

## **Reauthorization of Antlerless Moose Hunts & Brown Bear Tag Fee Exemptions for Other Regions**

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**PROPOSAL 150 – 5 AAC 85.045(1). Hunting seasons and bag limits for moose.** Reauthorize the antlerless moose hunts in Unit 1C as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(1)		
...		
Unit 1(C), Berners Bay Drainages:  1 moose by drawing permit only; up to 30 permits may be issued	Sept. 15–Oct. 15 (General hunt only)	Sept. 15–Oct. 15
...		
Unit 1(C), that portion west of Excursion Inlet and north of Icy Passage: 1 moose per regulatory year, only as follows:		
...		
1 antlerless moose by drawing permit only; up to 100 permits may be issued	Nov. 10–Dec. 10 (General hunt only)	Nov. 10–Dec. 10

**What is the issue you would like the board to address and why? Berners Bay:** The Berners Bay (Unit 1C) strategic moose management plan calls for a post-hunt population of 90 moose based on the area’s estimated carrying capacity. The Alaska Department of Fish and Game (department) has been successful at maintaining the Berners Bay population close to the post-hunt population objective by implementing both bull and cow hunts.

From 1998–2006 the number of drawing permits for Berners Bay moose ranged from ten bull and ten antlerless permits to seven bull permits and no antlerless permits. The average annual harvest of bulls during that period was seven moose, and in years when antlerless permits were issued, the annual harvest averaged four cow moose. Although the department has had

authorization to issue a total of 30 permits each year, over the past ten years no more than 20 total permits have been issued during a single year. As a result of several severe winters and resulting population declines, no Berners Bay moose permits were issued from 2007–2013.

The number of drawing permits issued annually for Berners Bay is based on the number of moose observed during winter aerial surveys. The mean number of moose seen during aerial surveys conducted from 1990–2006 was 77 (range: 59–108). As a result of a series of severe winters from 2006–2009 and associated population declines, the number of moose observed during surveys from 2007–2009 ranged from 33–62. Surveys in 2010 and 2011 found 73 moose including ten calves each year. Under ideal survey conditions in 2012, 102 moose were observed, including 21 bulls, 81 cows, and 14 calves. Adjusted for sightability based on collared moose, the 2012 population was estimated at 113 +/- 11 moose. Under less ideal conditions in 2013, 73 moose were observed, including 18 bulls, 47 cows, and eight calves. Adjusted for sightability, the 2013 population estimate was 90 +/- 13 moose. During the most recent survey in January 2014 a total of 105 moose were observed, including 22 bulls, 52 cows, 24 calves, and seven unknown. Based on this survey, the population was estimated to be 109 +/- 6 moose. The Berners Bay population has slowly increased and now exceeds the department's population and bull:cow management objectives.

Five bull permits were issued in 2014 and 2015. The department would like to retain the ability to implement an antlerless moose hunt should the population or habitat conditions warrant this type of management.

**Gustavus:** The Gustavus moose population (Unit 1C) rapidly expanded from just a few animals in the 1980s and early 1990s to a peak of about 400 animals in 2003. In 2002 the department estimated the density of moose on the Gustavus Forelands winter range exceeded five moose per km<sup>2</sup> despite only a small proportion of the area consisting of productive (abundant willow) winter habitat. In response to concerns about moose damaging the winter habitat, the department initiated spring browse surveys in 1999 and determined that an unsustainable level (85%–95%) of the current annual growth of willow twigs had been consumed by moose.

To conserve winter habitat the department requested the board authorize an antlerless moose hunt, and the first antlerless hunt was held in the fall of 2000. From 2002–2008 hunters harvested between 11 and 67 antlerless moose annually, depending on the number of permits issued. No hunt was held in fall 2007 due to high moose mortality during the previous winter, and no antlerless hunts have been held since 2009.

The objective of antlerless moose hunts in Gustavus is to maintain the moose population using the winter range to levels commensurate with habitat capability. Based on aerial surveys corrected for sightability and annual browse surveys, management of the population using antlerless hunts has been successful. In 2013, under favorable survey conditions 186 moose (25 bulls, 121 cows, and 40 calves) were observed. The population estimate corrected for sightability was 323 +/- 87 moose. Under poor late winter survey conditions in March 2014 91 (24 cows, 12 calves, and 55 unknown) moose were seen yielding a sightability corrected population estimate of 244 +/- 98 moose. Due to exceptionally mild winter weather, at the time of this survey a number of radiocollared moose had already transitioned to forested summer range outside the

survey area. There was little snow cover during the winter of 2014–15, so no survey was attempted.

Severe winters from 2006 through 2009 reduced calf survival, but since then calf survival has returned to 21% to 37%. Even during severe winters survival of adult females remained high at about 89%. Given the improved survival rate of calves during successive mild winters and stable cow survival, the potential exists for the Gustavus moose population to rapidly increase.

The Gustavus moose population is currently at a level the department believes is appropriate for the available winter habitat. However, we believe it is important to retain the ability to implement antlerless hunts should the population increase to a level that is detrimental to the habitat.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-042)  
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**PROPOSAL 151 – 5 AAC 85.045(3). Hunting seasons and bag limits for moose.** Reauthorize the antlerless moose hunt in Unit 5A, the Nunatak Bench hunt, as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(3)  Unit 5(A), that portion south of Wrangell-Saint Elias National Park, north and east of Russell and Nunatak Fiords, and east of the east side of East Nunatak Glacier to the Canadian Border (Nunatak Bench)	Nov. 15–Feb. 15	Nov. 15–Feb. 15
1 moose by registration permit only; up to 5 moose may be taken		
...		

