Wildlife Management Report ADF&G/DWC/WMR–2017–2

# Sitka Black-tailed Deer Pellet-Group Surveys in Southeast Alaska, 2016 Report

Karin McCoy



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Alaska Department of Fish and Game Division of Wildlife Conservation

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**Cover Photo:** A Sitka black-tailed deer on Prince of Wales Island, Alaska. ©2014 Steve Bethune.

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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 2016 in Region 1, Southeast Alaska. This information was collected by the Alaska Department of Fish and Game (ADF&G), 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 used 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. Kirchhoff and Pitcher (1988) provided a detailed discussion of the objectives, sample design, and field methodology of this program.

Deer pellet-group surveys have been conducted in Region 1 since 1981 (Fig. 1). 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 (USFS 2016). Each VCU usually has 3 transects. These transects traverse deer winter range from sea level to 1,500 feet in most cases, although some transects are flatter or more undulating and traverse only lower elevations (Fig 2). Transect locations are chosen based on a number of different considerations, including habitat characteristics, harvest pressure,

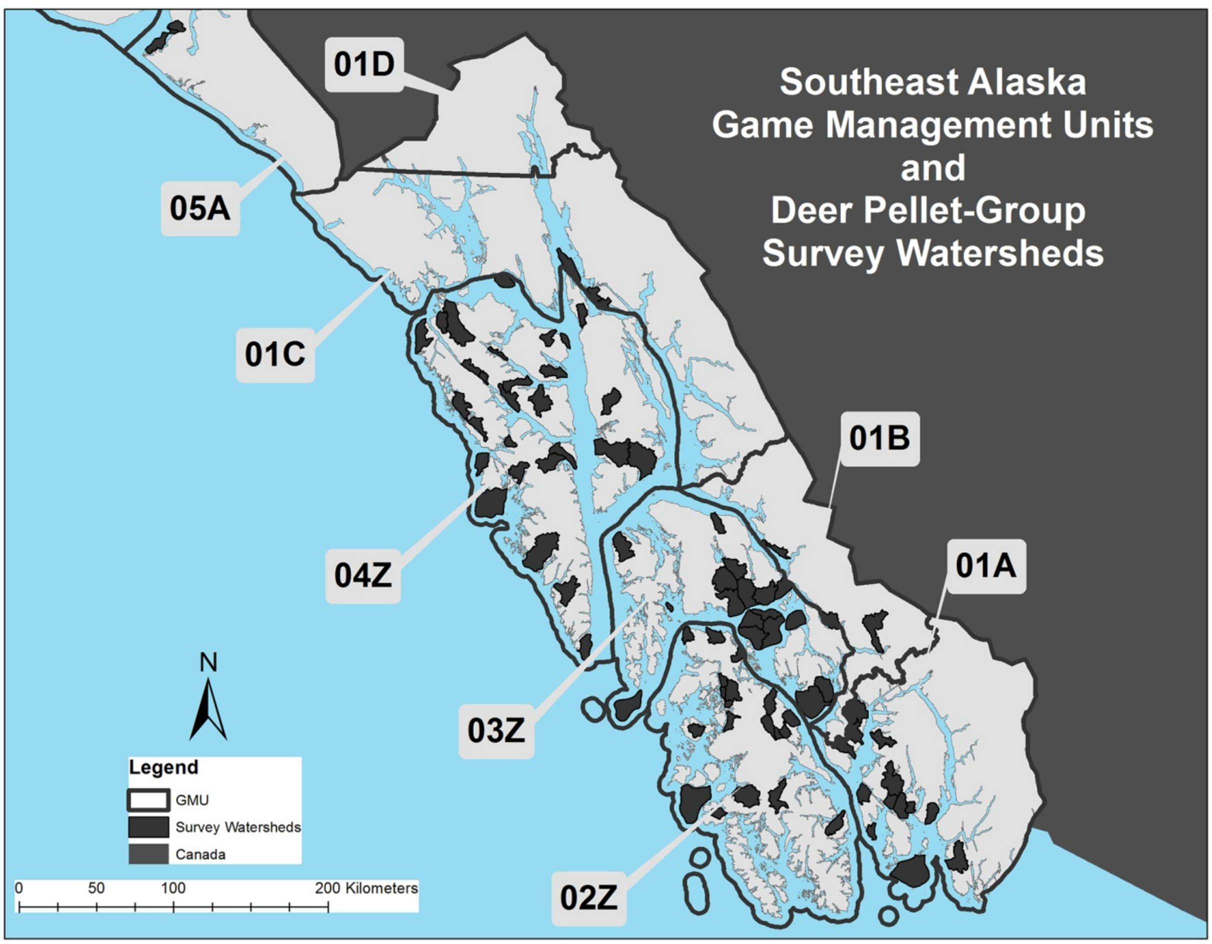


**Figure 1. Southeast Alaska game management units and deer pellet-group survey watersheds.**

management concerns, and accessibility. VCUs of higher management concern are monitored on a yearly basis, while others may be surveyed only every 2 or 3 years. Over time monitoring of some VCUs has been abandoned in lieu of monitoring other VCUs, usually in relation to changes in management concern or habitat (e.g., habitat changes caused by logging). General forest types within VCUs identified in this report follow the low, medium, and high timber volume strata and numeric class categories established by the USFS (USFS 2016).

Pellet-group data should be interpreted cautiously, as factors other than changes in deer population size can affect deer pellet-group density. Snowfall patterns influence the distribution and density of deer pellet-groups from year to year. Snow that persists late into the spring at elevations below 1,500 feet limits our ability to consistently survey the same elevation zone among years. Furthermore, it is sometimes not possible to survey all transects in a VCU, so the areas surveyed are not always directly comparable. 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. Warmer temperatures in spring cause early green-up and leaf-out, making detection of pellet-groups more difficult, especially by inexperienced surveyors. 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 in habitats that have no canopy or that have relatively open canopies, and also makes movement difficult for deer. In summary, winter severity and snowfall patterns, variability in survey effort, the length of time since the last survey, changes in pellet-group detectability, and habitat should all be considered when evaluating deer pellet-group data.

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. Habitats such as clearcuts and scrub forests are not primary winter range, but can provide winter forage when snow is not deep enough to bury forage or restrict deer movement. However, when supplemental forage is available from such habitats 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 because deer are competing for limited resources in a more constricted area. Since deer utilize other habitats during mild winters and concentrate in old-growth forests during severe winters, we expect higher pellet-group densities on primary winter range after severe winters—if the majority of deer live through most of winter.

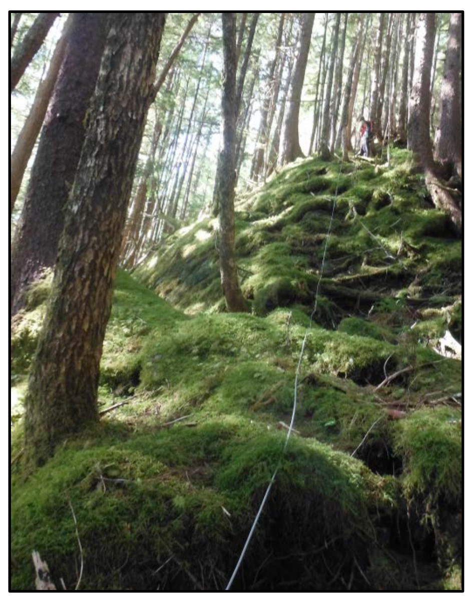

**Figure 2. Steep T1 at Bostwick Inlet, Alaska. ©2015 ADF&G.**

## Deer Pellet-Group Surveys: 2015–2016 Results

Traditional deer pellet-group (PG) surveys were conducted in game management units 01A, 01C, 03Z, and 04Z during April of 2016 (Table 1). The winter of 2015–2016 was extremely mild in Southeast Alaska, with very little snow, more rain, and warmer temperatures (see snow report section, page 35). As a result, pellet-group deterioration rates were likely higher. Under mild conditions deer are not concentrated on their winter range, which can result in lower pellet counts than during severe winters. Finally, green-up was about 6 weeks earlier than usual, which may have affected pellet-group detection rates to some extent in some areas, depending on survey date, habitat characteristics, elevation, and surveyor experience. High detection accuracy was indicated by tests of observer bias conducted during the Pleasant Island survey, so low counts in that watershed are likely an actual reflection of what was present on the transect lines. Note that while Table 1 focuses only on spring 2016 survey results, sections devoted to each GMU will summarize data from all areas surveyed since the last report in 2011. Historical data are summarized in Appendix A.

**Table 1. Deer pellet-group survey results: Southeast Alaska winter 2015–2016.**

| GMU | VCU[a] | VCU Name | 2016 Plots | 2016 No. PG | 2016 Mean PG/Plot | 2016 95% C.I.[b] | Prior Survey Year | Prior No. Plots | Prior Mean PG/Plot | % Change |
|---|---|---|---|---|---|---|---|---|---|---|
| 01C | 35 | North Douglas | 328 | 253 | 0.77 | 0.64–0.90 | 2015 | 323 | 1.04 | -0.26 |
| 01C | 36 | Inner Point | 239 | 241 | 1.01 | 0.80–1.22 | 2015 | 277 | 1.50 | -0.33 |
| 01C | 94 | Sullivan Island | 310 | 336 | 1.08 | 0.91–1.26 | 2012 | 206 | 1.47 | -0.26 |
| 04Z | 185 | Pleasant Island | 351 | 130 | 0.37 | 0.28–0.46 | 2015 | 180[c] | 1.34 | -0.72 |
| 03Z | 437 | East Duncan | 268 | 133 | 0.50 | 0.38–0.61 | 2015 | 281 | 0.60 | -0.17 |
| 03Z | 442 | Portage Bay | 252 | 115 | 0.46 | 0.35–0.56 | 2015 | 233 | 0.40 | 0.14 |
| 03Z | 448 | Woewodski | 235 | 166 | 0.71 | 0.55–0.86 | 2015 | 284 | 0.63 | 0.12 |
| 01A | 763 | Bostwick Inlet | 275 | 165 | 0.60 | 0.48–0.72 | 2015 | 277 | 0.53 | 0.13 |

[a] Value comparison unit (watershed).
[b] Confidence interval.
[c] Only 2 of 3 transects were surveyed on Pleasant Island in 2015.

■ ■ ■

## GMU 1A—KETCHIKAN AREA

Summary

In GMU 1A, 5 watersheds have been surveyed since the last report in 2011. Dall Head has been surveyed each year except 2016, when early green-up and adverse boating conditions combined to preclude accessing that watershed. Pellet-group densities in the Dall Head area appear stable to slightly increasing. On the Cleveland Peninsula, Helm Bay has been sampled 3 times and Port Stewart once since 2011. Low pellet densities on the Cleveland Peninsula likely reflect population declines that occurred due to winter severity during the winter of 1998–1999, but predation by wolves or bears may also be limiting population growth. The Gravina watershed (VCU 999) by the airport was done only once this reporting period, in 2013. Most of the survey area had been logged, and only one transect could be partially done. Surveying of this watershed has been discontinued. A new survey area was added in Bostwick Inlet in 2015, which has pellet densities similar to that of Dall Head. The Bostwick and Dall Head watersheds also have been surveyed for deer fecal DNA to enable estimation of deer density.

Helm Bay (VCU 716)

This VCU is located on the Cleveland Peninsula northwest of Ketchikan. The area was intensively sampled in 1981 and 3 permanent transects were established in 1984. Transect T1 is long, flat, and traverses extensive muskeg and scrub forest (Fig. 3). Transects T2 and T3 each reach 1,500 feet in elevation and traverse medium-volume forest. Snowfall in southern Southeast Alaska hit a 20-plus year high the winter of 1998–1999, contributing to the population declines. The slightly higher pellet-group densities in 2007 were likely the result of deer concentrating on winter range during that heavy snow year. Because the area has experienced periodic above average snowfall since then, the consistently low pellet counts (Fig. 4) likely reflect a lack of population rebound. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

**Figure 3. T1 start tree, Helm Bay, Cleveland Peninsula, Alaska, 22 April 2015. ©2015 ADF&G.**

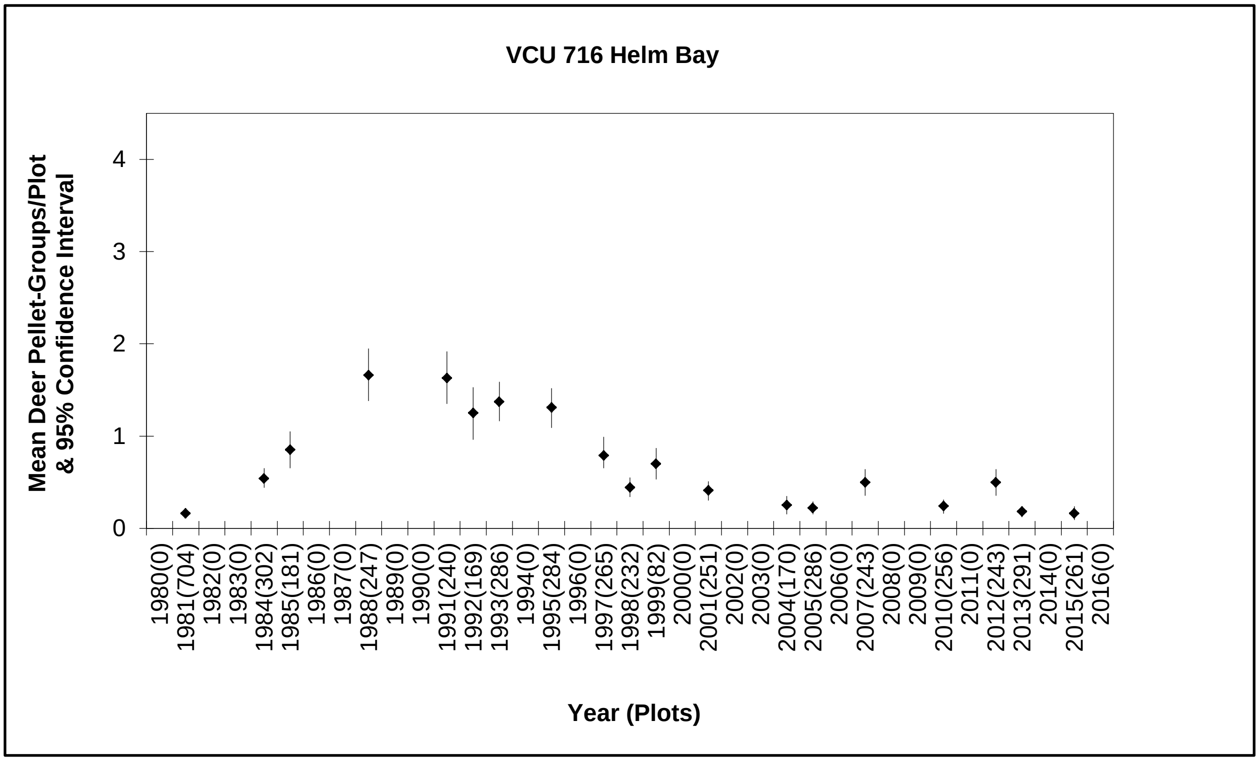


**Figure 4. Mean deer pellet-groups per plot, VCU 716, Helm Bay, Alaska, 1980–2016.**

Port Stewart (VCU 719)

Three transects were established at Port Stewart on the Cleveland Peninsula in 1993. Transect T1 starts on the west side of Port Stewart at the mouth of a large stream. The first 50 plots traverse noncommercial brushy forest, while the next 40 plots ascend a steep hillside to 1,500 feet in elevation through medium- to high-volume forest. Transect T2 starts in the bight on the east side of the bay. The first 60 plots traverse volume class 4 and 5 timber, while the rest of the plots are located in mixed conifer forest with blueberry understory. Transect T3 also starts in the bight on the east side of the bay. It traverses scrubby forest with a few large red cedar trees. Densities remain low since they declined after the heavy snows of the winter of 1998–1999 (Fig. 5). Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

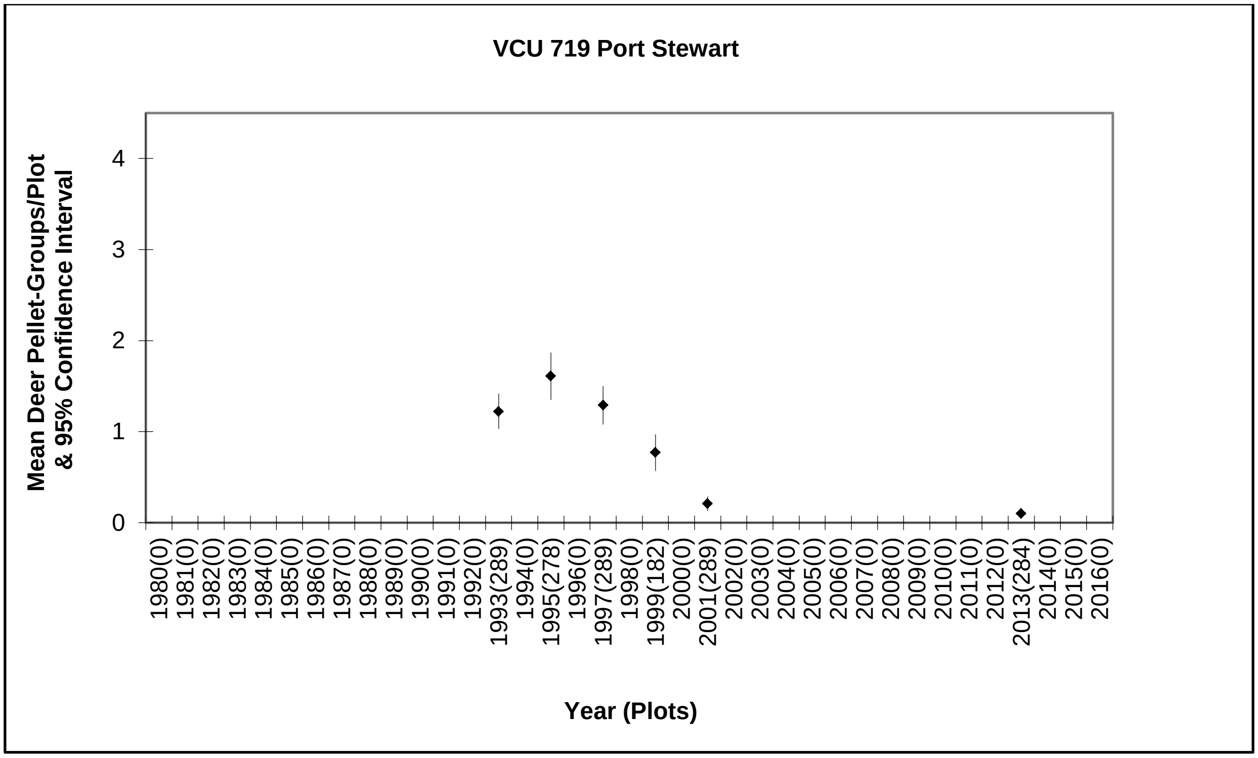


**Figure 5. Mean deer pellet-groups per plot, VCU 719, Port Stewart, Alaska, 1980–2016.**

<u>Bostwick Inlet (VCU 763)</u>

**Figure 6. T1, Bostwick Inlet, Alaska ©2015 ADF&G.**

Three transects were established in 2015 in the same area in which deer DNA surveying had occurred in 2014. While there is some low elevation scrub forest, this area has some of the best remaining deer habitat on Gravina Island (Fig. 6). Transects T1 and T2 rise to 1,500 feet over the course of 70–80 plots, while Transect T3 rises to 1,300 feet over 125 plots. Pellet densities in the area (Fig. 7) appear to be similar to that recorded in the Dall Head area. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

