Species Management Report and Plan ADF&G/DWC/SMR&P–2022–29

Deer Management Report and Plan, Game Management Unit 5:

Report Period 1 July 2016–30 June 2021, and

Plan Period 1 July 2021–30 June 2026

Roy T. Churchwell

2022

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Species management reports and plans provide information about species that are hunted or trapped and management actions, goals, recommendations for those species, and plans for data collection. Detailed information is prepared for each species every 5 years by the area management biologist for game management units in their areas, who also develops a plan for data collection and species management for the next 5 years. This type of report is not produced for species that are not managed for hunting or trapping or for areas where there is no current or anticipated activity. Unit reports are reviewed and approved for publication by regional management coordinators and are available to the public via the Alaska Department of Fish and Game's public website.

This species management report and plan was reviewed and approved for publication by Richard Nelson, Management Coordinator for Region I for the Division of Wildlife Conservation.

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Please contact the authors or the Division of Wildlife Conservation at (907) 465-4190 if you have questions about the content of this report.

Cover Photo: ©2021 ADF&G. Photo by Riley Woodford. Sitka black-tailed deer doe and fawn passing a trail camera in Southeast Alaska.

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Purpose of this Report

This report provides a record of survey and inventory management activities for Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) in Game Management Unit 5 for the 5 regulatory years 2016–2020 and plans for survey and inventory management activities in the next 5 regulatory years, 2021–2025. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY14 = 1 July 2014–30 June 2015). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report more efficiently on trends and to describe potential changes in data collection activities over the next 5 years. It replaces the deer management report of survey and inventory activities that was previously produced every 2 years.

I. RY16–RY20 Management Report

Management Area

The Unit 5 management area is 5,800 mi^2 and includes the mainland Gulf of Alaska coast from Cape Fairweather to Icy Bay and inland to the Canadian border (Fig. 1). Unit 5 is further subdivided into 2 administrative units: 5A and 5B. Unit 5A covers Cape Fairweather to Yakutat Bay. Unit 5B covers Yakutat Bay to Icy Bay and is remote and mostly accessed by aircraft or boat. Deer only occur in Unit 5A. Yakutat is the only municipality in Unit 5 (population 579; U.S. Census Bureau 2020), and the major economic drivers are fishing, logging, and jobs with tribal, municipal, state, and federal governments. Nearly all of Unit 5A is within the Tongass National Forest, Glacier Bay National Park, or the Glacier Bay National Preserve. The park was established in 1925. Almost all of Unit 5B is within Wrangell–St. Elias National Park and Preserve, which was designated as a provision of the Alaska National Interest Lands Conservation Act (ANILCA) legislation in 1980.

Much of the Unit 5 mainland is comprised of glaciers, but between the icefields and the coast are rocky cliffs, upland alpine areas, and steep coniferous forest slopes that drop down to the Yakutat Forelands. Deer are mostly found on islands near the coastline and on the forelands where they inhabit old-growth forests, especially in winter when the large trees protect them from heavy snow, and the snow depth is less allowing access to winter forage shrubs. Unit 5 has a subarctic climate with temperate rainforests. Average daily high temperatures range from 36°F in January to 57°F in August (NOAA 2017). Yakutat is considered one of the wettest towns in the state, recording an average annual precipitation of 130 inches, including 150 inches of snow that falls between November and April (NOAA 2017).

