

Program Objectives:

To reduce brown bear predation on muskoxen in Unit 26B to:

- Improve muskoxen survival and promote population growth
- Management objective goal of at least 300 muskoxen $\geq$ 1 year of age
- Maintain hunting and viewing opportunities for both muskoxen and brown bears

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Outline:

- Legal framework
- History of Eastern North Slope muskox
- Muskox research project
- Previous muskox recovery program
- Current status of muskox and BOG recovery program proposal

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Sustained Yield of Predators Under Department Removal

- Overview for the Board of Game
- July 2026
- Record Copy #_____

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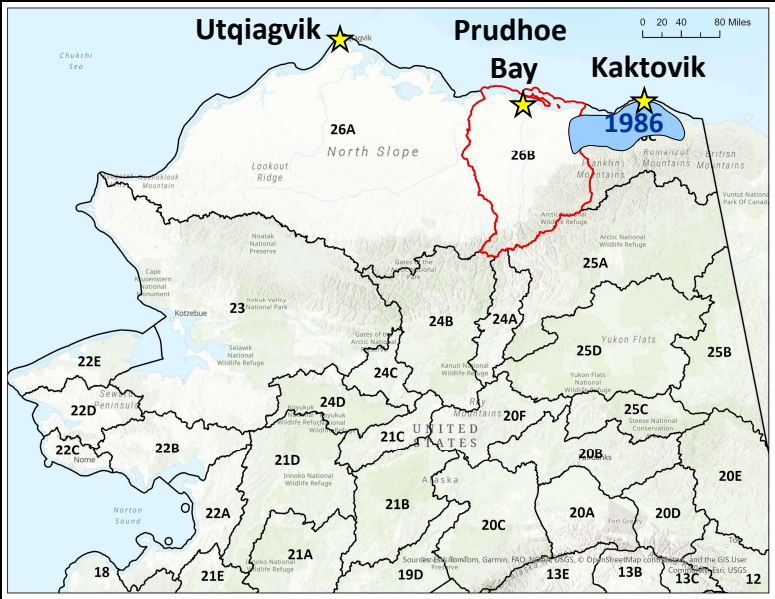
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Muskoxen on the Eastern North Slope, Alaska

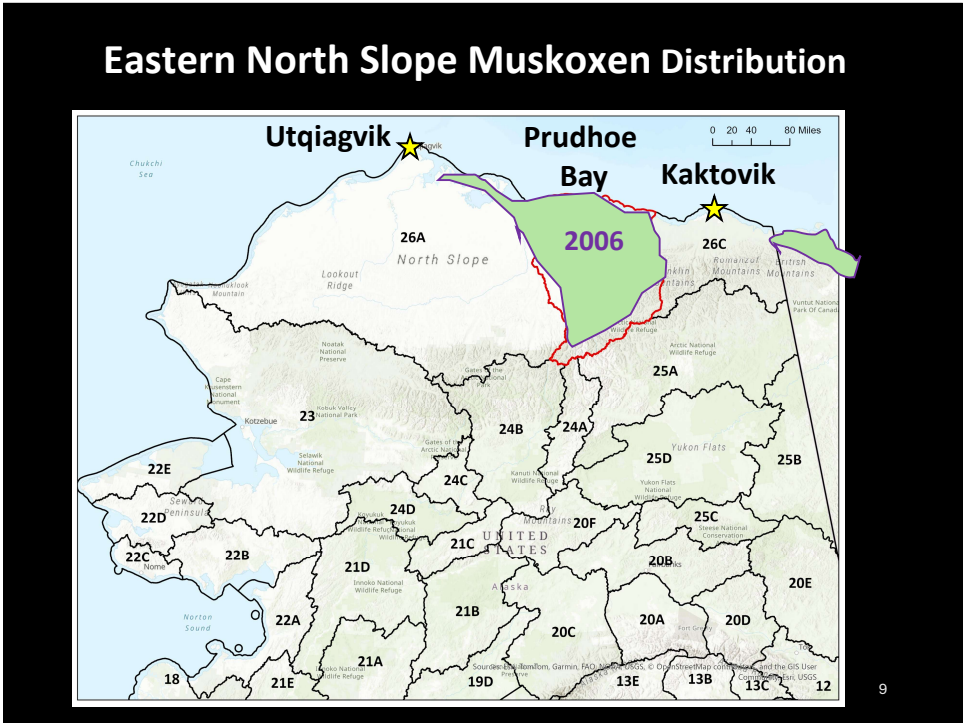


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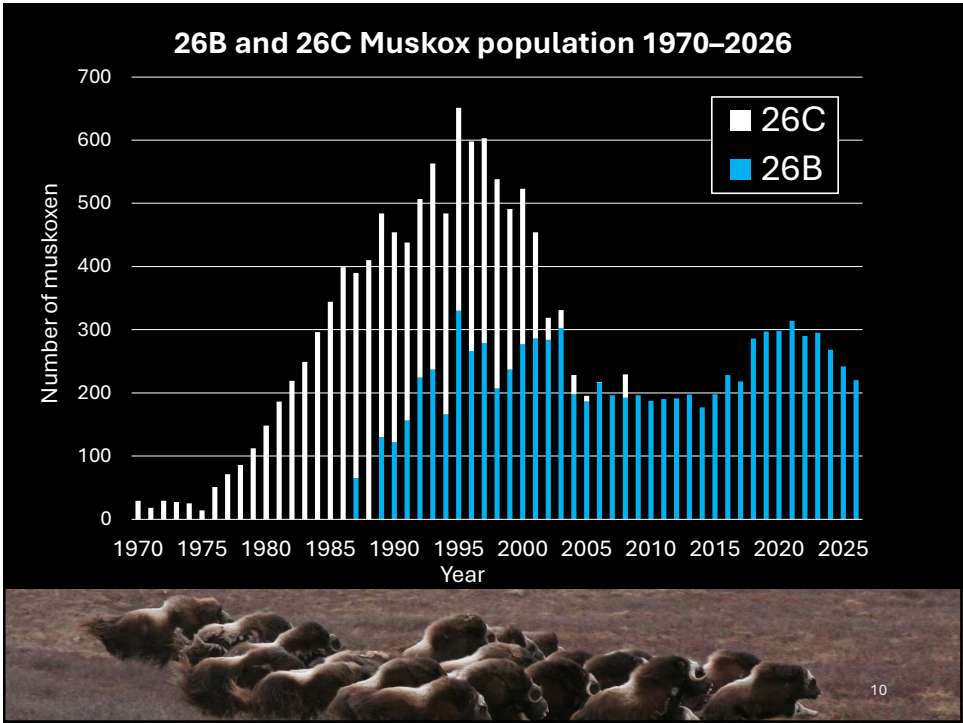
Eastern North Slope Muskoxen Distribution