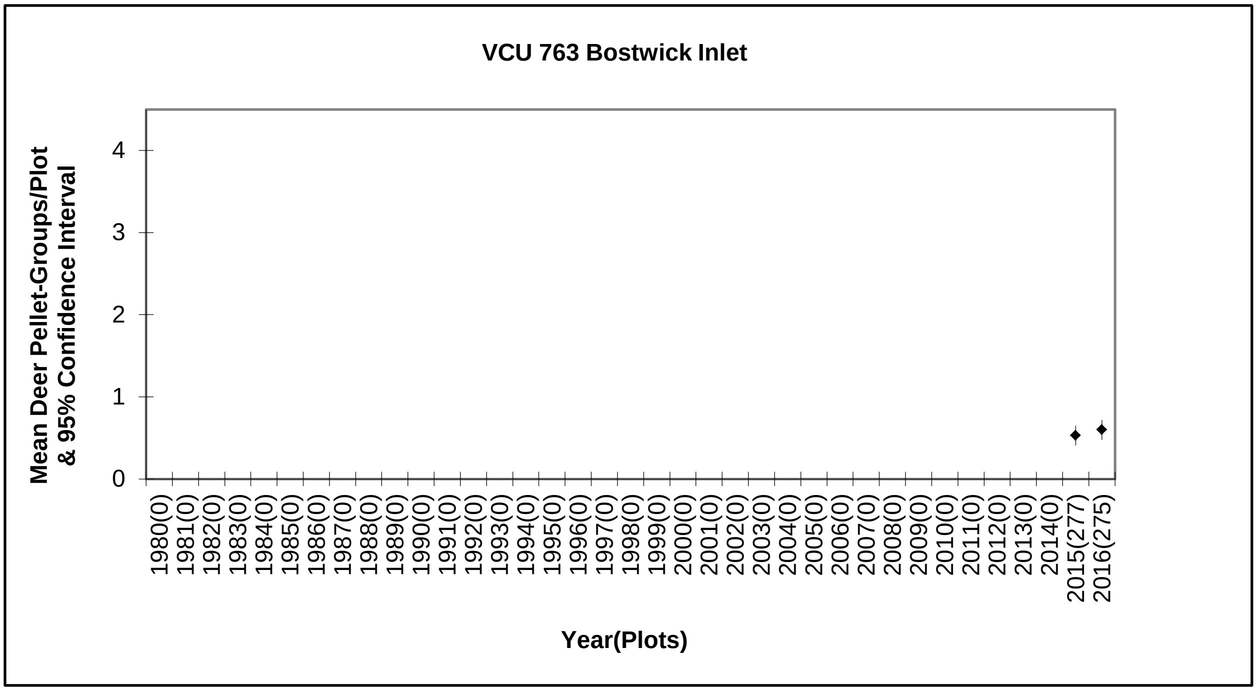


**Figure 7. Mean deer pellet-groups per plot, VCU 763, Bostwick Inlet, Alaska, 1980–2016.**

Dall Head (VCU 765)

This area on the southern end of Gravina Island (Fig. 8) was first sampled in 1981 (Fig. 9), but the location of the one transect surveyed is unknown. Three permanent transects were established in 1996. Much of Dall Head has been exposed to windthrow and fire and consequently there are large areas of second growth and red cedar stands. There is evidence of significant fire events along 2 of the 3 transects. Most of the understory is brushy conifer and salal. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

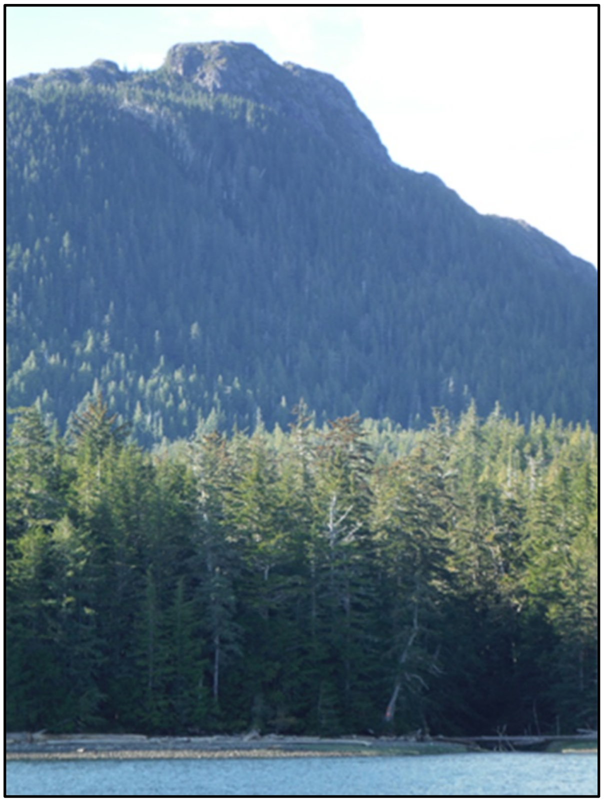

**Figure 8. A view of the Dall Head, Gravina Island, Alaska transect area. ©2015 ADF&G.**

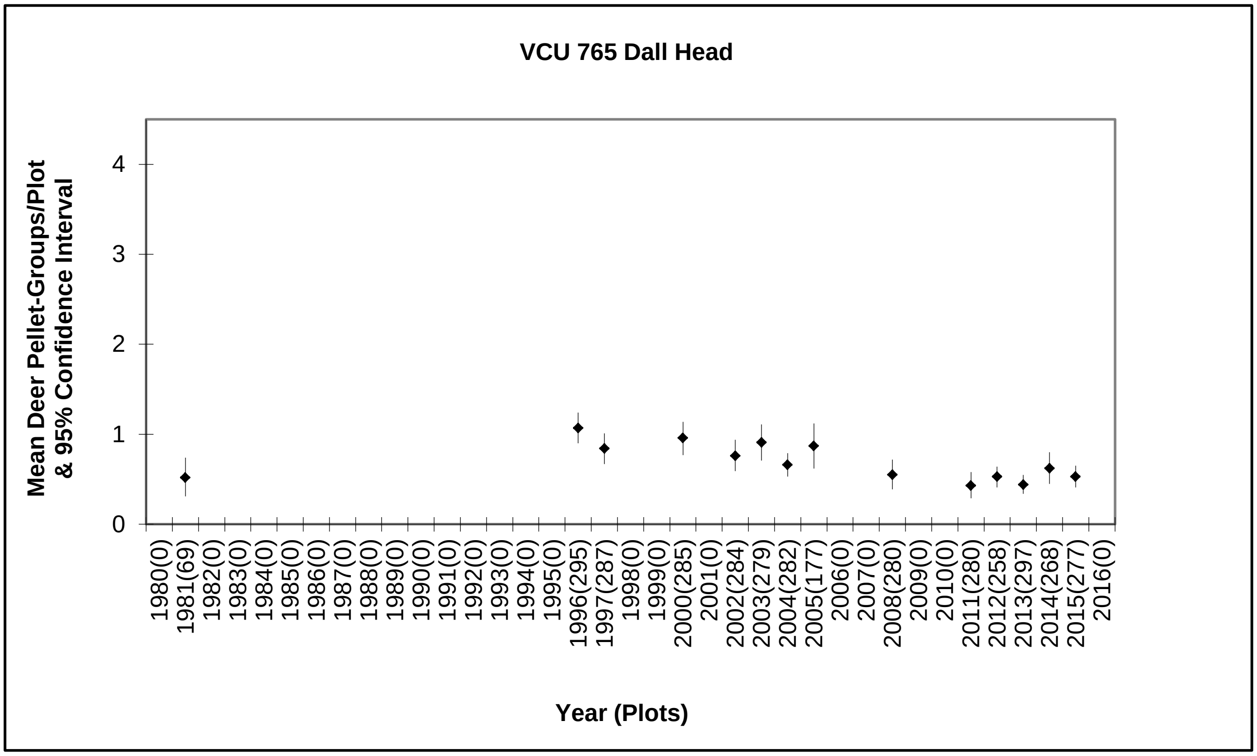


**Figure 9. Mean deer pellet-groups per plot, VCU 765, Dall Head, Alaska, 1980–2016.**

## Gravina (VCU 999)

The northeast shore of Gravina was surveyed intensively from 1984 to 1986, with more than 1,000 plots surveyed each year. In 1987, the 3 transects most accessible from the airport were chosen for future survey. Pellet density estimates are similar to those of the intensive sampling. Figure 10 displays summary data for the three transects only; results of the intensive sampling are in Appendix A. This VCU has been discontinued due to logging on the transects. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

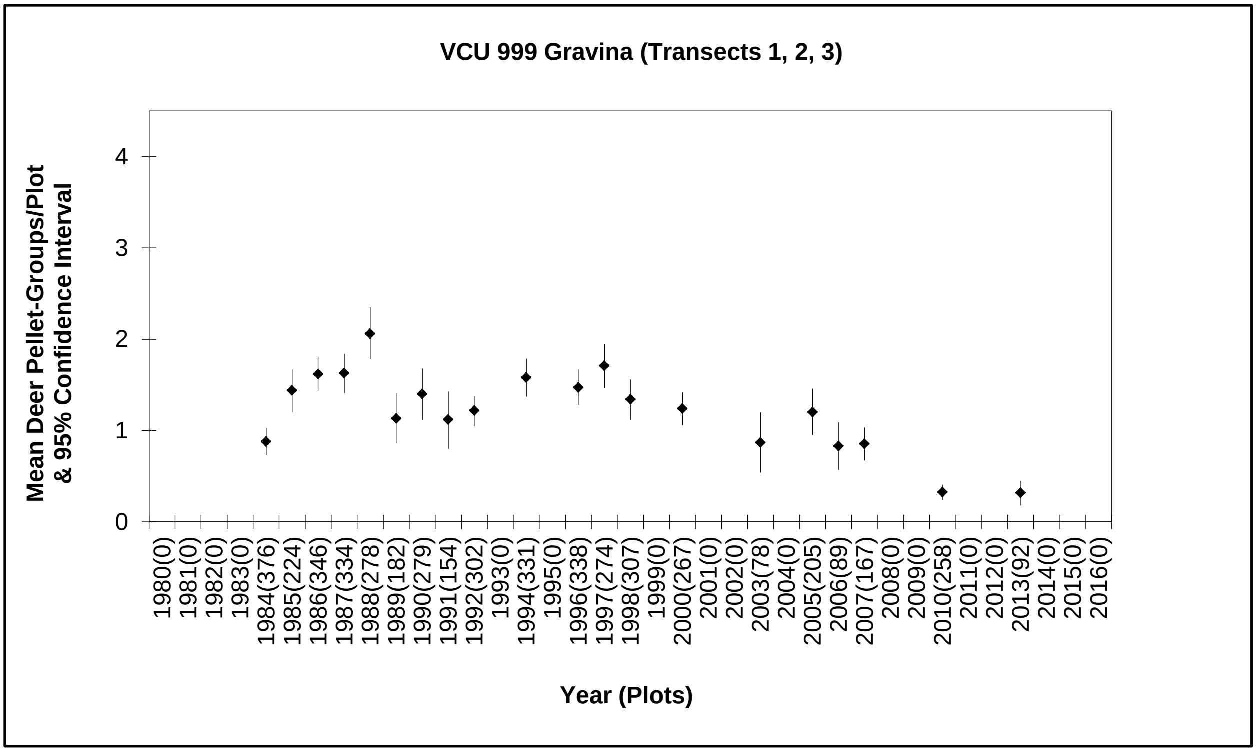


**Figure 10. Mean deer pellet-groups per plot, VCU 999, Gravina, Alaska, Transects 1, 2, and 3, 1980–2016.**

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## GMU 1C—JUNEAU AREA

### Summary

In GMU 1C, 4 watersheds have been surveyed since the last report in 2011. Two of these watersheds are on Douglas Island: VCU 35 is located on the North Douglas road system and VCU 36 is located near Inner Point on the west side of the island. Both of these watersheds have been surveyed annually. VCU 94, located near the northern boundary of GMU 1C on Sullivan Island, has been surveyed only 3 times. Pellet densities in all 3 of these 3 watersheds appear fairly stable, but are at the low end of their historical range. Lower pellet counts in 2016 are likely due to the extremely mild winter, which allowed deer to distribute themselves more broadly over the landscape rather than concentrate on winter range. Milder overwinter weather can also increase decomposition rates of pellets and induce early green-up, which in turn can result in lower detectability of pellet groups. The fourth watershed, VCU 124 on Shelter Island, has not been surveyed for a number of years, but the trend of increasing pellet-group densities through 2013 is an indication of a healthy population. Deer populations on most islands in Unit 1C have lower predation risk due to the absence of wolves, which allows them to recover more quickly when severe winter weather causes high mortality.

### North Douglas (VCU 35)

Douglas Island is located within the City and Borough of Juneau and is heavily used by Juneau hunters. Three transects were established on the road system in 1991, and ADF&G attempts to complete them annually. These transects start near the road and rise to over 1,000 feet in elevation, traversing medium-volume hemlock stands. While the graph of pellet-group densities (Fig. 11) seems to indicate that deer were increasing almost exponentially between 2002 and 2008, interpretation of these data should account for weather conditions and that fact that surveys are conducted in primary winter range and reflect overwinter pellet deposition (not how many deer are still in the population). High counts in spring 2006 were after a mild winter, and likely reflect a relatively high number of deer since they were likely not concentrated on winter range. The very high counts in spring 2007 and spring 2008 are likely a result of a similar amount of deer concentrating on winter range during deep snow winters (see snow report section, page 35). The lower count in spring 2009, combined with another record deep snow winter, indicates that while deer were likely still concentrated on winter range, spring mortality in 2008 and winter mortality in 2009 may have been high, reducing deer numbers. This is not surprising, as deer have a harder time withstanding multiple severe winters in a row because body condition does not have time to recover. Poor body condition can also lower productivity, which slows population growth. While consistent lower densities recorded since 2010 support a perceived reduction in deer abundance from 2006 levels, it is unclear why the counts were higher in 2013

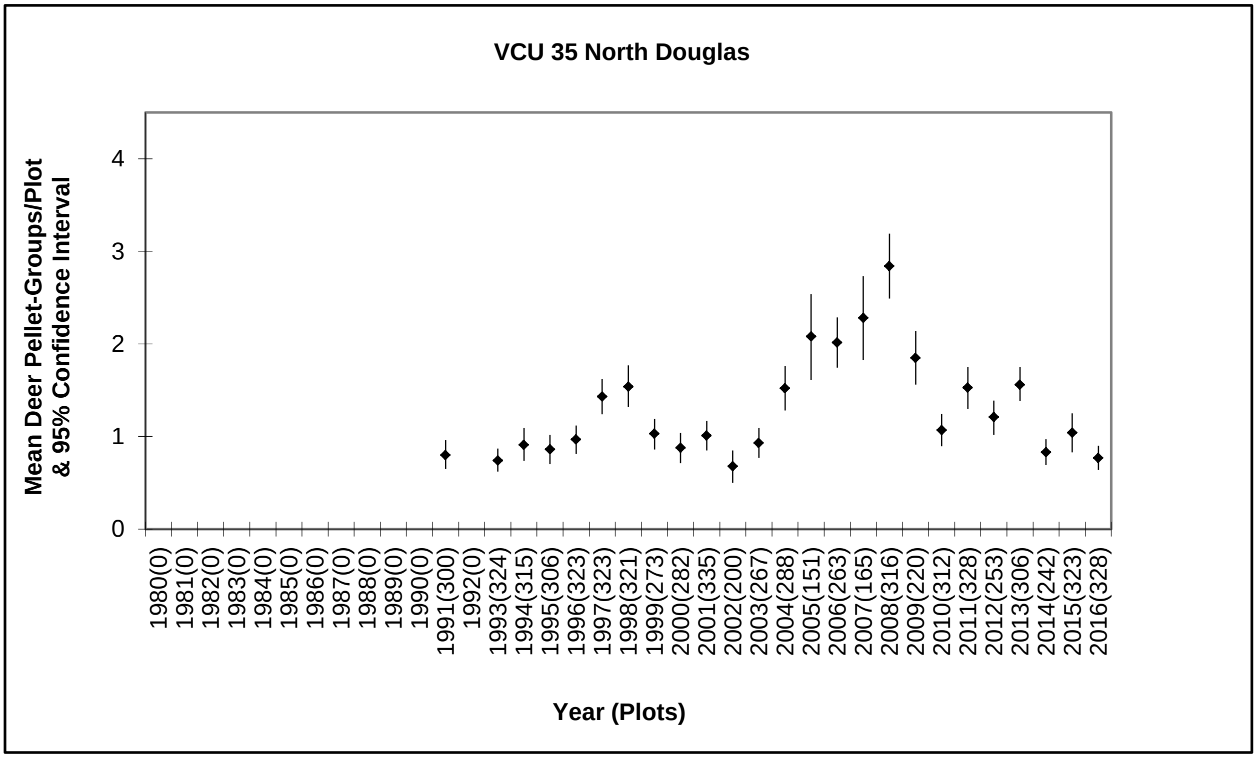


**Figure 11. Mean deer pellet-groups per plot, VCU 35, North Douglas, Alaska, 1980–2016.**

then dropped again in spring 2014. The low counts in spring 2015 and spring 2016, however, were likely due in part to fewer deer being more broadly distributed during those extremely mild winters, combined with lower detectability of pellet-groups during surveys due to factors such as early green-up and higher overwinter pellet decomposition. Anecdotal reports of wolves observed on North Douglas increased during the 2015–2016 winter (Fig. 12). The presence of wolves can affect deer populations by reducing numbers or slowing growth, but this has not been documented on Douglas. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.


**Figure 12. A wolf on Douglas Island, Alaska. ADF&G trailcam photo.**

## 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, ADF&G 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) rise from sea level to 1,500 feet, while the third (T2), is low elevation and consists of 125 plots rising to approximately 500 feet. Several consecutive winters with heavy snowfall between 2006 and 2009 (see snow report section, page 35) likely reduced deer populations to some extent, but the relatively milder winters of 2009–2010 and 2010–2011 seem to have allowed deer numbers to recover relatively quickly in this area, as indicated by higher counts in spring 2011 and spring 2013, after slightly below-average snowfall winters. It is unclear why the pellet-group counts dropped so significantly in spring 2014 (Fig. 13), given the winter snowfall was average and similar to that of the preceding winter. The even lower pellet-group counts in spring 2016, however, could be due in part to greater dispersal of deer across the landscape during the extremely mild 2015–2016 winter, higher pellet decomposition rates due to milder conditions, or lower detectability of pellet groups due to early green-up. Reports of wolves observed on Douglas Island increased during the 2015–2016 winter. The presence of wolves can affect deer populations by reducing numbers or slowing growth, but this has not been documented on Douglas. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

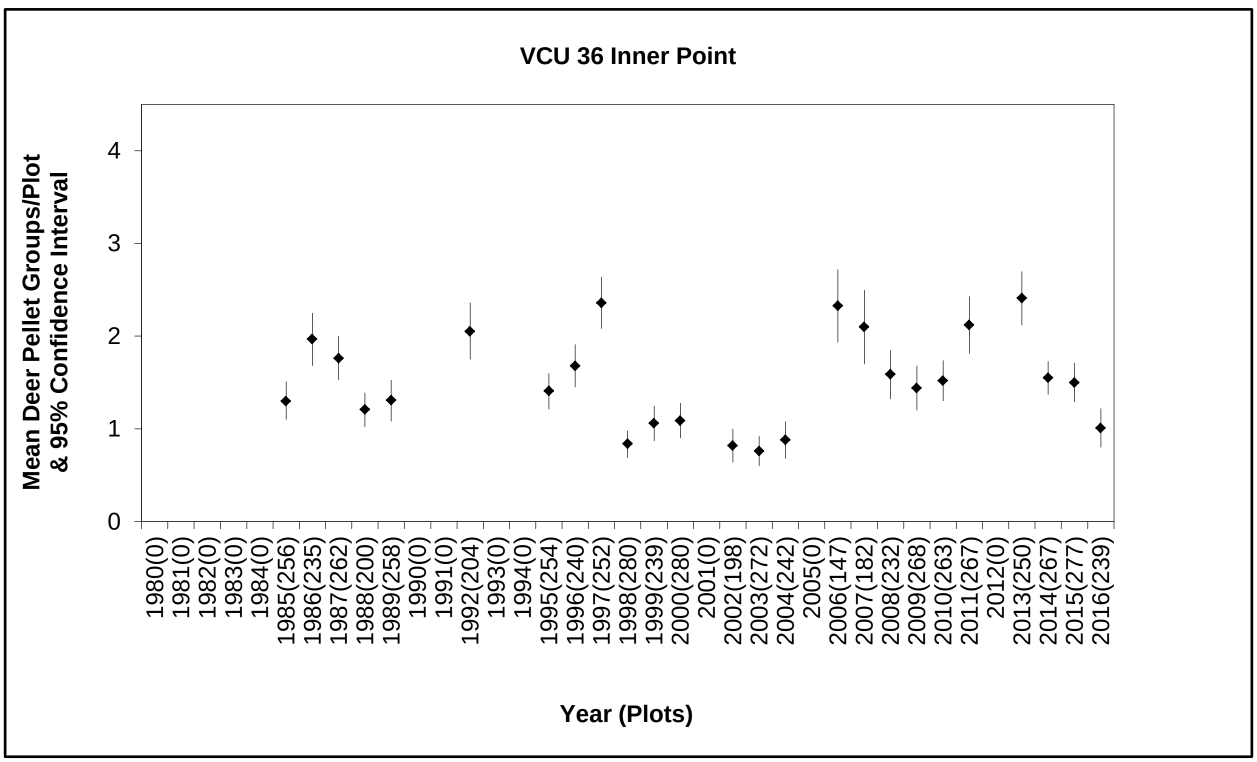


**Figure 13. Mean deer pellet-groups per plot, VCU 36, Inner Point, Douglas Island, Alaska, 1980–2016.**

Sullivan Island (VCU 94)

Transects were established on Sullivan Island in 1990. Located in upper Lynn Canal, the island is in the northernmost point of GMU 1C and is only 8 miles long. The island is located 15 miles south of Haines, and supports the only huntable population in the area. Deer also occur in small numbers on the Chilkat Peninsula and the mainland coast east of Lynn Canal in GMU 1D, but GMU 1D is closed to deer hunting. Transect 1 is on the east side of the island, about midway between the northern and southern sides, and runs up to the highest point on the island (at approximately 1,030 feet) through medium- to high-volume open timber. The transect midpoint crests a knoll with interesting grass and alder meadows. Transects 2 and 3 are located at the heads of the 2 bays situated on the southern end of the island. Both traverse a fair amount of lowland brushy habitat before climbing into heavier timber. The highest point on Transect 3 is less than 400 feet. Pellet-group densities (Fig. 14) were similar to those found on Shelter and Douglas islands. Counts in 2016 were similar to previous surveys in this watershed. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover. Transects on Sullivan have been terminated early at times due to time constraints.

