Federal Aid in Wildlife Restoration
Annual Report

1997 Report

Deer Pellet-Group Surveys in Southeast Alaska

by

Mark J. Kirchhoff

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

February 1998

State of Alaska
Tony Knowles, Governor

Department of Fish and Game
Frank Rue, Commisioner

Division of Wildlife Conservation
Wayne Regelin, Director
Ken Taylor, Deputy Director

Additional copies of this report and other Division of Wildlife Conservation publications may be obtained from:

ADF&G--Wildlife Conservation
P.O. Box 240020
Douglas, AK 99824-0020
(907) 465-4265

Federal Aid in Wildlife Restoration
Annual Report

1997 Report

Deer Pellet-Group Surveys in Southeast Alaska

by

Mark J. Kirchhoff

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

February 1998

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 1997. Pellet-group data are used by biologists to monitor deer population trends in specific watersheds throughout the region. The data also permit general comparisons of deer numbers from area to area within the region. The reader is referred to Kirchhoff and Pitcher (1988) for a more detailed discussion of objectives, sample design, and field methodology of this program.

RESULTS

During 1997, 46 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 about the same or higher in most Southeast VCUs, with the exception of the Cleveland Peninsula. This indicates deer populations are stable or are increasing across most of the region. Complete results for each VCU are found in Table 1. A brief summary of deer population trend by game management unit follows:

Subunit 1A - Ketchikan and Mainland. In 1997 six VCUs were surveyed in Subunit 1A. Of these six VCUs, three were on the Cleveland Peninsula, and all showed declines in pellet-group density, probably because of increased wolf predation. Hunters have reported more wolf sign on the peninsula than anytime in the past decade. On a positive note, in VCUs closer to Ketchikan, deer pellet-group densities were much higher than in past years.

Unit 2 - Prince of Wales Island. During 1997 a concerted effort was made to sample as many VCUs as possible on Prince of Wales Island because of concern by some local residents that the deer population was in trouble. Over 4,300 plots were sampled in 1997, more than any other year. For all plots on the island the average count was 1.03 pellet groups per plot, down slightly from 1996 levels of 1.18 pellet groups per plot, but well within the historical average for the last 14 years. These results indicate that while deer may be scarce in certain specific locales on the island, island-wide the deer population is stable.

Subunit 1B and Unit 3 - Central Southeast Alaska. Deer pellet-group surveys were concentrated on Mitkof Island in 1997. Pellet-group densities were moderate in all three VCUs sampled and there still appears to be plenty of deer around Petersburg. Two other VCUs were sampled in Unit 3, one on Zarembo Island, and one on Etolin Island. Deer pellet-group densities on both islands remained low.

Unit 4 - Northern Southeast Alaska. In 1997 eleven VCUs were surveyed in Unit 4. Deer pellet-group densities in most of these VCUs were the same or higher than in previous years surveyed. Particularly notable were those VCUs on Chichagof Island. All five had higher pellet-group densities than past years, probably because of the mild winters Southeast has lately been experiencing. In general, Unit 4 remains the place in Southeast Alaska for deer, with Finger River and Pt. Augusta exhibiting the highest pellet-group densities.

Subunit 1C - Juneau and Mainland. Douglas Island is the most important area in Unit 1C for Juneau deer hunters and VCUs on the island are regularly surveyed to track the deer population trend. In 1997 deer pellet-group densities increased substantially on the island, probably the result of two factors: the mild winters around Juneau have led to greater survival, and, with little snow, the deer have been able to stay dispersed at higher elevations, limiting hunter success.

Like Douglas Island, Shelter Island also experienced a big jump in pellet-group density in 1997, probably a result of the same factors mentioned above. Additionally, one new VCU was sampled around Juneau in 1997, the Rhine Creek drainage south of Thane. Biologists learned that there are deer there, but not many. The islands around Juneau still appear to be the places to go for deer.

Unit 5 - Yakutat. Five deer pellet transects were surveyed at Yakutat during May 1997. Survey results indicate that deer densities on the Yakutat Islands (Khantaak, Dolgoi, and Kriwoi islands) have remained low, averaging 0.6 pellet groups per plot. Survey results from Knight Island indicate that deer densities in this area have decreased from moderate levels in 1991 to very few deer in 1997 (0.02 pellet groups per plot). This is an increase from the 1996 survey that failed to find a single pellet group or track at Knight Island.

Based on pellet surveys from 1991 to 1993, ADF&G estimated the Yakutat deer population at 300. With the apparent reduction of the deer population at Knight Island, the Yakutat deer population may be significantly lower than previously estimated in 1993.

NARRATIVES

North Douglas (VCU 35) - Douglas Island is located immediately opposite the City of Juneau and is heavily used by local hunters. Three transects were established at the end of the road system in 1991. The transects rise to over 1,000 feet in elevation and traverse low to moderate volume hemlock stands. Deer pellet-group densities in this VCU have usually been low, but in 1997 improved to moderate levels at 1.43 pellet groups per plot.

Inner Point (VCU 36) - This drainage, located on the west side of Douglas Island, is popular with Juneau deer hunters. It is a small VCU containing mostly low-volume forest; it is also brushy, particularly at lower elevations. Access is sometimes difficult because of high winds and sea conditions in Stephens Passage. Pellet-group densities measured since 1985 have usually been moderate, between one and two pellet groups per plot, but 1997 results were the best ever, at 2.36 pellet goups per plot, indicating deer are surviving well on this side of the island.

Rhine Creek (VCU 38) - Two new transects were established on the mainland south of Juneau in 1997. Persistant reports of deer by Thane residents encouraged Fish and Game biologists to take a look at what kind of deer density occured in the area. The transects (#2 and #3) were arduous and brushy and did not follow the ridge lines as intended. Because of these conditions, and because deer pellet-group density was a low 0.31 pellet groups per plot, this VCU will probably not be visited again any time soon.

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 to1986 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. Pellet-group density on Shelter Island has been off the last few years, but rebounded in 1997 to 2.50 pellet groups per plot.

Pleasant Island (VCU 185) - Pleasant Island is located in Icy Strait close to the community of Gustavus and is a main source of deer to that town's residents. Three transects were established here 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 density in 1997 was the highest ever recorded at 1.80 pellet groups per plot.

Suntaheen Creek (VCU 209) - Three transects were established in Whitestone Harbor on northern Chichagof Island in 1988. These transects traverse a lot of muskeg and scrub; most of the better timber in the VCU is found along the beach fringe and creeks. Pellet-group density in 1997 was the highest ever recorded at 1.50 pellet groups per plot.

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 due to rough weather. In 1993, Point Augusta was revisited by a crew of six and three transects were run on the same bearing as those in 1983. Pellet-group density was high. These same three transects were run in 1997 and pellet group density was very high at 3.30 pellet groups per plot.

Pavlof River (VCU 218) - Three transects were established in this VCU on eastern Chichagof Island in 1988. Two start near the falls at Pavlof Harbor and the third starts from the beach at Wachusetts Cove. A wide variety of habitat types are encountered. Pellet-group counts remained moderate in 1997.

Saltery Bay (VCU 231) - Three transects were established at Saltery Bay on Chichagof Island in 1988. Two transects climb hillsides through mid-volume hemlock, spruce, and cedar forest; the third transect traverses a riparian spruce stand. Pellet-group density in 1997 was high at 2.00 pellet groups per plot.

Finger Mountain (VCU 247) - The Finger River drainage in Hoonah Sound has consistently exhibited some of the highest deer pellet-group densities in all of Southeast. Three transects were established here in 1983. 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 density in 1997 was once again the highest in Southeast at 3.53 pellet groups per plot.

Range Creek (VCU 288) - Located on northern Baranof Island along Peril Strait, this VCU was sampled intensively in 1983 and more moderately in 1984 and 1985. Because much of the area sampled is non-forested and because a canyon on one transect habitually forced crews to turn back, this VCU was abandoned after the 1985 season. Curiosity on the part of newcomers to the deer pellet program resulted in this VCU being reexamined in 1997. Deer pellet-group density was 1.44 pellet groups per plot, nearly identical to 1985 figures.

Portage Arm (VCU 296) - Three transects were established in Portage Arm in Kelp Bay in 1990. The bay is heavily used by subsistence deer hunters from Angoon. In 1997, only one transect (#4) was completed in Portage Arm, and data was limited because of snow at low elevations. Because the number of plots recorded was so small, not much more can be said about Portage Arm other than deer still seem to exist there in moderate numbers.

Middle Arm/Kelp Bay (VCU 298) - Four transects were established in Middle Arm in Kelp Bay in 1990. Only #3 and #4 were completed in 1997 and data was limited due to snow at low elevations. Deer densities appear to be moderate in this VCU.

Nakwasina (VCU 300) - This VCU, north of Sitka, is a popular local hunting area which has been sampled almost every year since 1984. All three transects traverse mid-volume forest to 1500 feet elevation and have a southerly aspect. Typically, deer pellet-group densities have been very high at Nakwasina, and 1997 was no exception at 2.79 pellet groups per plot.

Sealion Cove (VCU 305) - Located on northern Kruzof Island, this VCU has been sampled almost every year since 1984. Transects #1 and #3 are short and steep and run through low to mid-volume timber until breaking out into sub-alpine vegetation at approximately 900 feet. Transect #2 also traverses low to mid-volume timber but does not reach the sub-alpine. Deer pellet-group density was moderate in 1997.

Knight Island (VCU 361) - Knight Island is the largest island in Yakutat Bay, and is part of the Russell Fiord Wilderness Area. Two transects were surveyed at Knight Island in 1997. The forest on Knight Island is primarily low volume hemlock with a dense understory of blueberry. Topography along the transects varies from 0 feet to 150 feet in elevation. A total of 192 plots were surveyed at Knight Island. Only five pellet groups were counted. One set of deer tracks were seen on the beach on the south side of the island. These results are interesting because in 1996 no deer sign of any kind was observed at Knight Island. Prior to 1996, survey efforts had shown this area to have some of the highest deer pellet-group densities documented for Yakutat.

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, less snow, and little or no predator presence probably explains the persistence of deer on these islands. In 1997 transects were run at Kriwoi, Khantaak, and Dolgoi islands; deer pellet-group density remained low, with the highest counts coming from Kriwoi Island.

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. Deer pellet-group density in 1997 was moderate at 1.56 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. They traverse medium to high volume timber on south facing slopes and reach to 1500 feet elevation. Deer pellet-group density for this VCU in 1997 was moderate at 1.61 pellet groups per plot.

Dry (VCU 454) - Three transects were established in this VCU in 1993 by the Forest Service. All three transects traverse a south facing slope to 1500 feet elevation. Timber volume is medium to high. About 25 plots of transect #3 travel through a 30 year old clearcut. Pellet-group density in 1997 was moderate at 1.26 pellet groups per plot.

Snow (VCU 458) - Three transects were established on the SW shore of Zarembo Island in 1994. This particular VCU was picked for sampling because it is still mostly unlogged and has favorable deer winter range characteristics. All three transects start on the coast and travel through low to mid-volume timber with occasional second growth. Much of this second growth is probably the result of windthrow as all crews reported a lot of blowdown. Deer pellet-group density in this VCU improved in 1997 to 0.98 pellet groups per plot.

Onslow (VCU 473) - This VCU on southern Etolin Island has been sampled frequently since 1984. One transect is actually on Onslow Island; the two others are on Etolin. The three transects traverse low to mid-volume timber and a wide range of habitat types. Deer pellet-group densities have always been in the low range in this VCU, and 1997 was no exception. Fifty elk were introduced to Etolin Island in 1987 and the herd has grown to over 250 animals 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.