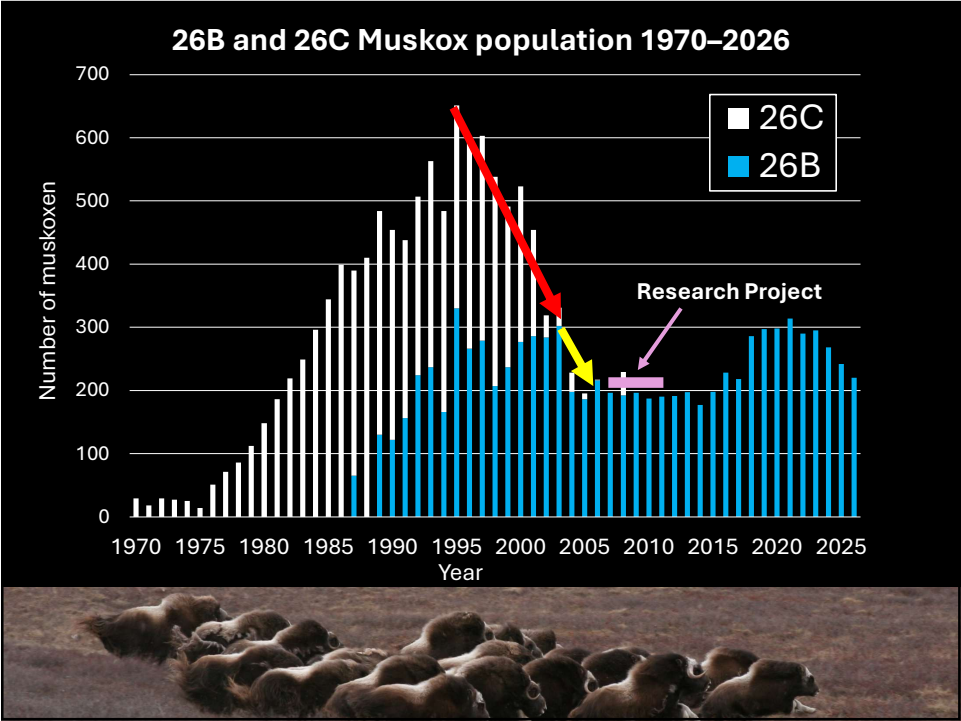
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2007 – 2011 Unit 26B Muskoxen Research Objectives

- 1. Estimate minimum annual birth rates
- 2. Estimate annual recruitment of calves
- 3. Estimate annual survival of adult females
- 4. Model population growth rate
- 5. Assess prevalence of disease
- 6. Assess nutritional status, including trace minerals
- 7. Determine frequency and causes of mortality

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2007 – 2011 Unit 26B Muskoxen Research Results

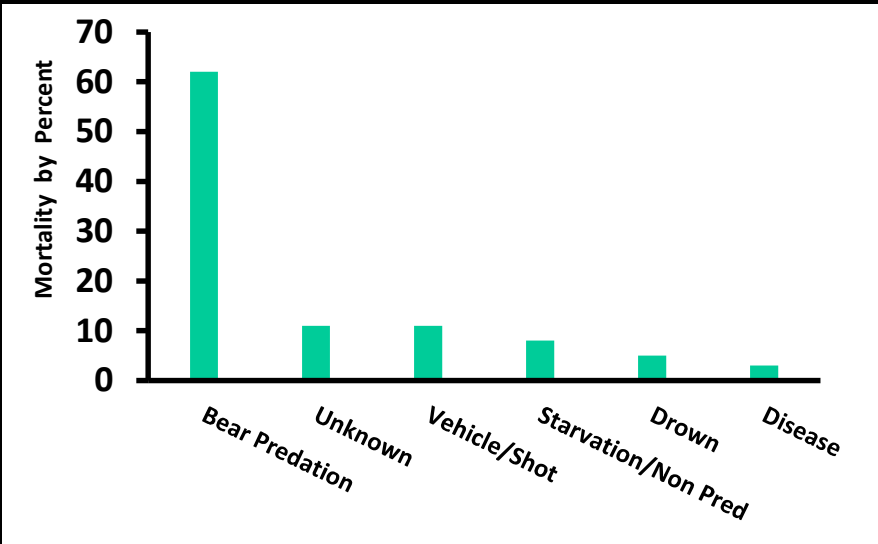
- 1. Minimum average annual birth rate: 68%
- 2. Annual calf survival (recruitment): 48%
- 3. Annual Adult survival: 84%
- 4. Modeled population annual growth rate: $\lambda = 0.95$
- 5. No significant prevalence of disease
- 6. No significant nutritional/trace mineral concerns
- 7. Frequency and causes of mortality.....

