12,377	43%	1985	335	1.16	1.00-1.33	1.11
				86	258	1.16	0.95-1.32	1.25
				88	65	1.01	0.68-1.34	1.25
				90	**263**	**1.09**		
764	Blank Inlet	3,640	19%	1981	108	1.24	0.89-1.59	0.70
765	Dall Head	4,803	63%	1981	69	0.52	0.31-0.74	0.91
769	Alava Bay	13,563	60%	1985	311	0.52	0.39-0.65	0.30
				86	326	0.85	0.68-1.01	0.49
772	Wasp Cove	4,882	90%	1985	271	0.41	0.31-0.51	0.52
				86	300	0.50	0.38-0.62	0.41
				89	145	0.58	0.39-0.77	0.42
999	Gravina (all transects)			1981	226	1.06	0.89-1.22	1.93
				84	1,087	0.86	0.78-0.94	0.84
				85	1,172	1.23	1.13-1.32	1.09
				86	1,267	1.40	1.30-1.50	1.08
999	Gravina (Trans. 1,2,3)			1984	376	0.88	0.73-1.03	0.65
				85	224	1.44	1.20-1.67	1.20
				86	346	1.62	1.43-1.81	1.60
				87	334	1.63	1.41-1.84	1.13
				88	278	2.06	1.78-2.35	1.16
				89	182	1.13	0.86-1.41	0.53
				90	**279**	**1.40**		

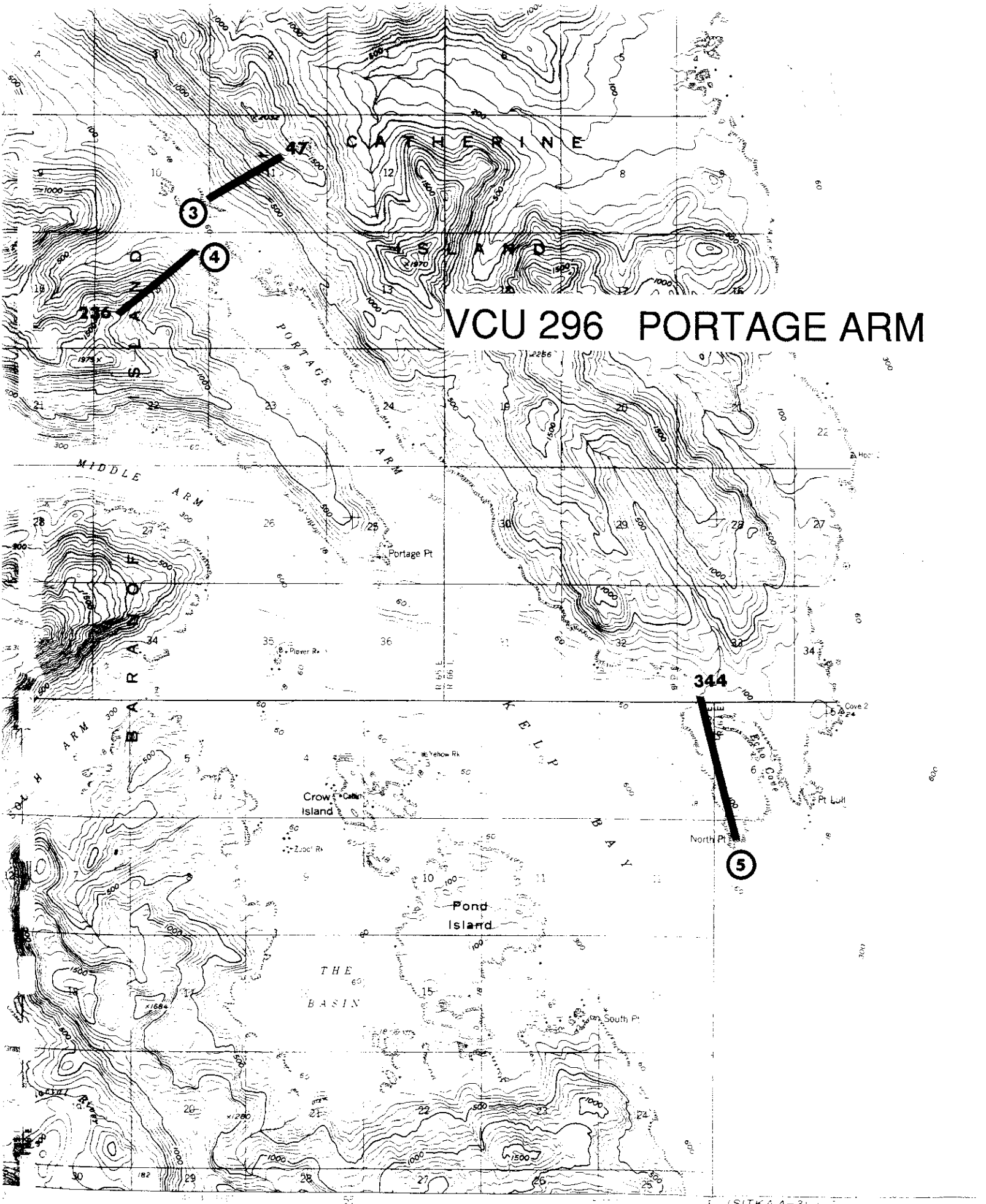
APPENDIX I

New VCUs Sampled in 1990[a]

