Alaska Department of Fish and Game, Division of Wildlife Conservation

Sitka Black-tailed Deer Pellet-Group Surveys In Southeast Alaska 2010 Report

By

Karin McCoy

2010

Sitka Black-tailed Deer, Kennel Creek, NE Chichagof Island. June 2010.
Photo by Phil Mooney.

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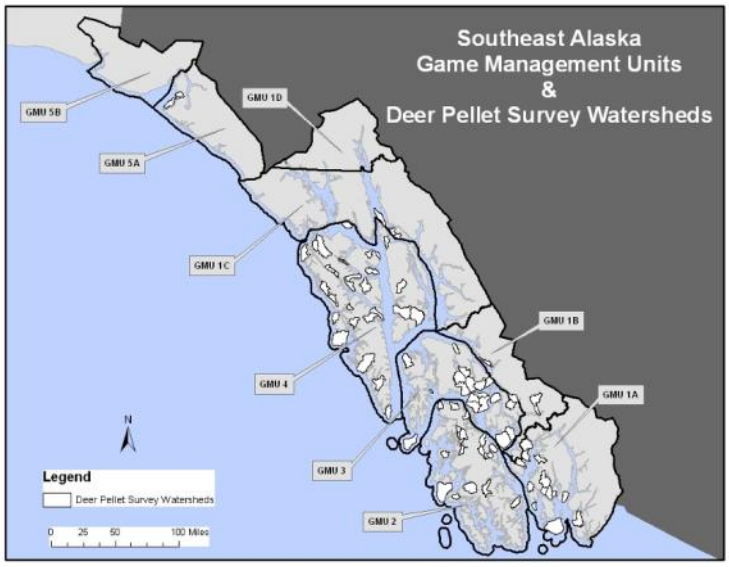
Deer Pellet-Group Surveys: Program Overview

This report provides a summary of pellet surveys conducted for Sitka black-tailed deer during April and May 2010 in Region One, Southeast Alaska. This information was collected by the Alaska Department of Fish and Game (ADFG), Division of Wildlife Conservation in collaboration with the U.S. Forest Service (USFS). Pellet-group data are used to monitor deer population trends in specific watersheds throughout the region. They are intended to document large changes (≥ 30%) in deer density . The data also permit general comparisons of deer numbers from area to area and year to year within the region.



Deer-pellet surveys have been conducted in Region 1 since 1981. Transects have been established in fixed locations within value comparison units (VCUs) for each game management unit (GMU). VCUs are USFS timber management units and are roughly equivalent to a watershed. Each VCU usually has three transects. These transects traverse deer winter range from sea level to 1500 feet, although some transects are flatter or more undulating. Transect locations are chosen based on a number of different considerations, including habitat characteristics, harvest pressure, management concerns, and accessibility. VCUs of higher management concern are monitored on a yearly basis, while others may only be surveyed every two or three years. Over time the monitoring of some VCUs has been abandoned in lieu of monitoring other VCUs, usually in relation to changes in management concern or habitat (such as logging).

Kirchhoff and Pitcher (1988)[1] provided a detailed discussion of objectives, sample design, and field methodology of this program.

Carl Koch records data at deer pellet transect start tree, Whitestone Harbor, Spring 2010. Photo by Holley Dennison.

[1] Kirchoff, 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.

Program Overview, Continued

The interpretation of pellet-group data should be done with caution, as more than changes in deer population size can affect deer pellet-group density. Snowfall patterns influence the distribution and density of deer pellets from year to year. Snow persisting late into the spring at elevations below 1500 feet limits our ability to consistently survey the same elevation zone among years. Occasionally all transects in a VCU cannot be surveyed, which can influence pellet-density results among years. Furthermore, comparisons over time, or from area to area, are most valid when weather conditions are similar. Pellet groups decompose more rapidly with increasing precipitation and warmer temperatures, potentially confounding comparisons. There are also weather-related differences in deer distribution from year to year. In mild winters, deer will access forage in a variety of habitats, including logged areas that have not yet entered the stem exclusion phase (at approximately 30 years). However, in severe winters, deep snow buries forage and makes movement difficult. When evaluating deer-pellet data, the reader should consider winter severity and snowfall patterns, the number of plots sampled from year to year, the variability in the data, and the length of time since the last survey.

Old-growth forests are considered primary deer winter range because canopy cover intercepts the snow, making it easier for deer to move and forage during severe winters. When supplemental forage is available from non-primary winter range during mild winters, deer may increase to or above the carrying capacity of their primary winter range. When this happens, heavy mortality may occur during the next severe winter. Since deer utilize other habitats during mild winters and concentrate in old-growth forests during severe winters, we expect higher pellet densities on winter range after severe winters—if the majority of deer live through most of winter. But early winter mortality could cause lower densities despite the unavailability of other habitats. In addition, if deer spend more of their time on the beach instead of in the forest, lower pellet densities on forest transects could result.

Deer Pellet-Group Surveys: Results

Deer Pellet-Group Survey Results: Southeast Alaska Winter 2009-2010

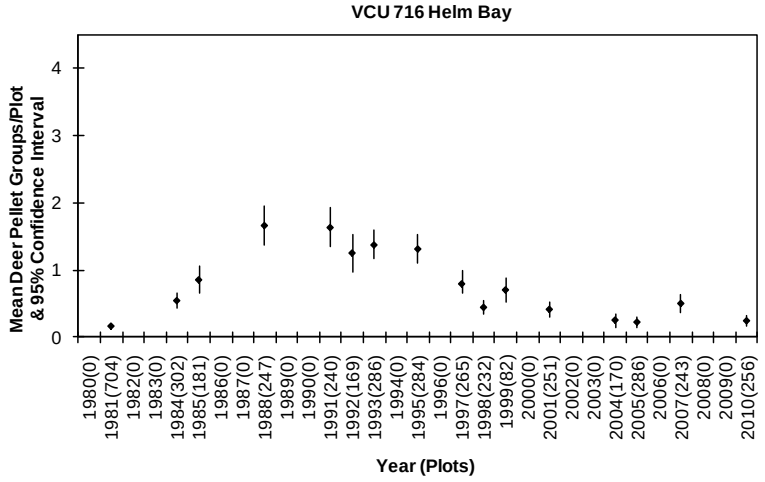
GMU	VCU Name	VCU	2010 Total Plots	2010 Mean (Pellet Group/Plot)	2010 Confidence Interval	Previous Survey Year	Previous # Plots	Previous PG/Plot	Previous Confidence Interval	% change
				NORTHERN SOUTHEAST ALASKA						
1C	North Douglas	35	312	1.07	0.89-1.24	2009	220	1.85	1.56-2.14	-42.3%
1C	Inner Point	36	263	1.52	1.29-1.74	2009	268	1.44	1.20-1.68	5.6%
1C	Shelter Island	124	325	1.27	1.09-1.44	2009	250	0.71	0.57-0.84	79.5%
4Z	Suntaheen Crk	209	265	1.36	1.11-1.61	2009	202	0.51	0.35-0.67	167.2%
4Z	Pavlof	218	216	1.48	1.23-1.71	2009	192	0.90	0.66-1.15	63.9%
4Z	Finger Mtn	247	217	2.53	2.12-2.93	2008	199	3.32	2.87-3.78	-23.8%
4Z	Range Creek	288	341	1.06	0.87-1.24	2006	359	1.82	1.57-2.06	-41.8%
4Z	Nakwasina	300	183	2.77	2.42-3.11	2008	166	3.17	2.66-3.68	-12.6%
4Z	Sea Lion Cove	305	248	1.04	0.83-1.23	2008	159	1.44	1.15-1.73	-28.0%
				SOUTHERN SOUTHEAST ALASKA						
3Z	Woewodski	448	234	0.81	0.63-0.98	2009	162	0.98	0.74-1.22	-17.2%
3Z	Onslow	473	366	0.96	0.81-1.10	2008	339	1.33	1.13-1.53	-28.1%
2Z	Thorne Lake	575	313	1.75	1.53-1.96	2009	312	1.97	1.69-2.24	-10.9%
2Z	Snakey Lakes	578	302	1.36	1.16-1.55	2008	300	1.43	1.22-1.64	-4.6%
2Z	Little Ratz	584	355	2.05	1.79-2.30	2009	305	2.34	2.07-2.61	-12.5%
2Z	Twelvemile	621	308	1.38	1.19-1.55	2008	190	2.14	1.75-2.52	-35.7%
1A	Helm Bay	716	256	0.24	0.16-0.31	2007	243	0.50	0.35-0.64	-52.3%
1A	Gravina	999	258	0.33	0.24-0.40	2007	167	0.86	0.68-1.04	-62.1%

Note: Changes in pellet density are influenced by several factors and may not always reflect actual changes in deer density. Snowfall patterns influence the distribution and density of deer pellets from year to year, and snow persisting late into the spring at elevations below 1500 feet limits our ability to consistently survey the same elevation zone among years. When evaluating deer pellet data, consider the length of time since the last survey, the number of plots sampled from year to year, the variability in the data, and snowfall.

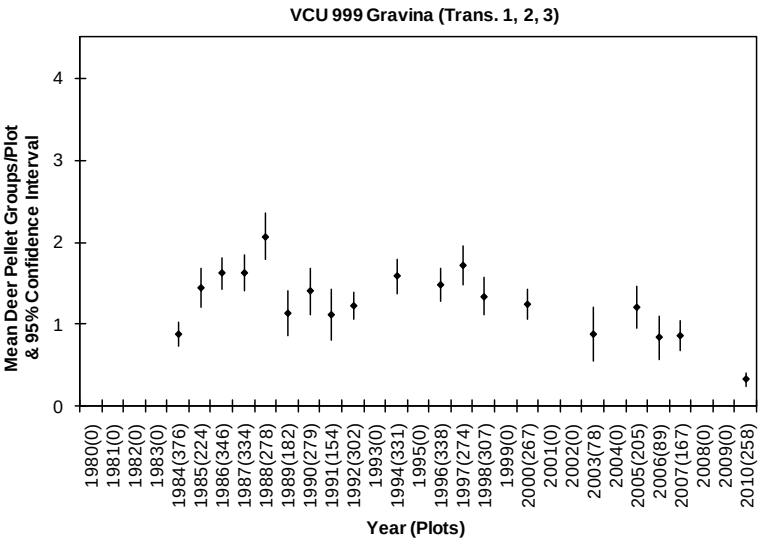
GMU 1A - Ketchikan Area

Summary: In GMU 1A, only two watersheds were sampled in 2010. Pellet densities appear to be quite low at both Helm Bay and Gravina. Three severe winters in a row (2006—2007, 2007—2008, 2008—2009) likely contributed to these low numbers, as did logging activity on Gravina. However, wolf and bear predation in GMU 1A is likely also playing a role in keeping deer numbers low in some areas.

Helm Bay (VCU 716): This VCU is located on the Cleveland Peninsula north of Ketchikan. This area was intensively sampled in 1981 and three permanent transects were established in 1984. The area was moderately sampled in 1984 and 1985. Three transects were established in 1984. Transect T1 is long, flat, and traverses extensive muskeg and scrub forest. Transects T2 and T3 each reach to 1500 feet elevation and traverse mid-volume forest. Snowfall in southern Southeast Alaska hit 20+ year highs the winters of 1998—1999 and 2001—2002, likely contributing to the apparent population declines. More recently, above average snowfall (see page 16) during three consecutive winters (2006—2007, 2007—2008, 2008—2009) likely lowered population levels if forage availability was reduced, leaving deer in a weakened condition where they would be more susceptible to winter mortality and predation. The slightly higher pellet densities in 2007 likely resulted from deer concentrating on winter range due to heavy snowfall. In contrast, the 2010 pellet densities, seen after a mild winter in southern Southeast Alaska, are probably more reflective of current deer densities. The # of plots sampled/year on the three permanent transects has ranged from 82 (1999) to 302(1984).*



Gravina (VCU 999): The northeast shore of Gravina Island was first sampled in 1981 at a moderate level. Between 1984 and 1986, the island was sampled intensively with over 1000 plots being recorded each year. In 1987, three transects (T1, T2, and T3) of the greater set were chosen for continued sampling. The three transects chosen were the most accessible from the Ketchikan airport. The chart below displays data for these transects only. The pellet density estimates that resulted from the intensive sampling are similar, but slightly lower, than the densities calculated using just these three transects. Results of the intensive sampling in 1984—1986 can be found in Appendix 1. Since 1984, an attempt has been made to complete all three transects at least every three years. Only one transect was completed in 2003 and 2006. Only two transects were completed in 2005 and 2007. Helicopter logging was occurring on T3 in 2007. Pellet densities in this area in 2010 are notably reduced. Logging within this watershed has likely changed not only the habitat composition, but also the distribution of deer. Deer densities may be lower due to a combination of the effects of logging as well as an apparent increase in wolf activity in this area in recent years. The # of plots sampled/year on the three permanent transects has ranged from 78(2003) to 376(1984).*



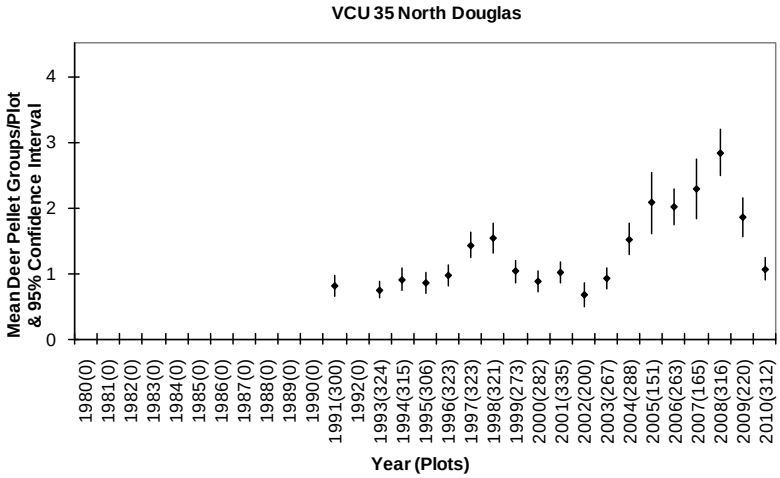
*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 1C - Juneau Area

Summary: In GMU 1C, pellet densities were down by over another 40% in the North Douglas VCU. The data indicates that the number of deer on North Douglas has likely decreased to some extent, but the pellet density in this area continues to be relatively high in comparison with other parts of the region and higher than most years between 1991 and 2003. In contrast to North Douglas, the pellet survey results appear to be stabilizing at Inner Point on the backside of Douglas Island, and stabilizing or increasing on Shelter Island. It should be noted that pellet densities in Unit 1C are relatively high in comparison to southern Southeast Alaska, and that coupled with lower predation risk will likely allow populations to recover more quickly when they are reduced due to winter severity.

North Douglas (VCU 35): Douglas Island is located immediately opposite the city of Juneau and is heavily used by Juneau hunters. Three transects were established at the end of the road in 1991, and ADFG attempts to complete them every year. These transects rise to over 1000 feet in elevation and traverse moderate volume hemlock stands. Deer appeared to be increasing almost exponentially in this area since 2002. However, three above average winters in a row between 2006 and 2009 likely knocked the population back to some extent. The high pellet densities recorded after these three winters are likely a result, at least in part, of higher concentrations of deer on the primary winter range due to high snow depth in other habitats. The 2009—2010 winter was much milder, which would allow deer to disperse across a broader range of habitats. The much lower density recorded after the relatively mild 2009—2010 winter likely reflects both reductions in the deer population after three relatively severe winters as well as a redistribution of deer across a broader area. However, it should also be noted that this area has been surveyed primarily in conjunction with high school students for the last 5 years, and so some deviations in sampling protocol or observer bias could be also be contributing to changes in observed pellet densities.

