



# Introduction

Muskoxen (Ovibos moschatus) were reintroduced to Alaska after disappearing in the late 1800s. The first establishment of muskoxen from Greenland to rural Alask Nunivak Island in 1936. The Nunivak population acted as a source of animals for relocations on historic range between 1967-1981. The relocation of 300 animals c five populations throughout Alaska: Nunivak, Nelson Island, Northea Northwestern, and Seward Peninsula (Figure 1). The successful establishme muskoxen populations and current cooperative management efforts have resul range expansion, population growth and stability, along with hunting and v opportunities.



### Harvest

Hunting of reintroduced muskoxen first occurred on Nunivak Island in 1975. Four of the five populations are open to harvest on an annual quota and  $\frac{1}{2}$ permit basis (Table 1). In 2008, the Board of Game adopted regulations that allow Alaskans to harvest muskoxen on the Seward Peninsula with a registration permit (Gorn 2009). The new hunts were created from recommendations from local advisory committees and Seward Peninsula Muskox Cooperators, a stakeholder group established n 1994.

Table 1. Harvest of Muskoxen in Alaska

Population	Hunting Began	Average Annual harvest Pre-1998	Average Annual Harvest 1998-2008	Available Harvest 2009	Hunt Structure 2009	Sex of Harvest	Available Harvest as % of population 2009
Nunivak Island	1975	56	81	85	<ul><li>Drawing</li><li>Registration</li></ul>	<ul> <li>Bulls 1975-1976</li> <li>Cows &amp; Bulls 1979-present</li> </ul>	15
Nelson Island	1981	23	23	42	<ul> <li>Registration</li> </ul>	Cows & Bulls	8
Northeastern	1990	9	8	0	No Open Season	<ul> <li>Closed to harvest in 2006</li> </ul>	0
Northwestern	1999	No Hunt	<3	6	Tier II drawing	Bulls 1999-present	1
Seward Peninsula	1995	13	76	187	<ul> <li>Tier I Registration</li> <li>Drawing</li> <li>Federal Permit</li> </ul>	<ul> <li>Bulls 1995-2000</li> <li>Cows &amp; Bulls 2000-present</li> </ul>	7* <sup>*</sup> will be < 7% in 2010-2011 pending census results



# **Current Status of Muskoxen in Alaska 1970-2009**

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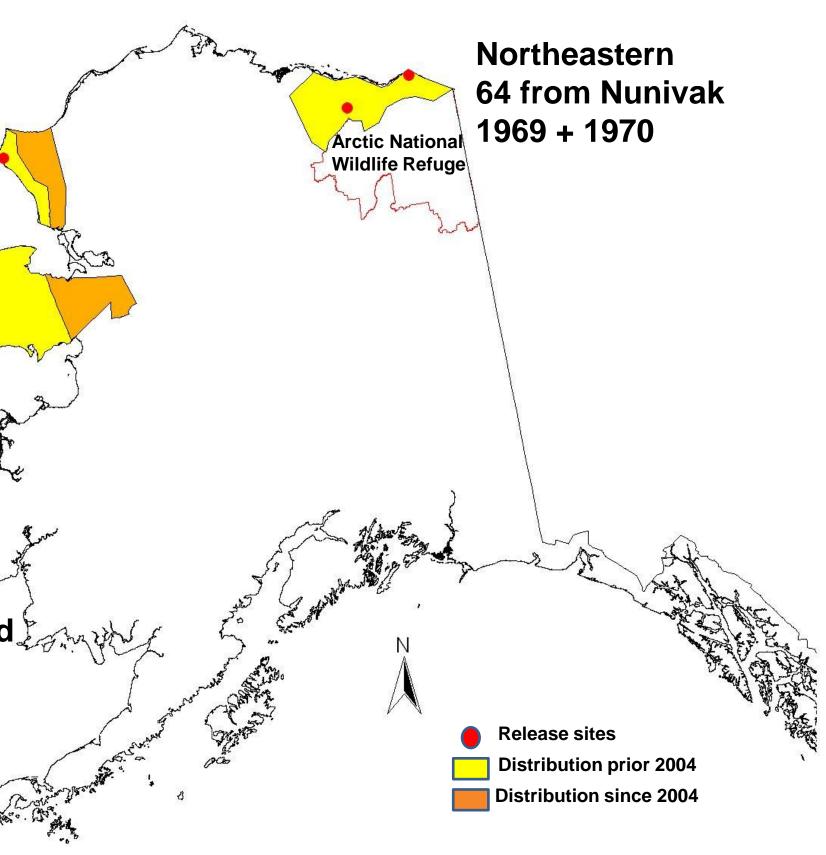
in the	
ka was	
<sup>r</sup> future	Northwestern
created	70 from Nunivak 1970 + 1977
astern,	1370 + 1377
nent of	Seward Peninsula 72 from Nunivak
ilted in	1970 + 1981
	Contraction of the second seco
viewing	Nelson Island
	23 from Nunivak
	1967 + 1968
	Nunivak Island 31 from Greenland
	193 <u>6</u>
	4
	· · · · · · · · · · · · · · · · · · ·
Fi	gure 1. Reintroduction s
500	
	Northwestern Ne
	Northeastern Se Nunivak
	NUTIIVAN
1500 -	
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500	
0	
1970,97	2,974,976,978,980,982,0

The reintroduction of muskoxen to Alaska continues to be successful. Population growth and range expansion provides opportunities for consumptive and nonconsumptive uses of muskoxen. Continued investigation of population parameters and health assessments along with public input will enhance future management of Alaska muskoxen.