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

VCU 94 SULLIVAN ISLAND

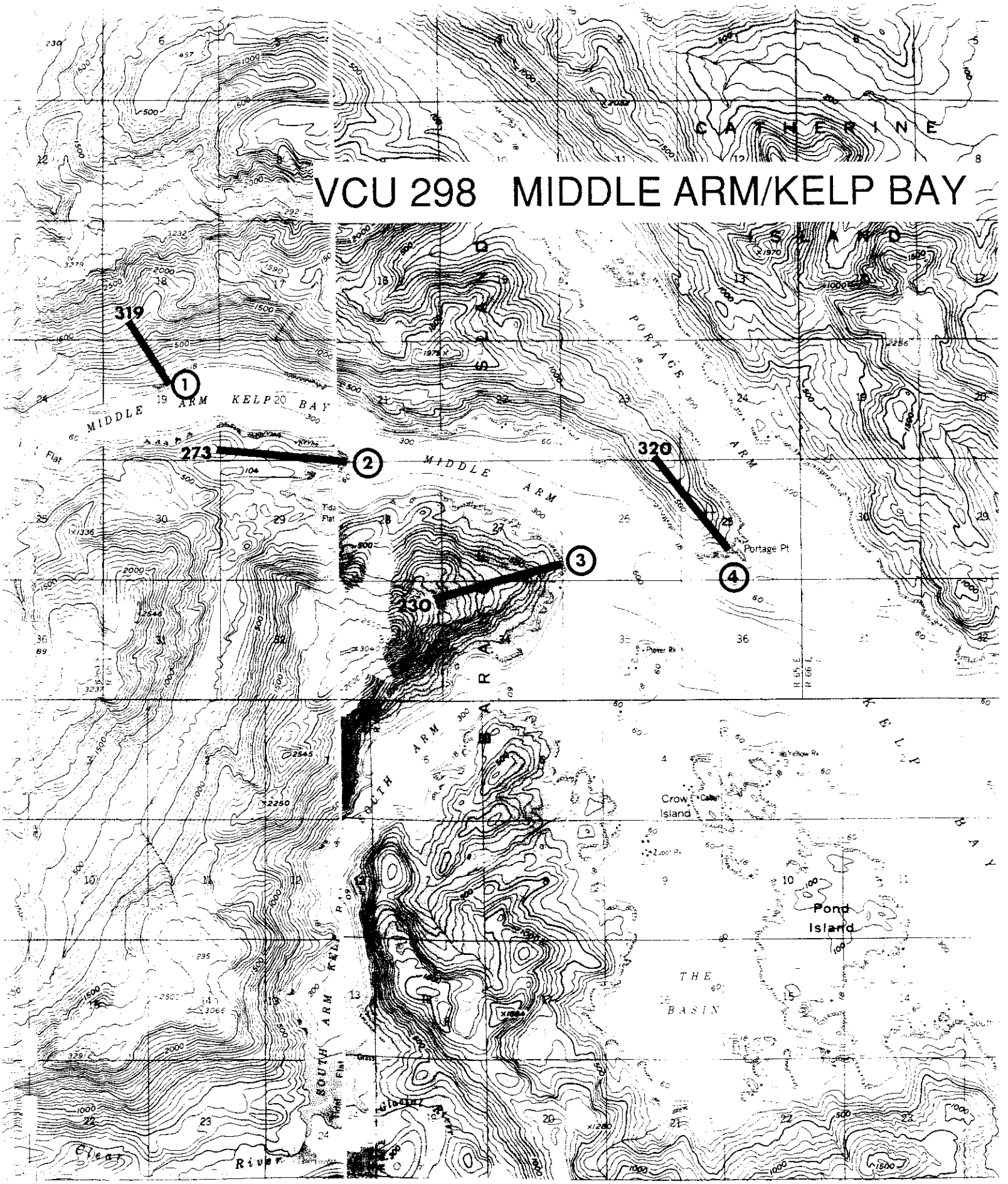


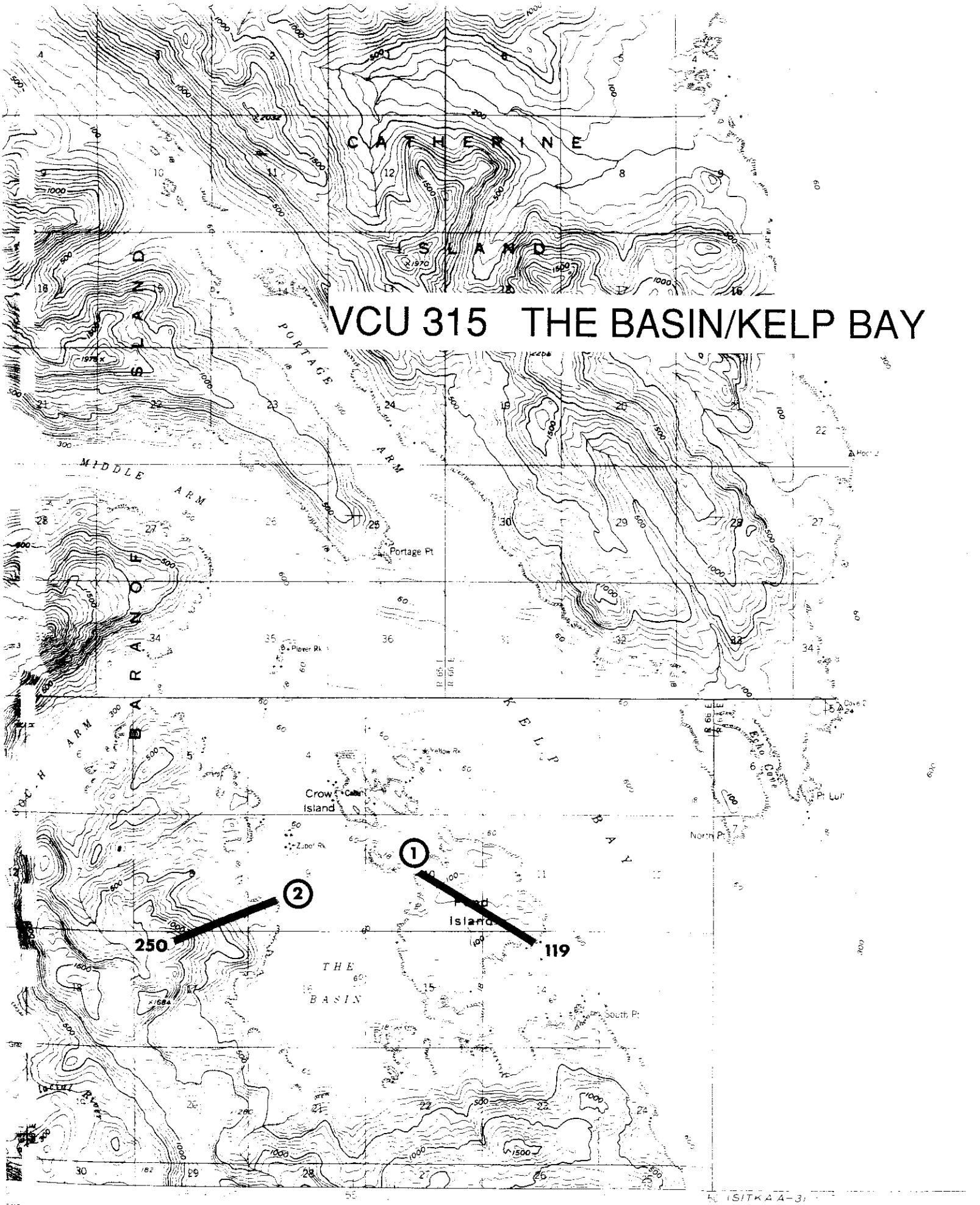


apped, edited, and published by the Geological Survey

ntrol by USGS and NOS/NOAA

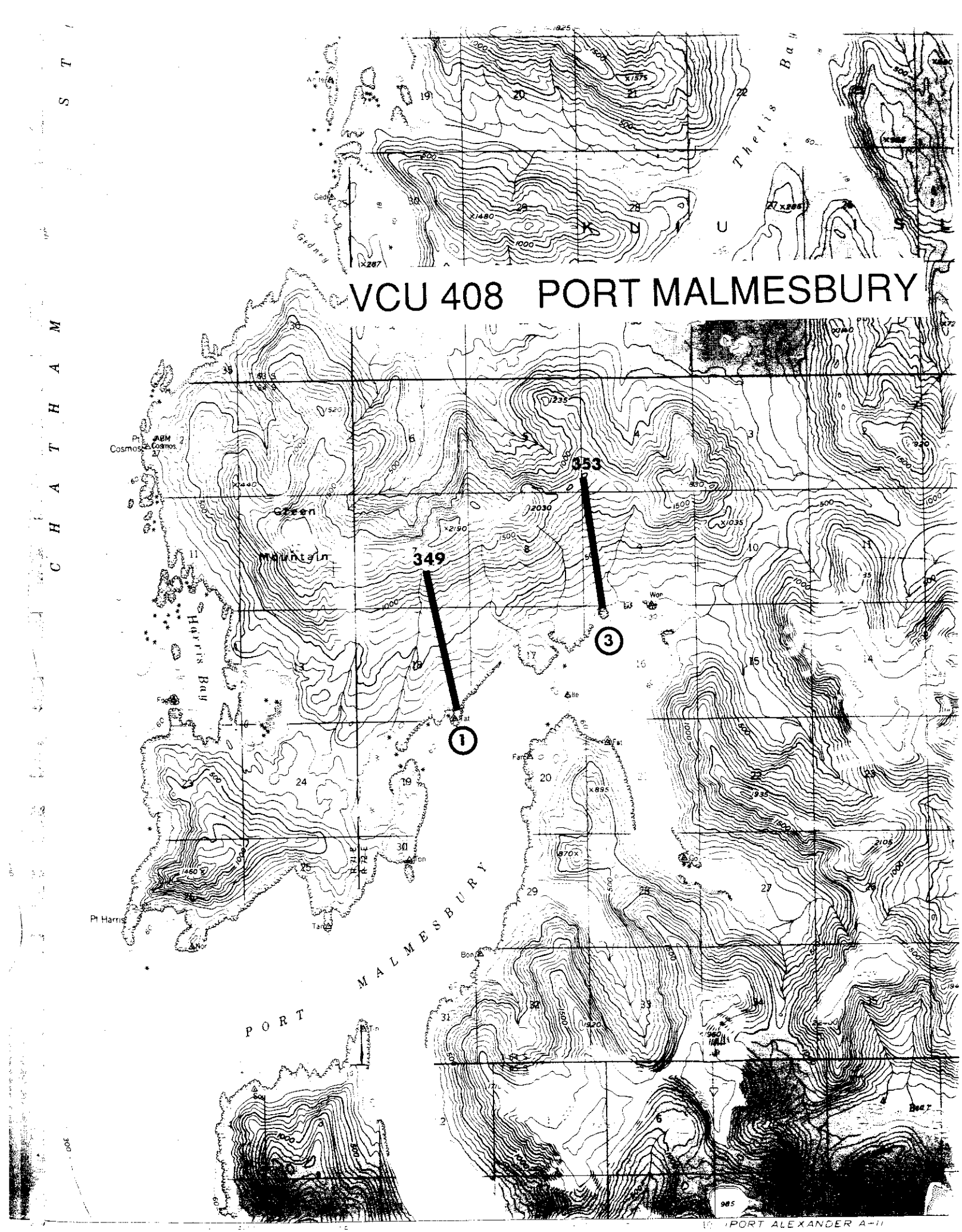
VCU 298 MIDDLE ARM/KELP BAY

