

Combined Deliberation Materials:

- A. Tier II Chronology**
- B. Proposal 59: GMU 9B Moose**
- C. Proposals 87, 88, 89, and 90: Tier II Scoring System**
- D. Proposals 95 and 96: GMU 13, ANS and New Drawing Hunts**

by

**Alaska Department of Fish and Game Division of Wildlife Conservation
and**

Division of Subsistence for the

February 2009 Board of Game Meeting in Anchorage, Alaska

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Alaska Department of Fish and Game

Division of Subsistence



TABLE OF CONTENTS

TIER II CHRONOLOGY	A-i
Table of Contents.....	A-iii
DELIBERATION MATERIALS FOR PROPOSAL 59: GMU 9B MOOSE	B-i
Table of Contents.....	B-iii
DELIBERATION MATERIALS FOR PROPOSALS 87, 88, 89, AND 90: TIER II SCORING SYSTEM.....	C-i
Table of Contents.....	C-iii
DELIBERATION MATERIALS FOR PROPOSALS 95 AND 96: ANS FOR GMU 13 MOOSE AND NEW DRAWING HUNTS IN PORTIONS OF GMU 13A, B, AND C.....	D-i
Table of Contents.....	D-iii
Appendix A.....	D-21

TIER II CHRONOLOGY

TABLE OF CONTENTS

	Page
CHRONOLOGY.....	1
REFERENCES CITED.....	6

Alaska Department of Fish and Game,
Division of Subsistence, March 2009 (updated)

1978

The Alaska legislature passed the first state subsistence law, which, among other provisions, listed three Tier II criteria for allocating harvest opportunity if there is not sufficient fish or game for subsistence.

June 1985

The Alaska Board of Game developed the first Tier II system, in response to *Gene Madison et al. v. Alaska Department of Fish and Game et al.* (1985) which opened subsistence hunting to all state residents. The board authorized 54 new Tier II hunts. The board developed a permit and scoring system for ranking applicants and awarding permits. The system was used for a single season (1985-86).

1986

The board repealed the Tier II regulations created in 1985, after the Alaska legislature passed subsistence legislation limiting subsistence hunting to rural residents.

July 1990

The board held an emergency session because of *McDowell et al. v. State of Alaska Department of Fish and Game et al.* (1989) ("rural" subsistence eligibility ruled to be unconstitutional; all state residents become subsistence users). The board authorized 15 Tier II hunts for 1990-91. The board developed a Tier II permit scoring system for the 1990-91 season.

October 1990

A report on the implementation of the 1990-91 Tier II system was presented to the Joint Boards of Fisheries and Game at their regular fall meeting (October 1990). No actions were taken.

March 1991

The board reviewed the Tier II system created the previous year. The board revised the Tier II questions and point scoring system. The board replaced the "long form" (used in 1990-91) with a "short form" (used from 1991-92 until 1995-96, with a few modifications).

November 1991

A report on the implementation of the 1991-92 Tier II system was presented to the Board of Game at their regular fall meeting (November 1991). No actions were taken.

March 1992

The board reviewed the Tier II system. The board changed the way that the proximity question is scored, creating an "absolute distance" scoring procedure to replace the "relative distance" scoring procedure. This was done to address a State of Alaska Department of Law concern that relative distance procedures may nullify the points for the proximity criterion if there is any far-distant Tier II applicant (*Sorenson vs. State*).

April 1993

A report on the Tier II system was presented to the board. The board reviewed the Tier II system and made the following changes: 1) slight wording changes to make regulations consistent with state subsistence law revisions made in spring 1993; 2) minor wording changes on question 1, "How many years have you or the longest hunting member of your household hunted or eaten meat from the game population for the hunt you have applied for..."; 3) minor wording changes on question 3, "How much time do you usually spend hunting, fishing, and gathering wild foods in the hunt area boundary during the year..."; 4) ADF&G is authorized to calculate the straight-line distance from a person's domicile to the hunt area boundary, rather than have the respondent estimate the distance; 5) the number of Tier II caribou permits are limited to three permits per household.

May 1995

In *Kenaitze Indian Tribe v. State of Alaska et al.* (1995), the Alaska Supreme Court ruled that proximity of an individual's domicile cannot be used as a Tier II criterion. This reduced the number of Tier II criteria from three to two. The board instructed ADF&G to prepare options for revising the Tier II scoring system in October.

June 1995

The Tier II regulations were repealed June 30, 1995, by a sunset provision requiring the board to revisit the Tier II system.

October 1995

The board had a work session in Anchorage. The Tier II scoring system was discussed.

January 1996

The board adopted regulations that substantially revised the Tier II point scoring system, replacing "subjective" questions with more "objective" questions and more scoring measures using verifiable data sources. The new point system had five questions:

Criterion One:

1. Number of years of use of the game population by the applicant (measuring the length of dependency of applicant on the game population – up to 50 points);
2. Number of years of use of the game population by a household member (measuring length of dependency of an applicant's household member on the game population – up to 10 points);

Criterion Two:

3. Percent of an applicant's game harvests from the Tier II population (measuring the relative availability of alternative sources of game to the applicant – up to 20 points);
4. Relative cost of purchased food to applicant (measuring the availability of food for purchase to the applicant – up to 10 points); and
5. Relative cost of gasoline to applicant (measuring the ability of a subsistence user to obtain food if subsistence use is restricted or eliminated – up to 10 points).

The revised Tier II system was used for the 1996-97 hunting season.

March 1996

The board heard an update on the Tier II scoring system at its Fairbanks meeting. A Tier II appeals process was established in regulation.

March 1997

The board heard a report from ADF&G on the implementation and performance of the Tier II points scoring system adopted in January 1996. No changes were made in the system.

March 2001

The board heard an updated report from ADF&G on the implementation and performance of the Tier II process. The board decided to request public proposals concerning the scoring system for consideration at the January 2002 statewide meeting.

January 2002

The board heard reports from ADF&G on the Tier II process and deliberated on public proposals and staff recommendations concerning the Tier II point system. The following changes were made:

1. Changed from 30 to 50 the maximum number of years of use of the Tier II population used to award points for the two questions on customary and direct dependence; one point per year (up to 50 points) is awarded for Question 14 and 0.2 point (one-fifth of a point) is awarded for Question 15 (up to 10 points).
2. Removed the 150-mile radius cap on household harvests to account for harvests over a wider area (Question 16, alternative sources of food) but retained the 150-mile radius cap for the calculation of the community cap for this question.
3. Modified Question 16 to ask applicants to report the number of big game animals by species harvested over the past 5 years, rather than ask the applicant to calculate the percentage of their total big game harvest that is from the Tier II population. ADF&G now makes this calculation, removing a source of inadvertent errors by applicants and requiring more verifiable information.
4. Adjusted the Tier II scoring system for muskoxen hunts on the Seward Peninsula; suspended for 10 years in inclusion of hunt history in the scoring formula for GMUs 22 and 23 muskoxen hunts.

June 17, 2003

In an emergency teleconference meeting, the board adopted an emergency regulation in response to an opinion issued by the Supreme Court of Alaska in *Manning v. State of Alaska* (2007) that 5 AAC 92.070(b)(1) (Question 16 on the Tier II application that measures the availability of alternative sources of food) violated equal protection standards. The emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2003-04 regulatory year was 80 points.

June 11, 2004

At an emergency teleconference meeting, the board adopted an emergency regulation identical to that adopted in June 2003 to again respond to the *Manning* ruling. Again, the emergency

regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2004-05 regulatory year was 80 points.

June 5, 2005

At a special meeting in Anchorage, the board again adopted an emergency regulation identical to those of the past two years to respond to the *Manning* ruling. Again, the emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2005-06 regulatory year was 80 points.

May 14, 2006

At a special meeting in Anchorage, the board again adopted an emergency regulation identical to those of the past three years to respond to the *Manning* ruling. Again, the emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2006-07 regulatory year was 80 points.

October 7-9, 2006

At a special meeting addressing Tier II hunt topics in Anchorage, the board adopted a limit of 2 Tier II caribou permits per household for the Nelchina caribou hunt (TC566) only; the household limit remained 3 for any other Tier II caribou hunts.

At the same meeting, the board did not adopt two other proposals to modify the Tier II hunt point system. The board directed ADF&G to prepare two proposals for public review and board consideration at the March 2007 meeting, one to add a question to the Tier II hunt application regarding household monetary income and another to add a question on the Tier II hunt application to award points based upon the number of days the applicant spent hunting and fishing in the Tier II hunt area.

March 2007

During a regularly scheduled meeting to address wildlife topics in the Southcentral and Southwest regions, the board made substantial changes to the Tier II scoring system, acting upon two proposals ADF&G had submitted at the request of the board. It repealed 5 AAC 92.070(b) (1), the question concerning alternative sources of game invalidated by the *Manning* ruling. For all hunts, the maximum number of points was increased to 140, with 85 points (approximately 61%) allocated to questions measuring Factor A (customary and direct dependence) and 55 points (approximately 39%) to questions measuring Factor B (ability to obtain food). For all hunts, a question, allocating up to 25 points, was added to measure Factor A that asked the number of days the applicant had spent hunting and fishing in the Tier II hunt area during the past year. (A similar question had been asked from 1991-92 through 1995-96.)

For all Tier II hunts except TC566 Nelchina caribou and TM300 GMU 13 moose, the board increased the number of points awarded based on the location of food purchases to 25 points, and increased the number of points awarded based on the location of gasoline purchases to 30 points.

For Tier II hunts TC566 Nelchina caribou and TM300 GMU 13 moose, the board increased the number of points awarded based on the location of food purchases to 15 points, and increased the number of points awarded based on the location of gasoline purchases to 20 points. It added a

question, allocating up to 20 points, to measure Factor A based upon the adjusted gross monetary income of the applicant's household in the previous calendar year. Also added was a question on the number of people living in the household. Households with total incomes at or below the federal poverty guidelines based on household size received the full 20 points. Households with higher incomes, up to twice the federal poverty guidelines, received a proportional number of points. Households with incomes twice or more above the federal poverty guidelines received zero points. Additionally, applicants who scored no points on the three questions measuring Factor A received no points for their entire application. Applicants who received no points for the question concerning income received no points for their entire application.

July 6, 2007

The Alaska Supreme Court affirmed the *Manning* ruling that invalidated 5 AAC 92.070(b) (1), the question concerning alternative sources of game. The court also provided guidance on how to construct a regulation to measure access to alternative game resources that would pass constitutional scrutiny. No other changes to the Tier II point system were made.

July 2007

On July 20, 2007, the Superior Court in Anchorage heard oral arguments concerning a motion for a preliminary injunction in the *Ahtna Tene Nene* case. In an oral ruling the same day, the court granted a preliminary injunction and ordered ADF&G to re-score applications for Tier II hunt TC566 Nelchina caribou and TM300 GMU 13 moose to not automatically assign a score of zero to applicants who had exceeded the income cap (twice the federal poverty limit based on household size).

On July 27, ADF&G re-issued 3,000 Tier II TC566 Nelchina caribou permits and 150 Tier II TM300 GMU 13 moose permits to comply with the court order.

January 2008

The board acted on an amended version of Proposal 33. The action modified 5 AAC 92.070(b)(4), to cap points for household income on GMU 13 Tier II applications at 130% above the federal poverty guideline for Alaska, taking into account household size.

June 2008

The Superior Court ruled in the *Ahtna Tene Nene* case. Among other things, the court ruled that the board could use income to score Tier II applications, but if income is used, applicants' scores must be adjusted to account for cost of living differences. The court also ruled that the board may use income or other measures to "zero out" scores for Factor A or Factor B, but may not use any single measure to zero out an entire application.

July 2008

In an emergency meeting in response to the court ruling, the department advised the board that up-to-date data on cost of living differences throughout the state were not available to adjust applicants' scores for GMU 13 Tier II hunt applications. Consequently, the board adopted an emergency regulation that directed the department to score GMU 13 Tier II hunt applications with the same procedures as were used for other Tier II hunts for the 2008/2009 regulatory year only, with the intention to revisit the Tier II scoring system during its spring 2009 regulatory meeting.

REFERENCES CITED

AAC (Alaska Administrative Code). 2007. 5 AAC 92.070. In Alaska Administrative Code, Title 5, Fish and Game; Part 3, Game; Chapter 92, Statewide Provisions; Article 3, Permits. Register 183, August 2007. Michie Law Publishers, Charlottesville, VA.

Ahtna Tene' Nene Subsistence Committee et al v. State of Alaska Board of Game et al. State of Alaska Trial Court case number 3AN-07-08072CI.

Gene Madison et al. v. Alaska Department of Fish and Game et al. 1985. Supreme Court of Alaska opinion published at 696 P.2d 168.

Sam E. McDowell et al. v. State of Alaska et al. 1989. Supreme Court of Alaska opinion published at 785 P.2d 1. State of Alaska Appellate Court case numbers S07559, S08029, and S11422 for State of Alaska Trial Court case number 3KN9300808CI; State of Alaska Appellate Court case number S09101 for State of Alaska Trial Court case number 3KN9800784CI.

Sorenson, Ken et al. v. State of Alaska et al. 1996. State of Alaska Trial Court case number 3AN9110649CI.

State of Alaska v. Kenaitze Indian Tribe. 1995. Supreme Court of Alaska opinion published at 894 P.2d 632, 638, 639. State of Alaska Appellate court case number S10388 for State of Alaska Trial Court case number 3AN9104569CI.

State of Alaska, Department of Fish and Game v. Kenneth H. Manning. 2007. Supreme Court of Alaska opinion published at 161 P.3d 1215. State of Alaska Appellate Court case numbers S09881, S10217, S10494, S10783, and S11170 for State of Alaska Trial Court case number 3AN0008814CI. State of Alaska Appellate Court case numbers S10664, S10753, S10804, and S10783 for State of Alaska Trial Court case number 3AN0204392CI.

**DELIBERATION MATERIALS FOR PROPOSAL 59: GMU 9B
MOOSE**

TABLE OF CONTENTS

	Page
INTRODUCTION.....	1
REFERENCES CITED	6

LIST OF TABLES

Table	Page
1. Harvests and uses of moose, communities of GMU 9B, 1972-2005.....	1
2. Estimated harvests of moose, Kvichak watershed (GMU 9B) communities, 1973-2005.	2
3. Estimated per capita harvests of moose, Kvichak watershed (GMU 9B) communities, 1973-2005.....	3
4. Number of moose hunters, 9B communities, based on harvest ticket returns, 1996-2008.....	3
5. Number of moose harvested, communities of GMU 9B, based on harvest ticket returns, 1996-2008.....	3

LIST OF FIGURES

Figure	Page
1. Number of moose harvested per capita, communities of GMU 9B.....	4
2. Percentage of moose-hunting households in GMU 9B communities that successfully harvested moose.....	5

INTRODUCTION

Proposal 59, submitted by the Lake Iliamna Advisory Committee for consideration by the Alaska Board of Game (board) at its February/March 2009 meeting, would extend the resident fall moose *Alces alces* hunting season in Game Management Unit (GMU) 9B from the present September 1 – 15 to August 20 – September 15. It would also require the antlers to be cut in half in order to destroy their trophy value. This report provides information on hunting and harvests of moose by residents of GMU 9B communities as background for the board's deliberations on this proposal.

