**Alaska Department of Fish and Game**
***Draft Comments***

## Wildlife Proposal 22-08

This proposal would reduce the bag limit for non-federally qualified users (NFQU) to 2 bucks within the Northeast Chichagof Controlled Use Area (NECCUA, Figure 1).

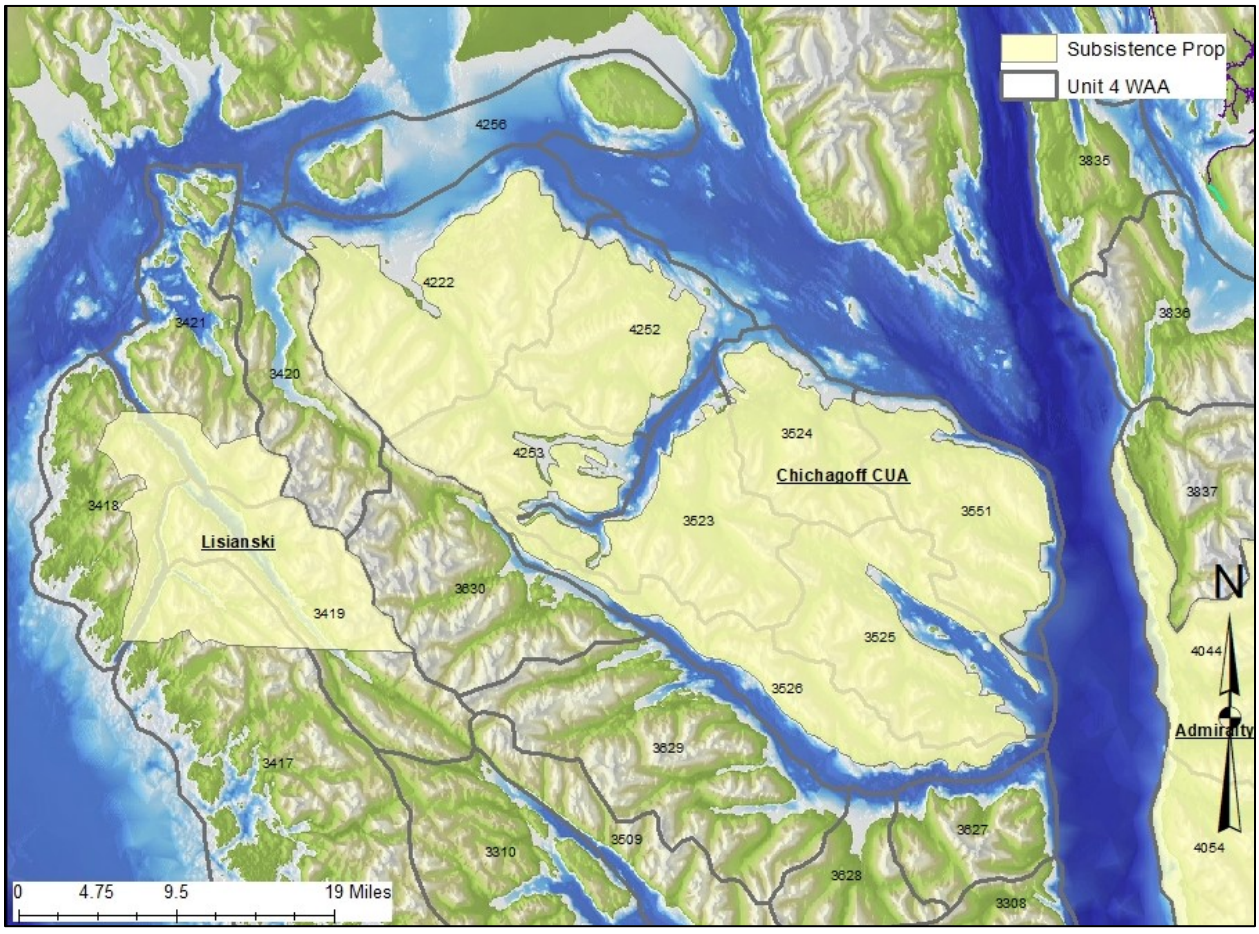


Figure 1. Map of the NECCUA proposal and boundaries of the ADF&G WAAs for deer hunter data used to analyze effects of the proposal.

## Background

The proposal by the Southeast Alaska Subsistence Regional Advisory Council (SERAC) states that over the past years it has become more challenging for federally qualified users (FQU) from Hoonah to meet their subsistence needs for deer due to increasing competition from NFQUs. To reduce competition and conserve the deer population, the proposal asked the Federal Subsistence Board to reduce the bag limit for deer for NFQUs within the NECCUA to two male deer.

Game Management Unit 4 (GMU 4) encompasses the ABC Islands (Admiralty, Baranof and Chichagof) and the surrounding archipelago. All residents of Southeast Alaska (GMUs 1-5) excluding residents of Juneau and Ketchikan are eligible to harvest deer in GMU 4 under federal subsistence regulations. Currently within the NECCUA, the federal deer season is August 1 to

January 31 with a bag limit of 6 deer (bucks only August 1 – September 14). Under the State season, NFQUs have a bag limit of 3 deer east of Port Frederick and 6 deer west of Port Frederick (bucks only August 1 – September 14). This proposal does not affect the current FQU bag limit for deer within the NECCUA. In 2019, the Alaska Board of Game (BOG) increased the deer bag limit in GMU 4 from 4 to 6 deer (except the NECCUA east of Port Frederick which remained 3 deer) because of high population indices in the GMU.

Under State regulations the NECCUA east of Port Frederick and north of Tenakee Inlet is treated separately from the remainder of GMU 4 with a more conservative bag limit. This area has been extensively logged and features a network of logging roads that facilitate access for hunting. It is also more prone to heavy snow than other areas of Unit 4 and much of the deer winter range has been altered by clearcut logging.

In 1992, the BOG established a positive customary and traditional use finding for deer in GMU 4 and established an annual amount reasonably necessary for subsistence (ANS) of 5,200-6,000 deer. ANS differs from the undefined term "subsistence need" used in Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). Under Alaska law ANS is the harvestable portion of a game population that is sufficient to provide a reasonable opportunity for subsistence uses. "Reasonable opportunity" is that which allows a normally diligent hunter a reasonable expectation of success. The BOG establishes an ANS for a game population through review of long-term population and harvest information. A portion of the state-designated Juneau Nonsubsistence Area extends into GMU 4 on northern and eastern Admiralty Island.

Indices of deer abundance, deer hunter effort and harvest in GMU 4 and within the NECCUA are all important aspects to consider when reviewing this proposal. Deer abundance and trend are derived from annual deer pellet group transects, aerial alpine surveys, and spring mortality surveys. Hunter effort and harvest data are derived from the annual deer hunter survey (1997-2010) and mandatory deer harvest ticket reports (2011 - present). Collectively, these data gathered by the Alaska Department of Fish and Game (ADF&G) are the only annually collected, objective, and quantitative information on deer abundance, hunter effort and harvest available for Southeast Alaska.

**GMU 4-Wide Population and Harvest**

Monitoring deer abundance in forested habitat is challenging as deer cannot be directly counted through ground or aerial surveys. We present several types of survey data. Since the 1980s ADF&G has used spring pellet group counts to monitor broad (≥30%) changes in deer abundance. Spring pellet group surveys are conducted in numerous US Forest Service Value Comparison Units across Southeast Alaska after snow melts and before spring green-up.

GMU 4 consistently has the highest pellet group counts in Southeast Alaska (Figure 2). Pellet group counts <1.0 groups/plot generally correspond to low density populations, 1.0 – 1.99 groups/plot to moderately dense populations and > 2.0 groups/plot correspond to high density populations. Pellet group counts in GMU 4 are usually well above the high-density threshold and are often double the counts in other GMUs. Although the area affected by this proposal is rarely sampled, this broad index of deer abundance suggests the GMU 4 population remains at high levels with no indication of depleted populations or conservation concerns.