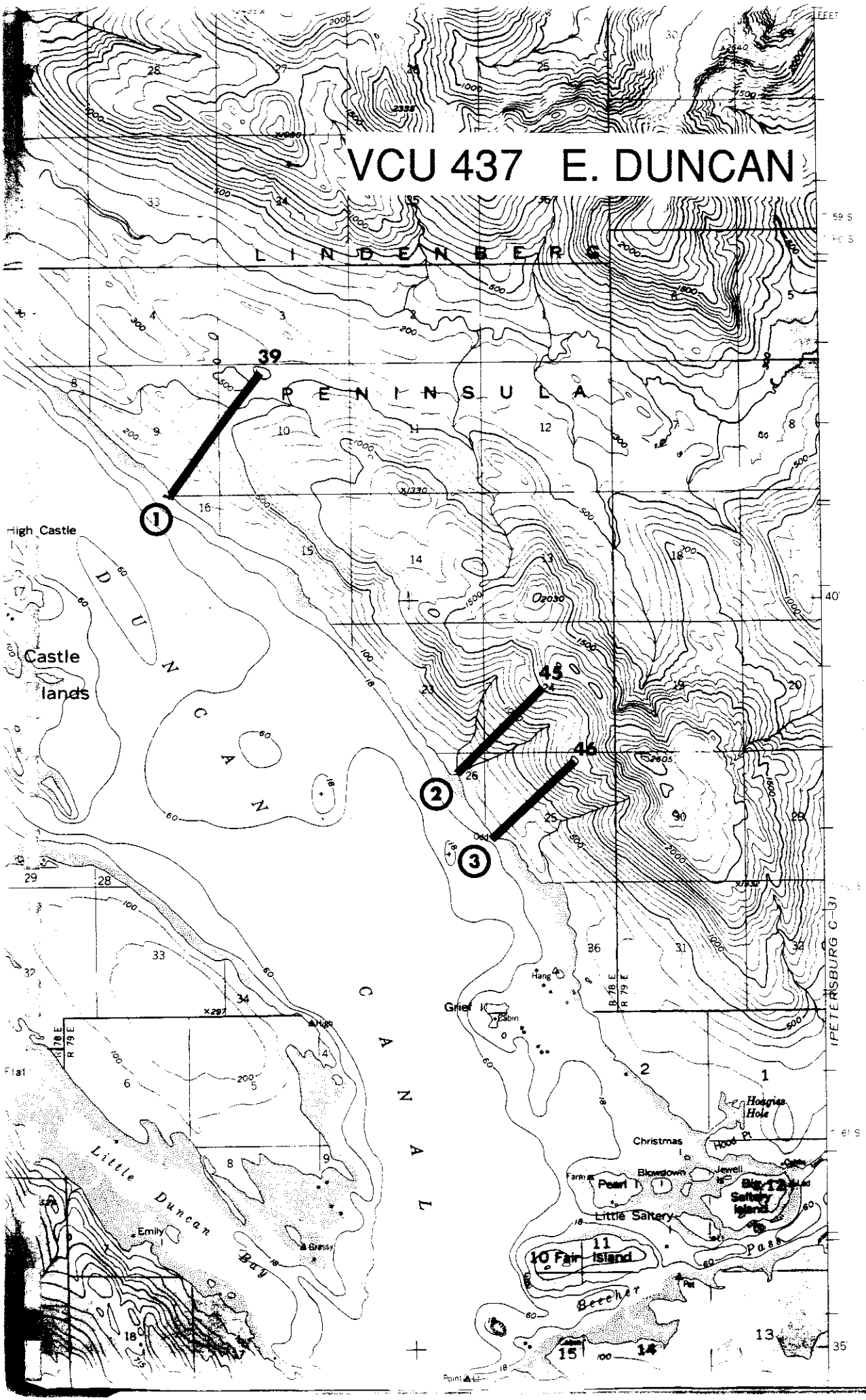




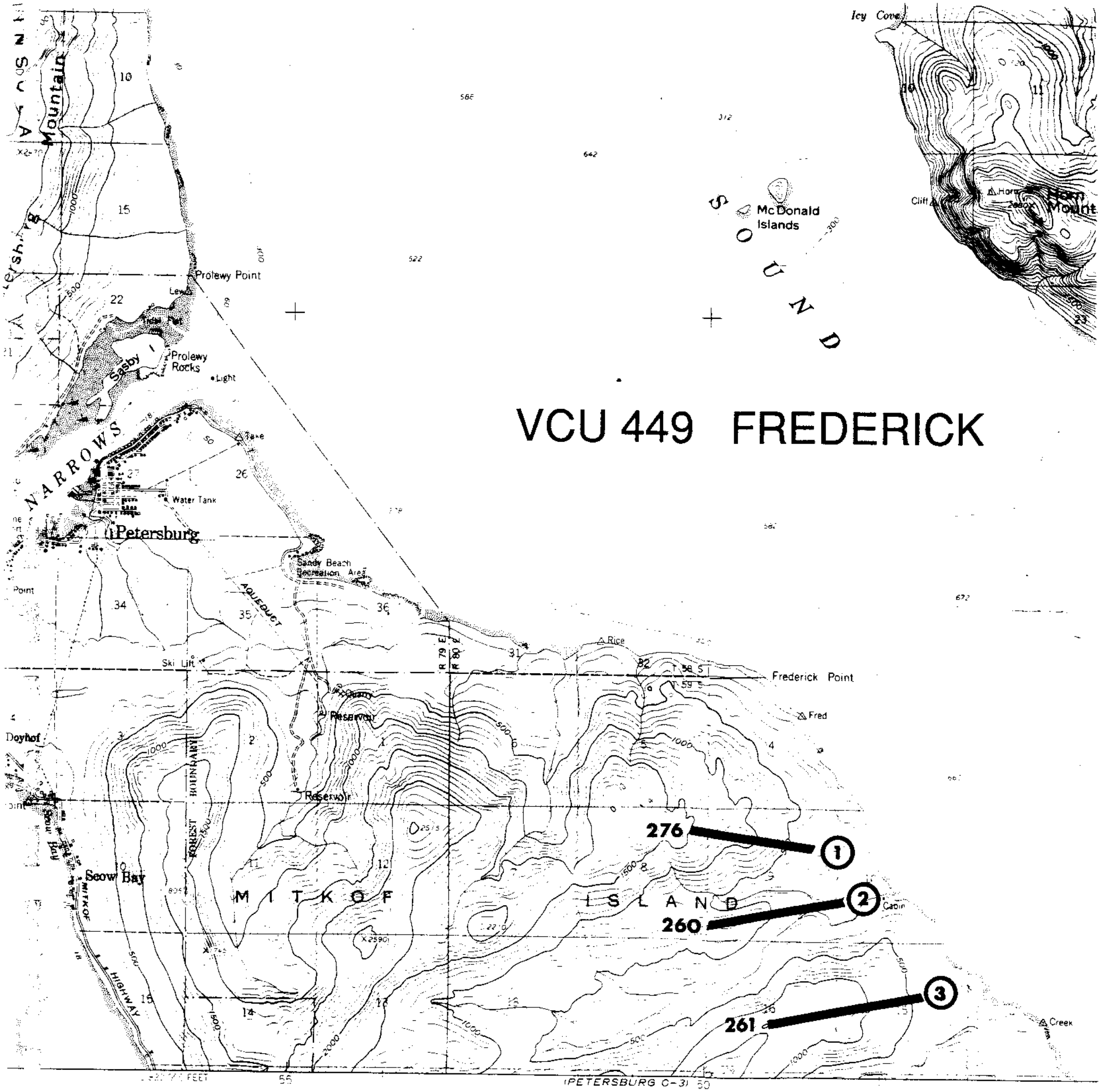
(SITKA A-3)

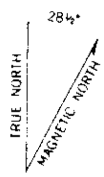
...ished by the Geological Survey
...1951 and 1952


VCU 408 PORT MALMESBURY
CHATHAM STRAIT
PORT MALMESBURY
Harris Bay
Green Mountain
Pt Cosmos
Pt Harris
Theris Bay
349
353
1
3
PORT ALEXANDER A-II


VCU 437 E. DUNCAN
LINDENBERG
PENINSULA
39
45
46
1
2
3
High Castle
Castle
lands
DUNCAN
CANAL
Little Duncan Bay
Emily
Grief I.
Hang
Cabin
Hoggies Hole
Christmas
Hood Pt
Farm
Blowdown
Pearl I
Jewell
Little Saltery
Big Saltery Island
10 Fair
11 Island
Beecher
Pass
Point
R 78 E
R 79 E
PETERSBURG C-3