Summary of Status, Trend, Management Activities, and History of Deer in Unit 5

Deer were introduced to the Yakutat Bay islands in 1934, when 7 does and 5 bucks were released (Paul 2009). These animals established a small population that persists on islands and along the

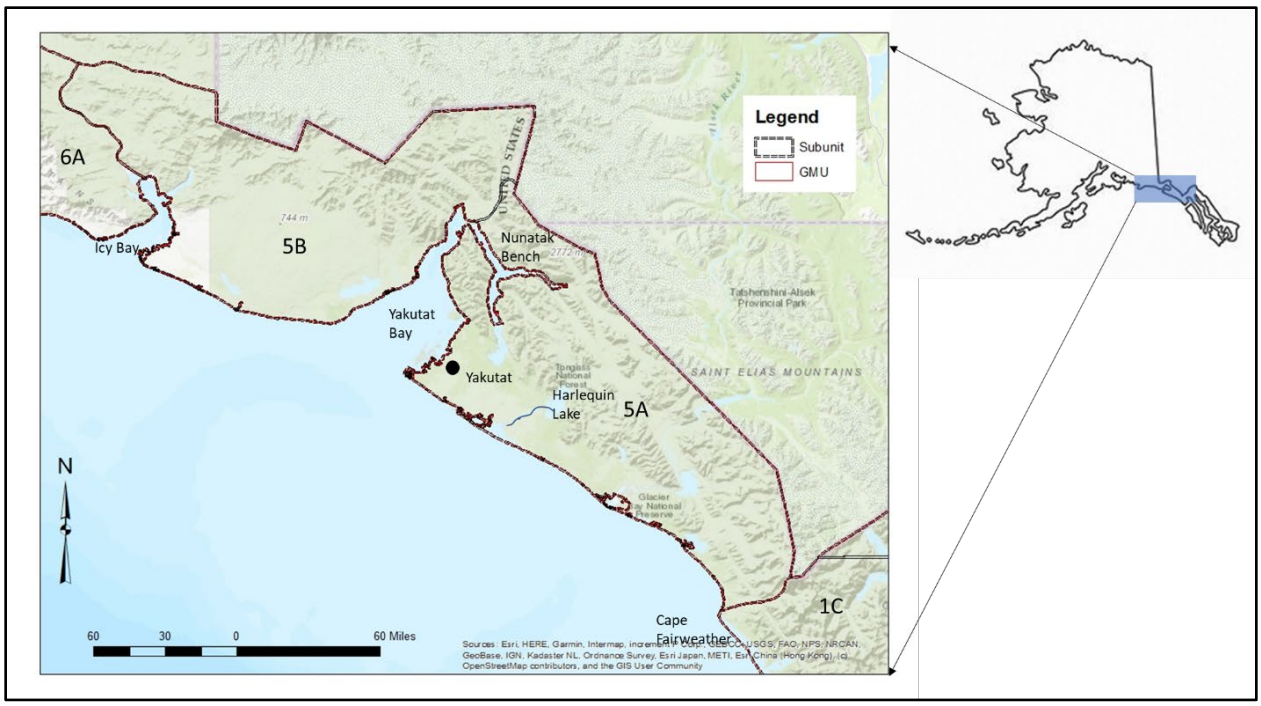

Figure 1. Map of Game Management Unit (GMU) 5, Southeast Alaska.

eastern mainland of Yakutat Bay. Heavy snowfall and predators limit deer densities, but the population has supported small harvests over the years. Most deer are taken incidentally. There is little potential for this herd to increase because of the extreme climatic conditions and limited habitat in Unit 5.

Due to deer declines in the 1970s and a virtual cessation of harvest, the Unit 5 season was closed in July 1980. By the end of the 1980s, deer had recovered to some degree, and public requests for an open season began coming before the Board of Game (BOG). In 1991 the BOG instituted a limited hunt in Unit 5A, with a 1-month bucks-only season. Since then, small numbers of deer have been taken in most years, including some reports of illegal harvest.

ADF&G began conducting hunter surveys in 1970 and continued annually through 2010. Those surveys evolved from telephone contacts of a few hunters to a mail-out survey of a random list of hunters (approximately 33%) beginning in 1980. The survey was designed to collect information on hunter effort, hunt location, hunt timing, number of days hunted, transportation used, and the number of deer harvested. In 2011 the department switched from a mail-out survey to a harvest ticket report that all hunters are required to turn in. Survey results for hunter effort, success, and kill location were expanded to estimate results for all harvest ticket holders. Pellet-group counts (Kirchhoff and Pitcher 1988) began in Unit 5A in 1984 and have been conducted primarily on the Yakutat islands and Knight Island with the help of the U.S. Forest Service (USFS; Table 1).