The Alaska Board of Game has determined that the moose population of GMU 9B supports customary and traditional subsistence uses. The board has established a range of 100 to 140 moose as the amount reasonably necessary (ANS) to provide for subsistence uses of moose in GMUs 9A, 9B, 9C, and 9E. An ANS finding for moose specific to GMU 9B has not been made.

Table 1.—Harvests and uses of moose, communities of GMU 9B, 1972-2005.

Community	Year	Percentage of households					Number harvested		Average pounds	
		Use	Hunt	Harvest	Receive	Give	Number	Percentage ±	Per HH	Per capita
Igiugig	1973			33.3			4		270.0	55.8
Igiugig	1983		66.7	33.3	0.0		4	150	180.0	28.4
Igiugig	1992	90.0	60.0	50.0	60.0	60.0	8	25	378.0	96.9
Igiugig	2001	63.6	90.9	18.2	63.6	18.2	2	0		
Igiugig	2005	100.0	50.0	41.7	66.7	75.0	7	25	270.0	85.3
Iliamna	1973			22.2			4		120.0	32.7
Iliamna	1983		25.0	10.0	10.0		4	75	54.0	13.9
Iliamna	1991	65.2	43.5	30.4	43.5	39.1	16	37	281.7	86.4
Iliamna	2001	71.4	42.9	19.0	57.1	47.6	9	50		
Iliamna	2004	76.9	46.2	15.4	61.5	30.8	3	40	83.1	25.1
Kokhanok	1973			66.7			14		600.0	96.4
Kokhanok	1983		36.8	31.6	52.6		14	42	284.2	53.5
Kokhanok	1992	91.7	55.6	41.7	86.1	58.3	43	16	600.0	135.0
Kokhanok	2001	100.0	50.0	43.8	87.5	31.3	26	49		
Kokhanok	2005	82.9	60.0	37.1	65.7	34.3	19	10	246.9	65.5
Levelock	1973			62.5			20		641.3	138.6
Levelock	1988	92.6	59.3	59.3	74.1	74.1	24	16	400.0	121.4
Levelock	1992	83.3	56.7	46.7	66.7	63.3	27	22	378.0	133.4
Levelock	2001	94.1	58.8	35.3	82.4	52.9	16	45		
Levelock	2005	92.9	42.9	28.6	78.6	42.9	8	54	231.4	129.6
Newhalen	1973			63.6			13		300.0	97.2
Newhalen	1983		27.3	0.0	0.0		0		0.0	0.0
Newhalen	1991	80.8	34.6	30.8	65.4	26.9	16	31	270.0	54.8
Newhalen	2001	67.6	44.1	23.5	58.8	26.5	9	23		
Newhalen	2004	60.0	32.0	20.0	56.0	36.0	9	11	151.2	37.2

-continued-

Table 1. Page 2 of 2.

Community	Year	Percentage of households					Number harvested		Average pounds	
		Use	Hunt	Harvest	Receive	Give	Number	Percentage ±	Per HH	Per capita
Nondalton	1973			52.0			28		518.4	100.5
Nondalton	1980			50.0			25		366.0	76.5
Nondalton	1981			53.0			31		483.2	85.0
Nondalton	1983		71.4	38.1	9.5		33	54	334.3	64.4
Nondalton	2001	100.0	57.6	51.5	90.9	51.5	95	35		
Nondalton	2004	68.4	44.7	15.8	63.2	36.8	17	12	213.2	55.9
Pedro Bay	1973			50.0			8		405.0	101.2
Pedro Bay	1982		29.4	17.6	41.2		4	50	95.3	32.4
Pedro Bay	1996	84.6	46.2	23.1	69.2	15.4	4	65	124.6	37.7
Pedro Bay	2001	84.2	63.2	10.5	78.9	31.6	2	45		
Pedro Bay	2004	77.8	72.2	16.7	61.1	22.2	4	31	90.0	27.5
Port Alsworth	1983		61.5	38.5	15.4		11	45	290.8	80.4
Port Alsworth	2001	75.0	30.0	5.0	75.0	25.0	1	112		
Port Alsworth	2004	54.5	36.4	4.5	45.5	9.1	1	163	24.5	6.8

Sources Gasbarro and Utermohle *Unpublished*; ADF&G Division of Subsistence Community Subsistence Information System (CSIS) <http://www.subsistence.adfg.state.ak.us/CSIS>; Holen et al. 2005; Fall et al. 2006; Krieg et al. *In prep.*

Blank cells = data not available.

Table 2.—Estimated harvests of moose, Kvichak watershed (GMU 9B) communities, 1973-2005.

Community	Estimated harvest of moose											
	1973	1980	1981	1982	1983	1988	1991	1992	1996	2001	2004	2005
Igiugig	4				4			8		2		7
Iliamna	4				4		16			9	3	
Kokhanok	14				14			43		26		22
Levelock	20					24		27		16		8
Newhalen	13				0		16			9	9	
Nondalton	28	25	31		33					95	17	
Pedro Bay	8			4					4	2	4	
Port Alsworth					11					1	1	

Sources ADF&G Division of Subsistence CSIS; Holen et al. 2005; Fall et al. 2006; Krieg et al. *In prep.*

Blank cells = no data.

Table 3.—Estimated per capita harvests of moose, Kvichak watershed (GMU 9B) communities, 1973-2005.

Community	Estimated number of moose harvested per capita											
	1973	1980	1981	1982	1983	1988	1991	1992	1996	2001	2004	2005
Igiugig	0.10				0.05			0.18		0.07		0.16
Iliamna	0.06				0.03		0.16			0.10	0.05	
Kokhanok	0.18				0.10			0.25		0.20		0.14
Levelock	0.26					0.22		0.25		0.26		0.24
Newhalen	0.18				0.00		0.10			0.06	0.07	
Nondalton	0.18	0.14	0.16		0.12					0.62	0.10	
Pedro Bay	0.19			0.06					0.07	0.04	0.05	
Port Alsworth					0.15					0.01	0.01	

Sources ADF&G Division of Subsistence CSIS; Holen et al. 2005; Fall et al. 2006; Krieg et al. *In prep.*

Blank cells = no data.

Table 4.—Number of moose hunters, 9B communities, based on harvest ticket returns, 1996-2008.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Igiugig	3	1	0	5	4	3	5	6	3	4	2	2	1
Iliamna	4	3	9	6	6	3	4	9	3	6	6	8	2
Kokhanok	1	3	2	1	0	0	0	0	0	0	0	1	0
Levelock	0	1	0	2	3	1	0	1	0	1	2	1	0
Newhalen							0	0	1	1	2	1	1
Nondalton	3	6	3	6	2	4	2	1	3	4	1	0	1
Pedro Bay	2	3	3	2	2	3	3	4	7	8	6	7	2
Pope Vannoy Landing	1	8	0										
Port Alsworth	13	15	9	14	10	10	7	9	9	7	11	8	0
TOTAL	27	40	26	36	27	24	21	30	26	31	30	28	7

Source ADF&G 2004.

Table 5.—Number of moose harvested, communities of GMU 9B, based on harvest ticket returns, 1996-2008.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Igiugig	1	0	0	3	2	1	3	1	2	2	1	1	1
Iliamna	1	2	5	1	1	1	1	3	2	2	2	4	2
Kokhanok	0	1	0	0	0	0	0	0	0	0	0	0	0
Levelock	0	0	0	1	3	1	0	1	0	0	2	0	0
Newhalen							0	0	0	0	1	0	1
Nondalton	2	1	0	0	0	1	0	0	0	1	1	0	0
Pedro Bay	2	1	1	0	0	1	0	1	1	4	0	1	2
Pope Vannoy Landing	1	6	0										
Port Alsworth	2	4	3	3	2	1	0	2	1	2	1	0	0
TOTAL	9	15	9	8	8	6	4	8	6	11	8	6	6

Source ADF&G 2004.

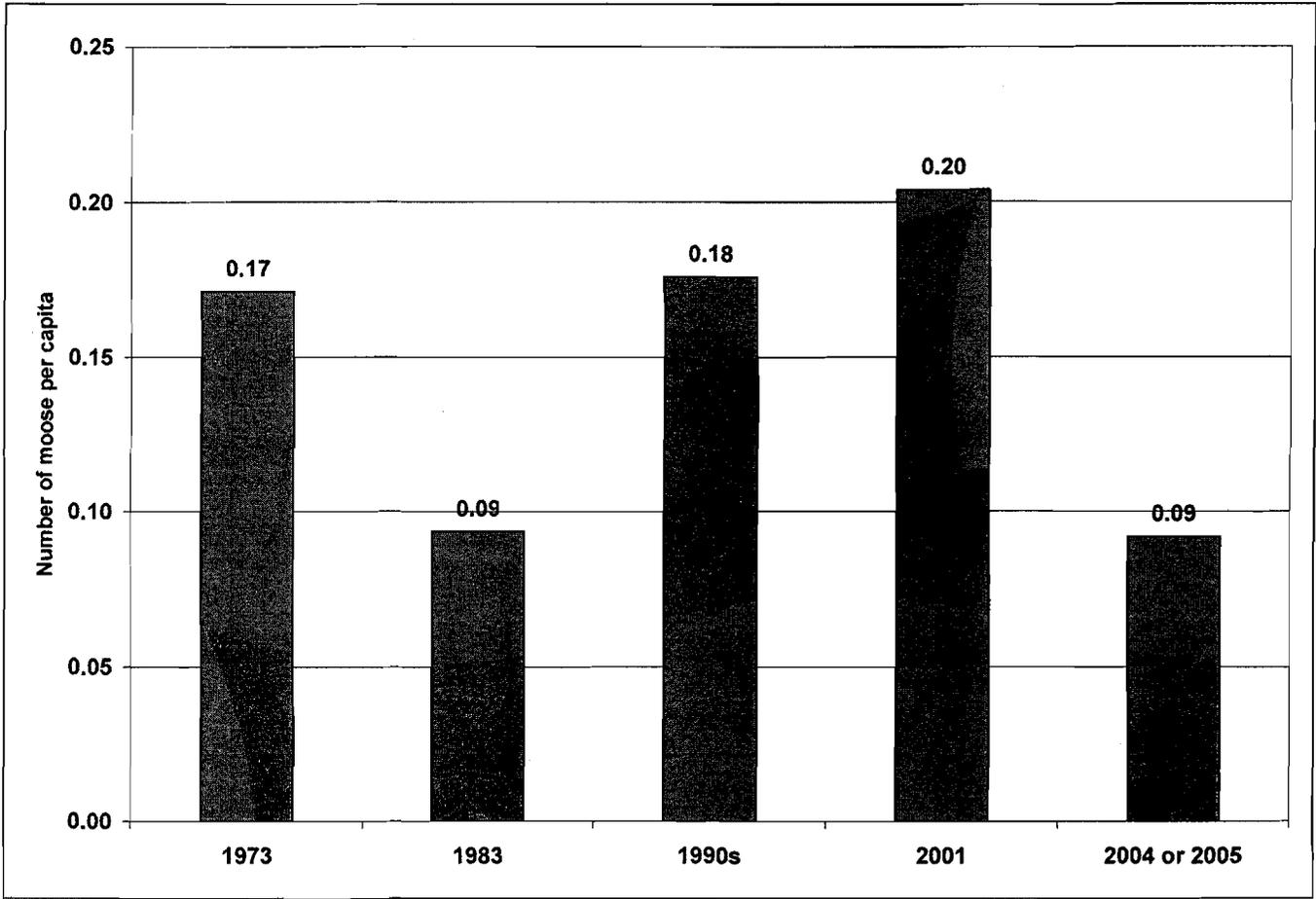
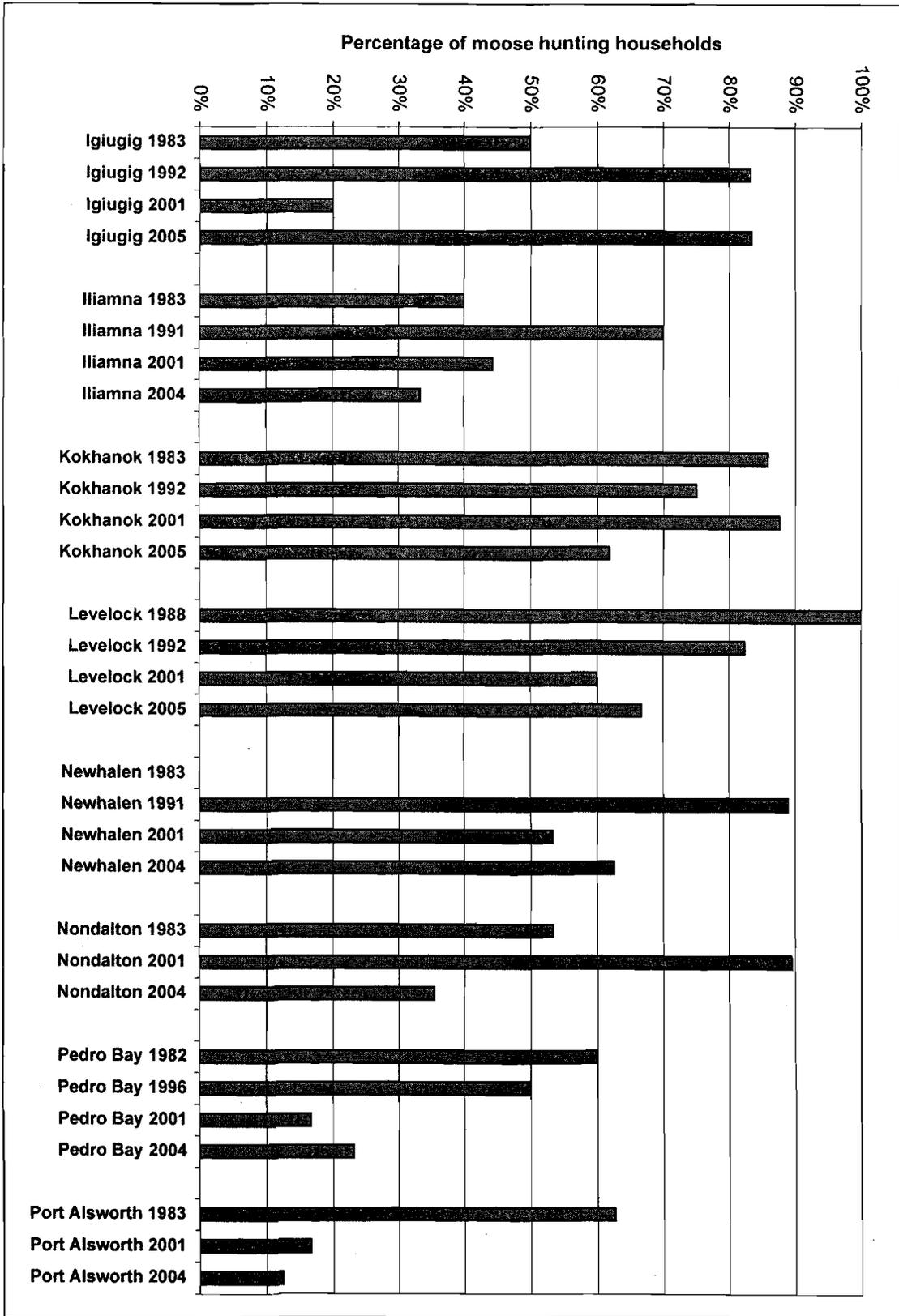


Figure 1.—Number of moose harvested per capita, communities of GMU 9B.

