

Summary of the 2008 Muskox Composition Survey in Units 22C and 22E

Unit 22C Muskox

Unit 22 staff completed sex and age composition surveys in 22C during April 2008. The survey took place after radio collars were placed on fifteen muskox during March 2008. Staff used an R-44 helicopter to visit 19 groups and classify 279 muskoxen (63% of the Unit 22C 2007 population count). Emphasis was given to groups that were handled during capture work and urine and fecal samples for analysis of carbon and nitrogen metabolites as an indicator of body condition (work by graduate student Dave Gustine, under Perry Barboza) were collected during surveys. One radio collared muskox mortality was discovered during the project and the collar was retrieved and returned to ADF&G for redeployment. Special thanks to Dave Gustine for the Unit 22C R-44 helicopter charter and Kate Persons for helping classify muskoxen.

The mature bull: cow ratio in Unit 22C declined since 2002 (70:100) and it will be important to closely monitor the area's population given the BOG's recent regulatory action. The April survey found 30 mature bulls: 100 cows which is the department's management objective for the area. Since the Unit 22C hunt began in 2001, hunters have averaged 9 bulls a year from Unit 22C so I suspect hunting has not reduced the bull: cow ratio. Animal movement and sampling may be factors in the reduced finding, but regardless the reason it is important to continue composition surveys and closely monitor the muskox population in Unit 22C, Unit 22D, and Unit 22B along the Nome road system.

Unit 22E Muskox

Unit 22 Assistant Areas Biologist Letty Hughes and NPS biologist Jim Lawler completed sex and age composition surveys in 22E during August 2008. Staff used an R-44 helicopter to visit 16 groups and classify 197 muskoxen (21% of the Unit 22E 2007 population count). One radio collar was retrieved during the project. Special thanks to Jim Lawler for the Unit 22E R-44 helicopter charter and Letty Hughes for helping classify muskoxen.

Population composition surveys are particularly important in Unit 22E because the Board of Game designated the mature bull component of the Unit 22E population its own unique population. The mature bull segment of the population is the population hunted under the drawing hunt system at an 8% harvest rate. Composition surveys completed in 2002 and 2005 found 18% and 17% mature bulls respectively and staff found 17% mature bulls during the 2008 survey so the number of drawing permits will remain unchanged during the 2008 and 2009 regulatory years.

The table on the following page shows the results of this survey compared to other Seward Peninsula composition surveys.

Age and Sex Composition of Seward Peninsula Muskox Groups, 2002-2008

Unit	Month	Year	N	Males ?4 years old		Females ?4 years old		Females 3 or 4 years old		Females 3 years old		Males 3 years old		Males 2 years old		Females 2 years old		Yearlings		Calves		Unknown		Bull/cow ratio ¹	Yearling/cow ratio ²
				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
22B		2002	178	39	22%	38	21%	10	6%	19	11%	13	7%	13	7%	13	7%	32	18%			1	1%	58/100	48/100
		2004	236	42	18%	86	36%	0	0%	23	10%	11	5%	16	7%	15	6%	43	18%			0	0%	39/100	39/100
		2007	317	65	21%	103	32%	0	0%	32	10%	18	6%	19	6%	31	10%	47	15%			2	0.6%	48/100	35/100
22C		2002	208	49	24%	35	17%	5	2%	30	14%	14	7%	20	10%	16	8%	40	19%			0	0%	70/100	57/100
		2004	217	70	32%	56	26%	0	0%	25	12%	18	8%	10	5%	17	8%	21	10%			0	0%	86/100	26/100
		2007	412	101	25%	151	37%	0	0%	27	7%	15	4%	25	6%	28	7%	65	16%			0	0%	57/100	37/100
		*2008	279	43	15%	123	44%	4	1%	15	5%	18	6%	16	6%	18	6%	42	15%			4	1%	30/100	30/100
22D		2002	454	70	15%	157	35%	9	2%	49	11%	17	4%	30	7%	33	7%	88	19%			2	0.4%	33/100 ³	41/100
		2006	516	99	19%	193	37%	0	0%	41	8%	32	6%	28	5%	26	5%	84	16%			13	3%	42/100	36/100
22E		2002	313	57	18%	84	27%	3	1%	29	9%	19	6%	32	10%	32	10%	57	18%			0	0%	49/100 ³	49/100
		2005	501	83	17%	161	32%	0	0%	69	14%	28	6%	43	9%	34	7%	77	15%			6	1%	36/100	33/100
	Aug	2008	197	34	17%	58	29%	4	2%	10	5%	16	8%	9	5%	12	6%	19	10%	35	18%	0	0%	47/100	26/100
23SW		2002	170	33	19%	52	31%	0	0%	20	12%	8	5%	15	9%	20	12%	22	13%			0	0%	46/100	31/100
	July	2008	141	19	13%	52	37%	0	0%	8	6%	8	6%	7	5%	8	6%	16	11%	20	14%	3	2%	32/100	27/100

¹ Number of males ?4 years old/100 cows ?3 years old

² Number of yearlings/100 cows ?3 years old

³ In the 2002 composition survey, 59% of the estimated population in 22D was sampled and in 22E 50% of the population was sampled. The group selection method used in 22D and 22E in the composition survey favored sampling larger groups. We did not sample many of the smaller groups that were likely to be all bulls. Therefore the number of bulls is probably underestimated. These bull/cow ratios should be viewed as a minimum.

* In the 2008 composition survey, emphasis was given to muskox groups that had collars placed in them 1 month prior to composition. Groups were located in Unit 22C and the periphery in Units 22B and 22D.