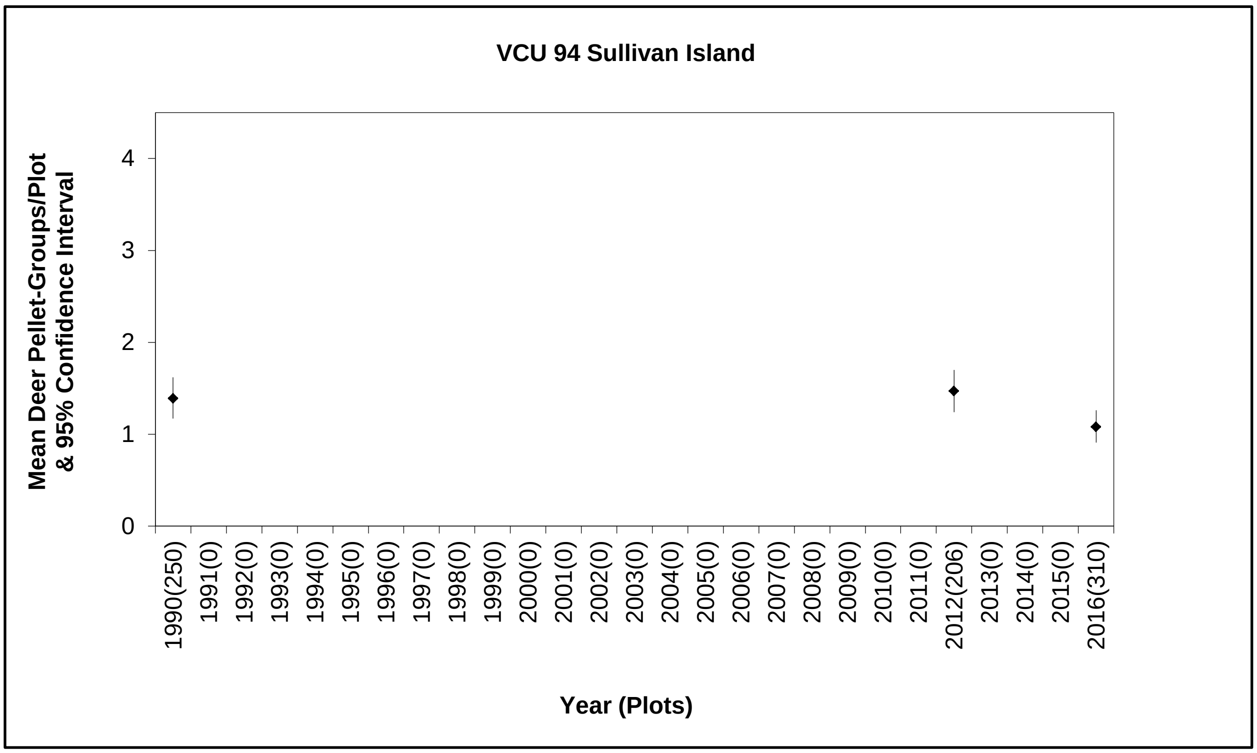


**Figure 14. Mean deer pellet-groups per plot, VCU 94, Sullivan Island, Alaska, 1990–2016.**

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 2 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 with numerous cabins. 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 be completed in one day with a 6-person crew. Because the island is narrow, each transect is relatively short. Crews survey one transect and then hike to the nearby start location of the next. The chart below (Fig. 15) displays pellet-group densities on only these 6 transects. Pellet-group densities for 1984–1986 that include all transects surveyed during intensive sampling may be found in Appendix A. Shelter has not been surveyed since 2013, but the trend then indicated the population was stable and increasing. Given recent mild winters, the population is suspected to be healthy. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

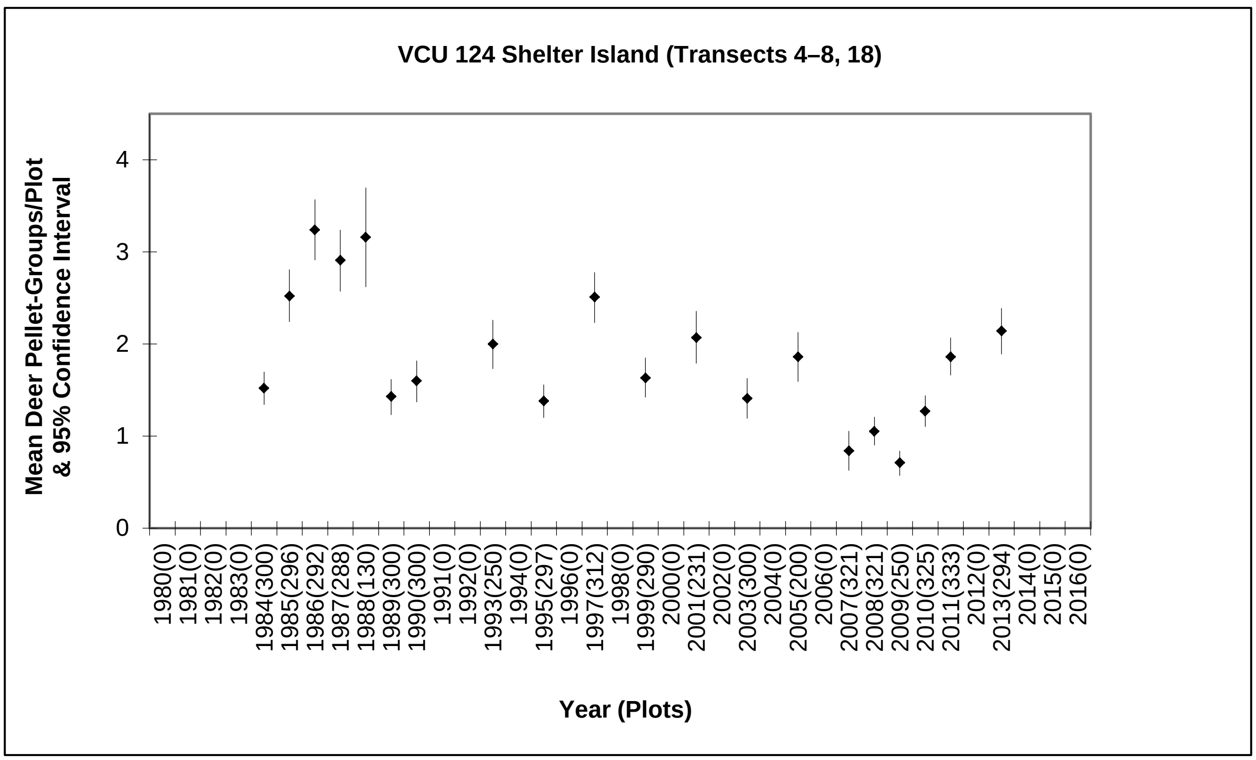


**Figure 15. Mean deer pellet-groups per plot, VCU 124, Shelter Island, Alaska, Transects 4–8 and 18, 1980–2016.**

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## GMU 2—PRINCE OF WALES ISLAND

### Summary

In GMU 2Z, 6 watersheds have been surveyed since the last report. The 3 watersheds surveyed in 2012 were Snakey Lakes (VCU 578), Little Ratz (VCU 584) and Twelve Mile Arm (VCU 621). In 2015, Snakey Lakes and Little Ratz were surveyed again, along with Red Bay (VCU 532), Sarkar (VCU554), Thorne Lake (VCU 575).

Despite a number of winters with above average snowfall in the last decade, pellet counts appear to be stable or increasing in most of the VCUs surveyed. This is likely due, at least in part, to the fact that even winters with above average snowfall in GMU 2 are still relatively mild. While snowfall data are collected in several areas of GMU 2, missing data from one or more months each winter make it difficult to document complete snowfall and snowpack trends. However, inspections of available data indicate that while snowfall on POW is somewhat higher than that recorded on Annette Island, trends are similar (see snow report section, page 35). While winter severity may have been relatively high for this area several times in the last decade, it may not have been high enough to result in much winter mortality if forage remained available in primary winter range (old-growth forest). Pellet-group counts indicate that deer are likely still doing quite well in most areas of Unit 2, with the exception of Little Ratz, and, while counts in Little Ratz were much lower than the prior year, density was still above 1.0 pellet-groups/plot, which is relatively high compared to counts in other management areas such as Units 1A and 3Z.

### Red Bay (VCU 532)

**Figure 16. T5, Juliene TreeXing, VCU 532, Red Bay, Alaska. ©2015 ADF&G.**

Located on northern Prince of Wales Island (Fig. 16), this VCU was first sampled in 1987 (Fig. 17). Red Bay has been extensively logged, and in 2001 and 2002, new transects were added to avoid second growth. Since then, T4, T5, and T6 have been surveyed. T4 traverses a big muskeg complex with little overwintering habitat, and runs into a clearcut after 80 plots. T5 traverses steep old growth and crosses 2 rivers, ending at 90 plots. T6 traverses muskeg, blowdown, and old growth. Pellet-group counts in 2015 were similar to those reported in the past. Given that the preceding winter was relatively mild, and deer were therefore not likely concentrated on winter range, densities of deer have not likely changed substantially. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

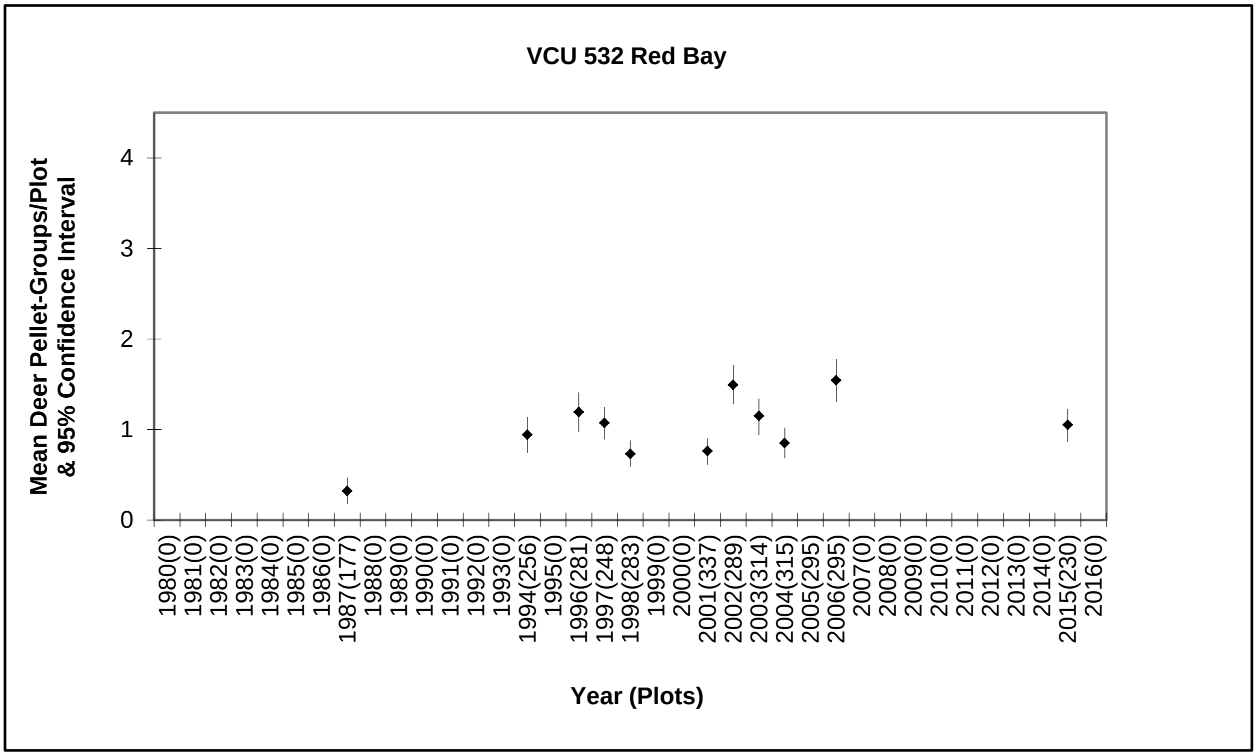


**Figure 17. Mean deer pellet-groups per plot, VCU 532, Red Bay, Alaska, 1980–2016**

<u>Sarkar (VCU 554)</u>

**Figure 18. Dense brush along T2, VCU 554, Sarkar, Alaska. ©2015 ADF&G.**

Three transects were established at Sarkar Lake on Prince of Wales Island in 1989. All 3 transects start at the Sarkar Rapids bridge. T1 and T3 travel through a combination of old-growth and second growth, some of which is very dense (Fig. 18). T2 starts at the same tree as T1, is mostly flat, and consists primarily of old growth with blowdown and thick *Vaccinium*. In 2001, T4 was created to replace T3 due to second growth. In 2002, T5 was created to replace T1 (T2, T4, T5 surveyed). However, 2003–2015, surveys included T1, T2, and T5. Pellet-group counts in 2015 were similar to those reported in the past (Fig. 19). Given that the preceding winter was relatively mild, and deer were therefore not likely concentrated on winter range, densities of deer have not likely changed substantially. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

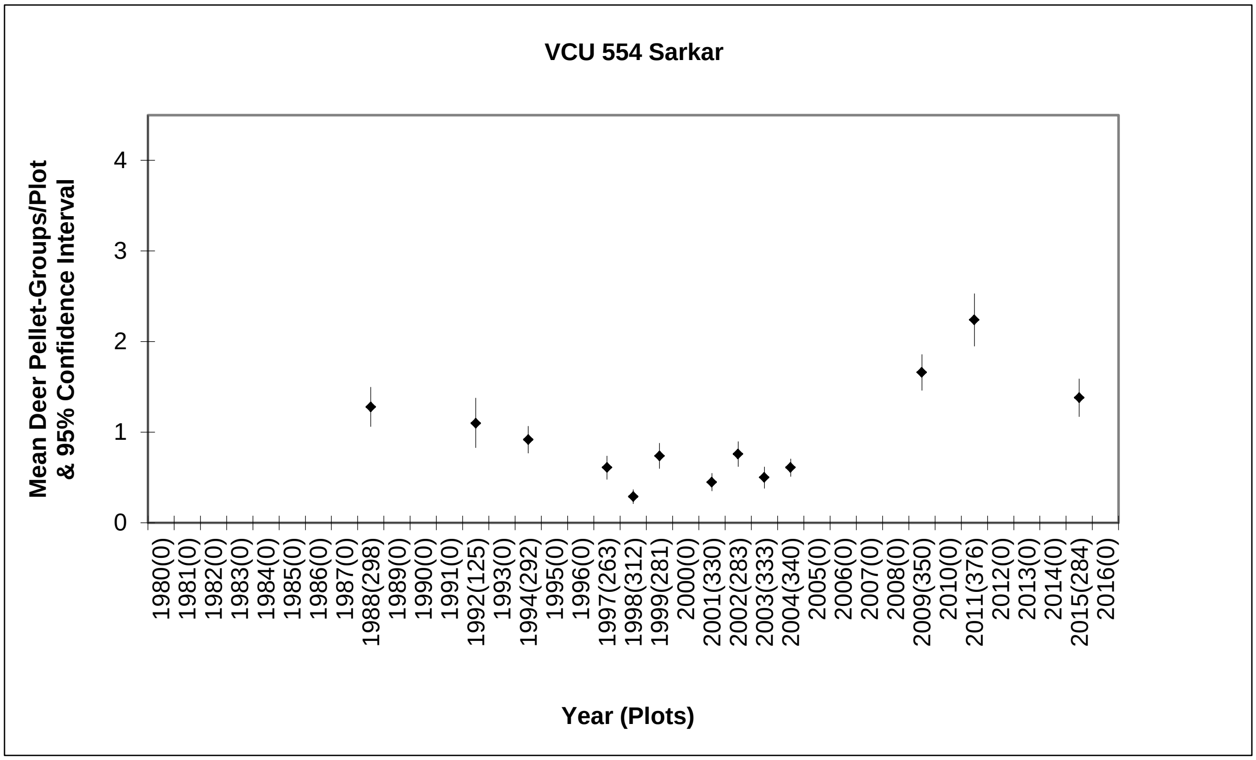


**Figure 19. Mean pellet-groups per plot, VCU 554 Sarkar, Alaska, 1980–2016.**

## Thorne Lake (VCU 575)

**Figure 20. Boyd Porter in wet meadow along T2, VCU 575, Thorne Lake, Alaska. ©2015 ADF&G.**

The Thorne River Drainage is located in the central part of Prince of Wales Island (Fig. 20). In 1992, 4 transects were established instead of 3 because they would be shorter and managers wanted to get 300 plots. All 4 transects start along Road 3015 and are accessed by vehicle from Thorne Bay. Transect T1 is mostly red cedar–western hemlock overstory and blueberry understory. T2 starts in muskeg and low-volume forest, passes through a series of wet meadows, and then skirts a clearcut. T4 is a steep steady climb to 1,500 feet, with the first half dominated by red cedar and the second half by high-volume spruce–hemlock. High counts in recent years (Fig. 21) despite several winters with above average snowfall in the last decade indicate deer are likely still doing well in this area. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover. 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 and 2004. Only T3 and T4 were sampled in 2003.