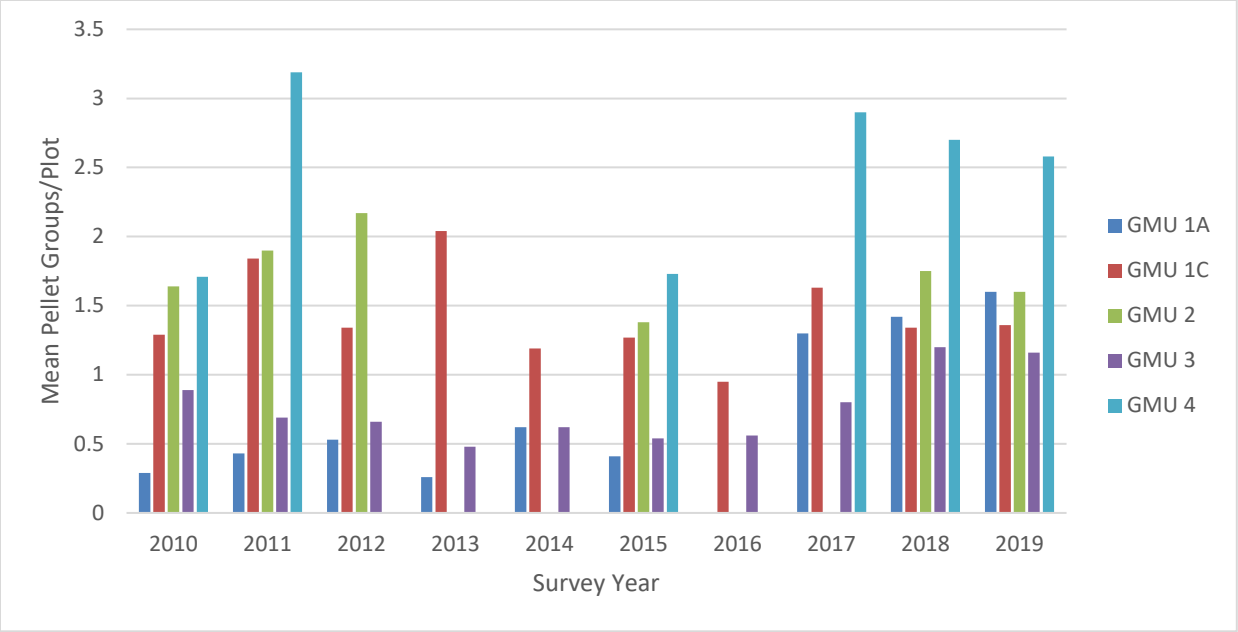


Figure 2. Mean number of deer pellet groups/plot for Southeast Alaska by GMU, 2010-2019.

In 2013 ADF&G began evaluating mid-summer aerial counts of deer in alpine habitat as an index of deer abundance. Surveys were conducted for 2 locations in GMU 4, Southern Admiralty Island (2015-2017) and Northeast Chichagof Island (2017-2018). The findings of those surveys were summarized as deer counted per hour of survey time (Figure 3). Southern Admiralty had the highest deer/hour of any survey area in Southeast Alaska. Estimates from Northeast Chichagof were similar to Prince of Wales Island (POW) and higher than all other survey areas except Southern Admiralty and POW.

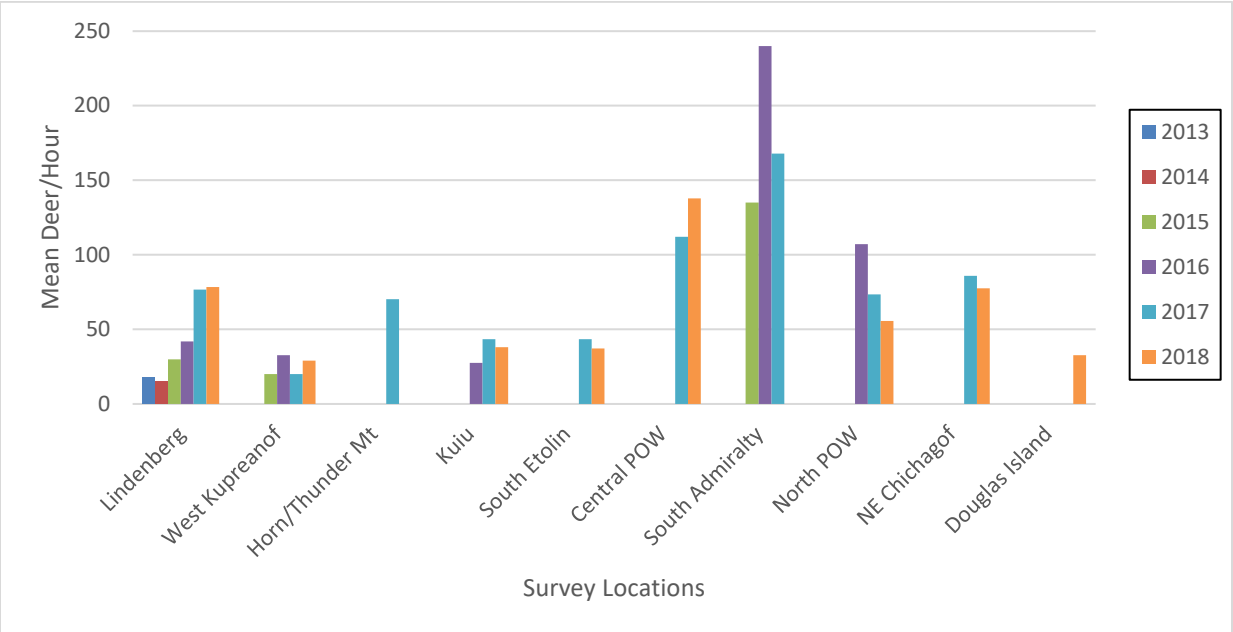


Figure 3. Mean number of deer counted per hour during mid-summer aerial alpine deer surveys in Southeast Alaska, 2013-2018.

Management biologists in GMU 4 began conducting beach mortality transects in the early 1990s. Although these mortality surveys are a relatively insensitive indicator of population trend, they are an indicator of mortality resulting from severe winters, which is the most limiting factor for Sitka black-tailed deer populations in GMU 4. In addition to the total count of carcasses per mile, the proportion of adult male, adult female and fawn mortalities also indicates winter severity. Usually fawns die first, followed by adult males and then adult females. The winter of 2006/2007 was the most severe on record, and in some parts of GMU 4 managers estimated up to 75% of deer died. Note the very high number of carcasses found during spring 2007 surveys (Figure 4). In the years since then, few carcasses were found indicating high overwinter survival and no winter related population declines.

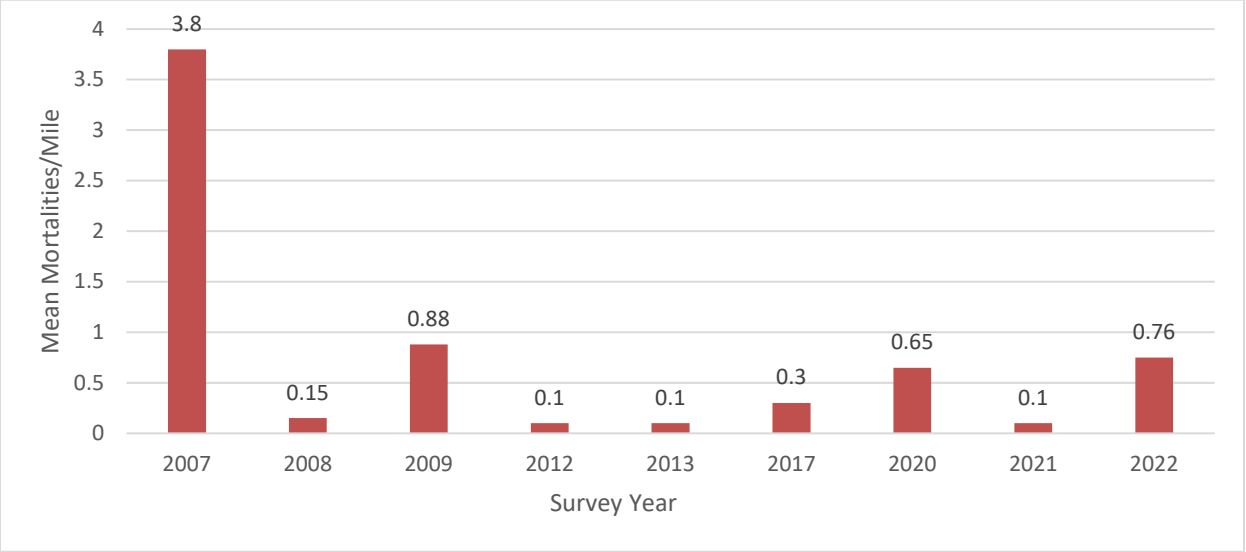


Figure 4. Mean number of winter-killed deer per mile of beach surveyed during spring in GMU 4.

Taken together, these indices of deer abundance (pellet group surveys, alpine counts, mortality transects) indicate the GMU 4 deer population is high and stable. None of these indices suggests a decline in deer abundance or a conservation concern for the GMU 4 deer population.

**Hunter Effort and Harvest**

GMU 4 managers also use harvest as an indicator of trend in the deer population. ADF&G estimates hunter effort and harvest using information provided by hunters. To hunt deer in Southeast Alaska all hunters must obtain harvest tickets. Prior to 2011, ADF&G mailed survey forms to one third of the hunters in each community who obtained harvest tickets. Since 2011 harvest tickets have come with a mandatory reporting requirement. People who obtain harvest tickets are required to report whether they (or a proxy or federal designated hunter) hunted or not. Those who did hunt are required to report where they hunted, days of hunting effort, and information about deer they harvested.

