Species Management Report and Plan ADF&G/DWC/SMR&P–2018–40

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

Report Period 1 July 2010–30 June 2015, and

Plan Period 1 July 2015–30 June 2020

Boyd Porter

2018

Alaska Department of Fish and Game Division of Wildlife Conservation

Species Management Report and Plan ADF&G/DWC/SMR&P-2018-40

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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 Thomas V. Schumacher, Management Coordinator for Region I for the Division of Wildlife Conservation, Douglas.

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, Alaska 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).

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Purpose of this Report

This report provides a record of survey and inventory management activities for moose in Unit 1A for the previous 5 regulatory years (RY) and plans for survey and inventory management activities in the 5 years following the end of that period. A regulatory year begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011). This report is produced primarily to provide agency staff with data and analysis to help guide and record its own efforts but is also provided to the public to inform them of wildlife management activities. In 2016 the Alaska Department of Fish and Game's Division of Wildlife Conservation (ADF&G, the department) launched this new type of 5-year report to more efficiently report on trends and describe potential changes in data collection activities over the next 5 years. It replaces the moose management reports of survey and inventory activities that were previously produced every 2 years.

I. RY10–RY14 Management Report

Study Area

Game Management Unit 1A is an area of approximately 5,300 mi^2 in the southeastern corner of the Alaska (Fig. 1). The moose population in Unit 1A is concentrated along the Unuk River drainage which is located in the Misty Fjords National Monument 60 air miles to the northeast of Ketchikan.

The valley is characterized by steep, glacially carved terrain. Forest cover extends to about 2,000 feet elevation. Climate in the lower valley is marine influenced with moderate temperatures and abundant precipitation. Moving inland the climate typically transitions to warmer summers and colder winters with less precipitation. Very deep snow can accumulate in some winters. Moose habitat in Unit 1A is limited to the valley bottom where vegetative cover primarily consists of old-growth temperate rain forest dominated by spruce and hemlock on uplands and cottonwood, willows and alders on river bars and floodplains throughout the drainage.

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

The Unit 1A moose population is primarily located on the mainland in the Unuk River drainage, and moose numbers appear stable. Heavy timber along a narrow valley with braided river channels makes observing moose from the air difficult. Consequently, population estimates are based on a combination of aerial survey counts and moose track distributions after recent snowfalls. Good habitat is limited, and moose densities are low. Harvest is low and variable, ranging from 0–8 per year. Unit 1A moose are believed to be *Alces alces andersonii*, and likely emigrated from interior British Columbia via the Unuk River valley. However, in 1963–1964 moose were transplanted to the Chickamin River Valley, "however no population became established and the Chickamin river moose transplant was deemed a failure." (Paul 2009). Moose are occasionally reported from other parts of Unit 1A including the Chickamin River valley, southern mainland, Revillagigedo Island, and the Cleveland Peninsula.

