Species Management Report and Plan ADF&G/DWC/SMR&P–2023–10

Deer Management Report and Plan, Game Management Unit 1A:

Report Period 1 July 2016–30 June 2021, and

Plan Period 1 July 2021–30 June 2026

Ross Dorendorf

2023

Alaska Department of Fish and Game Division of Wildlife Conservation

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PREPARED BY:

Ross Dorendorf
Area Wildlife Biologist

APPROVED BY:

Richard Nelson
Management Coordinator

PUBLISHED BY:

Susan Erben
Technical Reports Editor

Alaska Department of Fish and Game
Division of Wildlife Conservation
PO Box 115526
Juneau, AK 99811-5526

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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.

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org). To subscribe to email announcements regarding new technical publications from the Alaska Department of Fish and Game, Division of Wildlife Conservation please use the following link: http://list.state.ak.us/mailman/listinfo/adfgwildlifereport.

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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: A Sitka black-tailed deer doe passes a trail camera in coastal grasses in Southeast Alaska. ©2020 ADF&G

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Purpose of this Report

This report provides a record of survey and inventory management activities for deer (*Odocoileus hemionus sitkensis*) in Game Management Unit (Unit) 1A for the 5 regulatory years 2016–2021 and plans for survey and inventory management activities in the next 5 regulatory years, 2021–2026. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY16 = 1 July 2016–30 June 2017). 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

Unit 1A encompasses 5,252 mi^2 of the southern mainland and adjacent islands south of Lemesurier Point, including all drainages into Behm Canal, excluding all drainages into Ernest Sound, and bounded to the east and south by the Canadian border. The unit is bounded to the west by Clarence Straight. Larger islands included in the unit are Revillagigedo, Annette, and Gravina (Fig. 1). The Ketchikan Gateway Borough has an estimated population of 13,754 (U.S. Census Bureau 2021). Smaller outlying communities include Metlakatla (estimated population of 1,375), Hyder (est. pop. 87), and Meyers Chuck (est. pop. 25). Mean temperatures range from a low of 30°F (−1°C) in January to a high of 64°F (18°C) in August with 141 inches (358 cm) of rain annually (U.S. Climate Data 2019). The dominant habitat type in Unit 1A below 2,000 feet (600 m) elevation is temperate rainforest consisting of Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), red cedar (*Thuja plicata)*, and Alaska yellow cedar (*Chamaecyparis nootkatensis*). Other lower elevation habitats include muskegs, stands of red alder (*Alnus rubra*), and black cottonwood (*Populus balsamifera trichocarpa*) along major rivers and riparian areas. Old-growth forests are interspersed with a patchwork of even-aged forest stands at different successional stages resulting from extensive clearcut logging and a few natural windthrow events. Mainland areas above 2,000 feet elevation are predominately rock, ice, and open alpine.

Most land in Unit 1A is administered by the U.S. Forest Service (USFS), including the 2.3 million-acre Misty Fjords National Monument. This monument is the largest wilderness area in Alaska's national forests and the second largest in the nation. There are also private, state, and Alaska Native lands in Unit 1A.