VCU 449 FREDERICK





APPROXIMATE MEAN DECLINATION, 1961

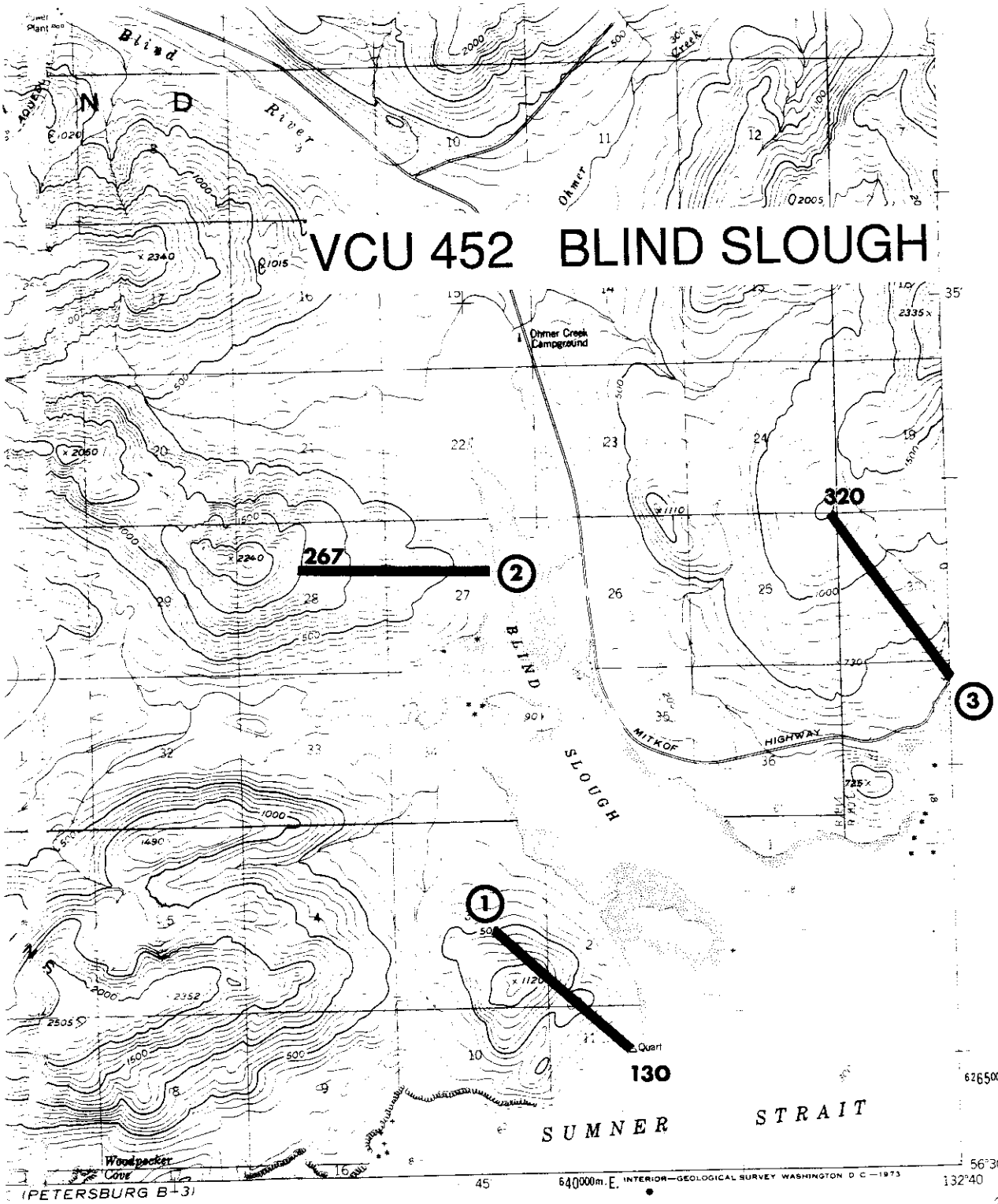
SCALE 1:63360

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
DEPTH CURVES AND SOUNDINGS IN FEET DATUM IS MEAN LOWER LOW WATER

ublished by the Geological Survey
&GS
methods from aerial photographs
Map not field checked
ompiled from USC&GS
1964 This information is
purposes
ojection 1927 North American datum
coordinate system zone 1
verse Mercator grid ticks
Alaska Division of Lands
the wetter areas
from aerial photographs

FOR SALE BY U. S. GEOLOGICAL SURVEY
FAIRBANKS, ALASKA 99701, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



ROAD CLASSIFICATION

Medium-duty ——— Light-duty ———

Unimproved dirt .....

ALASKA

QUADRANGLE LOCATION

PETERSBURG (C-3), ALASKA

N5630—W132 /15X20

15

00 FEET

EVEL

AN LOWER LOW WATER

PROXIMATE LINE OF MEAN HIGH WATER

APPROXIMATELY 33 FEET

GEC OGICAL SURVEY

)RA) 80225, OR WASHINGTON, D. C. 20242

S AND SYMBOLS IS AVAILABLE ON REQUEST

APPENDIX II

Winter Weather Conditions

1990

Winter Weather Conditions

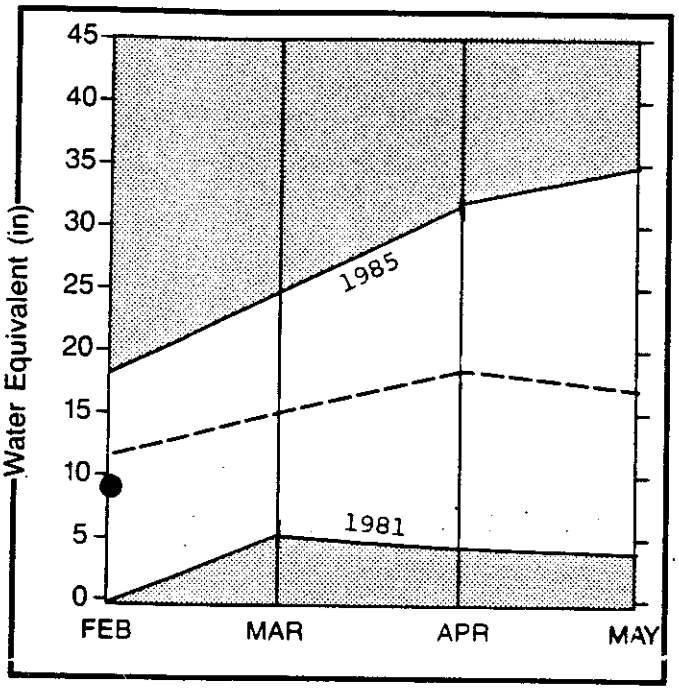
January - April 1990

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

Southeast

FEBRUARY 1, 1990

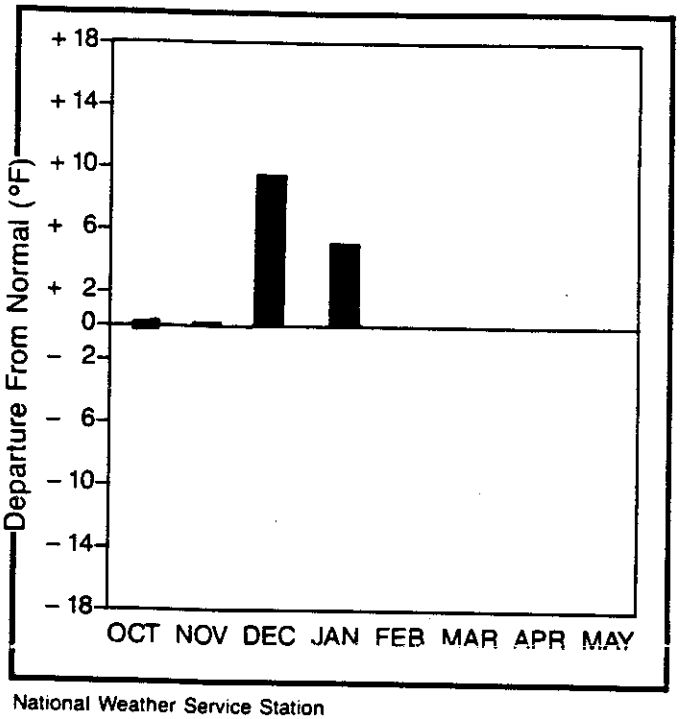
Douglas Island snowpack* (inches)



*Based on selected stations

Maximum
Minimum
since 1968
Average
Current

Juneau Temperature (degrees F)



National Weather Service Station

Monthly temperature

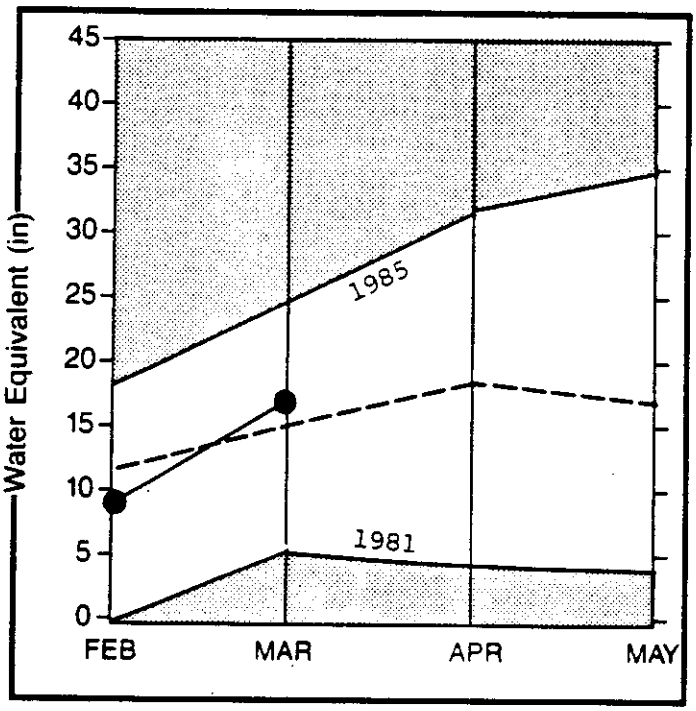
SNOWCOVER:

Southeast Alaska is experiencing one of the leanest snow years, throughout the region, since 1976. Most measurements sites are at least 30 percent below normal. While precipitation, in general, over most of the region has been near normal to only a little below, warm temperatures during December and January caused much of it to fall as rain and/or deplete the low elevation snowcover. All areas report less than half the snowpack of a year ago.

Southeast

MARCH 1, 1990

Douglas Island snowpack* (inches)



*Based on selected stations

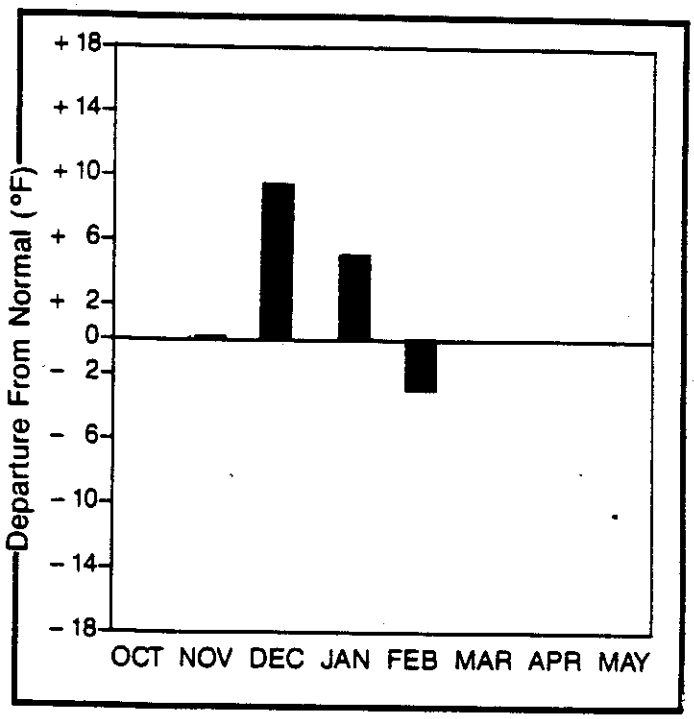
Maximum

Minimum since 1968

Average

Current

Juneau Temperature (degrees F)



National Weather Service Station

Monthly temperature

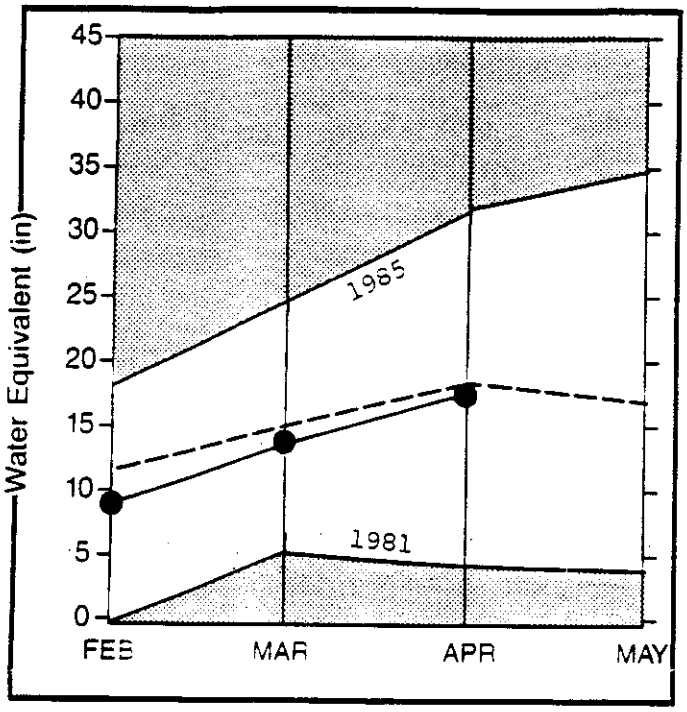
SNOWCOVER:

Snowfall was well above average over the northern three-quarters of southeast during February. That, and a cooler than normal month, led to an even more dramatic increase in the snowpack. Whereas the snowpack was well below normal throughout the region a month ago, many locations are now well above normal. Eagle Crest Ski Area near Juneau is 90 percent of average.

Southeast

APRIL 1, 1990

Douglas Island snowpack* (inches)



*Based on selected stations

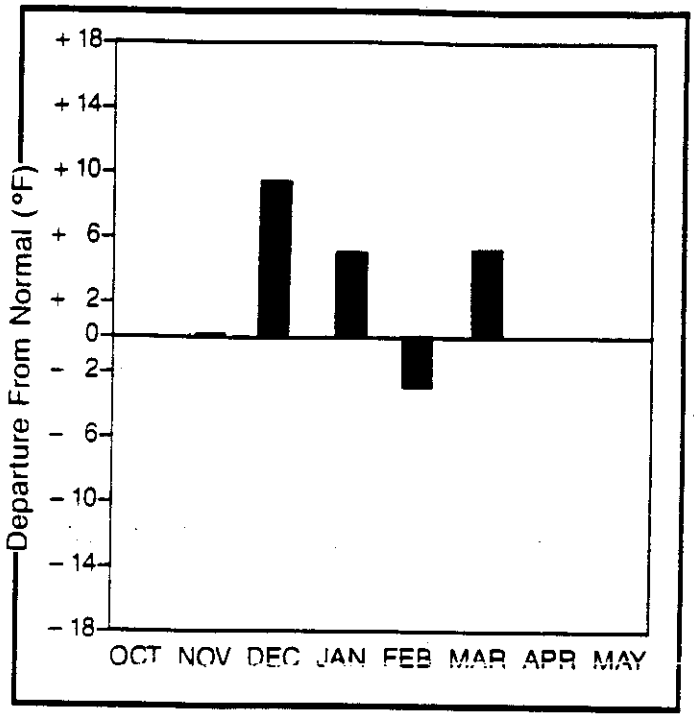
Maximum since 1968

Minimum since 1968

Average

Current

Juneau Temperature (degrees F)