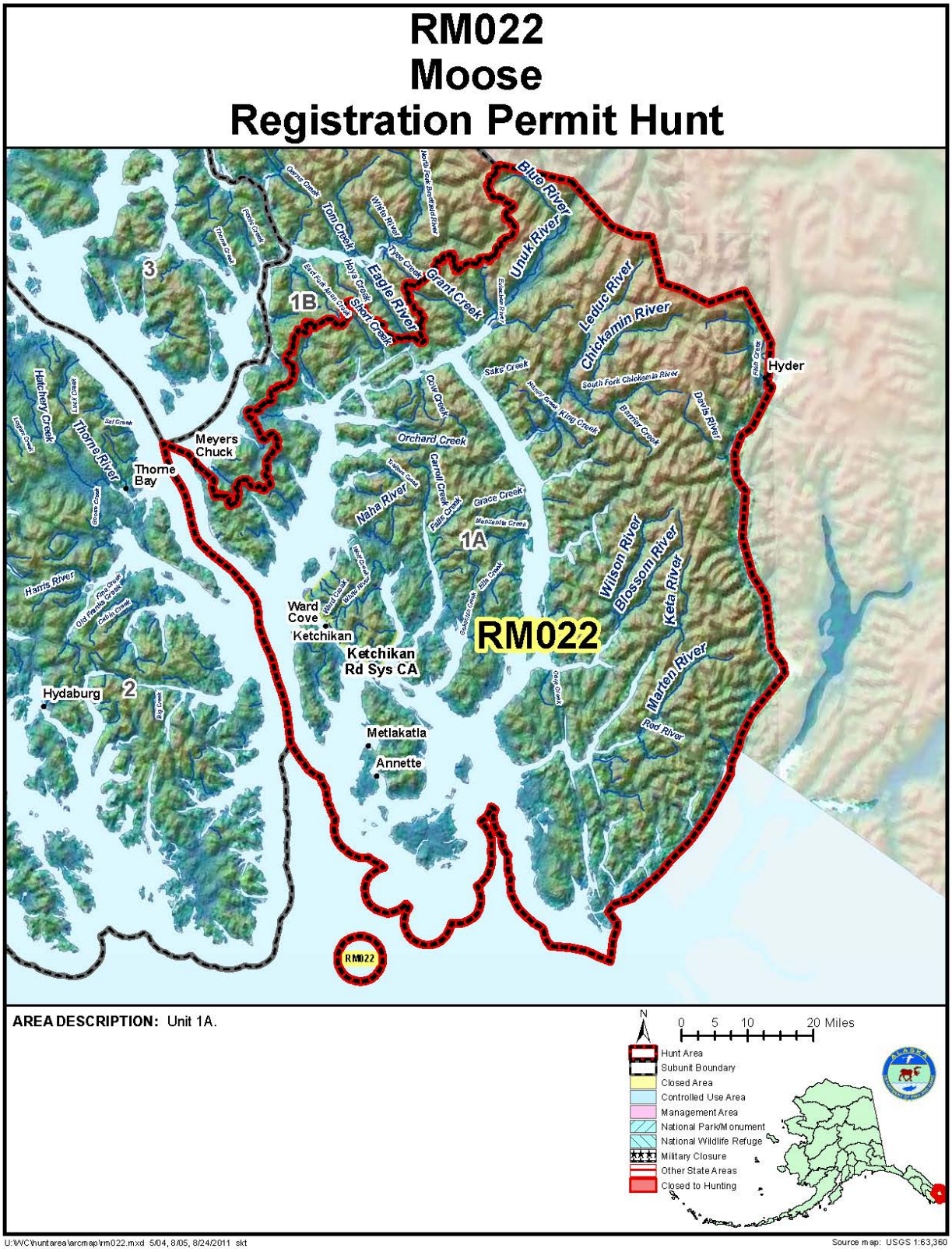

Figure 1. Game Management Unit 1A and the RM022 hunt area, Southeast Alaska.

Since 1960 a 1-month season with a 1 bull bag limit (no antler restrictions) has been in effect. The Federal Subsistence Board adopted a new regulation starting in 2011 that allowed federally qualified hunters to begin hunting on 6 September, 14 days earlier than the state season. This has caused constant reporting problems since both federal and state hunters use the same state registration ticket and many hunters report twice for the same hunt. Harvesting moose in Unit 1A is often opportunistic. Most of the population is located within a designated wilderness area, and moose can only be effectively hunted along the Unuk River where access is limited to jet boats and floatplanes. Because most Unit 1A moose habitat is within a wilderness area, there will never be a need to alter management due to changes in access or development, but there will also be no opportunities for habitat enhancement or habitat management, and road construction is not a concern.

Population surveys are difficult due to rarely ideal weather conditions (sufficient snow cover and calm conditions) and poor sightability. Current estimates of moose numbers in Unit 1A are 30–50 animals along the Unuk River drainage. Moose numbers appear sufficient to support the current hunting season and bag limit.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Region I developed a moose management plan in the late 1980s (ADF&G 1990) intended to guide management through RY94. That plan has never been formally updated. With the exception of the Gustavus moose population, the 1990 plan included objectives and management strategies for moose populations throughout the region.