Table 1. Unit 5A, Alaska deer population trends as indicated by pellet-group surveys, regulatory years 1990–2013.

Area	Regulatory year	Mean pellet-groups/plot	Number of plots	95% CI
Knight Island (VCU 361)	1990	0.81	100	0.61–1.01
	1991	0.95	100	0.74–1.16
	1993	0.44	90	0.25–0.64
	1995	0.00	153	0.00–0.00
	1996	0.03	192	0.01–0.05
	2002	0.22	117	–
Humpback (VCU 363)	1990	0.01	118	0.00–0.03
Yakutat Islands (VCU 368)	1990	0.32	415	0.24–0.39
	1991	0.48	243	0.37–0.58
	1992	1.07	106	0.81–1.32
	1993	0.66	251	0.52–0.80
	1995	0.59	379	0.48–0.69
	1996	0.59	344	0.48–0.70
	1999	0.90	145	0.85–0.95
	2001	0.66	200	–
	2002	0.58	325	–
	2003	0.86	274	–
	2007	1.97	421	1.76–2.18
	2013	1.30	355	1.14–1.46
Ankau (VCU 369)	1990	0.03	116	0.00–0.05

Note: VCUs are the U.S. Forest Service (USFS) timber management units and are roughly equivalent to a watershed. Endashes indicate data unavailable.

Winter severity, primarily deep and persistent snow, predation, and habitat and resource competition with moose appear to limit deer populations in Unit 5. Deer densities remain relatively low; however, anecdotal information and staff observations during RY16–RY20 suggest that deer were much more abundant than ever before and had expanded their range as far inland as the Dangerous River. In recent years, deer are routinely seen along the road system near the community of Yakutat and the areas adjacent to Highway 10. Very mild winters from 2000–2005 allowed deer populations across the region to do very well; however, the winters of 2006–2007 and 2007–2008 were severe with record snowfalls recorded in Yakutat (Fig. 2). The snowpack restricted deer movements and led to a substantial deer die off across the region.