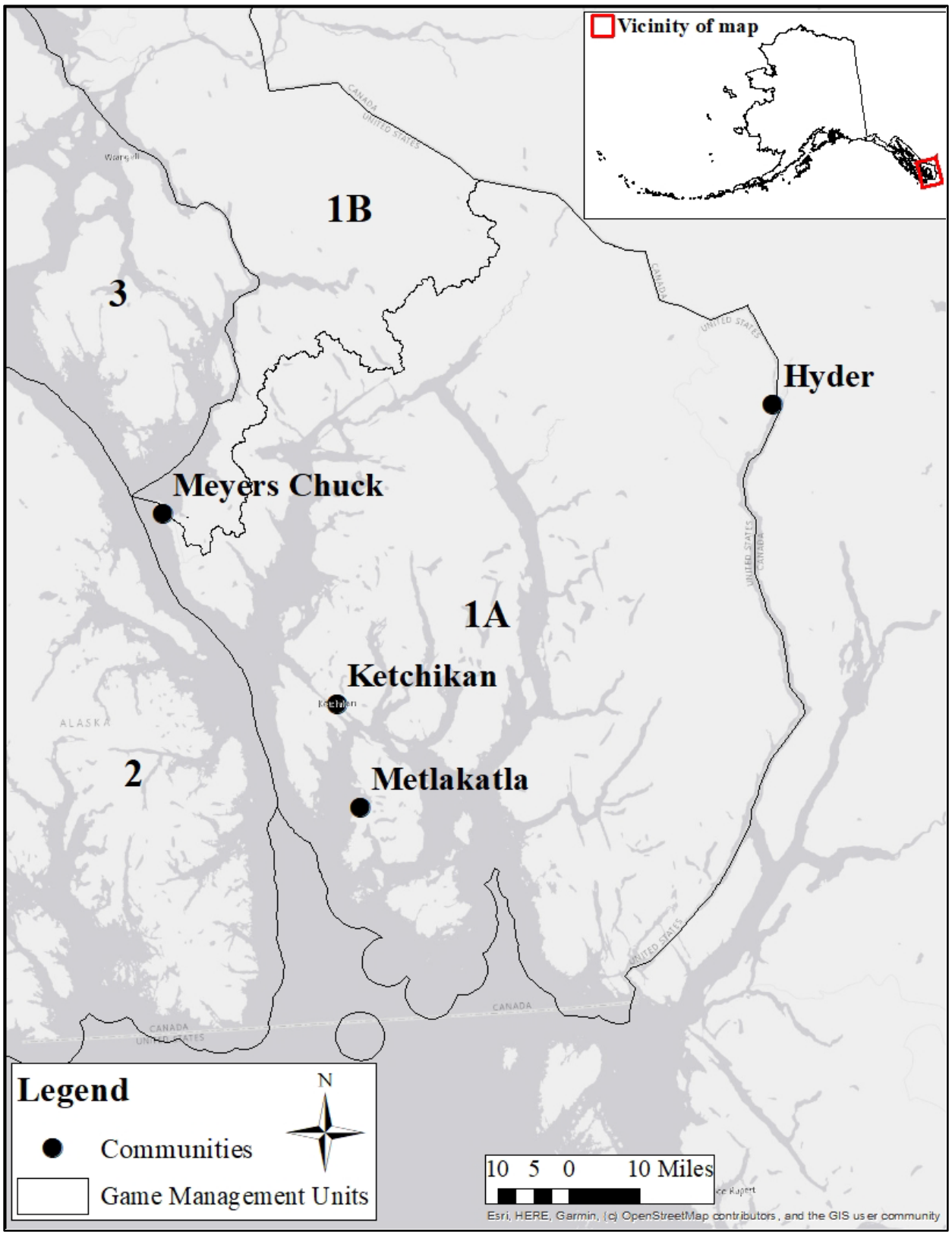

Figure 1. Map of Game Management Unit (GMU) 1A boundaries, Southeast Alaska.

Summary of Status, Trend, Management Activities, and History of Deer in Unit 1A

Sitka black-tailed deer (*Odocoileus hemionus sitkensis*), hereafter referred to as deer, are distributed throughout Unit 1A. Abundance is higher on islands, decreases on the mainland, and continues to decrease traveling further inland. A combination of less suitable habitat and increased winter severity reduces the carrying capacity of deer on the mainland in Unit 1A. Winter severity is the most important factor determining carrying capacity and distribution of deer in Southeast Alaska (Porter 2015; Gilbert et al. 2017).

Since 2013, Southeast Alaska has experienced a series of mild winters that allowed deer abundance to increase. Deer abundance has fluctuated through time as evidenced by variable harvest in Unit 1A from a high of 914 in 1995, to a low of 75 in 2008 (Porter 2011)[1]. Recent harvest indicates that the population is high. The department formerly used pellet counts to determine abundance along with harvest. However, drawing conclusions from pellet transect data was difficult because a large change in deer abundance (approximately ±30%) was needed before a change could be detected. The department has discontinued pellet surveys in Unit 1A and now relies on harvest to indicate trend in abundance.

The DWC tracked harvest using harvest tickets to inform management decisions and provide information to the Board of Game (BOG). Hunters used harvest tickets to record their success and report harvest at the end of the season through a required hunting report. This data provided the department with harvest statistics for deer management. During the 2008 BOG meeting, regulations changed in Unit 1A that resulted in a bag limit of up to 4 bucks throughout Unit 1A, except for the area south of the divide between Santa Anna Inlet and Yes Bay on the Cleveland Peninsula, which had a 2-buck bag limit (5 AAC 85.030). The reduction in bag limit on the Cleveland Peninsula was related to the low abundance estimate measured by pellet transects along with low harvest recorded by hunters (Porter 2011).