Since 1997 the estimated average annual harvest in GMU 4 has been 5,680 deer taken by 3,275 hunters (Figure 5). Currently, GMU 4 supports the highest deer harvest in the state with harvest remaining stable with between 5,000-7,000 deer harvested annually. The exception being the severe winter of 2006/2007 when high harvest was followed by significant overwinter mortality of deer in GMU 4. This resulted in a precipitous decline in harvest from 7,734 deer in 2006 to

1,933 deer in 2007. Based on harvest and other indicators of deer abundance, managers believe the deer population had fully recovered by the 2013 season.

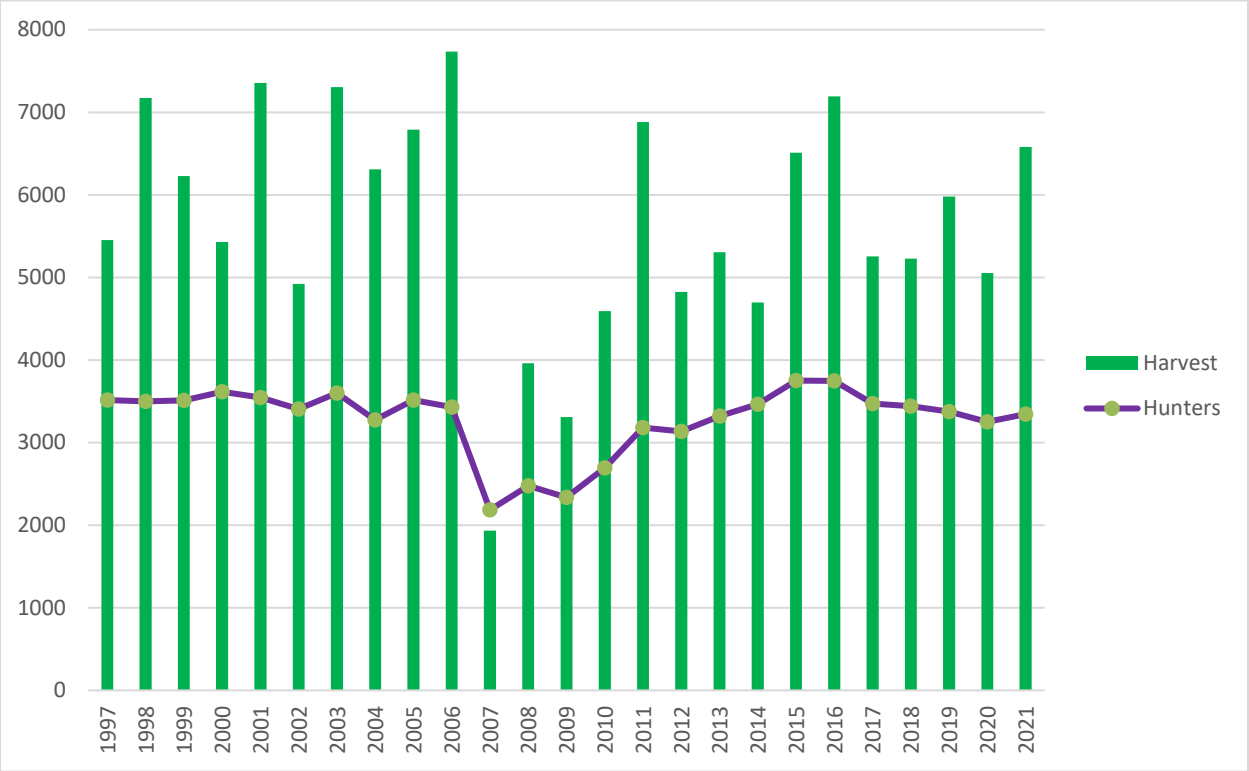


Figure 5. Numbers of people hunting deer and estimated deer harvest for GMU 4, RY97-RY21.

**Data Summaries for Impacted Area**

The following analyses present data summarized for FQUs and NFQUs in the 8 ADF&G Wildlife Analysis Areas (WAAs 3523-3526, 3551, 4222, 4252 and 4253) that intersect with the area this proposal covers (Figure 1). WAA boundaries generally correspond with watersheds and are the finest scale at which data can be meaningfully summarized. For this proposal, WAA boundaries directly correspond to the proposal area.

Long-term records indicate a declining trend in harvest for FQUs and a stable trend for NFQUs (Figure 6). From 1997 to 2006, FQUs harvested an average of 747 deer annually. Harvest by FQUs declined following the severe winter of 2006/2007. Since 2013, when ADF&G considered the deer population recovered, average annual harvest by FQUs grew to an average of 392 deer annually but remains about 50% lower than prior to RY07. Harvest by NFQUs also declined following the winter of 2006/2007 but has returned to approximately 90% of pre-2007 levels (Figure 6).

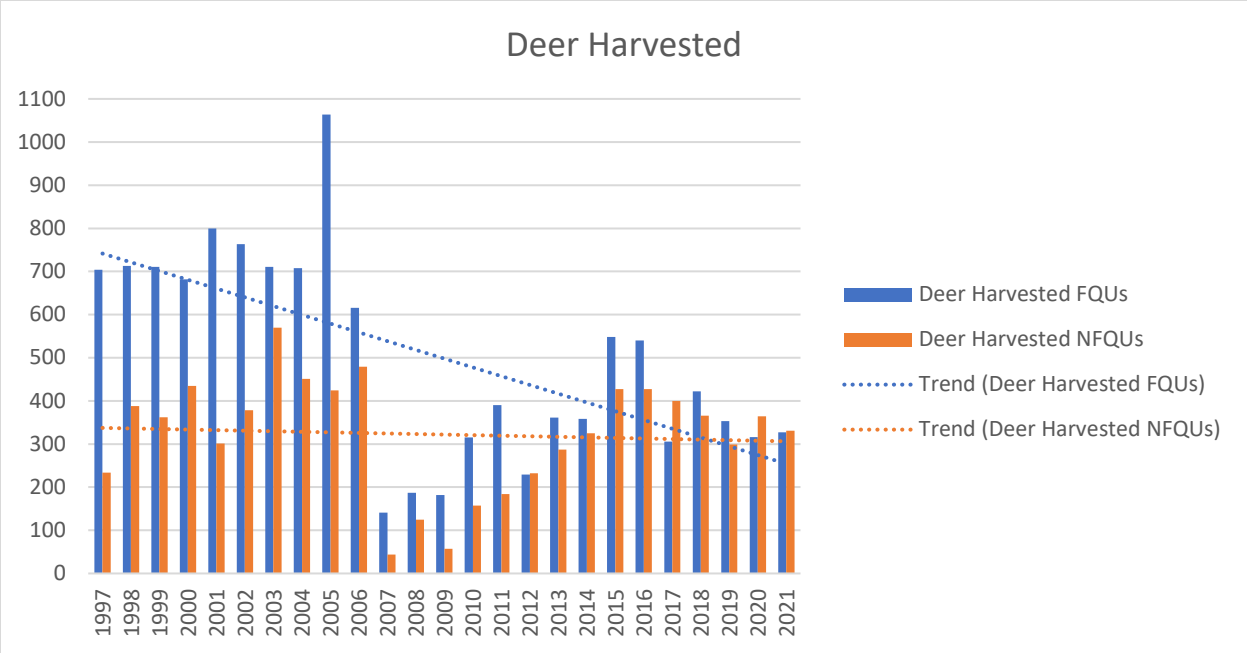


Figure 6. Trends of estimated deer harvest by FQUs and NFQUs, NECCUA, RY97-RY21.

To evaluate potential reasons for the decline in deer harvest by FQUs we examined trends in the numbers of FQU and NFQU hunters and days of hunting effort by those hunters. The number of FQUs hunting in the NECCUA has declined approximately 50% since the late 1990s. Prior to the winter of 2006/2007 an average of 333 FQUs took to the field. The number of FQUs participating in this hunt never fully recovered and since 2013 has only averaged 240 hunters. The number of NFQUs hunting in the NECCUA also declined after the winter of 2006/2007 but returned to pre-2006 levels by 2012 (Figure 7).