Notes 1973 does not include Port Alsworth. The 1983 estimate includes a 1988 estimate for Levelock. The 1990s estimate does not include Nondalton or Port Alsworth, and includes estimates for other communities from 1991, 1992, or 1996.

Figure 2.—Percentage of moose-hunting households in GMU 9B communities that successfully harvested moose.



REFERENCES CITED

- ADF&G. 2004. Harvest ticket database. Alaska Department of Fish and Game Division of Wildlife Conservation, Anchorage.
- Fall, J. A., D. L. Holen, B. Davis, T. Krieg, and D. Koster. 2006. Subsistence harvests and uses of wild resources in Iliamna, Newhalen, Nondalton, Pedro Bay, and Port Alsworth, Alaska, 2004. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 302, Juneau.
<http://www.subsistence.adfg.state.ak.us/TechPap/tp302.pdf>
- Gasbarro, A. F., and G. Utermohle. *Unpublished*. Unpublished 1974 field data, Bristol Bay subsistence survey. Files, Division of Subsistence, Alaska Department of Fish and Game, Anchorage.
- Holen, D. L., T. Krieg, R. Walker, and H. Nicholson. 2005. Harvests and uses of caribou, moose, bears, and Dall sheep by communities of Game Management units 9B and 17, western Bristol Bay, Alaska 2001-2002. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 283 and the Bristol Bay Native Association., Juneau. <http://www.subsistence.adfg.state.ak.us/TechPap/tp283.pdf>
- Krieg, T. M., D. L. Holen, and D. Koster. *In prep*. Subsistence harvests and uses of wild resources in Igiugig, Kokhanok, Koliganek, Levelock, and New Stuyahok, Alaska, 2005 Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 322, Dillingham.

**DELIBERATION MATERIALS FOR PROPOSALS 87, 88, 89,
AND 90: TIER II SCORING SYSTEM**

TABLE OF CONTENTS

	Page
BACKGROUND.....	1
MOOSE (TM300) FIGURES.....	6
CARIBOU (TC566) FIGURES: 1,000 PERMITS.....	7
CARIBOU (TC566) FIGURES: 1,500 PERMITS.....	8
CARIBOU (TC566) FIGURES: 2,000 PERMITS.....	9
CARIBOU (TC566) FIGURES: 2,500 PERMITS.....	10
CARIBOU (TC566) FIGURES: 3,000 PERMITS.....	11
CARIBOU (TC566) FIGURES: 4,000 PERMITS.....	12
CARIBOU (TC566) FIGURES: RESIDENTS OF GMU 13 AND GMU 11.....	13
CARIBOU (TC566) FIGURES: RESIDENTS OF THE ANCHORAGE MUNICIPALITY.....	14
CARIBOU (TC566) FIGURES: RESIDENTS OF THE MATANUSKA-SUSITNA BOROUGH.....	15
CARIBOU (TC566) FIGURES: RESIDENTS OF THE FAIRBANKS NORTH STAR BOROUGH.....	16
CARIBOU (TC566) FIGURES: RESIDENTS OF "OTHER ALASKA" COMMUNITIES.....	17

LIST OF TABLES

Table	Page
1. Tier II hunt scoring scenarios used in analysis of Proposal 87.....	5

LIST OF FIGURES

Figure	Page
1. Number of Tier II permits issued by area of residence for Hunt TM300 (GMU 13 moose) if 150 permits available, under 6 scoring scenarios.....	6
2. Percentage of applicants receiving Tier II permits for Hunt TM300 (GMU 13 moose) if 150 permits available, under 6 scoring scenarios, by area of residence of permit applicant.....	6
3. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 1,000 permits available, under 6 scoring scenarios.....	7
4. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 1,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.....	7
5. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 1,500 permits available, under 6 scoring scenarios.....	8
6. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 1,500 permits available, under 6 scoring scenarios, by area of residence of permit applicant.....	8
7. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 2,000 permits available, under 6 scoring scenarios.....	9
8. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 2,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.....	9
9. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 2,500 permits available, under 6 scoring scenarios.....	10
10. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 2,500 permits available, under 6 scoring scenarios, by area of residence of permit applicant.....	10
11. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 3,000 permits available, under 6 scoring scenarios.....	11

List of Figures, continued

Figure	Page
12. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 3,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.	11
13. Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 4,000 permits available, under 6 scoring scenarios.	12
14. Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 4,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.	12
15. Number of permits awarded to applicants residing in GMU 13 and 11, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.	13
16. Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from GMU 13 and 11 communities receiving permits, under 6 scoring scenarios.	13
17. Number of permits awarded to Anchorage applicants, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.	14
18. Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from Anchorage receiving permits, under 6 scoring scenarios.	14
19. Number of permits awarded to applicants residing in the Matanuska-Susitna Borough, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.	15
20. Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from the Matanuska-Susitna Borough receiving permits, under 6 scoring scenarios.	15
21. Number of permits awarded to applicants residing in the Fairbanks North Star Borough, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.	16
22. Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from the Fairbanks North Star Borough receiving permits, under 6 scoring scenarios.	16
23. Number of permits awarded to applicants residing in "other Alaska" communities, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.	17
24. Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from "other Alaska" communities receiving permits, under 6 scoring scenarios.	17

BACKGROUND

Proposals 87, 88, 89, and 90, presented to the Alaska Board of Game (board) for their consideration during deliberations scheduled for February-March 2009, would change the scoring system for Tier II hunts. By statute and regulation, Tier II hunts occur when the harvestable surplus of a game population is not sufficient to provide a reasonable opportunity for all Alaskans who wish to do so to participate in subsistence hunting and it is therefore necessary to distinguish among Alaskans who may participate (AS 16.05.258 and 5 AAC 92.062).

The state subsistence law presently identifies two factors that are used to rank those Alaskans who wish to participate in a Tier II hunt: customary and direct dependence on the game population for human consumption as a mainstay of livelihood (Factor A), and the ability of the subsistence user to obtain food if the subsistence use is restricted or eliminated (Factor B) (AS 16.05.258(b)(4)(B)). The board has developed questions to measure each of these factors for each applicant (5 AAC 02.070).

The board has established two Tier II scoring systems under 5 AAC 02.070: one for hunts that occur in Alaska Department of Fish and Game (ADF&G) Game Management Unit (GMU) 13 and a second for all other Tier II hunts. In both systems, 85 points (61% of the total of 140 possible points) are awarded to Factor A, which is measured by 3 questions. Two questions ask for the length of time the applicant or a member of the applicant's household has used the game population (Question 14 and Question 15 in the current Tier II application). The maximum number of points for these two questions is achieved at 50 years of use. The third question that measures Factor A asks for the number of days the applicant spent hunting and fishing in the Tier II hunt area (Question 16). The second factor, with a maximum score of 55 points (39% of the total of 140 possible points), is measured differently depending upon whether the hunt takes place in GMU 13 or another GMU.

Two questions that measure Factor B are used in both scoring systems: 1) the availability of food for purchase in the community where most of the applicant's food was purchased (15 points for GMU 13 hunts; 25 points for hunts in other GMUs) (Question 17); and 2) the cost of motor vehicle gasoline in the community where most of the applicant's gasoline is purchased (20 points for GMU 13 hunts; 30 points for hunts in other GMUs) (Question 18). A third question that measures Factor B, worth up to 20 points, is used for scoring GMU 13 hunt applications: the taxable income of the applicant's household (Question 20).

Another difference between the two scoring systems is the "zeroing out" provision for GMU 13 hunt applications. If the applicant scores 0 points on Question 20 (household income), the applicant's score for questions measuring Factor B is 0; and if the applicant scores 0 points for either Factor A or Factor B, the total score for the applicant is 0.¹

In June 2008, an Alaska Superior Court ruling in *Ahtna Tene Nene' Subsistence Committee vs. Alaska Board of Game* directed that the board could use income in Tier II scoring only if scores were adjusted to reflect differences in the cost of living between Alaska communities. Because no up-to-date data were available to make such adjustments, the board adopted an emergency regulation to not consider the income question when scoring applications for GMU 13 Tier II

¹ The Alaska Superior Court in *Ahtna Tene Nene' Subsistence Committee vs. Alaska Board of Game* ruled against the provision that a score for either Factor A or Factor B would result in a score of 0 for the entire application.

hunts. For the 2008-2009 regulatory year, applicants for GMU 13 Tier II hunts were scored with the same procedure as other Tier II hunts.

Proposal 87 proposes the following changes to the Tier II scoring system:

1. Delete Question 20 (household income) and correspondingly increase the maximum number of points for questions 17 and 18 in order to measure Factor B.
2. Delete the "zeroing out" provisions in 5 AAC 92.070(c).
3. Change the allocation of points between questions that measure Factor A and those that measure Factor B, in order to increase the weight given to Factor B questions. The proposal does not include a recommendation for the percentage of total points that should be allocated to each factor.
4. Reduce the number of years required to achieve a maximum score for questions 14 and 15 from 50 years to 30 years.
5. Change the point allocations for the number of days spent hunting and fishing in the Tier II area. The proposal does not include specific recommendations for point allocations.

Proposal 88 proposes to eliminate the income question.

Proposal 89 would change the distribution of points between Factor A and Factor B to favor Factor B, but, like Proposal 87, does not suggest a specific point allocation.

Proposal 90 would modify how points are awarded based on income.

The following analysis identifies some of the potential changes to the geographic distribution of Tier II permits for GMU 13 hunts if some of the recommendations of Proposal 87 were adopted. The geographic distribution of permits is a useful tool for discerning the effects of changes in the Tier II point system. The analysis is based on the applicant pool for the 2008-2009 regulatory year hunts. Six point system scenarios are examined (see also Table 1):

1. The scoring system implemented for all Tier II hunts in the 2008-2009 regulatory year.
2. The GMU 13 scoring system presently in regulation, except the provision that an applicant's entire score becomes 0 if the total score for either Factor A questions or Factor B questions is 0.² An applicant's score for Factor B questions is 0 if the applicant scores 0 points for household income.
3. Change Scenario A: questions measuring Factor A have a maximum score of 70 points (50%) and questions measuring Factor B have a maximum score of 70 points (50%); applicants receive maximum scores for questions 14 and 15 at 50 years; the question on household income is retained, but a 0 score for income does not result in a score of 0 for all questions measuring Factor B.
4. Change Scenario B: questions measuring Factor A have a maximum score of 70 points (50%) and questions measuring Factor B have a maximum score of 70 points (50%); applicants receive maximum scores for questions 14 and 15 at 50 years; the question on household income is deleted, and the maximum scores for questions 17 and 18 are increased.

² This regulation was deemed invalid in the Superior Court's ruling in *Ahtna Tene Nene' Subsistence Committee vs. Alaska Board of Game*, June 2008.

5. Change Scenario C: questions measuring Factor A have a maximum score of 70 points (50%) and questions measuring Factor B have a maximum score of 70 points (50%); applicants receive maximum scores for questions 14 and 15 at 30 years; the question on household income is retained, but a 0 score for income does not result in a score of 0 for all questions measuring Factor B..
6. Change Scenario D: questions measuring Factor A have a maximum score of 70 points (50%) and questions measuring Factor B have a maximum score of 70 points (50%); applicants receive maximum scores for questions 14 and 15 at 30 years; the question on household income is deleted, and the maximum scores for questions 17 and 18 are increased.

For each scenario, the geographic distribution of permits is reported at 1,000, 1,500, 2,000, 2,500, 3,000, and 4,000 available permits for the Nelchina caribou *Rangifer tarandus* herd and for 150 permits for GMU 13 moose *Alces alces* (which allow the permit holder to take “any bull.”)

The applicant pool for Tier II hunts changes each year. The number of permits available affects the number of applicants. A change in the scoring system would likely affect the size and composition of the applicant pool as well. Since this analysis is based on the 2008-2009 regulatory year applicant pool, it cannot predict with certainty how permits would be awarded in the future under any scoring scenario.

Following are some observations on the effects of the scoring scenarios. Further study of these results could result in additional observations about the implications of each scenario.

- Residents of GMUs 13 and 11 (“local residents”) obtain fewer permits when the present GMU 13 scoring system is used, especially when the number of available permits drops. The number of permits awarded to “other Alaska” residents also drops when the present GMU 13 scoring system is applied. The number of permits awarded to residents of Anchorage, the Matanuska-Susitna (Mat-Su) Borough, and Fairbanks is generally higher under the present GMU 13 scoring system than under other scoring scenarios. This is likely because of the key role that household income plays in the present GMU 13 scoring system. A larger percentage of applicants from GMU 13 and other more remote locations may have higher incomes than applicants from Anchorage, the Mat-Su Borough, and Fairbanks. Hunters with higher incomes in rural communities are likely to continue to apply for Tier II permits even if their score is lowered because of their household’s income, because these hunters provide subsistence resources in their communities. These hunters receive no points for Factor B questions, thereby negating any points they would otherwise receive for the higher costs of food and gasoline, while hunters from more populous areas, and who have lower incomes, receive points for Factor B and receive permits if their length of use of the game population and the number of days they spend hunting and fishing in the Tier II hunt area are equal to, or even slightly lower than, a local resident with an income above the cap for which points are awarded.
- Change Scenario D, which includes achieving maximum points for questions 14 and 15 at 30 years of use of the Tier II population and eliminates the income question, would result in more permits being awarded to residents of

GMUs 13 and 11 (“local residents”) when the overall number of available permits drops. This would be a result of more “ties” occurring for questions measuring Factor A, which therefore places more emphasis on the cost of food and gasoline (questions 17 and 18) in determining permit winners. Residents of GMUs 13 and 11 would also obtain more permits under Scenario C when available permit numbers drop. However, this advantage would not be seen when higher numbers of permits become available, perhaps because the rest of the GMUs 13 and 11 resident applicant pool has relatively low scores on questions 14 and 15 (length of use of the population).

- Anchorage applicants would generally receive fewer permits under Scenario C, and especially under Scenario D, again because more ties would occur for Factor A and Anchorage residents receive no points for questions 17 and 18 (cost of food and gasoline). Most permits would shift to Mat-Su Borough residents and “other Alaska residents.”
- The pattern for Mat-Su Borough residents is similar to that of GMU 13 and 11 residents. They would receive an advantage over Anchorage residents in Scenario D.
- Fairbanks residents would lose permits under Scenario D when the number of available permits decreased.
- “Other Alaska” residents would benefit from Scenario D, especially at lower numbers of available permits.

In general, the effects of these changes on the distribution of permits by geographic area are not as straightforward or pronounced as in analyses we have performed when similar proposals were reviewed in previous Board of Game meetings because the board has added Question 16 (number of days spent hunting and fishing in the Tier II area) as one measure of Factor A, reducing the number of ties for this factor when the years for a maximum score for questions 14 and 15 is reduced to 30. Including the income question as part of Factor B also reduces the geographic effect of these changes.