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

The Strategic Plan for Management of Deer in Southeast Alaska, 1991–1995, Population Objectives (ADF&G 1991) is the most recent deer management plan for Unit 1A. This plan breaks out management of Unit 1A into 6 major areas with one or more Wildlife Analysis Areas (WAAs) per management area. Major areas analyzed in the plan include Misty Fjords National Monument, lower Cleveland Peninsula, northern Revillagigedo Island, southern Revillagigedo Island, Duke Island, and Gravina Island. Department records for Annette Island are incomplete because the island is managed by the Metlakatla Indian Community (MIC) under its sovereign rights, and MIC has its own wildlife management program. The plan breaks down harvest, hunters, and effort in a similar way to this species management report and plan. Population objectives are stated for future management based on deer habitat capability, historic hunting

[1] Alaska Department of Fish and Game. Region I deer harvest reports: Deer harvest database of hunter survey results, 1995–2008, Wildlife Information Network (WinfoNet) [unpublished internal database]. Division of Wildlife Conservation, Anchorage. (Accessed 12 December 2021).

pressure, and harvest. Codified management objectives were created by the BOG as listed below. Under the Alaska Wildlife Management Plan: Southeastern Alaska (ADF&G 1976), deer are to be managed to provide for the greatest opportunity for people to participate in deer hunting.

GOALS

Provide opportunity for deer hunting and viewing under the sustained yield principle using the best science available to benefit the people of Alaska and conserve deer populations.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The BOG made a positive cultural and traditional finding (5 AAC 99.025) for deer in Unit 1A. The board set the amount necessary for subsistence during its fall 2000 meeting at 5–40 deer for Unit 1A outside the Ketchikan Nonsubsistence Area.

Intensive Management

The BOG also reported a positive finding for intensive management (5 AAC 92.106) for deer in Unit 1A during its fall 2000 meeting. The Unit 1A management goal is to maintain a population of 15,000 deer while supporting an annual harvest of 700 deer.

MANAGEMENT OBJECTIVES

Maintain populations in excess of 45 deer per 1 mi^2 of winter range, as determined by mean densities of 1.4 pellet groups per plot (Kirchhoff 1990).

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor population trend in selected watersheds using deer-pellet group transects.

Data Needs

To assess general long-term trends in deer abundance. This monitoring technique allows managers to monitor large changes (±30%) in deer abundance. This information is used to understand how management, weather, predation, and other factors influence deer abundance in Unit 1A.

Methods

ADF&G and the USFS cooperate to monitor the deer population trend in Unit 1A. ADF&G conducts annual pellet-group surveys along transects (Kirchhoff and Pitcher 1988) during late April and early May at 5 different watersheds. Each location has 3–4 transects consisting of a straight line of 1 × 20-meter plots running uphill from the beach fringe following a compass

bearing. All pellet groups within 0.5 meters of either side of the transect line are counted and recorded for each 20-meter-long transect. Transects start at sea level and terminate at either 1,500 feet in elevation or 120 plots. The number of plots vary, depending on the distance from the beach to the alpine and the presence of snow during the survey. Transects are terminated if snow covers the majority of 3 or more plots in a row.

Deer pellet surveys provide a general index of population level. Kirchhoff and Pitcher (1988) recommended the following classifications: less than 1.00 mean pellet-group per plot as a low-density population, 1.00–1.99 mean pellet-groups per plot (MPGP) as a moderate-density population, and greater than or equal to 2.00 MPGP as a high-density population.

Results and Discussion

MPGPs increased across all pellet transects during the RY16–RY20 period (Table 1). The increase in mean pellet groups corresponds with increased harvest during RY16–RY20, suggesting an increase in the deer population (Table 2). Mean pellet-group counts for RY16–RY20 averaged 1.35 for a moderate population (Table 1), which is below the objective of 1.4. The Cleveland Peninsula shows a slight rise in deer abundance between RY17 and RY18 (Table 2). However, overlapping confidence intervals indicate a lack of statistical difference between the regulatory years. The COVID-19 pandemic restricted surveys in RY20 to only road-based surveys from Bostwick Road and in the Whitman Lake area. Surveys had not previously been conducted in the Whitman Lake area since 1998, so no recent data is available to determine trends in mean pellet-group counts.

Pellet-group surveys have served ADF&G as an indicator of deer abundance since the 1980s, however, new technologies may provide increased accuracy and new types of data for deer management. Pellet surveys should be discontinued due to their coarse and questionable relation to trends in deer abundance (Brinkman et al. 2013). New camera-based methods should be tested to determine their utility in the dense rainforest environment where traditional aerial surveys are not practical.