**What is the issue you would like the board to address and why? Nunatak Bench:** The Nunatak Bench hunt area (Unit 5A) is managed as a separate population because it is generally isolated from other moose populations by fiords and glaciers. The area is subject to severe winters and has low capability to support moose relative to other moose habitat in Unit 5A. The

purposes of this hunt are to provide opportunity as the population allows and to maintain the number of moose within a level the limited habitat can support. This hunt opens after other moose hunts in the unit have closed, and it is a popular alternative for hunters who were unsuccessful during those hunts. Because much of the open season for this hunt takes place after bulls have dropped their antlers, either sex may be harvested.

The Nunatak Bench strategic moose management plan calls for a post-hunt population of no more than 50 moose. During an aerial survey in 2001 52 moose were seen. From 2005 through 2012 only 11–14 moose with one or two calves were seen during surveys. The decline in moose numbers following the 2001 survey may be related to the 68-foot rise of Russel Fiord flooding and damaging habitat when it was blocked by the surging Hubbard Glacier during 2003. Due to poor weather and the remoteness of the location this area was not surveyed again until December 2015 when a total of 14 moose (three bulls, two cows, three calves, and six unknown) were observed. A series of severe winters from 2006 through 2012 may have inhibited recovery of the population. Anecdotal reports from hunters indicate that wolves in the area may also be inhibiting recovery of this small population.

From 1997 through 2004 an average of 12 either sex permits were issued annually with about four people actually hunting. During this period a total of 15 moose (nine bulls, six cows) were harvested for an average of about two moose per year. No permits have been issued and no moose have been harvested in this area since 2004.

The Department of Fish and Game believes it is important to retain the ability to implement an antlerless hunt in this area to prevent habitat damage should the population increase. The department will continue to monitor this population as conditions allow, but we do not plan to issue hunt permits until the population reaches at least 25 moose.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-043)  
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**PROPOSAL 152 – 5 AAC 85.045(4). Hunting seasons and bag limits for moose.** Reauthorize the antlerless moose season in Unit 6C as follows:

<b>Seasons and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
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(4)

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Unit 6(C)

1 moose per regulatory year,  
 only as follows:

1 moose by drawing permit only; up to 40 permits for bulls and up to 20 permits for antlerless moose may be issued	Sept. 1–Oct. 31 (General hunt only)	No open season.
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or

1 moose by registration permit only;	Nov. 1–Dec. 31	No open season.
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**What is the issue you would like the board to address and why?** Antlerless moose seasons must be reauthorized annually. The Department of Fish and Game recommends reauthorizing the state antlerless hunt in Unit 6C to achieve the harvest objectives when the federal subsistence hunt is not able to achieve the desired level of harvest. The population objective in Unit 6C is 400–500 moose. A population estimate completed during February 2014 yielded an estimate of 600 moose, 25% of which were calves. Because the available antlerless harvest quota in Unit 6C is currently harvested under a federal subsistence season administered by the U.S. Forest Service, we have not held the antlerless hunt since the 1999–2000 season. Continuation of the antlerless hunts will be necessary to manage population growth and keep it within the limits of what the habitat can support.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-044)  
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**PROPOSAL 153 – 5 AAC 85.045(13). Hunting seasons and bag limits for moose.**  
 Reauthorize the antlerless moose season on Kalgin Island in Unit 15B as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
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(13)

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Unit 15(B), Kalgin Island

1 moose per regulatory year, by registration permit only	Aug. 20–Sept. 20	Aug. 20–Sept. 20
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**What is the issue you would like the board to address and why?** Antlerless moose hunts must be reauthorized annually by the Board of Game (board). The current regulation for hunting

moose on Kalgin Island in Unit 15B allows hunters to harvest antlerless moose with the goal of reducing the population to the management objective.

In response to concerns that the moose population on Kalgin Island had exceeded the island's carrying capacity and due to deteriorating habitat conditions, the board established a drawing permit hunt for antlerless moose in 1995. In a further attempt to reduce the number of moose on the island, the board established a registration hunt for any moose in 1999. Despite these measures to reduce moose numbers, moose remain abundant on the island and continue to exceed the management objective.

During the most recent moose survey, department staff counted 101 moose on Kalgin Island in January 2017. This count exceeded the population objective of 20–40 moose.

The "any moose" registration hunt is recommended to provide additional mortality on this predator-free island population. A registration hunt also allows the Department of Fish and Game to continue gathering biological information from specimens provided by successful hunters. The difficult hunting conditions and limited access will minimize the danger of over-harvest.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-047)  
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**PROPOSAL 154 – 5 AAC 85.045(13). Hunting seasons and bag limits for moose.**  
 Reauthorize the antlerless moose season and targeted moose season in a portion of Unit 15C as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(13)		
...		
Unit 15(C), that portion south of the south fork of the Anchor River and northwest of Kachemak Bay		

**RESIDENT HUNTERS:**

1 bull with spike or 50-inch antlers or antlers with 4 or more brow tines on one side; or	Sept. 1–Sept. 25 (General hunt only)
1 antlerless moose by drawing permit only; the taking of calves, and females accompa-	Oct. 20–Nov. 20

nied by calves, is prohibited;  
up to 100 permits may be issued in  
combination with the nonresident  
drawing hunt: or

