# Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Unit 15A

**Prepared by the Division of Wildlife Conservation**
**March 2015**

**1) Description of IM Program and Department recommendation for reporting period.**

**A) This report is an annual evaluation for a predation control program authorized by the Alaska Board of Game (Board) under 5 AAC 92.118**

**B) Month this report was submitted by the Department to the Board:** March 2015

**C) Program name:** GMU 15A Moose

**D) Existing program has an associated Operational Plan:** Operational Plan for Intensive Management of Moose in Game Management Unit 15A During Regulatory years 2012-2017.

**E) Game Management Unit(s) fully or partly included in IM program area:** GMU 15A

**F) IM objectives for Moose**: Population size 3,000-3,500. Harvest 180-350.

**G) Month and year the current predation control program was originally authorized by the Board:** January 2012, revised at the March 2013 Alaska Board of Game (BOG) meeting.

**H) Predation control is currently active in this IM area**: Yes

**I) The current predation control program began:** November 2013.

**J) A habitat management program funded by the Department or from other sources is currently active in this IM area:** Yes

**K) Size of IM program area (square miles) and geographic description:** 1,314 $mi^2$, GMU 15A

**L) Size and geographic description of area for assessing ungulate abundance:** 1,314 $mi^2$, GMU 15A

**M) Size and geographic description of area for ungulate harvest reporting:** 1,314$mi^2$, GMU 15A

**N) Size and geographic description of area for assessing predator abundance:** 1,314 $mi^2$, GMU 15A

**O) Size and geographic description of predation control area:** Approx. 49 $mi^2$, includes portions of Salamatof and Kenai Native Associations lands in GMU 15A

**P) Criteria for evaluating progress toward IM objectives**: An increase in calf:cow ratio, increased survival of calves, no further population decline.

**Q) Criteria for success with this program:** Increased calf survival and recruitment. The overall program will be successful when we attain IM population and harvest objectives in

GMU 15A.

**R) Department recommendation for IM program in this reporting period**: Stop program

**Refer to one or more scaled maps in the Operational Plan for areas described in this section**

**2) Prey data**

**Date(s) and method of most recent abundance assessment for Moose:**
Please refer to Figure 3 on page 5 of the Operational Plan for Intensive Management of Moose in Unit 15A. Prey data for RY 2012 include a November 2012 composition survey and a February 2013 GSPE population estimate. Data for RY 2013 is from a November/December composition survey. Data for RY 2014 was collected During December 2014, however, it was limited to 1 count area (2). We generally include 6 count areas to calculate ratios for GMU 15A (Table 1).

**Compared to IM area, was a similar trend and magnitude of difference in abundance observed in nearby non-treatment area(s) since program inception:** NO, we are in the second year of the program and it is premature to detect a difference.

**Date(s) of most recent age and sex composition survey:** November 25 – December 3, 2013.

**Compared to IM area, was a similar composition trend and magnitude of difference in composition observed in nearby non-treatment area(s) since program inception:** NO, we are in the second year of the program and it is premature to detect a difference.

**Table 1**. **Moose abundance, age and sex composition in assessment area (L) since program implementation in year 1 to reauthorization review in year 2017 in GMU 15A**. **Regulatory year is 1 July to 30 June (e.g, RY 2012 is 1 July 2012 to 30 June 2013).**

| | | | Composition (number per 100 females) | | | |
|---|---|---|---|---|---|---|
| Period | RY | Abundance (variation) | Calves | Yearlings | Males | Total *n* |
| | 2012 | | 25 | | 30 | 372 |
| | 2012 | 1569 (±13.4%; 95% C.I.) | | | | |
| Year 1 | 2013 | | 25 | | 29 | 332 |
| Year 2 | 2014[a] | | 33 | | 10 | 86 |
| Year 3 | 2015 | | | | | |
| Year 4 | 2016 | | | | | |
| Year 5 | 2017 | | | | | |

[a] During RY 2014 we were only able to survey one count area (CA2) due to lack of snow cover. During RY 2012 and RY 2013, we combined data from six count areas in GMU 15A.3.

**Describe trend in abundance or composition:** No noticeable difference in composition data between RY 2012 and RY 2013. Data from RY 2014 was not obtained from the same areas as data from RY 2012 and RY 2013 so comparisons cannot be made. There is no census data for RY 2013 or RY 2014.

**Table 2. Moose harvest in assessment area (M). Methods for estimating unreported harvest are described in Survey and Inventory reports.**

| Period | RY | Reported | | Estimated | | Total harvest | Other mortality[a] | Total |
|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Unreported | Illegal | | | |
| | 2012 | 6 | 0 | | | 6 | 107 | 113 |
| Year 1 | 2013 | 30 | 0 | | | 30 | 87 | 117 |
| Year 2 | 2014 | 36 | 0 | | 10 | 46 | 97 | 143 |
| Year 3 | 2015 | | | | | | | |
| Year 4 | 2016 | | | | | | | |
| Year 5 | 2017 | | | | | | | |

[a] vehicle mortality, and mortuary.