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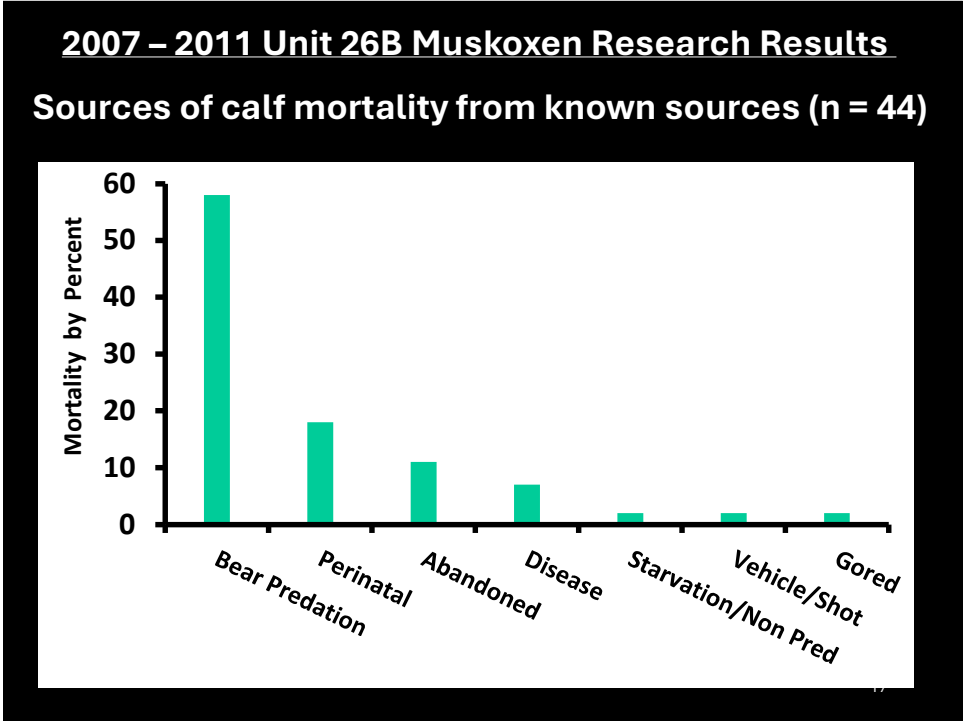
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2007 – 2011 Unit 26B Muskoxen Research Results

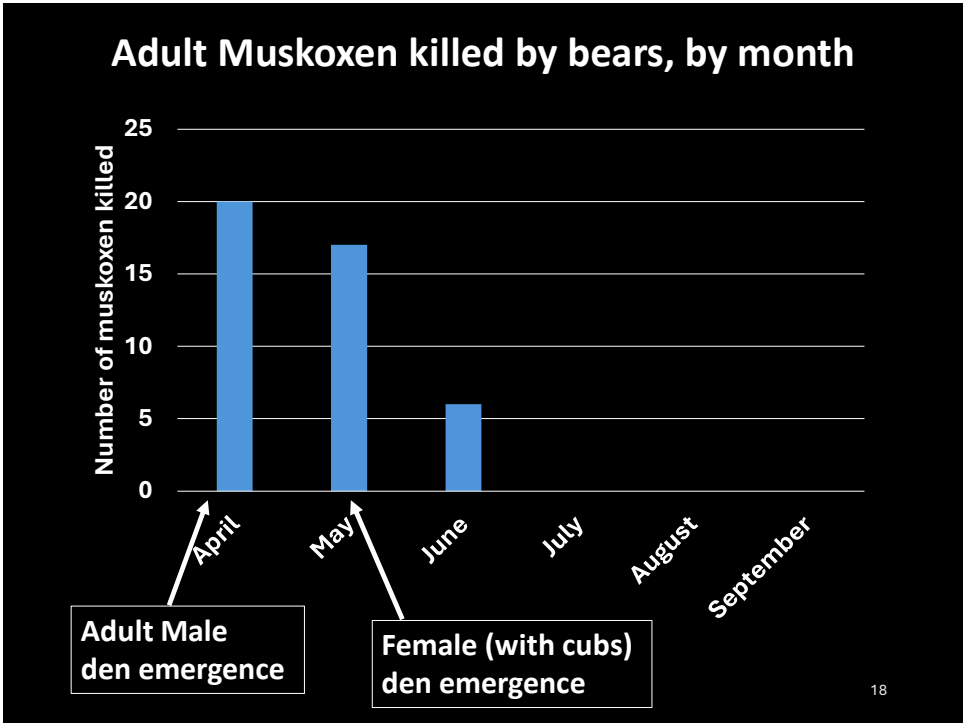
Sources of adult female mortality (n = 73)



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2007 – 2011 Unit 26B Muskoxen Research Conclusions

- Disease and nutrition concerns not significant
- Modeled estimates based on demographics matched closely with annual population counts
- Calf production sufficient to allow growth, if survival of adult cows and calves improved
- Brown bears are the most significant cause of mortality, primarily during April – June
- Appeared to be few individual brown bears responsible, mostly adult males

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2011 – 2016 Unit 26B Muskox recovery program

5 AAC 92.126(b) Non-intensive Management Plan



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Unit 26B Muskox Recovery Program

Project objectives:

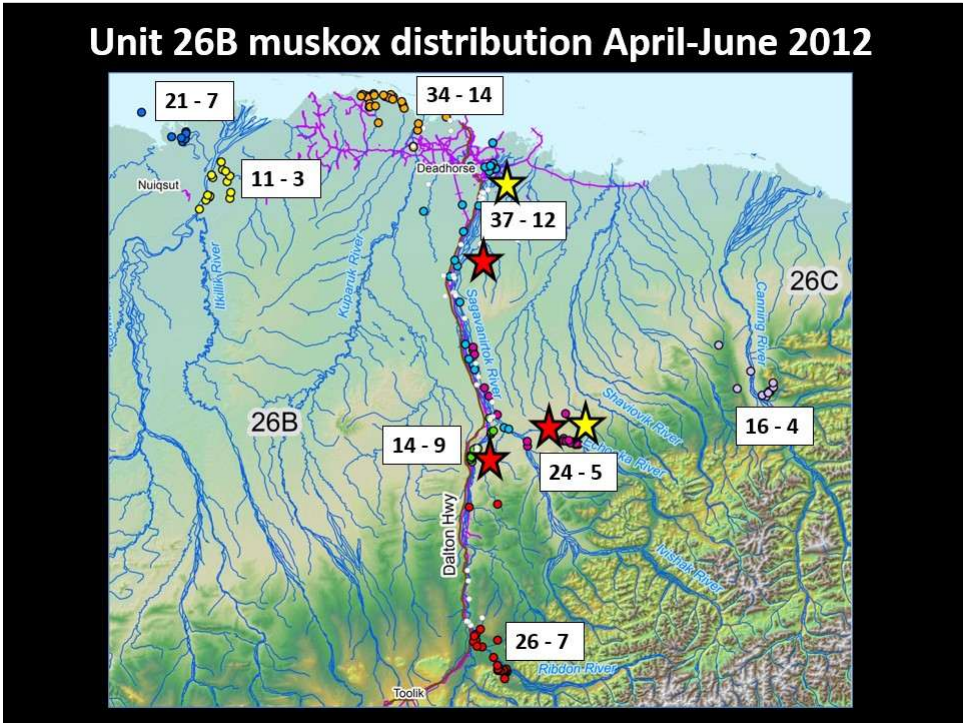
- 1. Identify and remove brown bears that prey on or threaten muskoxen during the calving period**
- 2. Increase spring/summer survival of muskoxen (includes adults and calves)**

Assumptions:

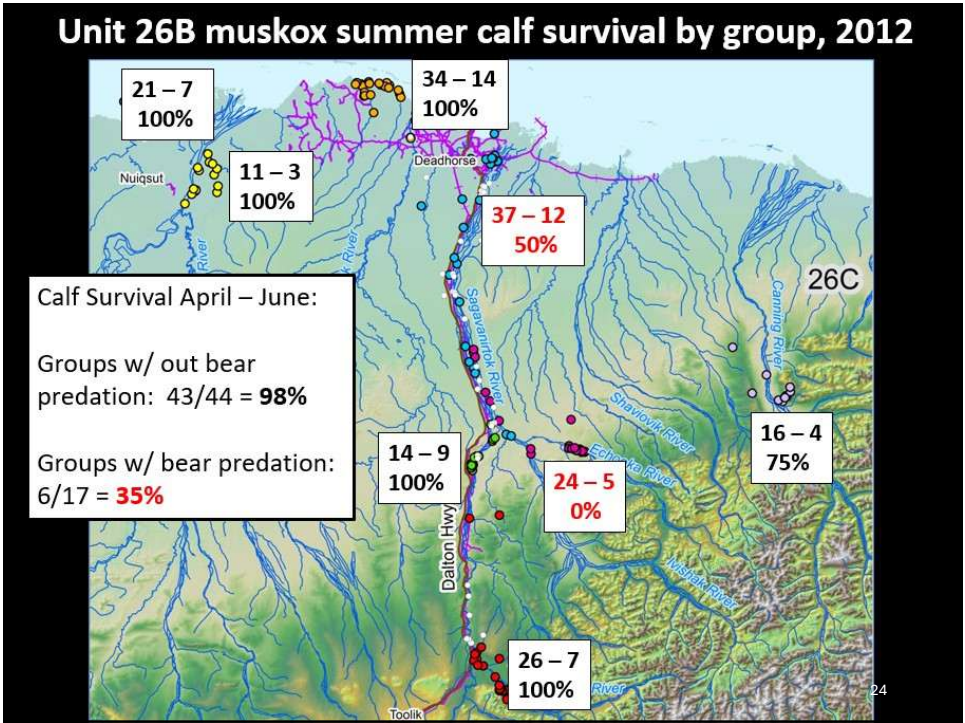
- 1. Few brown bears account for most predation**
- 2. Brown bear predation mostly additive mortality**
- 3. Increase in spring/summer muskoxen survival results in increased annual survival and population growth**

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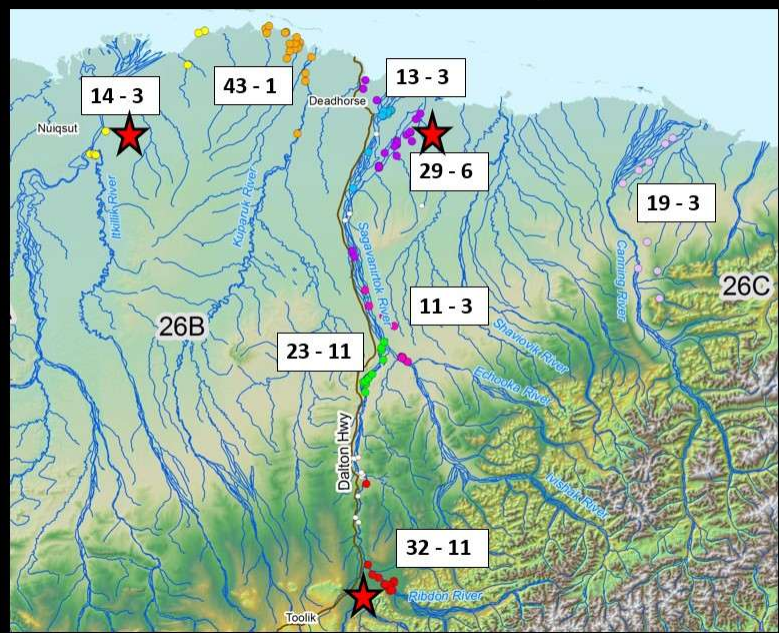