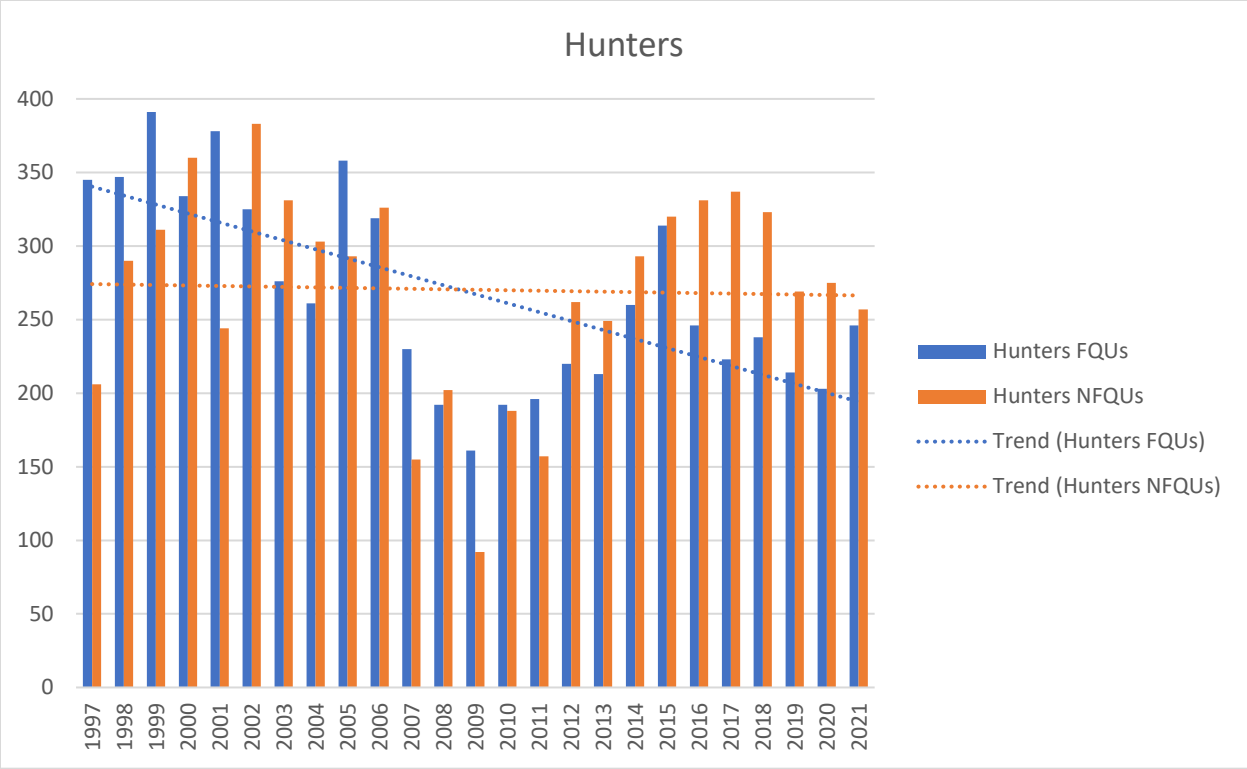


Figure 7. Trends in number of FQUs and NFQUs, NECCUA, RY97-RY21.

In Hoonah specifically, there has been a declining trend in the number of residents who have obtained deer harvest tickets (Figure 8). In the late 1990's and early 2000's it was common for 400 or more Hoonah residents to obtain deer harvest tickets. Now that number is closer to 300, and in RY21 only 265 Hoonah residents obtained deer harvest tickets.

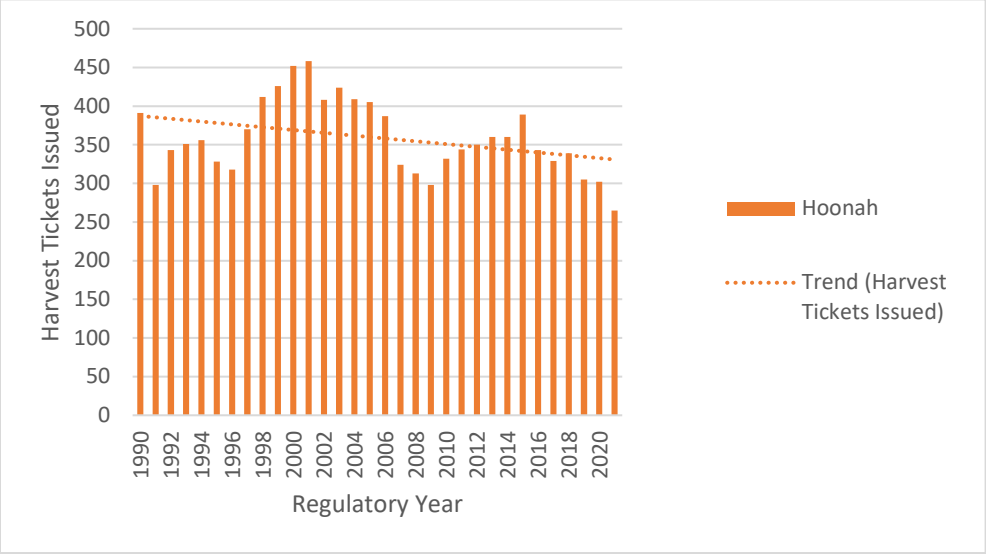


Figure 8. Deer harvest tickets issued to Hoonah residents RY97-RY21.

Trends in days hunted approximate the trends for number of hunters for both user groups. Since 1997 the number of days of hunting effort by FQUs has declined by over 50% while days of

hunting effort by NFQUs has remained stable (Figure 9). Similar to the number of hunters, days of hunting effort by FQUs never recovered from the steep decline following the winter of 2006/2007. The number of hunters along with the number of days hunted both indicate decreased deer hunting effort for this area of GMU 4 by FQU hunters.

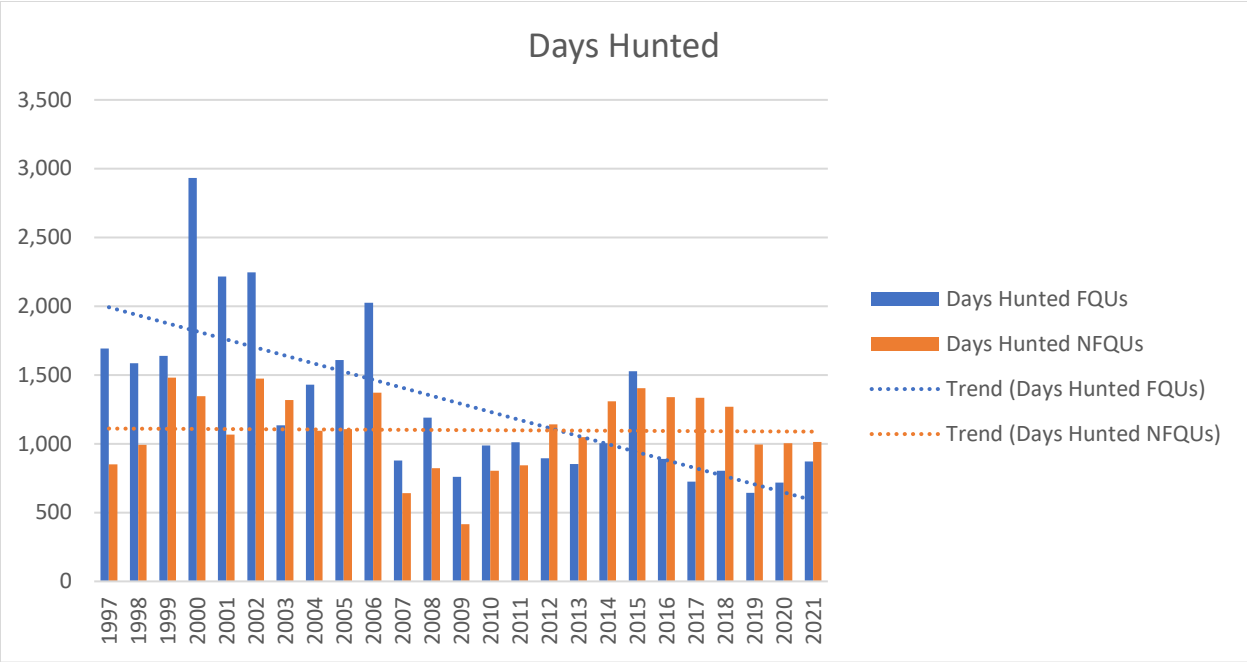


Figure 9. Trends in estimated days of hunting effort by FQUs and NFQUs, NECCUA, RY97-RY21.

## Trends in Hunter Efficiency

Hunter efficiency, or the days of hunting effort required to harvest 1 deer, is another indicator of deer availability to GMU 4 hunters. FQUs in the NECCUA are consistently more efficient than NFQUs (Figure 10). Since 2013, NFQUs required an average of 3.3 days to harvest 1 deer, but FQUs required only 2.3 days to harvest one deer. This metric is trending slightly down for FQUs (becoming more efficient) and has been below 2.0 days/deer for 3 of the past 6 seasons.