Protection (VCU 527) - Three new transects were established in this VCU in 1997 in response to concerns by local Port Protection residents about area deer herds. The three transects start on the beach about a half mile west of Merrifield Bay and traverse lower volume timber up to about 500 feet elevation. Pellet-group density was found to be moderate and nearly identical to the Mt. Calder VCU to the south.

Mt. Calder (VCU 528) - Mt. Calder on northern Prince of Wales was first surveyed in 1988. The area is important to Point Protection and Point Baker residents for subsistence use. Timber volume is generally high on all three transects which traverse southwest facing slopes to 1500 feet elevation. The transects are hard to access except in absolutely calm sea conditions because of the reef strewn Barrier Islands nearby. In 1997 deer pellet-group density was moderate, down from the high levels registered in 1988.

Red Bay (VCU 532) - Located on northern Prince of Wales Island, this VCU was first sampled in 1987. Red Bay has been extensively logged, making it difficult to avoid clearcuts and young second growth. Pellet-group density in 1997 was moderate at 1.08 pellet groups per plot.

Exchange Cove (VCU 539) - Three transects were established at Exchange Cove on northern Prince of Wales Island in 1988. The drainage has been partially logged and two of the transects run through clearcuts. Big stumps indicate that a high volume forest used to occur here. Pellet-group density in 1997 was moderate at 1.25 pellet groups per plot.

Sarheen (VCU 549) - Three transects were located at Sarheen on the NW coast of Prince of Wales in 1989. Sarheen was selected because it is mostly unlogged, protected from rough seas, and hunters reported good success there. The transects traverse mostly low volume timber and reach approximately 800 feet elevation. Deer pellet-group density in 1997 was 0.99 pellet groups per plot.

Sarkar (VCU 554) - Three transects were established at Sarkar Lake on Prince of Wales Island in 1988. All three transects start at the Sarkar Rapids bridge. Transects #1 and #3 travel through a combination of old growth and second growth; #2 is old growth all the way. Deer pellet-group density was low in 1997.

Warm Chuck (VCU 561) - Located on Heceta Island off the west coast of Prince of Wales Island, this VCU is a popular hunting destination. Transects were established here in 1984 because of reported high deer populations. Transect #1 travels up a well-timbered valley bottom; #2 traverses a flat poorly-drained area with low volume timber; and #3 climbs a steep hill to 1500 feet elevation. Significant portions of transects #1 and #2 have been logged since 1984. In 1997 deer pellet-group density was moderate at 1.21 pellet groups per plot.

Coronation (VCU 564) - Four transects were permanently established at Coronation Island in 1988. All originate at Egg Harbor, the best anchorage on the island. Much of the habitat traversed is second growth, a result of blowdown from the severe winds that regularly visit the island. Interspersed with the second growth is some low volume old growth. Deer pellet-group density was moderate when this island was last surveyed in 1988 and 1989, but since then has dropped to low levels at 0.44 pellet groups per plot.

Baker (VCU 569) - Three transects were established on Baker Island, off the west coast of Prince of Wales Island, in 1991. Transect #1 crosses the island from Port San Antonio to Veta Bay. The east side of the ridge is low volume cedar and the west side of the ridge is high volume spruce. Transects #2 and #3 originate from the same spot at the head of Port San Antonio and ascend to two different summits. Habitat type on transect #2 is hemlock along the beach, then mixed conifer-salal and hemlock-yellow cedar as one ascends the slope. Transect #3 also has hemlock on the beach, then goes into a brushy yellow cedar-lodgepole pine mix. Deer sign on all three transects was scarce and deer pellet-group density on the island was very low at 0.14 pellet groups per plot.

Thorne Lake (VCU 575) - Four transects were established on Prince of Wales Island in the Thorne River drainage in 1992. All four transects start along Road 3015 and are accessed by vehicle from Thorne Bay. The vegetation on transect #1 is mostly a red cedar-western hemlock overstory and a blueberry understory. Transect #2 starts in a muskeg and low volume forest, but soon encounters the edge of a clearcut. Timber is mostly low to mid-volume with muskegs scattered throughout. Transect #3 is an easy transect through mostly moderate to high volume hemlock. Transect #4 is a steady climb to 1500 feet. The first half is dominated by western red cedar, the second half is spruce-hemlock forest. Volume class is 5 and 6 all the way. In 1997 deer pellet-group density was low in this drainage at 0.84 pellet groups per plot.

Snakey Lakes (VCU 578) - This VCU, located on Prince of Wales Island, encompasses part of the Thorne River drainage. Four transects were established here by the Forest Service in 1986. Since then, roads and clearcuts have drastically altered the landscape and at least one starting tree is missing in action. A new starting tree for transects #3 and #4 was flagged in 1993 about 100 feet from the outlet of Snakey Lake. Deer pellet-group density was moderate in 1997 at 1.39 pellet groups per plot.

Little Ratz (VCU 584) - Four transects were established in this VCU on the east coast of Prince of Wales Island in 1992. Access to all transects is by vehicle from Thorne Bay. Transect #1 starts at a rock face shortly after Mile 9. Second growth and a clearcut have to be traversed before entering a red cedar-mountain hemlock forest. Transect #2 starts at the Sal Creek bridge. The first 24 plots go through a thinned clearcut. From there it's a short walk to the mouth of Sal Creek. The return trip back to the road goes through low volume old growth and a clearcut. Transect #3 leaves the road after the Sal Creek bridge is passed and goes through young spruce stands where several blowdowns have occurred Transect #4 leaves the road about two miles past Sal Creek and passes through rolling terrain with low to mid-volume timber. There is some nasty brush at the end. Deer pellet-group density in 1997 was 1.93 pellet groups per plot.

Tuxekan (VCU 587) - This VCU, located just south of Staney Creek on the west coast of Prince of Wales Island, was first sampled in 1988. Four transects were established which sample a wide variety of habitat types, from clearcuts to high volume old growth. Pellet-group density was moderate in 1997.

12 Mile (VCU 621) - This VCU, located near Kasaan Bay on Prince of Wales Island, has been sampled frequently by the Forest Service since 1985. Pellet-group density in 1997 was 1.45 pellet groups per plot, quite a bit higher than in years past.

Trocadero (VCU 625) - Three transects were established in 1995 at the head of Trocadero Bay on Prince of Wales Island. This particular VCU was chosen because it is popular with Craig deer hunters. Transect #1 heads up a south-facing slope to 1500 feet elevation. The forest is mostly low volume western red cedar. Transect #2 also heads up a south-facing slope to about 1,000 feet elevation. Timber volume is low throughout the transect and there is a lot of blowdown. Transect #3 heads up a north-facing slope to about 1,000 feet elevation. Like transect #2, timber volume is low and there is a lot of blowdown. Deer pellet-group density in this VCU was moderate at 1.18 pellet groups per plot.

Pt. Amagura (VCU 628) - Three new transects were established here by the Forest Service in 1997. Transect #1 starts on the beach about a mile north of the Pt. Amagura Forest Service cabin and traverses both non-commercial and low volume forest to about 700 feet elevation. Transect #2 starts in the bay east of Pt. Cuerbo and also traverses non-commercial and low volume forest. Transect #3 starts on the beach just north of Fern Point and traverses similar forest to the other two transects. Deer pellet-group density in this VCU was moderate at 1.04 pellet groups per plot.

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 almost every year since 1985. Since then there has been a lot of logging on the island. Pellet-group densities have varied widely over the years; in 1997 it was low at 0.82 pellet groups per plot.

Kitkun Bay (VCU 679) - Three transects were established at Kitkun Bay on the east coast of Prince of Wales Island in 1988. The transects run through some very high volume stands, particularly transect #1. Transect #2 has been heavily clearcut in the past decade, and transect #3 is plagued by blowdown. Deer pellet-group density in 1997 stayed low at 0.31 pellet groups per plot.

Helm Bay (VCU 716) - Helm Bay is located on the Cleveland Peninsula north of Ketchikan. Three permanent transects were established here in 1984. Transect #1 is long, flat, and traverses extensive muskeg and scrub forest. Transects #2 and #3 reach to 1500 feet elevation and traverse mid-volume forest. 1997 pellet-group density was low at 0.78 pellet groups per plot.

Port Stewart (VCU 719) - Three transects were established at Port Stewart on the Cleveland Peninsula in 1993. Transect #1 starts on the west side of Port Stewart at the mouth of a large stream. The first fifty plots traverse a non-commercial, brushy forest. The next forty plots ascend a steep hillside to 1500 feet elevation through mid- to high volume forest. Transect #2 starts at the mouth of a small stream located in the bight on the east side of the bay. The first 60 plots or so are side-hill walking through volume class 4 and 5 timber. The remainder of the transect traverses a mixed conifer forest with blueberry understory. Transect #3 starts in the southeastern most corner of the bight on the east side of the bay. Scrubby non-commercial forest is the predominant habitat type with a few large cedar found along the way. Deer pellet-group density was moderate in Port Stewart at 1.29 pellet groups per plot.

Spacious Bay (VCU 722) - Three transects were established at Spacious Bay on the Cleveland Peninsula in 1993. Transect #1 starts on the north side of the bay about 200 yards west of a large stream. The transect runs to 1500 feet through a low volume cedar forest and then a medium volume hemlock-spruce forest. Transect #2 also starts on the north side of the bay at the mouth of a six-foot wide stream. The transect runs to 1500 feet elevation through a mid-volume forest with a brushy blueberry understory. Transect #3 starts on the north shore of Spacious Bay at the head of the first sizeable cove west of Bluff Point. The transect goes over a low pass to Yes Bay and traverses low to mid-volume cedar stands. Deer pellet-group density in Spacious Bay remained low at 0.43 pellet groups per plot.

Margaret (VCU 738) - This VCU on northern Revilla Island was first sampled by the Forest Service in 1985. The three transects traverse low to mid-volume forest. Pellet-group density in 1997 was low at 0.56 pellet groups per plot.

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. All three transects reach to 1500 feet elevation on a south facing slope, traversing low to mid-volume forest. Deer pellet-group density continues to be low, less than one pellet group per plot.

Gravina (VCU 999) - The northeast shore of Gravina Island was first sampled for deer-pellet group density in 1981. Between 1984 and 1986, the island was sampled intensively with over 1,000 plots being recorded each year. Starting in 1987, sampling was reduced to the three transects (1, 2, and 3) most accessible from the Ketchikan airport. In the last few years pellet-group densities have been moderate on Gravina Island, and 1997 results continued that trend.