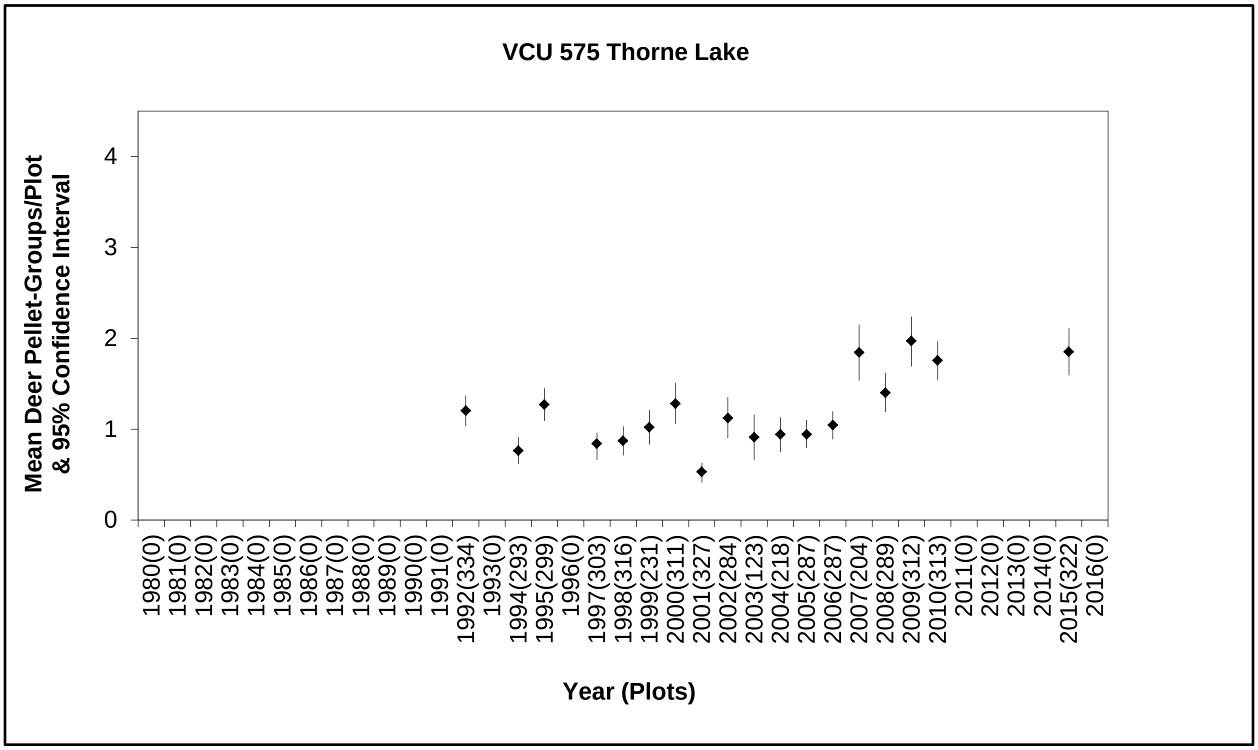


**Figure 21. Mean pellet-groups per plot, VCU 575, Thorne Lake, Alaska, 1980–2016.**

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 (POW). 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 so had to be replaced by new ones. Like other watersheds on POW, periodic severe winters in the last decade do not appear to have diminished deer density.

**Figure 22. T7 start tree, VCU 578, Snakey Lakes, Alaska. ©2015 ADF&G.**

Due to logging, a new start point for T3 and T4 was flagged in 1993. In 1998, T3 was not done. In 1999, T3 and 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 (Fig. 22) due to logging. T5, T6 and T7 are the current transects. Note that the number of plots sampled each year (Fig. 23) varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

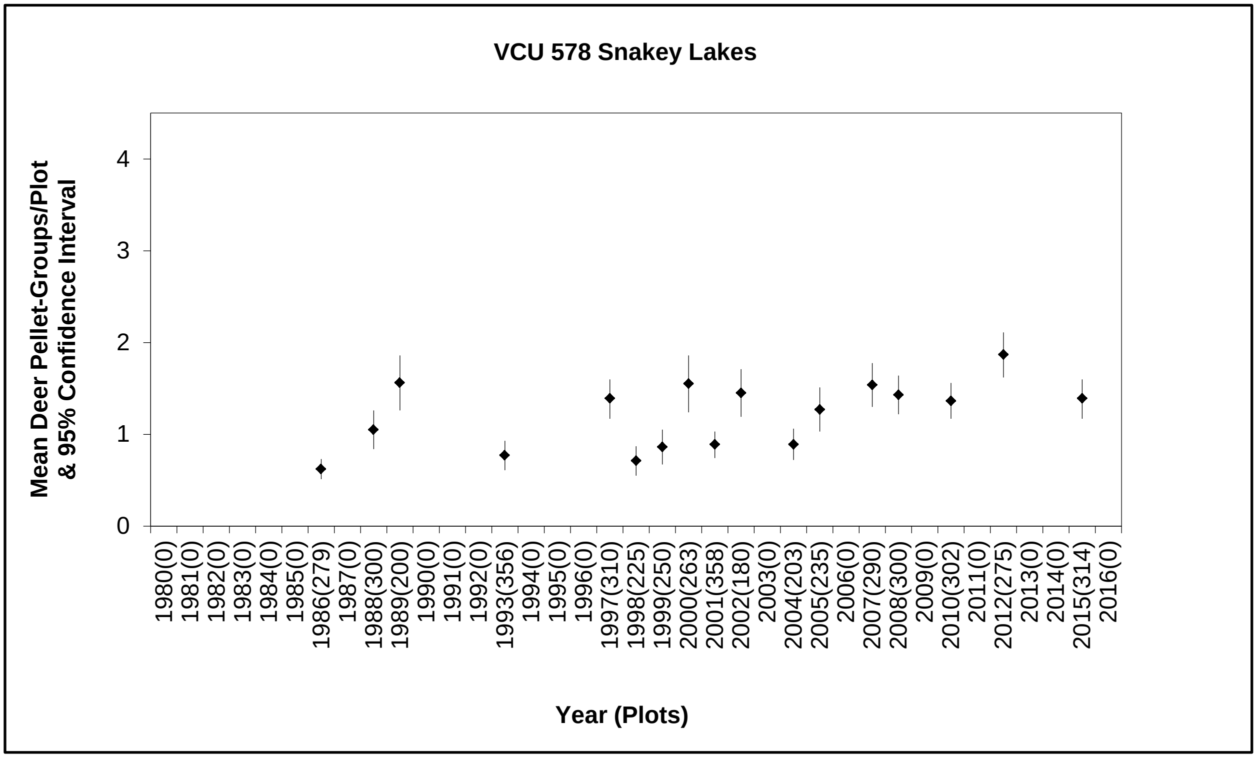


**Figure 23. Mean deer pellet-groups per plot, VCU 578, Snakey Lakes, Alaska, 1980–2016.**

## Little Ratz (VCU 584)

**Figure 24. T3 start tree, VCU 584, Little Ratz, Alaska. ©2015 ADF&G.**

Four transects were established in 1992 on the east coast of Prince of Wales Island. Four transects were established instead of 3 because the transects had to be relatively short due to habitat and geographic limitations (Fig. 24). Access to all transects is by vehicle from Thorne Bay. Pellet densities have often been relatively high in this VCU, with counts exceeding 2 pellet-groups per plot. In the graph below (Fig. 25), pellet-group densities appear to change quickly. However, this may have to do more with changes in weather and forage availability than in numbers of deer. Even small changes to the amount of snowfall could have significant effects on forage availability in a heavily logged watershed, depending on the condition and age of the clearcuts. Between 2006 and 2012 there were a series of deeper snow winters that may have concentrated deer on winter range, resulting in higher pellet-group densities. The winter of 2009–2010, however, was relatively mild, and counts remained high, indicating that deer were likely still doing well. The winter of 2014–2015 was even milder, but, in contrast, counts plummeted. This could in part be explained by early green-up and lower detectability of pellets or a broader distribution of deer on the landscape, but may also indicate there are fewer deer. Additional surveys will help confirm if deer abundance has decreased from 2012 levels. But, even if it has, the most recent pellet-group counts were still relatively high when comparing watersheds across the region.

Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover. All transects but fewer plots were done in 2002. T1 was not done in 2004. T2 was not done in 2007.

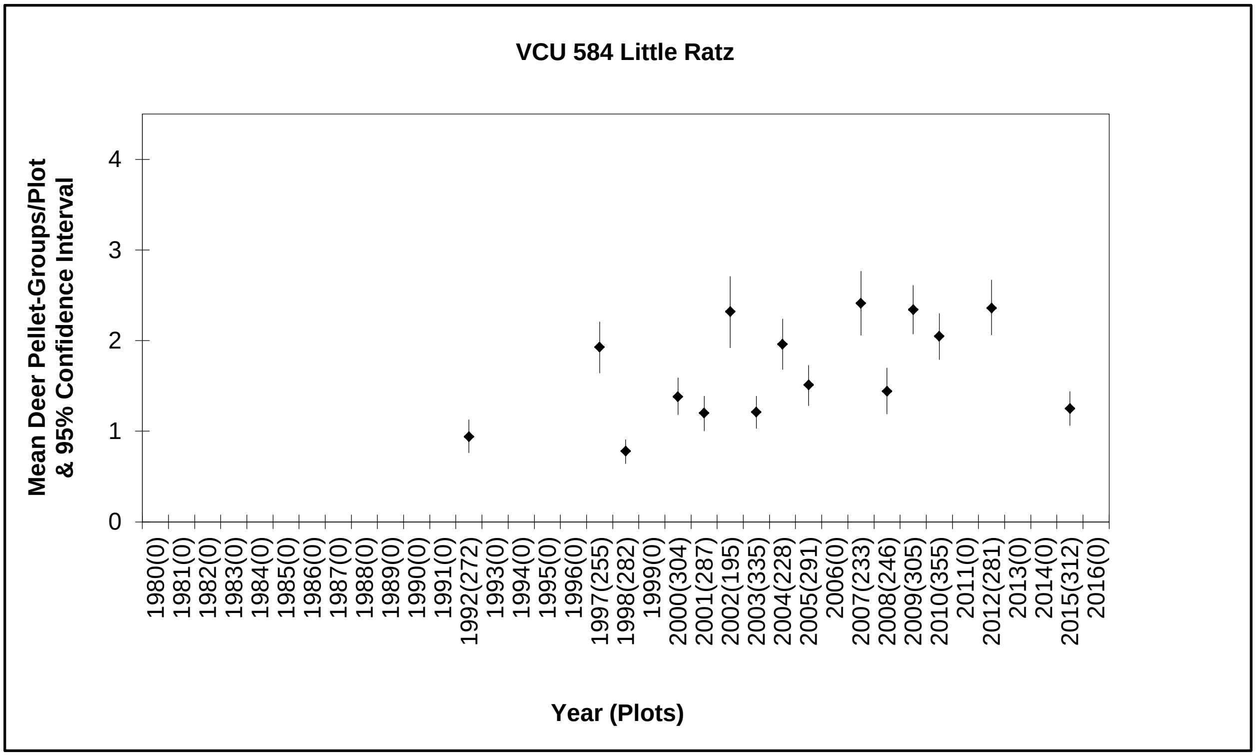


**Figure 25. Mean deer pellet-groups per plot, VCU 584, Little Ratz, Alaska, 1980–2016.**

## Twelve 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 since 1985. Pellet densities were relatively high in the most recent surveys (Fig. 26). Deer concentrating on winter range likely contributed to the high counts in spring 2007, spring 2008, and spring 2012. The winter of 2009–2010 was extremely mild, and deer were likely more dispersed on the landscape, resulting in lower counts. Pellet counts have increased substantially since 2002, and even the low count in 2010 is relatively high when comparing watersheds across the region.

Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

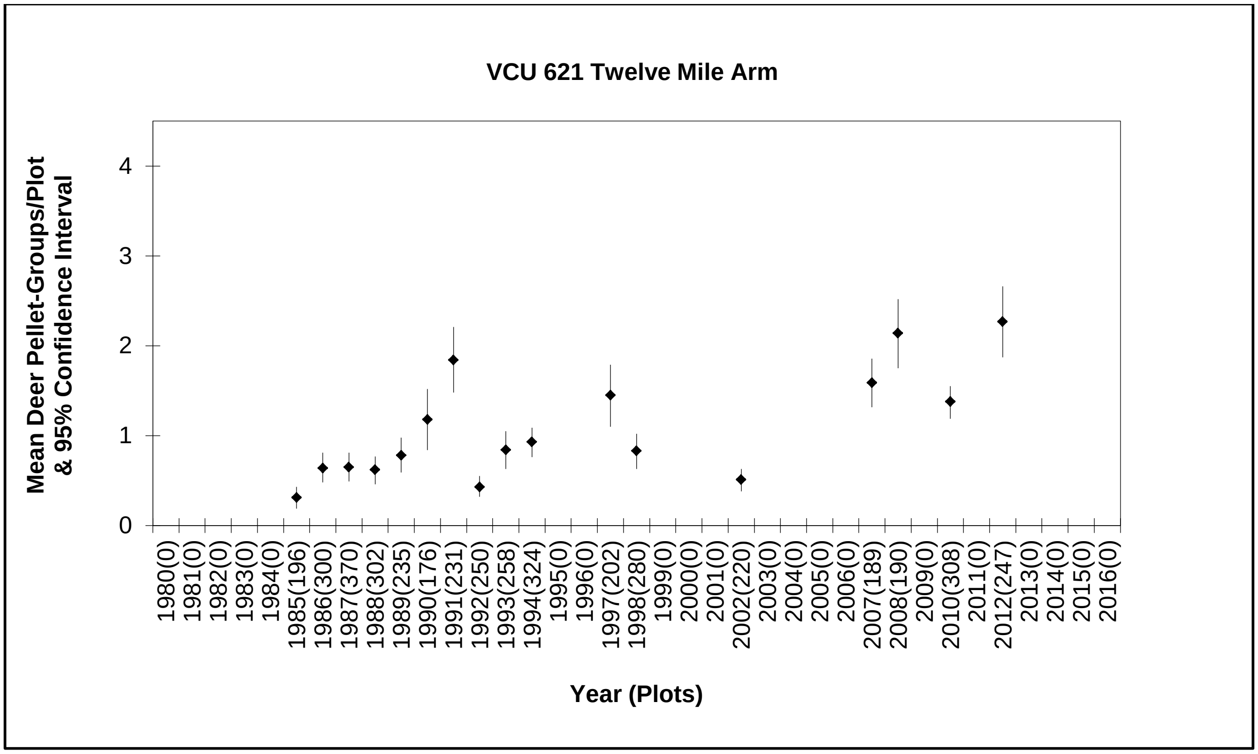


**Figure 26. Mean deer pellet-groups per plot, VCU 621, Twelve Mile Arm, Prince of Wales Island, Alaska, 1980–2016.**

■ ■ ■

## GMU 3 –Petersburg Area, Central Southeast Alaska Islands

### Summary

In GMU 3Z, 4 VCUs have been surveyed during the current reporting period (2012–2016). VCU 435 (Castle River) was surveyed once, VCUs 442 (Portage Bay) and 448 (Woewodski) were done 4 times, and VCU 437 was done every year. Historically, pellet-group densities in VCUs 435 and 442 have been stable at relatively low levels compared to other areas in the region. Densities in VCU 437 experienced a marked decline after 2008, and now appear stable at their lowest documented levels. Densities in VCU 448 also experienced a post-2008 decline, and now appear stable in the lower part of their historical range. The relationship between these declines and winter severity are apparent when comparing the charts below to historical snowfall trends for Petersburg (see snow report section, page 35**)**. Between 1974 and 2004, the Petersburg area experienced well below average to average snowfall, during which time deer likely did well despite habitat change resulting from forest management and road construction activities. This 30-year period of predominantly mild winters was immediately followed by a series of deep snow winters, including record snowfall during the winter of 2006–2007. The relatively high pellet-group densities documented in spring 2007 and 2008 are likely the result of low numbers of deer concentrating on winter range during those severe winters. High deer mortality due to both malnutrition and predation by wolves and black bears may have occurred in spring of those years, resulting in considerably lower counts in subsequent years. The combined effect of multiple severe winters and predation likely delayed recovery of deer populations in these VCUs. The last three winters (2013–2014, 2014–2015, 2015–2016), however, have been mild with well below average snowfall. Harvest data as well as anecdotal observations by ADF&G staff and hunters indicate that populations may now be rebounding.

### Castle River (VCU 435)

Castle River is located on Kupreanof Island in western Duncan Canal, and was first sampled in 1984. One transect (T2) is located on Big Castle Island, while T1 and T3 are located on Kupreanof Island. The topography traversed is mostly flat and habitat is characterized by muskeg and noncommercial forest. Stands of large trees are primarily located along beaches and stream courses. Since there is little classic deer wintering habitat (high volume old-growth stands on southerly aspects) in this watershed, lower deer abundance should be expected. Since surveys began in 1984, pellet-group densities have been relatively low (Fig. 27) compared to other areas of GMU 3 and the region. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

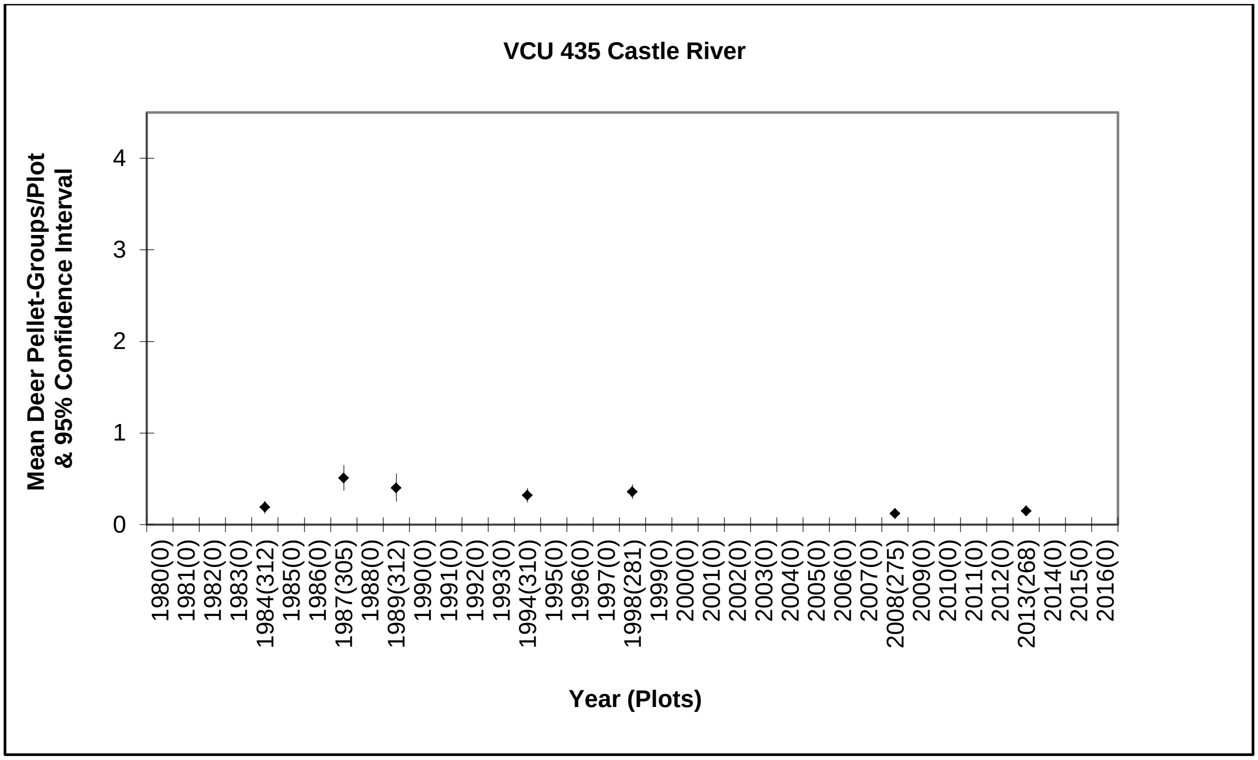


**Figure 27. Mean deer pellet-groups per plot, VCU 435, Castle River, Kupreanof Island, Alaska, 1980–2016.**

<u>East Duncan (VCU 437)</u>

Three transects were established on the Lindenberg Peninsula in 1990 along the eastern shore of Duncan Canal. The habitat and topography in this watershed are more favorable for deer winter range than in VCUs 435 or 442, so greater deer abundance is to be expected. Transect T1 is mostly low-volume timber at predominantly low elevations, rising from sea level to a 500-foot knob near the Castle Islands. A portion of T1 was clearcut in 1992. T2 (Fig. 28) starts near the head of the bay and traverses medium-volume hemlock forest, brush, and blowdown, then skirts a young clearcut. T3 climbs gradually from sea level up a southwest-facing slope to 1,500 feet while passing through medium-volume old-growth forest. Note that the number of plots sampled each year (Fig. 29) varies according to which transects were surveyed and what elevation was reached before encountering snow cover. High winds in 1998 prevented access to survey T1. An extra transect was surveyed in 2014.