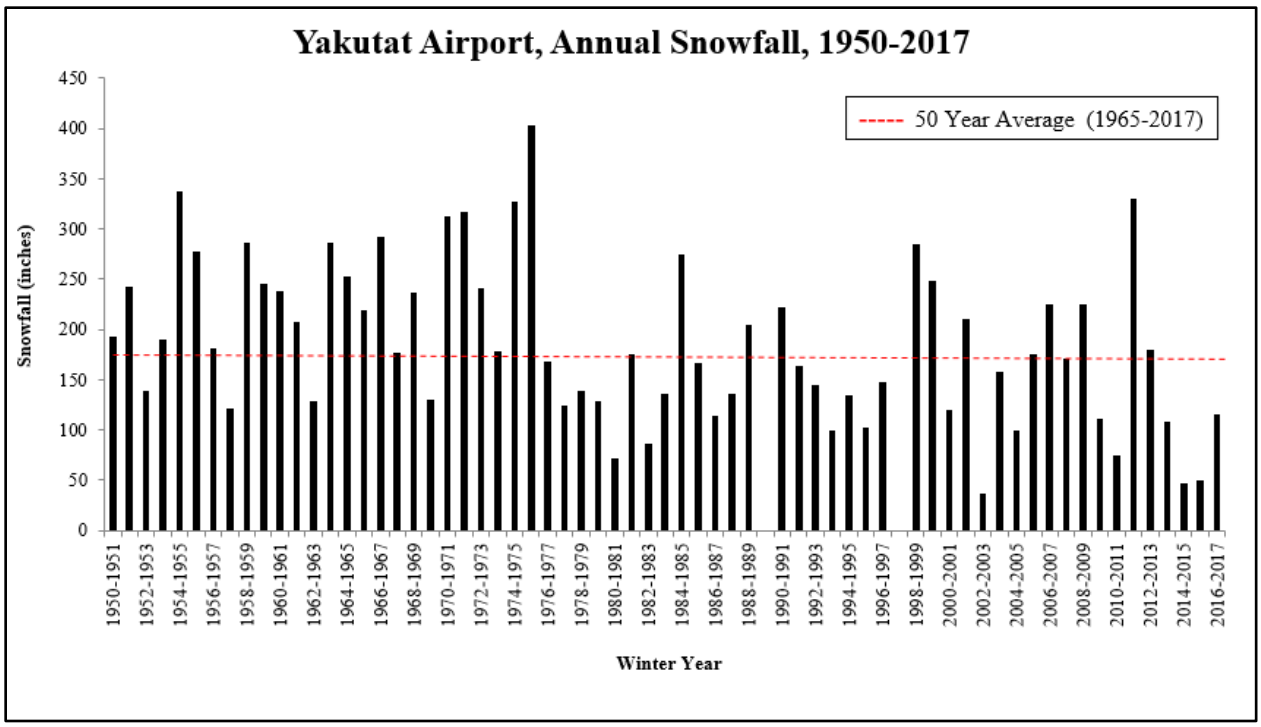

Figure 2. Annual winter snowfall measured at the Yakutat, Alaska airport, 1950–2016. The 50-year average snowfall (185.7 inches) is represented as a red horizontal dashed line (NOAA 2017). No snow data are available beyond the winter of 2016-2017.

During the 2012 Board of Game meeting a proposal passed that opened a youth-only deer hunt in Unit 5A which starts 2 weeks before the regular season. Youth hunters must successfully complete a department-approved hunter education course and be accompanied by a licensed resident adult at least 21 years of age or older. The board also modified the amounts reasonably necessary for subsistence uses for deer in Unit 5 to a range of 20–40 based on the mean and standard deviation of harvest by all Alaska residents from 2008–2012.

Management Direction

Existing Wildlife Management Plans

Region I developed a wildlife management plan in 1976 (ADFG 1976) which included objectives and management strategies for deer populations throughout the region. That plan was never formally updated; however, a strategic plan for management of deer population objectives was developed to guide management through RY89 (ADF&G 1991), but this plan only addressed Units 1–4.

Goals

Although the overall goals of the original plans are important, the management objectives and harvest management strategies have changed since the plan was written based on public comment, staff recommendations, and Board of Game actions. These periodic changes in

management planning have been reported in the division's previous species management reports. The plan portion of this report contains the current management plan for deer in Unit 5.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Board of Game has made a positive finding for customary and traditional use of deer in Game Management Unit 5 and set 20–40 deer as the amounts reasonably necessary for subsistence (ANS; 5AAC 99.025(a)(5)). The unitwide ANS has not been met since 2016.

Intensive Management

There is a negative intensive management finding (5 AAC 92.108) for deer in Unit 5 (AS 16.05.255(i)(4)).

MANAGEMENT OBJECTIVES

Maintain a population capable of sustaining a 1-month season and a bag limit of 1 buck.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Traditional deer pellet-group surveys.

Data Needs

Formal population estimates are not available for Unit 5 deer. Population information is needed to determine if management objectives are being met. Deer pellet-group surveys have been the primary method used by ADF&G to provide an index of general population trends.

Methods

Deer pellet-group surveys were conducted annually along traditional straight-line transects (Kirchhoff and Pitcher 1988) on several islands in Yakutat Bay: Krutoi, Kriwoi, Khantaak, and Dolgoi. Most transects surveyed were previously established in old-growth forest because of its importance as winter habitat for deer (Schoen and Kirchhoff 1990).