Compared to deer hunting effort required to harvest a deer elsewhere in the state, this is an extremely efficient hunt. Hunters in GMU 4 require approximately 2.3 days/deer. In comparison, hunters on Prince of Wales Island (GMU 2) average 4.1 days of hunting per deer harvested, Kodiak (GMU 8) averages 3.6 days/deer, GMU 1A (Ketchikan) averages 4.8 days/deer, GMU 3 (Petersburg/Wrangell) averages 6.0 days/deer, GMU 6 (Prince William Sound) averages 2.9 days/deer, and in GMU 1C (Juneau) hunters average 7.9 days/deer (ADF&G RY2013-RY2021). Hunters in GMU 4 experience the most efficient deer hunting of anywhere in Alaska. FQU hunters in the NECCUA mirror Unit 4 when it comes to days/deer.

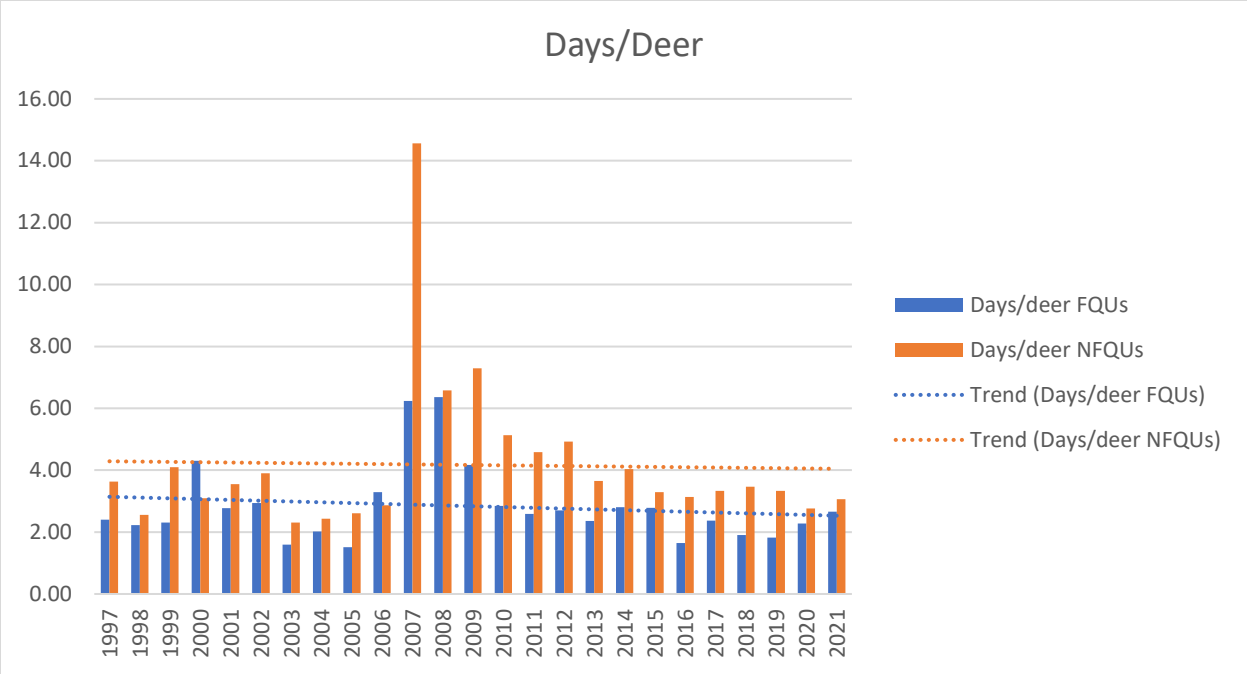


Figure 10. Trends in estimated days of hunting effort by FQUs and NFQUs required to harvest 1 deer, NECCUA, RY97-RY21.

The number of deer harvested per hunter is another gauge of deer abundance and hunting success. Since 1997 the number of deer harvested per NFQU has averaged 1.2. FQUs report harvesting about 1.9 deer/hunter. Prior to the winter of 2006/2007 FQU hunters averaged 2.2 deer/hunter. Since RY13, FQU hunters are only harvesting 1.6 deer/hunter. NFQU deer/hunter numbers have generally returned to pre-RY07 levels. Although the deer/hunter numbers for FQU hunters is trending down, this is more a function of fewer hunters spending less days afield than it is an indicator of hunting efficiency. Particularly in light of days/deer and that NFQU harvests have nearly reached pre-RY07 levels (Figure 11).

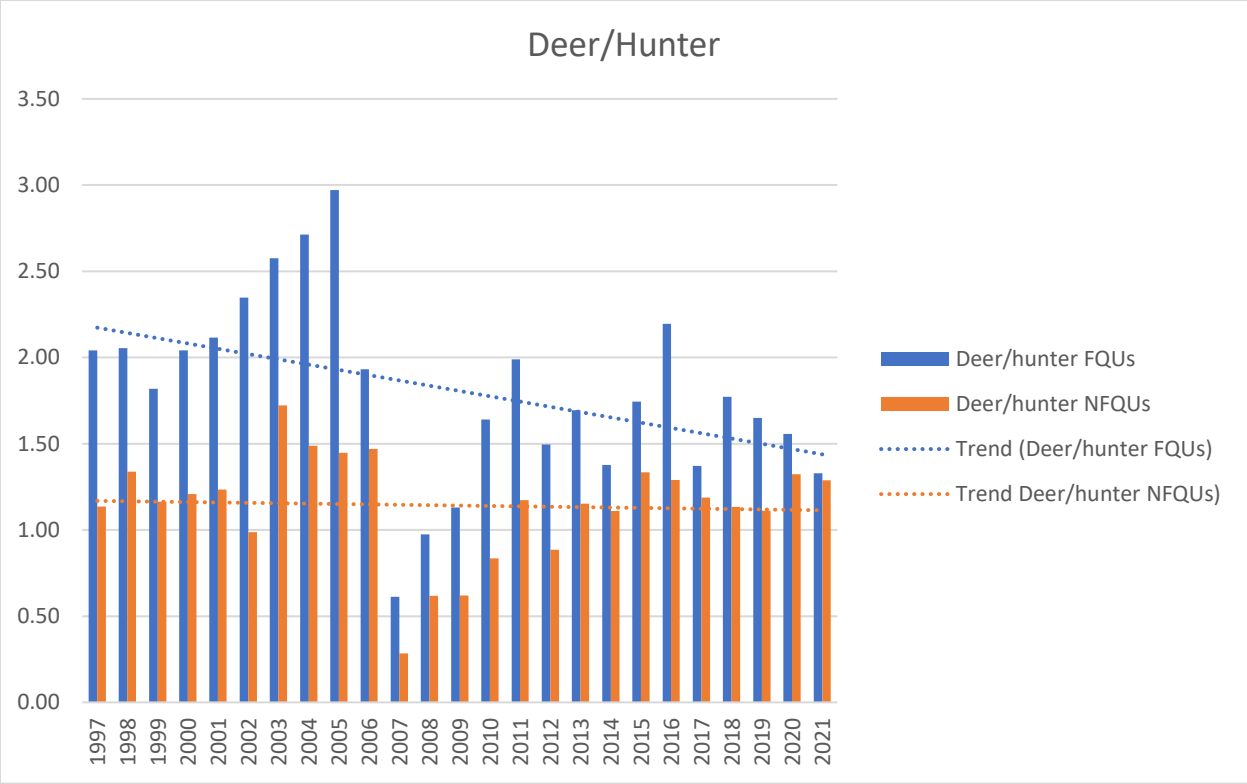


Figure 11. Trends in mean number of deer harvested per FQU and NFQU, NECCUA, RY97-RY21.

Within the NECCUA, the bag limit for NFQUs is 6 deer west of Port Frederick and 3 deer east of Port Frederick. This proposal seeks to reduce that bag limit to 2 bucks for the entire NECCUA. ADF&G collects data on the number of deer individual hunters report taking relative to the bag limit in areas they report hunting. Within GMU 4, 83% of NFQUs take 2 or fewer deer (Figure 12, ADF&G RY19-RY21). Nine percent of NFQUs take 3 deer and 5% take 4 deer. The percentage of hunters who took 5 or 6 deer (legal as of RY19) was 1.5% for both.