LITERATURE CITED

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

Table 1. Pellet-group count statistics from southeast Alaska, 1981-97.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
20	Comet	9,662	12%	1994	180	0.00	0.00-0.00
27	Auke Bay	15,245	45%	1987	381	0.99	0.87-1.12
35	North Douglas	4,430	49%	1991	300	0.80	0.65-0.96
				93	324	0.74	0.62-0.87
				94	315	0.91	0.74-1.09
				95	306	0.86	0.70-1.02
				96	323	0.97	0.81-1.12
				97	**323**	**1.43**	**1.24-1.62**
36	Inner Point	3,965	44%	1985	256	1.30	1.10-1.51
				86	235	1.97	1.68-2.25
				87	262	1.76	1.53-2.00
				88	200	1.21	1.02-1.39
				89	258	1.31	1.08-1.53
				92	204	2.05	1.75-2.36
				95	254	1.41	1.21-1.60
				96	240	1.68	1.45-1.91
				97	**252**	**2.36**	**2.08-2.64**
38	Rhine Creek	6,357	2%	**1997**	**108**	**0.31**	**0.14-0.47**
65	Sumdum Glacier	40,906	15%	1987	262	1.76	1.53-2.00
82	Negro Creek	12,212	31%	1989	312	0.21	0.13-0.29
89	Farragut Bay	na	na	1994	314	0.02	0.00-0.04
94	Sullivan Island	3,985	78%	1990	250	1.39	1.17-1.62
117	Couverden	9,933	10%	1993	350	0.35	0.27-0.44
124	Shelter Island (All Transects)	6,162	43%	1984	713	1.46	1.33-1.60
				85	774	1.82	1.67-1.97
				86	727	2.20	2.02-2.37

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
124	Shelter Island (Trans. 4-8, 18)			1984	300	1.52	1.34-1.70
				85	296	2.52	2.24-2.81
				86	292	3.24	2.91-3.57
				87	288	2.91	2.57-3.24
				88	130	3.16	2.62-3.70
				89	300	1.43	1.23-1.62
				90	300	1.60	1.37-1.82
				93	250	2.00	1.73-2.26
				95	297	1.38	1.20-1.56
				97	**312**	**2.51**	**2.23-2.78**
125	Barlow Cove	13,712	24%	1982	2,567	1.07	1.01-1.12
				84	347	1.69	1.46-1.92
				85	347	1.55	1.35-1.76
				90	270	1.42	1.18-1.65
127	Calm Station	4,941	66%	1982	1,054	1.65	1.53-1.77
128	Hawk Inlet	14,318	57%	1982	1,605	1.21	0.99-1.42
				84	339	1.42	1.22-1.63
				85	270	1.69	1.43-1.95
				86	286	1.92	1.64-2.19
				87	278	2.54	2.19-2.89
				89	364	1.82	1.56-2.08
				90	250	2.24	1.94-2.53
				92	319	1.61	1.38-1.83
				96	325	1.26	1.07-1.46
140	Dorn Island	9,485	81%	1984	230	1.27	1.02-1.53
148	Lake Kathleen	14,693	57%	1987	207	2.13	1.76-2.49
150	Lake Florence	21,342	52%	1988	294	1.48	1.27-1.69
162	Thayer Lake	25,342	79%	1987	313	2.81	2.49-3.12
				89	283	2.04	1.75-2.32
				94	282	2.27	1.98-2.56
171	Hood Bay	44,355	79%	1987	358	2.31	1.99-2.63
				89	366	1.77	1.54-2.00
				90	375	1.85	1.61-2.09
				92	360	1.91	1.64-2.18
				94	371	1.64	1.41-1.88

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	Pellet-Group 95% CI
182	Pybus Bay	41,501	62%	1981	390	1.34	1.16-1.52
				84	300	1.02	0.86-1.18
				85	269	1.86	1.60-2.12
				86	235	2.00	1.70-2.29
				87	242	2.03	1.69-2.37
				89	199	2.00	1.63-2.36
				90	221	1.72	1.44-2.01
				92	236	1.13	0.97-1.30
				95	205	1.48	1.23-1.74
185	Pleasant Island	8,738	16%	1991	311	1.38	1.18-1.57
				92	210	1.34	1.09-1.59
				93	305	1.77	1.52-2.02
				94	356	1.22	1.04-1.40
				97	**300**	**1.80**	**1.54-2.06**
189	Port Althorp	8,040	27%	1988	195	1.80	1.47-2.13
				91	223	1.92	1.55-2.29
				92	261	1.36	1.11-1.60
				93	248	1.39	1.15-1.62
				94	253	1.31	1.06-1.56
190	Idaho Inlet	53,183	22%	1988	258	1.34	1.09-1.60
				92	219	0.94	0.69-1.19
				93	305	0.56	0.45-0.68
				94	294	0.71	0.58-0.84
202	Port Frederick	16,619	52%	1988	242	1.87	1.62-2.13
				96	226	1.02	0.82-1.23
208	First No. 2	6,613	32%	1983	1,155	1.12	1.01-1.22
209	Suntaheen Cr.	13,198	49%	1988	272	1.22	1.00-1.44
				92	271	1.13	0.94-1.33
				93	265	0.73	0.58-0.88
				94	272	1.05	0.81-1.29
				96	276	0.98	0.77-1.18
				97	**263**	**1.50**	**1.23-1.77**
211	Point Augusta	4,688	63%	1983	757	1.78	1.62-2.01
				93	286	2.08	1.80-2.36
				97	**234**	**3.30**	**2.90-3.70**

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
218	Pavlof River	18,866	50%	1988	325	1.78	1.50-2.06
				92	341	1.56	1.32-1.81
				96	349	1.50	1.30-1.70
				97	**313**	**1.71**	**1.47-1.94**
221	Whip Station	4,708	53%	1981	193	0.86	0.64-1.08
222	Sand Station	12,231	50%	1981	253	0.60	0.48-0.73
223	Upper Tenakee	3,833	54%	1988	253	1.47	1.24-1.70
				92	265	0.58	0.47-0.70
				93	249	0.47	0.36-0.58
				94	319	0.61	0.48-0.74
				96	263	0.56	0.38-0.75
231	Saltery Bay	18,478	31%	1988	256	2.02	1.69-2.35
				92	256	0.96	0.79-1.14
				93	227	0.76	0.56-0.96
				94	193	0.97	0.79-1.15
				96	152	1.90	1.47-2.33
				97	**170**	**1.99**	**1.59-2.39**
234	Inbetween	6,002	62%	1981	35	0.49	0.08-0.89
235	Kadashan	33,641	53%	1981	96	0.54	0.32-0.76
				88	221	2.67	2.18-3.16
				92	282	1.62	1.38-1.86
				93	385	1.12	0.95-1.30
				94	294	1.39	1.18-1.60
				95	195	2.64	2.20-3.07
				96	204	2.36	1.96-2.76
236	Corner Bay	10,930	66%	1981	60	0.35	0.17-0.53
				92	206	2.27	1.91-2.64
				93	50	1.72	1.25-2.19
				94	198	1.69	1.41-1.98
246	Broad Island	17,145	38%	1981	209	1.41	1.18-1.63

Table 1. continued.

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
				94	275	2.29	1.96-2.62
				96	221	2.62	2.20-3.04
				97	**227**	**3.53**	**3.05-4.02**
249	Lisianski	19,677	24%	1988	255	0.97	0.79-1.14
				91	170	1.53	1.22-1.84
				95	317	0.70	0.56-0.85
254	Soapstone	17,695	29%	1988	274	1.92	1.67-2.17
				91	270	2.05	1.77-2.33
				93	243	1.88	1.59-2.16
				94	310	1.34	1.16-1.52
				95	283	1.48	1.27-1.69
271	Chichagof	20,680	10%	1991	301	1.39	1.19-1.58
				95	303	0.98	0.83-1.14
275	Cobol	14,618	49%	1984	224	1.15	0.92-1.37
				91	185	2.96	2.37-3.54
				95	218	1.45	1.16-1.74
279	Rapids Point	7,637	65%	1983	2,734	0.77	0.73-0.81
281	Ushk Bay	20,770	38%	1981	94	0.63	0.41-0.85
288	Range Creek	6,929	33%	1983	1,788	0.51	0.46-0.55
				84	303	0.71	0.61-0.92
				85	224	1.32	1.02-1.62
				97	**353**	**1.44**	**1.21-1.67**
295	Lake Eva	12,362	65%	1987	172	1.81	1.46-2.15

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
296	Portage Arm	16,101	59%	1981	213	0.53	0.39-0.68
				90	214	3.09	2.70-3.48
				97	**39**	**1.59**	**0.86-2.32**
298	Middle Arm Kelp Bay	28,424	21%	1990	306	2.68	2.35-3.01
				97	**100**	**2.67**	**2.04-3.30**
300	Nakwasina (All Transects)	19,575	48%	1984	196	2.51	2.14-2.88
				85	1046	3.92	3.67-4.17
				86	715	3.50	3.26-3.76
300	Nakwasina (Trans. 2,3,8)			1984	138	2.51	2.10-2.93
				85	218	3.65	3.13-4.17
				86	205	3.38	2.91-3.84
				87	195	2.31	1.90-2.71
				89	244	2.32	2.00-2.65
				90	255	2.98	2.56-3.40
				91	175	3.98	3.39-4.57
				92	223	1.64	1.37-1.90
				93	188	3.15	2.70-3.60
				94	230	1.46	1.24-1.68
				95	216	1.75	1.48-2.10
				96	210	2.82	2.35-3.29
				97	**188**	**2.79**	**2.31-3.27**
305	Sealion Cove	9,293	69%	1984	320	1.36	1.15-1.58
				85	292	2.57	2.23-2.91
				86	235	2.87	2.44-3.29
				87	226	3.31	2.82-3.80
				89	303	1.75	1.50-2.00
				90	227	2.03	1.71-2.35
				91	219	1.63	1.36-1.91
				92	239	1.30	1.08-1.51
				93	198	1.70	1.38-2.02
				94	221	1.29	1.09-1.48
				95	210	1.30	1.08-1.52
				96	225	1.63	1.35-1.90
				97	**223**	**1.76**	**1.43-2.10**
308	South Kruzof	71,158	25%	1993	345	1.62	1.41-1.83
				94	370	1.71	1.52-1.90

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	Pellet-Group 95% CI
315	Basin Kelp Bay	8,460	60%	1990	151	1.85	1.41-2.28
321	Redoubt Bay	9,045	58%	1989	304	2.17	1.88-2.47
339	Cape Ommaney	13,725	32%	1988	172	1.74	1.43-2.05
348	West Crawfish	57,434	16%	1989	360	1.35	1.36-1.57
361	Knight Island	10,419	40%	1991	100	0.81	0.61-1.01
				92	100	0.95	0.74-1.16
				94	90	0.44	0.25-0.64
				96	153	0.00	0.00-0.00
				97	**192**	**0.03**	**0.01-0.05**
363	Humpback	7,721	74%	1991	118	0.01	0.00-0.03
368	Yakutat Islands	1,021	99%	1991	415	0.32	0.24-0.39
				92	243	0.48	0.37-0.58
				93	106	1.07	0.81-1.32
				94	251	0.66	0.52-0.80
				96	379	0.59	0.48-0.69
				97	**344**	**0.59**	**0.48-0.70**
369	Ankau	---	---	1991	116	0.03	0.00-0.05
400	Security Bay	28,040	79%	1984	360	0.02	0.01-0.04
				89	304	0.25	0.16-0.34
				95	268	0.22	0.15-0.29
403	Pillar Bay	28,227	65%	1988	337	0.16	0.10-0.22
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
				96	191	1.45	1.19-1.70
427	Big John Bay	32,711	29%	1994	300	0.38	0.29-0.48
428	Rocky Pass	49,403	35%	1989	298	0.40	0.27-0.53
431	Point Barrie	22,187	27%	1988	357	0.23	0.17-0.29
				93	375	0.77	0.64-0.90

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
434a	Big Level Island	727	61%	1981	399	1.54	1.45-1.63
				83	336	1.56	
				86	382	1.66	1.41-1.90
				89	227	1.07	
				91	456	2.16	1.90-2.41
434b	Little Level Island	263	92%	1981	114	2.48	2.02-2.94
				83	136	2.34	
				86	122	1.39	1.07-1.70
				89	137	1.52	
				91	132	3.59	3.07-4.11
435	Castle River	32,724	36%	1984	312	0.19	0.12-0.26
				87	305	0.51	0.37-0.65
				89	312	0.40	0.25-0.56
				94	310	0.32	0.24-0.40
437	E. Duncan	23,744	55%	1990	227	1.12	0.92-1.32
				92	213	0.78	0.63-0.94
442	Portage Bay	11,269	49%	1993	282	0.43	0.31-0.56
				95	277	0.43	0.33-0.53
448	Woewodski	20,931	53%	1984	295	0.88	0.69-1.08
				85	209	1.00	0.82-1.19
				87	195	1.65	1.85-2.61
				88	433	1.33	1.16-1.51
				89	417	1.35	1.24-1.73
				90	355	1.46	1.28-1.64
				91	316	1.80	1.52-2.07
				92	248	0.79	0.62-0.97
				93	230	1.06	0.85-1.27
				94	152	1.14	0.82-1.46
				95	157	1.38	1.08-1.67
				96	243	2.25	1.95-2.55
				97	**282**	**1.56**	**1.27-1.84**
448a	Woewodski Island	20,931	53%	1991	461	1.86	1.66-2.05
				94	510	1.30	1.15-1.46
449	Frederick	6,835	70%	1981	945	0.08	0.06-0.11
				90	180	0.55	0.36-0.74
				92	227	0.54	0.42-0.65