Notes: Fewer plots were sampled on all three transects in 2002 due to snow covering the transect at higher elevations. Only transects T1 and T3 were sampled in 2005. Fewer plots were sampled on all three transects in 2006 due to snow covering the transect at higher elevations. The # of plots sampled/year has ranged from 151(2005) to 335(2001).*

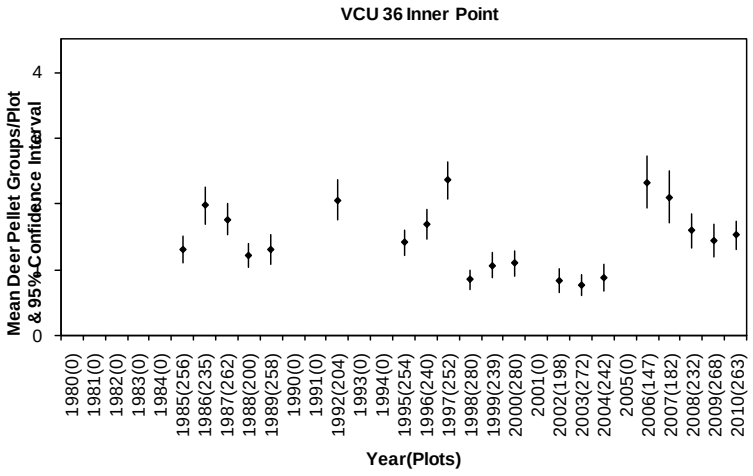


*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 1C - Juneau Area Continued

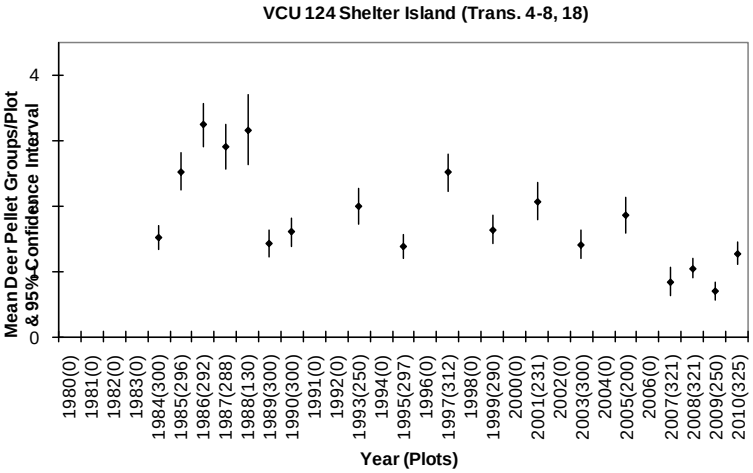
Inner Point (VCU 36): This drainage, located on the west side of Douglas Island, is popular with Juneau deer hunters. Because Douglas Island is the most important hunting area for Juneau hunters, ADFG attempts to complete these transects every year. However, because of high wind and sea conditions in Stephens Passage, access is sometimes difficult. This is a small VCU containing mostly low-volume forest, which is particularly brushy at lower elevations. Two transects (T1, T3) traverse from sea level to 1500 feet, while the third (T2), is low elevation and consists of 125 plots rising to approximately 500 feet. Three above average winters in a row (2006—2007, 2007—2008, 2009—2009) likely decreased deer populations to some extent, but the relatively mild winter of 2009—2010 likely have allowed deer numbers to stabilize (see page 16). It should be noted that pellet densities, although decreasing, are still relatively high compared to counts between 1998 and 2004 and other parts of the region.

Notes: In 1986 rough water prevented access to T2 and T3, so transects running directly uphill from Inner Point and Middle point were substituted for that year only. Only T2 and T3 were run in 1988. Selective logging in 1998 prior to the count may have displaced some of the deer population. Only T1 and T3 were run in 2002. Only transects T1 and T3 were run in 2006. All transects but fewer plots were surveyed in 2007 due to snow. The # of plots sampled/year has ranged from 147(2006) to 280 (1998/2000)*



Shelter Island (VCU 124): Located north of Juneau in the 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 islands in this VCU, is primarily forested with a maximum elevation of 1,170 feet on the northern end. This VCU was sampled intensively from 1984 to 1986, but this practice was discontinued in 1987 because most of the south end is private property. Currently only transects T4, T5, T6, T7, T8, and T18 on the north end of Shelter Island are sampled. These transects were chosen because they were the most easily accessed and can a be done in one day with a six-person crew. The chart below displays only pellet densities on these six transects, including the intensive sampling period. Pellet densities for 1984—1986 that include all plots may be found in Appendix 1. Three above average winters between 2006 and 2009 likely reduced deer numbers, but current pellet counts after the relatively mild winter of 2010 indicate the population is likely stabilizing or starting to recover.

Notes: Not all transects were sampled every year. The start location of T7 was missed in 1987 and it was run at least 1 mile south of it's proper location. In 1988, only three transects (T6, T7, T18) were run. In 1993, T7 was not done. In 2001, T18 was not done. In 2005, T7 and T8 were not done. The # of plots sampled/year has ranged from 130(1988) to 325(2010).*

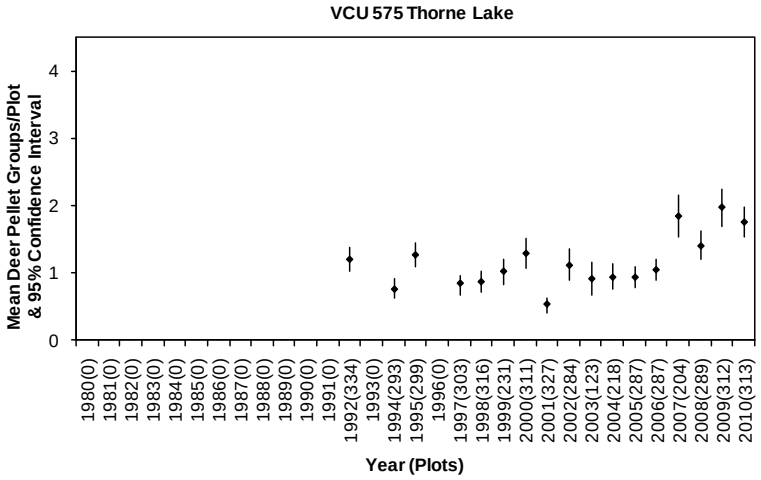


*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 2 - Prince of Wales Island

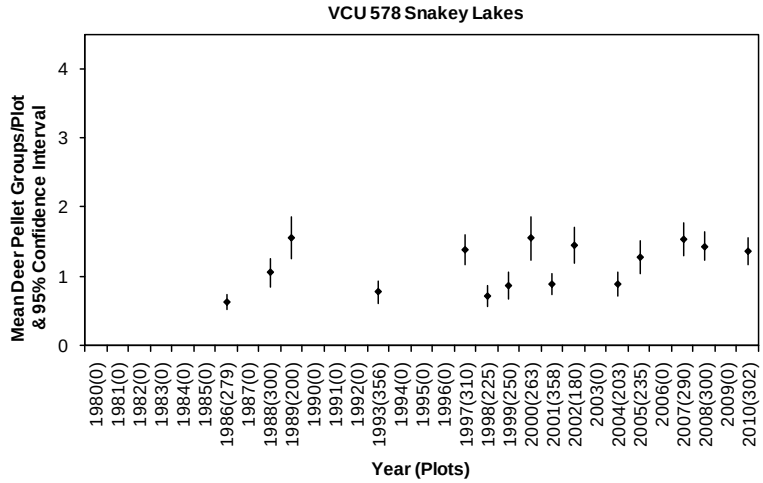
Summary: GMU 2Z continues to be the anomaly from the rest of the region. Despite three above average winters in a row during 2006—2009, pellet counts remained stable or increased. This occurred despite the fact that southern southeast Alaska had more snowfall in 2008—2009 than since the severe 1975—1976 winter. The reason we are not seeing decreases after three years of relatively hard winters may be because the severity of winter in GMU 2 is simply not as high as the rest of the region; even the 2008—2009 winter snowfall is still below the average snowfall for northern southeast Alaska (see page 16). While winter severity may be relatively high, it may not be high enough to cause high winter mortality as long as forage continues to be abundant and available throughout primary winter range (old-growth forest). If heavy mortality did not occur after the previous winters, deer would continue to congregate on winter range, and counts would remain stable or increase. Pellet counts after the relatively mild 2010 winter indicate that deer are continuing to do quite well in Unit 2.

Thorne Lake (VCU 575): In 1992, four transects were established in along the Thorne River drainage, located in the central part of Prince of Wales Island. All four transects start along Road 3015 and are accessed by vehicle from Thorne Bay. Higher counts in recent years despite several above average winters indicate deer are doing well in this area. Notes: A new start was established for T2 in 1994 due to logging , but it still hits the edge of a clearcut. Only T2, T3, T4 were sampled in 1999 & 2004. Only T3 & T4 were sampled in 2003. The # of plots sampled/year has ranged from 123(2003) to 334 (1992).*



Snakey Lakes (VCU 578): Four transects (T1, T2, T3, T4) were established off the road system by USFS in this VCU in 1986. This is an inland VCU, located in the Thorne River drainage of Prince of Wales Island. Pellet densities have been relatively stable in this VCU, especially considering that logging activity made it difficult to complete all transects every year, and because several transects were logged and had to be replaced by new ones that traversed primarily old growth forest. Likewise, winter severity does not appear to have diminished deer density.

Notes: Due to logging, a new start point for T3 and T4 was flagged in 1993. In 1998, T3 was not done. In 1999, T3 & T4 were not done. In 2002, T1 and T4 were not done. In 2004, T1 and T2 were discontinued due to logging and T5 was created. In 2007, T3 and T4 were replaced with T6 and T7 due to logging. T5, T6 and T7 are the current transects. The # of plots sampled/ year has ranged from 180(2002) to 358(2001).*

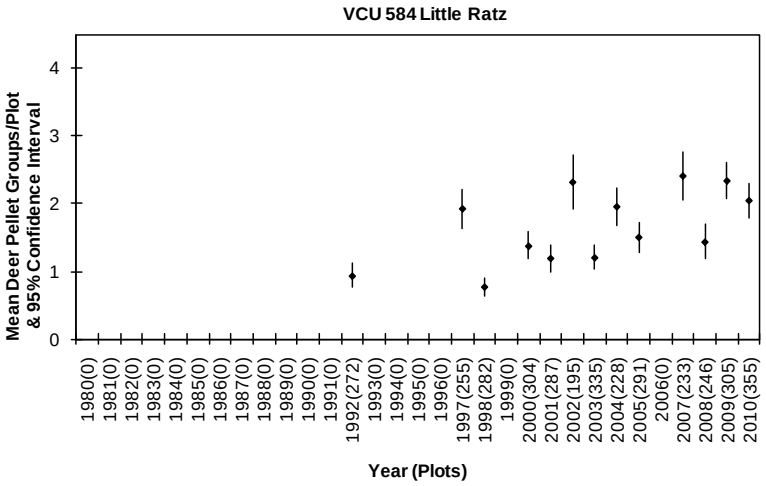


*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 2 - Prince of Wales Island Continued

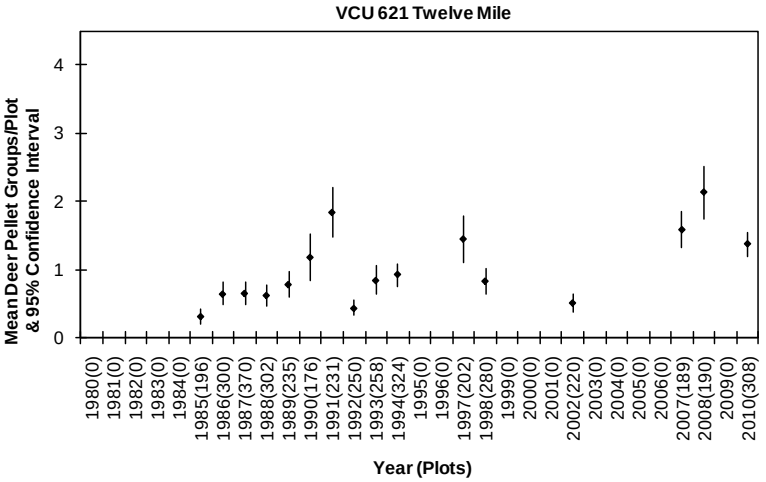
Little Ratz (VCU 584): Four transects were established in 1992 on the east coast of Prince of Wales Island. Access to all transects is by vehicle from Thorne Bay. Pellet densities appear to be stable and relatively high in this VCU.

Notes: all transects but fewer plots were run in 2002. T1 not run in 2004. T2 not run in 2007. The # of plots sampled/year has ranged from 195 (2002) to 355 (2010).*



12 Mile Arm (VCU 621): This VCU is located near Kasaan Bay on the east-central portion of Prince of Wales Island, and has been sampled by since 1985. Pellet densities have been relatively high in recent years. While deer concentrating on winter range likely contributed to the high counts in 2007 and 2008, the 2009—2010 winter was extremely mild. Therefore, continued high counts in 2010 likely indicate that deer density has increased substantially since 2002 and now remains stable.

Notes: the # of plots sampled/year has ranged from 176 (1990) to 370 (1987).*



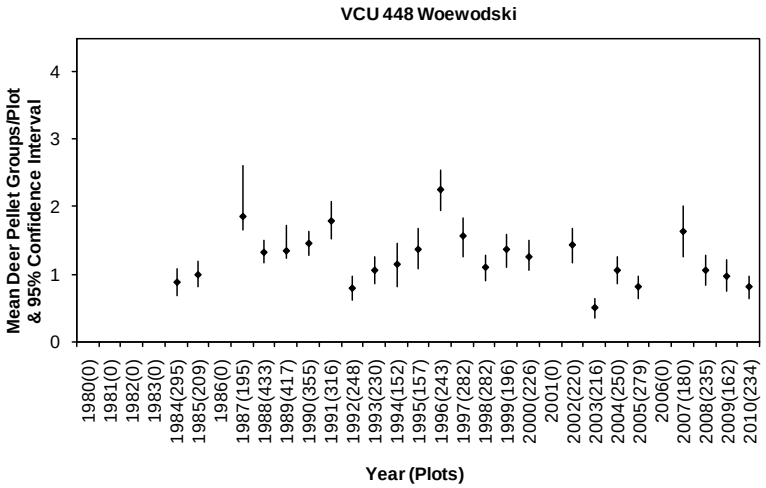
*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 3 - Central Southeast Alaska Islands

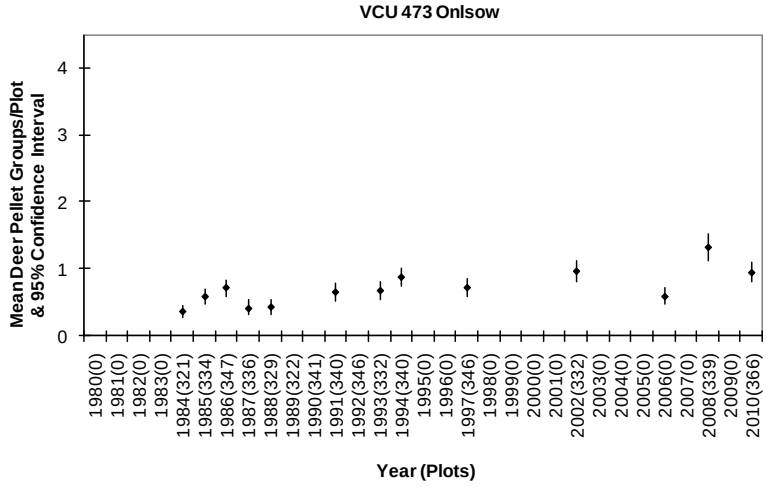
Summary: In GMU 3Z, two VCUs were sampled in 2010 and pellet densities appear to be remaining relatively stable in both. While counts are slightly lower in Woewodski, confidence intervals overlap previous years, indicating densities have likely changed very little. The 2010 winter in this area was considerably milder than the previous three years and close to the 15 and 30 year averages (see page 15). Because it is characterized by fairly steep west-facing slopes, this area likely melts out relatively quickly, enabling deer to consistently access available forage. The Onslow area transects are located in the southern section of Unit 3, and are characterized by lower snow deposition. Pellet counts in 2010 are actually one of the highest recorded for this VCU, which may reflect an increase in deer populations since they were not likely super-concentrated on winter range during the milder 2010 winter.

Woewodoski (VUC 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 elevation through moderate volume timber. It is interesting to note that despite heavy snowfalls the winter of 1998—1999, deer pellet group counts were slightly higher than the previous year, and remained in the same range during following surveys, indicating mortality during that severe winter was likely low. Corroborating evidence from deer radio-collared by the Forest Service confirmed this, as only one of 33 adult deer on Mitkof Island died of starvation that winter. Because deer were below carrying capacity in this area, their winter range was able to sustain them despite winter severity. Similarly, relatively high pellet counts have continued despite three severe winters in a row (2006—2007, 2007—2008, 2008—2009; see page 16). Pellet counts in 2010 remain relatively stable after near average snowfall (see page 15).