Recommendations for Activity 1.1

Discontinue conducting pellet surveys in Unit 1A.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Quantify and analyze harvest data.

Data Needs

Harvest data is necessary to track the progress toward achieving goals and objectives set forth by the BOG and to determine trends in deer abundance.

Methods

Harvest ticket reports were used to track trends in harvest over time. Hunters received 6 harvest tickets and a harvest report to provide hunt information to the department regarding their hunting activity. The questions were if they hunted or not, number of trips taken, GMU hunted in, month of the hunt, number of days hunted, number of bucks and/or does killed, method of take,

transportation that was used, and if commercial services were used for the hunt. Hunters were required to report within 15 days after reaching their bag limit or within 15 days after the close of the season. They had the option of reporting by mail, in an ADF&G office, or online through the ADF&G website (www.adfg.alaska.gov).

Table 1. Mean deer-pellet groups by surveyed watershed, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

Location	Regulatory year	Plots	MPGP[a]	95% CI[b]
Bostwick Inlet	2016	275	0.60	0.48–0.72
	2017	267	1.63	1.42–1.84
	2018	251	1.20	1.01–1.39
	2019	–	–	–
	2020	–	–	–
Bostwick Road	2016	–	–	–
	2017	–	–	–
	2018	298	1.42	1.20–1.64
	2019	151	1.68	1.38–1.99
	2020	355	1.80	1.60–2.00
Dall head	2016	–	–	–
	2017	276	1.87	1.64–2.10
	2018	285	1.63	1.39–1.87
	2019	259	2.52	2.24–2.80
	2020	–	–	–
Helm Bay	2016	–	–	
	2017	280	0.38	0.28–0.48
	2018	270	0.59	0.47–0.72
	2019	–	–	–
	2020	–	–	–
Whitman Lake	2016	–	–	–
	2017	–	–	–
	2018	–	–	–
	2019	–	–	–
	2020	270	0.87	0.67–1.08

Note: En dash indicates no survey was conducted.

[a] Mean pellet groups per plot (MPGP).

[b] Confidence interval (CI).

Season and Bag Limit

Resident and nonresident hunters

Area	Season	Bag Limit
Unit 1A Cleveland Peninsula south of the divide between Yes Bay and Santa Anna Inlet	1 August–30 November	2 bucks
Unit 1A remainder	1 August–30 November	4 bucks

Results and Discussion

Harvest by Hunters

Annual harvest of deer in Unit 1A increased during RY16–RY20, and the codified management objective of harvesting 700 deer annually (5 AAC 99.025) was met in RY19 and RY20 (Table 2, Fig. 2). The number of hunters and time spent hunting increased in RY16–RY20, and the average days needed to harvest a deer decreased during the same period, all of which explains the increased harvest. The decreasing trend in days per deer suggests that deer abundance continues to increase. (Table 2, Fig. 2).

GRAVINA ISLAND

Decreased snowfall and reduced predation likely accounts for the increased harvest of deer on Gravina Island from RY16 to RY20 (Table 2). In 2014, the BOG adopted an operational plan for intensive management in a portion of Unit 1A (ADF&G 2013). This plan included both Gravina Island and the Cleveland Peninsula (ADF&G 2013). The plan was never implemented as trappers took it upon themselves to increase trapping pressure on Gravina Island. This resulted in a decrease in the wolf population (Porter 2018). It also was likely a factor in allowing deer abundance to increase, which resulted in increased harvest.

REVILLAGIGEDO ISLAND

Harvest on Revillagigedo Island has doubled from RY16 to RY20 (Table 2). Days per deer has decreased and the number of deer harvested per hunter has increased, which indicates an increase in deer abundance (Table 2).

OTHER AREAS IN UNIT 1A

Gravina and Revillagigedo islands receive far more pressure than other areas in Unit 1A, but some hunters do pursue deer in other locations (Table 2). Hunting on the Cleveland Peninsula improved in RY16–RY20 compared to the RY11–RY15 period as the days per deer harvested decreased (Table 2; Dorendorf 2020). This may be a result of small sample size, or few hunters hunting on the Cleveland Peninsula. Yet, the trend of days per deer decreasing also corresponds with hunters' observations of seeing more deer. Other locations received minimal harvest and effort (Table 2).