Results and Discussion

Deer pellet-group surveys and harvest data are the only mechanisms currently used to monitor general trends in the Unit 5A deer population (McCoy 2017). The last pellet-group survey conducted in Unit 5 was on the Yakutat islands in 2013. At that time, pellet densities on the Yakutat islands were slightly lower than the last survey in 2007. However, the department does not feel this is an indication of a decline in the deer population because the public are reporting an increase in deer sightings. During the 2013 survey, department staff noticed heavy browsing on blueberry plants and moose pellets and tracks in some areas. This suggests that there may be some level of competition occurring on the island between these 2 ungulate species.

Pellet-group surveys have biases and limitations as quantitative measures of deer abundance and were not originally designed to detect finer-scale (≤30%) changes in deer abundance (Karin McCoy, Wildlife Research Biologist, ADF&G, personal communication). Deer pellet-group surveys allow biologists to get in the field and assess browse intensity, habitat condition, and investigate over-winter mortality to a degree. However, ADF&G management biologists have discontinued the use of pellet-group surveys because of their limitations and are experimenting with motion cameras to develop new monitoring methods. Mild winters during RY16–RY20 allowed for more mobility of deer due to the absence of snow no longer restricting their movements (Fig. 2).

Recommendations for Activity 1.1

Discontinue. Pellet-group transects are the most common method used to monitor deer population trends in specific watersheds throughout the unit and region. They are intended to document large changes (>30%) in deer density. The data also permit general comparisons of deer abundance among areas and years (McCoy 2017). Because winter severity can influence the results of pellet-group surveys, inferences about population trends based on year-to-year variations in observed pellet-group densities must be made with caution (Lowell 2013). Managers have expressed that deer pellet-group surveys provide little useful management information about deer numbers or distribution, and Region I management biologists are currently exploring other methods to replace pellet counts.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Analyze deer harvest data from mandatory deer hunt reports.

Data Needs

Hunt report data are required to determine if harvest objectives are being met. They provide information about the number of participants in the hunt, hunter effort and success, location of hunt and harvest, and modes of transport. Information collected about harvest trends can be indicative of population fluctuations.

Methods

Hunters in Unit 5A are required to obtain a general-season harvest ticket before entering the field. Each harvest ticket requires the hunter's demographic information and their hunting license number. Harvest tickets also include a series of punch tickets that hunters must validate upon successful harvest of a deer. Harvest tickets also contain a mail-in hunt report card which can also be completed online at www.hunt.alaska.gov for each trip they participate in, regardless of success.

Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY16 = 1 July 2016–30 June 2017). Since 2011, deer harvest data have been derived from mandatory hunt report cards issued in conjunction with deer harvest tickets rather than by polling a random sample of hunters from each community. All deer hunters are now expected to report their hunting activities. Nonetheless, not all hunters submit the required hunt report. Therefore, to obtain total harvest estimates, the reported harvest must still be multiplied by an expansion factor to account for nonrespondents.

Once hunt reports have been submitted, reported hunt and harvest locations are coded for data entry. Hunters often provide vague hunt or harvest locations; in which case an attempt is made to contact them for more precise location data. A cutoff date of 15 June has been established for receipt of hunt reports. Any hunt reports not submitted or received by 15 June are excluded from analysis. Once all hunt and harvest locations have been coded and data entry is complete, the results are analyzed and summaries of total harvest, hunter residency and success, harvest chronology, and transportation methods are derived for each unit.

Season and Bag Limit

Area	Season	Resident and nonresident hunters
Unit 5A (*youth hunt only*)	15 October–31 October	1 antlered deer
Unit 5A	1 November–30 November	1 antlered deer
Unit 5B	No open season	

Results and Discussion

Harvest by Hunters-Trappers

The average annual harvest in Unit 5A during this reporting period (RY16–RY20) was 17 deer (Table 2). The majority of deer were harvested within Yakutat Bay (Khantaak and Knight islands). The average number of days hunters took to harvest a deer during the reporting period varied between 10.1–13.6 days per deer with an average of 11.5 days per deer (Table 3). Deer harvest was highest in RY16 with 21 animals but was followed by the lowest harvest in RY17 of 13 animals. This is probably in part due to a decline in the number of hunters. Following that low RY17 harvest, the RY18–RY20 harvest was very similar at 15 to 18 animals each year, reflecting mild winters in the Yakutat area during this reporting period. Mild winters have allowed for deer to rebound and deer sightings in town suggest that populations have recovered and may be expanding.