**Figure 28. Huge skunk cabbage along T2, East Duncan, VCU 437, Alaska. ©2015 ADF&G.**

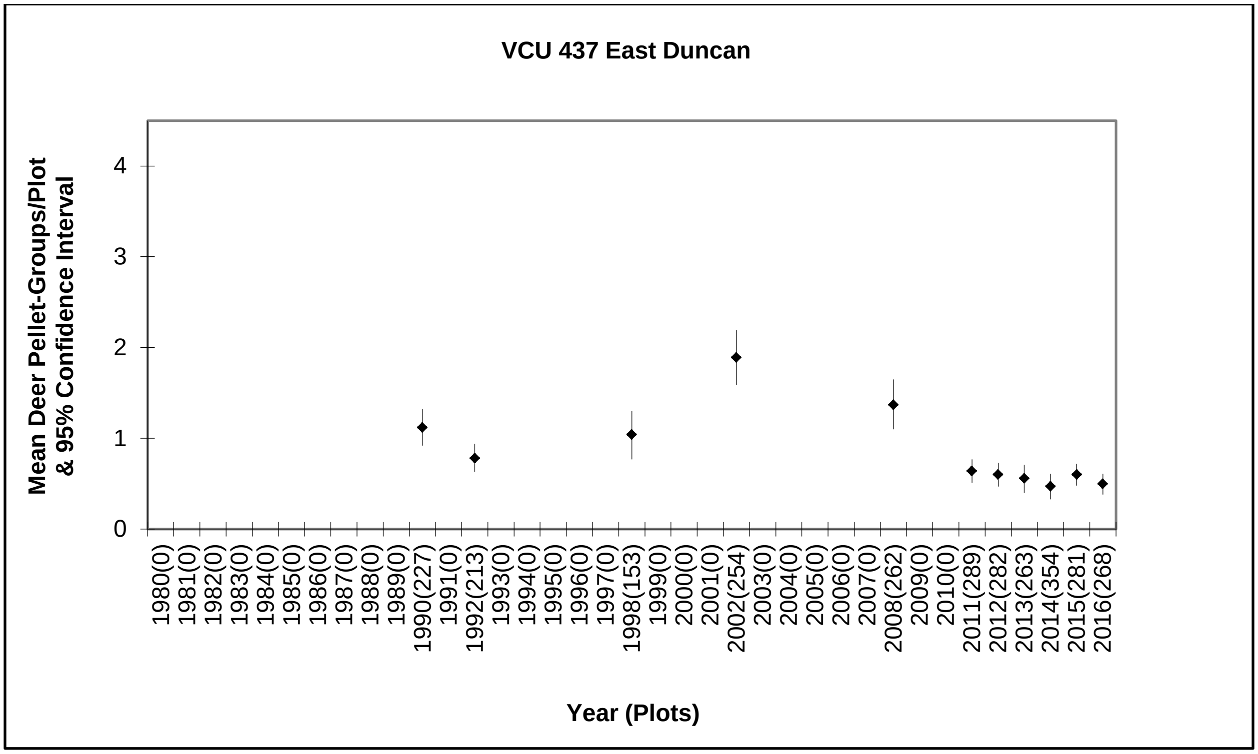


**Figure 29. Mean deer pellet-groups per plot, VCU 437, East Duncan, Alaska, 1980–2016.**

## <u>Portage Bay (VCU 442)</u>

**Figure 30. T3 viewpoint at end, VCU 442, Portage Bay, Alaska. ©2012 ADF&G.**

Three transects were established at Portage Bay on the north shore of Kupreanof Island in 1993. Transect T1 starts on the west side of the bay near Stop Island and traverses low-volume mixed forest to 640 feet elevation. T2 starts at the head of the bay and traverses medium-volume hemlock as it skirts a young clearcut. A bearing change is made at plot 49 from 45 degrees to 25 degrees. This transect was discontinued after 1998 because the shallow tide flat at the head of the bay made access difficult. T3 starts on the east side of the bay near the entrance to the bay and traverses low- to medium-volume hemlock up a steep slope to 1,500 feet (Fig. 30). Dense brush and blowdown make this transect very strenuous and time-consuming to complete. T4 was created and substituted for T2 in 2012. This transect rises steeply from sea level to 1,500 feet in 52 plots, traversing mostly medium-volume old growth. Since there is little classic deer wintering habitat (high volume old growth stands on southerly aspects) in this watershed, lower deer abundance should be expected. Since first surveyed in 1993, pellet-group densities have remained stable at low levels (Fig. 31). Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

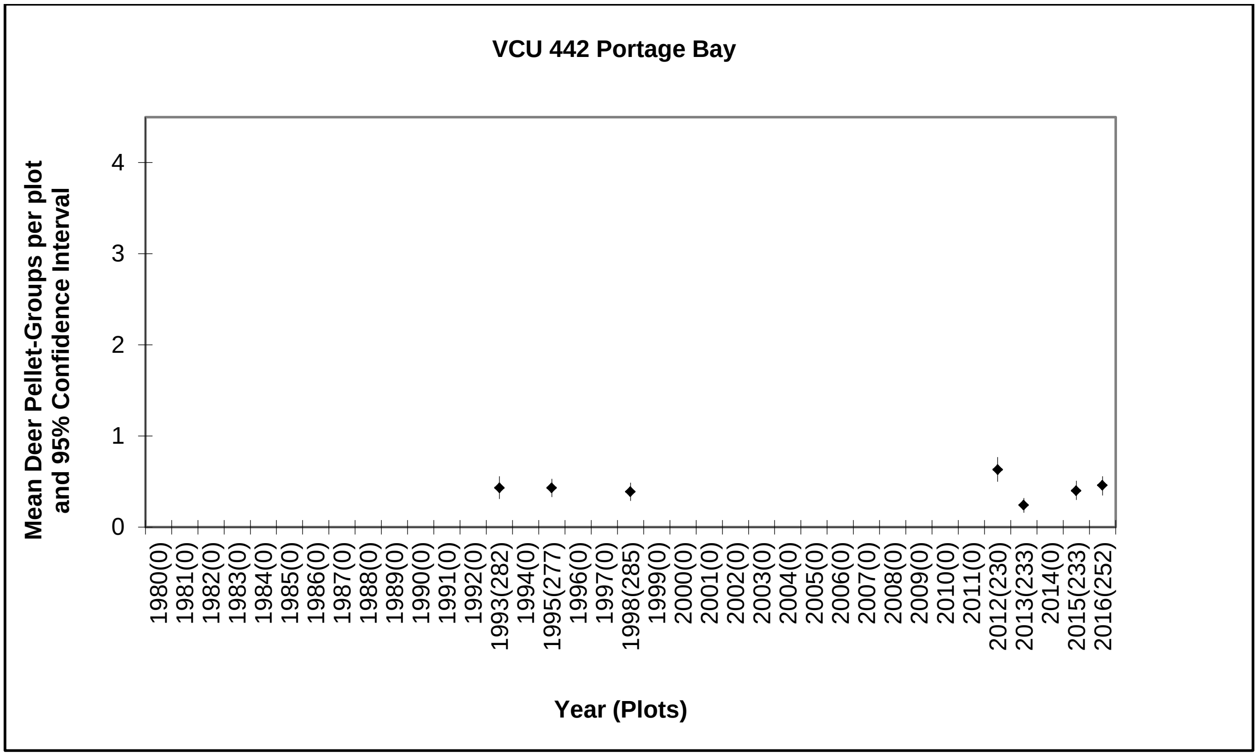


**Figure 31. Mean deer pellet-groups per plot, VCU 442, Portage Bay, Alaska, 1980–2016.**

<u>Woewodski (VCU 448)</u>

Three transects were established in the Woodpecker Cove area on southwestern Mitkof Island in 1984. These steep and west-facing slopes are easily accessible by skiff from Petersburg and climb to 1,500 feet elevation through moderate volume timber (Fig. 32). The habitat and topography in this watershed are more favorable for deer winter range than in VCUs 435 or 442, so greater deer abundance is to be expected. High pellet counts in spring 2007 are likely the result of deer concentrating on winter range during the severe winter of 2006–2007 (Fig. 33). But spring pellet counts measure overwinter pellet

**Figure 32. Steep climb on T2, VCU 448, Woewodski, Mitkof Island, Alaska. ©2015 ADF&G.**

deposition, not how many deer are still alive. Due to the severity of the 2006–2007 winter deer mortality was likely high spring 2007, and low pellet counts in subsequent years are likely the result of that mortality. In more recent years, pellet counts indicate populations have likely stabilized at a lower density. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

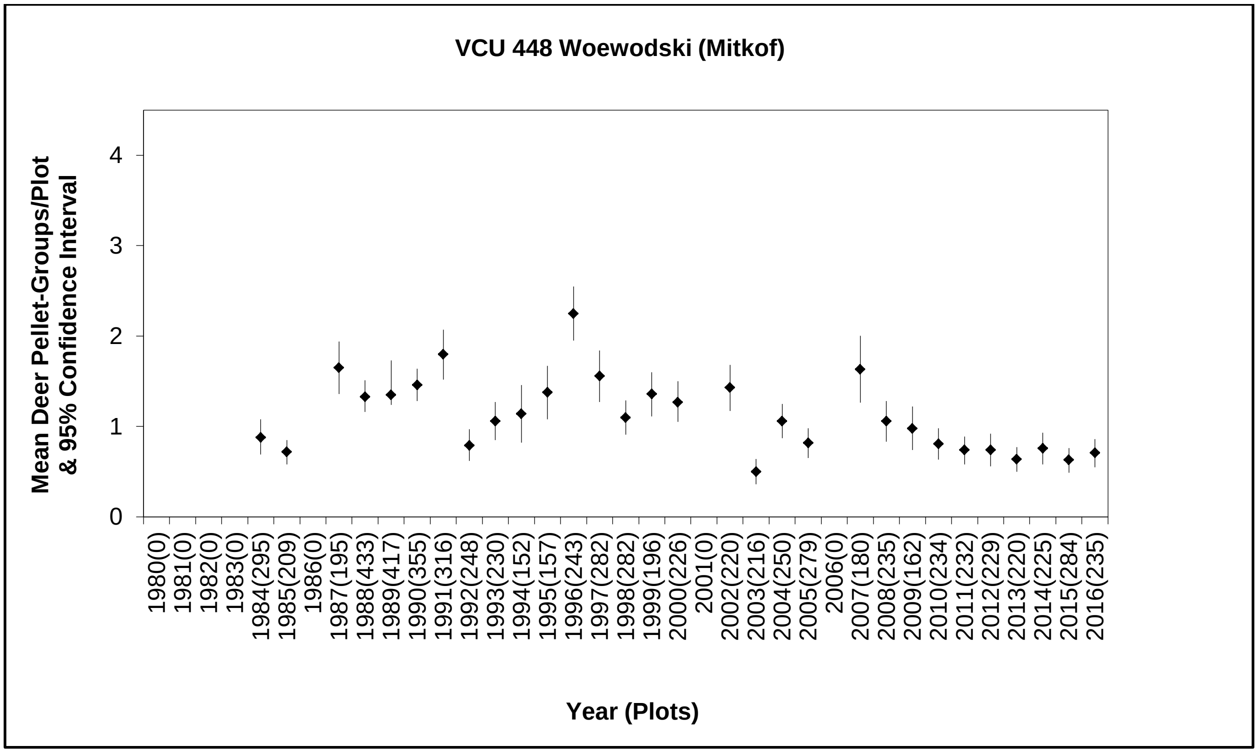


**Figure 33. Mean deer pellet-groups per plot, VCU 448, Woewodski, Mitkof Island, Alaska, 1980–2016.**

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## GMU 4—ADMIRALTY, BARANOF, AND CHICHAGOF ISLANDS


Summary

In GMU 4Z, pellet-count surveys were conducted in 4 watersheds since the last report in 2011. Counts were conducted in VCU 185 twice and in the other 3 watersheds once. Pellet-counts in GMU 4 were historically conducted off the liveaboard USFS Sitka Ranger boat. With that boat having been decommissioned, reaching most historical survey areas in GMU 4 will be much more difficult and/or expensive to conduct in the future. Most watersheds are not close enough to a community to travel there, do the survey, and get back in course of a day using a smaller boat. Survey areas could be reached by renting a private liveaboard or by flying crews into survey areas for the day, but those methods are costly and have their own logistical difficulties. Unless a specific concern arises, future surveys in GMU 4 will most likely be limited by geographic proximity to population centers from which they can more easily be reached.


Deer pellet-group surveys were conducted in GMU 4 in 2015, and counts were below the historical mean and median for 3 of the watersheds surveyed: VCU 247 (Finger Mountain), VCU 300 (Nakwasina), and VCU 305 (Sea Lion Cove). Four out of 6 winters between 2006 and 2011 had above average snowfall (Fig 34), so winter mortalities likely were higher, which would

**Figure 34. Upper left: Buck on Baranof Island in December 2006 following a heavy snow in November. ©2006 Phil Mooney; Lower left: Deer in Degroff Bay, June 2011. ©2011 ADF&G. Photo by Holley Dennison; Right: Deer in Katlian Bay, December 2016. ©2016 Phil Mooney.**

reduce populations to some extent. That said, it should be noted that these 3 watersheds have consistently yielded some of the highest deer pellet-group densities recorded in Southeast Alaska, and even the most recent counts are still relatively high and within their historical range. The 2014–2015 winter was very mild. Deer tend to remain more dispersed across the landscape during mild winters, which is another factor that might explain the lower counts seen in 2015 in these watersheds. Because conditions were mild then and in 2015–2016, forage availability was likely much higher than average, which should help deer populations rebound quickly.

While VCU 185 (Pleasant Island) has not yielded counts as high as those that have been recorded in the other watersheds surveyed in 2015, historical counts as high as 1.96 pellet-groups per plot have been recorded, which is very good relative to counts across the region as a whole. While counts in VCU 185 during 2015 remained similar to historical values, another survey in 2016 resulted in record low counts. Early green-up resulting in lower pellet visibility was a factor in 2015–2016, but tests of observer bias conducted during surveys on Pleasant Island indicate this did not have a substantial effect on counts. The 2015–2016 winter was extremely mild, and as noted above, greater dispersal across the landscape can contribute to lower counts in such conditions. Pleasant Island, however, is relatively small with maximum elevations below 600 feet, so a change this large in pellet-group counts likely reflects an actual reduction in deer. This is corroborated by a record low in the number of deer harvested from this island during the 2015–2016 winter. It is possible a wolf pack observed on Pleasant may be influencing this population, but more information is needed.

Pleasant Island (VCU 185)

Pleasant Island is located in Icy Strait close to the community of Gustavus and is a main source of deer for that town's residents. Three transects were established here in 1991 in response to local concerns with winterkill in 1990. The location of the transects was chosen because most locals hunt the western half of the island and a good anchorage was available along the north shore. Pleasant Island is a low-lying island with extensive muskegs and maximum elevations below 600 feet (Fig. 35). Most quality forest (high-volume) is found along the beach fringe and creeks. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover (Fig. 36). In 2015, only 2 of 3 transects were sampled because some of the crew members had to cancel their participation and sufficient crew was not available.

**Figure 35. Walking T3, VCU 185, Pleasant Island, Alaska. ©2016 ADF&G. Photo by Kevin White.**

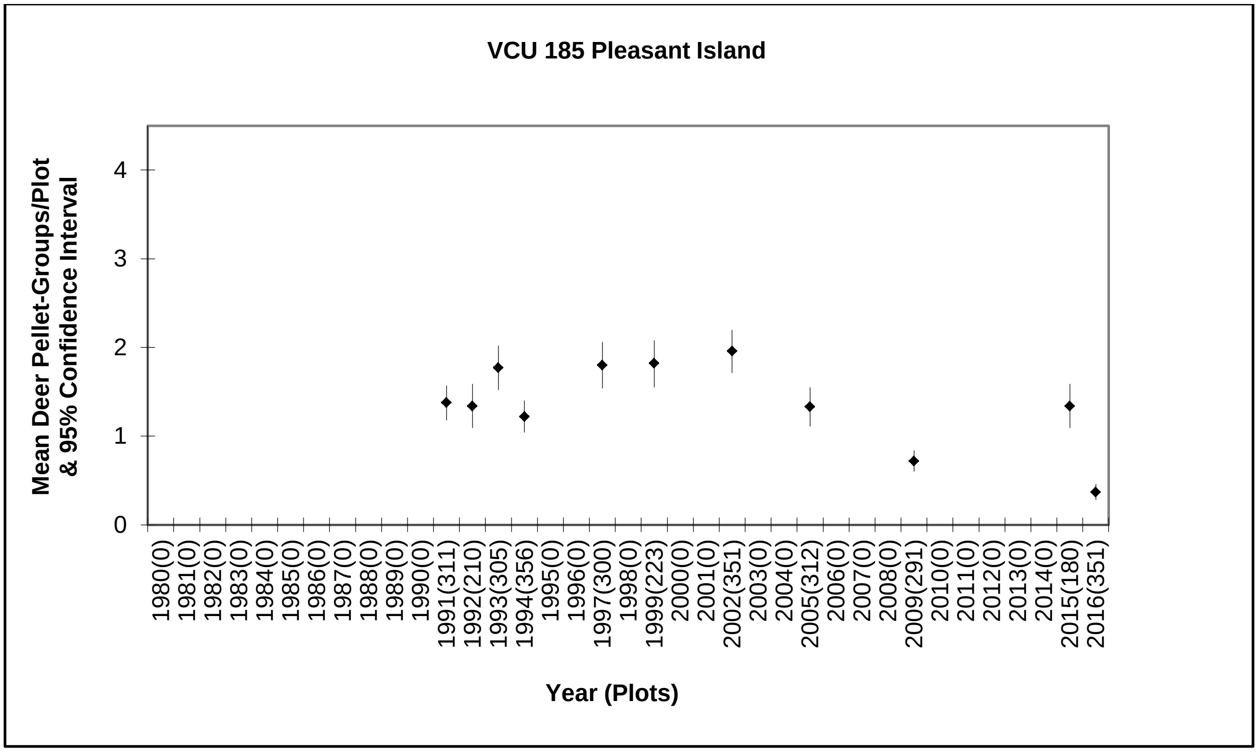


**Figure 36. Mean deer pellet-groups per plot, VCU 185, Pleasant Island, Alaska, 1980–2016.**

## Finger Mountain (VCU 247)

**Figure 37. Finger Mountain habitat, 3 May 2011. ©2011 ADF&G. Photo by Phil Mooney.**

Located in Hoonah Sound, this VCU (Fig. 37) was intensively sampled in 1983, when 20 transects were completed. Three transects were chosen for long-term sampling in 1984. All transects have a southwest-facing aspect. This VCU is physiographically complex. The fact that the 1983 counts with 20 transects yielded a much lower pellet-group per plot mean than in subsequent years seems to indicate that deer densities are not likely uniform within this watershed, and that the 3 transects chosen had higher pellet-group counts than the rest (Fig. 38). As a consequence, these three transects probably do not reflect the entire VCU. However, repeating transects should still yield useful trend data for the areas around these transects, which likely are characterized by some of the best habitat within the area. Counts in in this watershed have been consistently high compared to the rest of the region, with "low" count years being higher than most high count years in other watersheds. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover. T1 and T2 were run on incorrect bearings in 1991. Blowdown in 2011 caused some transects to be rerouted.