National Weather Service Station

Monthly temperature

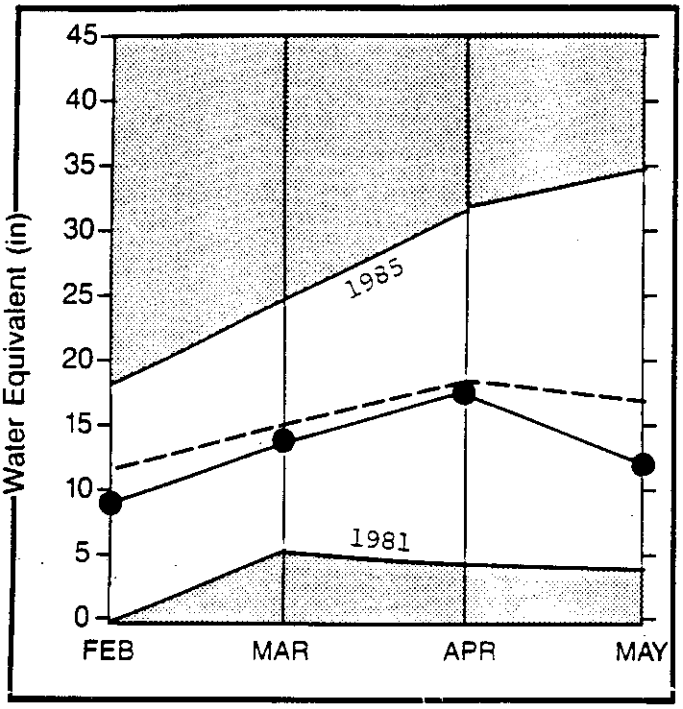
SNOWCOVER:

Precipitation for March varied over the region from below normal at the southern end and outer coast to a little above at Petersburg, well above at Juneau, and nearly twice normal at Yukatat. As a result, higher elevation snowcover in the northern and eastern portions of the region increased, percentagewise, from a month ago, while low elevation measurements reflect both new moisture and snowmelt conditions. The snowpack on Douglas Island, near Juneau, is very near normal for April 1st, the Snettisham Project area is above normal, the Petersburg area has above normal snow going up in elevation, but is well below normal at lower elevations. Snow in White Pass, north of Skagway, also has caught up and passed normal amounts for April 1st after a slow start.

Southeast

MAY 1, 1990

Douglas Island snowpack* (inches)



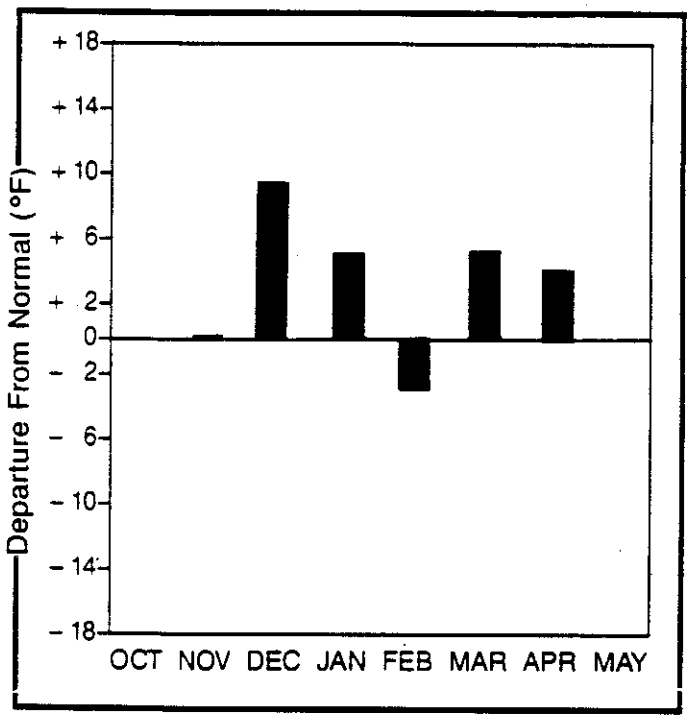
*Based on selected stations

Maximum ▒▒▒▒ Average ----

Minimum ▒▒▒▒ Current ——

since 1968

Juneau Temperature (degrees F)



National Weather Service Station

Monthly temperature ▮

SNOWCOVER:

April brought beautiful spring weather to the region. Precipitation was only 30 to 75 percent of normal, while temperatures ranged from 2-7 degrees above. The effect on the snowpack has been its elimination at lower elevations and a vast reduction higher up. Areas where snow surveys were made, found the pack lower by 30 to 40 percent, compared to normal, from amounts reported a month ago. In addition, the remaining snowcover is now only 54 to 80 percent of average.

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

APPENDIX III

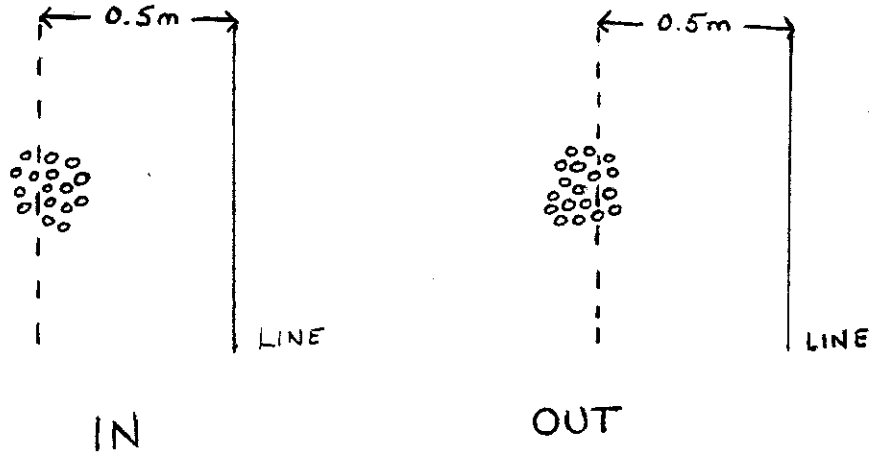
Pellet-group Count Methods

What does a deer pellet look like? How many does it take to make a group? What do you do when you encounter snow on your transect? With the increasing number of people counting deer pellet groups in Southeast Alaska, it's important that we all do it the same. With that thought in mind, a brief primer in deer pellet counting follows - I hope you'll read it.

What We're Looking For:

Deer pellets of course. The literature emphasizes that counting pellet groups is the only realistic way to census certain ungulate populations, and the technique has been used in Southeast Alaska since the 1960s. But exactly what does a deer pellet look like anyways? Anyone who has come across a deer bed knows they come in many different sizes, shapes, and colors, depending on the size of the deer, what their diet was, and how old the pellets are. Sometimes pellet groups are piled right on top of another, and then it takes some time to differentiate between them all.

There are two important things to remember. Rule #1 is that any group of deer pellets is counted if they are distinguishable as deer pellets and the **center** of the group falls within a half meter of the line. For example:



Fortunately, there's not many things out in the woods you'll find that you can confuse with a deer pellet. Hemlock cones are one thing; the other exception is the porcupine pellet. Porcupine pellets often look like deer pellets, but stray quills sometimes give them away; they are also usually an odd green color and there is a small indentation in the end of each pellet.

Important Rule #2 to remember: Even if there is only one pellet, we count it as a group if it is "in." Usually other pellets can be found nearby if a close search is made. But sometimes there is just one pellet, and, if so, it should be counted.