Table 2. Deer harvest, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

Area	Regulatory year	Sum of hunters	Percent of successful hunters	Sum of days spent hunting	Total harvest	Average deer per hunter	Average days hunted per deer harvested
All Unit 1A	2016	673	40	2,301	419	0.6	5.5
	2017	774	45	2,726	570	0.7	4.8
	2018	851	46	2,852	647	0.8	4.4
	2019	904	57	3,122	850	0.9	3.7
	2020	995	48	3,633	855	0.9	4.2
Revillagigedo Island	2016	499	43	1,577	293	1.45	5.1
	2017	509	45	1,718	335	1.55	5.5
	2018	490	47	1,559	373	1.45	5.0
	2019	591	58	1,892	518	1.45	3.6
	2020	701	52	2,356	601	1.65	4.0
Gravina Island	2016	177	35	546	98	1.6	5.6
	2017	312	45	835	206	1.5	4.0
	2018	387	43	1,093	232	1.4	4.7
	2019	383	45	1,011	273	1.6	3.7
	2020	388	40	971	204	1.3	4.8
Cleveland Peninsula	2016	19	29	32	5	1	5.9
	2017	20	39	79	11	1.4	7.4
	2018	18	70	51	18	1.5	2.8
	2019	31	78	96	31	1.3	3.1
	2020	54	40	129	29	1.4	4.5
Other mainland	2016	15	11	49	5	3	6.6
	2017	4	50	6	2	1	3.0
	2018	11	31	26	3	1	9.6
	2019	21	42	44	12	1.1	5.4
	2020	14	21	29	5	1	5.3
Annette Island[a]	2016	15	67	89	15	1.5	6.0
	2017	9	0	17	0	–	–
	2018	4	0	15	0	–	–
	2019	9	33	31	3	1	11.0
	2020	2	0	2	0	–	–
Duke and surrounding islands	2016	–	–	–	–	–	–
	2017	6	0	11	0	–	–
	2018	9	0	15	0	–	–
	2019	5	37	6	2	1	3.5
	2020	3	0	3	0	–	–

Note: Harvest information in this table is derived from ADF&G harvest ticket data. The en dash indicates no survey was conducted.

[a] Department records for Annette Island are incomplete because the island is managed by the Metlakatla Indian Community (MIC) under its sovereign rights, and MIC has its own wildlife management program.