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
				97	**245**	**1.61**	**1.34-1.88**
454	Dry	11,033	74%	1981	91	0.92	0.56-1.28
				93	210	1.44	1.17-1.72
				97	**188**	**1.26**	**0.88-1.39**
455	Vank	8,437	99%	1981			
	a) Sokolof				900	1.73	1.61-1.85
	b) Rynda				281	0.25	0.18-0.32
	c) Greys				284	0.25	0.18-0.32
458	Snow Passage	31,572	46%	1994	345	0.58	0.45-0.70
				97	**315**	**0.98**	**0.80-1.16**
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
				94	224	0.26	0.18-0.34
467	Mosman	25,573	54%	1993	304	0.07	0.03-0.11
473	Onslow	28,947	55%	1984	321	0.37	0.28-0.46
				85	334	0.59	0.48-0.70
				86	347	0.72	0.59-0.84
				87	336	0.42	0.31-0.55
				88	329	0.44	0.32-0.55
				91	322	0.66	0.51-0.80
				93	341	0.68	0.55-0.82
				94	340	0.88	0.74-1.02
				97	**346**	**0.73**	**0.59-0.86**
480	Fools Inlet	30,906	44%	1994	194	0.54	0.38-0.70
489	Muddy River	40,275	37%	1996	348	1.53	1.26-1.80
524	Frosty Bay	17,959	41%	1991	266	0.70	0.55-0.86

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
527	Protection	6,257	100%	**1997**	**332**	**1.15**	**0.99-1.30**
528	Mt. Calder	9,232	83%	1988	252	2.14	1.78-2.49
				97	**272**	**1.17**	**0.96-1.39**
532	Red Bay	15,145	66%	1987	177	0.32	0.18-0.47
				94	256	0.94	0.74-1.14
				96	281	1.19	0.97-1.41
				97	**248**	**1.07**	**0.89-1.25**
539	Exchange Cove	10,406	74%	1988	266	1.39	1.15-1.64
				92	125	1.10	0.83-1.38
				97	**303**	**1.25**	**1.04-1.46**
549	Sarheen	11,875	52%	1989	310	1.73	1.44-2.01
				96	334	1.00	0.83-1.16
				97	**330**	**1.00**	**0.85-1.14**
554	Sarkar	32,183	60%	1988	298	1.28	1.06-1.50
				92	125	1.10	0.83-1.38
				94	292	0.92	0.77-1.07
				97	**263**	**0.61**	**0.48-0.74**
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
				96	276	1.39	1.17-1.61
				97	**247**	**1.21**	**1.01-1.41**
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
				97	**289**	**0.44**	**0.34-0.55**
569	Baker	31,802	68%	1991	256	0.08	0.04-0.12
				97	**250**	**0.14**	**0.08-0.20**
575	Thorne Lake	17,970	68%	1992	334	1.20	1.03-1.37
				94	293	0.76	0.62-0.91
				95	299	1.27	1.09-1.45
				97	**303**	**0.84**	**0.66-0.96**

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
				97	**310**	**1.39**	**1.17-1.60**
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
				97	**255**	**1.93**	**1.64-2.21**
587	Tuxekan	12,129	77%	1988	300	1.06	0.84-1.28
				97	**314**	**1.04**	**0.87-1.22**
621	12 Mile	23,344	59%	1985	196	0.31	0.19-0.43
				86	300	0.64	0.48-0.81
				87	370	0.65	0.49-0.81
				88	302	0.62	0.46-0.77
				89	235	0.78	0.59-0.98
				90	176	1.18	0.84-1.52
				91	231	1.84	1.48-2.21
				92	250	0.43	0.32-0.55
				93	258	0.84	0.63-1.05
				94	324	0.93	0.76-1.09
				97	**202**	**1.45**	**1.10-1.79**
625	Trocadero	16,624	75%	1995	235	1.74	1.41-2.06
				97	**235**	**1.18**	**0.97-1.38**
628	Pt. Amagura	10,477	26%	**1997**	**255**	**1.04**	**0.83-1.24**
635	Port Refugio	9,118	50%	1985	317	2.69	2.27-3.12
				86	324	2.52	2.09-2.96
				87	369	1.76	1.46-2.07
				88	270	1.15	0.90-1.40
				89	507	0.80	0.68-0.93
				90	232	1.25	1.03-1.48
				91	367	1.13	0.95-1.32
				92	254	0.76	0.57-0.95
				93	213	1.35	0.98-1.71
				94	280	1.85	1.51-2.19
				97	**276**	**0.82**	**0.65-1.00**

Table 1. continued.

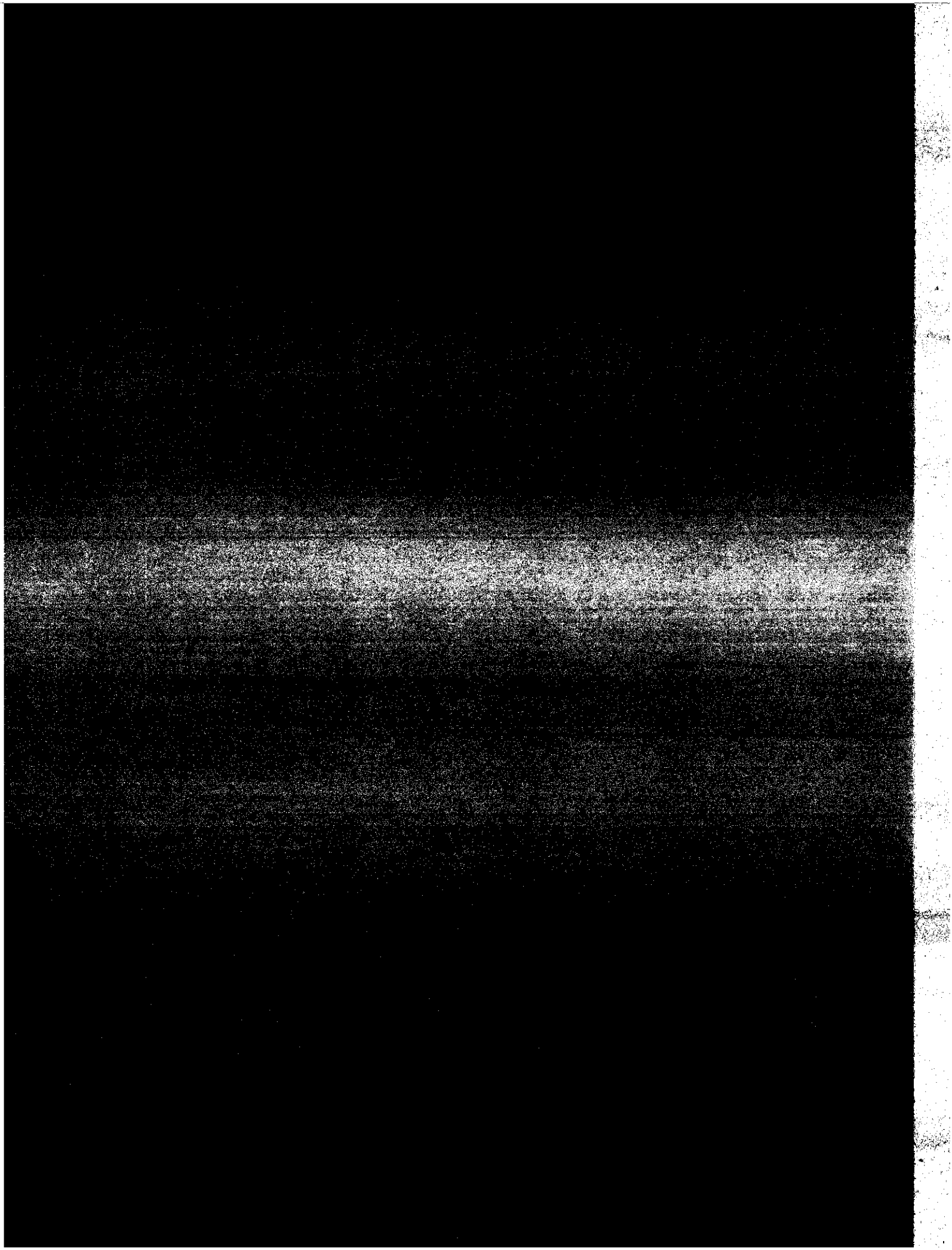
VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
679	Kitkun Bay	15,359	75%	1988	240	0.31	0.20-0.42
				89	273	0.89	0.71-1.07
				95	264	0.40	0.28-0.52
				97	**261**	**0.31**	**0.19-0.44**
685	Nutkwa	17,079	73%	1988	234	0.09	0.02-0.16
716	Helm Bay	16,127	57%	1981	704	0.16	0.12-0.19
				84	302	0.54	0.44-0.65
				85	181	0.85	0.65-1.05
				88	247	1.66	1.38-1.95
				91	240	1.63	1.35-1.92
				92	169	1.25	0.96-1.53
				93	286	1.37	1.16-1.59
				95	284	1.31	1.09-1.52
				97	**265**	**0.79**	**0.65-0.99**
719	Port Stewart	21,482	55%	1993	289	1.22	1.03-1.42
				95	278	1.61	1.35-1.87
				97	**289**	**1.29**	**1.08-1.50**
722	Spacious Bay	31,461	44%	1993	300	0.54	0.43-0.64
				95	283	0.45	0.35-0.54
				97	**276**	**0.43**	**0.33-0.53**
738	Margaret	19,286	67%	1985	515	0.57	0.47-0.66
				86	251	0.84	0.69-1.00
				88	110	1.31	0.96-1.67
				89	129	0.62	0.44-0.80
				90	274	0.56	0.44-0.68
				91	272	0.76	0.58-0.94
				93	281	0.31	0.23-0.39
				95	304	0.70	0.56-0.84
				97	**297**	**0.56**	**0.43-0.68**