Although the overall goals of the original plan are still important, the management objectives and harvest management strategies have changed since the plan was written based on public comment, staff recommendations, and Alaska 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 moose in Unit 1A.

GOALS

Regionwide moose management goals were established during creation of the Region I moose management plan (ADF&G 1990). The following goals are general and applicable to the entire region:

- Maintain, protect, and enhance moose habitat and other components of the ecosystem.
- Maintain viable populations of moose in their historic range throughout the region.
- Manage moose on a sustained yield basis.
- Manage moose in a manner consistent with the interests and desires of the public.
- Manage primarily for meat hunting and not trophy hunting of moose.
- Manage for the greatest hunter participation possible consistent with maintaining viable populations, sustained yield, subsistence priority, and the interests and desires of the public.

- Provide opportunities to view and photograph moose for the benefit of nonconsumptive users.
- Develop and maintain a database useful for making informed management decisions.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- There is no customary and traditional use determination finding for moose in Unit 1A listed in 5 AAC 99.025.

Intensive Management

- There is no intensive management finding for moose in Unit 1A.

MANAGEMENT OBJECTIVE

- Maintain an annual harvest of at least 2 bulls.

MANAGEMENT ACTIVITIES

Monitor population status and harvest. Survey and inventory management activities used to monitor moose populations in Unit 1A are described below.

1. Population Status and Trend

ACTIVITY 1.1. Count minimum number of moose in the population annually as conditions allow.

Data Needs

Learning the minimum number of moose in the Unuk River drainage during years when conditions allow an aerial survey informs the current management strategy.

Methods

Aerial moose surveys were conducted during winter (December–February) when weather and snow conditions allow. Surveys have been flown using a Cessna 185 on floats and a Hughes 500 helicopter both at a survey altitude of 500 feet. Few suitable aircraft and pilots are available in the Ketchikan area. Choice of aircraft usually depends on availability of aircraft and a qualified pilot. During surveys, the number of moose observed and their locations are recorded on a data sheet, and animals are classified by age and sex whenever possible (Appendix).

Results and Discussion

Due to poor weather conditions and survey aircraft availability, no aerial moose surveys or other counts were conducted during this report period.

Population Size

Data are insufficient to make a quantitative determination of Unit 1A moose population size or trend during the past 5 years. However, Unit 1A moose populations appear to be stable at a low density and carrying capacity is estimated to be low. Healthy brown bear, black bear, and wolf populations probably account for substantial mortality in this area, particularly on young moose calves.

After more than 2 decades of no moose observations along the mainland Chickamin River, the Alaska Department of Fish and Game-Division of Sport Fish tagging crew observed fresh moose tracks and pellets in this area from at least 1 adult moose during summer 2010 and again in summer 2013. This area once held a small moose population during the 1970s and we will watch to see if more signs of moose are observed in the near future.

Population Composition

The current population estimate for the portion of the Unuk River drainage within Alaska is 30–50 moose. This estimate came from winters 2001 and 2002 when survey conditions were ideal and resulted in similar census counts (Table 1). Efforts are made each year to complete aerial survey counts after a fresh snowfall with calm wind conditions. However, thick timber canopy cover along most of the river and frequent inclement weather make accurate and complete counts during aerial surveys difficult and infrequent. Composition counts are contingent on antler drop, but extra effort is made to distinguish bulls using presence of antler burrs during winter surveys. These are considered minimum bull counts.

Table 1. Progress towards Unit 1A moose management objectives, Southeast Alaska, regulatory years[a] 2010–2014.

Harvest and effort	Regulatory year					5-year average
	2010	2011	2012	2013	2014	
Posthunt aerial survey numbers	_[b]	_[b]	_[b]	_[b]	_[b]	
Annual hunter harvest	2	4	3	5	3	3
Number of hunters	7	11	30	18	15	16
Hunter effort/days	43	58	118	58	44	64
Hunter success (%)	29	36	10	28	20	21

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2010 = 1 July 2010–30 June 2011.
[b] Conditions were poor for posthunt aerial surveys.