Table 1.—Tier II hunt scoring scenarios used in analysis of Proposal 87.

Question	Maximum Points Awarded					
	Scoring System Used in 2008/2009	GMU 13 Scoring System in Regulation ¹	Scenario A	Scenario B	Scenario C	Scenario D
<i>Part A: customary and direct dependence for human consumption as a mainstay of livelihood</i>						
Q. 14. Number of years applicant has hunted or eaten meat from the population	50	50	50	50	50	50
	(maximum at 50 years)	(maximum at 50 years)	(maximum at 50 years)	(maximum at 30 years)	(maximum at 50 years)	(maximum at 30 years)
Q. 15. Maximum number of years any member of applicant's households has hunted or eaten from the population	10	10	10	10	10	10
	(maximum at 50 years)	(maximum at 50 years)	(maximum at 50 years)	(maximum at 30 years)	(maximum at 50 years)	(maximum at 30 years)
Q. 16. Number of days spent hunting and fishing in the Tier II hunt area	25	25	10	10	10	10
Subtotal	85	85	70	70	70	70
(% of total maximum score)	61%	61%	50%	50%	50%	50%
<i>Part B: ability to obtain food if subsistence use is restricted or eliminated</i>						
Q. 17. Community in which most food purchased.	25	15	20	30	20	30
Q. 18. Community in which most gasoline purchased.	30	20	25	40	25	40
Q. 20. Household adjusted gross income.	NA	20	25	NA	25	NA
Subtotal	55	55	70	70	70	70
(% of total maximum score)	39%	39%	50%	50%	50%	50%
Total	140	140	140	140	140	140

NA = not asked/not part of scoring process

¹ Under the GMU 13 scoring procedure, applicants receive a score of 0 for Part B if they receive no points for Question 20 (income).

MOOSE (TM300) FIGURES

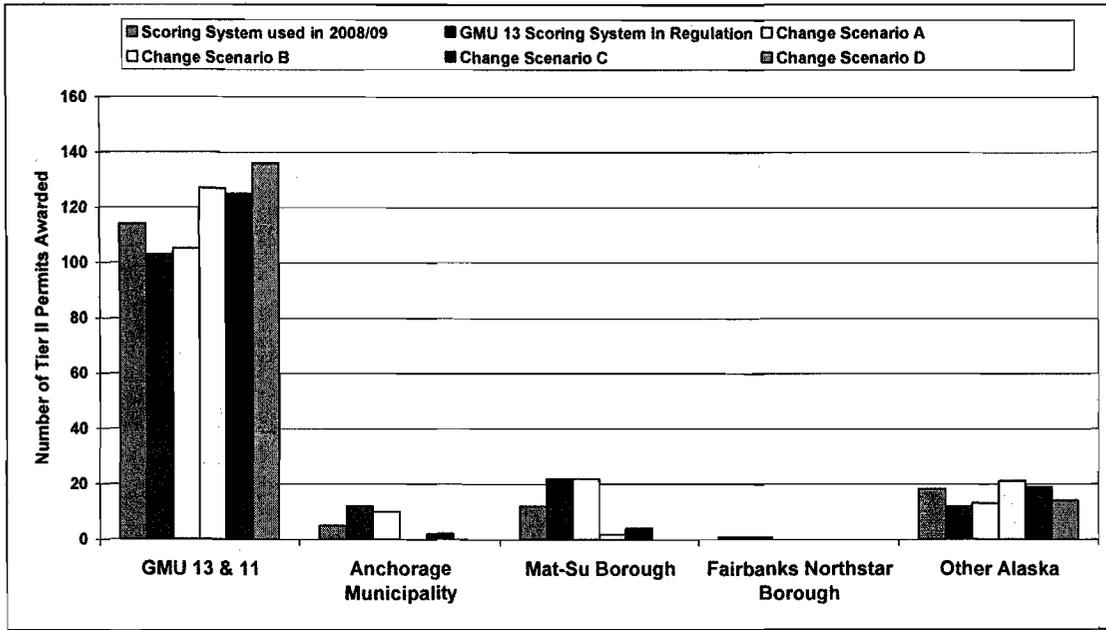


Figure 1.—Number of Tier II permits issued by area of residence for Hunt TM300 (GMU 13 moose) if 150 permits available, under 6 scoring scenarios.

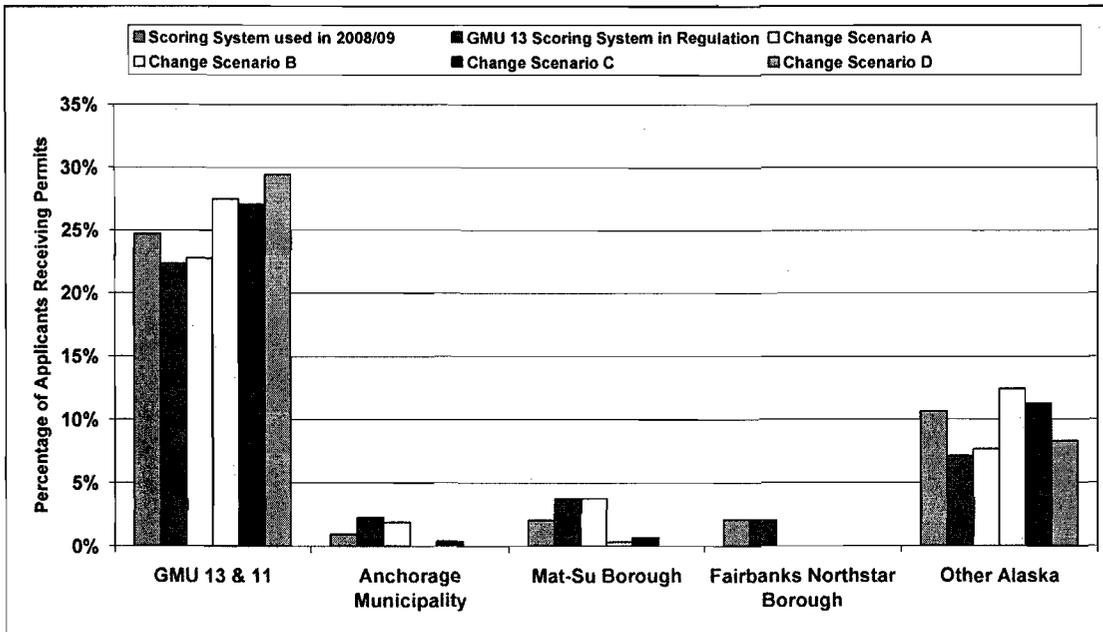


Figure 2.—Percentage of applicants receiving Tier II permits for Hunt TM300 (GMU 13 moose) if 150 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 1,000 PERMITS

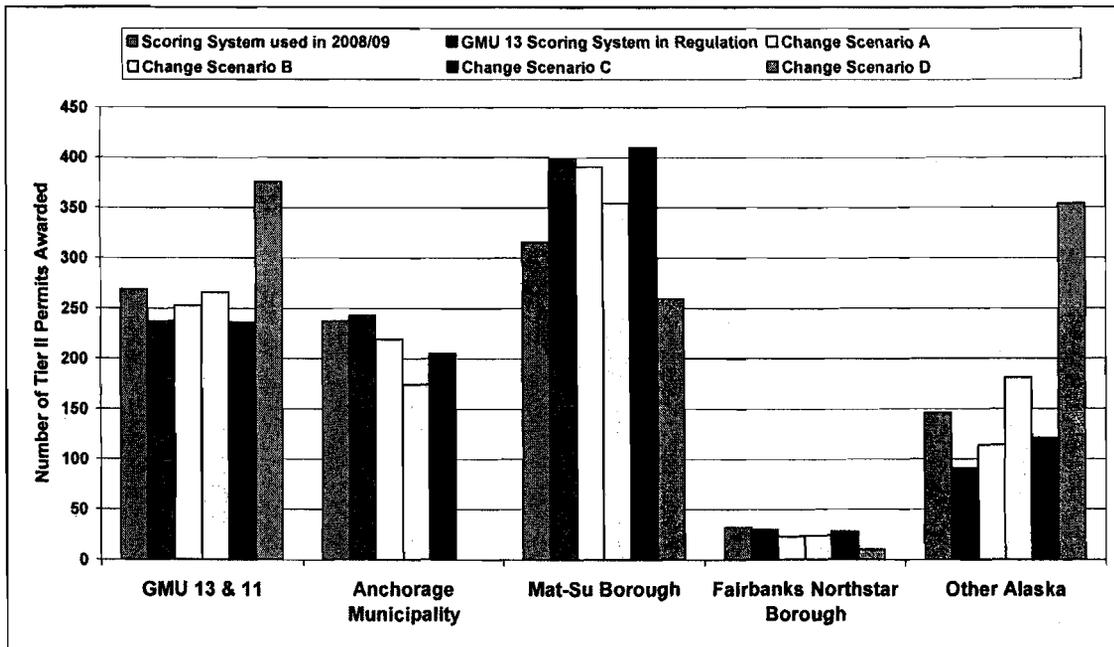


Figure 3.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 1,000 permits available, under 6 scoring scenarios.

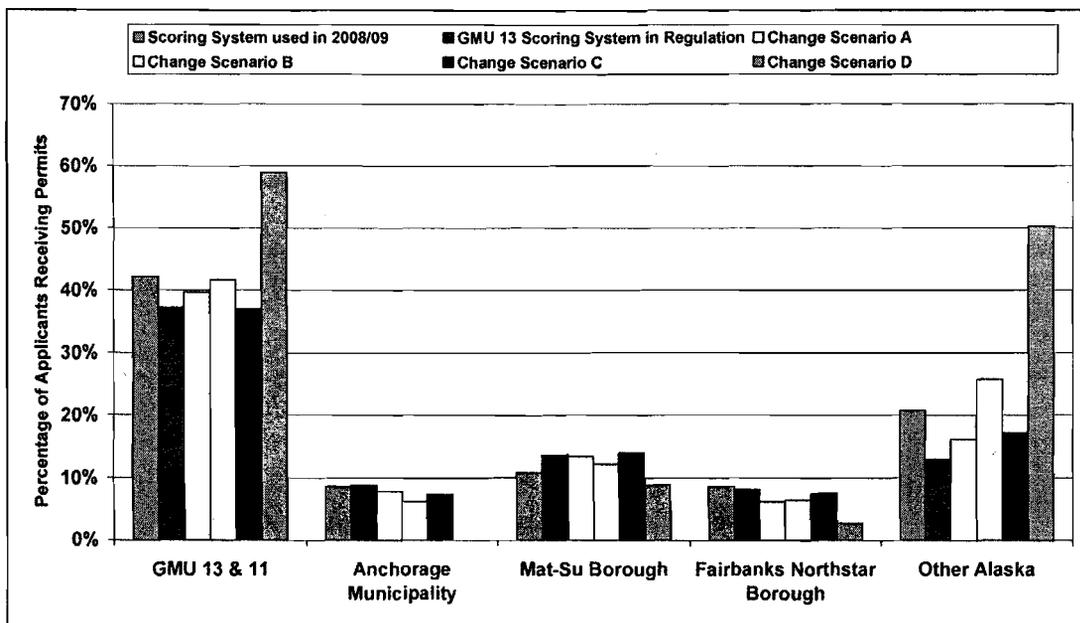


Figure 4.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 1,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 1,500 PERMITS

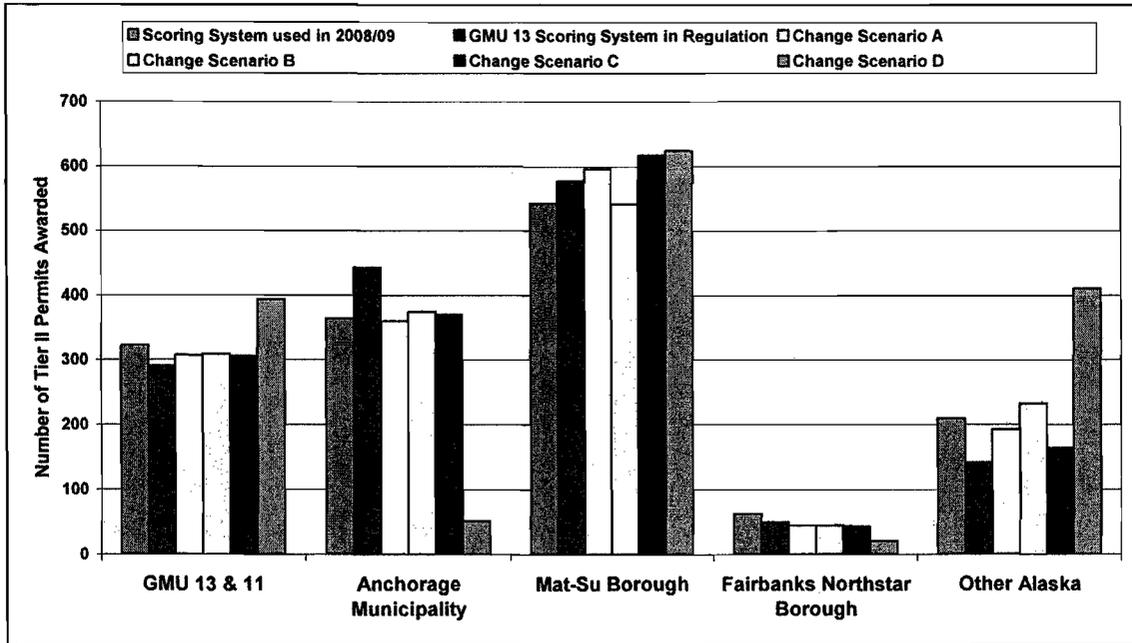


Figure 5.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 1,500 permits available, under 6 scoring scenarios.