One other area which could stand improvement in counting deer pellets is standardized data entry. Look at the following field instructions and the key for a moment just to ensure everybody enters their data the same way.

No.'s 1-6 are self-explanatory.

No. 7 - We do a maximum of 125 plots (or go to 1500 feet, whichever comes first), for each transect. SNOW - When snow is encountered at higher elevations, we keep going until there is 50% or more snow cover on three consecutive plots. Then it's time to quit. CLIFFS, CANYONS, STREAMS and BEAVER PONDS - If you come to one of these and consider it dangerous, snake around it and continue on course when you get past it. Continue to count if you can, but don't take any unnecessary risks. Safety is the #1 priority at all times.

No. 8 - Please remember to switch places every five plots. It helps prevent crew members from "spacing out" and has been shown to improve accuracy.

No. 9 - Already covered.

No. 10 - Please put altimeter readings down by the nearest 10 or 20 feet according to your altimeter's sensitivity, but do not record by 5 foot intervals (ex. 115 feet). It drives the data entry people crazy. Speaking of which, try and be as neat as possible. Again, the data entry people will appreciate it.

No. 11-13 - No. 11 and No. 12 are pretty much self-explanatory; for No. 13 consult with the Fish and Game biologist or the Forest Service ecologist in charge. IRI plant association numbers are often different from region to region.

No. 14 - Check plots are no longer done. Still, try to be as accurate as possible, balancing the goal of a thorough search and completing the transect in a reasonable time.

FIELD INSTRUCTIONS AND KEY

1. VCU number from FS map.

2. Date (month, day, year)

3. Transect Number (from field map)

4. Compass Bearing (from field map)

5. Field Crew (last names)

6. Aspect (from field map)

N = 1	S = 5
NE = 2	SW = 6
E = 3	W = 7
SE = 4	NW = 8

7. Plot No. (preprinted 1-135)

8. Crew No. (preprinted 1 or 2) specifies the crew member doing the counting. Switches every 5 plots.

9. Count. The number of pellet groups within 0.5 m of the lead line. Measure to pellet group center. Min group size = 1.

10. Elevation. From altimeter (to nearest 20 feet).

11-13. (Key to these fields is on the reverse page)

14. Check. The accuracy of pellet-group counts will be randomly checked on 5-10 plots per transect. "Check" plots will be marked on the form each day before going into the field. The line puller will announce the "check" plot after the counter is finished. Both crew members will carefully recount the plot checking for missed groups.

HABITAT KEY

11. Spp. Overstory species composition.

1 = Spruce > 5%
2 = Spruce 5-25%
3 = Spruce 25-50%
4 = Spruce > 50%
5 = Cedar (dominant)
6 = Mountain Hemlock (dominant)
7 = Mixed (> 3 spp.)

12. Volume Class (Habitat Type).

0 = Nonforest (muskeg)
1 = Young clearcut (< 25 years)
2 = Second growth (26-150 years)
3 = Noncommercial Forest (< 8 MBF/acre)
4 = Low Volume (8-20 MBF/acre)
5 = Mid Volume (20-30 MBF/acre)
6 = High Volume (> 30 MBF/acre)
7 = Very High Volume (> 50 MBF/acre)
8 = Misc. (blowdown, alder, road) note in comments.

13. IRI PLANT ASSOCIATIONS (Chatham Area)

	Code
Western Hemlock/Devil's Club/Skunk Cabbage	123
Western Hemlock/Blueberry/Skunk Cabbage	113
Western Hemlock/Blueberry/Devils Club (WD)	112
Western Hemlock/Blueberry/Devils Club (PD)	112
Western Hemlock/Devil's Club	120
Western Hemlock/Blueberry/Shield-Fern	114
Western Hemlock/Blueberry	110
Mountain Hemlock/Blueberry-Cassiope	316
Mountain Hemlock/Blueberry-Copper Bush	315
Mountain Hemlock/Blueberry-False Hellebore	319
Mountain Hemlock/Blueberry	310
Mixed Conifer/Blueberry/Deer Cabbage	419
Mixed Conifer/Blueberry/Skunk Cabbage	413
Mixed Conifer/Skunk Cabbage/Lady Fern	439
Mixed Conifer/Blueberry	410
W. Hemlock-Y. Cedar/Blueberry/Skunk Cabbage	513
W. Hemlock-Y. Cedar/Blueberry	510
Sitka Spruce/Alder	200
Sitka Spruce/Devils Club/Skunk Cabbage	223
Sitka Spruce/Blueberry/Devils Club	212
Sitka Spruce/Devils Club	220
Sitka Spruce/Pacific Reedgrass	209
Sitka Spruce/Blueberry	210
Lodgepole Pine/Crowberry	600

VCU NO. _____ DATE _____ TRANSECT _____ BEARING _____

CREW _____=1 _____=2 ASPECT ___ PAGE 1

	CREW	COUNT	ELEVATION	SPP.	VOL	IRI	CHECK	COMMENTS
001	1							
002	1							
003	1							
004	1							
005	1							
006	2							
007	2							
008	2							
009	2							
010	2							
011	1							
012	1							
013	1							
014	1							
015	1							
016	2							
017	2							
018	2							
019	2							
020	2							
021	1							
022	1							
023	1							
024	1							
025	1							
026	2							
027	2							
028	2							
029	2							
030	2							
031	1							
032	1							
033	1							
034	1							
035	1							
036	2							
037	2							
038	2							
039	2							
040	2							
041	1							
042	1							
043	1							
044	1							
045	1							

VCU NO. _____ DATE _____ TRANSECT _____ PAGE 2

	CREW	COUNT	ELEVATION	SPP.	VOL	IRI	CHECK	COMMENTS
046	2							
047	2							
048	2							
049	2							
050	2							
051	1							
052	1							
053	1							
054	1							
055	1							
056	2							
057	2							
058	2							
059	2							
060	2							
061	1							
062	1							
063	1							
064	1							
065	1							
066	2							
067	2							
068	2							
069	2							
070	2							
071	1							
072	1							
073	1							
074	1							
075	1							
076	2							
077	2							
078	2							
079	2							
080	2							
081	1							
082	1							
083	1							
084	1							
085	1							
086	2							
087	2							
088	2							
089	2							
090	2							

VCU NO. _____ DATE _____ TRANSECT _____ PAGE 3

	CREW	COUNT	ELEVATION	SPP.	VOL	IRI	CHECK	COMMENTS
091	1							
092	1							
093	1							
094	1							
095	1							
096	2							
097	2							
098	2							
099	2							
100	2							
101	1							
102	1							
103	1							
104	1							
105	1							
106	2							
107	2							
108	2							
109	2							
110	2							
111	1							
112	1							
113	1							
114	1							
115	1							
116	2							
117	2							
118	2							
119	2							
120	2							
121	1							
122	1							
123	1							
124	1							
125	1							
126	2							
127	2							
128	2							
129	2							
130	2							
131	1							
132	1							
133	1							
134	1							
135	1							