Notes: the # of plots sampled/year has ranged from 152(1994) to 433(1988).*



Onslow (VCU 473): In this VCU, 2 transects are located on Etolin Island, and one is on nearby Onslow Island. Annual sampling between 1984 and 1986 indicated low but increasing deer numbers, and then a slight decline in 1987 and 1988. Pellet counts have remained fairly stable over the years. The 2008 count, was the highest on record to date, but this may be related in part to deer concentrating on primary winter range during this above-average winter. The count in 2010 after a milder winter was lower than the previous count, but still relatively high and therefore densities have likely remained stable or increased slightly over the last decade.
Notes: the # of plots sampled/year has ranged from 321(1984) to 366(2010).*



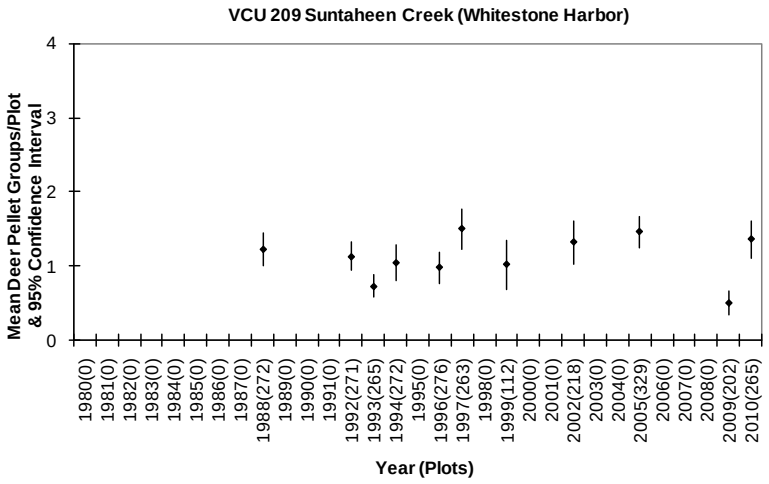
*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 4 - Admiralty, Baranof & Chichagof Islands

Summary: In GMU 4Z pellet counts were conducted in six watersheds. Do to management concerns and doe closures on NE Chichagof, it was sampled again. In the two NE Chichagof watersheds (VCU 209 and 218), pellet densities appear to have increased substantially from the previous year. The 2010 winter was considerably milder than the severe winters of the previous three years, so this is not likely due to deer concentrating on winter range. Because of the mild conditions, forage availability was likely much higher in 2009—2010. Deer populations in this area are likely recovering. While pellet densities are lower at Finger Mountain and Nakwasina, confidence intervals overlap with previous years and pellet densities fall within the range of normal, indicating these populations were likely stable. In contrast, pellet densities at Range Creek are the third lowest recorded for that watershed and lower than the previous four counts conducted since 1985. While deer populations might have been somewhat reduced here, pellet densities are still relatively high and we expect deer should recover. Finally, while the pellet density at Sea Lion Cove is the second lowest ever recorded for that watershed, confidence intervals overlap for the previous 5 years so the population here is likely stable or only slightly decreased.

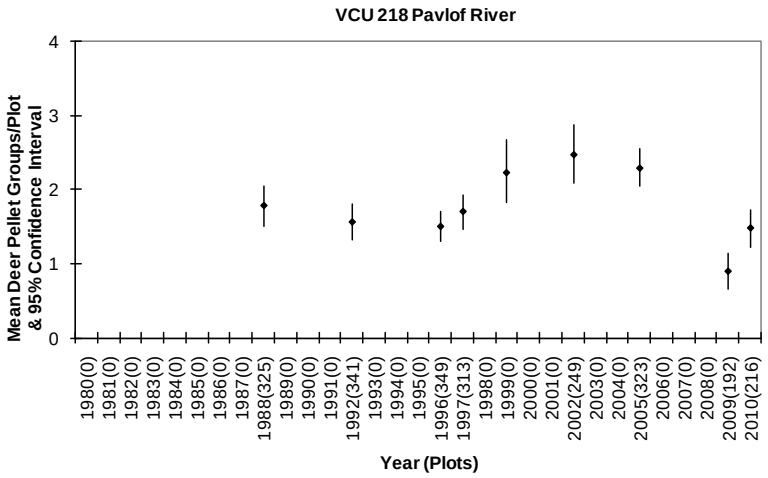
Suntaheen Creek (VCU 209): This VCU is also known as Whitestone Harbor. Located on NE Chichagof, these three transects were established in 1988. These transects traverse a lot of muskeg and scrub; most of the better habitat in the VCU is found along the beach fringe and creeks. Pellet counts in 2010 recovered substantially from the previous year.

Notes: the # of plots sampled/year has varied from 112(1999) to 329(2005). * Only two of three (T2, T3) transects were sampled in 2009 due to lack of crew.



Pavlof (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 Wachusettts Cove. A wide variety of habitat types are encountered. High pellet densities in 1999 were originally thought to be related to deer concentrating during the abundant snow during the 1998—1999 winter, but pellet densities remained high in subsequent surveys, and so likely reflected a real population increase. While the population appear to have declined after three severe winters in a row (2006—2007, 2007—2008, and 2008—2009), the density is back up after the mild winter of 2010, indicating it is likely recovering.

Notes: the # of plots sampled/year has varied from 192(2009) to 349(1996). * Only two of three transects (T1, T2) were sampled in 2009 due to lack of crew.

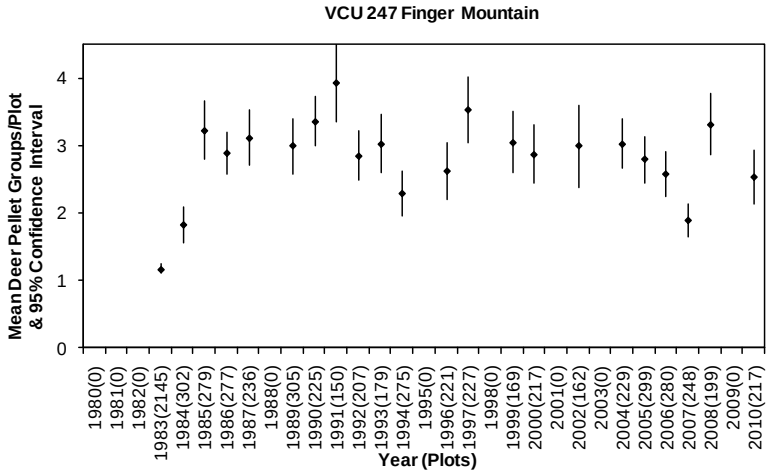


*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 4 - Admiralty, Baranof & Chichagof Islands Continued

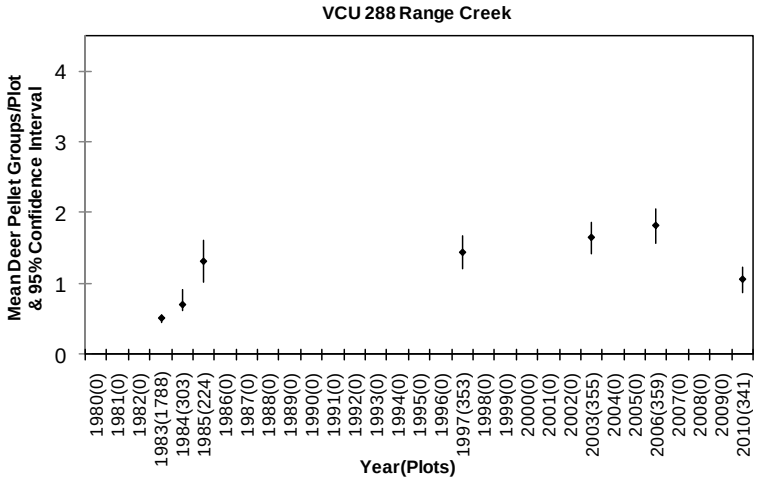
Finger Mountain (VCU 247): Located in Hoonah Sound, this VCU was intensively sampled in 1983 when 20 transects were completed. Three transects were chosen for long-term sampling in 1984. All transects have a SW facing aspect. This VCU is physiographically complex. While three transects probably do not reflect the entire VCU, repeating transects should yield useful trend data. Counts in 2008 were the third highest recorded, after a 2007 count that was the third lowest for this watershed. The counts after the milder 2010 winter, however, are similar to the counts prior to the severe winters and indicate that this population has likely remained stable.

Notes: T1 & T2 were run on incorrect bearings in 1991. the # of plots sampled/year has ranged from 150(1991) to 2145(1983).*



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 discontinued for the next decade. It was sampled again in 1997, 2003, and 2006. The 2010 counts indicate that the deer population may have decreased somewhat after the three severe winters between 2006 and 2009. However, it should be noted that the pellet counts are also relatively good compared to many areas of the region, and the deer population should recover from winter mortality as long as future winters do not limit forage availability for extended times.

Notes: The number of plots sampled/year after the intensive sampling of 1983 has ranged from 224(1985) to 359(2006).

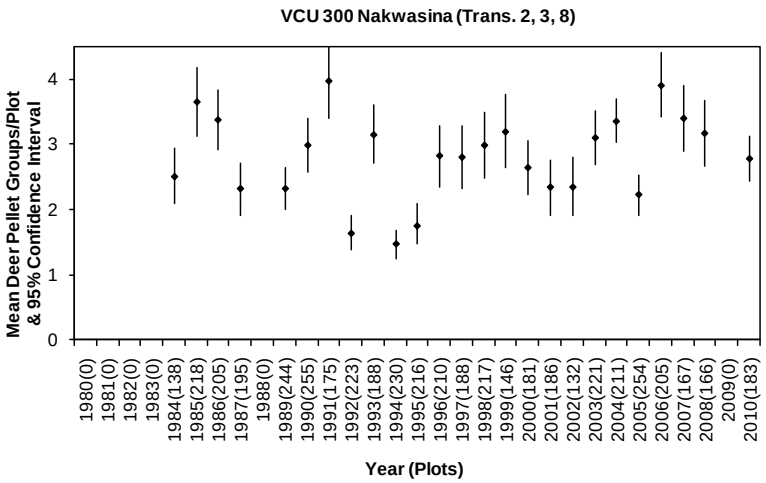


*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 4 - Admiralty, Baranof & Chichagof Islands Continued

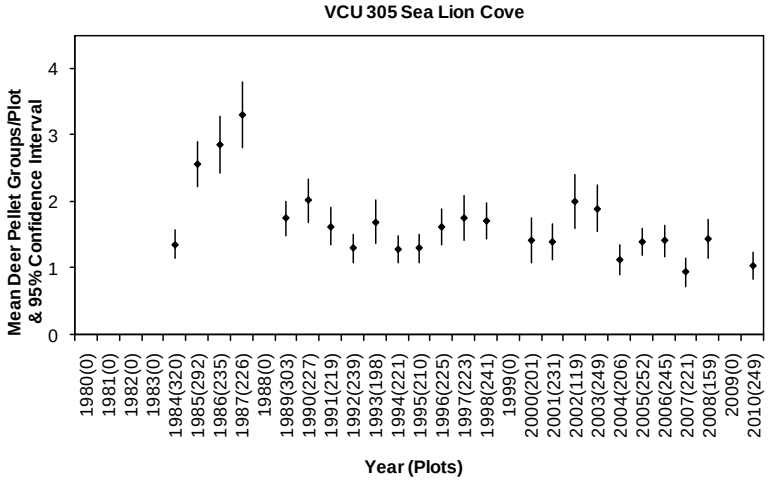
Nakwasina (VCU 300): This VCU north of Sitka is popular with local hunters and has displayed some of the highest deer pellet densities in Southeast Alaska. First sampled in 1984 with 12 transects, it was sampled more intensively in 1985 and 1986. In 1987, three transects were selected for continued sampling. This chart displays only data for transects T2, T3, and T8 since 1984. All three transects have southerly aspects and traverse mid-volume forest to elevations of 1500 feet. Heavy browsing on *Vaccinium* has been noted on all transects, and deer are likely near carrying capacity. After the hard winter of 1990—1991, deer pellet densities were high, likely from deer concentrating on winter range, but the 1992 low densities likely reflect die-off of from the 1990—1991 winter. The winters of 2006—2007, 2007—2008, and 2008—2009 were three of the most severe on record in northern Southeast Alaska. If deer populations were reduced, we would expect to see much lower densities after the next mild or moderate winter, when deer would not be as concentrated on winter range. The 2009—2010 winter was relatively mild to moderate, and pellet densities in this watershed are lower. However, the actual pellet density encountered in this area is still one of the highest in the region. While deer populations might be slightly lower than before the three severe winters, their numbers are still in the average range for the watershed and above average for the region.

Notes: the # of plots sampled/year has ranged from 138(1984) to 255(1990).*



Sea Lion Cove (VCU 305): These three transects are accessed from Kalinin Bay on Kruzof Island and are low to mid-volume timber. Heavy browsing followed by severe winters in 1989—1990 and 1990—1991 may have contributed to a decrease in the population. Likewise, the three severe winters that occurred between 2006 and 2009 may have also decreased the population, but because the confidence intervals for 2010 overlap with the previous 5 years, any decrease would likely be relatively minor. If milder winter weather continues, this population will likely have the opportunity to fully recover from any population reductions that may have occurred.

Notes: In 1987 one transect was relocated to avoid steep side-hills and ravines. The # of plots sampled/year has ranged from 119(2002) to 320 (1984).*



*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

GMU 5 - Yakutat Area

No pellet surveys were planned for GMU 5 in 2010. Please see Appendix 3 or 2008 report for GMU 5 trends.

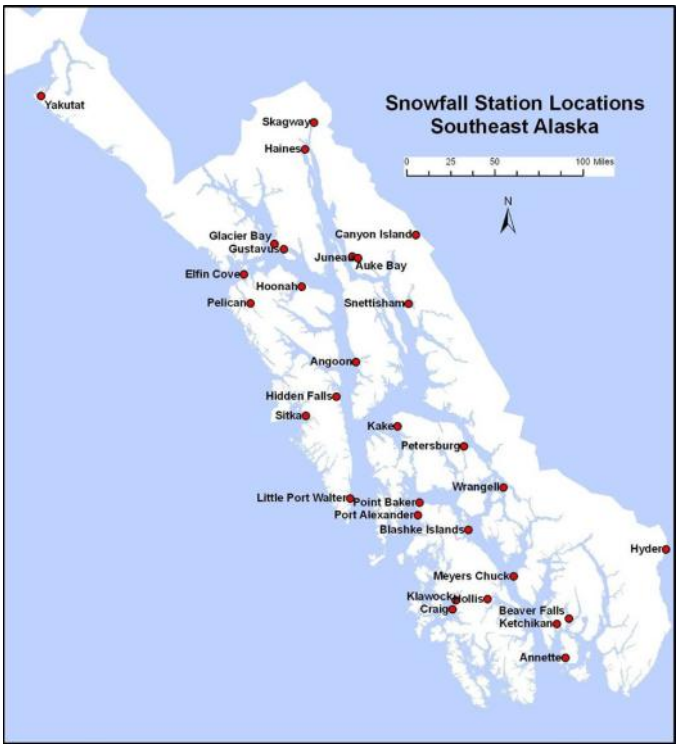
*See Appendices 1 & 2 for # plots sampled & pellet group densities by VCU, elevation & transect. See Appendix 3 for # plots sampled & pellet densities by VCU & survey year.

Southeast Alaska Snow Report

Winter severity, particularly snow depth, can play an important role in determining deer distribution, nutritional condition, productivity and survival. As a result, biologists often rely on winter severity information in order to forecast effects of winter conditions on deer population dynamics. Due to the strong maritime influence on deer range in southeast Alaska, winter snow conditions can be extremely variable both within a given winter and between years. Snow depths vary considerably throughout the region with northern areas (e. g. Juneau) typically receiving more winter snowfall than more southerly areas (e. g. Ketchikan/ Annette). Snow depth increases with increasing elevation, on northerly aspects, and where there is less or no canopy cover. Low elevation old growth forests provide important winter habitat for deer. In areas that are heavily fragmented naturally (such as by muskegs) or due to timber harvest, deer can have difficulty moving between patches of winter range. Deer begin to flounder at snow depths exceeding 18 inches (chest-height for a deer). Deep soft snow buries forage, causes greater energy consumption and increases vulnerability to predators and hunters. However, freeze-thaw cycles and the formation of deer trails can eventually condense snow, enabling deer to walk on top of the crust.

Snow persists at low elevations on NE Chichagof. Pavlof Rd, April 20th, 2010. Photo by Phil Mooney.

Snow behind Bear Paw Lake, April 23rd, 2010. Photo by Phil Mooney.