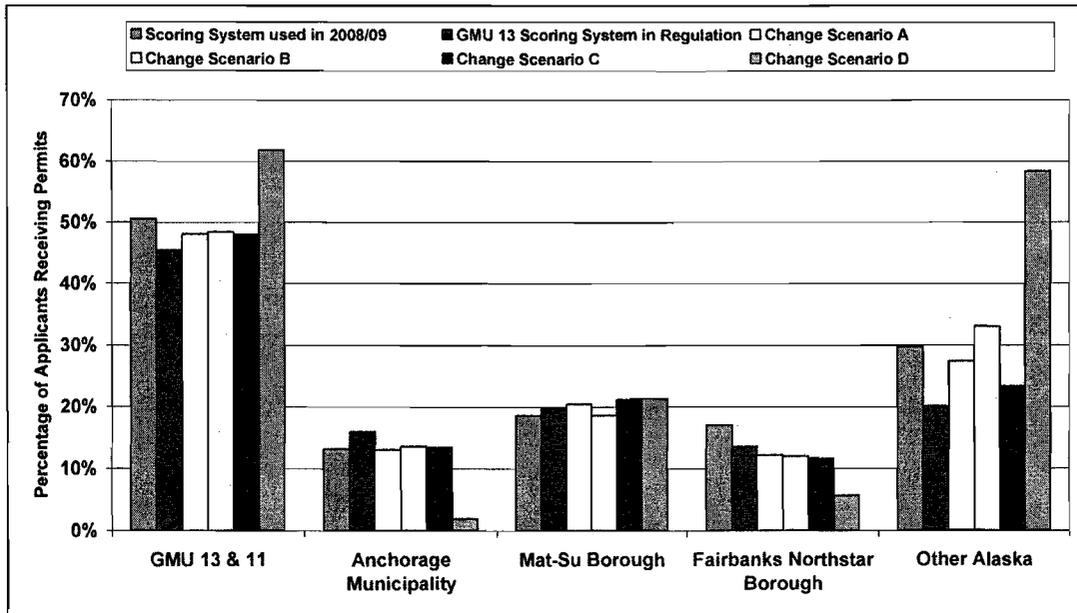


Figure 6.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 1,500 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 2,000 PERMITS

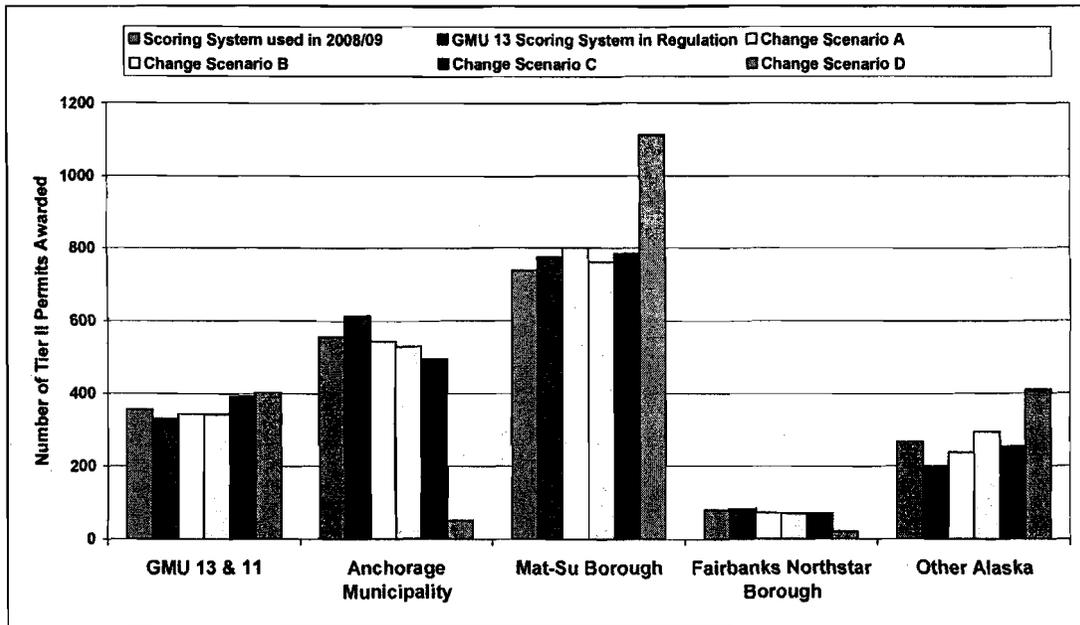


Figure 7.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 2,000 permits available, under 6 scoring scenarios.

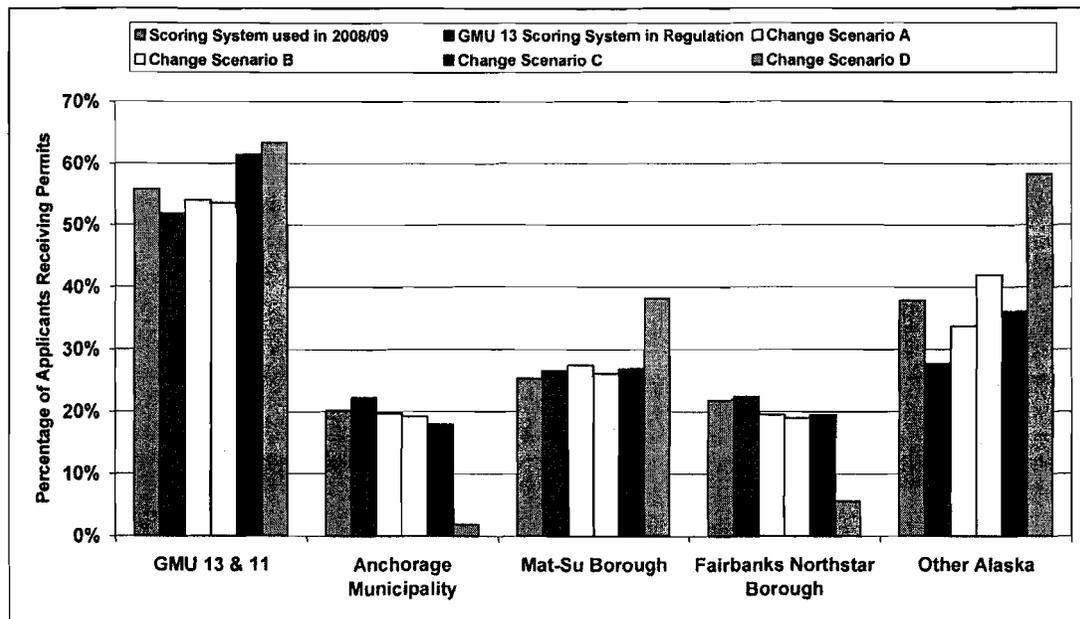


Figure 8.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 2,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 2,500 PERMITS

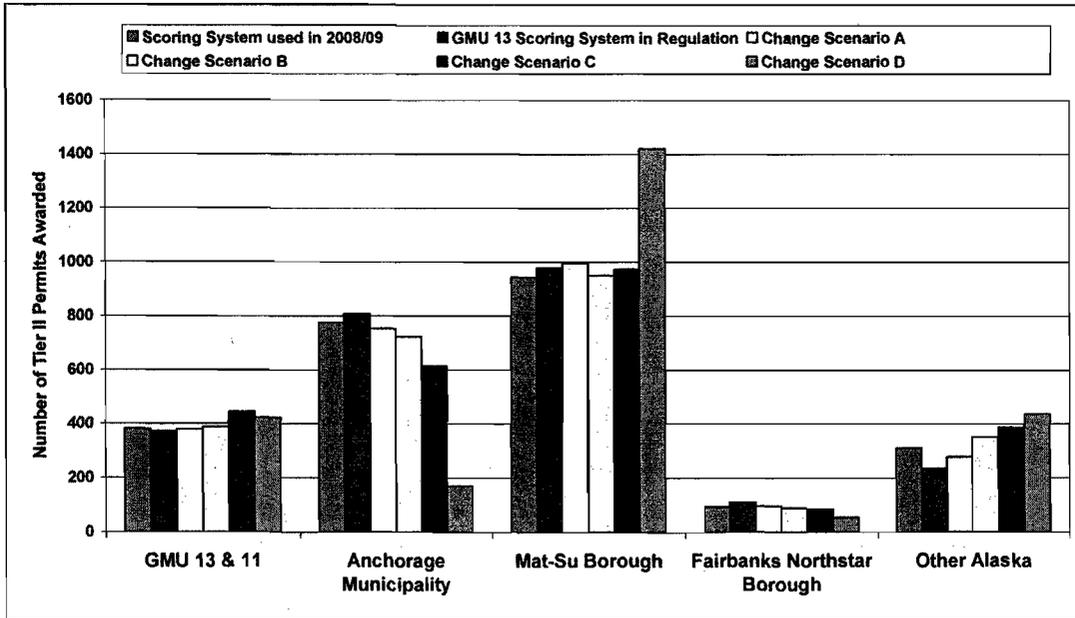


Figure 9.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 2,500 permits available, under 6 scoring scenarios.

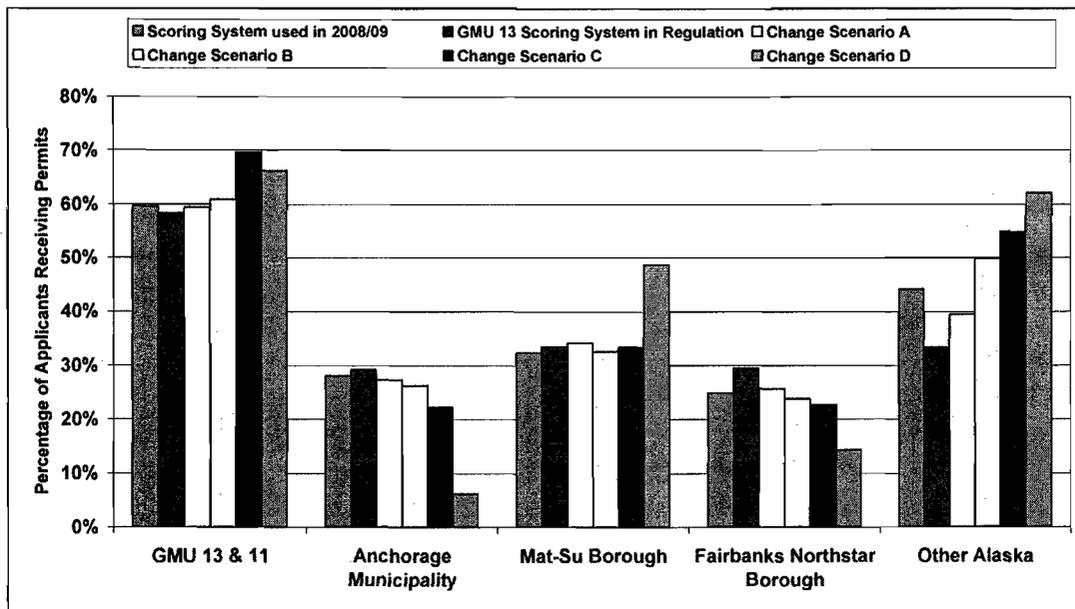


Figure 10.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 2,500 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 3,000 PERMITS

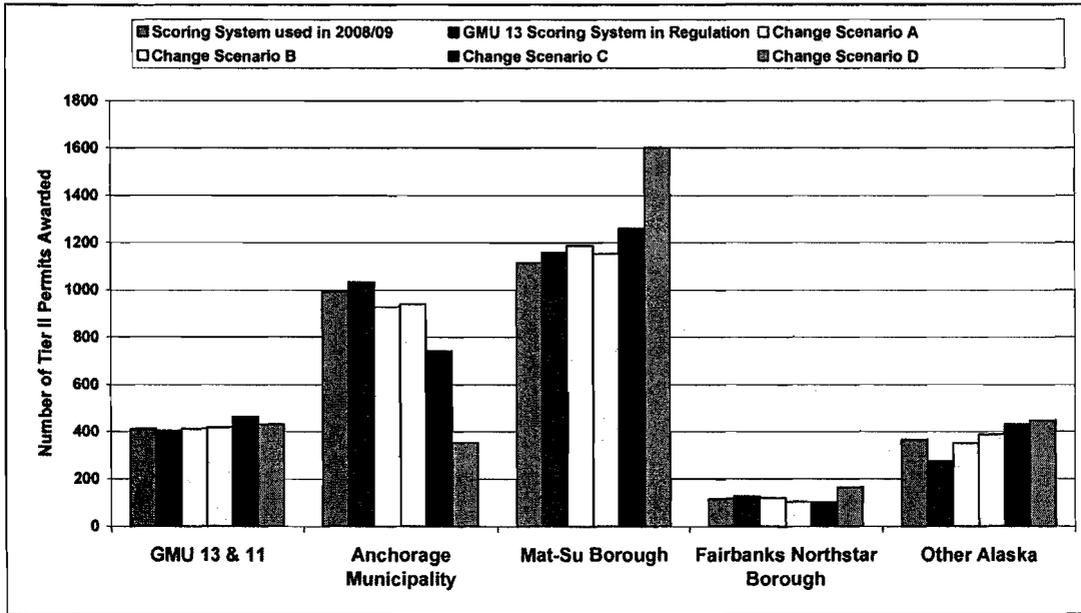


Figure 11.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 3,000 permits available, under 6 scoring scenarios.

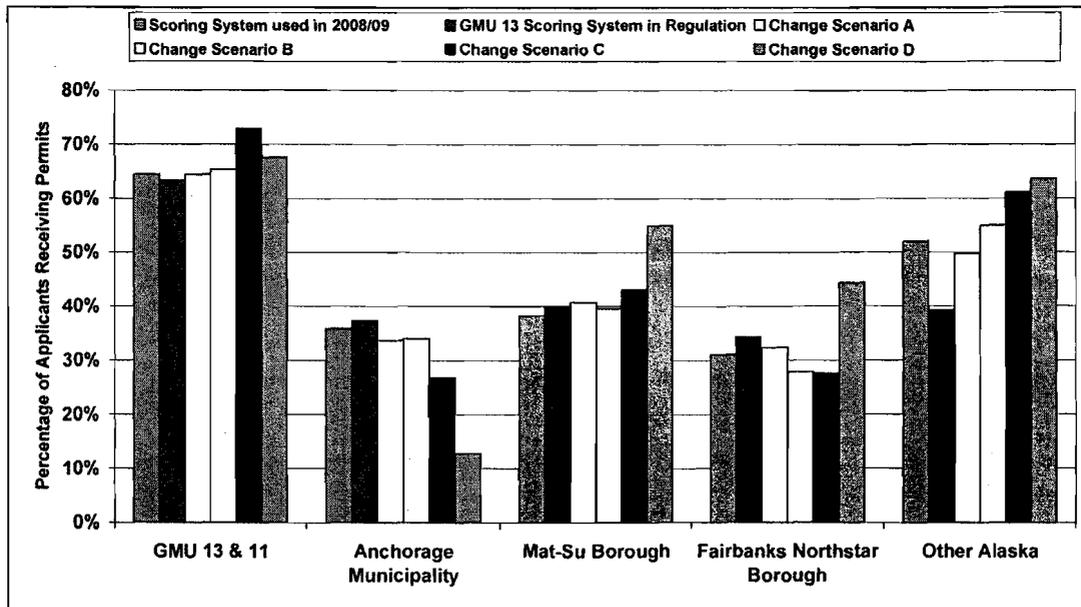


Figure 12.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 3,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: 4,000 PERMITS

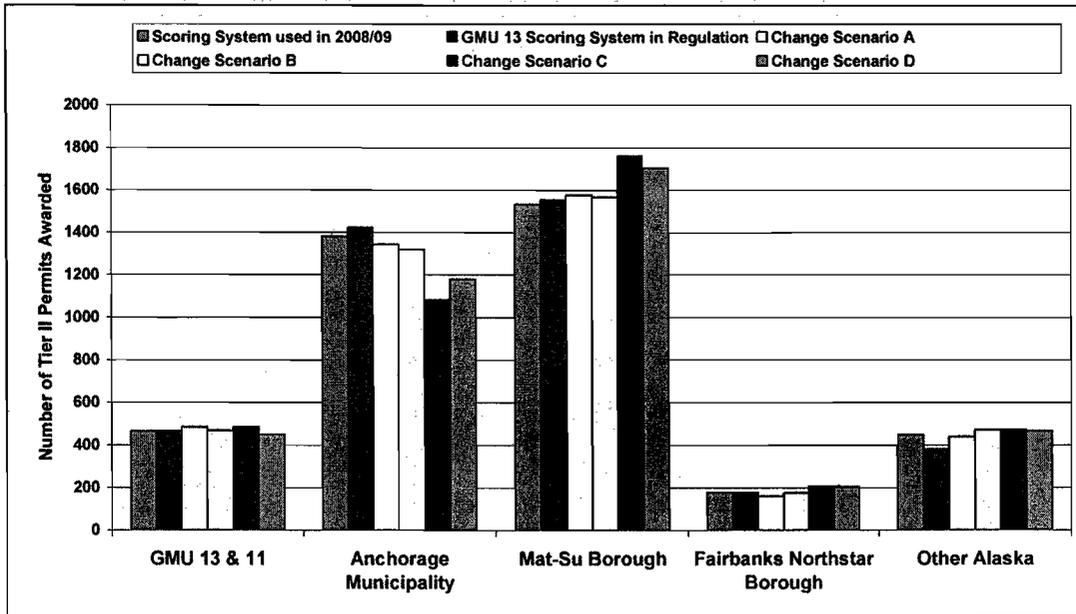


Figure 13.—Number of Tier II permits issued by area of residence for Hunt TC566 (GMU 13 Nelchina caribou) if 4,000 permits available, under 6 scoring scenarios.