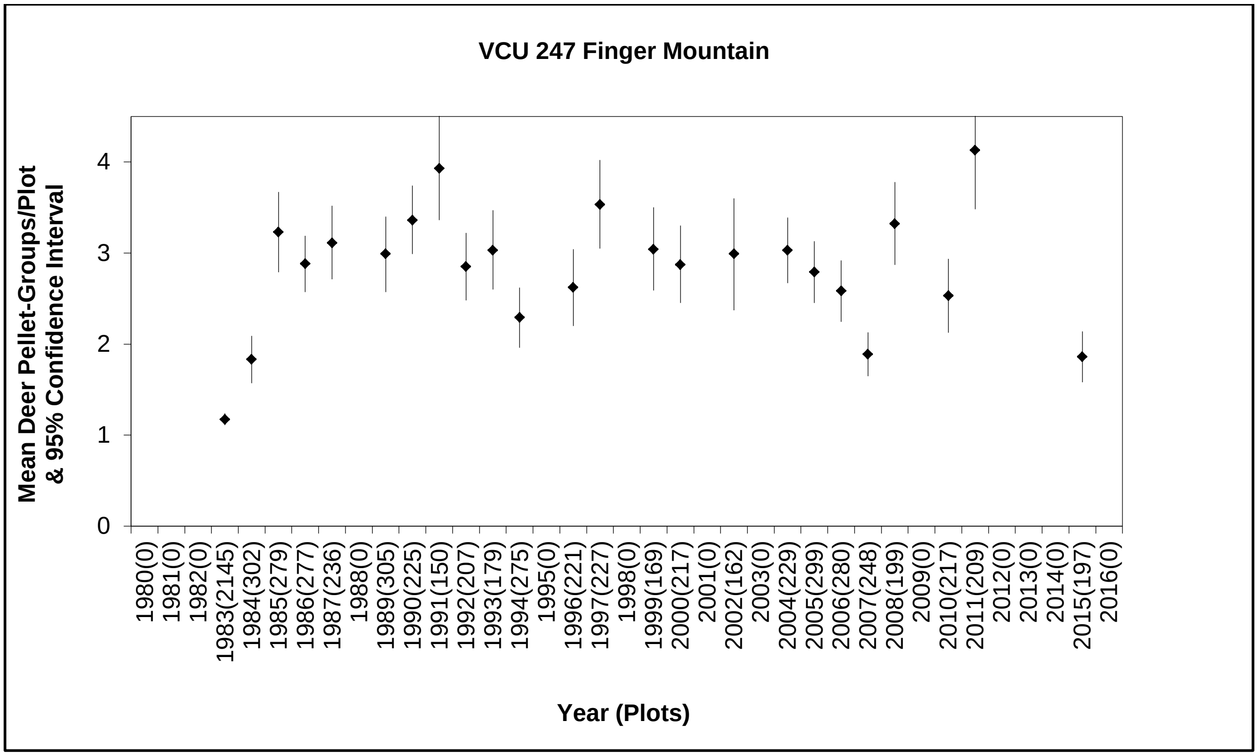


**Figure 38. Mean deer pellet-groups per plot, VCU 247, Finger Mountain, Alaska, 1980–2016.**

Nakwasina (VCU 300)

This VCU north of Sitka (Fig. 39) is popular with local hunters and has produced some of the highest deer pellet-group densities in Southeast Alaska. First sampled in 1984 with 12 transects, it was sampled more intensively in 1985 and 1986. In 1987, 3 transects were selected for continued sampling. Figure 40 displays data only for transects T2, T3, and T8 since 1984. All 3 transects have southerly aspects and traverse medium-volume forest to elevations of 1,500 feet. Heavy browsing on *Vaccinium* was noted on all transects in 2011, and deer were thought to be near carrying

**Figure 39. T2, VCU 300, Nakwasina, Alaska. ©2015 ADF&G.**

capacity. After the hard winter of 1990–1991, deer pellet-group densities were high, likely from deer concentrating on winter range, but the 1992 low densities likely reflect die-off from the 1990–1991 winter. The winters of 2006–2007, 2008–2009, and 2012–2013 were 3 of the most severe winters in the last 20 years, with the 2006–2007 winter having the highest snowfall ever recorded at the Juneau Airport (see snow report section, page 35). If deer populations had been severely reduced, pellet-group densities after the 2008–2009 winter would likely have been much lower. While there does appear to be a downward trend in the mean pellet-group count during that timeframe, confidence intervals largely overlap, indicating little significant change (Fig. 40). And, while the pellet counts after the 2014–2015 winter were much lower than the 2011 counts, that was a very mild winter, and deer may just have been more dispersed across the landscape. Regardless, actual pellet-group densities encountered in this watershed are still relatively high for the region. The mild nature of more recent winters likely will allow populations to rebound to prior high levels as long as habitat has not been degraded. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

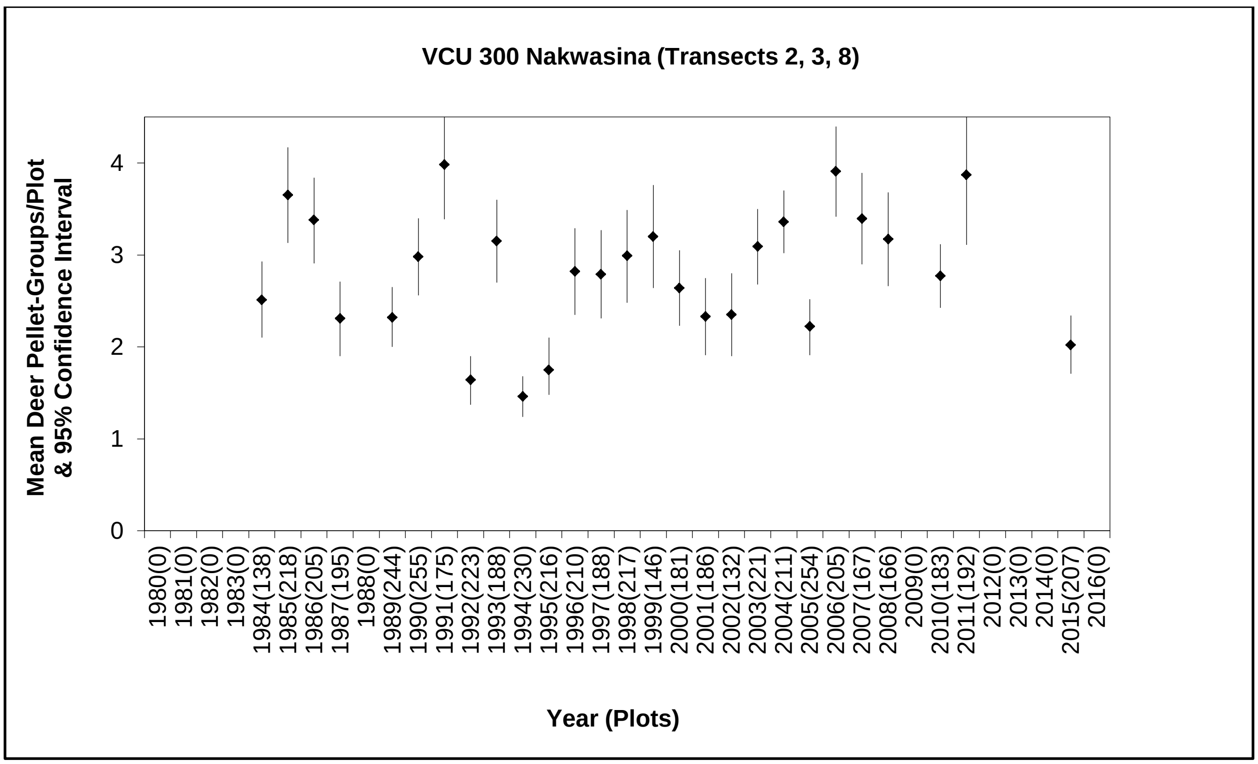


**Figure 40. Mean deer pellet-groups per plot, VCU 300, Nakwasina, Alaska, Transects 2, 3, and 8, 1980–2016.**

Sea Lion Cove (VCU 305)

These 3 transects are accessed from Kalinin Bay on Kruzof Island and are low- to medium-volume timber (Fig. 41). 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 reduced the population, but because the confidence intervals of pellet-group results overlap with the previous 5 years, any decrease was likely minor (Fig. 42). The 2015 count indicates that deer densities are relatively stable and likely increasing after recent mild winters. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover. In 1987 one transect was relocated to avoid steep slopes and ravines.

**Figure 41. View from end of transect T3, at 1,100 feet, VCU 305, Sea Lion Cove, Alaska. ©2015 ADF&G.**

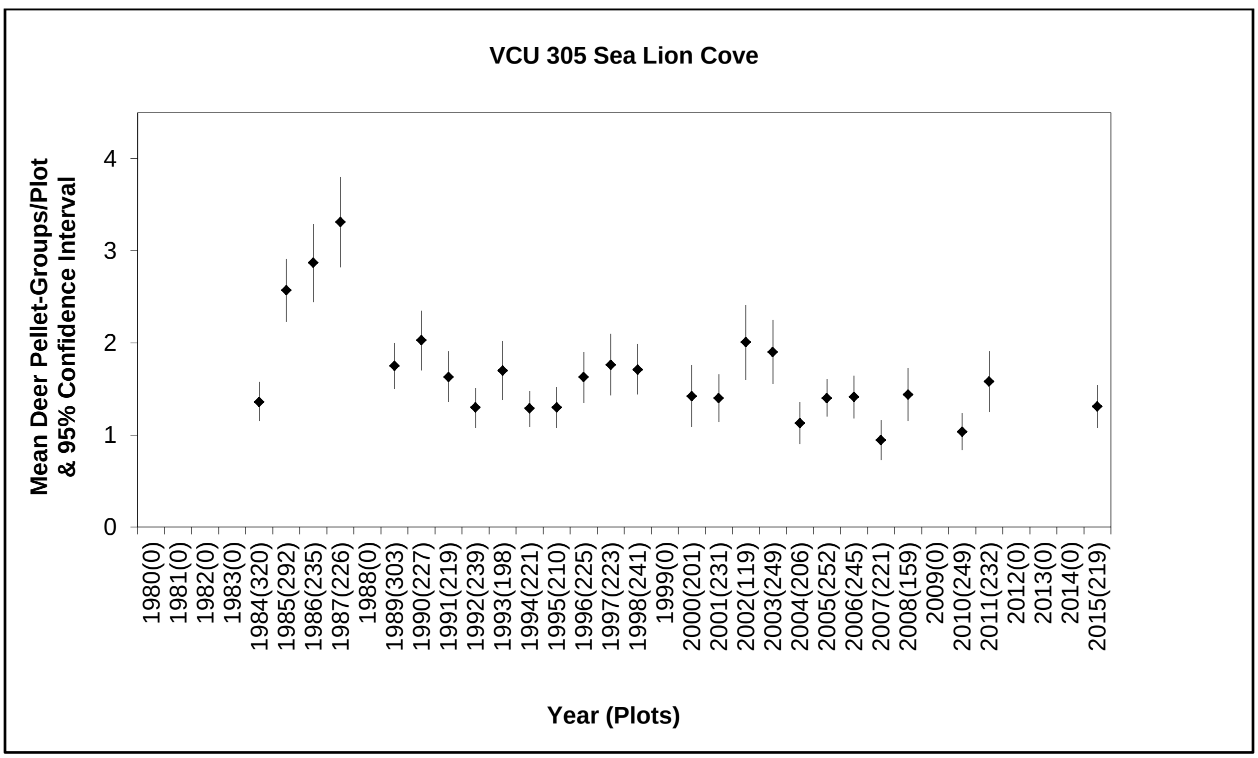


**Figure 42. Mean deer pellet-groups per plot, VCU 305, Sea Lion Cove, Alaska, 1980–2016.**

## GMU 5—YAKUTAT AREA

### Summary

In GMU 5A**,** only VCU 368 has been surveyed since the last report in 2011. Due to staff availability and travel constraints, only 2 VCUs are periodically surveyed in this management area. VCU 361 (Knight Island) has been surveyed 6 times, primarily in the early 1990s, and relatively low pellet-group densities were found in this area (see Appendix A). VCU 368 (Yakutat Islands) has been surveyed more often, and recent pellet-group densities seem to indicate the populations may have increased. Since the islands are relatively small and low elevation, the distribution of deer on the landscape may not vary as much relative to winter severity as it does in steeper areas with higher elevations. As such, the pellet-group results may indicate a real increase in deer numbers on these islands.

Deer were introduced to the Yakutat and Knight islands in 1934, when 7 does and 5 bucks were translocated from the Rocky Pass area near Petersburg. It should be noted that this deer population has expanded its range, and deer have been seen regularly on the road system near Yakutat and as far as 50 miles to the east of Yakutat at Dry Bay. Even though there are now more sightings of deer on the Yakutat forelands, their densities there are still believed to be much lower than on the islands.

### Yakutat Islands (VCU 368)

This VCU incorporates several islands found in Yakutat Bay: Krutoi, Kriwoi, Khantaak, and Dolgoi, but Krutoi has not been surveyed often. One or 2 transects were established on each island in 1991. The habitat consists primarily of medium-volume hemlock with a blueberry understory. All transects are low elevation. While the islands are not considered ideal deer habitat, their maritime climate and relatively low annual snowfall contribute to the persistence of deer. Pellet densities in 2008 and 2014 were the highest and second highest ever recorded for this area, indicating that deer numbers may have increased considerably (Fig. 43). Further surveys are needed to confirm this trend. During the 2014 survey, staff noticed heavy browsing on blueberry plants and moose pellets in some areas, suggesting there may be some competition between these 2 ungulate species occurring on the islands. Note that the number of plots sampled each year varies according to which transects were surveyed and what elevation was reached before encountering snow cover.

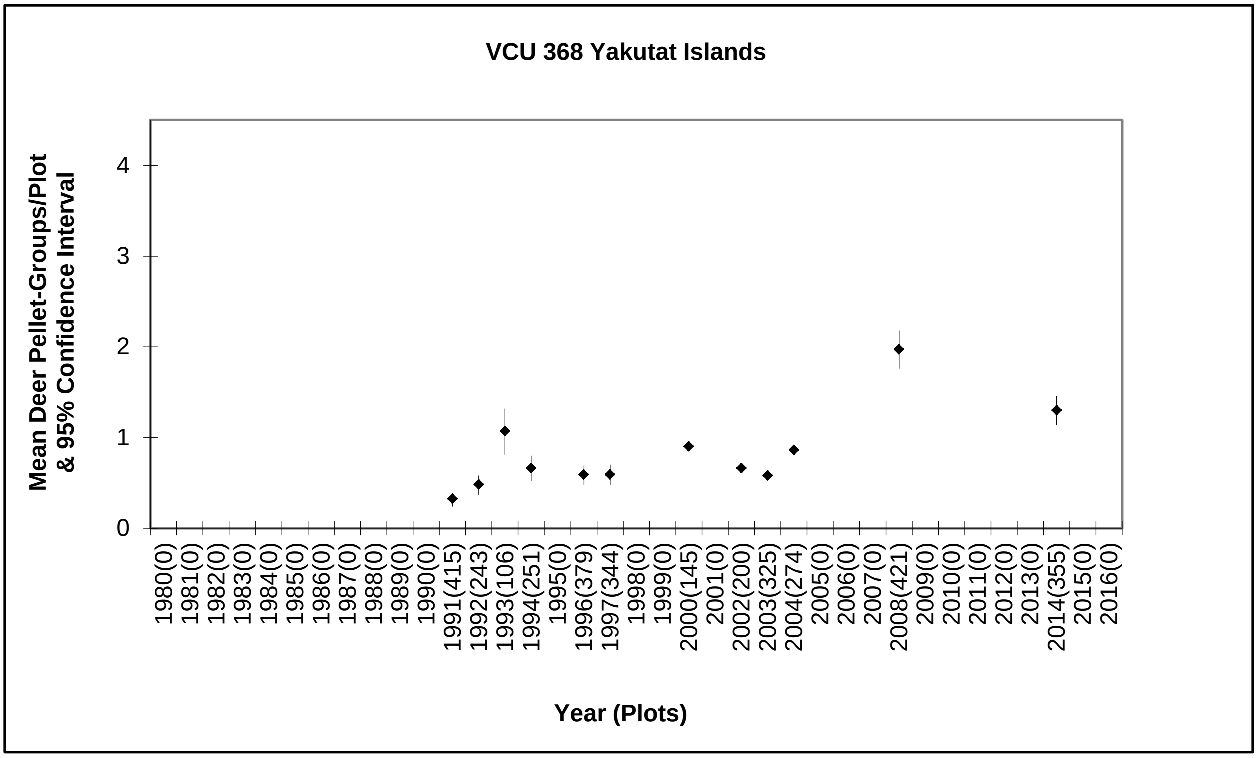


**Figure 43. Mean deer pellet-groups per plot, VCU 368, Yakutat Islands, Alaska, 1980–2016.**

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## 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 during a given winter and between years. Snowfall is recorded by the National Weather Service at various stations throughout Southeast Alaska (Fig. 44, NOAA 2016). Snow patterns vary throughout the region with areas farther north and east typically receiving more snowfall than areas to the south and west (Table 2). Snow depth increases with elevation, distance from saltwater, and on northerly aspects. The pattern of snow conditions in relation to spatial and temporal distributions of forage can have a profound effect on deer health and survival. Snowfall varies considerably among watersheds, and deer suffer most in areas with higher snowfall, where habitats are fragmented, and where populations are near carrying capacity. In areas that are heavily fragmented naturally (e.g., muskegs) or anthropogenically (e.g., 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 snow buries forage, causes greater energy consumption and increases vulnerability to predators and hunters. However, freeze–thaw cycles and the formation of trails can eventually condense snow, enabling deer to walk on top of the crust. Low elevation old-growth forests provide important winter habitat for deer. The dense canopy of an old growth forest intercepts snow, such

Source: ADF&G graphic using location data provided by the National Weather Service, Juneau Alaska.

**Figure 44. Southeast Alaska select snowfall weather station locations.**

that snow depths are often considerably less than in open areas, making travel easier and forage more accessible. In addition, there is a thermal gradient within forests, such that snow within forested areas tends to thaw faster than snow in open areas. Melted out areas around trees, called "tree wells" illustrate this thermal effect.

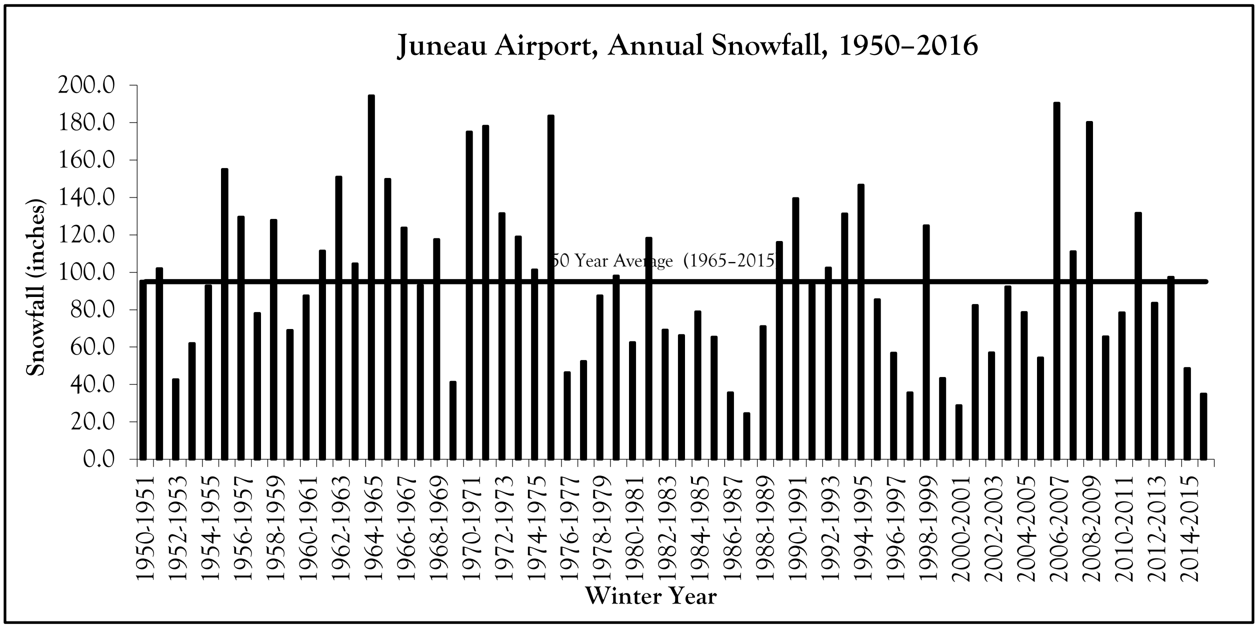
**Table 2. Snowfall (inches) for select stations, Southeast Alaska (winter 2015–2016).[a]**

| Station Name | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | **Total** | Averages[b] 5 | 15 | 30 | % change from 5-year average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annette Island | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | **5** | 24 | 37 | 32 | -79% |
| Annex Creek | 0 | M[c] | M | M | 32 | 4 | 0 | 0 | **36** | – | – | – | |
| Craig | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 19 | – | – | -97% |
| Elfin Cove | 0 | 20 | 17 | 0 | 1 | 6 | 0 | 0 | **44** | 48 | 95 | 100 | -10% |
| Glacier Bay | 0 | M | 13 | M | 2 | 0 | 0 | 0 | **14** | 110 | 103 | – | -87% |
| Gustavus | 0 | 18 | 11 | 0 | 2 | 0 | 0 | 0 | **31** | 88 | – | – | -65% |
| Haines Co-op | 0 | 21 | 43 | 18 | 15 | 2 | 0 | 0 | **98** | 163 | 167 | – | -40% |
| Haines Customs | 0 | 52 | 53 | 71 | 75 | 9 | 0 | 0 | **260** | 205 | 240 | – | 27% |
| Hidden Falls Hatchery | 0 | 10 | 9 | 0 | 3 | 0 | 0 | 0 | **22** | 93 | – | – | -77% |
| Hoonah | 0 | 7 | 21 | 0 | 3 | 0 | 0 | 0 | **31** | 102 | – | – | -70% |
| Juneau Airport | 0 | 17 | 16 | 0 | 2 | 0 | 0 | 0 | **35** | 88 | 92 | 88 | -60% |
| Little Port Walter | M | 4 | 14 | 1 | 0 | 0 | 0 | 0 | **19** | 120 | – | – | -85% |
| Pelican | 0 | 15 | 11 | 0 | 0 | 0 | 0 | 0 | **26** | 149 | – | – | -83% |
| Petersburg | 0 | 7 | 14 | 0 | 0 | 0 | 0 | 0 | **21** | 101 | 95 | 82 | -79% |
| Point Baker | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | **3** | 24 | – | – | -87% |
| Port Alexander | 0 | M | M | M | M | M | M | 0 | **M** | 48 | 49 | 49 | |
| Skagway Power | 0 | 16 | 11 | 3 | 5 | 0 | 0 | 0 | **36** | 55 | 49 | – | -34% |
| Thorne Bay | 0 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | **14** | 56 | – | – | -75% |
| Yakutat | 0 | 23 | 24 | 0 | 2 | 1 | 0 | 0 | **50** | 148 | 151 | 158 | -66% |

[a] Data from National Weather Service, (NOAA 2016), http://w2.weather.gov/climate/xmacis.php?wfo=pajk
[b] Averages for the 5, 15, and 30 years preceding the 2015–2016 winter (when available).
[c] M = Data were missing for that month.