1 moose by targeted permit only,

Oct. 15–Mar. 31

NONRESIDENT HUNTERS:

1 bull with 50-inch antlers or  
antlers with 4 or more brow  
tines on one side; or

Sept. 1–Sept. 25

1 antlerless moose by drawing  
permit only; the taking of  
calves, and females accompa-  
nied by calves, is prohibited;  
up to 100 permits may be issued in  
combination with the resident  
drawing hunt

Oct. 20–Nov. 20

Remainder of Unit 15(C)

RESIDENT HUNTERS

1 bull with spike or 50-inch  
antlers or antlers with 4 or more  
brow tines on one side; or

Sept. 1–Sept. 25  
(General hunt only)

1 moose by targeted permit  
only,

Oct. 15–Mar. 31

NONRESIDENT HUNTERS

1 bull with 50-inch antlers  
or antlers with 4 or more brow  
tines on one side;

Sept. 1–Sept. 25

**What is the issue you would like the board to address and why?** Antlerless moose seasons must be reauthorized annually, and the Department of Fish and Game recommends reauthorization of the Homer benchland hunt (DM549) and the targeted hunt (AM550) along the Sterling Highway in 15C for the 2018–19 hunting season.

The Homer benchland in Unit 15C, which encompasses the hunt boundary of DM549, contains high densities of moose in winters when deep snow drives moose into human populated areas. Even without deep snow, some moose die due to malnutrition and negative interactions with

humans occur as moose become more aggressive in their search for food around human residences.

In February 2017, a GSPE census was conducted in the northern portion of Unit 15C (north of Kachemak Bay) and resulted in a population estimate of 3,529 moose (95% CI: range 2,769–4,289), of which 19% (95% CI: 14–24) were calves. This equates to a density of approximately three moose/mi<sup>2</sup> in the census area. Density estimates for the winter are difficult to determine because the areas available to moose vary depending on snowfall, but winter density is consistently higher. Fall composition counts in December 2016 provided a bull ratio of 40 bulls:100 cows. Fifty permits were issued in each of the last 10 years resulting in an average harvest of 23 cows annually.

The purpose of AM550 is to allow for the harvest of antlerless moose along the Sterling Highway in Unit 15C during deep snow winters if they pose a threat to highway vehicles. On average, 61 known animals are killed each year in vehicle collisions in Unit 15C. The Department of Fish and Game will decide when and where permits will be issued during the hunt period. Targeted hunts are administered through a registration permit and up to 100 moose may be taken. The number of permits issued each year will depend on conditions, and it is possible no permits will be issued in some years based on snow conditions.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-048)

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**PROPOSAL 155 – 5 AAC 85.045(5). Hunting seasons and bag limits for moose.** Reauthorize the antlerless moose season in the Twentymile/Portage/Placer hunt area in Units 7 and 14C as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(5)		

...

Unit 7, the Placer River drainages, and that portion of the Placer Creek (Bear Valley) drainage outside the Portage Glacier Closed Area, and that portion of Unit 14(C) within the Twentymile River drainage

RESIDENT HUNTERS:



1 moose by drawing permit only; up to 60 permits for bulls will be issued in combination with nonresident hunts, and up to 70 permits for antlerless moose will be issued

Aug. 20–Oct. 10  
(General hunt only)

**NONRESIDENT HUNTERS:**

1 bull by drawing permit only; up to 60 permits for bulls will be issued in combination with resident hunts

Aug. 20–Oct. 10

...

**What is the issue you would like the board to address and why?** Antlerless moose seasons must be reauthorized annually, and the Department of Fish and Game recommends reauthorizing the antlerless hunt in Units 7 and 14C. The moose population in the Twentymile/Portage/Placer area has a history of rapid increase following mild winters and sharp reductions during severe winters. In 2009, antlerless permits were issued for the first time since 2004. The number of permits issued depends on the current population estimate and bull:cow ratios, as well as estimated winter mortality. A December 2016 aerial composition count of moose in the Twentymile, Portage, and Placer river drainages found 153 moose with a bull:cow ratio of 30 bulls per 100 cows and a calf:cow ratio of 18 calves per 100 cows.

The harvest of antlerless moose provides the department with a management tool to maintain the number of moose in the Twentymile/Portage/Placer area at a population level low enough to reduce over-browsing of winter habitat, moose-vehicle collisions, and starvation during severe winters. The moose population will be healthier and more productive due to decreased stress levels associated with winter food shortages. This hunt has been successful in creating additional moose hunting opportunity with little or no controversy.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-045)

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**PROPOSAL 156 – 5 AAC 85.045(5). Hunting seasons and bag limits for moose.** Reauthorize the antlerless moose seasons in Unit 14C as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(12)		

...