Distribution and Movements

It is undoubtable that moose move between Canada and the U.S. along mainland drainages. However, moose have never been marked or collared in this area, and consequently we know little about their seasonal movement along the Unuk drainage. Some of the best habitat along the Unuk River occurs in Canada just upstream of the border. That area likely supports a significant number of moose which may immigrate into Unit 1A. However, moose research on the Stikine River during the early 1980s found minimal movement between Canada and Alaska (Craighead et al. 1984). No research has ever been done on the Unuk River moose population.

2. Mortality–Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor hunter effort and harvest.

Data Needs

We need information on hunter effort and harvest to inform management of the hunt and population.

Methods

State qualified hunters in Unit 1A must possess an RM022 registration permit before entering the field in search of moose. At the time a registration permit is issued hunters are also provided a mandatory mail-in hunt report card. We use a registration hunt harvest report to collect information on hunter effort, hunt timing, mode of transport, and hunter success. Federally qualified hunters must obtain the FM0101 moose registration permit for this same hunt area. We attempt to obtain federal registration permit hunt information from the U.S. Forest Service prior to compiling annual state species reports. However, reporting for the federal hunt is not mandatory and the hunt reports do not require comparable hunter effort questions such as days hunted and transport used to reach the hunt area. Harvest data are organized by regulatory year. Under federal subsistence hunting regulations, any qualified subsistence user who is ineligible to obtain a state registration permit as a result of having failed to submit a mandatory hunt report during the preceding regulatory year may still hunt by acting as a federal designated hunter for another qualified subsistence user. Similarly, those who have already harvested a legal or illegal moose, thereby filling their bag limit, may continue to hunt for any federally qualified beneficiary under the federal designated hunter provision.

Results and Discussion

Numbers of hunters going into the field in search of moose and actual days hunted have been consistent during this report period for RM022 with the exception of 2012. The average during the past 5 years has been 16 hunters in the field and about 64 hunter days. During the 2012 season 30 hunters spent time hunting and recorded 118 days of moose hunting effort. Hunter success was also reduced during the peak year of 2012 with more folks in the field and consequently hunter success was only 10%, down from the 5-year average of 21% (Table 1). On average about 50% of hunters who register for RM022 actually report time hunting in the field.

Season and Bag Limit

Area/Bag limit	Season
Unit 1A	
RESIDENT AND NONRESIDENT HUNTERS: 1 bull by registration permit only RM022.	15 Sep–15 Oct (General hunt only)

Harvest by Hunters

Harvest levels and population characteristics can fluctuate from year to year as a result of both hunting and natural processes. Hunters harvest between 1 and 5 bulls from Unit 1A each year (Table 2). Most successful hunters are Alaska residents living in Unit 1A (Table 3). Harvest

dates are variable during the season (Table 4) and most hunters use jet boats to access this remote hunt area (Table 5).

Other Mortality

Predators (wolves, black bears, and brown bears) exist on most of the mainland but the extent of predation on moose is unknown. We receive periodic requests to harvest moose out-of-season for funerary and cultural education activities. Poaching of moose in this area is likely a very rare event.

Alaska Board of Game Actions and Emergency Orders

No Board of Game actions took place and no emergency orders were issued regarding Unit 1A moose during the report period.

Table 2. Unit 1A moose reported harvest, Southeast Alaska, regulatory years[a] 2000–2014.

Regulatory year	Males	(%)	Female	(%)	Unk	Subtotal	Illegal	Total
2000	1	(100)	0	(0)	0	1	0	1
2001	3	(100)	0	(0)	0	3	0	3
2002	2	(100)	0	(0)	0	2	0	2
2003	5	(100)	0	(0)	0	5	0	5
2004	5	(100)	0	(0)	0	5	0	5
2005	4	(100)	0	(0)	0	4	0	4
2006	4	(100)	0	(0)	0	4	0	4
2007	2	(100)	0	(0)	0	2	0	2
2008	3	(100)	0	(0)	0	3	0	3
2009	3	(100)	0	(0)	0	3	0	3
2010	2	(100)	0	(0)	0	2	0	2
2011	4	(100)	0	(0)	0	4	0	4
2012	3	(100)	0	(0)	0	3	0	3
2013	5	(100)	0	(0)	0	5	0	5
2014	3	(100)	0	(0)	0	3	0	3

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

Table 3. Unit 1A moose hunter residency and success, Southeast Alaska, regulatory years[a] 2000–2014.