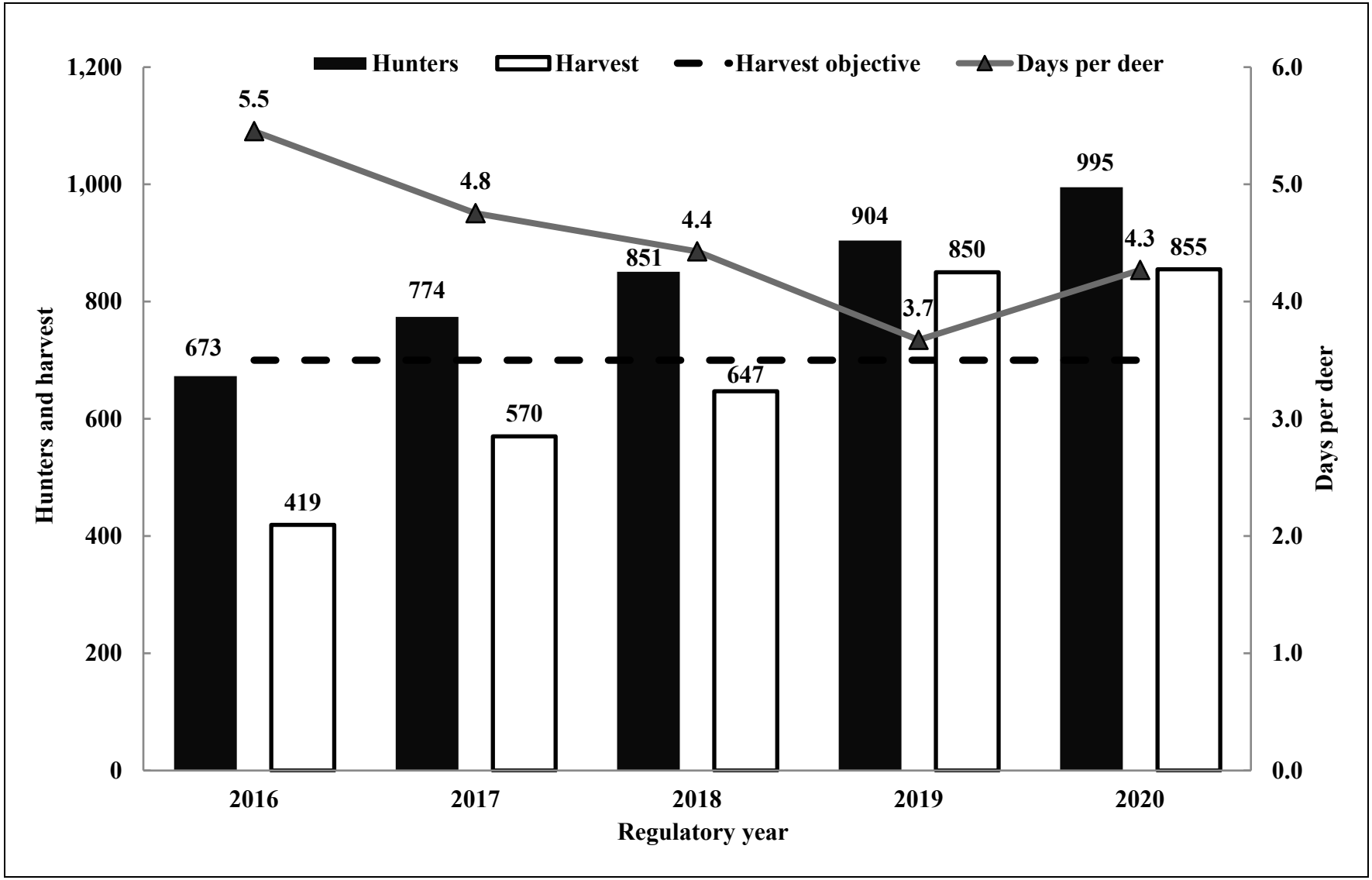

Figure 2. Deer hunter effort and success, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

Hunter Residency and Success

Local residents of Unit 1A represent the majority of hunters in the unit during the RY16–RY20 period (Table 3). Few nonlocal or nonresident hunters pursue deer in the unit. The number of successful and unsuccessful nonlocal residents and nonresidents has changed little in RY16–RY20.

Harvest Chronology

Consistent with previous reporting periods, harvest in RY16–RY20 was highest in October and November during the rut (Porter 2015, Dorendorf 2020; Table 4). August was a popular month to hunt in the alpine, while vegetation was still available before it began to senesce in September, prompting deer to move down in elevation. Harvest among months and years was relatively unchanged during RY16–RY20 (Table 4).

Transport Methods

Overall patterns of harvest by transportation method in RY16–RY20 remained similar with only a few changes compared to previous reporting periods (Porter 2015, Dorendorf 2020; Table 5). Boating and highway vehicles continued to be the preferred method for accessing deer hunting locations in Unit 1A. Timber harvests are scheduled to continue on Gravina Island and may open up new roads for hunters to access deer hunting via highway vehicle.

Other Mortality

Other types of mortality for deer include illegal harvest, car strikes, starvation, disease, and accidents. ADF&G began to record data on human-deer interactions in RY17 (Table 6). Car strikes are the most consistent and common form of other mortality that the public notifies ADF&G about. Injured and dead animals make up the other largest portion of calls received from the public. One dead deer reported to ADF&G in RY20 had a large infestation of lung worms, however, we have not detected any large-scale disease or pathogen outbreaks.

Alaska Board of Game Actions and Emergency Orders

In 2014, the BOG adopted an operational plan for intensive management of predators in a portion of Unit 1A, on Gravina Island and the Cleveland Peninsula (ADF&G 2013). That plan expired in 2018. No emergency orders were issued for deer in Unit 1A during RY16–RY20.

Recommendations for Activity 2.1

Continue monitoring harvest.

Table 3. Deer hunter residency and success, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

	Successful					Unsuccessful					
Regulatory year	Local resident[a]	Nonlocal resident	Nonresident	Total[b]	%	Local resident[a]	Nonlocal resident	Nonresident	Total[b]	%	Total hunters[b]
2016	255	4	12	271	40	354	21	25	400	60	671
2017	338	9	3	350	45	379	20	24	423	55	773
2018	374	17	7	398	47	409	24	19	452	53	850
2019	475	28	11	514	57	355	19	14	388	43	902
2020	460	14	9	484	49	476	17	14	507	51	991

[a] Resident of Unit 1A.
[b] Total does not include unknown residency.