Snowfall in Inches for Southeast Alaska (Winter 2009-2010)[1]

Station Name	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Total	Averages[2] 5	15	30	% change from 5-year average
Yakutat	0	32	16	21	5	33	4	0	111	179	160	159	-38%
Elfin Cove	0	22	9	16	1	40	1	0	89	170	115	109	-48%
Pelican	0	19	11	9	0	48	2	0	89	157			-43%
Glacier Bay	0	M[3]	11	2	0	M	0	0	14	126			-89%
Gustavus	0	22	12	24	0	19	1	0	77	91			-15%
Hoonah	1	30	12	23	0	30	1	0	96	150			-36%
Skagway Power	0	5	3	16	2	26	1	0	54	58			-7%
Skagway Customs	0	18	5	18	3	32	0	0	75	46			62%
Haines Customs	0	95	40	51	30	111	2	0	328	259	253		27%
Haines	0	47	20	68	8	58	0	0	202	203			-1%
Juneau Airport	0	20	9	21	0	11	6	0	67	124	92	88	-46%
Annex Creek	0	51	52	70	15	46	5	0	240	324			-26%
Hidden Falls Hatchery	0	7	14	14	0	15	0	0	49	150			-67%
Little Port Walter	0	5	7	16	0	17	1	0	46	142	100		-67%
Port Alexander	0	3	7	8	0	5	2	0	25	65	49	50	-61%
Point Baker	0	8	5	2	0	2	0	0	16	43			-63%
Petersburg	0	35	15	11	0	18	0	0	80	134	78	68	-41%
Wrangell	0	14	10	7	2	7	0	0	39	82			-52%
Blashke Island	0	1	7	2	0	5	0	0	16	44			-64%
Meyer Chuck	0	5	2	2	5	7	0	0	21				
Annette WSO	0	1	3	0	0	3	1	0	8	51	41	34	-84%
Craig	0	1	1	1	0	1	4	0	7	28			-74%
Hyder	0	13	16	6	1	4	1	0	40	255			-84%

1 Data from National Weather Service, NOAA website: http://www.arh.noaa.gov/clim/akcoopclim.php?wfo=pajk

2 Averages for the 5, 10, and 15 years preceeding the 2009-2010 winter (when available).

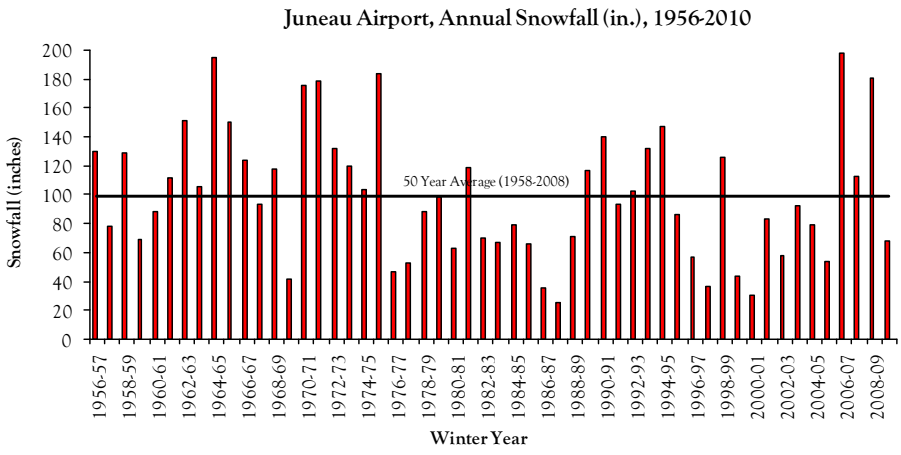
3 Data was missing for that month of the 2009-2010 winter

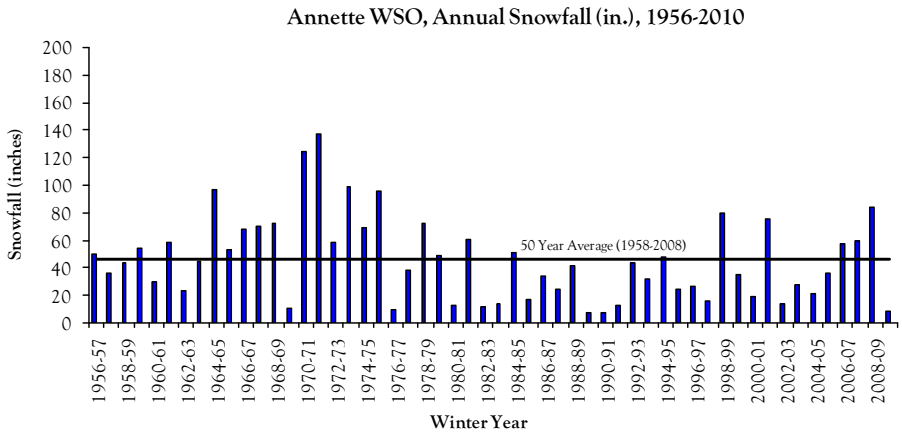
Southeast Alaska Snow Report - Continued

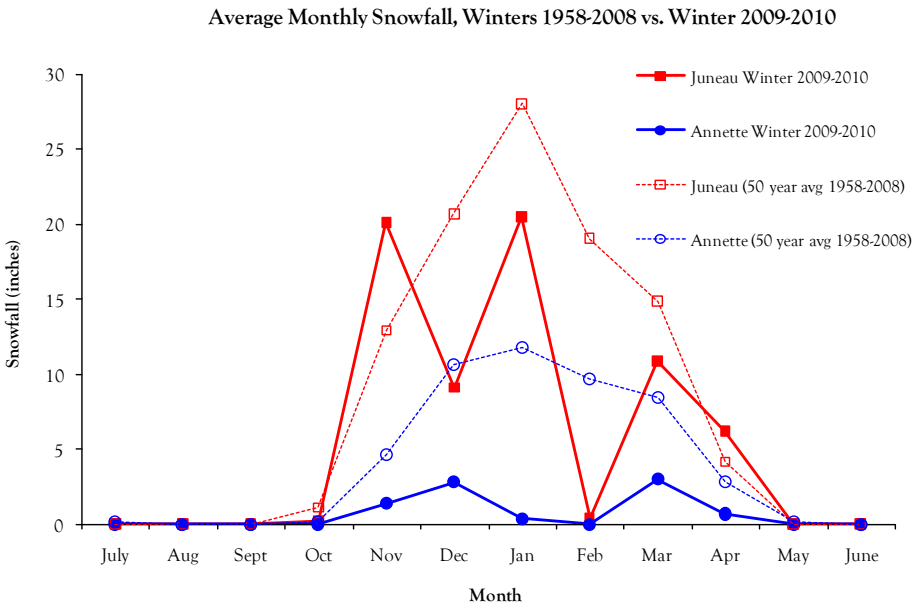
Between 1995—2006, winter conditions in southeast Alaska were relatively mild, with only one out of 11 winters having greater than average annual snowfall in the Juneau area, and two out of 11 in Annette. As a result, it is unlikely that winter conditions negatively affected deer populations between 1995 and 2006. However, the three winters between 2006 and 2009 were severe across the region.

In the Juneau area, the winters of 2006—2007 and 2008—2009 had the highest and fouth highest recorded snowfall since 1956, respectively, with above-average snowfall during the 2007—2008 winter. At Annette WSO, snowfall was above average and increasing during this same time period, with the 2008—2009 winter being the highest snowfall since the 1975—76 winter. In contrast, the 2010 winter was relatively mild to moderate throughout much of the region.

The pattern of snow conditions in relation to the spatial and temporal distribution of forage can have a profound effect on deer health and survival. In 2006—2007, heavy early (Nov: Juneau 64", Annette 14") and late (March: Juneau 62", Annete 22") season snowfall likely caught deer at high elevations, limited movements, and then reburied remnant forage late in the season when deer were already weakened. In 2007—2008, snow did not come as heavy, and the peak (Feb: Juneau 44", Annete 22") was less snow that came later in the winter. In 2008—2009, however, extremely heavy snows mid-winter (Jan: Juneau 75", Annete 28") coupled with above average snowfall and a 2nd peak late-winter (March: Juneau 31", Annette 21") likely limited deer movements throughout much of the winter in northern Southeast Alaska, and to a lesser extent in southern Southeast Alaska.





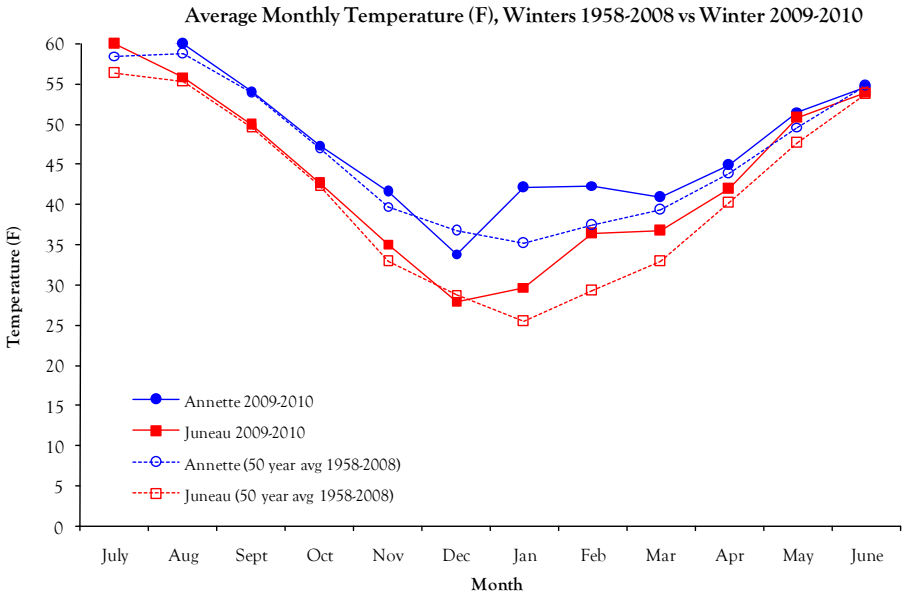


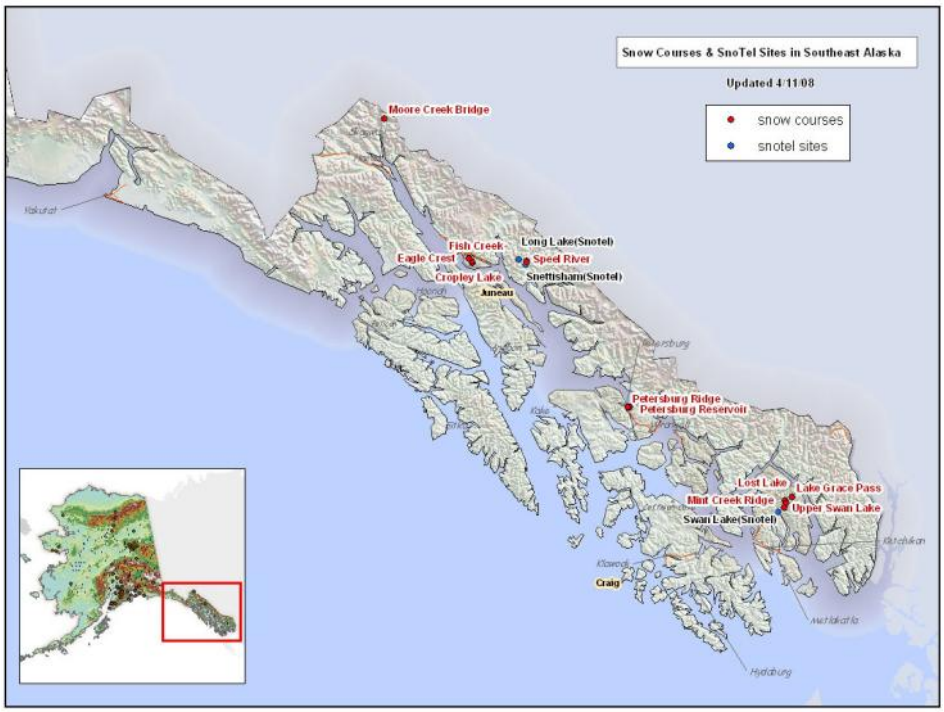
Southeast Alaska Snow Report - Continued

In contrast, the 2009–2010 winter was relatively mild, although a higher than average early and late season snowfall likely limited forage availability to some extent. Snowfall varies considerably among watersheds, and deer suffer most in areas with higher snowfall, where habitats were fragmented, and where populations were near carrying capacity. Because the 2009–2010 winter was relatively mild and because many older and/or diseased individuals had already died the previous winters, deer survival likely increased. Survival may also have increased if reduced population sizes in some areas resulted in more available forage/deer on summer and winter range.

Freeze-thaw cycles in winter are good for deer because they compact snow, expose vegetation, and enable deer to walk on snow crusts. Because freeze-thaw cycles tend to occur on a daily basis and are not easily detectable through averaged data, they are hard to evaluate for the winter season as a whole. However, it is evident that the 2009–2010 winter was warmer than average, with cooler than average temperatures only occurring briefly in December.

While snowfall is a good indicator of winter severity, because freeze-thaw cycles melt and compact snow, it does not always reflect what is on the ground. Snow pack analyses help fill this information gap. Snow courses are located throughout Southeast Alaska, the details of which have been included on pages 19–26. The snow depth information from these sites indicate that snow depth was near or below average in early 2010. The table to the right summarizes these data for the Douglas and Petersburg snow courses.





2010 Watershed Snowpack Analysis

Snow Course Name	# Courses Averaged	Percent of Average Snow Depth			
		Feb	March	April	May
Douglas Island	3	110%	77%	91%	96%
Petersburg	2	94%	67%	87%	93%

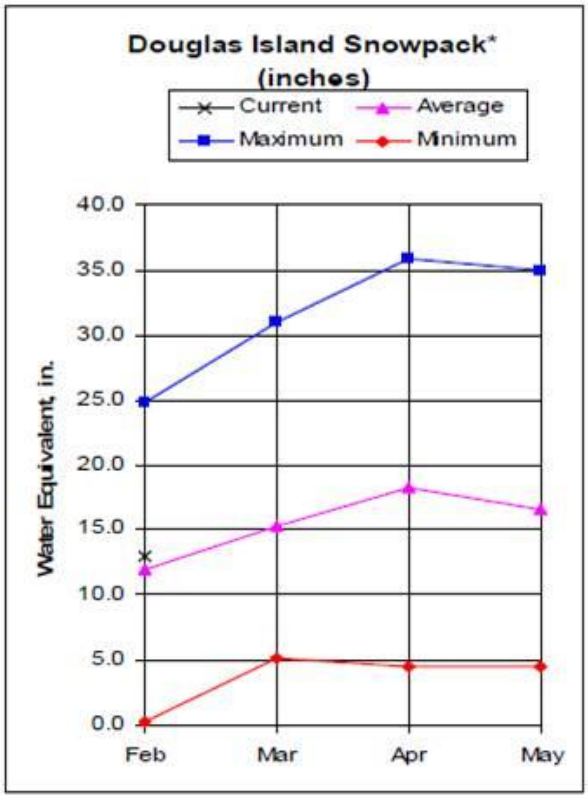
Data from NRCS Alaska Snow Survey Report: http://www.ambcs.org

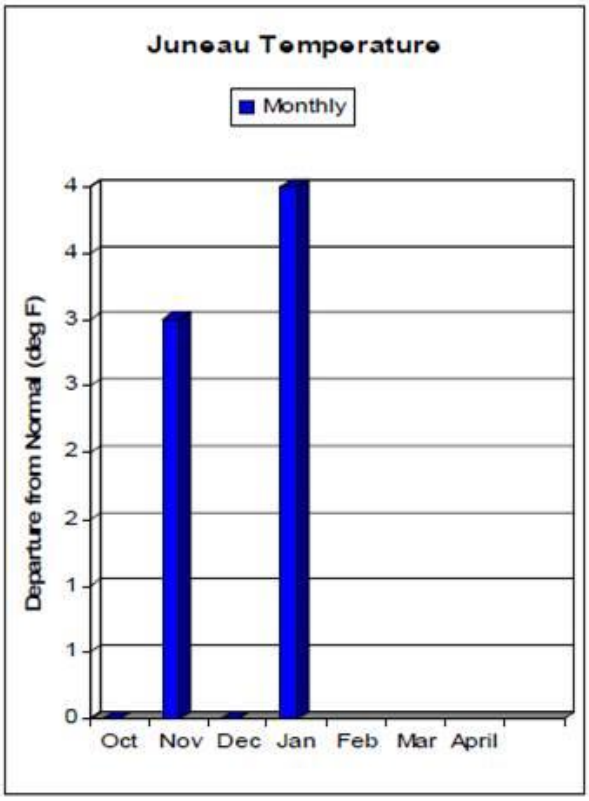
February 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, February Issue. Pp 24. Full report available at website: http://www.ambcs.org

SOUTHEAST*





Current Basin Conditions

Southeast Alaska is having a near normal snow pack year after three big snow years in a row (2007, 2008, 2009).
The Long Lake SNOTEL site is reporting 84 inches of snow and 25.2 inches of water content, which is 105% of normal.
The two Petersburg snow courses are 94% of normal water content.
The three Douglas Island snow courses are110% of normal water content.
There are two new snow courses in Wrangell, Institute Creek has 21 inches of snow with 7.3 inches of water content and Rainbow Falls at 500 feet elevation has no snow.
The snow water contents measured at the snow courses in the Swan Lake Hydro-electric project near Ketchikan were in the normal range the 5th of January.