	Successful					Unsuccessful					
Regulatory year	Local resident	Nonlocal resident	Nonresident	Total	(%)	Local resident	Nonlocal resident	Nonresident	Total	(%)	Total hunters
2000	1	0	0	1	(4)	26	0	0	26	(96)	27
2001	3	0	0	3	(12)	22	0	0	22	(88)	25
2002	2	0	0	2	(10)	17	2	0	19	(81)	21
2003	5	0	0	5	(18)	23	0	0	23	(82)	28
2004	3	2	0	5	(15)	27	1	0	28	(85)	33
2005	0	0	0	0	(0)	0	0	0	0	(0)	0
2006	3	0	0	3	(18)	11	2	1	14	(82)	17
2007	2	0	0	2	(12)	14	1	0	15	(88)	17
2008	3	0	0	3	(18)	14	0	0	14	(82)	17
2009	3	0	0	3	(14)	17	1	0	18	(86)	21
2010	2	0	0	2	(22)	7	0	0	7	(78)	9
2011	4	0	0	4	(36)	6	0	1	7	(64)	11
2012	3	0	0	3	(10)	22	4	1	27	(90)	30
2013	5	0	0	5	(28)	13	0	0	13	(72)	18
2014	3	0	0	3	(20)	12	0	0	12	(80)	15

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

Table 4. Unit 1A moose harvest chronology, Southeast Alaska, regulatory years[a] 2000–2014.

Regulatory year	5–14 Sep[b]	15–21 Sep	22–28 Sep	29 Sep–5 Oct	6–15 Oct	No date given	Total
2000		1					1
2001		3					3
2002			1		1		2
2003			1	1		3	5
2004	2	1		1	1		5
2005							0
2006	1		1		1		3
2007					2		2
2008				2		1	3
2009				1	2		3
2010				1		1	2
2011				1	3		4
2012		1	1			1	3
2013				1		4	5
2014		1				2	3

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.
[b] Federal subsistence (5 Sep–15 Oct).

Table 5. Unit 1A successful moose hunter transport methods, Southeast Alaska, regulatory years[a] 2000–2014.

Regulatory year	Airplane	Boat	3- or 4-Wheeler	Unknown	Total
2000	4	23	0	0	27
2001	4	21	0	0	25
2002	1	0	0	20	21
2003	1	8	0	10	19
2004	3	28	0	2	33
2005	2	14	0	0	16
2006	5	11	0	0	16
2007	0	17	0	0	17
2008	1	16	0	0	17
2009	1	16	0	4	21
2010	3	5	0	1	9
2011	0	12	0	0	12
2012	0	28	0	2	30
2013	0	14	0	4	18
2014	0	13	0	1	14

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

3. Habitat Assessment–Enhancement.

There were no habitat enhancement activities during this period.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

ARCHIVING

- Harvest data are stored on internal ADF&G database on a server (http://winfonet.alaska.gov/index.cfm).
- Field data sheets from surveys and antler measurements are stored in file drawers in area management section files at the Ketchikan ADF&G office. Scanned copies of completed forms are stored on the Ketchikan ADF&G network drive S:\Region1Shared-DWC\Offices\Ketchikan\Boyd Porter\Moose

Permitting

The state and federal subsistence hunts for Unit 1A moose are managed under separate permits including the state registration moose permit (RM022) and the federal registration moose permit (FM0101). Under federal subsistence hunting regulations, any qualified subsistence users who are themselves ineligible to obtain a state registration permit as a result of having failed to submit

a mandatory hunt report during the preceding regulatory year can circumvent this regulation by acting as a federal designated hunter for another qualified subsistence user. Similarly, those who have already harvested a legal or illegal moose, thereby having achieved their bag limit, may continue to harvest additional moose for any federally qualified beneficiary under the federal designated hunter provision.