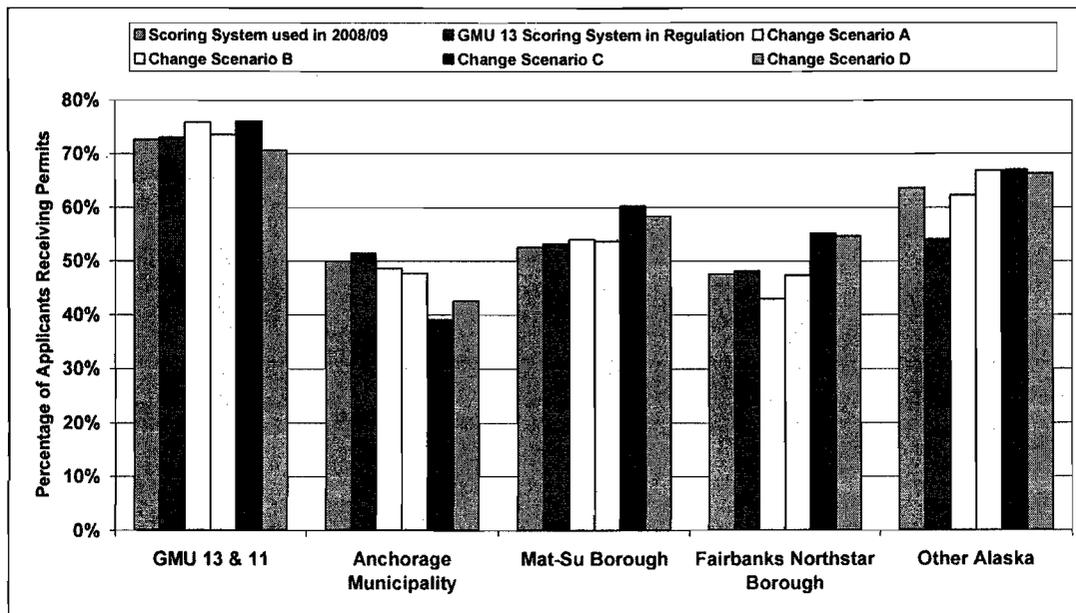


Figure 14.—Percentage of applicants receiving Tier II permits for Hunt TC566 (GMU 13 Nelchina caribou) if 4,000 permits available, under 6 scoring scenarios, by area of residence of permit applicant.

CARIBOU (TC566) FIGURES: RESIDENTS OF GMU 13 AND GMU 11

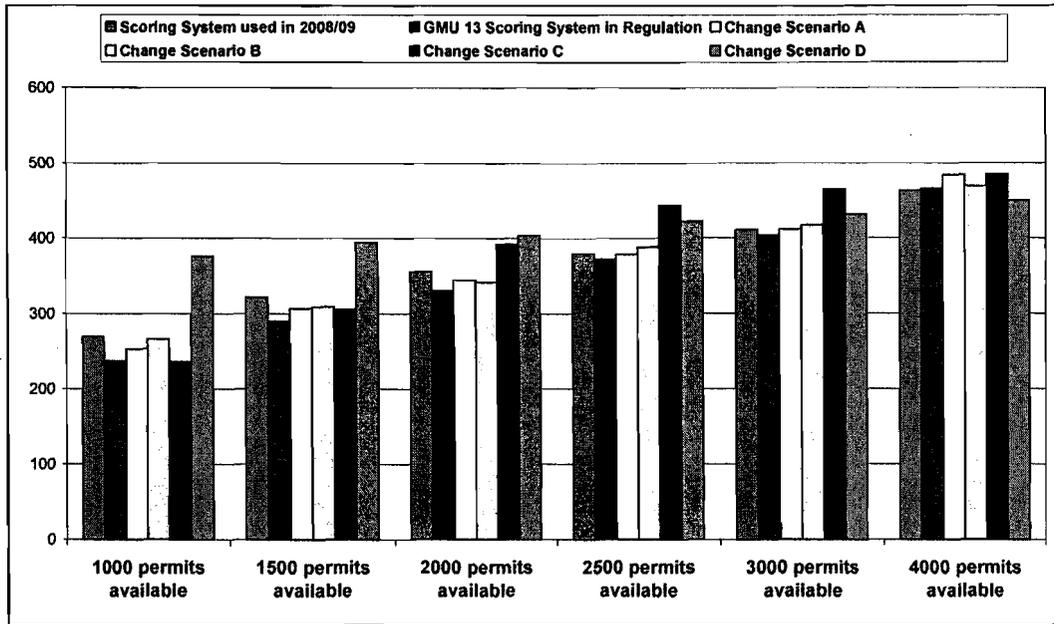


Figure 15.—Number of permits awarded to applicants residing in GMU 13 and 11, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.

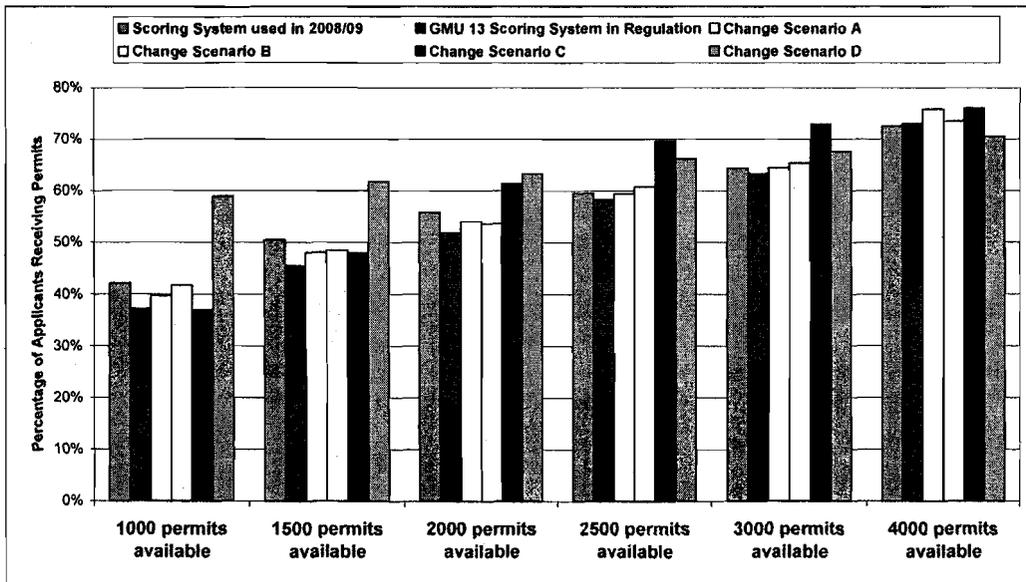


Figure 16.—Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from GMU 13 and 11 communities receiving permits, under 6 scoring scenarios.

CARIBOU (TC566) FIGURES: RESIDENTS OF THE ANCHORAGE MUNICIPALITY

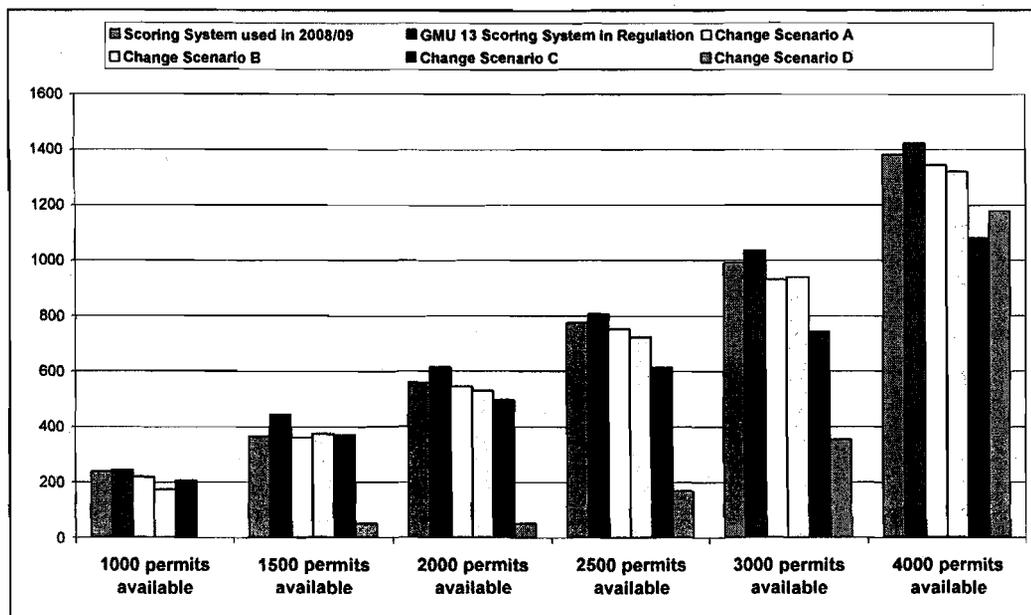


Figure 17.—Number of permits awarded to Anchorage applicants, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.

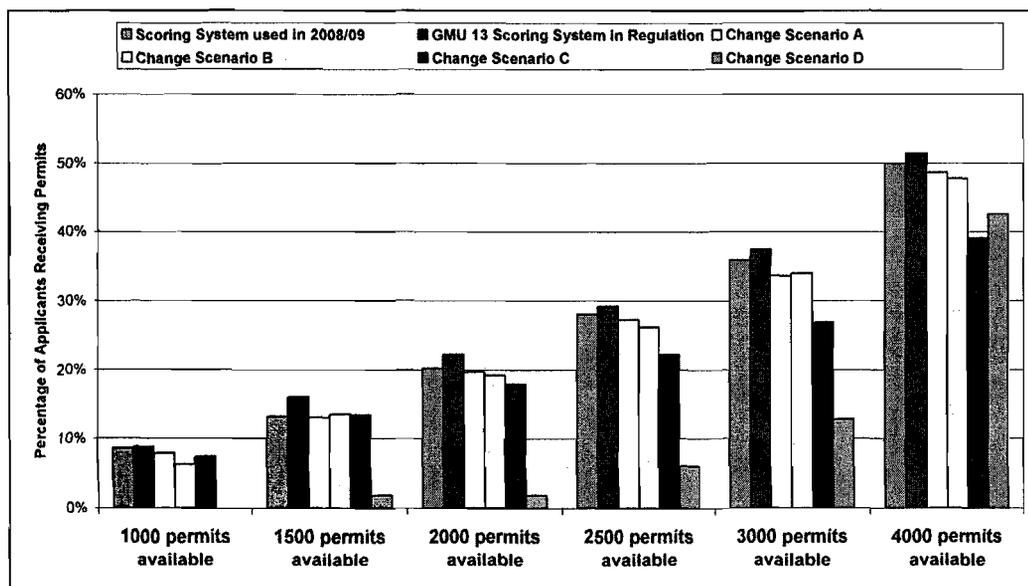


Figure 18.—Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from Anchorage receiving permits, under 6 scoring scenarios.

CARIBOU (TC566) FIGURES: RESIDENTS OF THE MATANUSKA-SUSITNA BOROUGH

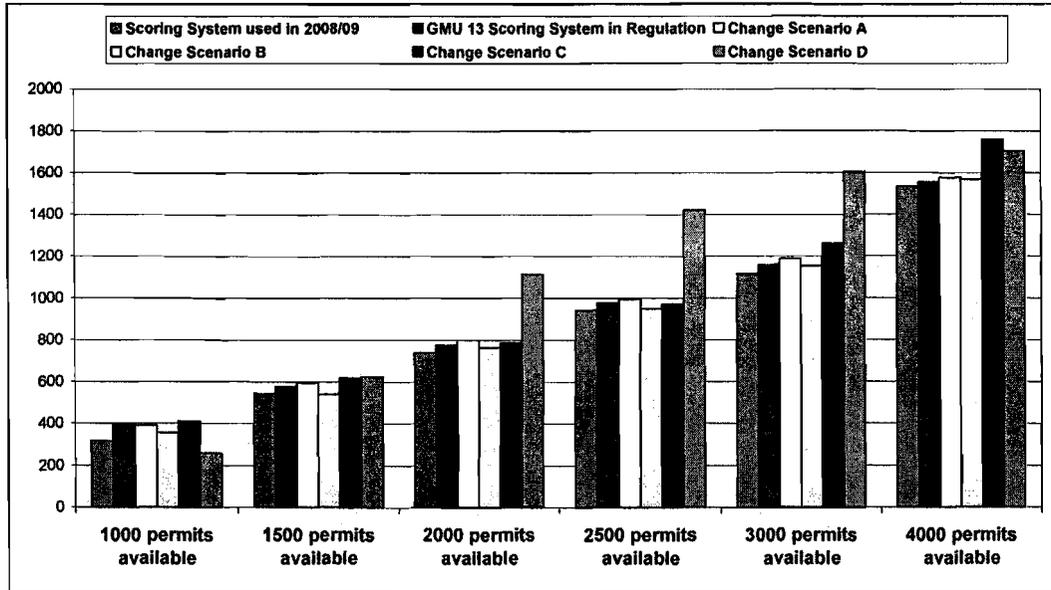


Figure 19.—Number of permits awarded to applicants residing in the Matanuska-Susitna Borough, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.