February 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, February Issue. Pp 25. Full report available at website: http://www.ambcs.org

Southeast

SNOWPACK DATA

Snow Course	Elev. (feet)	Date	THIS YEAR Snow Depth	THIS YEAR Water Content	LAST YEAR Snow Depth	LAST YEAR Water Content	1971-2000 AVERAGE Snow Depth	1971-2000 AVERAGE Water Content
			(inches)					
December								
Cropley Lake	1650	11/30/09	43	10.6	31	10.0	---	---
Eagle Crest	1200	11/30/09	26	8.3	0	0.0	---	---
Fish Creek	500	11/30/09	9	2.4	0	0.0	---	---
Institute Creek	1350	12/01/09	26	7.4	New		---	---
Long Lake	850	11/30/09	36	9.5	24	8.8	36	9.1
Moore Creek Bridge	2250	11/27/09	26	4.8	30	8.0	---	---
Petersburg Reservoir	550	12/02/09	18	3.3	0	0.0	---	---
Petersburg Ridge	1650	12/01/09	50	11.0	18	5.2	---	---
Rainbow Falls	500	12/01/09	2	0.3	New		---	---
West Creek	470	12/02/09	15	3.6	---	---	---	---
January								
Lake Grace Pass	1900	No Survey			89	23.0	63	20.6
Long Lake	850	12/31/09	54	16.0	68	16.9	54	16.3
Lost Lake	425	1/05/10	33	9.1*	39	10.8	21	4.5
Mint Creek Ridge	1900	1/0510	63	19.6*	---	---	58	18.0
Petersburg Reservoir	550	12/31/09	22	6.6	19	3.0	13	3.3
Petersburg Ridge	1650	12/30/09	50	14.1	50	8.6	40	11.3
Upper Swan Lake	1700	1/05/10	40	11.5*	87	18.7	34	8.8
Upper Silvas	2300	No Survey			---	---	---	---
West Creek	470	01/01/10	20	5.8	---	---	---	---
February								
Cropley Lake	1650	1/29/10	56	22.4	76	23.6	58	18.4
Eagle Crest	1200	1/29/10	38	13.7	51	15.2	41	12.2
Fish Creek	500	1/29/10	6	3.0	17	4.7	20	5.0
Institute Creek	1350	1/31/10	21	7.3	New		---	---
Long Lake	850	2/01/10	84	25.2	87	29.9	75	23.9
Moore Creek Bridge	2250	2/01/10	59	20.0	76	15.7	62	16.9
Petersburg Reservoir	550	2/01/10	8	2.6	38	11.3	17	4.5
Petersburg Ridge	1650	2/01/10	48	17.6	81	23.6	57	16.9
Rainbow Falls	500	1/31/10	0	0.0	New		---	---
West Creek	470	No Report			29	8.5	---	---

Estimate *

PRECIPITATION DATA

INCHES ACCUMULATED SINCE OCTOBER 1ST

Precipitation Gauge	Elevation (feet)	Date	This Year	Last Year	1971-2000 Ave	% of Average
Long Lake	850	2/01/10	61.3	79.9	77.5	83
Moore Creek Bridge	2250	2/01/10	18.9	19.9	20.5	92
Snettisham	25	1/31/10	62.7	100.6	81.6	77
Swan Lake	50	No Report		82.8	65.1	

WATERSHED SNOW PACK ANALYSIS

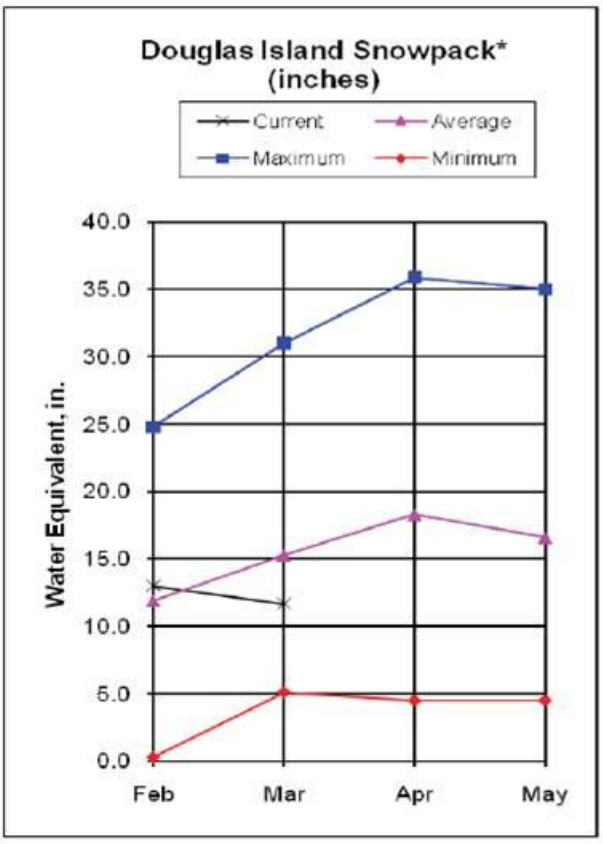
Region / River Basin	No. of Courses Averaged	Percent of Last Year	Percent of Average
Douglas Island	3	90	110
Long Lake	1	85	105
Petersburg	2	58	94

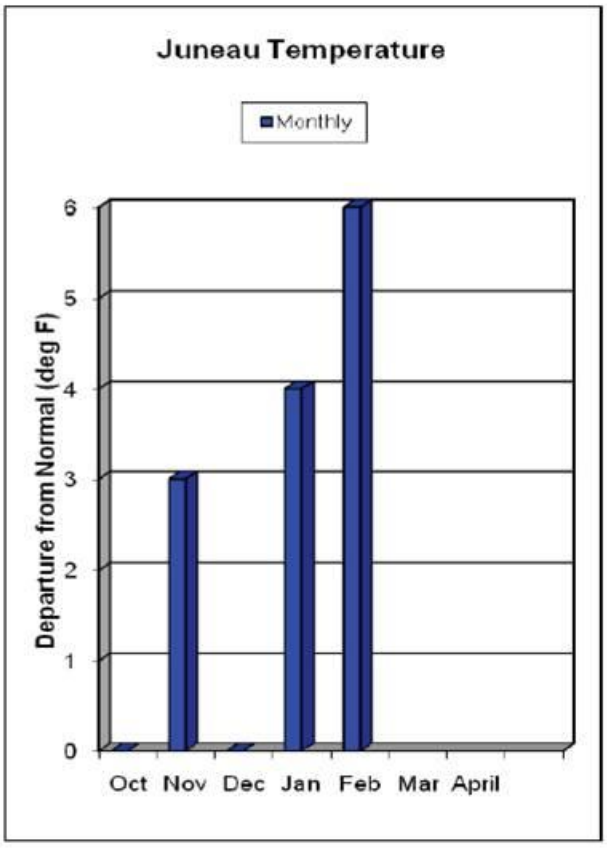
March 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, March Issue. Pp. 28. Full report available at website: http://www.ambcs.org

Southeast





Snowcover:

Southeast Alaska is having a below average snow pack year after three big snow years in a row (2007, 2008, 2009).
The Long Lake SNOTEL site is reporting 74 inches of snow and 26.7 inches of water content, which is 78% of average.
The two Petersburg snow courses have gone down to 67% of average water content from 94 percent last month.
The three Douglas Island snow courses are down to 77 percent of average from 110% of average water content last month.
The Moore Creek Bridge snow course, north of Skagway, has 60 inches of snow depth with 17.0 inches of water content, 80 percent of average. The precipitation received at Moore Creek since October 1st is 22.6 inches, 95 percent of average.

March 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, March Issue. Pp. 29. Full report available at website: http://www.ambcs.org

SOUTHEAST

SNOWPACK DATA

SNOW COURSE	ELEV.	DATE	THIS YEAR SNOW DEPTH	THIS YEAR WATER CONTENT	LAST YEAR SNOW DEPTH	LAST YEAR WATER CONTENT	1971-2000 AVERAGE SNOW DEPTH	1971-2000 AVERAGE WATER CONTENT
Cropley Lake	1650	2/26/10	53	23.1	98	33.9	70	23.9
Eagle Crest	1200	2/26/10	30	12.1	79	23.0	48	16.1
Fish Creek	500	2/26/10	0	0.0	32	9.2	20	6.0
Long Lake	820	2/28/10	74	26.7	104	38.1	92	34.1
Moore Creek Bridge	2250	2/27/10	60	19.0	78	23.5	62	21.3
Petersburg Reservoir	550	3/01/10	0	0.0	45	13.6	18	5.8
Petersburg Ridge	1650	3/01/10	45	18.6	93	28.3	65	21.8
Speel River	280	2/28/10	46	17.0	101	39.8	75	26.8
West Creek	470	3/01/10	38	9.6	---	---	---	---

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	30- YR AVERAGE (1000AF)	50 PERCENTILE	% OF AVERAGE	MAX (kaf)	MIN (kaf)
Gold Creek near Juneau	Apr-Jul	33	30	91	124	70

PRECIPITATION DATA

INCHES ACCUMULATED SINCE OCTOBER 1ST

Precipitation Gauge	Elev.	Date	This Year	Last Year	71-2000 Ave	% of Average
Long Lake	820	2/28/10	66.3	89.1	85.9	77
Moore Creek Bridge	2250	2/27/10	22.6	21.9	23.9	95
Snettisham	25	2/28/10	67.6	116.0	95.2	71
Swan Lake	50			93.4	77.8	

WATERSHED SNOWPACK ANALYSIS

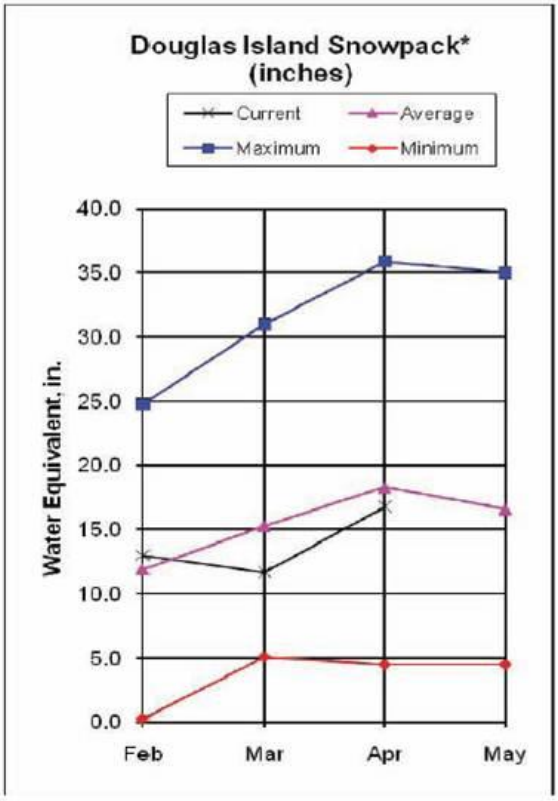
REGION / RIVER BASIN	# COURSES AVERAGED	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Skagway	1	72	80
Douglas Island	3	53	77
Snettisham	2	56	72
Petersburg	2	44	67

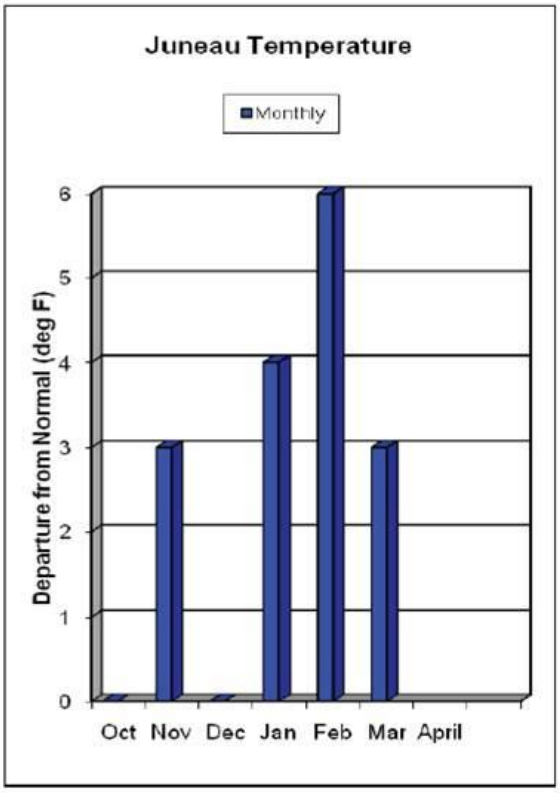
April 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, April Issue. Pp. 28. Full report available at website: http://www.ambcs.org

SOUTHEAST*





Snowcover:

In March, Southeast Alaska received significant snow above 800 feet of elevation. The Eagle Crest snow course has 49 inches of snow with 19.4 inches of water content, up 7.3 inches of water content from last month.

The Long Lake SNOTEL site, 60 miles southeast of Juneau in the Snettisham Hydro-electric project watershed, is reporting 99 inches of snow and 39.8 inches of water content, which is 90 percent of average.

The Petersburg Reservoir snow course has no snow while the Petersburg Ridge snow course has 71 inches with 28.5 inches of water content, 108 percent of average water content.

The Moore Creek Bridge snow course, north of Skagway, has 71 inches of snow depth with 22.6 inches of water content, 113 percent of average. The precipitation received at Moore Creek since October 1st is 29.1 inches, 109 percent of average.

April 2010: Southeast Alaska Snow Pack Data

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United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, April Issue. Pp. 29. Full report available at website: http://www.ambcs.org

SOUTHEAST

SNOWPACK DATA

SNOW COURSE	ELEV.	DATE	THIS YEAR SNOW DEPTH	THIS YEAR WATER CONTENT	LAST YEAR SNOW DEPTH	LAST YEAR WATER CONTENT	1971-2000 AVERAGE SNOW DEPTH	1971-2000 AVERAGE WATER CONTENT
Cropley Lake	1650	3/30/10	87	30.9	125	42.0	81	30.3
Eagle Crest	1200	3/30/10	49	19.4	110	30.1	54	18.5
Fish Creek	500	3/30/10	0	0.0	43	14.6	19	6.2
Institute Creek	1350	4/02/10	28	10.9	New			
Lake Grace Pass	1900	No Report			152	57.5	118	45.5
Long Lake	850	4/02/10	99	39.8	137	49.9	110	44.1
Lost Lake	425	No Report			67	25.5	39	15.0
Mint Creek Ridge	1900	No Report			137	44.5	117	43.6
Moore Creek Bridge	2250	3/31/10	71	22.6	71	25.8	73	20.0
Petersburg Reservoir	550	3/30/10	0	0.0	69	21.5	15	6.2
Petersburg Ridge	1650	3/30/10	71	28.5	127	40.8	71	26.4
Rainbow Falls	500	4/02/10	0	0.0	New			
Speel River	280	3/28/10	64	23.2	132	48.0	78	31.1
Upper Swan Lake	1700	No Report			87	30.7	60	23.1
West Creek	470	No Report			38	12.8	---	---
Upper Silvas	2300	No Report			---	---	---	---

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	30- YR AVERAGE (1000AF)	50 PERCENTILE	% OF AVERAGE	MAX (kaf)	MIN (kaf)
Gold Creek near Juneau	Apr- Jul	33	33	100	41	25

PRECIPITATION DATA

INCHES ACCUMULATED SINCE OCTOBER 1ST

Precipitation Gauge	Elev.	Date	This Year	Last Year	71-2000 Ave	% of Average
Long Lake	850	4/02/10	84.5	97.6	96.4	88
Moore Creek Bridge	2250	3/30/10	30.9	23.5	26.8	109
Snettisham	25	3/31/10	85.6	130.1	106.8	80
Swan Lake	50	No Report		101.7	88.2	---

WATERSHED SNOWPACK ANALYSIS

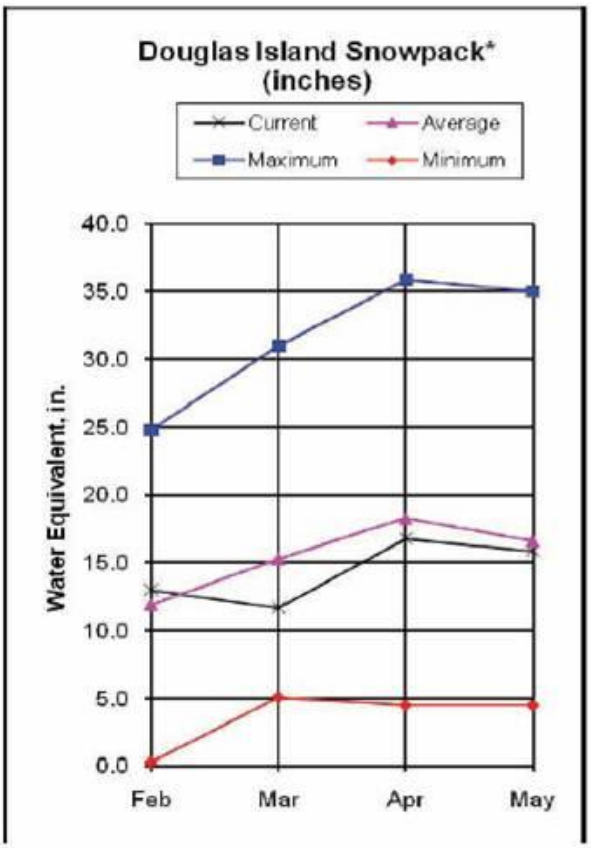
REGION / RIVER BASIN	# COURSES AVERAGED	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Douglas Island	3	58	91
Long Lake	2	64	84
Petersburg	2	46	87
Swan Lake	No Report		

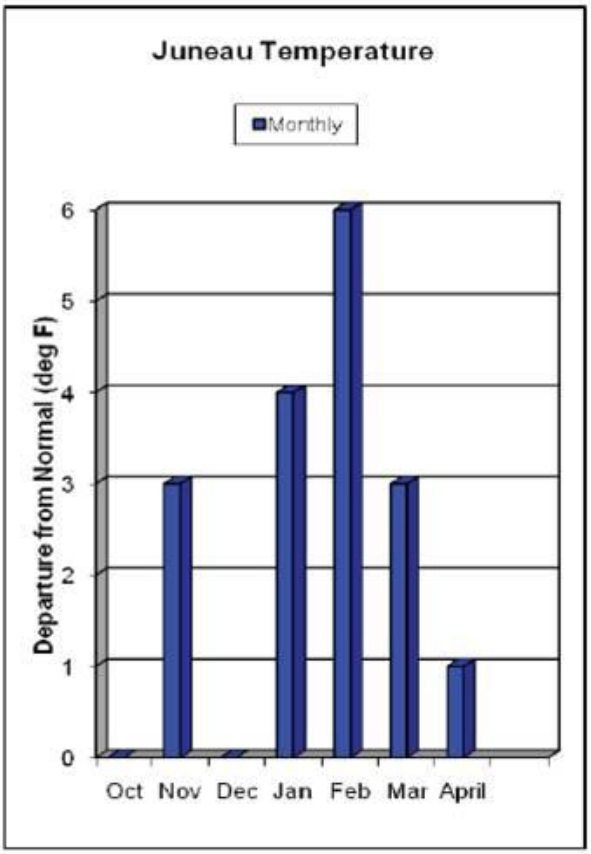
May 2010: Southeast Alaska Snow Pack Data

Reproduced from:

United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, May Issue. Pp. 28. Full report available at website: http://www.ambcs.org

SOUTHEAST*





Snowcover:

The snow courses at the Swan Lake Hydroelectric facility were measured the 12th of April. Mint Creek Ridge snow course had the most snow, 120 inches with 44.5 inches of water content. This is 102 percent of average.