Unit 14(C), Joint Base Elmendorf-Richardson (JBER) Management Area	Day after Labor Day –Mar 31 (General hunt only)	Day after Labor Day –Mar 31
1 moose by regulatory year by drawing permit, and by muzzleloading blackpowder rifle or bow and arrow only; up to 185 permits may be issued		
Unit 14(C), that portion known as the Birchwood Management Area	Day after Labor Day –Sept. 30 (General hunt only)	Day after Labor Day –Sept. 30
1 moose by drawing permit, by bow and arrow only; up to 25 permits may be issued		
Unit 14(C), that portion known as the Anchorage Management Area	Day after Labor Day –Nov. 30 (General hunt only)	No open season
1 antlerless moose by drawing permit only, and by bow and arrow, shotgun, or muzzleloader only; up to 50 permits may be issued		
Unit 14(C), that portion of the Ship Creek drainage upstream of the Joint Base Elmendorf-Richardson (JBER) Management Area		
1 moose by drawing permit only; up to 50 permits may be issued; or	Day after Labor Day –Sept. 30 (General hunt only)	Day after Labor Day –Sept. 30
1 bull by registration permit only	Oct. 1–Nov. 30 (General hunt only)	Oct. 1–Nov. 30
...		
Remainder of Unit 14(C)		
1 moose per regulatory year, only as follows:		

1 bull with spike-fork antlers or 50-inch antlers or antlers with 3 or more brow tines on one side; or	Day after Labor Day –Sept. 30 (General hunt only)	Day after Labor Day –Sept. 30
1 antlerless moose by drawing permit only; up to 60 permits may be issued; or	Day after Labor Day –Sept. 30 (General hunt only)	No open season
1 bull by drawing permit only, by bow and arrow only; up to 10 permits may be issued	Oct. 20–Nov. 15	No open season

...

**What is the issue you would like the board to address and why?** Antlerless moose hunts must be reauthorized annually, and the Department of Fish and Game (department) recommends reauthorizing the antlerless moose hunts in Unit 14C. The harvest of antlerless moose provides the department with a management tool to maintain the number of moose in Unit 14C at the desired population objective (1,500 moose). This population size has been demonstrated to reduce over-browsing of winter habitat, moose-vehicle collisions, moose-human conflicts in urban areas, and starvation during severe winters. These hunts have also been successful in providing additional moose hunting opportunities in the state’s human population center with little controversy.

Moose in Unit 14C are managed intensively for a population objective of 1,500–1,800 moose and an annual harvest objective of 90–270 moose (5AAC 92.108). The number of antlerless permits issued depends on the current population estimate and bull:cow ratios, as well as estimated winter mortality. In 2013, the department estimated that the moose population contained approximately 1,533 moose in Unit 14C from a combination of population census, composition surveys and extrapolation to unsurveyed areas. Since 2013, a lack of snow has limited our ability to conduct surveys, but we have seen no indication from either harvest or roadkill numbers that the moose population has changed significantly. It is likely that moose survival has been good during recent mild winters.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-046)

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**PROPOSAL 157 – 5 AAC 85.045(16). Hunting seasons and bag limits for moose.**  
Reauthorize the nonresident antlerless moose season in the Remainder of Unit 18 as follows:

	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
<b>Units and Bag Limits</b>		

(16)

...

Remainder of Unit 18

RESIDENT HUNTERS:

2 moose; of which  
only 1 may be  
an antlered bull;  
a person may not  
take a calf or  
a cow accompanied  
by a calf; or

Aug. 1–Sept. 30

2 antlerless moose; or

Oct. 1–Nov. 30.

2 moose

Dec. 1–Mar. 15

NONRESIDENT HUNTERS:

1 antlered bull; or

Sept. 1–Sept. 30

1 antlerless moose

Dec. 1–Mar. 15

**What is the issue you would like the board to address and why?** To be retained, the antlerless moose seasons in the Remainder of Unit 18 must be reauthorized annually. The current nonresident antlerless hunt was adopted at the January 2017 Board of Game (board) meeting in Bethel. The board has previously reauthorized the resident antlerless moose season for regulatory year (RY) 2016 and RY2017. This proposal requests reauthorization for RY2018.

Implementation of antlerless hunts began in 2007 and has continued each year due to increased moose abundance, productivity, and population growth along the Yukon River drainage in Unit 18. Based on the steady growth in moose populations and productivity, the Department of Fish and Game proposes continued antlerless moose hunts in the Remainder of Unit 18.

Within the areas near the Yukon River, the moose population is estimated at a minimum of 17,000 animals with calf:cow ratios ranging from 65:100 to 75:100, and twinning rates from 20% to 50% for all areas. Population growth continues to be strong in this portion of Unit 18 and anecdotal evidence suggests that calf survival rates remain high. The population is expected to continue to grow with high recruitment and adult survival.

Although the current year harvest data in the Remainder of Unit 18 has not been finalized due to the early proposal deadline, we expect harvest to be similar to the past four years and well within sustained yield for this robust population. Allowing antlerless harvest will benefit hunters

through increased opportunity, and any increases in harvest may help slow the growth rate of the population in this portion of Unit 18.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-053)  
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**PROPOSAL 158 – 5 AAC 85.045(18). Hunting seasons and bag limits for moose.**  
 Reauthorize the antlerless moose seasons in Unit 20A as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
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(18)

Unit 20(A), the  
 Ferry Trail  
 Management Area,  
 Wood River  
 Controlled Use  
 Area, and the  
 Yanert Controlled  
 Use Area

RESIDENT HUNTERS:

...

1 antlerless moose by  
 drawing permit only; up  
 to 2,000 permits may  
 be issued in combination  
 with the Remainder of Unit  
 20(A); a person may not  
 take a cow accompanied  
 by a calf; or

Aug. 15–Nov. 15  
 (General hunt only)

1 antlerless moose by  
 registration permit only;  
 a person may not take  
 a cow accompanied  
 by a calf; or

Oct. 1–Feb. 28  
 (General hunt only)

...

1 moose by targeted permit only; by crossbow shotgun, or bow and arrow only; up to 100 permits may be issued

Season to be announced by emergency order (General hunt only)

...