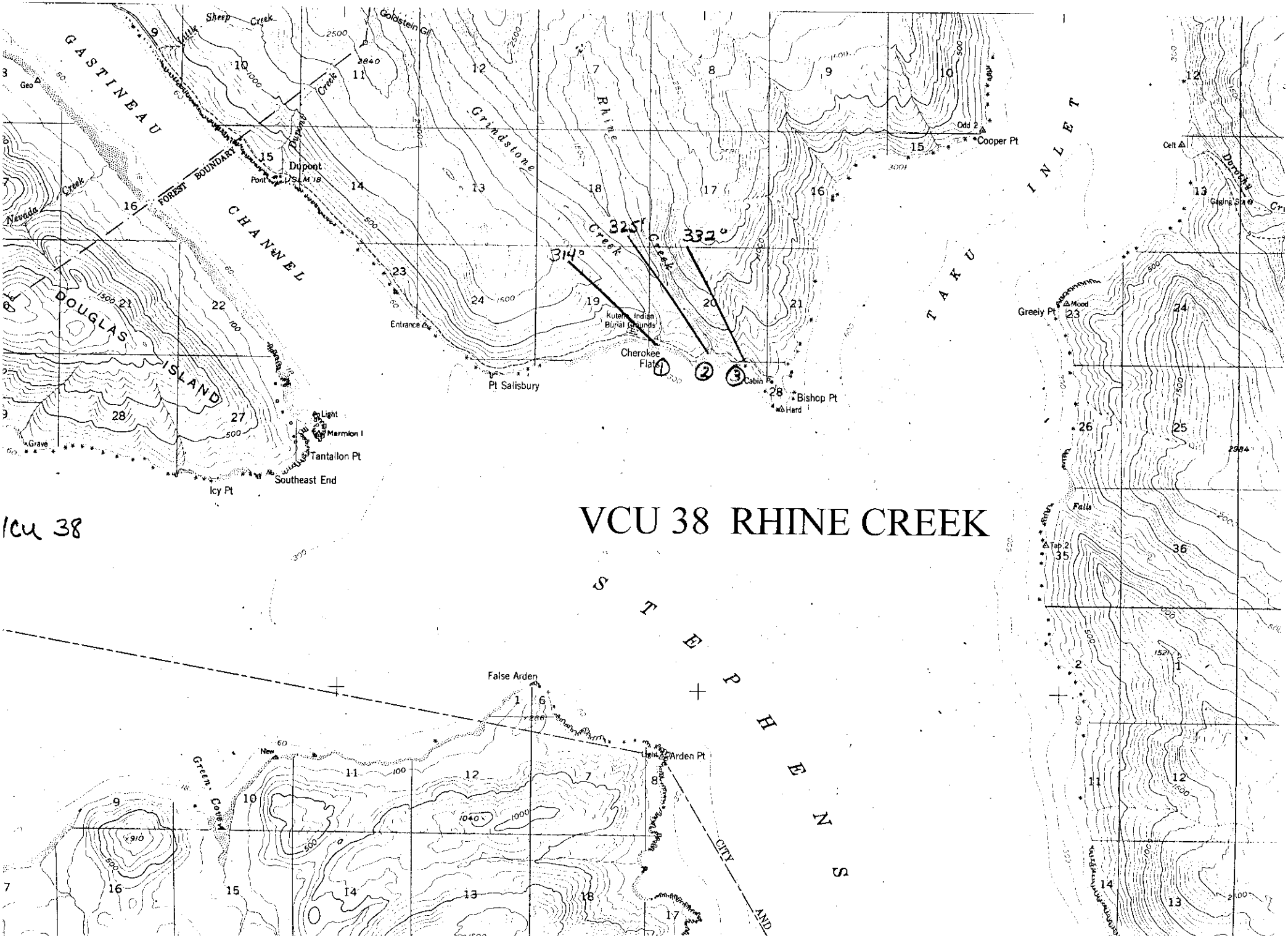
Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
748	George Inlet	19,448	28%	1981	110	0.21	0.09-0.33
				84	344	0.27	0.19-0.35
				85	313	0.52	0.39-0.65
				89	169	1.41	1.08-1.75
				90	240	1.03	0.82-1.25
				91	168	1.49	1.15-1.84
				92	195	0.65	0.49-0.81
				94	309	0.95	0.79-1.11
				96	305	0.98	0.76-1.19
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
				97	**181**	**0.81**	**0.63-0.98**
758	Carroll Pt.	11,629	34%	1985	118	0.66	0.46-0.86
				86	118	0.75	0.56-0.95
				88	85	1.15	0.81-1.48
				92	87	0.28	0.14-0.41
				94	125	0.70	0.49-0.90
759	Moth Bay	7,652	23%	1985	140	0.59	0.42-0.74
				86	156	0.98	0.79-1.17
				88	78	0.71	0.46-0.97
				92	136	0.48	0.30-0.66
				94	136	0.94	0.71-1.17
760	Lucky Cove	12,377	43%	1985	335	1.16	1.00-1.33
				86	258	1.16	0.95-1.32
				88	65	1.01	0.68-1.34
				90	263	1.10	0.92-1.27
				91	271	1.39	1.07-1.70
764	Blank Inlet	3,640	19%	1981	108	1.24	0.89-1.59
765	Dall Head	4,803	63%	1981	69	0.52	0.31-0.74
				96	295	1.07	0.90-1.24
767	Duke Island	39,171	17%	1996	294	0.05	0.02-0.09
769	Alava Bay	13,563	60%	1985	311	0.52	0.39-0.65
				86	326	0.85	0.68-1.01
				91	143	1.64	1.22-2.05
				94	326	0.79	0.64-0.94
				96	324	0.93	0.77-1.09

Table 1. continued.

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95% CI
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
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
				94	331	1.58	1.37-1.79
				96	338	1.47	1.28-1.67
				97	**274**	**1.71**	**1.47-1.95**