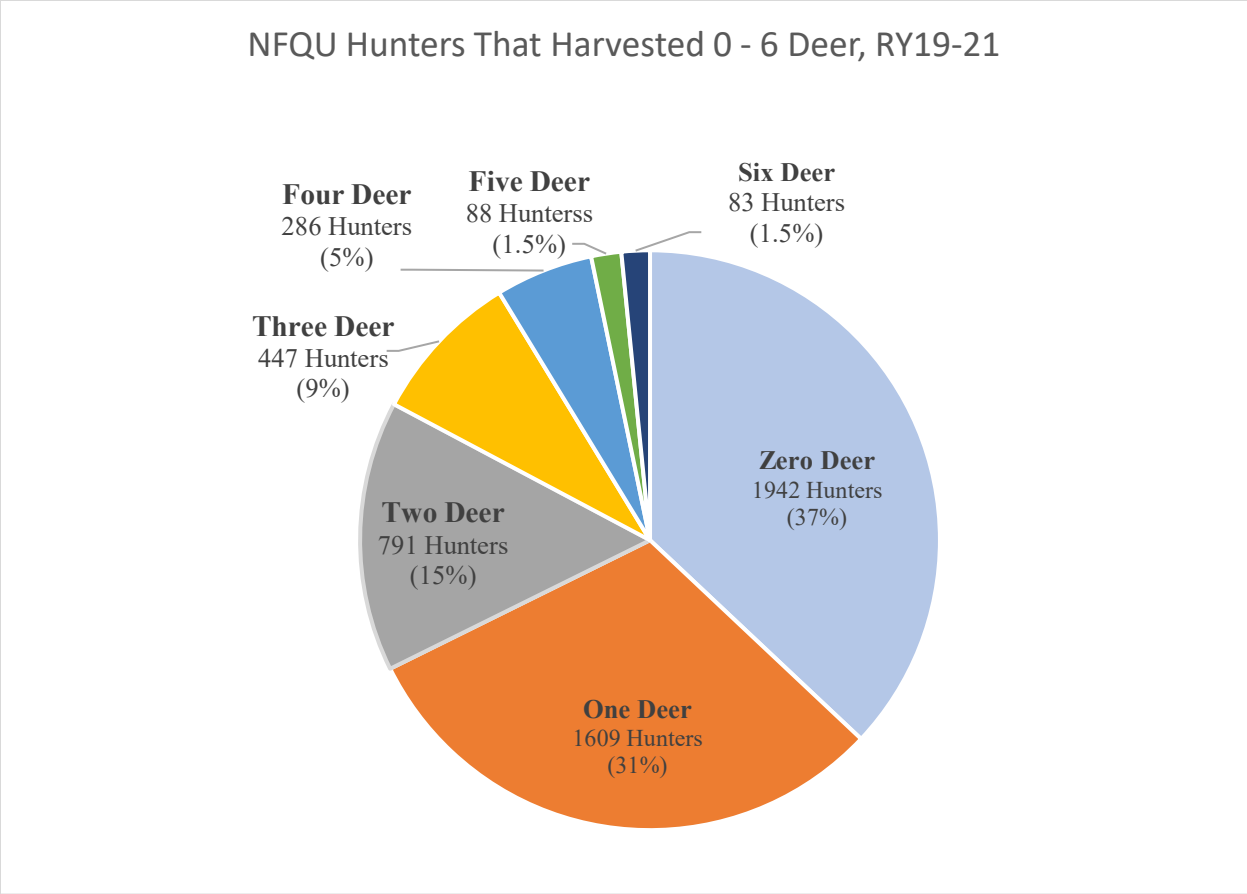


Figure 12. Percentages of NFQUs who report harvesting 0, 1, 2, 3, 4, 5, or 6 deer in GMU 4, RY19-RY21.

Under federal regulations, FQU hunters were able to harvest six deer prior to RY19 when the State bag limit was raised to six. On average, more FQU hunters take multiple deer than NFQU hunters. For example, since RY13, 13% of FQU hunters take more than four deer (Figure 13).

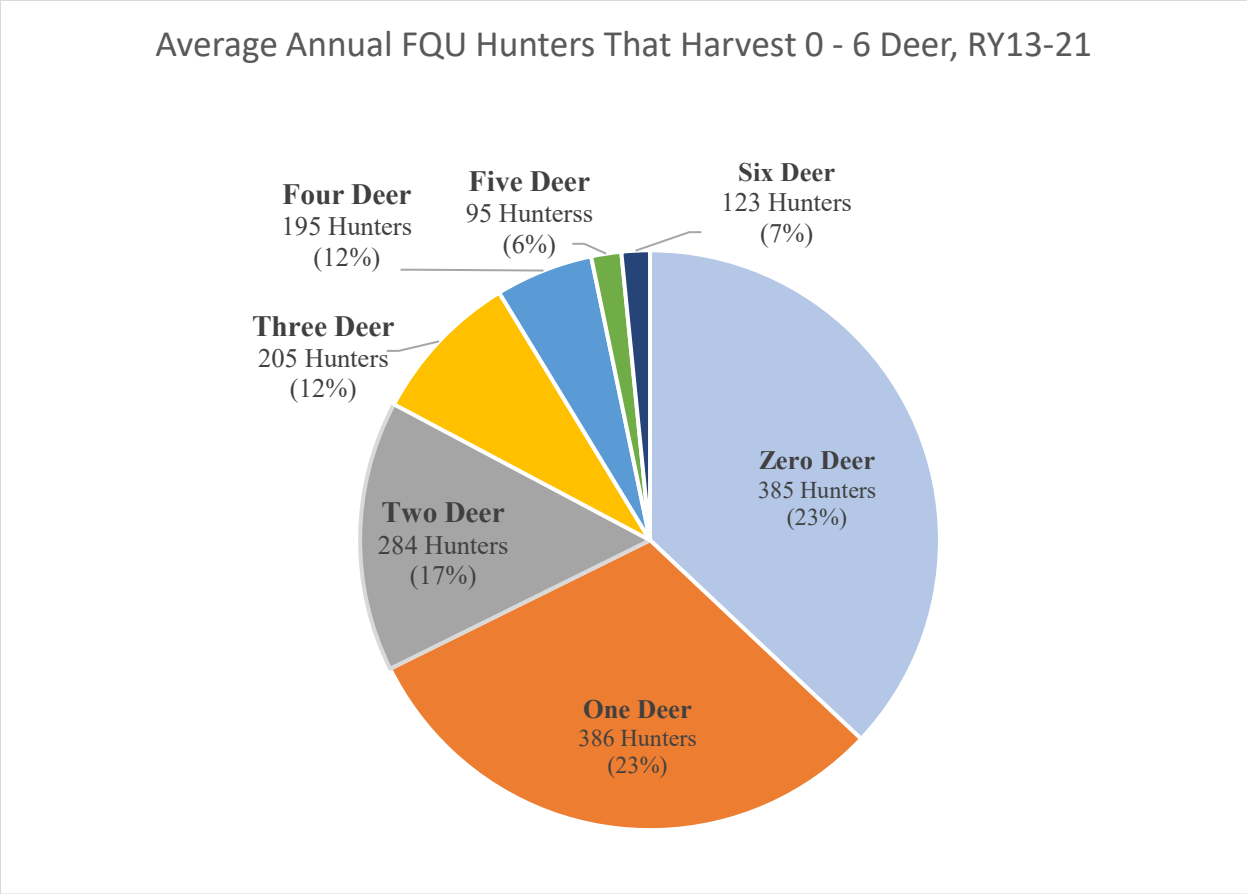


Figure 13. Percentages of FQUs who report harvesting 0, 1, 2, 3, 4, 5 or 6 deer in GMU 4, RY13-RY21.

Doe harvest accounts for approximately 25% of both the FQU and NFQU annual harvest. Since RY13, FQUs have averaged approximately 86 does annually and NFQUs about 92. These calculations do not include RY07-RY12 when doe harvests were restricted to facilitate recovery of the deer herd following the winter of 2006/2007.

**Analysis**

The analyses presented here are based on several different metrics that come from the only annually collected, objective, and quantitative information available on deer abundance, hunter effort and harvest in the area affected by this proposal. Deer abundance is monitored by ADF&G through the reporting of effort and harvest data from hunters, including those from Hoonah.

The proposal asserts that the deer population within the NECCUA is "depleted" and that in recent years FQUs have had increasing difficulty meeting their subsistence needs for deer because of increasing competition from NFQUs. The term, "subsistence need", as used in Title VIII of ANILCA has no quantitative benchmark analogous to ANS in state regulations. ANILCA also does not require the federal program to quantify historical levels of harvest for subsistence uses. Consequently, there is no objective way of verifying whether the existing federal regulations continue to provide for adequate subsistence harvest opportunity. Therefore, our analysis focuses on measures of deer abundance and trend in GMU 4 and on trends in effort and harvest by FQUs and NFQUs in the proposal area. Conditions that would support the assertion

that NFQUs are hindering deer harvest by FQUs would include increasing numbers of hunters, days of hunting effort, and harvest by NFQUs that coincide with declining harvest by FQUs while the number of FQU hunters and effort by those hunters remained stable or increased.

ADF&G monitors deer abundance at the scale of the GMU or subunit, so we can only note that the available data indicate GMU 4 deer populations are currently at high and stable levels. Winter severity, particularly deep and lingering snowpack, is the biggest limiting factor for Sitka black-tailed deer in GMU 4. The last winter with above average snowfall occurred in 2011/2012. Since then, winters have been average, to mild, with little overwinter mortality as corroborated by ADF&G's spring mortality surveys. Pellet group and aerial alpine deer counts also support the conclusion that deer remain abundant in GMU 4.