Remainder of Unit 20(A)

RESIDENT HUNTERS:

...

1 antlerless moose by drawing permit only; up to 2,000 permits may be issued in combination with Unit 20(A), the Ferry Trail Management Area, Wood River Controlled Use Area, and the Yanert Controlled Use Area; a person may not take a cow accompanied by a calf; or

Aug. 15–Nov. 15 (General hunt only)

1 antlerless moose by registration permit only; a person may not take a cow accompanied by a calf; or

Aug. 25–Feb. 28

...

1 moose by targeted permit only; by crossbow, shotgun, or bow and arrow only; up to 100 permits may be issued

Season to be announced by emergency order (General hunt only)

...

**What is the issue you would like the board to address and why?** Antlerless moose hunting seasons must be reauthorized annually. Our goal is to provide for a wide range of public uses and

benefits, and to protect the health and habitat of moose populations. Antlerless hunts are important for improving or maintaining the ability of moose habitat to support current populations. They also help regulate moose population growth, help to meet Intensive Management (IM) objectives for high levels of harvest, and provide subsistence hunters with a reasonable opportunity to pursue moose for subsistence uses without reducing bull-to-cow ratios.

If antlerless moose hunts are not reauthorized, the moose population may increase to unacceptable levels or may need reduction when new data is available and analyzed. Opportunity to hunt a harvestable surplus of cow moose will be lost, and our ability to meet intensive management harvest objectives will be compromised. Subsistence hunters in the portion of Unit 20A outside the Fairbanks Nonsubsistence Area (part of the western Tanana Flats) may not have a reasonable opportunity to pursue moose for subsistence uses.

This reauthorization of antlerless moose hunts will likely improve or maintain the ability of moose habitat to support the current moose population. Hunting opportunity and harvest will increase and allow the Department of Fish and Game (department) to manage these moose populations at optimum levels. The additional harvest will help in meeting intensive management harvest objectives without reducing bull-to-cow ratios to low levels. Meat and subsistence hunters will benefit from the opportunity to harvest cow moose. Moose populations will benefit by having moose densities compatible with their habitat. Motorists and residents may benefit from reduced moose-vehicle collisions and moose-human conflicts.

The number of moose in Unit 20A was estimated at 17,768 in 2003. Research indicated this high-density moose population was experiencing density-dependent effects, including low productivity, relatively light calf weights, and high removal rates of winter forage. The objective beginning in regulatory year 2004–2005 (RY04) was to reduce moose numbers to the population objective of 10,000–12,000 unless indicators of moose condition showed signs of improvement at higher densities. The Unit 20A population was estimated at 10,272–14,115 moose (90% confidence interval) in 2012.

Our current objective is to maintain moose numbers within the IM population objective of 10,000–15,000 moose (the IM population objective adopted by the board in 2016) while monitoring indicators of moose and habitat condition for positive density-dependent responses. The Unit 20A population was estimated at 10,622–14,009 moose (90% confidence interval) in 2015. Because this estimate falls within the IM population objective and the department has not detected any indicators that the nutrition is not limited within this population, our intention is to harvest moose at a rate of 1% of the population which has been shown to stabilize the moose population at its current level. Antlerless harvest will be from drawing permits for a majority of Unit 20A and a registration permit in northwest Unit 20A near Nenana. The harvest objective will be based on the most recent survey results.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-049)  
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**PROPOSAL 159 – 5 AAC 85.045(18). Hunting seasons and bag limits for moose.**  
 Reauthorize the antlerless moose seasons in Unit 20B as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(18)  Unit 20(B), that portion within Creamer’s refuge		
...		
1 antlerless moose by bow and arrow only, by drawing permit only; up to 150 bow and arrow permits may be issued in the Fairbanks Manage- ment Area; a recipient of a drawing permit is prohibited from taking an antlered bull moose in the Fairbanks Management Area; or	Sept. 1–Nov. 27 (General hunt only)	Sept. 1–Nov. 27
1 antlerless moose by muzzle-loader by drawing permit only; up to 10 permits may be issued; a recipient of a drawing permit is prohibited from taking an antlered bull moose in the Fairbanks Management Area	Dec. 1–Jan. 31 (General hunt only)	Dec. 1–Jan. 31
Unit 20(B), remainder of the Fairbanks Management Area		
...		
1 antlerless moose by bow and arrow only, by	Sept. 1–Nov. 27 (General hunt only)	Sept. 1–Nov. 27



drawing permit only; up to 150 bow and arrow permits may be issued in the Fairbanks Management Area; a recipient of a drawing permit is prohibited from taking an antlered bull moose in the Fairbanks Management Area; or

1 moose by targeted permit only; up to 100 permits may be issued

Season to be announced by emergency order (General hunt only)

No open season.

Unit 20(B), that portion within the Minto Flats Management Area

RESIDENT HUNTERS:

...

1 antlerless moose by registration permit only

Oct. 15–Feb. 28 (Subsistence hunt only)

No open season.

...

Unit 20(B), the drainage of the Middle Fork of the Chena River

1 antlerless moose by drawing permit only; up to 300 permits may be issued; a person may not take a cow accompanied by a calf; or

Aug. 15–Nov. 15 (General hunt only)

1 antlerless moose by registration permit only; a person may not take

Oct. 1–Feb. 28 (General hunt only)

No open season.

a cow accompanied  
by a calf; or

...