Data from the National Weather Service indicates that winter severity can fluctuate substantially in Southeast Alaska. Between 1995 and 2005, winter conditions were relatively mild across the region, with only one or two winters exhibiting above average snowfall among the different areas where snowfall is recorded. Since then, severity has spiked and receded, in a pattern similar to the 1970s. The 2015 winter was one of the mildest on record in Juneau, Petersburg, and Annette.

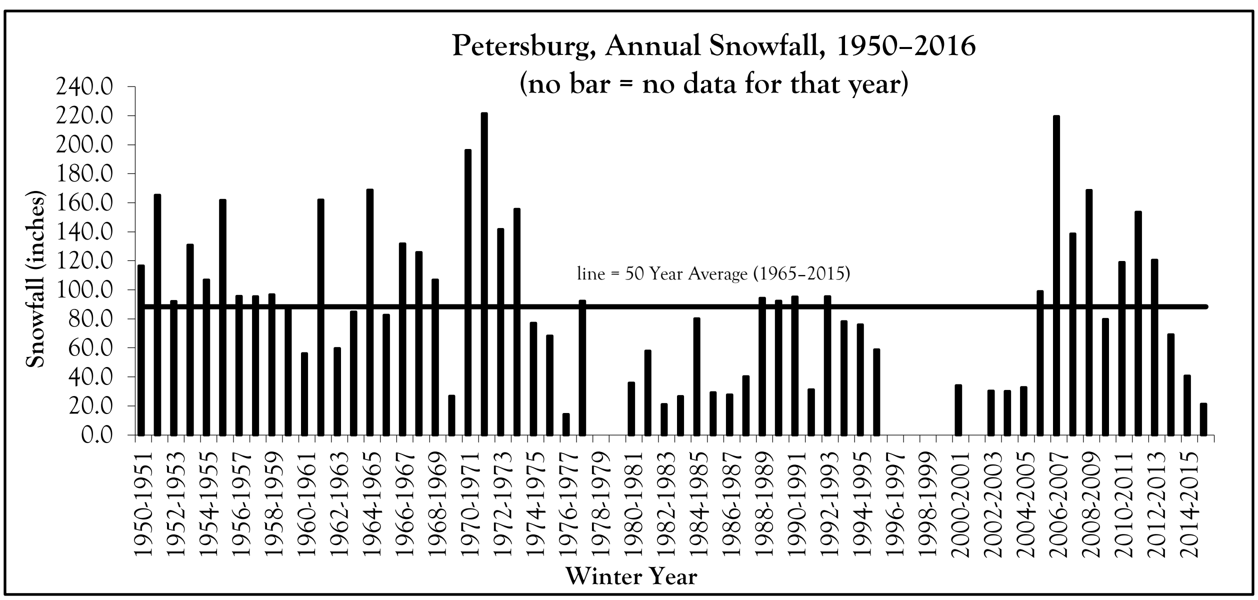
In the Juneau area, 3 winters from 2006–2008 were all above average, and included the second and fourth highest snowfall in the area since 1950 (Fig. 45). Since then, most winters have been below average, allowing deer to recover more quickly.




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 45. Juneau airport, Alaska, annual snowfall, 1950–2016.**

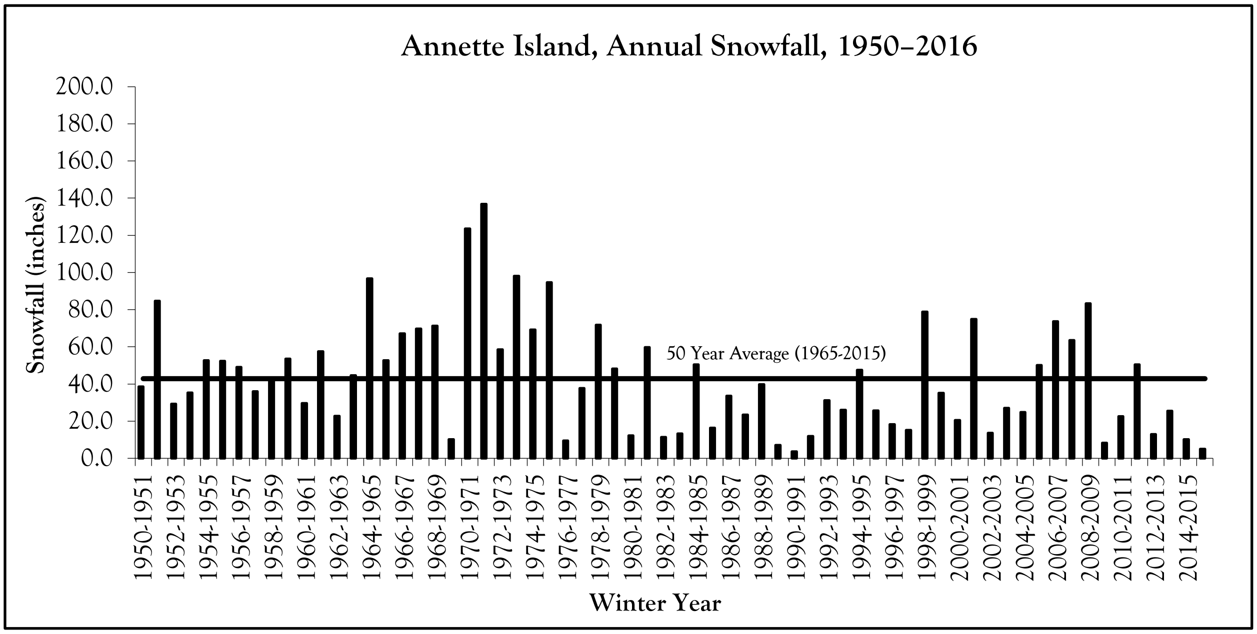
In Petersburg, snowfall levels 2006–2008 were similar to Juneau but higher in 2 of the 3 years. In addition, above average snowfall was also experienced in 2005. While Petersburg got a small reprieve from heavy snow in 2009, it then experienced another 3 years of above-average snowfall (Fig. 46). These 7 years of almost back-to-back heavy snowfall likely reduced deer populations significantly and then severely retarded population recovery. It takes several reproductive cycles before deer populations can increase notably, but with 3 mild winters in a row 2013–2015, population numbers should rise substantially if this weather trend continues.




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 46. Petersburg, Alaska, annual snowfall, 1950–2016.**

Like Petersburg, Annette snowfall was above average 2005–2008, with the 2008 winter the highest snowfall in that area since 1975 (Fig. 47). Since then, winters have been mild, and deer populations have likely been increasing. It is important to note that since average snowfall on Annette Island is approximately half that seen in more northern areas, even above average snowfall will not affect deer as significantly as above average snowfall to the north.




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

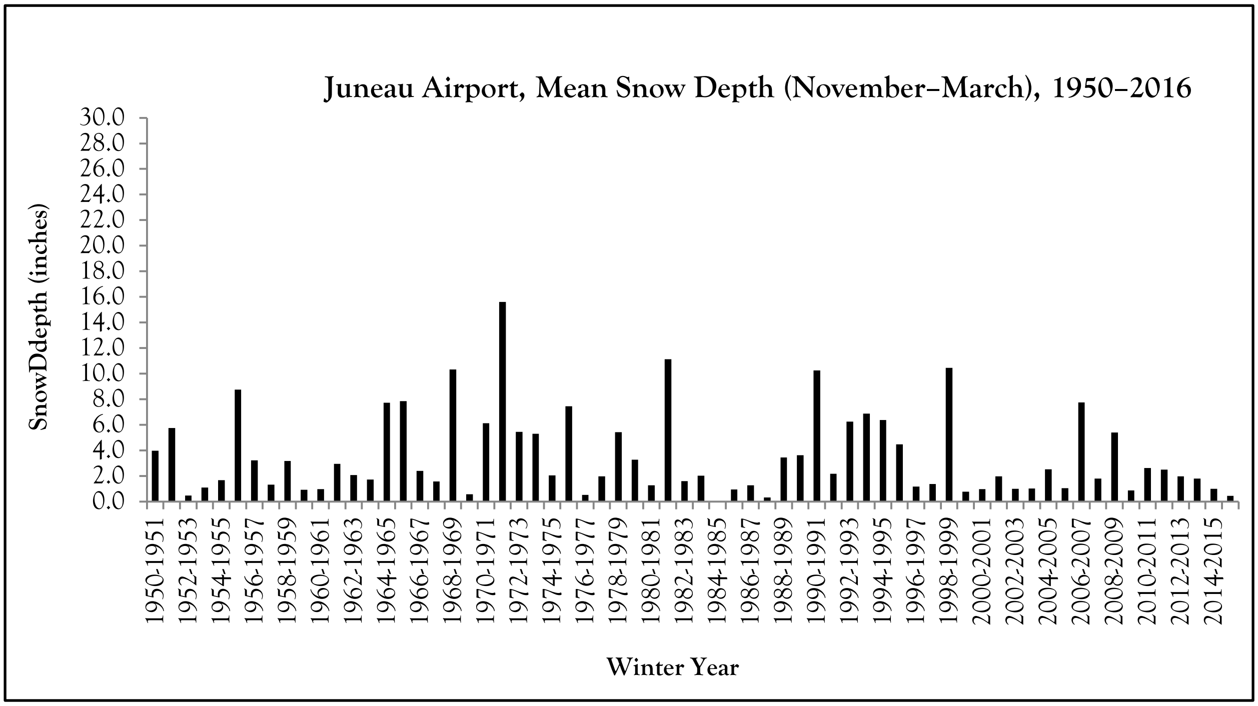
**Figure 47. Annette Island, Alaska, annual snowfall, 1950–2016.**

While snowfall provides a good picture of winter severity, it does not tell the whole story. Prolonged periods of extreme cold can be taxing to deer, and deer have great difficulty moving through snow deeper than 18 inches. But luckily for deer, temperatures and snow depths can change dramatically over the course of a few days. Heavy snowfall followed by warm temperatures make snow thaw quickly. In contrast, consistently cold temperatures may allow smaller snowfalls to keep accumulating. Freeze–thaw cycles are good for deer because they compact snow, expose forage, and enable deer to walk on snow crusts. Coupled with snowfall data, average snow depths indicate how much thawing occurred. Snow depths reported here (Figs. 48, 49, and 50) are from 100–150 feet elevation, and much deeper snow likely occurred at higher elevations.

In the early 1970s, both Juneau and Petersburg experienced extreme snowfall winters, and as a result, deer mortality after those winters was also likely extreme, reducing population sizes. However, while both locations had extreme snowfall during that time, the average snow depth was much higher in Petersburg for a longer sequence of years (Fig. 49), indicating more persistent deep snow conditions. As a result, deer populations likely suffered more intensely, and population recovery was likely retarded for a longer time period due to higher mortality as well as decreased reproductive success. Indeed, as a result of perceived low deer numbers in Game

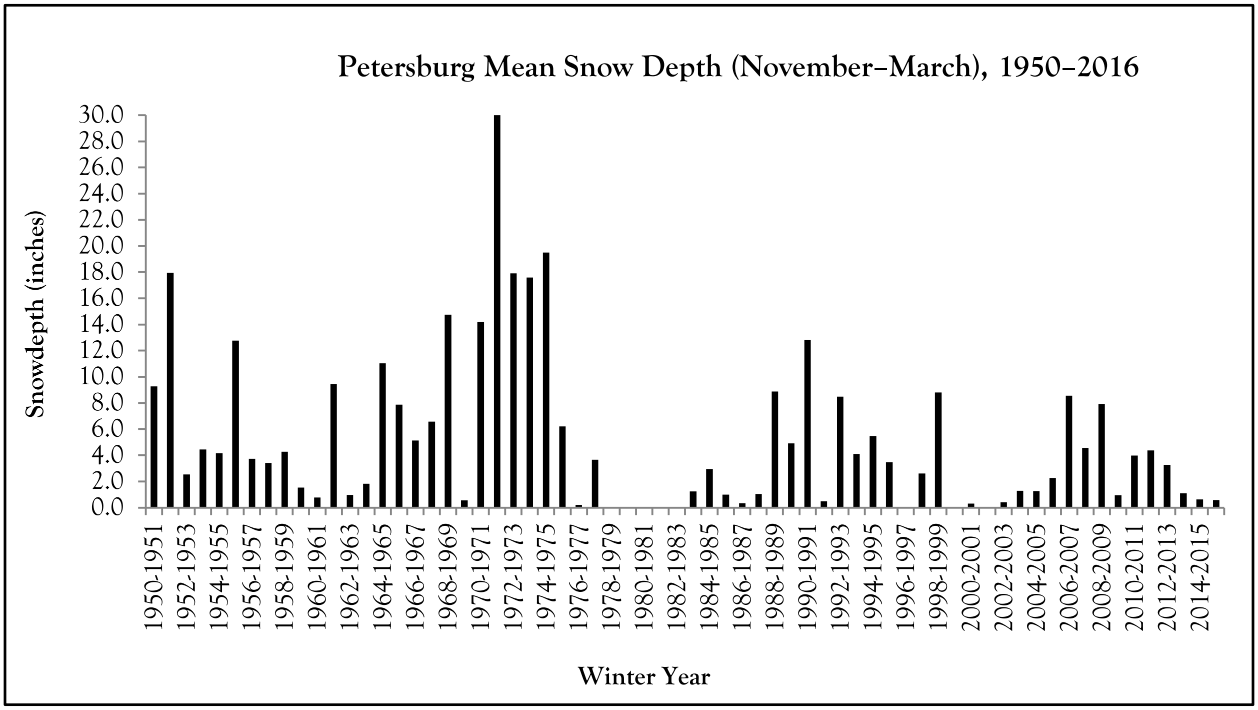
Management Unit 3, the hunting season was closed for almost a decade. After a series of mild winters, a one-buck season reopened in 1980, and increased to two bucks in 1988.

While snowfall was similar in the Juneau and Petersburg areas between 2006 and 2009, as well as during the early 1970s, the depth and duration of deep snow differed, incrementally higher or lower depending on local weather patterns (Figs. 48 and 49). While average snow depth at the Petersburg airport was significantly less than what was seen in the 1970s, Juneau's snow depth was higher than what was seen in the 1970s, but still lower than that experienced in the Petersburg area during both time periods. In addition, Petersburg also experienced greater snowfall and snow persistence than the Juneau or Annette areas during the 2010–2012 winters. As a result, population recovery was likely much slower in the Petersburg area than seen elsewhere in the region.




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

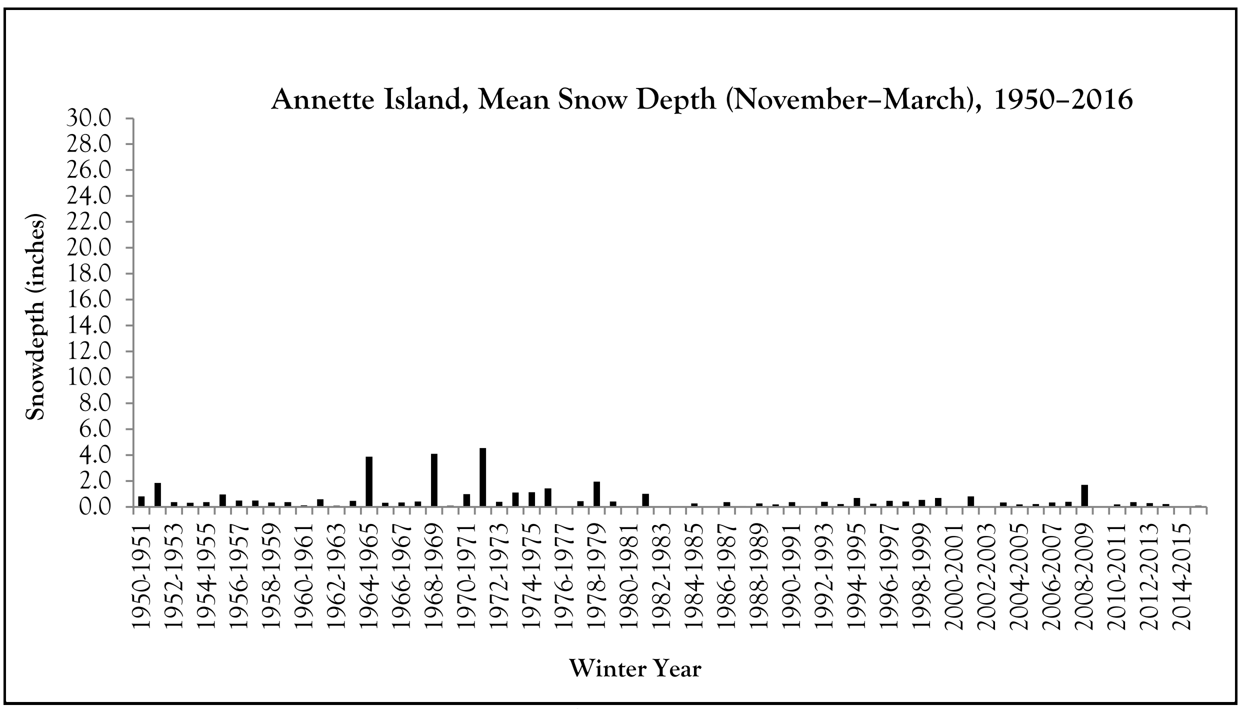
**Figure 48. Mean snow depth (November–March), Juneau airport, Alaska, 1950–2016.**




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 49. Petersburg, Alaska, mean snow depth (November–March), 1950–2016.**

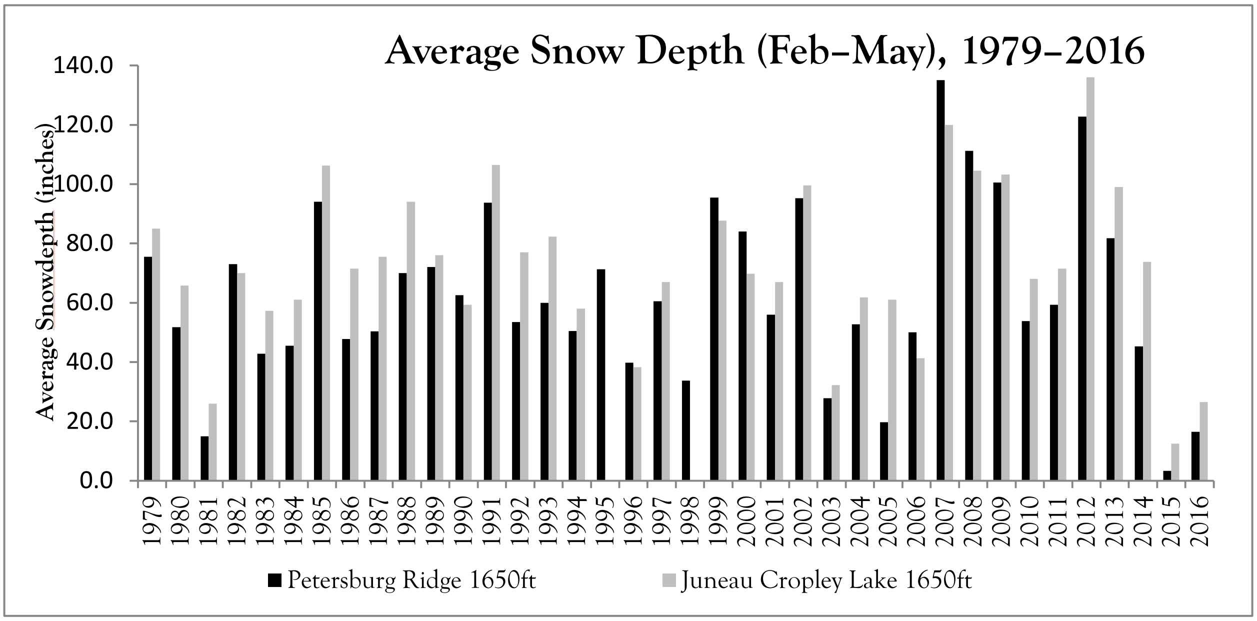
Snow depths on Annette Island indicate that snow has likely been of negligible importance for deer at low elevations (Fig. 50).