The Long Lake SNOTEL site, 60 miles southeast of Juneau in the Snettisham Hydro-electric project watershed, reports 78 inches of snow and 35.2 inches of water content, which is 74 percent of average.

The Petersburg Reservoir snow course has no snow while the Petersburg Ridge snow course has 50 inches with 22.6 inches of water content, 102 percent of average water content.

The Moore Creek Bridge snow course, north of Skagway, has 53 inches of snow depth with 21.5 inches of water content, 113 percent of average. The precipitation received at Moore Creek since October 1st is 31.9 inches, 120 percent of average.

The Snowmelt Runoff Index for the Skagway River at Skagway is plus 2.0, much above average.

May 2010: Southeast Alaska Snow Pack Data

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United States Department of Agriculture, National Resources Conservation Service. 2010. Alaska Snow Survey Report, May Issue. Pp. 29. Full report available at website: http://www.ambcs.org

Southeast

SNOWPACK DATA

Snow Course	Elev. (feet)	Date	THIS YEAR Snow Depth	THIS YEAR Water Content	LAST YEAR Snow Depth	LAST YEAR Water Content	1971-2000 AVERAGE Snow Depth	1971-2000 AVERAGE Water Content
			(inches)					
Cropley Lake	1650	4/28/10	76	34.0	114	39.8	73	32.8
Eagle Crest	1200	4/28/10	38	13.7	78	30.8	37	15.7
Fish Creek	500	4/2//10	0	0.0	15	6.1	3	1.3
Institute Creek	1350	No Report			New		---	---
Lake Grace Pass	1900	4/12/10	102	45.7	152	57.5	---	---
Long Lake	850	4/30/10	79	35.2	111	51.8*	100	47.9
Lost Lake	425	4/12/10	2	0.5	67	25.5	---	---
Mint Creek Ridge	2250	4/12/10	120	44.5	137	44.0	---	---
Moore Creek Bridge	2250	4/28/10	53	21.5	62	25.2	46	18.9
Petersburg Reservoir	550	4/30/10	0	0.0	41	15.8	6	2.3
Petersburg Ridge	1650	4/30/10	50	21.5	101	43.4	51	22.1
Rainbow Falls	500	No Report			New		---	---
Speel River	280	4/30/10	38	17.0	95	42.2	59	26.1
Upper Swan Lake	1700	4/12/10	54	21.5	87	30.7	---	---

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	30-YR AVERAGE (1000AF)	50 PERCENTILE	% OF AVERAGE	MAX (kaf)	MIN (kaf)
Gold Creek near Juneau	May-Jul	31	32	103	39	25

PRECIPITATION DATA

INCHES ACCUMULATED SINCE OCTOBER 1ST

Precipitation Gauge	Elevation (feet)	Date	This Year	Last Year	1971-2000 Ave	% of Average
Long Lake	850	4/30/10	88.4	103.2	104.6	84
Moore Creek Bridge	2250	4/30/10	31.9	24.6	26.6	120
Snettisham	25	4/30/10	89.9	134.9	112.5	80
Swan Lake	50	No Report		108.6	98.8	---

WATERSHED SNOWPACK ANALYSIS

Region / River Basin	No. of Courses Averaged	Percent of Last Year	Percent of Average
Douglas Island	3	62	96
Petersburg	2	38	93
Skagway	1	85	113
Snettisham	2	56	70
Swan Lake	4	71	---

Appendix 1: Pellet-Group Densities by VCU and Elevation

Analyzing the spatial distribution of pellet groups allows managers to better understand the relative use of habitat with increasing elevation. Use of different elevations is influenced by the presence of forage species as well as the availability of this forage given snow depth and conditions. In Spring 2010, the mean pellet groups/plot in Game Management Unit (GMU) 1C was substantially higher at high elevations on North Douglas, mid elevations near Inner Point, and low elevations on Shelter Island. In Unit 4Z, the mean pellet groups/plot was generally highest in the low-elevation category, but the mid- and high- elevation densities were similar or only slightly lower in several VCUs. In GMU 3Z, pellet density was highest at high elevations on Woewodski, but higher in the mid- and low-elevation categories near Onslow. In GMU 2Z, pellet densities were generally highest in the mid- or high-elevation categories. Winter movement patterns and forage availability were likely not as limited by snow where higher elevations were heavily used.

It should be noted that the number of plots in each elevation category is not equal, which may bias results to some extent. This inequality results because not all transects are created equal: some are flatter or undulating, some start with a moderate incline and become increasingly steeper with distance from the coast, while others rise steeply from sea level. Furthermore, snow conditions usually vary from transect to transect. After a severe winter, snow often persists at higher elevations and northerly aspects. Because snow hides pellets from view, transects are terminated when snow covers greater than 50% of the plot for three consecutive plots.

Mean Pellet Groups (PG) Per Plot by VCU and Elevation Category, Spring 2010

		0-500 feet			501-1000 feet			>1000 feet		
VCU	Name	PG Count	# Plots	Mean	PG Count	# Plots	Mean	PG Count	# Plots	Mean
35	North Douglas	78	104	0.75	108	145	0.74	147	63	2.33
36	Inner Point	220	178	1.24	118	45	2.62	62	40	1.55
124	Shelter Island	336	253	1.33	66	58	1.14	11	14	0.79
209	Suntaheen Creek	321	241	1.33	40	20	2.00	0	4	0.00
218	Pavlof River	261	172	1.52	24	19	1.26	34	25	1.36
247	Finger Mtn	508	169	3.01	24	30	0.80	17	18	0.94
288	Range Creek	311	264	1.18	42	71	0.59	8	6	1.33
300	Nakwasina	417	141	2.96	57	27	2.11	33	15	2.20
305	Sea Lion Cove	175	140	1.25	57	49	1.16	25	59	0.42
Northern Southeast Alaska		**2627**	**1662**	**1.58**	**536**	**464**	**1.16**	**337**	**244**	**1.38**
448	Woewodski	35	73	0.48	44	66	0.67	110	95	1.16
473	Onslow	275	282	0.98	50	50	1.00	25	34	0.74
575	Thorne Lake	263	140	1.88	203	134	1.51	83	39	2.13
578	Snakey Lakes	313	256	1.22	65	21	3.10	34	25	1.36
584	Little Ratz	291	172	1.69	165	68	2.43	271	115	2.36
621	Twelvemile Arm	130	89	1.46	165	91	1.81	129	128	1.01
716	Helm Bay	26	168	0.15	17	44	0.39	18	44	0.41
999	Gravina	35	96	0.36	34	114	0.30	15	48	0.31
Southern Southeast Alaska		**1368**	**1276**	**1.07**	**743**	**588**	**1.26**	**685**	**528**	**1.30**
All Southeast Alaska		**3995**	**2938**	**1.36**	**1279**	**1052**	**1.22**	**1022**	**772**	**1.32**

Appendix 2: Pellet-Group Densities by VCU and Transect

Pellet-Groups Per Plot by VCU and Transect, Spring 2010

VCU	Name	Transect	Pellet Groups (PG)	Plots	Mean PG/ Plot	Lower 95% C. I.	Upper 95% C. I.
35	North Douglas	1	94	78	1.21	0.84	1.57
35	North Douglas	2	73	125	0.58	0.42	0.75
35	North Douglas	3	166	109	1.52	1.16	1.88
35	**North Douglas**	**Total**	**333**	**312**	**1.07**	**0.89**	**1.24**
36	Backside Douglas	1	105	66	1.59	1.27	1.91
36	Backside Douglas	2	117	125	0.94	0.73	1.14
36	Backside Douglas	3	178	72	2.47	1.87	3.08
36	**Backside Douglas**	**Total**	**400**	**263**	**1.52**	**1.30**	**1.74**
124	Shelter Island	4	87	50	1.74	1.33	2.15
124	Shelter Island	5	35	47	0.74	0.38	1.10
124	Shelter Island	6	56	50	1.12	0.76	1.48
124	Shelter Island	7	41	50	0.82	0.49	1.15
124	Shelter Island	8	45	50	0.90	0.57	1.23
124	Shelter Island	18	149	78	1.91	1.45	2.37
124	**Shelter Island**	**Total**	**413**	**325**	**1.27**	**1.10**	**1.44**
209	Whitestone Hbr	1	64	86	0.74	0.46	1.03
209	Whitestone Hbr	2	138	92	1.50	0.98	2.02
209	Whitestone Hbr	3	159	87	1.83	1.42	2.24
209	**Whitestone Hbr**	**Total**	**361**	**265**	**1.36**	**1.11**	**1.61**
218	Pavlof	1	109	81	1.35	0.98	1.71
218	Pavlof	2	71	31	2.29	1.55	3.03

Appendix 2: Pellet-Group Densities by VCU and Transect

Pellet-Groups Per Plot by VCU and Transect, Spring 2010

VCU	Name	Transect	Pellet Groups (PG)	Plots	Mean PG/ Plot	Lower 95% C. I.	Upper 95% C. I.
218	Pavlof	3	139	104	1.34	0.99	1.68
218	**Pavlof**	**Total**	**319**	**216**	**1.48**	**1.23**	**1.72**
247	Finger Mtn	1	97	63	1.54	0.99	2.09
247	Finger Mtn	2	300	86	3.49	2.86	4.12
247	Finger Mtn	3	152	68	2.24	1.42	3.05
247	**Finger Mtn**	**Total**	**549**	**217**	**2.53**	**2.12**	**2.94**
288	Range Creek	1	70	125	0.56	0.37	0.75
288	Range Creek	2	129	99	1.30	0.93	1.67
288	Range Creek	3	162	117	1.38	1.02	1.74
288	**Range Creek**	**Total**	**361**	**341**	**1.06**	**0.88**	**1.24**
300	Nakwasina	2	162	56	2.89	2.28	3.50
300	Nakwasina	3	117	51	2.29	1.68	2.91
300	Nakwasina	8	228	76	3.00	2.44	3.56
300	**Nakwasina**	**Total**	**507**	**183**	**2.77**	**2.42**	**3.12**
305	Sea Lion Cove	1	72	94	0.77	0.46	1.07
305	Sea Lion Cove	2	112	105	1.07	0.76	1.38
305	Sea Lion Cove	3	73	49	1.49	0.99	1.99
305	**Sea Lion Cove**	**Total**	**257**	**248**	**1.04**	**0.83**	**1.24**
448	Woewodski	1	84	70	1.20	0.75	1.65
448	Woewodski	2	57	80	0.71	0.47	0.96
448	Woewodski	3	48	84	0.57	0.39	0.75

Appendix 2: Pellet-Group Densities by VCU and Transect

Pellet-Groups Per Plot by VCU and Transect, Spring 2010

VCU	Name	Transect	Pellet Groups (PG)	Plots	Mean PG/ Plot	Lower 95% C. I.	Upper 95% C. I.
448	**Woewodski**	**Total**	**189**	**234**	**0.81**	**0.63**	**0.98**
473	Onslow	1	106	118	0.90	0.68	1.11
473	Onslow	2	162	123	1.32	1.00	1.63
473	Onslow	3	82	125	0.66	0.46	0.85
473	**Onslow**	**Total**	**350**	**366**	**0.96**	**0.81**	**1.10**
575	Thorne Lake	1	164	90	1.82	1.32	2.32
575	Thorne Lake	2	145	94	1.54	1.22	1.86
575	Thorne Lake	3	154	87	1.77	1.48	2.06
575	Thorne Lake	4	86	42	2.05	1.31	2.79
575	**Thorne Lake**	**Total**	**549**	**313**	**1.75**	**1.54**	**1.97**
578	Snakey Lakes	5	95	103	0.92	0.68	1.16
578	Snakey Lakes	6	178	125	1.42	1.12	1.73
578	Snakey Lakes	7	139	74	1.88	1.39	2.36
578	**Snakey Lakes**	**Total**	**412**	**302**	**1.36**	**1.17**	**1.56**
584	Little Ratz	1	242	125	1.94	1.51	2.37
584	Little Ratz	2	85	71	1.20	0.73	1.67
584	Little Ratz	3	225	64	3.52	2.73	4.30
584	Little Ratz	4	175	95	1.84	1.53	2.15
584	**Little Ratz**	**Total**	**727**	**355**	**2.05**	**1.80**	**2.30**
621	Twelvemile Arm	1	130	125	1.04	0.78	1.30
621	Twelvemile Arm	2	134	83	1.61	1.35	1.87

Appendix 2: Pellet-Group Densities by VCU and Transect

Pellet-Groups Per Plot by VCU and Transect, Spring 2010

VCU	Name	Transect	Pellet Groups (PG)	Plots	Mean PG/ Plot	Lower 95% C. I.	Upper 95% C. I.
621	Twelvemile Arm	3	160	100	1.60	1.22	1.98
621	**Twelvemile Arm**	**Total**	**424**	**308**	**1.38**	**1.20**	**1.56**
716	Helm Bay	1	13	83	0.16	0.04	0.28
716	Helm Bay	2	28	72	0.39	0.22	0.56
716	Helm Bay	3	20	101	0.20	0.09	0.31
716	**Helm Bay**	**Total**	**61**	**256**	**0.24**	**0.16**	**0.31**
999	Gravina 1	33	109	0.30	0.17	0.44	
999	Gravina 2	30	58	0.52	0.31	0.73	
999	Gravina 3	21	91	0.23	0.13	0.33	
999	**Gravina**	**Total**	**84**	**258**	**0.33**	**0.24**	**0.41**

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL*	Year	Plots	Pellet-Group Mean	95%C.I.
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
				1993	324	0.74	0.62-0.87
				1994	315	0.91	0.74-1.09
				1995	306	0.86	0.70-1.02
				1996	323	0.97	0.81-1.12
				1997	323	1.43	1.24-1.62
				1998	321	1.54	1.32-1.77
				1999	273	1.03	0.86-1.19
				2000	282	0.88	0.71-1.04
				2001	335	1.01	0.85-1.17
				2002	200	0.68	0.50-0.85
				2003	267	0.93	0.77-1.09
				2004	288	1.52	1.28-1.76
				2005	151	2.08	1.61-2.54
				2006	263	2.02	1.74-2.29
				2007	165	2.28	1.83-2.73
				2008	316	2.84	2.49-3.19
				2009	220	1.85	1.57-2.14
				2010	312	1.07	0.89-1.24
36	Inner Point	3,965	44%	1985	256	1.30	1.10-1.51
				1986	235	1.97	1.68-2.25
				1987	262	1.76	1.53-2.00
				1988	200	1.21	1.02-1.39
				1989	258	1.31	1.08-1.53
				1992	204	2.05	1.75-2.36
				1995	254	1.41	1.21-1.60
				1996	240	1.68	1.45-1.91
				1997	252	2.36	.08-2.64
				1998	280	0.84	0.69-0.98
				1999	239	1.06	0.87-1.25
				2000	280	1.09	0.90-1.28
				2002	198	0.82	0.64-1.00
				2003	272	0.76	0.60-0.92
				2004	242	0.88	0.68-1.08
				2006	147	2.33	1.93-2.72
				2007	182	2.10	1.70-2.50