Unit 20(B), that  
portion southeast  
of the Moose  
Creek dike within  
one-half mile of  
each side of the  
Richardson highway

...

1 moose by drawing  
permit only; by crossbow,  
bow and arrow, or  
muzzleloader only;  
up to 100 permits  
may be issued; or

Sept. 16–Feb. 28  
(General hunt only)

No open season.

1 moose by targeted  
permit only; by crossbow,  
shotgun, or bow and arrow  
only; up to 100 permits may be  
issued

Season to be announced  
by emergency order  
(General hunt only)

No open season.

Remainder of Unit 20(B)

1 antlerless moose by  
drawing permit only; by  
youth hunt only; up  
to 200 permits may be issued;  
or

Aug. 5–Aug. 14  
(General hunt only)

No open season

...

1 antlerless moose by  
drawing permit only;  
up to 1,500 permits  
may be issued in the  
Remainder of Unit 20(B);  
a person may not take  
a cow accompanied  
by a calf; or

Aug. 15–Nov. 15  
(General hunt only)

No open season.

1 antlerless moose by registration permit only; a person may not take a cow accompanied by a calf; or

Oct. 1–Feb. 28  
(General hunt only)

1 moose by targeted permit only; by crossbow, shotgun, or bow and arrow only; up to 100 permits may be issued

Season to be announced by emergency order  
(General hunt only)

No open season.

...

**What is the issue you would like the board to address and why?** Antlerless moose hunting seasons must be reauthorized annually. Our goal is to provide for a wide range of public uses and benefits, and to protect the health and habitat of moose populations. Antlerless hunts are important for improving or maintaining the ability of moose habitat to support current populations. They also help regulate moose population growth, help to meet Intensive Management (IM) objectives for high levels of harvest, and provide subsistence hunters with a reasonable opportunity to pursue moose for subsistence uses without reducing bull-to-cow ratios.

If antlerless moose hunts are not reauthorized, the moose population may increase to unacceptable levels or may need reduction when new data is available and analyzed. Opportunity to hunt a harvestable surplus of cow moose will be lost, and our ability to meet intensive management harvest objectives will be compromised. Subsistence hunters in the portion of Unit 20B in the Minto Flats Management Area may not have a reasonable opportunity to pursue moose for subsistence uses.

This reauthorization of antlerless moose hunts will likely improve or maintain the ability of moose habitat to support the current moose population. Hunting opportunity and harvest will increase and allow the Department of Fish and Game (department) to manage these moose populations at optimum levels. The additional harvest will help in meeting intensive management harvest objectives without reducing bull-to-cow ratios to low levels. Meat and subsistence hunters will benefit from the opportunity to harvest cow moose. Moose populations will benefit by having moose densities compatible with their habitat. Motorists and residents may benefit from reduced moose-vehicle collisions and moose-human conflicts.

*Fairbanks Management Area (FMA)*—The purpose of this antlerless hunt is to regulate population growth in the FMA and potentially reduce moose-vehicle collisions and nuisance moose problems.

The number of moose-vehicle collisions in the FMA are high and pose significant safety risks to motorists. In addition, moose nuisance issues continue to place significant demands on property owners. To increase hunting opportunity and harvest and reduce moose-vehicle collisions, the department incrementally increased the number of drawing permits for antlerless moose in the

FMA during RY99-RY10. Moose-vehicle collisions and moose nuisance problems declined during RY06-RY13, presumably, in part due to consistent antlerless moose harvests.

*Minto Flats Management Area (MFMA)*—The primary purpose of this antlerless hunt is to provide a reasonable opportunity for subsistence uses and to regulate the moose population in the MFMA.

The MFMA moose density was high in 2010 (4.1 moose/mi<sup>2</sup>). In order to reduce the moose population, harvest of antlerless moose during RY12 and RY13 was about 2.5% of the population. The fall 2013 estimate showed a more appropriate density of 2.6 moose/mi<sup>2</sup>. Therefore, to stabilize this population, antlerless harvest will be reduced to approximately 1% of the total population to maintain the current population.

*Targeted Hunt*—The purpose of the targeted hunt is to allow the public to harvest moose that are causing a nuisance or public safety issue. These permits are used sparingly, but allow the public to harvest the moose instead of the department just dispatching them.

*Unit 20B, drainage of the Middle Fork of the Chena River and the Remainder of Unit 20B*—The antlerless moose harvest in this area is designed to regulate the moose population in this portion of Unit 20B and to help meet the Unit 20B IM harvest objective. Because the 2015 population estimate (11,064 moose, 90% CI 8,870–13,258) was below the IM population objective of 12,000–15,000 moose and no surveys were conducted in 2016, we suspended these hunts for the 2017 season. If a population estimate survey is can be conducted in November of 2017, then the department may reinstate these hunts; however at this time we will continue to manage this area conservatively until we have a population estimates and determine whether the moose population falls within the IM population objective.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-050)  
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**PROPOSAL 160 – 5 AAC 85.045(18). Hunting seasons and bag limits for moose.**  
Reauthorize antlerless moose hunting seasons in Unit 20D as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
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(18)

...

Unit 20(D), that portion lying west of the west bank of the Johnson River and south of the north bank of the

Tanana River, except  
the Delta Junction  
Management Area and  
the Bison Range Controlled  
Use Area

RESIDENT HUNTERS:

...