The proposal is predicated on the idea that FQUs in the NECCUA area are having an increasingly difficult time meeting their subsistence needs. Because no similar proposal has been submitted before, we can presume that previously FQUs were able to meet their needs. Therefore, to evaluate the need for this restriction of NFQUs opportunity we evaluated harvest and measures of hunter effort for trends of increasing effort and harvest by NFQUs.

We found that harvest by FQUs and NFQUs declined in response to the severe winter of 2006/2007. Since then, harvest by NFQUs has recovered to pre-2007 levels, but harvest by FQUs remains much lower than before RY07. To investigate reasons for declining harvest after the deer population recovered, we examined numbers of FQUs and NFQUs participating in this hunt and days of hunting effort by both groups of hunters. We found that since RY07 the number of individual FQUs hunting within the NECCUA has declined by 50%, whereas the number of NFQUs has returned to pre-2007 levels. Days of hunting effort by FQUs also declined while days of hunting effort by NFQUs returned to pre-2007 levels. This finding directly contradicts the assertion in the proposal that increasing competition from NFQUs is hindering harvest by FQUs. In fact, total deer hunting effort and the potential for competition between hunters in this area has substantially declined.

To evaluate whether FQUs are having an increasingly difficult time harvesting deer we looked for trends in the number of days of hunting effort required to harvest one deer and number of deer harvested per hunter. Since RY13, FQUs require 2.3 days of hunting effort per deer compared to 3.3 days of effort for NFQUs. Since RY13 days of hunting effort required to harvest a deer has been trending down for FQUs, including Hoonah hunters, and has been below 2.0 days/deer for 3 of the past 6 seasons.

If harvesting deer was becoming more difficult for FQUs, we would expect to see an increase in the number of days of hunting effort required to harvest a deer and a decline in the number of deer harvested per FQU hunter. While there has been a decline in the number of deer/hunter (2.2 to 1.6 between RY97-RY06 and RY13-RY20), there hasn't been a corresponding increase in days/deer. These measures of hunter success based on hunt reports provided by FQUs, including residents of Hoonah, indicate that deer hunting conditions in the NECCUA remain very good and that in recent years FQUs have enjoyed very good hunting success.

Potential effects of the proposed change on the deer population or FQU harvest are difficult to project. NFQ hunters take on average 92 does annually in the NECCUA. By applying the percentage of NFQUs who take 0, 1, 2, 3, 4, 5 or 6 (only hunters west of Port Frederick can harvest more than three) deer to previous harvests by NFQUs in the NECCUA, the average annual reduction in NFQU harvest would be approximately 20 deer west of Port Frederick and 40 deer east of Port Frederick. However, those calculations do not take into account deer harvested below mean high tide and on other State and private lands, or whether hunters would harvest additional bucks if does were not legal. Because NFQUs take an average of only 1.2 deer per hunter, and harvest 75% bucks, the proposed regulatory change is unlikely to affect the deer population or result in any substantial increases in opportunity for FQUs.

**Summary**

The proposal asserts that the deer population within the NECCUA is depleted and that in recent years FQUs have had difficulty meeting their subsistence needs because of increasing competition from NFQUs. Our analysis of the deer population, hunter effort and harvest trends found no support for either contention. Instead, the available information indicates that deer remain abundant throughout GMU 4. Within the NECCUA it is unlikely that hunter harvest has reduced deer abundance because total hunting effort is relatively light, and over the last 2 decades total hunter effort and harvest have both declined.

We could find no support for the contention that competition from NFQUs has increased or that NFQUs are hindering harvest by FQUs. In fact, the number of NFQUs and days of hunting effort by NFQUs has remained stable over the past 2 decades. Further, days of hunting effort required to harvest one deer remains very low.

The analysis conducted by ADF&G indicates a long-term decline in the number of deer harvested by FQUs within the NECCUA. However, that decline is attributable to a decline in the number of FQUs and days of effort by those hunters. Over the last 20 years the number of FQUs and days of hunting effort by those hunters has declined by more than half. Deer remain abundant and competition from NFQUs is unchanged, so we conclude that the decline in federal subsistence harvest of deer results from a decline in participation and effort by FQUs, not depleted deer populations or increasing competition from NFQUs.

**Impact on Subsistence Users**

The reduction in the bag limit of NFQUs would not have any impact on FQUs given the data showing how many deer NFQUs typically harvest.

**Impact on Other Users**

Opportunity for NFQUs to harvest deer on federal public lands in the NECCUA would be reduced. Bag limits west of Port Frederick would decline from 6 deer per hunter to 2 bucks. East of Port Frederick the NFQU bag limit would be reduced from 3 deer to 2 bucks. However, NFQUs would still be able to harvest the larger number of deer under state hunting regulations on adjacent state-owned tidelands below mean high tide, state public uplands, and private property.

**State Customary and Traditional Use Findings**
The Alaska Board of Game has made positive customary and traditional use findings for deer in GMU 4.

**Amounts Reasonably Necessary for Subsistence**
Alaska state law requires the Board of Game to determine the amount of the harvestable portion of a game population that is reasonably necessary for customary and traditional uses. This is an ANS. The board does this by reviewing extensive harvest data from all Alaskans, collected either by ADF&G or from other sources. The ANS for deer in GMU 4 is 5,200–6,000 deer.

Contrary to its name, ANS does not indicate subsistence "need". Instead, ANS provides the board with guidelines on typical numbers of animals harvested for customary and traditional uses under normal conditions. The ANS for deer in GMU 4 was established in 1992. Hunting regulations can be re-examined if harvests for customary and traditional uses consistently falls below ANS. However, harvest may decline for many reasons, and in this case it appears to result from declining participation and effort by FQUs in the Hoonah area

**Opportunity Provided by the State**

The State season and bag limit for the NECCUA in GMU 4 is:

| | | | |
|---|---|---|---|
| GMU 4 *NECCUA* East of Port Frederick | Bag Limit *3 deer (bucks only to Sep 14th)* | Resident Open Season *Aug 1-Dec 31 (Harvest ticket)* | Nonresident Open Season *Aug 1-Dec 31 (Harvest ticket)* |
| GMU 4 *Remainder* | Bag Limit 6 *deer (bucks only to Sep 14th)* | Resident Open Season *Aug 1-Dec 31 (Harvest ticket)* | Nonresident Open Season *Aug 1-Dec 31 (Harvest ticket)* |

**Conservation Issues**
There are no conservation issues for the deer population in GMU 4. Following a decade of mild winters, the available population indices suggest the GMU 4 deer population remains high and stable. Deer harvest remains within the historical range and state ANS is met in most years. Population indices and measures of hunter effort and success indicate that GMU 4 has the highest population of deer and highest hunting success of anywhere in in the state.

Based on the information provided to ADF&G by GMU 4 deer hunters, population indices, anecdotal reports by local hunters and field observations by management biologists we conclude that there is no conservation concern for the GMU 4 deer population.

**Enforcement Issues**
Passage of this proposal will create increasingly complex regulations for NFQUs. Enforcement will be challenging because NFQU's will remain eligible to hunt deer (including does) on state-owned tidelands below the line of mean high tide and on other state and private property. The

tideline is not marked, so NFQUs and enforcement officers will have difficulty determining when deer are above or below that line of mean high tide.

**Position**

ADF&G **OPPOSES** this proposal because there is no evidence that hunting by NFQUs has affected FQUs ability to harvest deer. There is no conservation concern and therefore no biological justification for reducing the bag limit of NFQUs. Adopting this proposal would deprive NFQUs of sustainable deer hunting opportunity contrary to terms in Title VIII of ANILCA. This proposal would also unnecessarily restrict Alaskans, including former residents of Hoonah who would be prohibited from practicing their traditional and cultural way of life.

Approximately 90% of land in GMU 4 is federally managed, and current federal regulations provide greater opportunity for FQUs compared to NFQUs. FQUs are eligible to hunt an entire month longer than NFQUs with a season extending through January. In the NECCUA, east of Port Frederick (where 70% and 80% of FQU and NFQU harvest occurs, respectively), FQUs have a much more liberal bag limit (6 deer compared to 3 deer for NFQUs) as well as a very liberal designated hunter program.

In *Alaska v. Federal Subsistence Bd.*, 544 F.3d 1089, 1100 (9th Cir. 2008), the Ninth Circuit ruled that, under ANILCA, the Federal Subsistence Board may regulate subsistence use but is prohibited from limiting nonsubsistence use. A bag limit reduction for NFQUs for deer in GMU 4 is inconsistent with ANILCA under applicable case law on federal preemption. As directed by Congress in Section 802 of ANILCA, subsistence uses of wildlife shall be the priority consumptive use on federal public lands "when it is necessary to restrict taking in order to assure the continued viability of a fish or wildlife population or the continuation of subsistence uses of such population." Section 815 of ANILCA authorizes federal restrictions on nonsubsistence uses on the public lands only if "necessary for the conservation of healthy populations of fish and wildlife" or if necessary to "continue subsistence uses." Based on ADF&G's analysis of the only annually collected, objective, and quantitative data available, none of those reasons apply. There is no conservation concern for the NECCUA deer population, and no restrictions on NFQU bag limit are needed to continue subsistence uses of deer. Data largely provided by FQUs residing in Hoonah clearly indicate that the decline in harvest by that user group results from declining participation and effort by FQU deer hunters.