In Prep. Unit 22 Muskox. Muskox management report of survey and inventory activities. 1July 2006-30 June 2008. Alaska Department of Fish and Game. Juneau, AK, USA Lenart, E. A. 2007. Units 26B and 26C muskox. Pages 49-69 in P. Harper, editor. Muskox management report and inventory activities. 1 July 2004-30 June 2006. Alaska Department of Fish and Game. Project 16.0. Juneau, AK, USA

26C muskox. Muskox management report of survey and inventory activities. 1 July 2006-30 June 2008. Alaska Department of Fish and Game. Juneau, AK, USA Jnit 23 muskox. Muskox management report of survey and inventory activities. 1 July-30 June 2008. Alaska Department of Fish and Game. Juneau, AK, USA

# **Recent Range Expansion**



sites and group distribution of muskoxen populations

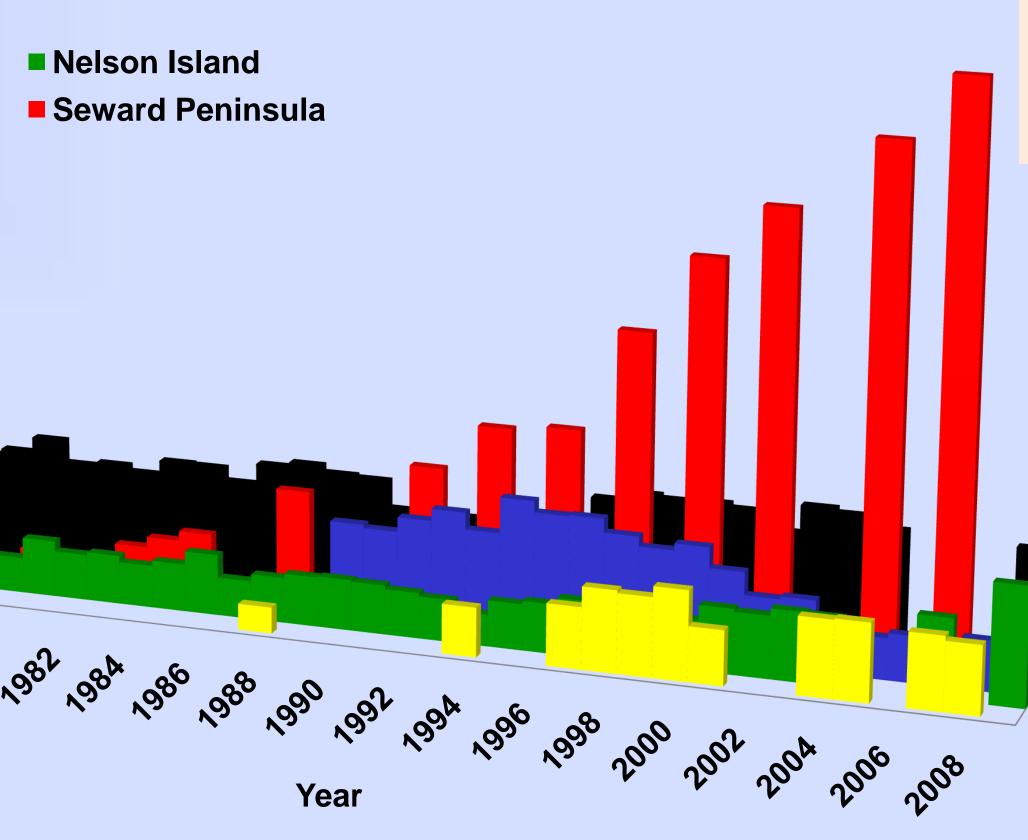


Figure 2. Historic counts of Alaska muskoxen populations 1970-2009

## Future Management

During the 74 years since 31 muskoxen were first on Nunivak Island, populations have established increased to over 4400 animals in Alaska (Table 2). The Seward Peninsula population is the state's largest, and continues to expand eastward (Figure 1) as the population increases (Figure 2).

**Population** 

**Nunivak Island** 

**Nelson Island** 

Northeast

Northwest

Seward Peninsu

**Total minimum** Alaska populatio estimate

<u>Mortali</u>

Bear Pr

Disease

Vehicle

Other r predati

Total

# **Seward Peninsula**

- Low in copper

# Northeastern



### **Population Growth**

### Table 2. Current size of Alaska muskoxen populations

			-
	Population	Date of	
	Size	Estimate	Status
	567	Oct. 2009	■16% from 1947-1968 ■Stable since 1970
	557	Jun. 2009	■22% from 1968-1981 ■6% from 2004
	<b>200-250</b> *	Apr. 2008	<ul> <li>650 muskoxen by 1995</li> <li>Declined 60% 1996-2006</li> <li>Stable from 2006-2009</li> </ul>
	<b>324-424</b> <sup>a</sup>	Jan. 2008	<ul> <li>8% from 1970-1998</li> <li>Stable from 1999-2008</li> </ul>
ula	<b>2688</b> <sup>b</sup>	Mar. 2007	■14% from 1970-2000 ■6% from 2000-2007
on	4486		<sup>a</sup> Westing 2009 <sup>b</sup> Gorn 2009 <sup>*</sup> Northern Canada animals excluded

 Table 3. Mortality type in Northeastern population 2007-2009

ity Type	Adults	Calves	Total	
redation	16	36	52	
-	0	0		
6e	2	2	4	
e collision	3	0	3	
non- ion	4	10	14	
	25	48	73	
	LJ	τu	15	

## **Mortality and Disease Surveillance**

Predation relatively low compared to Northeastern Chlamydia present (Gorn 2009) Negative for iron, zinc, selenium (Gorn 2009) Composition surveys show 30 yearlings:100 cows since 2002 (Gorn 2009)

Predation a significant mortality factor (Table 3) Mortalities from drowning and stranding on sea ice Chlamydia present (Lenart 2009) Copper deficient (Lenart 2009) Low calf recruitment and low calf:cow ratios (Lenart 2007)