1 antlerless moose by  
drawing permit only;  
up to 1,000 permits may  
be issued in combination  
with that portion in the  
Delta Junction Management  
Area; a person may not  
take a calf or a cow  
accompanied by a calf; or

Oct. 10–Nov. 25  
(General hunt only)

1 antlerless moose by  
registration permit only;  
a person may not take a  
calf or a cow accompanied  
by a calf

Oct. 10–Nov. 25  
(General hunt only)

...

Unit 20(D), that portion within  
the Delta Junction Management Area

RESIDENT HUNTERS:

1 moose every four regulatory  
years by drawing permit only,  
a person may not take a calf or a  
cow accompanied by a calf; or

Sept. 1–Sept. 15  
(General hunt only)

...

1 antlerless moose by drawing  
permit only; up to 1,000 permits  
may be issued in combination  
with that portion lying west  
of the west bank of the  
Johnson River and south of  
the north bank of the Tanana

Oct. 10–Nov. 25  
(General hunt only)

River; a person may not take a calf or a cow accompanied by a calf; or

1 antlerless moose by registration permit only; a person may not take a calf or a cow accompanied by a calf

Oct. 10–Nov. 25  
(General hunt only)

**NONRESIDENT HUNTERS:**

1 moose every four regulatory years by drawing permit only, a person may not take a calf or a cow accompanied by a calf; or

Sept. 1–Sept. 15

...

**What is the issue you would like the board to address and why?** Antlerless moose hunts must be reauthorized annually. The objectives of the Unit 20D antlerless moose hunts are to 1) stabilize population growth of this high-density moose population; 2) address concerns about range degradation, reduced nutritional condition, and reduced reproductive success; 3) make progress toward meeting the Unit 20D intensive management (IM) harvest objective of 500–700 moose; and 4) provide youth and disabled veteran hunting opportunity. These objectives are being met.

If antlerless moose hunts are not reauthorized, the moose population could quickly increase to undesirable levels. Opportunity to hunt a harvestable surplus of cow moose would be lost, and our ability to meet IM harvest objectives could be compromised. Additionally, the population may need to be reduced dramatically when new data are available and analyzed.

Antlerless moose hunts are offered in southwest Unit 20D, which has the highest moose density in the unit. This area has great potential for population growth due to an abundance of high quality moose habitat created from extensive land clearing for agricultural use and multiple wild fires over the past 30 years. Total moose harvest in all of Unit 20D averaged 278 moose (an average of 272 bulls and six antlerless moose) during regulatory year (RY) 2014 and RY2015.

Antlerless hunting opportunity is limited. The largest antlerless harvest (n=113) that occurred recently in Unit 20D was in 2009 when antlerless hunts were newly authorized. The southwest Unit 20D population estimate (approximately 4,000–4,500 moose, with a sightability correction factor applied) and bull harvest in southwestern Unit 20D (135–165) have been stable since 2011. The 2014 population estimate for southwest Unit 20D was 4,321 moose (corrected for sightability) with a density of 3.2 moose per square mile, 38 calves:100 cows and 32 bulls:100 cows.

Antlerless harvest will likely be needed to maintain the population at the optimal density and will help make progress toward the IM harvest objective of 500–700 moose without reducing bull:cow ratios below the management objectives. The population trend and harvest rate suggest the low, consistent antlerless harvest provided by the drawing permit hunts in Unit 20D, in conjunction with other mortality factors (including ceremonial harvest, vehicle collision, accidents, and predation), is an appropriate rate of antlerless mortality that contributes to stability in the southwest 20D moose population.

The Department of Fish and Game will continue to evaluate antlerless moose hunts and their effect on moose density and population growth. Future antlerless moose hunts will be implemented as needed based on evaluation of three indices of density-dependent moose nutritional conditions in relation to changes in moose density: biomass removal of current annual growth on winter browse, proportion of females with twin calves, and late-winter calf weights.

Additional drawing permits or registration permits will be issued only if more harvest is needed in specific areas to maintain optimal moose densities.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-051)  
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**PROPOSAL 161 – 5 AAC 85.045(24). Hunting seasons and bag limits for moose.**  
 Reauthorize the antlerless moose season in the western portion of Unit 26A as follows:

<b>Units and Bag Limits</b>	<b>Resident Open Season (Subsistence and General Hunts)</b>	<b>Nonresident Open Season</b>
(24)		
...		
Unit 26(A), that portion west of 156° 00' W. longitude and excluding the Colville River drainage.	July 1–Sept. 14	No open season.
1 moose; a person may not take a calf or a cow accompanied by a calf		
...		

**What is the issue you would like the board to address and why?** To be retained, the antlerless moose season in the portion of Unit 26A west of 156° 00' W longitude and excluding the Colville drainage must be reauthorized annually.

The moose population in the western portion of Unit 26A north of the Colville drainage is somewhat unique compared to the unit-wide population, and the distribution is very sparse because there is very little moose habitat in the coastal plain. However, each year a small number of bulls and cows migrate into the area from the major river drainages in the central and southern parts of the unit. So far, the marginal habitat in this portion of Unit 26A has not allowed moose to establish a population, but these moose provide the only opportunity to harvest a moose in the northwestern portion of Unit 26A.

Unit 26A moose population estimates fluctuated between 294 and 609 moose between 2011 and 2014. More recently, staff counted 145 moose in 2015 and 158 moose in 2016 in the core sample area. The number of moose in the antlerless hunt area is difficult to estimate, but is likely around 10 moose per year. Harvest reports indicate three antlerless moose have been harvested since 2006, and the annual harvest rate of antlerless moose is less than 1% of the total population.