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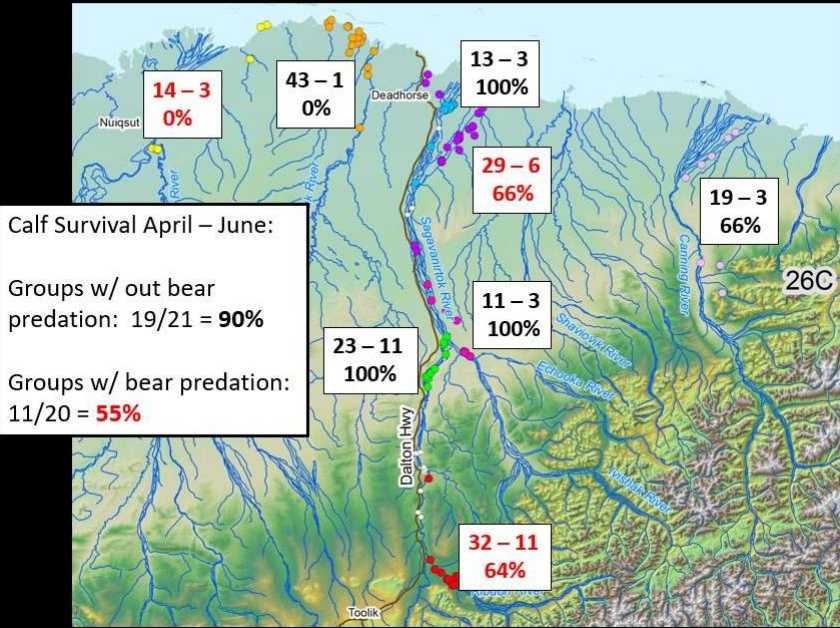
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Unit 26B muskox distribution April-June 2013

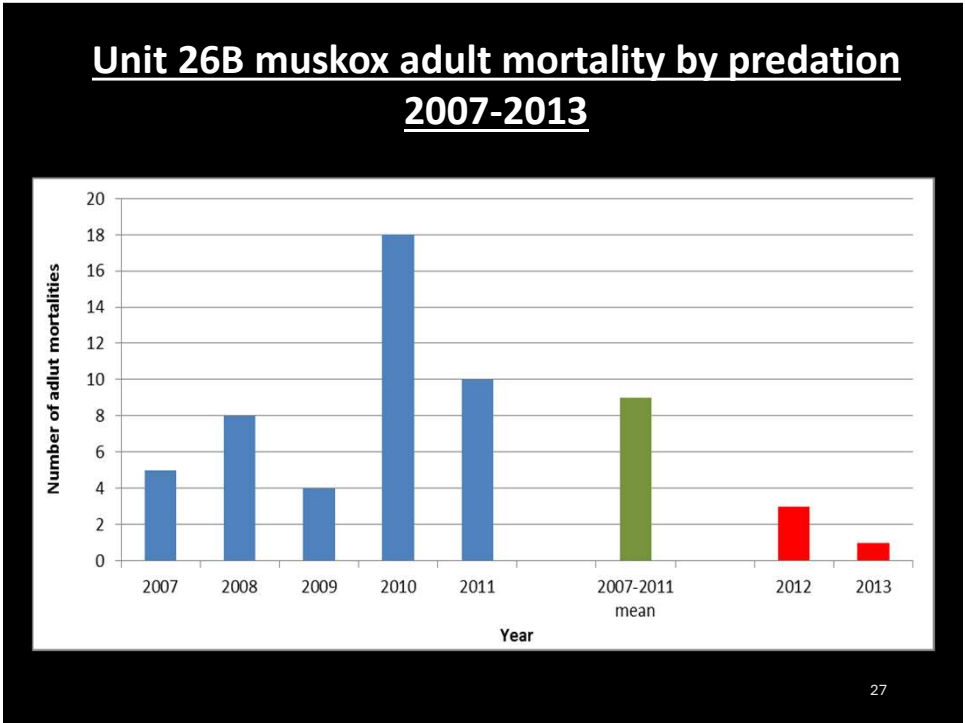


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Unit 26B muskox summer calf survival by group, 2013



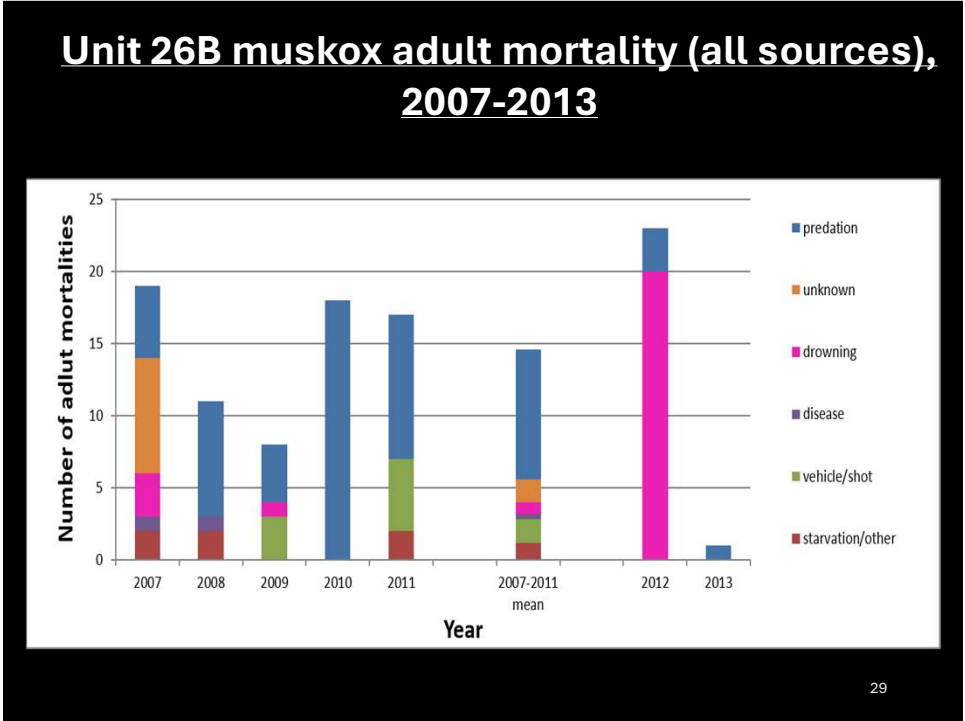
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- Unit 26B muskox adult and calf survival, 2012**
- Increased summer calf survival from 63% to 80%
 - Increased calf survival to October from 55% to 66%
 - Increased annual calf survival (recruitment) from 48% to 54%
 - Adult female survival through October >95%
 - Expected 10% increase in population by spring 2013
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- Unit 26B Muskox Recovery Program Conclusions 2012 - 2013**
- Increased summer calf survival from 63% to 73%
 - No statistical difference in annual calf survival
 - Reduced mortality of adults and calves as a result of brown bear predation
 - Total mortality was similar to the research project (drowning event)
 - No change in population size
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Unit 26B Muskox Recovery Program Conclusions **2012 - 2013**