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				2008	232	1.59	1.32-1.85
				2009	268	1.44	1.20-1.68
				2010	263	1.52	1.30-1.74
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
				1985	774	1.82	1.67-1.97
				1986	727	2.20	2.02-2.37
124	Shelter Island (Trans. 4-8, 18)			1984	300	1.52	1.34-1.70
				1985	296	2.52	2.24-2.81
				1986	292	3.24	2.91-3.57
				1987	288	2.91	2.57-3.24
				1988	130	3.16	2.62-3.70
				1989	300	1.43	1.23-1.62
				1990	300	1.60	1.37-1.82
				1993	250	2.00	1.73-2.26
				1995	297	1.38	1.20-1.56
				1997	312	2.51	2.23-2.78
				1999	290	1.63	1.42-1.85
				2001	231	2.07	1.79-2.36
				2003	300	1.41	1.19-1.63
				2005	200	1.86	1.59-2.13
				2007	321	1.10	0.97-1.41
				2008	321	1.05	0.90-1.21
				2009	250	0.71	0.57-0.84

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				2010	325	1.27	1.10-1.44
124	Lincoln Island			1998	207	1.52	1.27-1.77
				2007	213	0.84	0.62-1.06
125	Barlow Cove	13,712	24%	1982	2,567	1.07	1.01-1.12
				1984	347	1.69	1.46-1.92
				1985	347	1.55	1.35-1.76
				1990	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
				1984	339	1.42	1.22-1.63
				1985	270	1.69	1.43-1.95
				1986	286	1.92	1.64-2.19
				1987	278	2.54	2.19-2.89
				1989	364	1.82	1.56-2.08
				1990	250	2.24	1.94-2.53
				1992	319	1.61	1.38-1.83
				1996	325	1.26	1.07-1.46
				1999	176	1.25	1.00-1.50
				2002	183	1.17	0.93-1.42
				2005	322	2.69	2.30-3.08
				2007	305	1.19	0.97-1.41
				2008	290	1.33	112-1.55
				2009	207	1.35	1.06-1.63
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
				1989	283	2.04	1.75-2.32
				1994	282	2.27	1.98-2.56

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1998	308	2.13	1.87-2.38
171	Hood Bay	44,355	79%	1987	358	2.31	1.99-2.63
				1989	366	1.77	1.54-2.00
				1990	375	1.85	1.61-2.09
				1992	360	1.91	1.64-2.18
				1994	371	1.64	1.41-1.88
				2000	349	1.04	0.87-1.21
				2003	220	1.41	1.17-1.65
				2006	355	2.76	2.5-3.02
				2008	301	1.62	1.37-1.88
182	Pybus Bay	41,501	62%	1981	390	1.34	1.16-1.52
				1984	300	1.02	0.86-1.18
				1985	269	1.86	1.60-2.12
				1986	235	2.00	1.70-2.29
				1987	242	2.03	1.69-2.37
				1989	199	2.00	1.63-2.36
				1990	221	1.72	1.44-2.01
				1992	236	1.13	0.97-1.30
				1995	205	1.48	1.23-1.74
				1998	256	1.37	1.16-1.59
185	Pleasant Island	8,738	16%	1991	311	1.38	1.18-1.57
				1992	210	1.34	1.09-1.59
				1993	305	1.77	1.52-2.02
				1994	356	1.22	1.04-1.40
				1997	300	1.80	1.54-2.06
				1999	223	1.82	1.55-2.08
				2002	351	1.96	1.71-2.20
				2005	312	1.33	1.11-1.55
				2009	291	0.72	0.60-0.84
189	Port Althorp	8,040	27%	1988	195	1.80	1.47-2.13
				1991	223	1.92	1.55-2.29
				1992	261	1.36	1.11-1.60
				1993	248	1.39	1.15-1.62
				1994	253	1.31	1.06-1.56
				1998	281	1.48	1.27-1.70
				2001	225	1.81	1.49-2.13
190	Idaho Inlet	53,183	22%	1988	258	1.34	1.09-1.60

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1992	219	0.94	0.69-1.19
				1993	305	0.56	0.45-0.68
				1994	294	0.71	0.58-0.84
				1998	273	1.11	0.92-1.30
				2001	308	0.94	0.78-1.11
				2004	296	1.05	0.85-1.25
202	Port Frederick	16,619	52%	1988	242	1.87	1.62-2.13
				1996	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. (Whitestone Harbor)	13,198	49%	1988	272	1.22	1.00-1.44
				1992	271	1.13	0.94-1.33
				1993	265	0.73	0.58-0.88
				1994	272	1.05	0.81-1.29
				1996	276	0.98	0.77-1.18
				1997	263	1.50	1.23-1.77
				1999	112	1.02	0.69-1.34
				2002	218	1.32	1.03-1.60
				2005	329	1.46	1.25-1.66
				2009	202	0.51	0.35-0.67
				2010	265	1.36	1.11-1.61
211	Point Augusta	4,688	63%	1983	757	1.78	1.62-2.01
				1993	286	2.08	1.80-2.36
				1997	234	3.30	2.90-3.70
218	Pavlof River	18,866	50%	1988	325	1.78	1.50-2.06
				1992	341	1.56	1.32-1.81
				1996	349	1.50	1.30-1.70
				1997	313	1.71	1.47-1.94
				1999	213	2.24	1.83-2.67
				2002	249	2.48	2.10-2.87
				2005	323	2.30	2.06-2.55
				2009	192	0.90	0.66-1.15
				2010	216	1.48	1.23-1.72
221	Whip Station	4,708	53%	1981	193	0.86	0.64-1.08

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
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
				1992	265	0.58	0.47-0.70
				1993	249	0.47	0.36-0.58
				1994	319	0.61	0.48-0.74
				1996	263	0.56	0.38-0.75
231	Saltery Bay	18,478	31%	1988	256	2.02	1.69-2.35
				1992	256	0.96	0.79-1.14
				1993	227	0.76	0.56-0.96
				1994	193	0.97	0.79-1.15
				1996	152	1.90	1.47-2.33
				1997	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
				1988	221	2.67	2.18-3.16
				1992	282	1.62	1.38-1.86
				1993	385	1.12	0.95-1.30
				1994	294	1.39	1.18-1.60
				1995	195	2.64	2.20-3.07
				1996	204	2.36	1.96-2.76
				2009	137	0.99	0.75-1.24
236	Corner Bay	10,930	66%	1981	60	0.35	0.17-0.53
				1992	206	2.27	1.91-2.64
				1993	50	1.72	1.25-2.19
				1994	198	1.69	1.41-1.98
246	Broad Island	17,145	38%	1981	209	1.41	1.18-1.63
247	Finger Mountain	15,918	38%	1983	2,145	1.17	1.11-1.24
				1984	302	1.83	1.57-2.09
				1985	279	3.23	2.79-3.67
				1986	277	2.88	2.57-3.19
				1987	236	3.11	2.71-3.52
				1989	305	2.99	2.57-3.40
				1990	225	3.36	2.99-3.74
				1991	150	3.93	3.36-4.51
				1992	207	2.85	2.48-3.22

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1993	179	3.03	2.60-3.47
				1994	275	2.29	1.96-2.62
				1996	221	2.62	2.20-3.04
				1997	227	3.53	3.05-4.02
				1999	169	3.04	2.59-3.50
				2000	217	2.87	2.45-3.30
				2002	162	2.99	2.37-3.60
				2004	229	3.03	2.67-3.39
				2005	299	2.79	2.45-3.13
				2006	280	2.58	2.24-2.92
				2007	248	1.89	1.65-2.13
				2008	199	3.32	2.87-3.78
				2010	217	2.53	2.12-2.94
249	Lisianski	19,677	24%	1988	255	0.97	0.79-1.14
				1991	170	1.53	1.22-1.84
				1995	317	0.70	0.56-0.85
				1998	321	0.88	0.75-1.02
254	Soapstone	17,695	29%	1988	274	1.92	1.67-2.17
				1991	270	2.05	1.77-2.33
				1993	243	1.88	1.59-2.16
				1994	310	1.34	1.16-1.52
				1995	283	1.48	1.27-1.69
				2001	246	1.95	1.65-2.25
271	Chichagof (Klag Bay)	20,680	10%	1991	301	1.39	1.19-1.58
				1995	303	0.98	0.83-1.14
				1998	319	1.34	1.16-1.53
				2001	291	1.23	1.04-1.43
				2004	303	1.15	0.99-1.31
				2007	275	0.81	0.67-0.95
275	Cobol	14,618	49%	1984	224	1.15	0.92-1.37
				1991	185	2.96	2.37-3.54
				1995	218	1.45	1.16-1.74
				1998	219	2.19	1.86-2.51
				2001	180	1.94	1.59-2.30
				2004	232	2.97	2.48-3.46
				2007	176	2.13	1.69-2.56
279	Rapids Point	7,637	65%	1983	2,734	0.77	0.73-0.81

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
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
				1984	303	0.71	0.61-0.92
				1985	224	1.32	1.02-1.62
				1997	353	1.44	1.21-1.67
				2003	355	1.65	1.43-1.87
				2006	359	1.82	1.57-2.06
				2010	341	1.06	0.88-1.24
295	Lake Eva	12,362	65%	1987	172	1.81	1.46-2.15
296	Portage Arm	16,101	59%	1981	213	0.53	0.39-0.68
				1990	214	3.09	2.70-3.48
				1997	39	1.59	0.86-2.32
				2003	103	2.77	2.28-3.26
298	M. Arm Kelp Bay	28,424	21%	1990	306	2.68	2.35-3.01
				1997	100	2.67	2.04-3.30
				2003	140	1.41	1.12-1.70
				2006	248	2.10	1.83-2.38
300	Nakwasina (All Transects)	19,575	48%	1984	196	2.51	2.14-2.88
				1985	1046	3.92	3.67-4.17
				1986	715	3.50	3.26-3.76
300	Nakwasina (Trans. 2,3,8)	19,575	48%	1984	138	2.51	2.10-2.93
				1985	218	3.65	3.13-4.17
				1986	205	3.38	2.91-3.84
				1987	195	2.31	1.90-2.71
				1989	244	2.32	2.00-2.65
				1990	255	2.98	2.56-3.40
				1991	175	3.98	3.39-4.57
				1992	223	1.64	1.37-1.90
				1993	188	3.15	2.70-3.60
				1994	230	1.46	1.24-1.68
				1995	216	1.75	1.48-2.10
				1996	210	2.82	2.35-3.29
				1997	188	2.79	2.31-3.27
				1998	217	2.99	2.48-3.49

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1999	146	3.20	2.64-3.76
				2000	181	2.64	2.23-3.05
				2001	186	2.33	1.91-2.75
				2002	132	2.35	1.90-2.80
				2003	221	3.09	2.68-3.50
				2004	211	3.36	3.02-3.70
				2005	254	2.22	1.91-2.52
				2006	205	3.91	3.42-4.40
				2007	167	3.40	2.90-3.89
				2008	166	3.17	2.66-3.68
				2010	183	2.77	2.42-3.12
305	Sea Lion Cove (Kalinin Bay)	9,293	69%	1984	320	1.36	1.15-1.58
				1985	292	2.57	2.23-2.91
				1986	235	2.87	2.44-3.29
				1987	226	3.31	2.82-3.80
				1989	303	1.75	1.50-2.00
				1990	227	2.03	1.71-2.35
				1991	219	1.63	1.36-1.91
				1992	239	1.30	1.08-1.51
				1993	198	1.70	1.38-2.02
				1994	221	1.29	1.09-1.48
				1995	210	1.30	1.08-1.52
				1996	225	1.63	1.35-1.90
				1997	223	1.76	1.43-2.10
				1998	241	1.71	1.44-1.99
				2000	201	1.42	1.09-1.76
				2001	231	1.40	1.14-1.66
				2002	119	2.01	1.60-2.41
				2003	249	1.90	1.55-2.25
				2004	206	1.13	0.90-1.36
				2005	252	1.40	1.20-1.61
				2006	245	1.41	1.18-1.65
				2007	221	0.95	0.73-1.16
				2008	159	1.44	1.15-1.73
				2010	249	1.04	0.83-1.24
308	South Kruzof	71,158	25%	1993	345	1.62	1.41-1.83
				1994	370	1.71	1.52-1.90
				1999	365	1.38	1.16-1.58

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
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
				2000	270	1.26	1.02-1.49
				2003	221	1.56	1.31-1.81
344	Whale Bay	na	na	2000	260	1.40	1.17-1.62
				2003	279	1.70	1.43-1.97
348	West Crawfish	57,434	16%	1989	360	1.35	1.36-1.57
				2000	211	1.34	1.07-1.61
				2003	313	1.31	1.07-1.55
361	Knight Island	10,419	40%	1991	100	0.81	0.61-1.01
				1992	100	0.95	0.74-1.16
				1994	90	0.44	0.25-0.64
				1996	153	0.00	0.00-0.00
				1997	192	0.03	0.01-0.05
				2003	117	0.22	not avail
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
				1992	243	0.48	0.37-0.58
				1993	106	1.07	0.81-1.32
				1994	251	0.66	0.52-0.80
				1996	379	0.59	0.48-0.69
				1997	344	0.59	0.48-0.70
				2000	145	0.90	0.85-0.95
				2002	200	0.66	not avail
				2003	325	0.58	not avail
				2004	274	0.86	not avail
				2008	421	1.97	1.76-2.18
369	Ankau	na	na	1991	116	0.03	0.00-0.05
400	Security Bay	28,040	79%	1984	360	0.02	0.01-0.04
				1989	304	0.25	0.16-0.34
				1995	268	0.22	0.15-0.29

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				2000	200	0.09	0.05-0.14
403	Pillar Bay	28,227	65%	1988	337	0.16	0.10-0.22
				2000	265	0.18	0.13-0.23
408	Malmesbury	18,151	68%	1990	206	0.11	0.05-0.18
				2000	254	0.06	0.03-0.09
417	Conclusion Island	12,561	99%	1987	207	2.66	2.32-3.01
				1989	200	0.95	0.72-1.18
				1991	200	0.71	0.53-0.88
				1996	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
				1993	375	0.77	0.64-0.90
434a	Big Level Island	727	61%	1981	399	1.54	1.45-1.63
				1983	336	1.56	
				1986	382	1.66	1.41-1.90
				1989	227	1.07	
				1991	456	2.16	1.90-2.41
				1999	427	2.00	1.74-2.26
434b	Little Level Island	263	92%	1981	114	2.48	2.02-2.94
				1983	136	2.34	
				1986	122	1.39	1.07-1.70
				1989	137	1.52	
				1991	132	3.59	3.07-4.11
				1999	123	2.84	2.28-3.40
435	Castle River	32,724	36%	1984	312	0.19	0.12-0.26
				1987	305	0.51	0.37-0.65
				1989	312	0.40	0.25-0.56
				1994	310	0.32	0.24-0.40
				1998	281	0.36	0.28-0.44
				2008	275	0.12	0.07-0.17

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
437	E. Duncan	23,744	55%	1990	227	1.12	0.92-1.32
				1992	213	0.78	0.63-0.94
				1998	153	1.04	0.77-1.30
				2002	254	1.89	1.59-2.19
				2008	262	1.37	1.10-1.65
442	Portage Bay	11,269	49%	1993	282	0.43	0.31-0.56
				1995	277	0.43	0.33-0.53
				1998	285	0.39	0.29-0.49
448	Woewodski (Mitkof)	20,931	53%	1984	295	0.88	0.69-1.08
				1985	209	1.00	0.82-1.19
				1987	195	1.65	1.85-2.61
				1988	433	1.33	1.16-1.51
				1989	417	1.35	1.24-1.73
				1990	355	1.46	1.28-1.64
				1991	316	1.80	1.52-2.07
				1992	248	0.79	0.62-0.97
				1993	230	1.06	0.85-1.27
				1994	152	1.14	0.82-1.46
				1995	157	1.38	1.08-1.67
				1996	243	2.25	1.95-2.55
				1997	282	1.56	1.27-1.84
				1998	282	1.10	0.91-1.29
				1999	196	1.36	1.11-1.60
				2000	226	1.27	1.05-1.50
				2002	220	1.43	1.17-1.68
				2003	216	0.50	0.36-0.64
				2004	250	1.06	0.87-1.25
				2005	279	0.82	0.65-0.98
				2007	180	1.63	1.26-2.00
				2008	235	1.06	0.83-1.28
				2009	162	0.98	0.74-1.22
				2010	234	0.81	0.63-0.98
448a	Woewodski Island	20,931	53%	1991	461	1.86	1.66-2.05
				1994	510	1.30	1.15-1.46
449	Frederick	6,835	70%	1981	945	0.08	0.06-0.11
				1990	180	0.55	0.36-0.74