Due to the low harvest rate the Department of Fish and Game recommends reauthorization of the antlerless moose season in this area to provide additional hunting opportunity for the small number of hunters to opportunistically harvest antlerless moose in this remote portion of Unit 26A.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-054)  
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**PROPOSAL 162 – 5 AAC 92.015(a)(4). Brown bear tag fee exemptions.** Reauthorize resident brown bear tag fee exemptions throughout Interior and Eastern Arctic Alaska as follows:

(a) A resident tag is not required for taking a brown bear in the following units:

(4) Units 12, 19, 20, 21, 24, 25, 26(B), and 26(C)

**What is the issue you would like the board to address and why?** Brown bear tag fee exemptions must be reauthorized annually. Reauthorizing the exemption allows residents, who have not purchased the \$25 brown bear tag, to take bears opportunistically.

Region III (Interior and Eastern Arctic) brown bear populations are healthy, and harvest is monitored through the brown bear sealing requirement. Eliminating all resident brown bear tag fees throughout Region III simplifies regulations, increases resident hunter opportunity, and is not likely to cause declines in these brown bear populations. This reauthorization would assist with our objective of managing Region III brown bear populations for hunter opportunity and would continue to allow hunters to take brown bears opportunistically. During regulatory years 2006–2014, 31% of brown bears harvested by resident hunters in Region III were taken incidentally to other activities compared with 13% statewide.

The Department of Fish and Game (department) estimates that brown bear harvest account for approximately 6% of the bear populations. It is composed primarily of males and is sustainable. Where harvests are elevated (i.e., Units 20A, 20B, 20D, and portions of 26B), brown bear



populations are managed by adjusting seasons and bag limits. The resident tag fees that were in place prior to 2010 appeared to have little effect on harvest rates in these areas.

The department also recommends that the tag fee exemptions for subsistence registration permit hunts in Units 19A and 19B (downstream of and including the Aniak River drainage), 21D, and 24 should also be reauthorized to provide additional subsistence opportunity in these areas.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-052)  
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**PROPOSAL 163 – 5 AAC 92.015(a)(4). Brown bear tag fee exemptions.** Reauthorize the current resident tag fee exemptions for brown bear in Units 18, 22, 23 and 26A as follows:

(a) A resident tag is not required for taking a brown bear in the following units:

- ...
- (4) Units... 26;
- ...
- (8) Unit 22;
- (9) Unit 23;
- ...
- (13) Unit 18;
- ...

(b) In addition to the units as specified in (a) of this section, if a hunter obtains a subsistence registration permit before hunting, that hunter is not required to obtain a resident tag to take a brown bear in the following units:

- ...
- (4) Unit 18;
- ...
- (7) Unit 22;
- (8) Unit 23;
- ...
- (10) Unit 26(A).

**What is the issue you would like the board to address and why?** The Board of Game must reauthorize brown bear tag fee exemptions annually or the fee automatically becomes reinstated. We recommend continuing resident tag fee exemptions for the general season and subsistence season hunts in Region V (Units 18, 22, 23, and 26A).

General Season Hunts: Reauthorizations are needed for: Unit 18, where the tag fee has been exempted for five years; Unit 22, where the tag fee has been exempted for 15 years; Unit 23, where the tag fee has been exempted for 10 years; and Unit 26A, where the tag fee has been exempted for five years. Tag fee exemptions are desired to allow: 1) incremental increase in

annual harvest, 2) opportunistic harvest by resident hunters, and 3) harvest by a wide range of users. Increased harvest is allowable because portions of these units have high bear populations.

General season brown bear harvest rates are within sustained yield limits and previous exemptions of the resident tag fee have not caused dramatic or unexpected increases in overall harvest. In Units 18 and 26A, tag exemptions were adopted in RY2012 and harvest has remained within sustained yield and continues to be similar to the preceding ten-year period. In Unit 22, the 15-year tag-free period (RY2000-RY2015) for Alaska residents has had an average annual harvest of 52 brown bears (range 42–65 bears). In Unit 23, general harvest has been stable since 1990, although annual harvest is variable due to effects of weather on hunting conditions. Harvest data for Unit 23 show no trend in the sex ratio, age or size of bears harvested under all types of hunts.

Subsistence Season Hunts: Reauthorizations are needed for Units 18, 22, 23, and 26A where brown bear subsistence hunt requirements include: 1) registration permit, 2) tag fee exemption, 3) salvaging meat for human consumption, 4) no use of aircraft in Units 22, 23 and 26A, 5) no sealing requirement unless hide and skull are removed from subsistence hunt area, and 6) if sealing is required, the skin of the head and front claws must be removed and retained by the Department of Fish and Game (department) at the time of sealing. Continuing the tag fee exemption helps facilitate participation in the associated brown bear harvest programs maintained by the department for subsistence hunts.

In all units, subsistence brown bear harvest rates are low and well within sustained yield limits, and exempting the resident tag fee has not caused an increase in subsistence harvest. In Unit 18, an estimated 1–3 bears are taken annually in subsistence hunts. In Unit 22, subsistence harvest by permit is quite low, averaging less than one bear per year (less than 1% of the total brown bear harvest). In Unit 23, subsistence permit harvest is less than five bears annually since 1992 (less than 10% of the total brown bear harvest). In Unit 26A, between one and five bears are taken annually by subsistence hunters.

**PROPOSED BY:** Alaska Department of Fish and Game (HQ-F17-055)  
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