**Describe trend in harvest**: Please refer to Figure 4 on page 6 of the Operational Plan for Intensive Management of Moose in Unit 15A. The increased harvest from 2012 compared to 2013 and 2014 was primarily attributed to liberalized antler configuration for a legal bull. In 2012 a legal bull had to have an antler spread of at least 50 inches or at least 4 brow tines on at least one side. In 2013 and 2014 a bull with no more than a spike on at least one side was added to the 2012 definition for a legal bull to harvest. The reported harvest increased by six bulls from 2013 to 2014, but the increase is within expected annual variation so it would be premature to say we can detect a trend at this time.

**Describe any other harvest related trend if appropriate:** During 2012, 293 individuals reported hunting in GMU 15A and the reported harvest was 6 bulls (2% success rate). During 2013, 351 individuals reported hunting in GMU 15A and the reported harvest was 30 bulls (9% success rate). Preliminary

**3) Predator data:**

**Wolves**

**Dates and method of most recent spring abundance assessment for wolves:**

Survey data for RY 2010 were collected in March 2011, for RY 2011 in November 2011, and for RY 2012 in February 2013. All of GMU 15A was flown and the total numbers are based on the number of wolves observed and an assessment of tracks observed. A partial survey was conducted during December 2013 and no surveys were completed during 2014 due to lack of adequate snow cover. It appears that wolf numbers have remained relatively constant since 2010 (Table 3.). The spring abundance is our best estimate of what remained post-harvest. For this report hunting mortality is included under trapping because it is difficult to distinguish between the two. Only a few wolves are taken under the hunting regulation. We believe 10-20 wolves spend at least some of their time in the areas open to wolf control.

**Dates and method of most recent fall abundance assessment for wolves:**
Fall abundance was estimated by adding the estimated number of wolves removed prior to the date the wolf survey was flown to the number of wolves counted during the survey

**Other research or evidence of trend or abundance status in wolves:** Interviews with trappers and information from trapper survey reflect concurrence with estimated abundance.

**Table 3.** Population estimates and human caused mortalities for wolves in GMU 15A. **Removal objective is 100% of pre-control fall abundance from control area (49 mi$^2$) in year 1 of wolf predation control program, so estimated or confirmed number remaining by spring (30 April) each RY in all of GMU 15A (1,314 mi$^2$) must be at least 15.**

| Period | RY | Fall abundance | Harvest removal from GMU 15A | | Dept. control removal from GMU 15A | Public control removal from GMU 15A | Total removal from GMU 15A | Spring abundance |
|---|---|---|---|---|---|---|---|---|
| | | | Trap | Hunt | | | | |
| | 2010 | 53-63 | 15 | | | | 15[a] | 38-48 |
| | 2011 | 60-62 | 10 | | | | 10 | 50-52 |
| | 2012 | 60-65[a] | 20 | | | | 20[a] | 45-50 |
| Year 1 | 2013 | 45-60[b] | 2 | | | 3 | 5 | 45-50 |
| Year 2 | 2014[d] | | 2 | | | 0 | 2 | |
| Year 3 | 2015 | | | | | | | |

[a] Given the date of the survey we estimated that 5 wolves were harvested by trappers/hunters from the date of the survey until the close of the season.

[b] This is estimate based on a partial survey of GMU 15A and other reported sightings.

[c] Harvest data was obtained from the State Winfonet database.

[d] Preliminary data.

**Black Bear**

The latest estimate for black bear abundance occurred in the mid-1980's. Extrapolating data from that time period resulted in a current estimate of 700-900 black bears in GMU 15A. It is not known if these data accurately portray current black bear numbers in this area, but black bears do occur throughout the unit.

**Brown Bear**

The Kenai National Wildlife Refuge completed a study in 2013 estimating the brown bear population on the Kenai Peninsula during 2010 Using their density calculation (42/100km$^2$) there were approximately 142 brown bears in GMU 15A.

The most significant action affecting brown bear mortality in GMU 15A is the recent liberalization of hunting seasons and bag limits. Prior to Fall 2012 the hunting season was managed through a limited drawing permit season with a 1 bear/4 years bag limit. In January 2012 the BOG liberalized hunting opportunity for Kenai brown bears by adding a fall registration hunt with unlimited number of permits and season dates of October 1 – November 30. The BOG furthered liberalized brown bear hunting opportunity in March 2013 including expanded season dates of September 1 – May 31, a bag limit of 1 bear/regulatory year, and maintained the unlimited number of registration permits. The BOG set a cap (to begin in calendar year 2014) on human caused brown bear mortalities of 70 human caused mortalities annually and during January 2014 allowed for the harvest of brown bears at registered black bear baiting stations. During calendar year 2013 the recorded human caused brown bear mortalities reached 71 and during 2014, 69 brown bears died from human causes. During

calendar years 2013 and 2014 the total human caused brown bear mortalities in GMU 15A were 20 and 15 respectively.