- Allocated 2 years of funding
- Suspended program / Report to BOG
- Unknown effects of removing brown bears on future survival of muskoxen
- Regulation Expired in 2018

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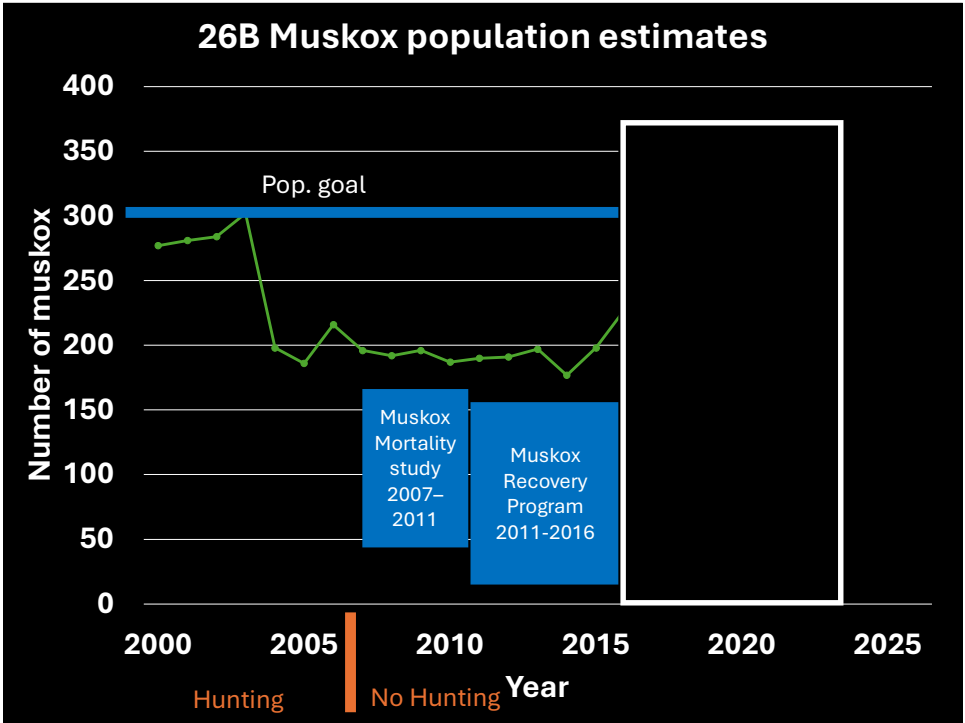
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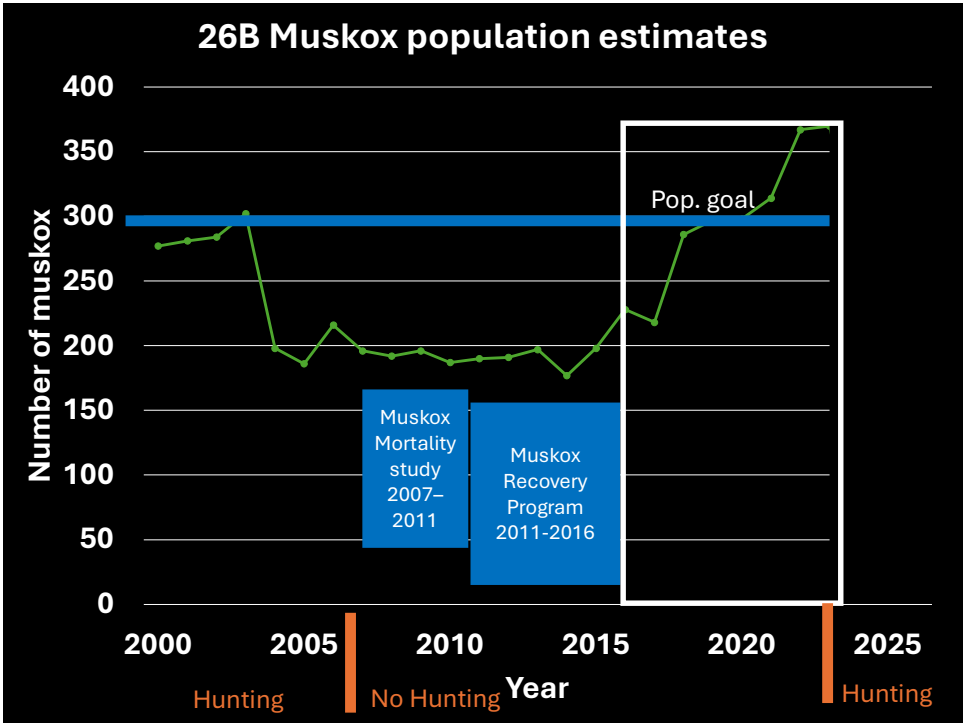
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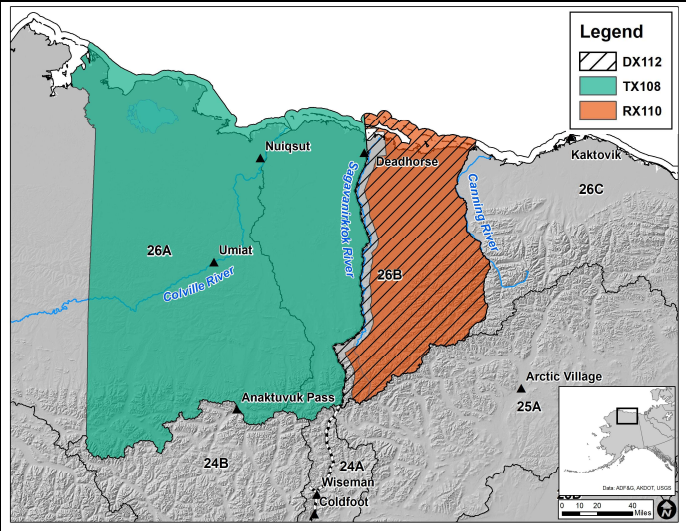