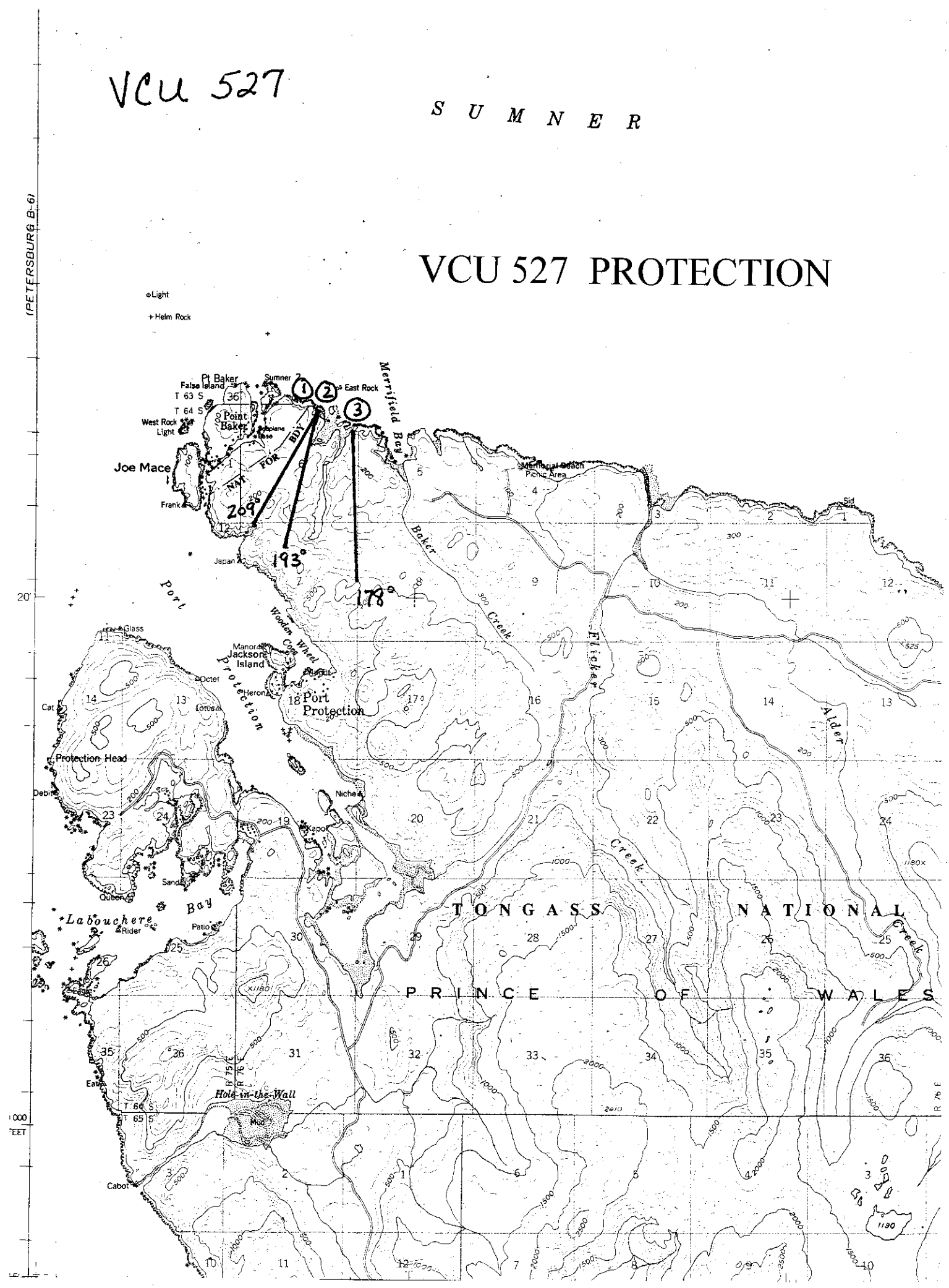
ICU 38

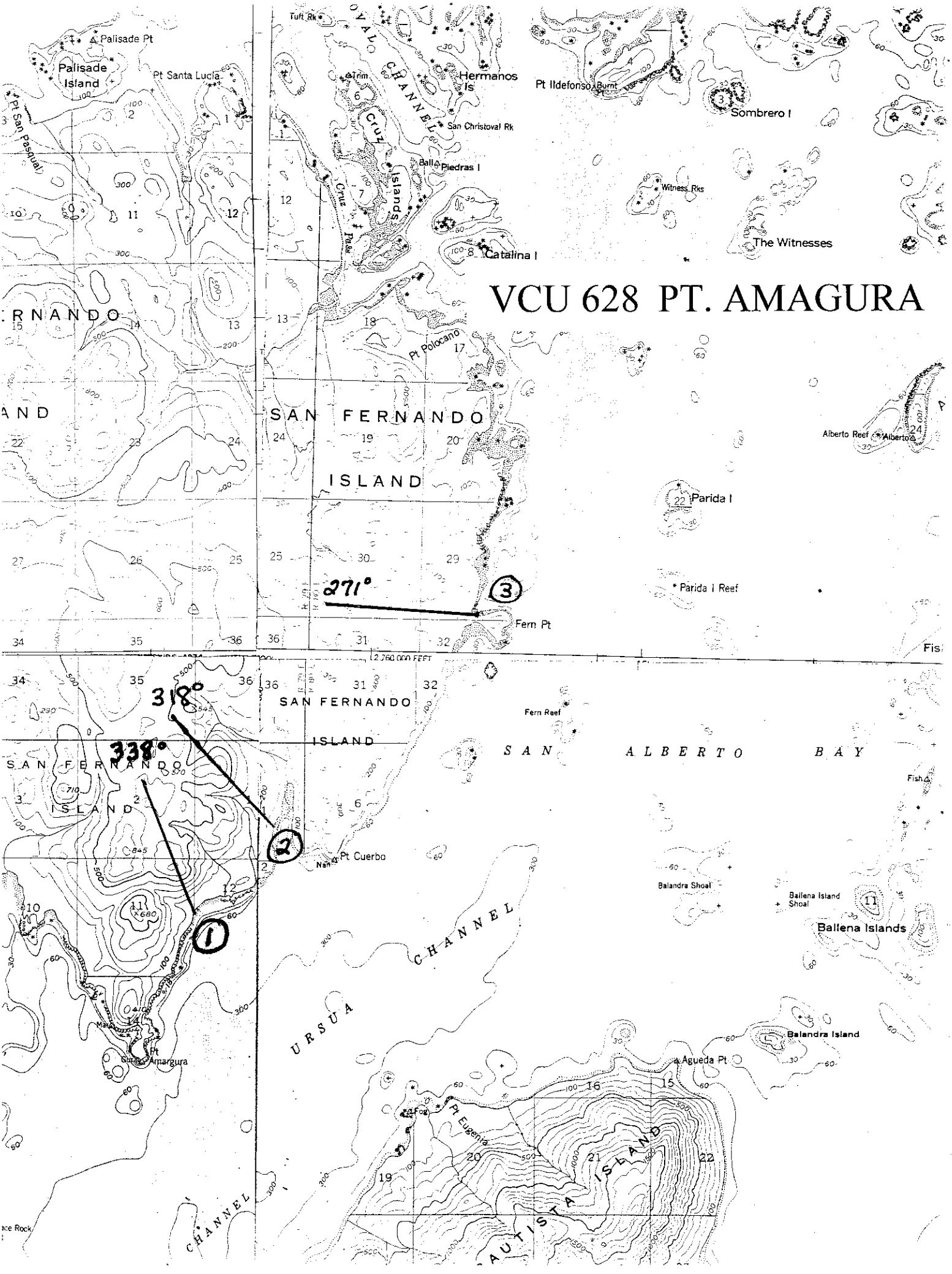
VCU 38 RHINE CREEK

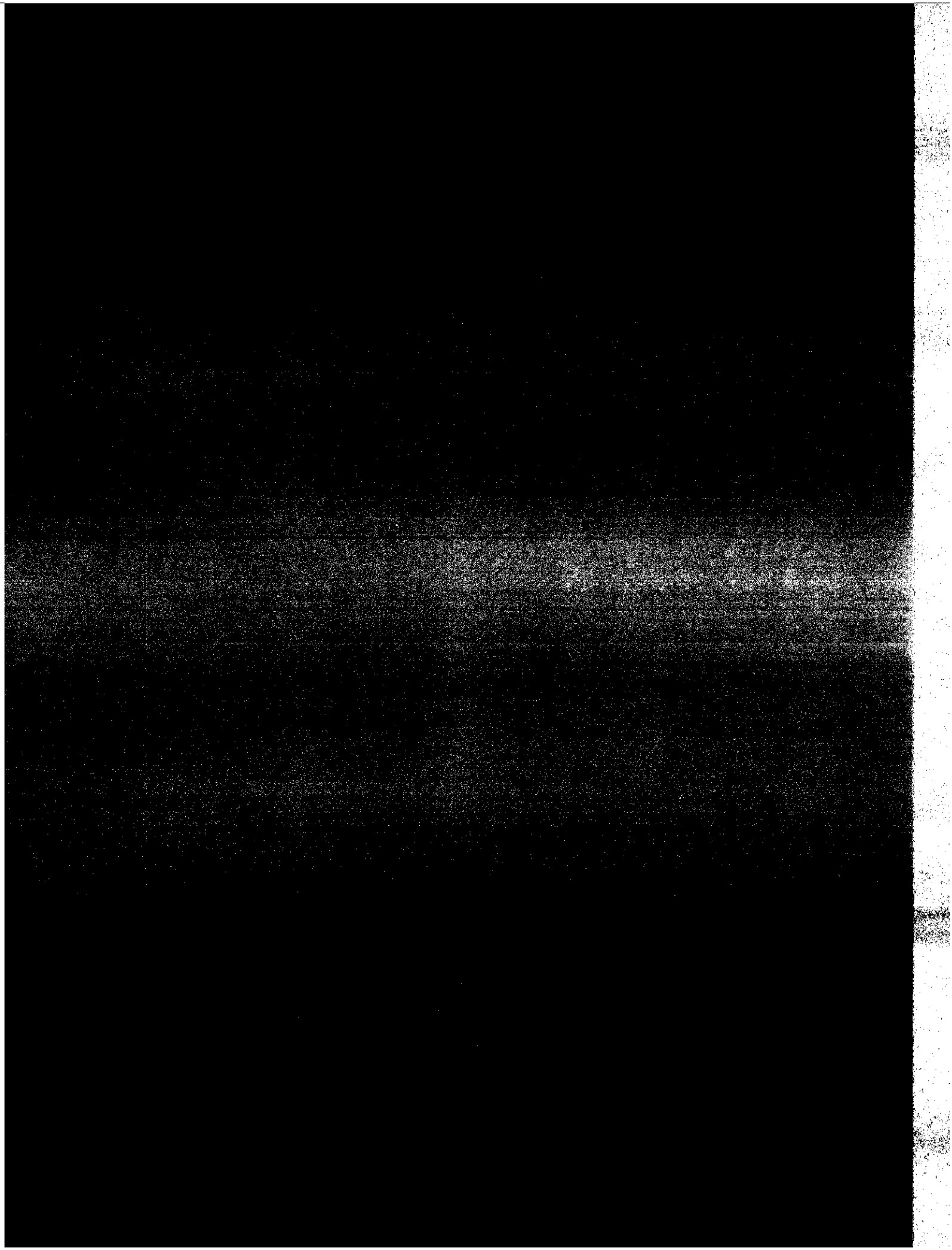
VCU 527

S U M N E R

VCU 527 PROTECTION




VCU 628 PT. AMAGURA
Palisade Pt
Palisade Island
Pt Santa Lucia
Pt San Pasqual
Tuff Rk
Trim
Hermanos Is
San Christoval Rk
Cruz Islands
Piedras I
Catalina I
Pt Ildefonso
Burnt
Sombrero I
Witness Rks
The Witnesses
SAN FERNANDO ISLAND
Pt Polocano
Alberto Reef
Alberto
Parida I
Parida I Reef
271°
Fern Pt
318°
338°
Fern Reef
SAN ALBERTO BAY
Pt Cuerbo
Balandra Shoal
Ballena Island Shoal
Ballena Islands
CHANNEL
URSUA
Balandra Island
Agueda Pt
Pt Eugenia
SAN BARTOLOME ISLAND
Pt Amargura
2,760,000 FEET



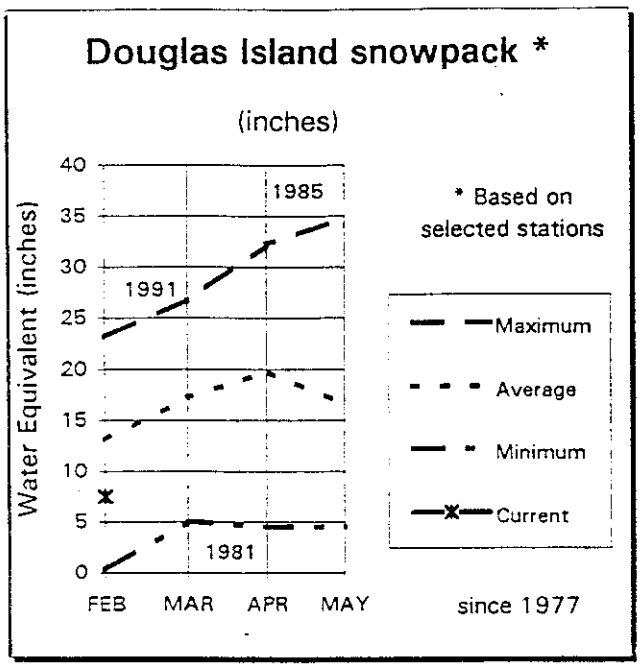
Winter Weather Conditions

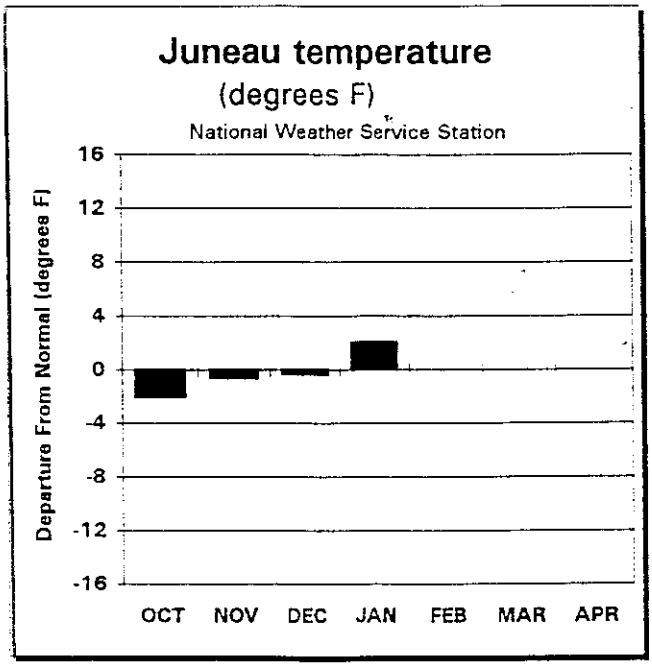
January - April 1997

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

Southeast

February 1, 1997



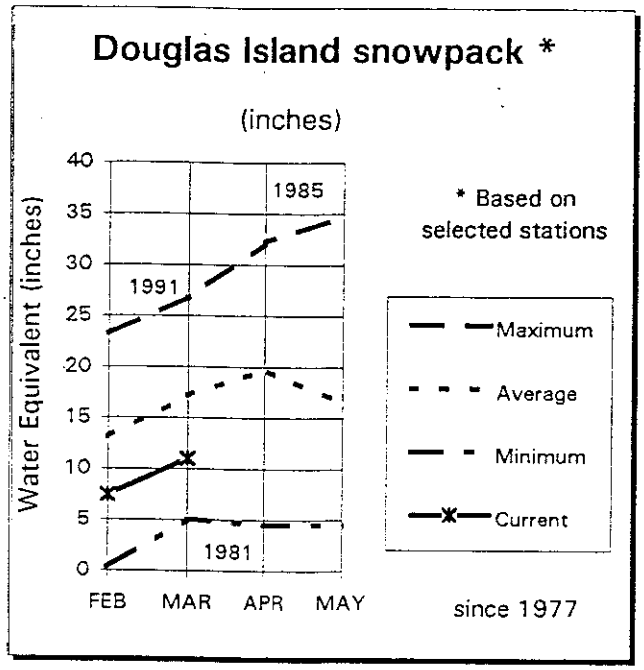


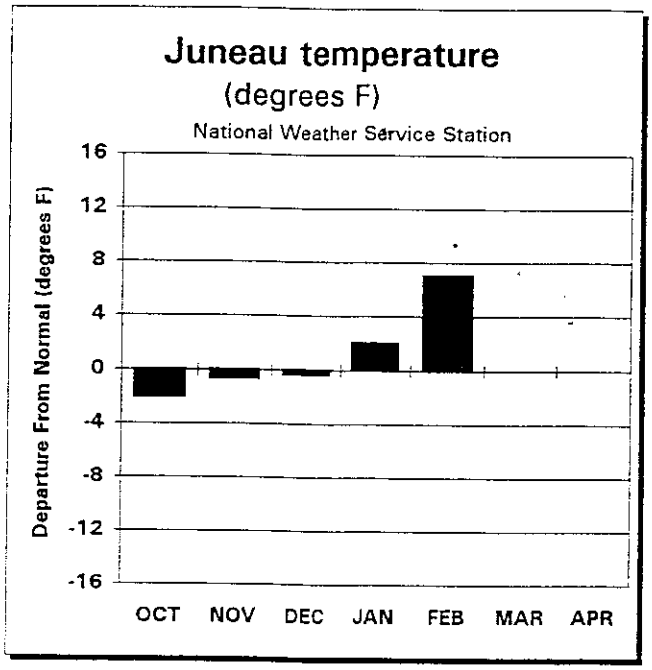
SNOWCOVER:

The snow courses measured in the watershed above the Swan Lake hydro-electric power plant have a good amount of snow on them. Values are similar to 1995. As one proceeds north, the snow decreases to a record low at Moore Creek Bridge north of Skagway, which is 39 percent of the eight year average.