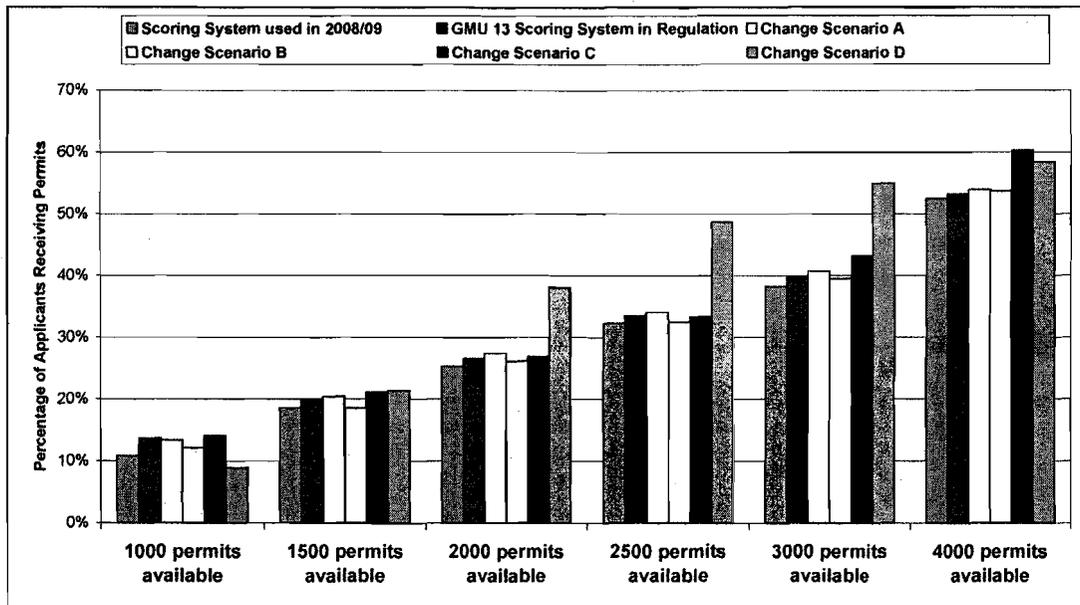


Figure 20.—Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from the Matanuska-Susitna Borough receiving permits, under 6 scoring scenarios.

CARIBOU (TC566) FIGURES: RESIDENTS OF THE FAIRBANKS NORTH STAR BOROUGH

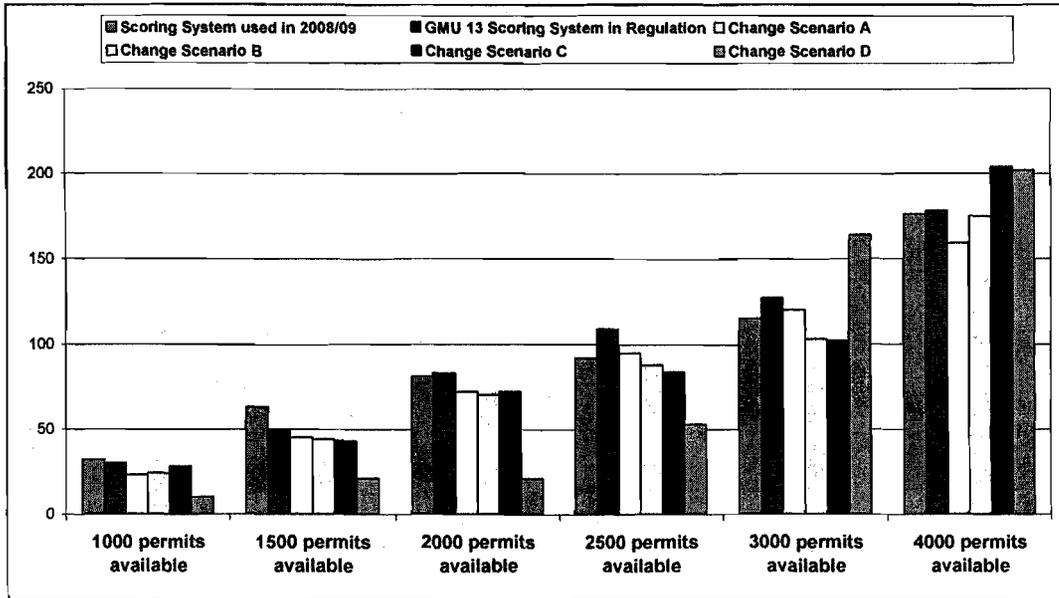


Figure 21.—Number of permits awarded to applicants residing in the Fairbanks North Star Borough, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.

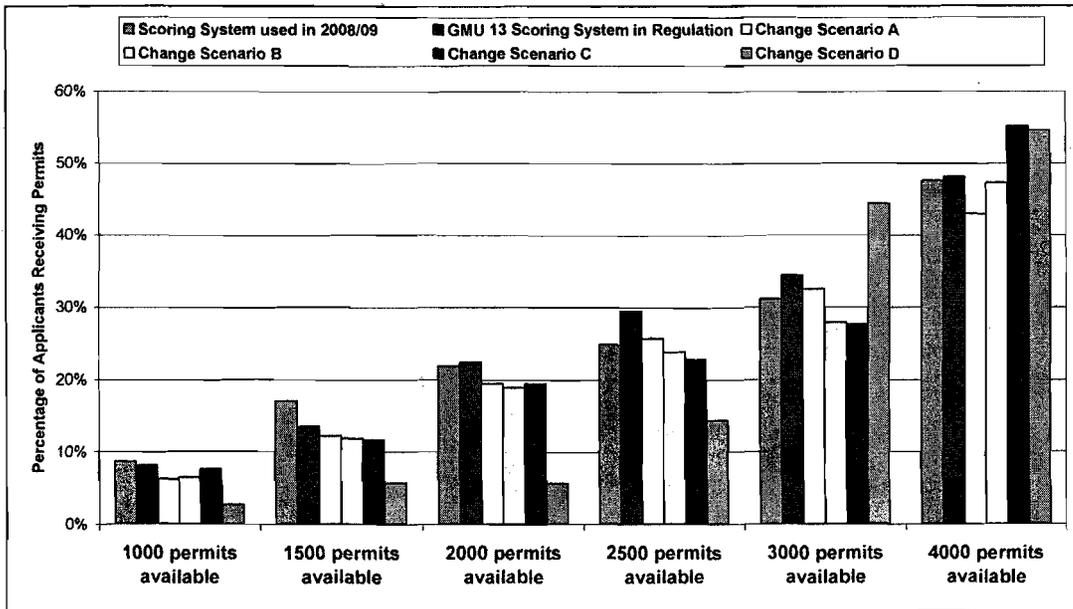


Figure 22.—Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from the Fairbanks North Star Borough receiving permits, under 6 scoring scenarios.

CARIBOU (TC566) FIGURES: RESIDENTS OF "OTHER ALASKA" COMMUNITIES

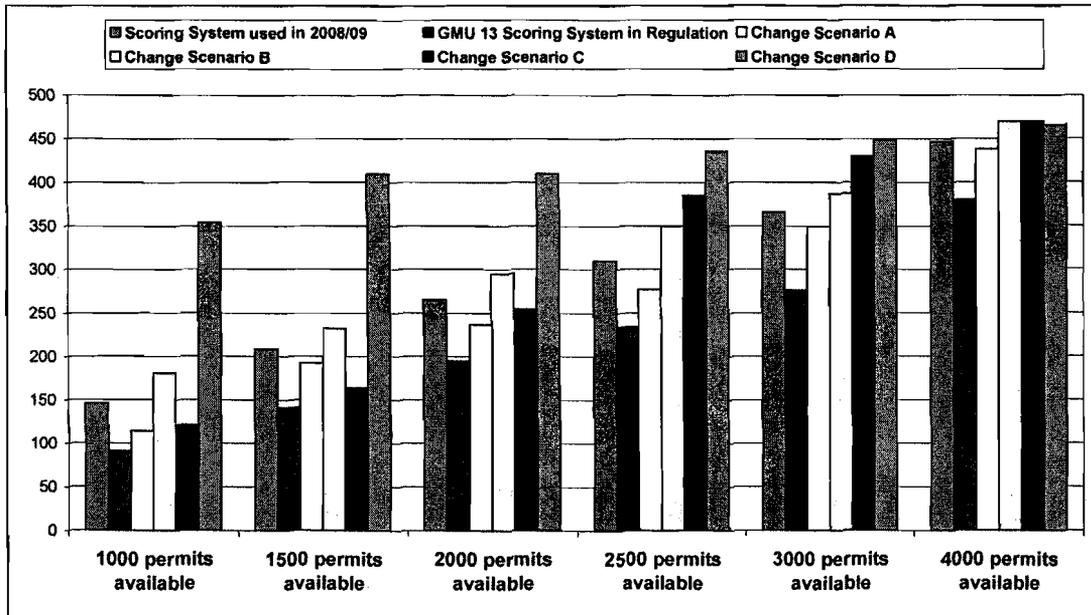


Figure 23.—Number of permits awarded to applicants residing in "other Alaska" communities, Tier II Hunt TC566 (GMU 13 Nelchina caribou), under 6 scoring scenarios.

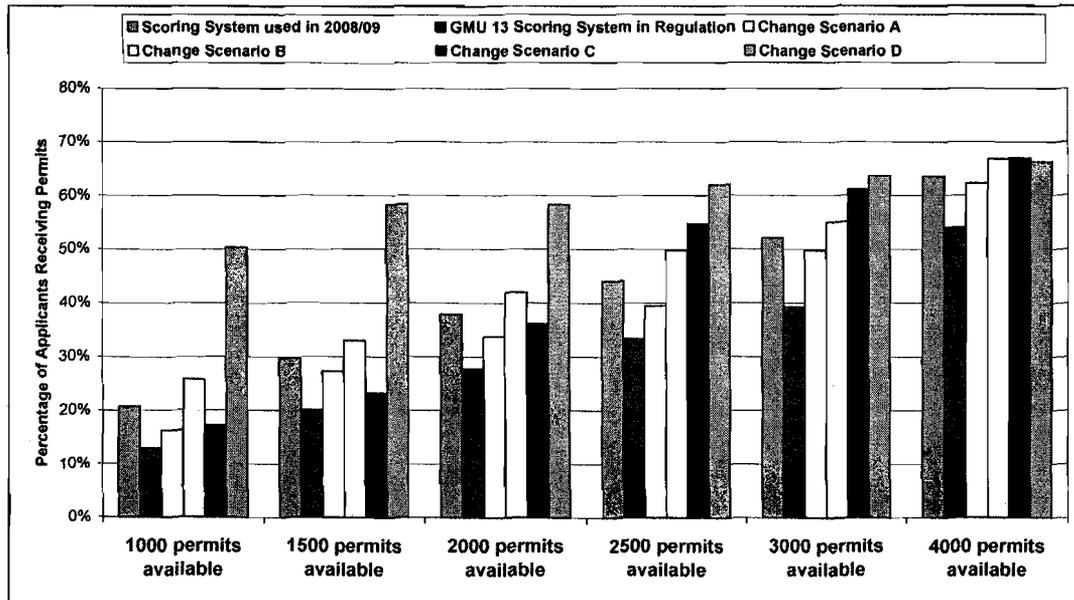


Figure 24.—Percentage of Tier II Hunt TC566 (GMU 13 Nelchina caribou) applicants from "other Alaska" communities receiving permits, under 6 scoring scenarios.

**DELIBERATION MATERIALS FOR PROPOSALS 95 AND
96: ANS FOR GMU 13 MOOSE AND NEW DRAWING
HUNTS IN PORTIONS OF GMU 13A, B, AND C.**

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	iii
LIST OF FIGURES.....	iii
BACKGROUND.....	1
The 1992 ANS Finding.....	1
Updated Information about Human Demography.....	2
Updated Information about Hunting and Harvests.....	2
Number of Hunters, Number of Moose Harvested, and Success Rates.....	2
Transportation Methods.....	3
Participation by Type of Hunt.....	3
Proposal 95: Hunters and Successful Hunters in Portions of Subunits 13A, 13B, and 13C.....	4
OPTIONS FOR REVISIONS OF ANS FOR MOOSE, GMU 13.....	4
APPENDIX A.....	21

LIST OF TABLES

Table	Page
1. Population of areas connected by road to GMU 13, 1990, 2000, and 2007.....	5
2. Number of moose hunters, harvesters, harvests, and success rates by area of residence, GMU 13, 1963-2008.....	5
3. Moose harvests in GMU 13 by area of residence and hunt type, 1990-2008.....	6
4. Mean annual number of hunters and successful hunters, and success rates, GMU 13 moose, 1980-1991 and 1992-2007.....	7
5. Annual average number of GMU 13 moose hunters by primary method of transport and area of residence, 1998-2007.....	8
6. Annual mean of moose hunters and successful hunters in 3 subareas of GMU 13 – 13A, 13B, and 13C, by area of residence, 1992-2007.....	8

LIST OF FIGURES

Figure	Page
1. Population of areas of Alaska connected by road to GMU 13, 1990, 2000, and 2007.....	9
2. Number of Alaska resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1967-2007.....	10
3. Hunter success rates, Alaska resident hunters, GMU 13 moose, 1967-2007.....	11
4. Number of local resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1969-2007.....	12
5. Percentage of moose hunters in GMU 13 who were nonlocal residents and percentage of total moose harvested by nonlocal hunters, all hunts, 1969-2007.....	13
6. Percentage of GMU 13 moose hunters by area of residence, 1992-2008.....	14
7. Success rate, GMU 13 moose hunters, by area of residence, 1967-2007.....	15
8. GMU 13 moose hunters, method of transport by area of residence, 1998-2007.....	16
9. Primary transport method, GMU 13 moose hunters, 1998-2007.....	17
10. Percentage of GMU 13 moose hunters by type of hunt and area of residence, 1992-2007.....	18
11. Percentage of moose hunters by area of residence, 3 areas with GMU 13 proposed for drawing hunts, 1992-2007.....	19

BACKGROUND

Proposal 96, submitted by the Alaska Department of Fish and Game (ADF&G), suggests that the Board of Game (board) review its finding regarding the amount reasonably necessary for subsistence (ANS) for Game Management Unit (GMU) 13 moose *Alces alces*. Under AS 16.05.258(b), the board must determine, for populations with customary and traditional uses, "the amount of the harvestable portion that is reasonably necessary for subsistence uses." The proposal notes that during its emergency meeting in July 2008, the board expressed its intention to review the ANS finding for GMU 13 moose at its spring 2009 regulatory meeting in Anchorage. The proposal also states that the harvestable surplus presently exceeds the ANS of 600 moose. The purpose of this overview is to provide updated information about hunting and harvests of moose in GMU 13 to assist the board during its deliberations on Proposal 96.

Also, Proposal 95, submitted by ADF&G, proposes that new drawing permit hunts for bull moose be established in portions of GMU 13A, GMU 13B, and GMU 13C, because moose populations are increasing in these remote areas and additional moose are available for harvest. Information about the number of hunters and successful hunters by place of residence for each these areas is included in this report.

Presently, the following opportunities exist for hunting moose in GMU 13 for Alaska residents. Note that there is no nonresident season for hunting moose in GMU 13.

1. A state-managed resident-only open hunt, with a September 1 – September 20 season and a bag limit of one bull with spike-fork or 50-inch antlers or antlers with 4 or more brow tines on at least one side.
2. A state-managed Tier II hunt, with an August 15 – August 31 season, with a one bull bag limit; up to 150 Tier II permits are issued annually.
3. A federally-managed registration hunt with an August 1 – September 20 season and a one antlered bull bag limit; only residents of GMU 13 and certain other rural communities are eligible for these registration permits.