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Current hunts 2023–2026

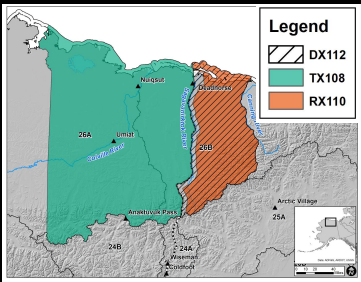


+C&T, 26B east of the Dalton Hwy, ANS = 4
+C&T, 26A and 26B west of the Dalton Hwy, ANS = 20

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Current hunts 2023–2026

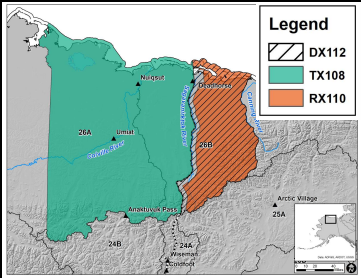
- Tier II subsistence hunt TX108
 - 26A Remainder and 26B West of the Dalton Highway
 - Average 74 applications/year
 - 4 either sex permits issued each year
 - Average 1 muskox taken/year (2 bulls, 1 cow)



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Current hunts 2023–2026

- Registration subsistence hunt RX110
 - 26B East of the Dalton Highway Corridor
 - 4 permits issued each year
 - 1 bull muskox harvested/year

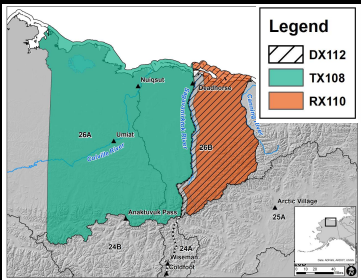


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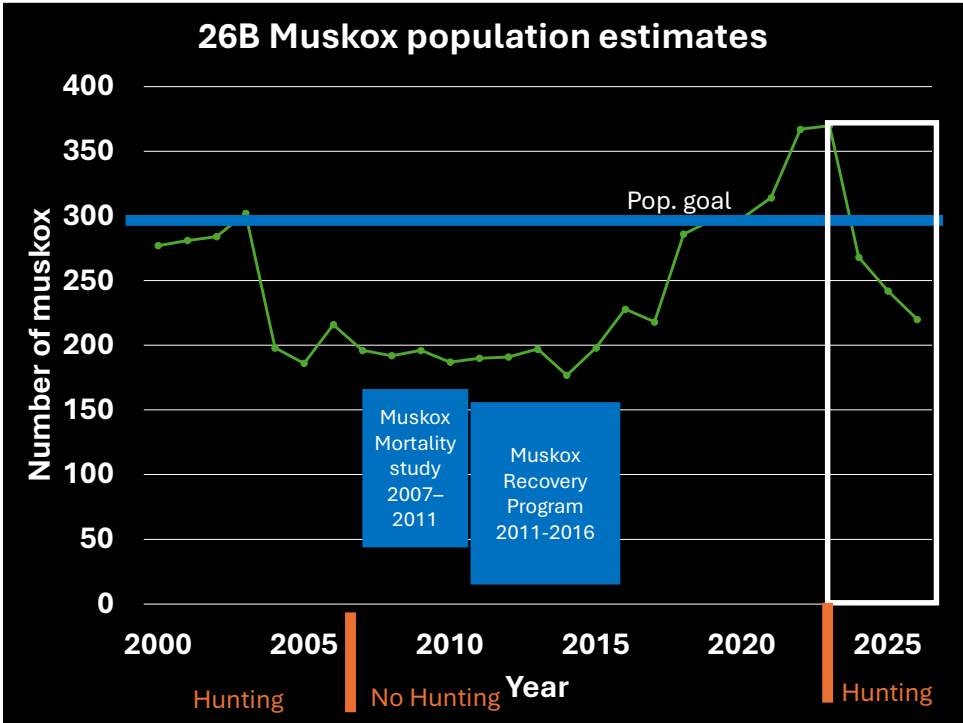
Current hunts 2023–2026

- Drawing hunt DX112
 - East of the Dalton Highway
 - Average 10,098 applications/year
 - 4 bull only permits issued/year
 - 4 bull muskox harvested/year
 - All with archery equipment in the corridor



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Hunting through a decline

- Continue to see high proportion of bulls
 - >60 bulls:100 cows
- Permits are mostly bull only
 - RX110 changed to bull only
 - DX112 is bull only
 - TX108 is either sex (1 cow taken in 3 years)
- Will decrease permits in near future
 - Will not offer DX112 in 2027
 - May not offer TX108 or RX110 beyond 2027



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Recent Muskoxen Mortality

- Maintain ~20 collars on adult female muskox
- 2023-2026 Mortality investigations
 - 14 Collared muskoxen have died
 - 3 muskoxen showed no sign of predation
 - 3 likely predation but too old to investigate
 - 8 showed evidence of bear predation
 - 79% of mortalities - predation



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Brown bear harvest in 26B 2016–2025

26B population estimate = 333 bears (243–423)

Harvestable surplus
= ≤27 total bears
(≤8% of population)

≤ 12 females (40%)