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 50. Annette Island, Alaska, mean snow depth (November–March), 1950–2016.**

While there are differences in how and when the data are collected, low elevation snow depth data in Figures 48, 49, and 50 can be compared to data collected by the Natural Resource Conservation Service at 1,650 feet snow courses in the Juneau and Petersburg areas (Fig.51). It is interesting to note that while snow depth was deeper at the Petersburg airport than the Juneau airport in 2011–2013 it was deeper at Cropley Lake near Juneau than it was on Petersburg Ridge. While generally snow depth increases with elevation and distance from the coast, the nature of the relationship may vary from year to year due to dynamic microclimatic conditions, or from one area to another due to differences in geographic features.



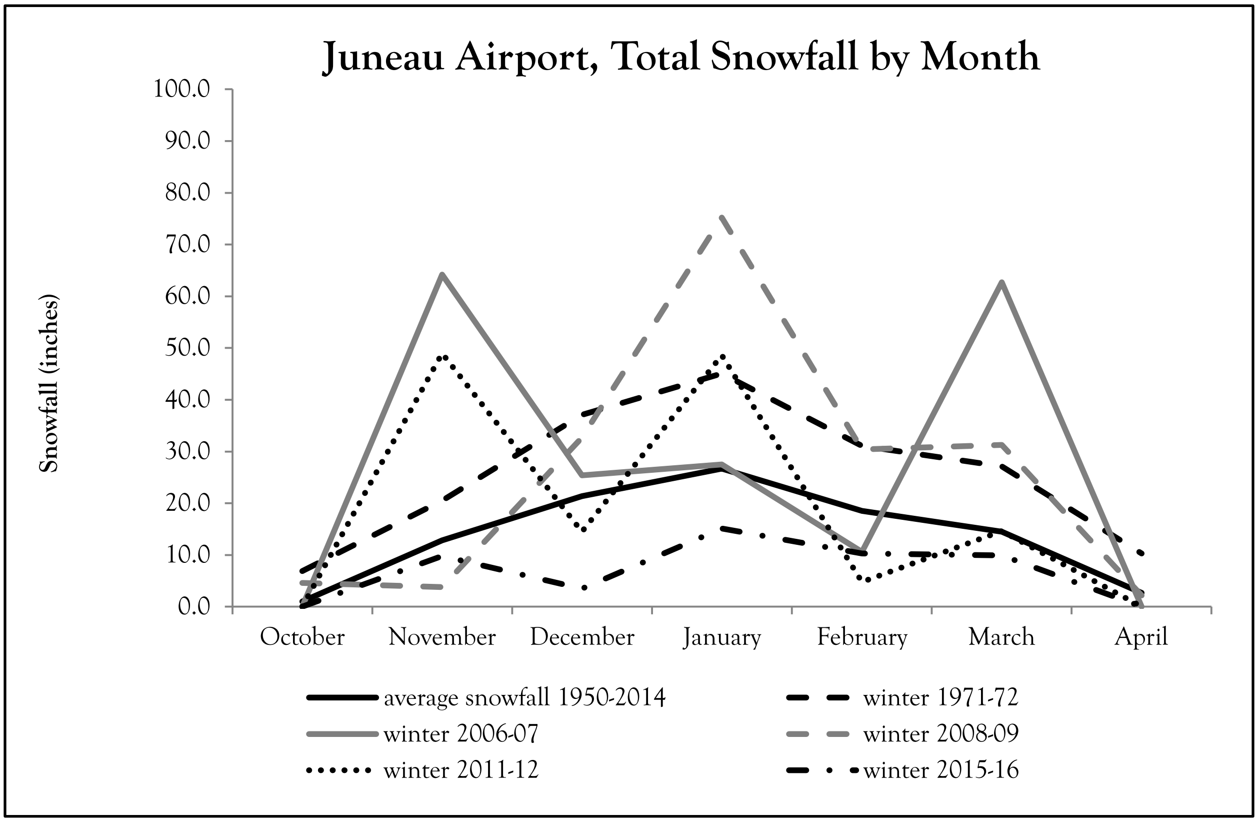

Source: ADF&G graphic created using data from the Natural Resource Conservation Service (NRCS 2016).

**Figure 51. Average snow depth, Petersburg Ridge, Petersburg, Alaska, and Cropley Lake, Juneau, Alaska, 1,650-foot elevation, February–March 1979–2016.**

Timing of snowfall is important in determining how it affects deer. Heavy snowfall early in the season limits movement, which can trap deer at high elevations or confine low elevation deer to beaches, where they are more vulnerable to hunters. Late season snows bury remnant forage when deer are already weakened. Consistent moderate snowfall and consistent low temperatures combined allow snow to keep accumulating, which can bury forage and make movement between habitat patches increasingly difficult. Heavy snows limit deer movements, unless followed by warm thaws.

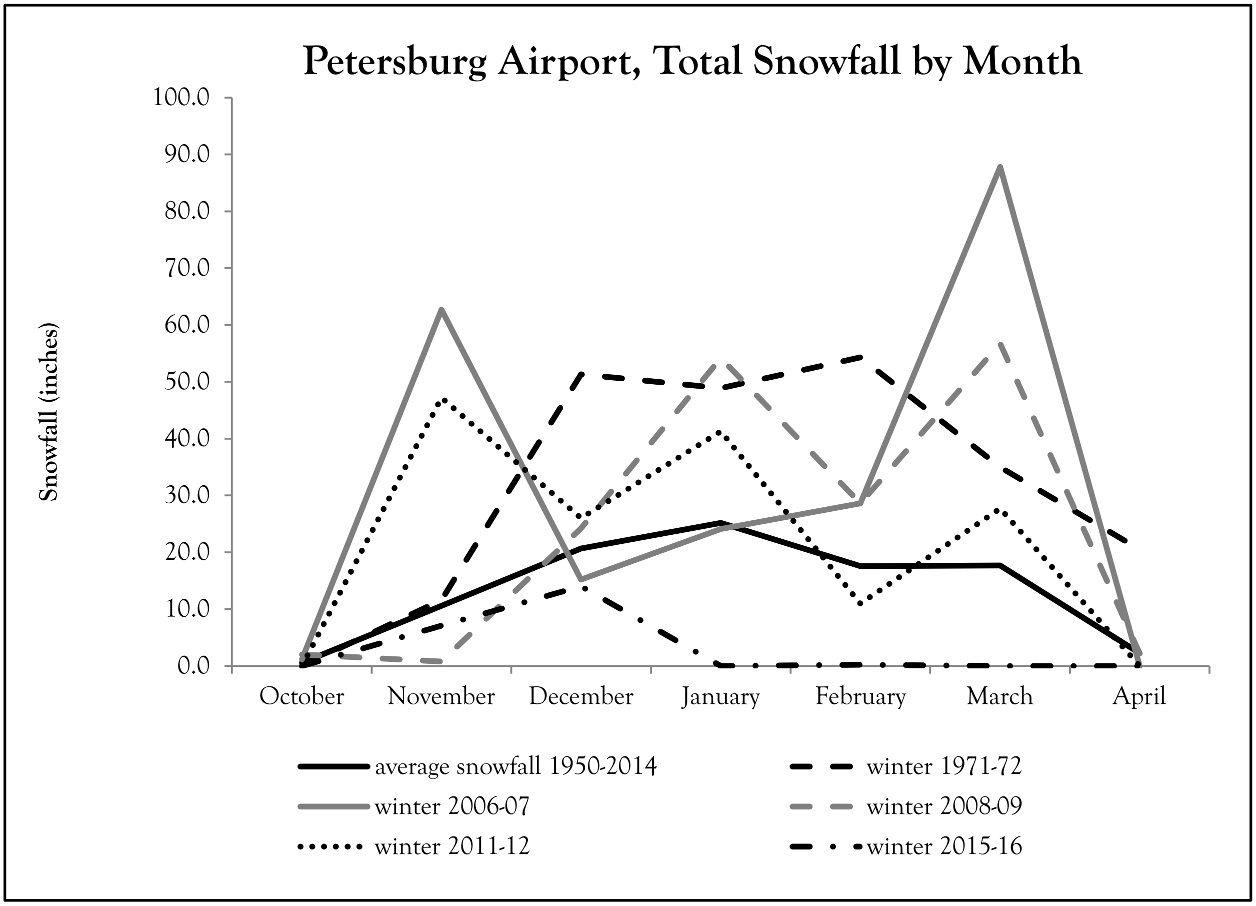
On average, snowfall peaks in January and then tapers off, but individual winters may have different patterns. The winter of 1971–1972 was a high snow year in Juneau and Petersburg, and followed average trends. In contrast, the heavy snow winter of 2006–2007 started and ended with huge snowfalls, likely increasing early season hunting success and late season winter mortality. In 2008–2009, snowfall patterns differed between the two areas. In Juneau, most snow fell in

January. This likely limited deer mobility, and may have increased hunting success in Unit 4. In contrast, Petersburg had snowfall peaks in January and March, the latter of which may have increased spring mortality. The winter of 2011–2012 came on strong in both areas with big snows in November and January, after which Juneau deer got a respite from snow, but Petersburg deer continued to get snowfall through March. The winter of 2015–2016 was the mildest on record for both areas, giving deer time to recover (Figs. 52 and 53).




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 52. Total snowfall at the Juneau, Alaska airport by month, October–April, 1950–2014.**




Source: ADF&G graphic created using daily data available online from the National Weather Service (NOAA 2016).

**Figure 53. Total snowfall at the Petersburg, Alaska airport by month, October–April, 1950–2016.**

## Acknowledgments

I wish to acknowledge all of the individuals that have contributed to the collection and compilation of these data over the years. The deer pellet-group survey program would not be possible without the interest, dedication, and support of ADF&G and USFS staff as well as community volunteers.

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# Appendices

## APPENDIX A: PELLET-GROUP COUNT STATISTICS, SOUTHEAST ALASKA

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | 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 |
| | | | | 2011 | 328 | 1.53 | 1.30–1.75 |
| | | | | 2012 | 253 | 1.21 | 1.02–1.39 |
| | | | | 2013 | 306 | 1.56 | 1.38–1.75 |
| | | | | 2014 | 242 | 0.83 | 0.69–0.97 |
| | | | | 2015 | 323 | 1.04 | 0.83–1.25 |
| | | | | 2016 | 328 | 0.77 | 0.64–0.90 |
| 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| | | | | 1995 | 254 | 1.41 | 1.21–1.60 |
| | | | | 1996 | 240 | 1.68 | 1.45–1.91 |
| | | | | 1997 | 252 | 2.36 | 2.08–2.64 |
| | | | | 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 |
| | | | | 2008 | 232 | 1.59 | 1.32–1.85 |
| | | | | 2009 | 268 | 1.44 | 1.20–1.68 |
| | | | | 2010 | 263 | 1.52 | 1.30–1.74 |
| | | | | 2011 | 267 | 2.12 | 1.81–2.43 |
| | | | | 2013 | 250 | 2.41 | 2.12–2.70 |
| | | | | 2014 | 267 | 1.55 | 1.37–1.73 |
| | | | | 2015 | 277 | 1.50 | 1.29–1.71 |
| | | | | 2016 | 239 | 1.01 | 0.80–1.22 |
| 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 | | | 1994 | 314 | 0.02 | 0.00–0.04 |
| 94 | Sullivan Island | 3,985 | 78% | 1990 | 250 | 1.39 | 1.17–1.62 |
| | | | | 2012 | 206 | 1.47 | 1.24–1.70 |
| | | | | 2016 | 310 | 1.08 | 0.91–1.26 |
| 117 | Couverden | 9,933 | 10% | 1993 | 350 | 0.35 | 0.27–0.44 |
| 124 | Shelter Island | 6,162 | 43% | 1984 | 713 | 1.46 | 1.33–1.60 |
| | (All Transects) | | | 1985 | 774 | 1.82 | 1.67–1.97 |
| | | | | 1986 | 727 | 2.20 | 2.02–2.37 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 124 | Shelter Island | | | 1984 | 300 | 1.52 | 1.34–1.70 |
| | (Trans. 4–8, 18) | | | 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 |
| | | | | 2010 | 325 | 1.27 | 1.10–1.44 |
| | | | | 2011 | 333 | 1.86 | 1.66–2.07 |
| | | | | 2013 | 294 | 2.14 | 1.89–2.39 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Pellet-Group Mean | Pellet-Group 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 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 | 1.12–1.55 |
| | | | | 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 |
| | | | | 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 | 2.50–3.02 |
| | | | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| 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 |
| | (only 2 of 3 transects surveyed) | | | 2015 | 180 | 1.34 | 1.09–1.59 |
| | | | | 2016 | 351 | 0.37 | 0.28–0.46 |
| 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 |
| | | | | 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. | 13,198 | 49% | 1988 | 272 | 1.22 | 1.00–1.44 |
| | (Whitestone Harbor) | | | 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 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 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 |
| | | | | 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 |
| | | | | 2011 | 209 | 4.13 | 3.48–4.78 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 2015 | 197 | 1.86 | 1.58–2.14 |
| 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 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 | 2.1 | 1.83–2.38 |
| 300 | Nakwasina (All Transects) | 19,575 | 48% | 1984 | 196 | 2.51 | 2.14–2.88 |
| | | | | 1985 | 1,046 | 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 |
| | | | | 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 2007 | 167 | 3.40 | 2.90–3.89 |
| | | | | 2008 | 166 | 3.17 | 2.66–3.68 |
| | | | | 2010 | 183 | 2.77 | 2.42–3.12 |
| | | | | 2011 | 192 | 3.87 | 3.11–4.63 |
| | | | | 2015 | 207 | 2.02 | 1.71–2.34 |
| 305 | Sea Lion Cove | 9,293 | 69% | 1984 | 320 | 1.36 | 1.15–1.58 |
| | (Kalinin Bay) | | | 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 |
| | | | | 2011 | 232 | 1.58 | 1.25–1.91 |
| | | | | 2015 | 219 | 1.31 | 1.08–1.54 |
| 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 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Pellet-Group Mean | Pellet-Group 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 | | | 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 | –[b] |
| 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 | – |
| | | | | 2003 | 325 | 0.58 | – |
| | | | | 2004 | 274 | 0.86 | – |
| | | | | 2008 | 421 | 1.97 | 1.76–2.18 |
| | | | | 2014 | 355 | 1.30 | 1.14–1.46 |
| 369 | Ankau | | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 2008 | 275 | 0.12 | 0.07–0.17 |
| | | | | 2013 | 268 | 0.15 | 0.10–0.21 |
| | | | | | | | |
| 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 |
| | | | | 2011 | 289 | 0.64 | 0.51–0.77 |
| | | | | 2012 | 282 | 0.60 | 0.47–0.73 |
| | | | | 2013 | 263 | 0.56 | 0.40–0.71 |
| | (extra transect surveyed—4 total) | | | 2014 | 354 | 0.47 | 0.33–0.61 |
| | | | | 2015 | 281 | 0.60 | 0.48–0.72 |
| | | | | 2016 | 268 | 0.50 | 0.38–0.61 |
| | | | | | | | |
| 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 |
| | | | | 2012 | 230 | 0.63 | 0.50–0.77 |
| | | | | 2013 | 233 | 0.24 | 0.16–0.32 |
| | | | | 2015 | 233 | 0.40 | 0.30–0.51 |
| | | | | 2016 | 252 | 0.46 | 0.35–0.56 |
| | | | | | | | |
| 448 | Woewodski (Mitkof) | 20,931 | 53% | 1984 | 295 | 0.88 | 0.69–1.08 |
| | | | | 1985 | 209 | 0.85 | 0.58–0.85 |
| | | | | 1987 | 195 | 1.65 | 1.36–1.94 |
| | | | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| | | | | 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 |
| | | | | 2011 | 232 | 0.74 | 0.58–0.89 |
| | | | | 2012 | 229 | 0.74 | 0.56–0.92 |
| | | | | 2013 | 220 | 0.64 | 0.50–0.77 |
| | | | | 2014 | 225 | 0.76 | 0.58–0.93 |
| | | | | 2015 | 284 | 0.63 | 0.49–0.76 |
| | | | | 2016 | 235 | 0.71 | 0.55–0.86 |
| 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 |
| | | | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| 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 |
| | | | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| 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 |
| 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 | | 60% | 2001 | 244 | 0.23 | 0.14–0.31 |
| 511 | Harding | | 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| 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 |
| | | | | 2015 | 230 | 1.05 | 0.86–1.23 |
| 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 |
| | | | | 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 |
| | | | | 2011 | 345 | 1.56 | 1.37–1.76 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 2009 | 350 | 1.66 | 1.46–1.86 |
| | | | | 2011 | 376 | 2.24 | 1.95–2.53 |
| | | | | 2015 | 284 | 1.38 | 1.17–1.59 |
| 561 | Warm Chuck | 12,348 | 85% | 1984 | 326 | 1.02 | 0.66–1.38 |
| | | | | 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 |
| 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| | | | | 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 |
| | | | | 2015 | 322 | 1.85 | 1.59–2.11 |
| 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 |
| | | | | 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 |
| | | | | 2012 | 275 | 1.87 | 1.62–2.11 |
| | | | | 2015 | 314 | 1.39 | 1.17–1.60 |
| 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 |
| | | | | 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 2009 | 305 | 2.34 | 2.07–2.61 |
| | | | | 2010 | 355 | 2.05 | 1.79–2.30 |
| | | | | 2012 | 281 | 2.36 | 2.06–2.67 |
| | | | | 2015 | 312 | 1.25 | 1.06–1.44 |
| 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 |
| | | | | 2012 | 247 | 2.27 | 1.87–2.66 |
| 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 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| | | | | 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 |
| | | | | 2010 | 256 | 0.24 | 0.16–0.31 |
| | | | | 2013 | 291 | 0.18 | 0.12–0.23 |
| | | | | 2015 | 261 | 0.16 | 0.09–0.24 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 |
| | | | | 2013 | 284 | 0.10 | 0.06–0.15 |
| 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 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 |
| | | | | 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 |
| 763 | Bostwick Inlet | | | 2015 | 277 | 0.53 | 0.41–0.65 |
| | | | | 2016 | 275 | 0.60 | 0.48–0.72 |
| 764 | Blank Inlet | 3,640 | 19% | 1981 | 108 | 1.24 | 0.89–1.59 |

| VCU | Name | Land Acres | % CFL[a] | Year | Pellet-Group Plots | Mean | 95% C.I. |
|---|---|---|---|---|---|---|---|
| 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 |
| | | | | 2011 | 288 | 0.43 | 0.29–0.58 |
| | | | | 2012 | 258 | 0.53 | 0.41–0.64 |
| | | | | 2013 | 297 | 0.44 | 0.34–0.55 |
| | | | | 2014 | 268 | 0.62 | 0.45–0.80 |
| | | | | 2015 | 277 | 0.53 | 0.41–0.65 |
| 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 |

| | | | | | Pellet-Group | | |
|---|---|---|---|---|---|---|---|
| VCU | Name | Land Acres | % CFL[a] | Year | Plots | Mean | 95% C.I. |
| 859 | Very Inlet | | | 2002 | 306 | 0.11 | 0.07–0.16 |
| | | | | | | | |
| 999 | Gravina | | | 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 |
| | | | | 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 |
| | Last time. Transects cut, discontinued | | | 2013 | 92 | 0.32 | 0.18–0.45 |

[a] CFL = commercial forest land, or volume classes 4–7 (currently referred to as productive forest land or “PFL”). Numbers are from the 1980s.

[b] En dashes are used in the confidence interval (C. I.) column for a particular year of data when raw data were not available so confidence intervals could not be calculated.