Table 4. Deer harvest chronology percent by month, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

Regulatory year	Harvest chronology percent by month						
	August	September	October	November	December	Unknown	*n*
2016	21	9	49	21	0	0	419
2017	20	13	30	36	0	1	570
2018	17	6	37	40	0	0	647
2019	18	7	39	36	0	0	850
2020	22	6	32	39	1	0	855

Table 5. Deer harvest percent by transport method, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

	Percent harvest by transport method									
Regulatory year	3- or 4-wheeler	Airplane	Boat	Foot	Highway vehicle	Horse or dog team	Offroad vehicle	Other/ unknown	Snow-machine	*n*
2016	4	1	52	10	33	0	0	0	0	419
2017	3	1	52	11	31	0	1	0	1	570
2018	5	1	52	8	32	1	1	0	0	647
2019	5	0	52	7	34	0	2	0	0	850
2020	6	1	58	4	29	0	2	0	0	855

Table 6. Human-deer interactions, regulatory years 2016–2020, Unit 1A, Southeast Alaska.

	Deer-human interaction						
Regulatory year	Agency kill[a]	Car strike[b]	Dead animal found[c]	Injured[d]	Orphaned fawn[e]	Sighting[f]	Other[g]
2016	–	–	–	–	–	–	–
2017	1	7	0	2	2	1	3
2018	1	6	0	2	5	2	0
2019	0	6	8	7	1	1	1
2020	0	8	6	4	1	2	1

Note: The en dash indicates no information was collected.

[a] Agency kill is when a deer was dispatched by ADF&G.

[b] Car strike is when an animal was killed by a vehicle strike.

[c] Dead animal found is an animal that died of unknown causes that was investigated by ADF&G.

[d] Injured is when an injured animal was seen and reported by the public.

[e] Orphaned fawn is when the public notifies ADF&G of a fawn that seems to be alone.

[f] Sightings covers deer that were seen by the person reporting to ADF&G.

[g] Other covers a variety of other issues that the public calls ADF&G about regarding deer.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Comment on state and federal timber sales.

Data Needs

To promote the retention of quality deer habitat.

Methods

The ADF&G's Habitat Section announces calls for comments on habitat altering activities on state lands and combines the comments from the divisions of Wildlife Conservation, Sport Fish, and Commercial Fisheries before submitting. Other activities are brought to the divisions by other entities such as the USFS.

Results and Discussion

DWC staff submitted comments to the USFS on the South Revilla Integrated Resource Project (USFS 2023).

Recommendations for Activity 3.1

Continue to comment on state and federal timber sales.

ACTIVITY 3.2. Quantify and analyze snowfall data.

Data Needs

Winters with deep persistent spring snow increase deer mortality. Monitoring snowfall on an elevational gradient on the mainland and islands in Unit 1A may help determine impacts of winters with deep persistent snowpack on deer abundance. Placing snow-monitoring stakes on the mainland and islands will allow for comparison in snow depth. Typically, snow depth is deeper on the mainland compared to islands, but no direct measurements are currently available for comparison. This method will allow us to determine impacts of snow between these 2 areas that coincide with where we conduct pellet transects.

Methods

Motion-triggered cameras were set to time-lapse mode to capture snow depth on marked-depth boards. Boards were placed at 100–200, 400–500, and 1,900–2,000 feet (30–61, 122–152, 579–610 meters) in elevation on Gravina Island and the Cleveland Peninsula. These 2 locations coincide with pellet-transect locations to offer a comparison between deer abundance and snow. Snow-depth data was monitored from local weather stations.

Results and Discussion

Data was not summarized in time for this report.

Recommendations for Activity 3.2

Discontinue this activity as snow-depth monitoring is now covered under the new camera-monitoring protocol. See planning section for details.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Data sheets were scanned and stored on ADF&G's Ketchikan server.
- Historical survey notes, memos, and data sheets were digitized and scanned for permanent storage on the Ketchikan server.
- Wildlife management reports and plans and the management operational plan for deer – Unit 1A are stored online at www.wildlifepublications.adfg.alaska.gov.

Agreements

No agreements.

Permitting

No permits are currently needed to complete work during RY16–RY20.

Conclusions and Management Recommendations

Mean pellet-groups per plot averaged 1.35, which is below the management objective of 1.4 per plot for all monitored watersheds from RY16–RY20. The codified harvest objective of 700 deer annually was met 2 out of 5 regulatory years during RY16–RY20. However, a lack of severe winters seems to have helped deer abundance to increase in Unit 1A. Mild winters along with an increase in hunters, days spent hunting, and harvest of deer all indicate an increasing trend in deer abundance in Unit 1A.