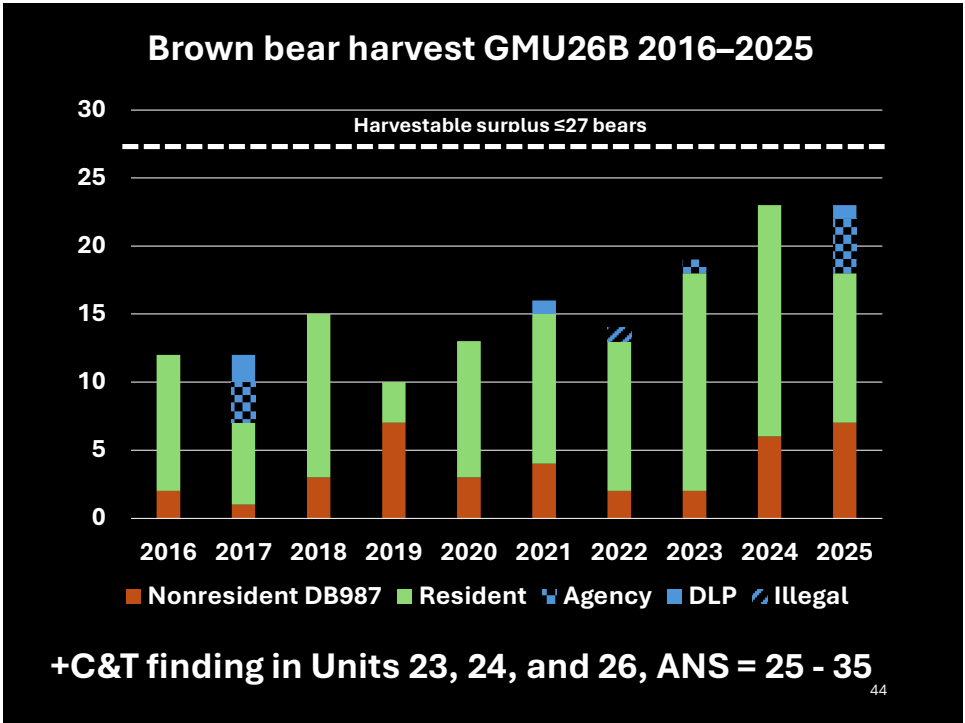


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Plan if
Adopted

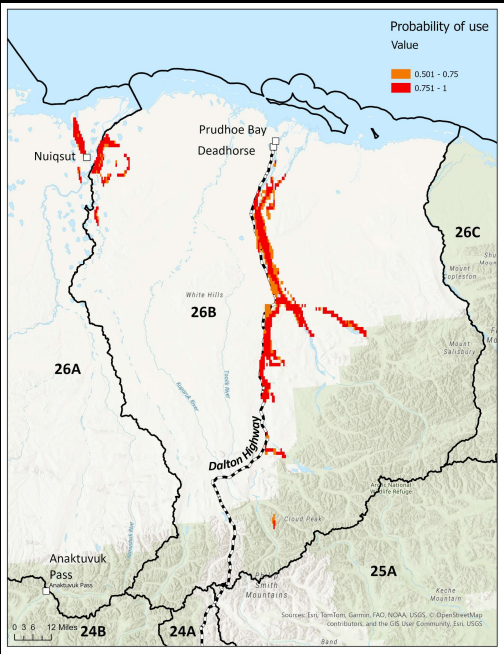
- Target bears predating muskox
 - Currently collared bears
 - New bears found predating/threatening
 - Bears of any age and sex will be removed
 - We expect most to be lone male bears
- Bears will be removed by
 - Shooting from a helicopter
 - Landing and shooting from a fixed-winged aircraft
- Salvaged when appropriate
 - Hides will be sold at auction
 - Will not salvage if poor condition
 - Skulls will be cleaned

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What portion of Unit 26B
will be affected?

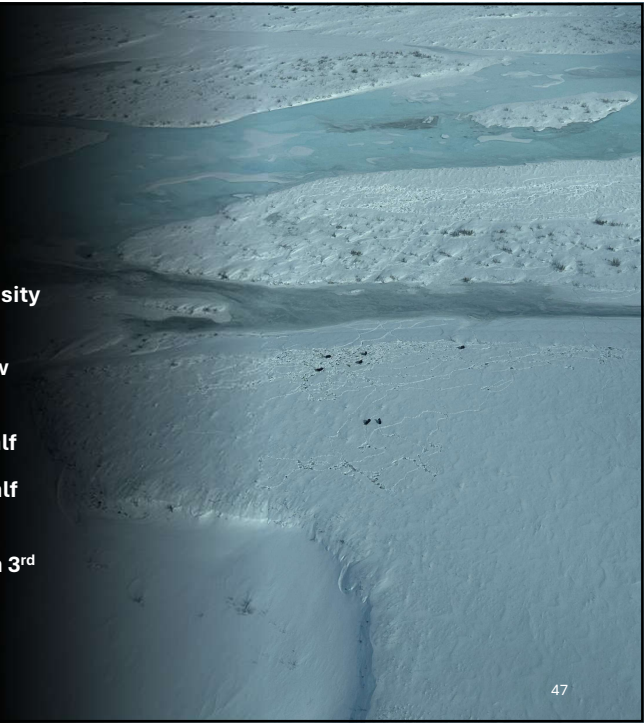
Limited distribution of
muskox.



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- Program will run through 2034
- Funding will dictate level of survey intensity
- Timeframe will allow for 2 muskox generations
 - Generation = calf to reproductive age and their calf to reproductive age
 - Reproductive in 3rd year of life



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Expectations

- Remove very few bears/year
 - <10 bears/year
- Within harvestable surplus
- 1 bear currently identified
 - Adult male
 - Killed 3 muskoxen immediately after den emergence
 - Collared and monitored



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Evaluating the program

- Surveys of muskox groups
 - Flown weekly
 - April through June
 - Flown monthly
 - July-October
 - Will record during each survey flight
 - Total number of muskox
 - Total calves observed
 - Muskox mortalities and attempt to determine cause
 - Bears near muskox and bear predating muskox



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Proposal 1

5 AAC 92.126(b) Non-intensive Management Plan

Reauthorize lethal removal of brown bears by Department personnel to reduce predation on muskoxen in Unit 26B

Proposed by: Department of Fish and Game

Department Recommendation: Support

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