## Data Tables

Table 1. Number of GMU 4 NFQUs that harvest 0, 1, 2, 3, 4, 5, or 6 deer.

| Reg Year | Total Hunters | Zero Deer | One Deer | Two Deer | Three Deer | Four Deer | Five Deer | Six Deer |
|---|---|---|---|---|---|---|---|---|
| 2013 | 1660 | 579 | 520 | 286 | 170 | 100 | 0 | 0 |
| 2014 | 1808 | 762 | 534 | 287 | 148 | 78 | 0 | 0 |
| 2015 | 1875 | 588 | 559 | 340 | 232 | 155 | 0 | 0 |
| 2016 | 1872 | 596 | 589 | 325 | 220 | 141 | 0 | 0 |
| 2017 | 1783 | 663 | 558 | 303 | 168 | 90 | 0 | 0 |
| 2018 | 1779 | 645 | 550 | 327 | 173 | 83 | 0 | 0 |
| 2019 | 1750 | 664 | 569 | 274 | 124 | 76 | 26 | 18 |
| 2020 | 1793 | 697 | 504 | 253 | 171 | 108 | 29 | 30 |
| 2021 | 1719 | 587 | 541 | 267 | 152 | 104 | 33 | 35 |
| **Average*** | 1782 | 642 | 547 | 296 | 173 | 104 | 29 | 28 |

*Five and six deer average calculations based on RY19-RY21 only.

Table 2. Number of GMU 4 FQUs who harvest 0, 1, 2, 3, 4, 5, or 6 deer.

| Reg Year | Total Hunters | Zero Deer | One Deer | Two Deer | Three Deer | Four Deer | Five Deer | Six Deer |
|---|---|---|---|---|---|---|---|---|
| 2013 | 1644 | 408 | 402 | 291 | 174 | 184 | 91 | 95 |
| 2014 | 1662 | 536 | 375 | 280 | 178 | 157 | 66 | 71 |
| 2015 | 1903 | 412 | 472 | 328 | 235 | 243 | 104 | 108 |
| 2016 | 1883 | 340 | 386 | 281 | 235 | 322 | 123 | 196 |
| 2017 | 1717 | 462 | 400 | 305 | 217 | 175 | 76 | 83 |
| 2018 | 1684 | 414 | 441 | 302 | 215 | 144 | 80 | 88 |
| 2019 | 1646 | 277 | 404 | 278 | 198 | 201 | 121 | 167 |
| 2020 | 1464 | 402 | 339 | 251 | 186 | 138 | 64 | 86 |
| 2021 | 1624 | 270 | 320 | 272 | 217 | 202 | 127 | 216 |
| **Average** | 1692 | 391 | 393 | 288 | 206 | 196 | 95 | 123 |

Table 3. Summary Table Federally Qualified Deer Hunters, WAAs 3523-3526, 3551, 4222, 4252, and 4253.

| Regulatory Year | No. of Hunters | Hunt Days | Buck Harvest | Doe Harvest | Total Harvest | Deer/ Hunter | Days/ Deer |
|---|---|---|---|---|---|---|---|
| 1997 | 345 | 1692 | 545 | 159 | 704 | 2.04 | 2.40 |
| 1998 | 347 | 1586 | 545 | 168 | 713 | 2.05 | 2.22 |
| 1999 | 391 | 1640 | 483 | 228 | 711 | 1.82 | 2.31 |
| 2000 | 334 | 2933 | 517 | 165 | 682 | 2.04 | 4.30 |
| 2001 | 378 | 2215 | 531 | 269 | 800 | 2.12 | 2.77 |
| 2002 | 325 | 2246 | 710 | 53 | 763 | 2.35 | 2.94 |
| 2003 | 276 | 1134 | 528 | 183 | 711 | 2.58 | 1.59 |
| 2004 | 261 | 1429 | 513 | 195 | 708 | 2.71 | 2.02 |
| 2005 | 358 | 1609 | 707 | 357 | 1064 | 2.97 | 1.51 |
| 2006 | 319 | 2026 | 466 | 150 | 616 | 1.93 | 3.29 |
| 2007 | 230 | 879 | 115 | 26 | 141 | 0.61 | 6.23 |
| 2008 | 192 | 1190 | 177 | 10 | 187 | 0.97 | 6.36 |
| 2009 | 161 | 759 | 182 | 0 | 182 | 1.13 | 4.17 |
| 2010 | 192 | 989 | 283 | 32 | 315 | 1.81 | 2.84 |
| 2011 | 196 | 1010 | 378 | 12 | 390 | 1.99 | 2.59 |
| 2012 | 220 | 894 | 296 | 33 | 329 | 1.50 | 2.70 |
| 2013 | 213 | 853 | 267 | 94 | 361 | 1.69 | 2.36 |
| 2014 | 260 | 1004 | 275 | 83 | 358 | 1.38 | 2.80 |
| 2015 | 314 | 1527 | 435 | 113 | 548 | 1.75 | 2.79 |
| 2016 | 246 | 889 | 463 | 77 | 540 | 2.20 | 1.65 |
| 2017 | 223 | 726 | 235 | 71 | 306 | 1.37 | 2.37 |
| 2018 | 238 | 803 | 324 | 98 | 422 | 1.77 | 1.90 |
| 2019 | 214 | 643 | 283 | 70 | 353 | 1.65 | 1.82 |
| 2020 | 203 | 719 | 228 | 88 | 316 | 1.56 | 2.28 |
| 2021 | 246 | 871 | 249 | 78 | 327 | 1.33 | 2.66 |

Table 4. Summary Table NFQU Deer Hunters WAAs 3523-3526, 3551, 4222, 4252, and 4253.

| Regulatory Year | No. of Hunters | Hunt Days | Buck Harvest | Doe Harvest | Total Harvest | Deer/ Hunter | Days/ Deer |
|---|---|---|---|---|---|---|---|
| 1997 | 206 | 850 | 201 | 33 | 234 | 1.14 | 3.63 |
| 1998 | 290 | 993 | 275 | 113 | 388 | 1.34 | 2.56 |
| 1999 | 311 | 1482 | 226 | 136 | 362 | 1.16 | 4.09 |
| 2000 | 360 | 1345 | 363 | 72 | 435 | 1.21 | 3.09 |
| 2001 | 244 | 1067 | 219 | 82 | 301 | 1.23 | 3.54 |
| 2002 | 383 | 1475 | 300 | 77 | 378 | 0.99 | 3.90 |
| 2003 | 331 | 1318 | 435 | 135 | 570 | 1.72 | 2.31 |
| 2004 | 303 | 1095 | 333 | 118 | 451 | 1.49 | 2.43 |
| 2005 | 293 | 1106 | 309 | 115 | 424 | 1.45 | 2.61 |
| 2006 | 326 | 1372 | 386 | 93 | 479 | 1.47 | 2.86 |
| 2007 | 155 | 641 | 39 | 5 | 44 | 0.28 | 14.57 |
| 2008 | 202 | 823 | 125 | 0 | 125 | 0.62 | 6.58 |
| 2009 | 92 | 416 | 57 | 0 | 57 | 0.62 | 7.30 |
| 2010 | 188 | 805 | 157 | 0 | 157 | 0.84 | 5.13 |
| 2011 | 157 | 843 | 172 | 11 | 183 | 1.17 | 4.58 |
| 2012 | 262 | 1142 | 218 | 14 | 232 | 0.89 | 4.92 |
| 2013 | 249 | 1048 | 212 | 75 | 287 | 1.15 | 3.65 |
| 2014 | 293 | 1310 | 248 | 77 | 325 | 1.11 | 4.03 |
| 2015 | 320 | 1405 | 313 | 114 | 427 | 1.33 | 3.29 |
| 2016 | 331 | 1339 | 327 | 100 | 427 | 1.29 | 3.14 |
| 2017 | 337 | 1334 | 274 | 126 | 400 | 1.19 | 3.34 |
| 2018 | 323 | 1270 | 305 | 61 | 366 | 1.13 | 3.47 |
| 2019 | 269 | 995 | 231 | 68 | 299 | 1.11 | 3.33 |
| 2020 | 275 | 1005 | 243 | 121 | 364 | 1.32 | 2.76 |
| 2021 | 257 | 1014 | 246 | 85 | 331 | 1.29 | 3.06 |