There are no identified Intensive Management control efforts for black or brown bears.

4) **Habitat data and nutritional condition of prey species:**

**Where active habitat enhancement is occurring or was recommended in the Operational Plan, describe progress toward objectives**

**Objective(s):** Increase available moose browse through mechanical treatment and work with other agencies to develop a long term habitat management strategy. The department received funding to expand this effort in the future and is cooperating with other agencies and native organization to develop a long term plan.

**Area treated and method:** Timber (mainly spruce, aspen, and some birch) was harvested on about 85 acres in GMU 15A. Portions of that area were scarified and approximately 1,000 birch seedlings were planted.

**Observation on treatment:** Initial visits to the site indicate good survival of the planted seedlings and regeneration of early successional species has started. Moose browsing is evident in the area, but the area treated is small. We have not detected any effect on the moose population we can attribute to the treatment.

**Evidence of progress toward objectives:** Department staff will continue to work with other government and private companies or organizations to develop a long term habitat management strategy.

**Nutritional indicators for moose in assessment area (L) of the GMU 15A Intensive management area:** Current research efforts addressing moose productivity and body condition are in the early stages and data are not summarized at this time. Preliminary data indicate that adult cow moose are in relatively poor condition in GMU 15A compared to adult cows in GMU 15C, based on body condition indices.

5) **Costs specific to implementing Intensive Management**

**Table 4. Cost ($1000 = 1.0) of agency salary based on estimate of proportional time of field level staff and cost of operations for intensive management activities (e.g., predator control or habitat enhancement beyond normal Survey and Inventory work) performed by personnel in the Department or work by other state agencies (e.g., Division of Forestry) or contractors in GMU 15A Intensive management area. Fiscal year (FY) is also 1 July to 30 June but the year is one greater than the comparable RY (e.g, FY 2010 is 1 July 2009 to 30 June 2010).**

| Period | FY | Predation control[a] | | Other IM activities | | Total IM cost[c] | Research cost[d] |
|---|---|---|---|---|---|---|---|
| | | Time[b] | Cost[c] | Time | Cost[c] | | |
| | 2012 | | | 12 | 35.5 | 35.5 | 150.0 |
| | 2013 | | | 13 | 136.3 | 136.3 | 250.0 |
| Year 1 | 2014 | 5 | 3 | 11 | 3 | 6 | 1 |
| Year 2 | 2015[e] | | | 1 | | | |
| Year 3 | 2016 | | | | | | |
| Year 4 | 2017 | | | | | | |
| Year 5 | 2018 | | | | | | |

[a]State or private funds only.
[b]Person-months (22 days per month)
[c]Salary plus operations
[d]Separate from implementing IM program but beneficial for understanding of ecological or human response to management treatment (scientific approach that is not unique to IM).[e]Cost of the moose research program and habitat improvement project are not included.

### 6) Department recommendations for interim

**Has progress toward defined criteria been achieved?** Yes, we completed initial habitat improvements (85 acres) and are continuing discussions with private organizations and government agency to develop a long term habitat improvement plan. We also issued permits for the wolf control portion of the program, and the public took 3 wolves (total) by aerial shooting in December 2013 and March 2014. A private contractor was hired to attempt ground based trapping efforts within the control area. Lack of snow hampered initial ground based removal efforts during 2014 (there were no ground based efforts during 2015). Aerial shooting efforts were also limited due to lack of snow during the 2013-14 and 2014-15 winters. A total of 3 wolves have been removed by control efforts during the first 2 years of this program, so the predator control portion of this IM effort has been ineffective.

**Has achievement of success criteria occurred?** No, we have not been able to detect any changes to the moose population or harvest in GMU 15A attributed to the IM efforts.

**Recommendation for IM practice:** Continue working on the habitat improvement efforts, but end the wolf control efforts. Given the size of the control area we will not be able to detect any changes to the moose population or harvest attributed to the aerial shooting efforts. Also, the Operational Plan states that any moose added to the population from the control efforts will be reallocated to harvest. When we detect a difference we will submit a proposal to the board of game (either during regular scheduled meeting or through agenda change request to address the surplus. The only moose currently available for harvest in GMU 15A are bulls with a spike on at least one side, or a 50 inch antler spread, or 4 or more brow tines on at least one

side.

We still consider lack of habitat as the primary factor for low moose numbers (and consequently moose harvest) in GMU 15A.