Agreements

None.

CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

Moose reside at low densities in Unit 1A supporting a low but consistent annual harvest. The majority of moose reside in the Unuk River drainage that connects moose in interior Canada to coastal Alaska. Habitat is limited to a small corridor from Canada through the Coastal Range, thus limiting the population size. The presence of an estimated 30–50 moose reflects the limitations of available habitat. This small population resulted in the consistently low harvest of 3 bulls per year during this reporting period. Access also limits harvest as most successful hunters use a jet boat to hunt for moose in the area.

No changes are recommended to the survey and inventory methods or season and bag limits currently in place. ADF&G will continue to monitor the population through aerial minimum counts when weather and logistics permit. The department will also continue to monitor harvest through a registration hunt to determine hunter effort and success.

II. Project Review and Plan

Review of Management Direction

MANAGEMENT DIRECTION

There are no changes in management direction for moose in Unit 1A.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- There is no customary and traditional use determination finding for moose in Unit 1A listed in 5 AAC 99.025.

Intensive Management

- There is no intensive management finding for moose in Unit 1A.

MANAGEMENT OBJECTIVES

- Maintain an annual state harvest of at least 2 bulls.
- Provide maximum moose hunting opportunity.
- Provide opportunities for nonconsumptive users by maintaining a healthy moose population.

REVIEW OF OBJECTIVES

In the absence of information on the number, distribution, sex and age ratios, and other population characteristics of moose in Unit 1A, we must rely on annual harvest trends and hunter field observations to evaluate sustainability of the management strategy. Trend in the number of bulls harvested is currently the most useful tool we have for assessing the Unit 1A moose population. To date we have never limited the number of registration permits for this moose hunt.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Count minimum number of moose in the population annually as conditions allow.

Data Needs

Learning the minimum number of moose in the Unuk River drainage during years when conditions allow a survey informs the current management strategy.

Methods

No changes recommended.

2. Mortality–Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor hunter effort and harvest.

Data Needs

We need information on hunter effort and harvest to inform management of the hunt and population.

Methods

No changes recommended.

3. Habitat Assessment–Enhancement.

There are no planned habitat assessment or enhancement activities.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Harvest data are stored on internal ADF&G database on a server (http://winfonet.alaska.gov/index.cfm).
- Field data sheets from surveys and antler measurements are stored in file drawers in area management section files at the Ketchikan ADF&G office. Scanned copies of completed forms are stored on the Ketchikan ADF&G network drive S:\Region1Shared-DWC\Offices\Ketchikan\Boyd Porter\Moose

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Agreements

None.

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Appendix. Aerial moose survey data sheet.

Moose Survey Form (v. 11/29/12) Page__________of__________

Area:	Date:	Observers/Pilot:	Aircraft Type:	Start Time:
Sky Conditions: Clear Ptly Cloudy Overcast/Flat		Wind Speed:	Temp:	Stop Time:
Snow Depth (in.):	Fresh Snow (in.)/Age (days):	% of Area Covered by Snow:	Snow on Trees?	Total Survey Time:
Comments:				

WPT/ Group	Bulls			Cows			Unk Sex	# Adults Checked for Collars	Collared Moose Data									Comments
	L	M	S	C0	C1	C2			Moose ID	Seen During Survey (Yes, No)	Activity (Bedded, Standing)	Light (Sun, Shade, Flat)	% Canopy Cover (10m radius)	Spruce <10m	Habitat (Mdw, Low Shb, Tall Shb, Conf, Mxd. Fst.)	% Snow (Complete Veg Visible Ground Visible)	Photo #	
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		
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										Y N	B S	Su Sh Fl		Y N	M LS TS C MF	C V G		


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