Table 2. Unit 5A, Alaska annual deer harvest, regulatory years 2011–2020.

Regulatory year	Males	Females	Estimated total
2011	51	0	51
2012	19	0	19
2013	15	0	15
2014	17	0	17
2015	13	0	13
2016	21	0	21
2017	13	0	13
2018	15	0	15
2019	17	0	17
2020	18	0	18

Table 3. Unit 5A, Alaska hunter effort and success, regulatory years 2011–2020.

Regulatory year	Number of hunters	Number of days hunted	Number of deer killed	Number of deer/hunter	Number of days/deer
2011	90	322	51	0.6	6.3
2012	69	254	19	0.3	13.4
2013	61	215	15	0.2	14.3
2014	75	242	17	0.2	14.2
2015	64	234	13	0.2	18.1
2016	65	235	21	0.3	11.3
2017	45	182	13	0.3	13.6
2018	47	170	15	0.3	11.1
2019	60	193	17	0.3	11.2
2020	50	185	18	0.4	10.1

Hunter Residency and Success

The overall success rate for all Unit 5A deer hunters combined averaged 31% during this report period (RY16–RY20). As is generally the case, local residents of Unit 5A represented the largest group of both successful and unsuccessful hunters, accounting for 90% of the hunters. During this report period the overall success rate for local residents (residents of Unit 5A) was 32%, nonlocal Alaska residents was 30%; and nonresidents was 38% (Table 4).

Transport Methods

Deer are often taken from small offshore islands and boats are typically the primary means of transportation, but use of highway vehicles on the mainland was more common in Unit 5A during RY16–RY20. During this period, hunters reported using boats (42%), highway vehicles (47%), walking (4%), and all-terrain vehicles (4%) to access deer hunting areas (Table 5). Hunters are often confused regarding which mode of transportation to submit on a hunt report. This confusion comes from using various modes of transportation prior to setting out on foot in search of deer (e.g., towing a boat to harbor with highway vehicle).

Other Mortality

Winter mortality is suspected to have been minimal due to the mild winters during RY16–RY20. Although brown bears, black bears, and wolves are also present in Unit 5A, the extent of deer mortality by predation has not been investigated. Illegal harvest of deer most likely occurs in Unit 5A, but we do not know how prevalent it is. We do not have estimates of nonhunting mortality during RY16–RY20.

Alaska Board of Game Actions and Emergency Orders

There were no Board of Game or emergency order actions during RY16–RY20.

Recommendations for Activity 2.1

Continue to monitor total harvest for comparison with management objectives.

Table 4. Deer hunter residency and success, Unit 5A, Alaska, regulatory years 2011–2020.

	Successful						Unsuccessful						
Regulatory year	Local resident	Nonlocal resident	Nonresident	Unk	Total	(%)	Local resident	Nonlocal resident	Nonresident	Unk	Total	(%)	Total hunters
2011	50	2	0	0	52	(58)	30	7	0	0	37	(42)	89
2012	19	0	0	0	19	(28)	49	1	0	0	50	(72)	69
2013	14	1	0	0	15	(25)	43	1	2	0	46	(75)	61
2014	17	0	0	0	17	(33)	52	3	2	0	57	(78)	73
2015	11	0	2	0	13	(20)	50	1	0	0	51	(80)	64
2016	20	2	0	0	22	(34)	40	3	0	0	43	(66)	65
2017	13	0	0	0	13	(29)	30	1	1	0	32	(71)	45
2018	14	1	0	0	15	(32)	27	4	1	0	32	(68)	47
2019	14	3	0	0	17	(28)	35	5	3	0	43	(72)	60
2020	16	0	3	0	19	(38)	30	1	0	0	31	(62)	50

Table 5. Percent deer hunters by transport method, Unit 5A, Alaska, regulatory years 2011–2020.