Southeast

March 1, 1997





SNOWCOVER:

The Douglas Island snow courses, near Juneau, are less than 70 percent of normal. This trend continues north to Skagway.

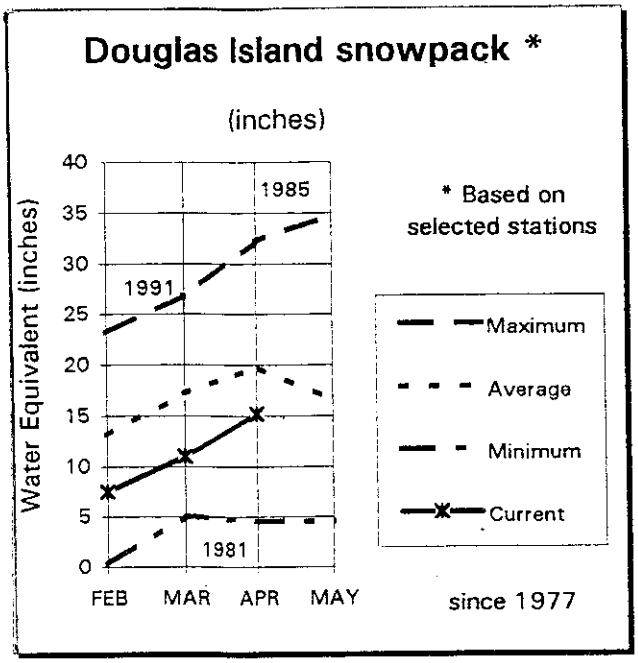
The Petersburg snow courses show 71 percent of normal at Petersburg Ridge and 44 percent of normal at Petersburg Reservoir.

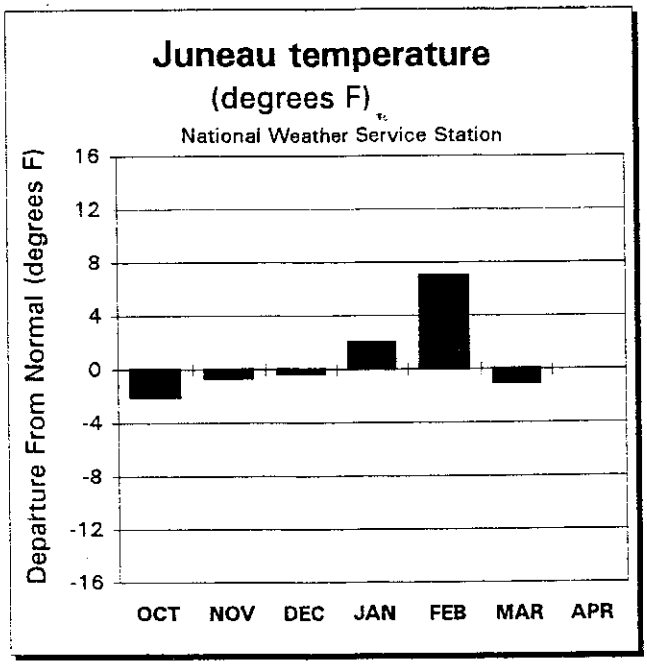
The volume flow forecast for Gold Creek for the April - July period is 33,500 acre-ft or 91 percent of normal.

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

Southeast

April 1, 1997





SNOWCOVER:

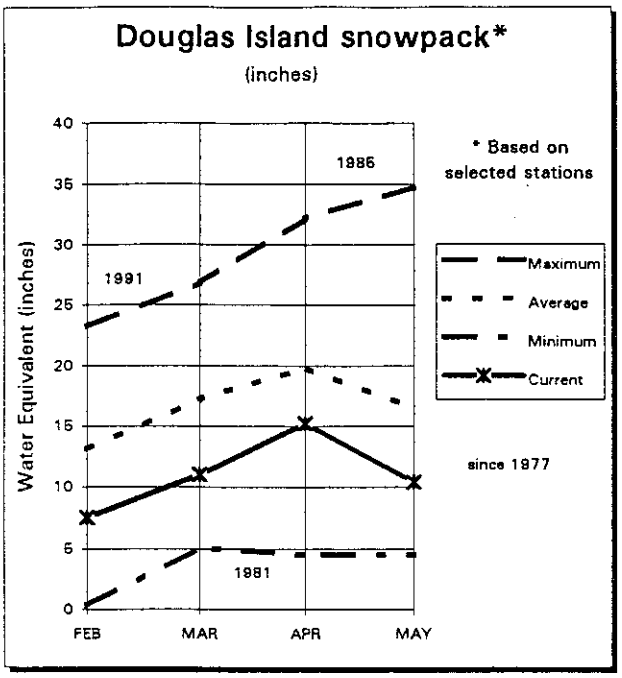
The Douglas Island index to the region received a normal increase of snow water content (4.6 inches) to raise the percent of normal to 73. Petersburg snow course water went up 11 percent to 76 percent of normal.

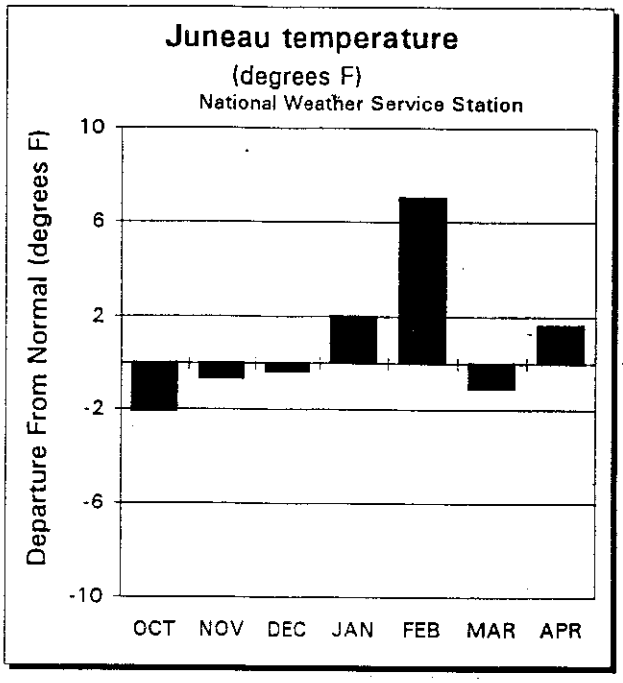
The Swan Lake snow surveys were delayed due to weather and scheduling. The percent of normal precipitation caught of this site is 90 percent since October 1st.

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

Southeast

May 1, 1997





SNOWCOVER:

The Speel River snow course is 90 percent of normal water content while the Snettisham precipitation has caught 78 percent of normal precipitation since October 1st.

The delayed Swan Lake snow course measurements show a significant water content compared with last year, Mint Creek Ridge having 54.8 inches of water compared to 17.8 last year. The precipitation caught at the power plant, since October 1st, is 93 percent of normal compared to 91 percent of normal last year.

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

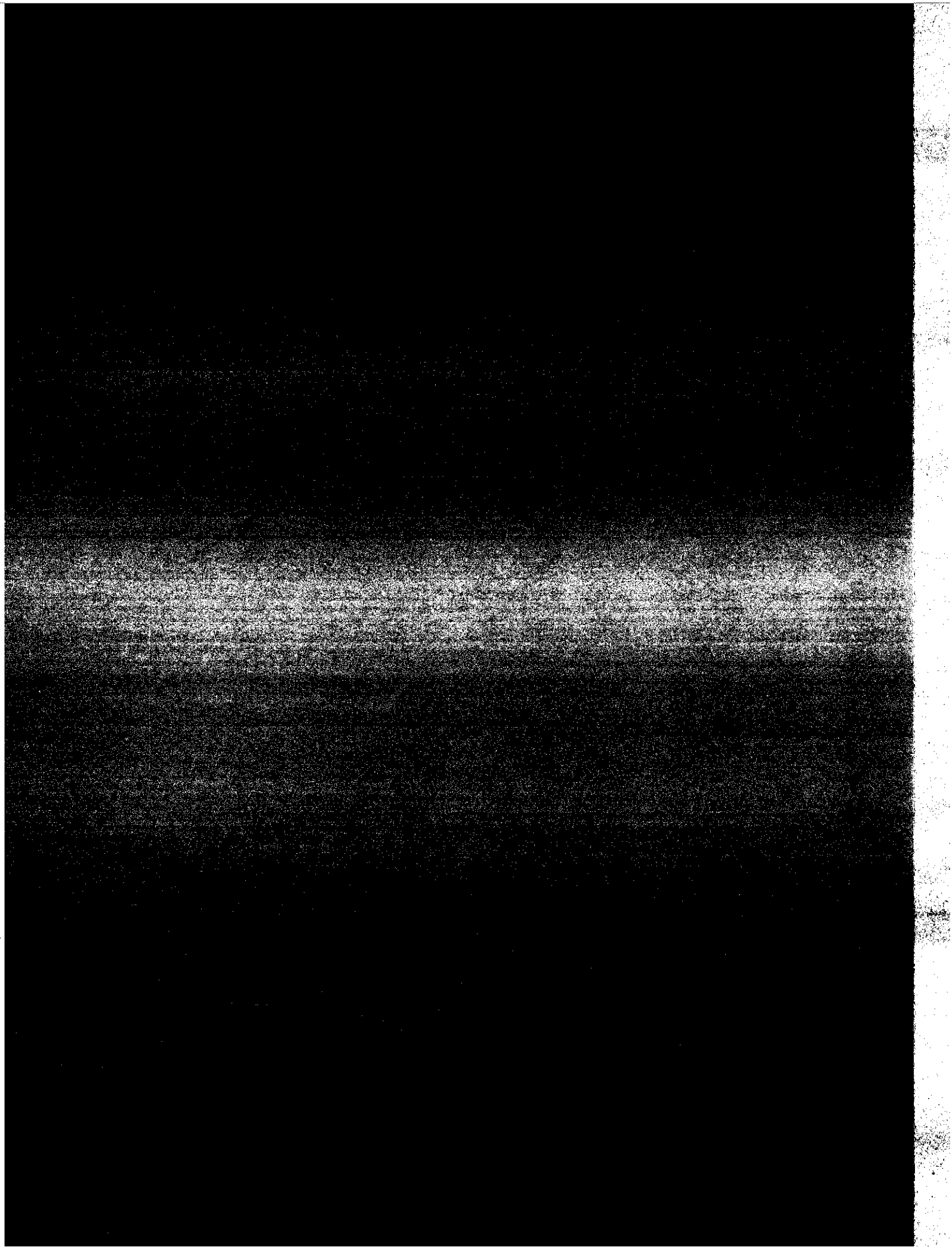


TABLE 2. MEAN PELLET-GROUP DENSITY, BY VCU, BY TRANSECT, SPRING 1997

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
TRANSECT		
1	1.53	85
2	1.44	126
3	1.35	112
VCU 36 - INNER POINT		
TRANSECT		
1	2.46	72
2	2.23	115
3	2.46	65
VCU 38 - RHINE CREEK		
TRANSECT		
2	0.38	66
3	0.19	42
VCU 124 - SHELTER ISLAND		
TRANSECT		
4	2.56	50
5	1.76	46
6	2.36	50
7	1.57	49
8	3.40	50
18	3.10	67
VCU 185 - PLEASANT ISLAND		
TRANSECT		
1	2.06	95
2	1.28	125
3	2.30	80
VCU 209 - SUNTAHEEN CREEK		
TRANSECT		
1	1.17	117
2	0.86	76
3	2.76	70
VCU 211 - POINT AUGUSTA		
TRANSECT		
1	3.53	68
2	3.70	82
3	2.73	84
VCU 218 - PAVLOV RIVER		
TRANSECT		
1	1.91	135
2	1.78	90
3	1.32	88