ADF&G should discontinue use of pellet transects to determine trends in deer abundance, and instead use harvest and test camera-based methods to track trends in abundance. Pellet transects provide coarse and potentially misleading data to extrapolate results to a large area such as a game management unit (Brinkman et al. 2013). There is no effective method to estimate the deer population in all of Unit 1A due to cost, logistics, and staff time. So, monitoring harvest statistics will be our main metric to determine trends in abundance until we determine the utility of camera-based methods. Since cumulative snowfall and its persistence is a key factor in determining access to deer forage during winter (White et al. 2009), we will also monitor snow accumulation at camera-monitored locations.

II. Project Review and RY21–RY25 Plan

Review of Management Direction

MANAGEMENT DIRECTION

Maintain a bag limit of 4 bucks to the extent possible, taking into account trends in abundance, condition of habitat, harsh winters, predation, disease, and other factors that limit deer carrying capacity.

GOALS

Provide opportunity for deer hunting and viewing under the sustained-yield principle using the best science available to benefit the people of Alaska and conserve deer populations.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The BOG made a positive cultural and traditional finding (5 AAC 99.025) for deer in Unit 1A. The board set the amount necessary for subsistence during its fall 2000 meeting at 5–40 deer for Unit 1A outside the Ketchikan Nonsubsistence Area.

Intensive Management

The BOG also reported a positive finding for intensive management (5 AAC 92.106) for deer in Unit 1A during its fall 2000 meeting. The Unit 1A management goal is to maintain a population of 15,000 deer while supporting an annual harvest of 700 deer.

MANAGEMENT OBJECTIVES

Create new objective based on results and utility of camera-based methods for trends in deer abundance.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Use camera-based method to monitor trends in deer abundance.

Data Needs

Camera-based methods for monitoring wildlife have increased in recent years allowing managers to monitor trends in abundance of cryptic species. These methods could aid management of deer in Southeast Alaska where aerial surveys and other methods are impractical. This data can be used to make management decisions and compare to other indices such as harvest.

Methods

ADF&G will use the random encounter and staying time (REST) model and motion-sensor cameras to calculate deer density as an index of abundance (Nakashima et al. 2017) through a pilot study on Gravina, Mitkof, and Douglas islands. Deer sex and age ratios will also be collected from the camera photo data providing demographic information. Cameras will be placed on islands at a density of ≥1 per 10 km^2 in proportion to quality of winter deer habitat. A snow stake to measure snow depth will be placed 5 meters in front of the camera to measure snow depth to assess winter severity. Studies indicated that trail cameras can be placed at relatively low density and still return a useful density estimate for ungulate species in similarly dense habitat (Warbington and Boyce 2020). ADF&G will use methods from Huggard 2018 for guidance on specific placement of cameras and processing data. All photo data will be assessed in the program Timelapse 2 (Greenburg 2021). This project will run for 3 years to determine its utility before implementing in new locations.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Quantify and analyze harvest data.

Data Needs

Harvest data is necessary to track the progress toward achieving goals set forth by the BOG. The board found a positive customary and traditional finding for Sitka black-tailed deer in Unit 1A, so harvest objectives were created. These objectives include the amounts reasonably necessary for subsistence (ANS) and intensive management (IM) objectives listed above.

Methods

Harvest tickets will be used to track trends in harvest over time. Hunters will receive 6 harvest tickets and a report to provide hunt information to the department on their hunting activity. The questions will be if they hunted or not, the number of trips taken, GMU hunted in, plus month of hunt, number of days hunted, number of bucks and/or does killed, method of take, transportation used, and if commercial services were used. Hunters will be required to report within 15 days after reaching their bag limit or within 15 days after the close of the season. Hunters will have the option of reporting by mail, in an ADF&G office, or through the ADF&G website (www.adfg.alaska.gov).

3. Habitat Assessment-Enhancement

No activities anticipated other than commenting on development projects from USFS, State of Alaska, and other entities.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Data sheets will be scanned and stored on ADF&G's Ketchikan server.
- Historical survey notes, memos, and data sheets will be digitized and scanned for permanent storage on the Ketchikan server.
- Wildlife management reports and plans and the management operational plan for deer – Unit 1A will be stored online at www.wildlifepublications.adfg.alaska.gov.

Agreements

No agreements.

Permitting

Currently, no permits will be needed to complete work.

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