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1992	227	0.54	0.42-0.65
452	Blind Slough	30,655	55%	1990	324	1.35	1.15-1.56
				1992	114	1.04	0.77-1.30
				1993	265	1.28	1.04-1.51
				1997	245	1.61	1.34-1.88
454	Dry	11,033	74%	1981	91	0.92	0.56-1.28
				1993	210	1.44	1.17-1.72
				1997	188	1.26	0.88-1.39
455	Vank	8,437	99%				
	a) Sokolof			1981	900	1.73	1.61-1.85
				1999	360	0.92	0.76-1.08
	b) Rynda			1981	281	0.25	0.18-0.32
				1999	280	0.27	0.18-0.36
	c) Greys			1981	284	0.25	0.18-0.32
456	Baht	16,972	69%	2002	109	2.75	2.10-3.41
				2004	108	1.80	1.45-2.15
				2005	101	2.12	1.73-2.51
				2007	108	1.51	1.14-1.88
				2009	125	1.19	0.86-1.52
457	St. John	26,112	53%	2002	220	1.65	1.38-1.93
				2004	229	1.17	0.96-1.38
				2005	213	1.75	1.44-2.03
				2007	211	1.98	1.65-2.31
				2009	225	0.99	0.81-1.17
458	Snow Passage	31,572	46%	1994	345	0.58	0.45-0.70
				1997	315	0.98	0.80-1.16
				2002	280	1.50	1.28-1.72
				2004	306	1.02	0.84-1.20

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				2005	262	1.08	0.89-1.27
				2007	289	1.52	1.26-1.78
459	Meter	42,438	46%	2002	180	0.87	0.64-1.10
				2004	180	0.89	0.68-1.10
				2005	155	1.41	1.75-1.07
				2009	80	2.29	1.33-3.24
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
				1987	201	2.23	1.85-2.61
				1989	223	2.52	2.18-2.85
				1991	203	1.59	1.32-1.85
				1993	225	0.22	0.13-0.31
				1994	224	0.26	0.18-0.34
				1999	216	0.11	0.06-0.17
				2004	227	0.08	0.03-0.13
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
				1985	334	0.59	0.48-0.70
				1986	347	0.72	0.59-0.84
				1987	336	0.42	0.31-0.55
				1988	329	0.44	0.32-0.55
				1991	322	0.66	0.51-0.80
				1993	341	0.68	0.55-0.82
				1994	340	0.88	0.74-1.02
				1997	346	0.73	0.59-0.86
				2002	332	0.97	0.81-1.13
				2006	363	0.60	0.48-0.71
				2008	339	1.33	1.13-1.53
				2010	366	0.96	0.81-1.10
474	Fisherman's Cove (Canoe)			2001	228	0.11	0.06-0.17
480	Fools Inlet	30,906	44%	1994	194	0.54	0.38-0.70
				2001	201	0.61	0.45-0.77

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
489	Muddy River	40,275	37%	1996	348	1.53	1.26-1.80
490	Horn	9,815	55%	1998	250	0.60	0.47-0.74
				2003	290	0.67	0.53-0.81
504	Madan	na	60%	2001	244	0.23	0.14-0.31
511	Harding	na	20%	2001	207	0.02	0.00-0.05
524	Frosty Bay	17,959	41%	1991	266	0.70	0.55-0.86
527	Protection	6,257	100%	1997	332	1.15	0.99-1.30
				1998	281	0.59	0.47-0.71
				2000	325	0.56	0.46-0.66
				2002	349	0.70	0.56-0.83
				2003	319	0.69	0.53-0.85
528	Mt. Calder	9,232	83%	1988	252	2.14	1.78-2.49
				1997	272	1.17	0.96-1.39
				1999	165	0.48	0.31-0.62
532	Red Bay	15,145	66%	1987	177	0.32	0.18-0.47
				1994	256	0.94	0.74-1.14
				1996	281	1.19	0.97-1.41
				1997	248	1.07	0.89-1.25
				1998	283	0.73	0.59-0.88
				2001	337	0.76	0.61-0.90
				2002	289	1.49	1.28-1.71
				2003	314	1.15	0.94-1.34
				2004	315	0.85	0.68-1.02
				2006	295	1.54	1.31-1.78
539	Exchange Cove	10,406	74%	1988	266	1.39	1.15-1.64
				1992	125	1.10	0.83-1.38
				1997	303	1.25	1.04-1.46
549	Sarheen	11,875	52%	1989	310	1.73	1.44-2.01
				1996	334	1.00	0.83-1.16
				1997	330	1.00	0.85-1.14
				1998	355	0.42	0.33-0.51

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1999	284	0.64	0.51-0.78
				2000	293	0.98	0.78-1.17
				2001	319	0.45	0.36-0.55
				2002	263	0.69	0.54-0.83
				2005	257	0.78	0.64-0.93
				2009	316	1.75	1.52-1.97
554	Sarkar	32,183	60%	1988	298	1.28	1.06-1.50
				1992	125	1.10	0.83-1.38
				1994	292	0.92	0.77-1.07
				1997	263	0.61	0.48-0.74
				1998	312	0.29	0.21-0.37
				1999	281	0.74	0.60-0.88
				2001	330	0.45	0.35-0.55
				2002	283	0.76	0.62-0.90
				2003	333	0.50	0.38-0.62
				2004	340	0.61	0.51-0.71
				2009	350	1.66	1.46-1.86
561	Warm Chuck	12,348	85%	1984	326	1.02	1.02-1.38
				1985	295	1.60	1.36-1.84
				1989	302	2.21	1.91-2.50
				1991	291	2.05	1.73-2.37
				1996	276	1.39	1.17-1.61
				1997	247	1.21	1.01-1.41
				1998	246	1.29	1.08-1.51
				2000	288	0.99	0.81-1.16
				2002	221	1.17	0.94-1.39
				2006	277	1.23	1.01-1.45
				2009	278	1.69	1.45-1.93
564	Coronation	19,107	69%	1983	696	1.20	1.04-1.36
				1985	228	2.34	
				1988	408	1.41	1.17-1.66
				1989	293	1.63	1.28-1.98
				1997	289	0.44	0.34-0.55
				2001	336	0.85	0.67-1.03
569	Baker	31,802	68%	1991	256	0.08	0.04-0.12
				1997	250	0.14	0.08-0.20

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
575	Thorne Lake	17,970	68%	1992	334	1.20	1.03-1.37
				1994	293	0.76	0.62-0.91
				1995	299	1.27	1.09-1.45
				1997	303	0.84	0.66-0.96
				1998	316	0.87	0.71-1.03
				1999	231	1.02	0.83-1.21
				2000	311	1.28	1.06-1.51
				2001	327	0.53	0.42-0.63
				2002	284	1.12	0.90-1.35
				2003	123	0.91	0.66-1.16
				2004	218	0.94	0.75-1.13
				2005	287	0.94	0.79-1.10
				2006	287	1.04	0.89-1.20
				2007	204	1.84	1.54-2.15
				2008	289	1.40	1.19-1.62
				2009	311	1.97	1.70-2.25
				2010	313	1.75	1.54-1.97
578	Snakey Lakes	6,431	84%	1986	279	0.62	0.51-0.73
				1988	300	1.05	0.84-1.26
				1989	200	1.56	1.26-1.86
				1993	356	0.77	0.61-0.93
				1997	310	1.39	1.17-1.60
				1998	225	0.71	0.55-0.87
				1999	250	0.86	0.67-1.05
				2000	263	1.55	1.24-1.86
				2001	358	0.89	0.74-1.03
				2002	180	1.45	1.19-1.71
				2004	203	0.89	0.72-1.06
				2005	235	1.27	1.03-1.51
				2007	290	1.54	1.30-1.78
				2008	300	1.43	1.22-1.64
				2010	302	1.36	1.17-1.56
581	Luck Lake	19,818	67%	1986	178	1.74	1.41-2.07
				1988	300	2.11	1.80-2.41
				1993	175	1.10	0.87-1.32
				2001	320	0.60	0.47-0.72
584	Little Ratz	12,392	65%	1992	272	0.94	0.76-1.13

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1997	255	1.93	1.64-2.21
				1998	282	0.78	0.64-0.91
				2000	304	1.38	1.18-1.59
				2001	287	1.20	1.00-1.39
				2002	195	2.32	1.92-2.71
				2003	335	1.21	1.03-1.39
				2004	228	1.96	1.68-2.24
				2005	291	1.51	1.28-1.73
				2007	233	2.41	2.06-2.77
				2008	246	1.44	1.19-1.70
				2009	305	2.34	2.07-2.61
				2010	355	2.05	1.79-2.30
587	Tuxekan	12,129	77%	1988	300	1.06	0.84-1.28
				1997	314	1.04	0.87-1.22
				1998	353	0.48	0.37-0.58
				1999	328	1.26	1.03-1.49
621	12 Mile	23,344	59%	1985	196	0.31	0.19-0.43
				1986	300	0.64	0.48-0.81
				1987	370	0.65	0.49-0.81
				1988	302	0.62	0.46-0.77
				1989	235	0.78	0.59-0.98
				1990	176	1.18	0.84-1.52
				1991	231	1.84	1.48-2.21
				1992	250	0.43	0.32-0.55
				1993	258	0.84	0.63-1.05
				1994	324	0.93	0.76-1.09
				1997	202	1.45	1.10-1.79
				1998	280	0.83	0.63-1.02
				2002	220	0.51	0.38-0.63
				2007	189	1.59	1.32-1.86
				2008	190	2.14	1.75-2.52
				2010	308	1.38	1.19-1.55
625	Trocadero	16,624	75%	1995	235	1.74	1.41-2.06
				1997	235	1.18	0.97-1.38
				1998	267	0.97	0.78-1.16
				2002	332	0.93	0.75-1.10

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	Pellet-Group 95%C.I.
628	Pt. Amagura	10,477	26%	1997	255	1.04	0.83-1.24
				1998	325	0.93	0.78-1.08
635	Port Refugio	9,118	50%	1985	317	2.69	2.27-3.12
				1986	324	2.52	2.09-2.96
				1987	369	1.76	1.46-2.07
				1988	270	1.15	0.90-1.40
				1989	507	0.80	0.68-0.93
				1990	232	1.25	1.03-1.48
				1991	367	1.13	0.95-1.32
				1992	254	0.76	0.57-0.95
				1993	213	1.35	0.98-1.71
				1994	280	1.85	1.51-2.19
				1997	276	0.82	0.65-1.00
				1998	315	0.78	0.61-0.96
				2000	272	0.94	0.75-1.13
				2002	317	1.12	0.93-1.31
				2007	311	1.72	1.48-1.96
				2008	342	1.53	1.33-1.73
679	Kitkun Bay	15,359	75%	1988	240	0.31	0.20-0.42
				1989	273	0.89	0.71-1.07
				1995	264	0.40	0.28-0.52
				1997	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
				1984	302	0.54	0.44-0.65
				1985	181	0.85	0.65-1.05
				1988	247	1.66	1.38-1.95
				1991	240	1.63	1.35-1.92
				1992	169	1.25	0.96-1.53
				1993	286	1.37	1.16-1.59
				1995	284	1.31	1.09-1.52
				1997	265	0.79	0.65-0.99
				1998	232	0.44	0.34-0.55
				1999	82	0.70	0.53-0.87
				2001	251	0.41	0.30-0.51
				2004	170	0.25	0.15-0.35
				2005	286	0.22	0.15-0.29
				2007	243	0.50	0.35-0.64

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				2010	256	0.24	0.16-0.31
719	Port Stewart	21,482	55%	1993	289	1.22	1.03-1.42
				1995	278	1.61	1.35-1.87
				1997	289	1.29	1.08-1.50
				1999	182	0.77	0.57-0.97
				2001	289	0.21	0.13-0.29
722	Spacious Bay	31,461	44%	1993	300	0.54	0.43-0.64
				1995	283	0.45	0.35-0.54
				1997	276	0.43	0.33-0.53
				1999	161	0.09	0.04-0.13
				2001	285	0.06	0.02-0.09
738	Margaret	19,286	67%	1985	515	0.57	0.47-0.66
				1986	251	0.84	0.69-1.00
				1988	110	1.31	0.96-1.67
				1989	129	0.62	0.44-0.80
				1990	274	0.56	0.44-0.68
				1991	272	0.76	0.58-0.94
				1993	281	0.31	0.23-0.39
				1995	304	0.70	0.56-0.84
				1997	297	0.56	0.43-0.68
				1999	264	0.47	0.98-1.45
				2001	279	0.44	0.34-0.54
748	George Inlet	19,448	28%	1981	110	0.21	0.09-0.33
				1984	344	0.27	0.19-0.35
				1985	313	0.52	0.39-0.65
				1989	169	1.41	1.08-1.75
				1990	240	1.03	0.82-1.25
				1991	168	1.49	1.15-1.84
				1992	195	0.65	0.49-0.81
				1994	309	0.95	0.79-1.11
				1996	305	0.98	0.76-1.19
				1998	314	0.52	0.40-0.65
				2000	270	0.51	0.38-0.64
				2002	227	0.18	0.09-0.28
				2004	309	0.25	0.18-0.32
752	Whitman Lake	6,015	38%	1981	45	0.18	0.02-0.33
				1987	187	0.16	0.09-0.23
				1990	193	0.46	0.32-0.59
				1992	189	0.20	0.12-0.28

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1997	181	0.81	0.63-0.98
				1998	209	0.47	0.33-0.61
758	Carroll Pt.	11,629	34%	1985	118	0.66	0.46-0.86
				1986	118	0.75	0.56-0.95
				1988	85	1.15	0.81-1.48
				1992	87	0.28	0.14-0.41
				1994	125	0.70	0.49-0.90
				1998	125	0.51	0.38-0.64
				2002	84	0.36	0.21-0.50
				2008	122	1.42	1.00-1.83
759	Moth Bay	7,652	23%	1985	140	0.59	0.42-0.74
				1986	156	0.98	0.79-1.17
				1988	78	0.71	0.46-0.97
				1992	136	0.48	0.30-0.66
				1994	136	0.94	0.71-1.17
				1998	176	0.68	0.53-0.82
				2002	150	1.09	0.84-1.34
				2008	191	1.30	1.08-1.53
760	Lucky Cove	12,377	43%	1985	335	1.16	1.00-1.33
				1986	258	1.16	0.95-1.32
				1988	65	1.01	0.68-1.34
				1990	263	1.10	0.92-1.27
				1991	271	1.39	1.07-1.70
761	Vallenar			2003	96	0.99	0.74-1.24
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
				1996	295	1.07	0.90-1.24
				1998	287	0.84	0.67-1.01
				2000	285	0.96	0.77-1.14
				2002	284	0.76	0.59-0.94
				2003	279	0.91	0.71-1.11
				2004	282	0.66	0.53-0.79
				2005	177	0.87	0.62-1.12
				2008	280	0.55	0.39-0.72

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Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
767	Duke Island	39,171	17%	1996	294	0.05	0.02-0.09
				2000	282	0.13	0.08-0.18
				2002	292	0.19	0.12-0.26
				2008	291	0.16	0.09-0.22
769	Alava Bay	13,563	60%	1985	311	0.52	0.39-0.65
				1986	326	0.85	0.68-1.01
				1991	143	1.64	1.22-2.05
				1994	326	0.79	0.64-0.94
				1996	324	0.93	0.77-1.09
				1998	335	0.66	0.52-0.79
				2000	329	0.75	0.56-0.93
				2002	107	1.22	0.90-1.55
				2004	313	0.92	0.75-1.09
	T3 only			2006	92	1.01	0.75-1.27
				2008	330	1.14	0.95-1.32
772	Wasp Cove	4,882	90%	1985	271	0.41	0.31-0.51
				1986	300	0.50	0.38-0.62
				1989	145	0.58	0.39-0.77
				1991	207	0.13	0.07-0.18
821	Winstanley Island	14,104	45%	1991	49	0.27	0.11-0.42
859	Very Inlet	na	na	2002	306	0.11	0.07-0.16
999	Gravina	na	na	1981	226	1.06	0.89-1.22
	(All Transects)			1984	1,087	0.86	0.78-0.94
				1985	1,172	1.23	1.13-1.32
				1986	1,267	1.40	1.30-1.50
999	Gravina			1984	376	0.88	0.73-1.03
	(Trans. 1,2,3)			1985	224	1.44	1.20-1.67
				1986	346	1.62	1.43-1.81
				1987	334	1.63	1.41-1.84
				1988	278	2.06	1.78-2.35
				1989	182	1.13	0.86-1.41
				1990	279	1.40	1.12-1.68
				1991	154	1.12	0.80-1.43
				1992	302	1.22	1.05-1.38

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.

Appendix 3: Pellet-group count statistics, Southeast Alaska

VCU	Name	Land Acres	% CFL	Year	Plots	Pellet-Group Mean	95%C.I.
				1994	331	1.58	1.37-1.79
				1996	338	1.47	1.28-1.67
				1997	274	1.71	1.47-1.95
				1998	307	1.34	1.12-1.56
				2000	267	1.24	1.06-1.42
				2003	78	0.87	0.54-1.20
				2005	205	1.20	0.95-1.46
	T1 only			2006	89	0.83	0.57-1.09
	T2 & T3 only (logging on T1)			2007	167	0.86	0.68-1.04
				2010	258	0.33	0.24-0.41

*CFL = commercial forest land, or volume classes 4-7 (currently referred to as productive forest land, or "PFL"). Numbers are from the 1980's, and should be updated.