Regulatory year	Airplane	Boat	All-terrain vehicle	Foot	Highway vehicle	Other	Unknown
2011	0	72	3	7	8	2	8
2012	2	54	6	10	23	0	5
2013	5	65	5	0	16	0	9
2014	0	56	2	2	34	0	6
2015	2	58	3	3	26	0	8
2016	0	37	8	0	50	0	5
2017	0	47	3	3	47	0	0
2018	3	29	5	8	49	0	6
2019	0	36	0	5	56	0	3
2020	0	59	6	2	33	0	0

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Conduct annual browse surveys.

Data Needs

Winter habitat, in the form of low-elevation, high-volume, old-growth forests, is the most important habitat factor for deer in the region. Deer habitat capability models were developed to estimate the capability of habitats in Southeast Alaska to support populations of Sitka black-tailed deer (Suring et al. 1992); however, Unit 5 was not included. Extensive old-growth logging is occurring on Native corporation lands that make up the bulk of deer habitat in the Yakutat area.

Methods

The model for other Southeast Alaska regions provides an evaluation of habitat quality which is assumed to be related to long-term carrying capacity. The model only used winter range because winter is assumed to be the most limiting season for Sitka black-tailed deer (Hanley and McKendrick 1985). Suring et al. (1992) determined that under low-snow, intermediate-snow, and deep-snow situations, deer carrying capacity is assumed to be 125 deer per mi^2 (0.5 deer per ha), 100 deer per mi^2 (0.4 deer per ha), and 50 deer per mi^2 (0.2 deer per ha), respectively for habitats with the highest coefficients.

Results and Discussion

No habitat assessment or habitat enhancement has occurred in Unit 5A since the model was developed.

Recommendations for Activity 3.1

We recommend modifying this activity to a habitat capability assessment. In addition, monitoring would be best completed both in Region I as a whole, and also specifically Unit 5A, to better determine deer population estimates and harvest objectives within each unit.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

None.

Data Recording and Archiving

All records and data analysis related to deer pellet-group transects, harvest tickets, and hunter reports are archived on network servers located in the ADF&G Region I office in Douglas.

Agreements

None during RY16–RY20.

Permitting

No permits were needed to conduct deer management activities in Unit 5 during RY16–RY20.

Conclusions and Management Recommendations

Pellet surveys were last conducted on the Yakutat Islands of Krutoi, Kriwoi, Khantaak, and Dolgoi during RY13. Deer pellet indices were relatively high at that time, and since then the deer population seems to have expanded and sightings have become more common.

While pellet-group surveys have historically been used to monitor deer population trends in specific watersheds throughout the region, they are only useful for documenting large changes (≥30%) in deer density the year after changes in deer numbers have occurred, and only allow general comparisons of deer numbers from area to area in Southeast Alaska. The technique is generally considered of limited use for assessing small, short-term changes in deer density, and management biologists are exploring other methods of monitoring deer populations with motion cameras.

An average of 17 deer were harvested annually during this reporting period (RY16–RY20). Deer populations in Unit 5A are largely driven by winter severity and less so by predation and competition with moose.

II. Project Review and RY21–RY25 Plan

Review of Management Direction

Management Direction

Region I developed a wildlife management plan in 1976 (ADFG 1976) which included objectives and management strategies for deer populations throughout the region; however, that plan was never formally updated. A strategic plan for management of deer population objectives was developed to guide management through RY89 (ADF&G 1991) but this plan only addressed Units 1–4.