TABLE 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 231 - SALTERY BAY		
TRANSECT		
1	3.44	68
2	0.27	30
3	1.35	72
VCU 247 - FINGER RIVER		
TRANSECT		
1	2.71	59
2	4.10	113
3	3.25	55
VCU 288 - RANGE CREEK		
TRANSECT		
1	1.16	135
2	1.76	106
3	1.48	112
VCU 296 - PORTAGE ARM		
TRANSECT		
4	1.59	39
VCU 298 - MIDDLE ARM KELP BAY		
TRANSECT		
3	3.23	35
4	2.37	65
VCU 300 - NAKWASINA		
TRANSECT		
2	1.25	51
3	3.49	70
8	3.24	67
VCU 305 - KALININ BAY		
TRANSECT		
1	1.95	76
2	1.58	95
3	1.83	52
VCU 361 - KNIGHT ISLAND		
TRANSECT		
1	0.04	114
2	0.00	78
VCU 368 - YAKUTAT ISLANDS		
TRANSECT		
1	1.09	130
2	0.27	106
3	0.30	108

TABLE 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 448 - WOEWODSKI		
TRANSECT		
1	1.43	125
2	1.45	76
3	1.85	81
VCU 452 - BLIND SLOUGH		
TRANSECT		
1	1.50	107
2	1.54	90
3	1.96	48
VCU 454 - DRY		
TRANSECT		
1	1.08	89
2	1.32	41
3	1.10	58
VCU 458 - SNOW		
TRANSECT		
1	0.71	100
2	1.62	90
3	0.74	125
VCU 473 - ONSLOW		
TRANSECT		
1	0.45	111
2	1.04	25
3	0.65	110
VCU 527 - PROTECTION		
TRANSECT		
1	1.04	95
2	1.02	112
3	1.34	125
VCU 528 - MT. CALDER		
TRANSECT		
1	1.14	77
2	1.70	84
3	0.79	111
VCU 532 - RED BAY		
TRANSECT		
1	1.63	93
2	0.40	45
3	0.87	110

TABLE 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 539 - EXCHANGE COVE		
TRANSECT		
1	1.30	67
2	1.50	121
3	0.96	115
VCU 549 - SARHEEN		
TRANSECT		
1	1.23	124
2	1.06	125
3	0.54	80
VCU 554 - SARKAR		
TRANSECT		
1	0.85	101
2	0.56	104
3	0.28	58
VCU 561 - WARM CHUCK		
TRANSECT		
1	1.48	122
2	0.85	75
3	1.10	50
VCU 564 - CORONATION		
TRANSECT		
1	0.45	95
2	0.50	94
3	0.38	100
VCU 569 - BAKER ISLAND		
TRANSECT		
1	0.02	89
2	0.12	74
3	0.28	87
VCU 575 - THORNE LAKE		
TRANSECT		
1	0.63	90
2	0.76	97
3	0.87	76
4	1.45	40
VCU 578 - SNAKEY LAKES		
TRANSECT		
1	1.23	116
2	1.45	125
3	1.54	69

TABLE 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 584 - LITTLE RATZ		
TRANSECT		
1	1.01	125
3	2.19	62
4	3.37	68
VCU 587 - TUXEKAN		
TRANSECT		
2	0.99	125
3	1.34	64
4	0.94	125
VCU 621 - 12 MILE		
TRANSECT		
1	1.86	76
2	1.50	68
3	0.84	58
VCU 625 - TROCADERO		
TRANSECT		
1	1.53	85
2	1.50	60
3	0.63	90
VCU 628 - PT AMAGURA		
TRANSECT		
1	1.28	95
2	1.18	60
3	0.71	100
VCU 635 - PORT REFUGIO		
TRANSECT		
1	0.45	100
2	1.48	86
3	0.61	90
VCU 679 - KITKUN BAY		
TRANSECT		
1	0.43	100
2	0.45	80
3	0.04	81
VCU 716 - HELM BAY		
TRANSECT		
1	0.86	125
2	0.61	61
3	0.94	79

TABLE 2. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 719 - PORT STEWART		
TRANSECT		
1	1.28	88
2	0.95	106
3	1.67	95
VCU 722 - SPACIOUS BAY		
TRANSECT		
1	0.40	70
2	0.39	107
3	0.49	99
VCU 738 - MARGARET		
TRANSECT		
10	0.69	74
11	0.62	123
25	0.39	100
VCU 752 - WHITMAN LAKE		
TRANSECT		
1	0.55	56
2	1.25	57
3	0.65	68
VCU 999 - GRAVINA ISLAND		
TRANSECT		
1	1.83	83
2	1.48	97
3	1.83	94

TABLE 3. MEAN PELLET-GROUP DENSITY, BY VCU, BY ELEVATION, SPRING 1997

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 35 - N. DOUGLAS		
0-500 FT.....	1.26	194
501-1000 FT.....	1.39	56
1001-1500 FT.....	1.92	73
VCU 36 - INNER POINT		
0-500 FT.....	2.25	176
501-1000 FT.....	2.89	35
1001-1500 FT.....	2.37	41
VCU 38 - RHINE CREEK		
0-500 FT.....	0.31	108
VCU 124 - SHELTER ISLAND		
0-500 FT.....	2.38	246
501-1000 FT.....	2.98	59
1001-1500 FT.....	2.86	7
VCU 185 - PLEASANT ISLAND		
0-500 FT.....	1.80	285
501-1000 FT.....	1.87	15
VCU 209 - SUNTAHEEN CREEK		
0-500 FT.....	1.45	221
501-1000 FT.....	1.49	35
1001-1500 FT.....	3.14	7
VCU 211 - POINT AUGUSTA		
0-500 FT.....	3.87	119
501-1000 FT.....	2.78	107
1001-1500 FT.....	1.88	8
VCU 218 - PAVLOV RIVER		
0-500 FT.....	1.78	271
501-1000 FT.....	0.54	24
1001-1500 FT.....	2.17	18
VCU 231 - SALTERY BAY		
0-500 FT.....	1.87	106
501-1000 FT.....	2.09	43
1001-1500 FT.....	2.43	21
VCU 247 - FINGER RIVER		
0-500 FT.....	3.95	154
501-1000 FT.....	2.67	43
1001-1500 FT.....	2.63	30

TABLE 3. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 288 - RANGE CREEK		
0-500 FT.....	1.48	272
501-1000 FT.....	1.36	78
1001-1500 FT.....	0.33	3
VCU 296 - PORTAGE ARM		
0-500 FT.....	2.21	24
501-1000 FT.....	0.60	15
VCU 298 - MIDDLE ARM KELP BAY		
0-500 FT.....	2.00	56
501-1000 FT.....	3.52	44
VCU 300 - NAKWASINA		
0-500 FT.....	3.08	83
501-1000 FT.....	2.76	46
1001-1500 FT.....	2.41	59
VCU 305 - KALININ BAY		
0-500 FT.....	1.49	114
501-1000 FT.....	2.18	73
1001-1500 FT.....	1.78	36
VCU 361 - KNIGHT ISLAND		
0-500 FT.....	0.03	192
VCU 368 - YAKUTAT ISLANDS		
0-500 FT.....	0.59	344
VCU 448 - WOEWODSKI		
0-500 FT.....	0.71	78
501-1000 FT.....	1.39	75
1001-1500 FT.....	2.17	129
VCU 452 - BLIND SLOUGH		
0-500 FT.....	1.21	82
501-1000 FT.....	1.69	103
1001-1500 FT.....	2.02	60
VCU 454 - DRY		
0-500 FT.....	0.78	63
501-1000 FT.....	1.49	80
1001-1500 FT.....	1.02	45
VCU 458 - SNOW		
0-500 FT.....	1.03	178
501-1000 FT.....	1.41	66
1001-1500 FT.....	0.45	71

TABLE 3. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 473 - ONSLOW		
0-500 FT.....	0.57	266
501-1000 FT.....	1.08	61
1001-1500 FT.....	1.74	19
VCU 527 - PROTECTION		
0-500 FT.....	1.15	332
VCU 528 - MT. CALDER		
0-500 FT.....	0.62	136
501-1000 FT.....	1.64	61
1001-1500 FT.....	1.80	75
VCU 532 - RED BAY		
0-500 FT.....	0.61	174
501-1000 FT.....	2.24	55
1001-1500 FT.....	1.95	19
VCU 539 - EXCHANGE COVE		
0-500 FT.....	0.80	132
501-1000 FT.....	1.45	97
1001-1500 FT.....	1.78	74
VCU 549 - SARHEEN		
0-500 FT.....	0.90	210
501-1000 FT.....	1.18	119
VCU 554 - SARKAR		
0-500 FT.....	0.61	263
VCU 561 - WARM CHUCK		
0-500 FT.....	1.20	225
501-1000 FT.....	1.21	19
1001-1500 FT.....	1.67	3
VCU 564 - CORONATION		
0-500 FT.....	0.45	193
501-1000 FT.....	0.41	75
1001-1500 FT.....	0.48	21
VCU 569 - BAKER ISLAND		
0-500 FT.....	0.06	158
501-1000 FT.....	0.20	46
1001-1500 FT.....	0.37	46
VCU 575 - THORNE LAKE		
0-500 FT.....	0.72	136
501-1000 FT.....	0.77	131
1001-1500 FT.....	1.35	36

TABLE 3. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 578 - SNAKEY LAKES		
0-500 FT.....	1.23	218
501-1000 FT.....	1.43	47
1001-1500 FT.....	2.09	45
VCU 584 - LITTLE RATZ		
0-500 FT.....	1.72	106
501-1000 FT.....	1.99	102
1001-1500 FT.....	2.26	47
VCU 587 - TUXEKAN		
0-500 FT.....	0.77	174
501-1000 FT.....	1.37	107
1001-1500 FT.....	1.42	33
VCU 621 - 12 MILE		
0-500 FT.....	1.33	132
501-1000 FT.....	1.75	67
1001-1500 FT.....	0.00	3
VCU 625 - TROCADERO		
0-500 FT.....	1.01	200
501-1000 FT.....	1.83	18
1001-1500 FT.....	2.47	17
VCU 628 - PT AMAGURA		
0-500 FT.....	0.79	170
501-1000 FT.....	1.53	85
VCU 635 - PORT REFUGIO		
0-500 FT.....	0.76	140
501-1000 FT.....	0.86	130
1001-1500 FT.....	1.33	6
VCU 679 - KITKUN BAY		
0-500 FT.....	0.12	203
501-1000 FT.....	0.86	36
1001-1500 FT.....	1.13	22
VCU 716 - HELM BAY		
0-500 FT.....	0.78	209
501-1000 FT.....	1.12	41
1001-1500 FT.....	0.60	15
VCU 719 - PORT STEWART		
0-500 FT.....	1.21	199
501-1000 FT.....	0.86	35
1001-1500 FT.....	1.87	55

TABLE 3. Continued.

	PELLET-GROUPS PER PLOT	
	MEAN	NO. OF PLOTS
VCU 722 - SPACIOUS BAY		
0-500 FT.....	0.51	182
501-1000 FT.....	0.23	70
1001-1500 FT.....	0.42	24
VCU 738 - MARGARET		
0-500 FT.....	0.57	260
501-1000 FT.....	0.06	18
1001-1500 FT.....	0.84	19
VCU 752 - WHITMAN LAKE		
0-500 FT.....	1.32	56
501-1000 FT.....	0.66	73
1001-1500 FT.....	0.46	52
VCU 999 - GRAVINA ISLAND		
0-500 FT.....	2.07	163
501-1000 FT.....	1.27	84
1001-1500 FT.....	0.85	27