Goals

Although the overall goals of the original plans are important, the management objectives and harvest management strategies have changed since the plan was written based on public comment, staff recommendations, and Board of Game actions. These periodic changes in management planning have been reported in the division's previous species management reports. This is the current management plan for deer in Unit 5.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

The Board of Game has made a positive finding for customary and traditional use of deer in Game Management Unit 5 and set 20–40 deer as the amount necessary for subsistence (ANS; 5AAC 99.025(a)(5)). The unitwide ANS has not been met since 2016.

Intensive Management

There is a negative intensive management finding (5 AAC 92.108) for deer in Unit 5 (AS 16.05.255(i)(4)).

MANAGEMENT OBJECTIVES

Maintain a population capable of sustaining a 1-month season and a bag limit of 1 buck.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Motion sensor camera methods.

Data Needs

Traditional pellet-count methods did not provide the level of accuracy needed, and other methods are showing promise at a reasonable cost and time commitment for deer management. Using motion-sensor cameras and unmarked animal analysis methods, such as time-to-event and time-in-front-of-the-camera methods, will be investigated during RY21–RY25.

Methods

The exploration of motion-activated cameras is being conducted at other locations. If these methods are productive, then they will likely be used across Region I, including Unit 5A, to monitor deer.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Analyze deer harvest data from mandatory deer hunt reports

Data Needs

Hunt-report data are required to determine if harvest objectives are being met. They provide information about the number of participants in the hunt, hunter effort and success, location of hunt and harvest, and modes of transport. Information collected about harvest trends can be indicative of population fluctuations and help determine future management decisions.

Methods

Hunters in Unit 5A are required to obtain a general-season harvest ticket before entering the field. Each harvest ticket requires the hunter's demographic information and their hunting license number. Harvest tickets also include a series of punch tickets that hunters must validate upon successful harvest of a deer. Harvest tickets also contain a mail-in hunt report card which can also be completed online at www.hunt.alaska.gov for each trip they participate in, regardless of success.

Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY21 = 1 July 2021–30 June 2022). Since 2011, deer harvest data have been derived from

mandatory hunt report cards issued in conjunction with deer harvest tickets. All deer hunters are expected to report their hunting activities. Nonetheless, not all hunters submit the required hunt report. Therefore, to obtain total harvest estimates the reported harvest will be multiplied by an expansion factor to account for nonrespondents.

Once hunt reports have been submitted, reported hunt and harvest locations are coded for data entry. Hunters often provide vague hunt or harvest locations; in which case an attempt will be made to contact them for more precise location data. A cutoff date of 15 June has been established for receipt of hunt reports. Any hunt reports not submitted or received by 15 June will be excluded from analysis. Once all hunt and harvest locations have been coded and data entry is complete, the results will be analyzed and summaries of total harvest, hunter residency and success, harvest chronology, and transportation methods will be derived for each unit.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Use geographic information system (GIS) technology to assess current deer habitat capability (DHC) in Unit 5A to better determine population estimates. This activity has been modified for RY21–RY25.

Data Needs

There are currently no population or harvest objectives for Unit 5A deer. Given that deer are introduced in this unit and offer a limited harvest opportunity, more specific objectives should be developed by assessing DHC.

Furthermore, extensive old-growth logging is occurring on Native corporation lands that make up the bulk of deer habitat in the Yakutat area. With continued logging, there will be a point where these cuts will negatively impact the area deer population.

Methods

A landscape analysis for the current deer habitat capability should be conducted using GIS technology and USFS's Forage Resource Evaluation System for Habitat—Deer, or FRESH model (Hanley et al. 2012).

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

None.

Data Recording and Archiving

All records and data analysis related to deer pellet-group transects, harvest tickets, and hunter reports are archived on network servers located in the ADF&G Region I office in Douglas.

Agreements

None during this reporting period.

Permitting

No permits were needed to conduct deer management activities in Unit 5 during RY16–RY20.

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