THE 1992 ANS FINDING

The present ANS finding of 600 moose for GMU 13 (5 AAC 99.025(8)) dates to June 23, 1992. The board adopted written findings (No. 92-60-BOG) that explain how the ANS determination of 600 moose was developed (Appendix A). According the findings, the board followed these steps:

1. Accepted the department's recommendation that 600 bull moose (based on a harvest range of 500 to 700) were available for harvest.
2. Determined that the best available information upon which to base an ANS finding was for the period 1980 through 1991, a 12-year time frame. Although data were available for the previous 20 years, the board concluded that data for the previous 12 years were more reliable "due to improved data gathering techniques," and more relevant due to "changing human demographics."
3. Determined that there were approximately 3,000 "subsistence users who hunt [moose] in Unit 13. Approximately 600 of these hunters are local residents of Unit 13." The board noted that an annual average of 3,400 Alaska residents hunted moose in GMU 13 over the 12-year period, but this time period included 5 years of high moose populations. Moose populations

had declined in the past 2 years as had, in response, the number of moose hunters. Therefore, “considering the range of numbers, the Board decided 3000 was the number of subsistence users who would hunt moose in Unit 13 in 1992.”

4. Determined that “all 600 harvestable moose were needed to provide a “reasonable opportunity” for subsistence uses” by the 3,000 hunters. The board stated that it reached this conclusion “working under the all Alaskans policy which states that all Alaska residents are eligible to be subsistence users.”
5. Noted that the success rate for moose hunters in who live in GMU 13 had ranged between 19% and 28% for the period 1980 to 1991, and the success rate for nonlocal hunters had ranged between 19.5% and 28%. The board concluded that, “A harvest of 600 moose by approximately 3000 hunters yields a success rate of 20 percent, which is within the recent historical range.”

This review of the board’s 1992 finding illustrates that the board relied on several key types of data, including human demography, annual harvests of moose in GMU 13 by all Alaskans, estimated numbers of Alaskans who hunted moose in the unit, place of residence of hunters and successful hunters, and hunter success rates. We have focused on updating information about these aspects of the GMU 13 moose hunt in the following sections, in order to provide guidance to the board for the board’s evaluation and possible revision of the ANS finding.

UPDATED INFORMATION ABOUT HUMAN DEMOGRAPHY

As noted above, in establishing the ANS in 1992, the board chose more recent harvest data (for the previous 12 years) in part because it was “more relevant due to changing human demographics.” Table 1 and Figure 1 report the population of areas connected by road to GMU 13 in 1990, 2000, and 2007. Since 1990, the population of these areas has increased from 399,051 to 522,896 (an increase of 31%). The population of the local area (Copper River Census Subarea) increased from 2,763 to 3,332 (an increase of 21%), but dropped from 0.7% of the total population of the road-connected area in 1990 to 0.6% in 2007.

UPDATED INFORMATION ABOUT HUNTING AND HARVESTS

Number of Hunters, Number of Moose Harvested, and Success Rates

Table 2 reports number of moose hunters, moose harvests, and hunter success rates for local and other Alaska hunters for the period 1963 through 2008.³ Table 3 reports moose harvests by hunt (state harvest ticket, state Tier II permit, federal registration permit) and area of residence for the period 1990 through 2008. Figure 2 depicts the number of Alaska resident moose hunters and the moose harvests by year from 1967 through 2007.⁴ Figure 3 depicts hunter success rates for Alaska resident hunters from 1967 through 2007.

For the 16-year period from 1992 – 2007⁵ (the period since the present ANS was established), the number of moose hunters in GMU 13 has averaged 4,435 annually (range of 3,132 to 5,834

³ While conducting this analysis, we were concerned about double-counting hunters who may have held some combination of a harvest ticket, federal registration permit, and/or Tier II permit in the same year. A review of records by person found only 104 individuals (about 21 per year) who had obtained and reported on two permits in one year, and none who had reported on 3 permits. Only one held a federal permit and a general season harvest ticket. This small number (only 0.6% of total records) has only a marginal effect on the findings, and further analysis to revise the table was not undertaken.

⁴ Alaska resident hunters can be separated from nonresident hunters in the database starting in 1967.

⁵ 2008 is omitted because harvest reporting is incomplete, federal hunt data were also unavailable at this time.

(Table 4). In comparison, the annual average number of moose hunters for the 12-year period from 1980 through 1991 (the period upon which the present ANS determination was based) was 3,317 (range of 2,615 to 4,278). From 1992 through 2007, the annual average moose harvest in GMU 13 was 716 moose (range of 428 to 1,158), compared to an annual average from 1980 to 1991 of 764 moose (range of 450 to 1,084). The hunter success rate for the period 1992 to 2007 was 16.1%, a drop from the 23.0% recorded for 1980 to 1991.

Figure 4 depicts the number of GMU 13 (“local resident”) moose hunters and the number of successful GMU 13-resident moose hunters from 1969 through 2007 (see also Table 2). The number of local resident moose hunters rose during the 1970s and 1980s, peaking in the mid-1980s when subsistence registration permits were available to residents of GMU 13 communities. Since 1992, the number of local resident moose hunters has been relatively steady, with an annual average of 885. Harvests of moose by local residents also peaked at over 200 annually in the mid-1980s, and have averaged 124 moose since 1992.

As shown in Figure 5, nonlocal resident moose hunters comprised about 75% or more of the moose hunters in GMU 13 from the 1980s to 2007, and have taken about 80% or more of the annual harvest. As shown in Figure 6, from 1992 through 2008, about 40% of hunters of moose in GMU 13 lived in the Anchorage Municipality, 26% in the Matanuska-Susitna Borough, 16% in GMU 13 communities, 5% in the Fairbanks North Star Borough, 3% in the Kenai Peninsula Borough, and 10% in other Alaska communities.

Figure 7 shows hunting success rates for GMU 13 moose for local residents, other Alaska residents, and all Alaska resident hunters from 1967 through 2007. As reported in Table 4, the number of local residents who hunted moose in GMU 13 rose from an annual average of 696 for the 12-year period from 1980 through 1991 (the years upon which the current ANS finding is based) to 885 for the period 1992 through 2007. Conversely, the number of successful hunters dropped from an annual average of 156 for 1980 – 1991 to 124 from 1992 – 2007. The annual average moose hunting success rate for local hunters was 22.3% from 1980 – 1991 and 14.0% from 1992 to 2007.

Transportation Methods

Table 5 reports the annual average number of moose hunters in GMU 13 by area of residence and primary method of transport. Figure 8 illustrates the primary method of transport by percentage of hunters by area of residence. As shown in Figure 9, for all moose hunters in GMU 13 from 1998 – 2007, 3- or 4-wheeler was the primary method of transport for 42%, highway vehicle for 27%, offroad vehicle for 13%, boat for 10%, airplane for 5%, and other methods for 3%.

Participation by Type of Hunt

Figure 10 illustrates the percentage of moose hunters in GMU 13 by type of hunt (drawing hunt, general hunt (harvest ticket), Tier II permit hunt, federal registration hunt) and location of residence of hunter. A relatively large percentage of hunters who live in GMU 13, the Southeast Fairbanks Census Area, and the Denali Borough use federal registration permits, reflecting limited eligibility under federal regulations.

Proposal 95: Hunters and Successful Hunters in Portions of Subunits 13A, 13B, and 13C

Table 6 reports the mean annual number of moose hunters and successful hunters by area of residence for the period 1992 – 2007 in the 3 subareas in GMU 13 that proposed for drawing hunts in Proposal 95. For the uniform coding units (UCUs) within GMU 13A, 3% of the moose hunters were from GMU 13 communities, 42% from Anchorage, 45% from the Matanuska-Susitna Borough, 1% from the Fairbanks North Star Borough, 5% from the Kenai Peninsula Borough, and 4% from other Alaska communities (Figure 11). For the UCUs within GMU 13B, 7% of the moose hunters were from GMU 13 communities, 42% from Anchorage, 28% from the Matanuska-Susitna Borough, 6% from the Fairbanks North Star Borough, 3% from the Kenai Peninsula Borough, and 14% from other Alaska communities. For the UCUs within GMU 13C, 16% of the moose hunters were from GMU 13 communities, 34% from Anchorage, 17% from the Matanuska-Susitna Borough, 4% from the Fairbanks North Star Borough, 4% from the Kenai Peninsula Borough, and 26% from other Alaska communities.

OPTIONS FOR REVISIONS OF ANS FOR MOOSE, GMU 13

The following options for ANS revisions are offered for discussion purposes. Other options could be developed based on using a different range of years, a different percentage to set an upper and lower bound for the range, a subset of Alaska resident moose hunters, or different combinations of primary transport methods.

- Option A. No action: leave ANS at 600 moose.
- Option B. Mean harvest by Alaska residents over last 16 years (1992 through 2007) (716 moose), +/- 25%: 537 to 895 moose.
- Option C. High and low harvest by Alaska residents over last 16 years: 428 to 1,158 moose.
- Option D. Mean (for high end of range) and low (for low end of range) harvest by Alaska residents over last 16 years: 428 to 716 moose.

Note that under 5 AAC 92.108, the board has found that GMU 13 moose are a wildlife population that is important for providing high levels of harvest of human consumption. Also, the board identified moose harvest objectives for each GMU 13 subunit that, in total, range from 1,050 – 2,180 moose.

Table 1.—Population of areas connected by road to GMU 13, 1990, 2000, and 2007.

	1990	2000	2007
Anchorage Municipality	226,338	260,283	283,823
Copper River Census Subarea	2,763	3,231	3,332
Denali Borough	1,764	1,893	1,731
Fairbanks North Star Borough	77,720	82,840	90,963
Kenai Peninsula Borough	40,802	49,691	52,370
Matanuska-Susitna Borough	39,683	59,322	80,056
Southeast Fairbanks Census Area	5,913	6,174	7,022
Valdez	4,068	4,036	3,599
TOTAL	399,051	467,470	522,896

Table 2.—Number of moose hunters, harvesters, harvests, and success rates by area of residence, GMU 13, 1963-2008.

	Number of hunters			Number of moose harvested			Success rate		
	Local	Nonlocal	Total	Local	Nonlocal	Total	Local	Nonlocal	All
1963 ^a						1,735			
1964 ^a						1,607			
1965 ^a						1,331			
1966 ^a			4,163			1,553			37.3%
1967			3,578			1,243			34.7%
1968			4,035			1,210			30.0%
1969	296	2,544	2,840	94	815	909	31.8%	32.0%	32.0%
1970			2,622			852			32.5%
1971	343	3,965	4,308	122	1,281	1,403	35.6%	32.3%	32.6%
1972	196	2,448	2,644	34	398	432	17.3%	16.3%	16.3%
1973	157	2,029	2,186	39	410	449	24.8%	20.2%	20.5%
1974	200	2,240	2,440	43	576	619	21.5%	25.7%	25.4%
1975	210	2,486	2,696	45	536	581	21.4%	21.6%	21.6%
1976	286	2,648	2,934	58	570	628	20.3%	21.5%	21.4%
1977	241	1,922	2,163	64	548	612	26.6%	28.5%	28.3%
1978	382	2,338	2,720	99	614	713	25.9%	26.3%	26.2%
1979	301	2,004	2,305	101	734	835	33.6%	36.6%	36.2%
1980	366	2,249	2,615	76	374	450	20.8%	16.6%	17.2%
1981	437	2,473	2,910	106	581	687	24.3%	23.5%	23.6%
1982	437	2,329	2,766	74	484	558	16.9%	20.8%	20.2%
1983	584	2,510	3,094	147	666	813	25.2%	26.5%	26.3%
1984	576	2,722	3,298	131	640	771	22.7%	23.5%	23.4%
1985	650	2,715	3,365	135	598	733	20.8%	22.0%	21.8%
1986 ^b	1,166	3,112	4,278	230	813	1,043	19.7%	26.1%	24.4%
1987 ^b	850	2,956	3,806	199	633	832	23.4%	21.4%	21.9%
1988 ^b	928	2,959	3,887	263	821	1,084	28.3%	27.7%	27.9%
1989 ^b	755	3,416	4,171	249	818	1,067	33.0%	23.9%	25.6%
1990	741	1,878	2,619	102	346	448	13.8%	18.4%	17.1%
1991	865	2,132	2,997	155	531	686	17.9%	24.9%	22.9%
1992	825	2,307	3,132	101	518	619	12.2%	22.5%	19.8%

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Table 2. Page 2 of 2.

	Number of hunters			Number of moose harvested			Success rate		
	Local	Nonlocal	Total	Local	Nonlocal	Total	Local	Nonlocal	All
	1993	912	4,524	5,436	138	1,020	1,158	15.1%	22.5%
1994	924	4,784	5,708	113	745	858	12.2%	15.6%	15.0%
1995	961	4,847	5,808	152	724	876	15.8%	14.9%	15.1%
1996	937	4,897	5,834	150	776	926	16.0%	15.8%	15.9%
1997	865	4,815	5,680	130	713	843	15.0%	14.8%	14.8%
1998	943	4,246	5,189	136	706	842	14.4%	16.6%	16.2%
1999	943	3,834	4,777	153	576	729	16.2%	15.0%	15.3%
2000	870	3,072	3,942	104	406	510	12.0%	13.2%	12.9%
2001	898	2,531	3,429	104	324	428	11.6%	12.8%	12.5%
2002	924	2,507	3,431	114	455	569	12.3%	18.1%	16.6%
2003	875	2,599	3,474	136	483	619	15.5%	18.6%	17.8%
2004	826	2,743	3,569	112	500	612	13.6%	18.2%	17.1%
2005	864	2,904	3,768	103	463	566	11.9%	15.9%	15.0%
2006	855	3,227	4,082	110	574	684	12.9%	17.8%	16.8%
2007	743	2,950	3,693	129	489	618	17.4%	16.6%	16.7%
2008*	419	2,465	2,884	85	529	614	20.3%	21.5%	21.3%

Sources ADF&G 1992c through 1989; ADF&G, Division of Wildlife Conservation, 1990 to present.

Note Updated with R. Stadmler table, 9/9/06 & 6/23/08.

a. For 1963 through 1966, includes all hunters, including nonresidents. Nonresidents not included in totals from 1967 to present.

b. From 1986 through 1989, residents of GMU 13 communities qualified for registration subsistence permits.

* Data from federal hunts not available for 2008

Table 3.—Moose harvests in GMU 13 by area of residence and hunt type, 1990-2008.

Year	Harvests by residents of GMUs 11 and 13				Harvests by other Alaska residents				Total harvests by all Alaskans			
	State		Federal permit	Subtotal	State		Federal permit	Subtotal	State		Federal permit	Total
	harvest ticket	Tier II hunt			harvest ticket	Tier II hunt			harvest ticket	Tier II hunt		
1990	28		74	102	346		346	374	0	74	448	
1991	53		102	155	531		531	584	0	102	686	
1992	45		56	101	518		518	563	0	56	619	
1993	101		49	150	1,019		1,019	1,120	0	49	1,169	
1994	83		30	113	747		747	830	0	30	860	
1995	90	18	44	152	716	8	724	806	26	44	876	
1996	85	22	43	150	765	11	776	850	33	43	926	
1997	66	21	43	130	709	4	713	775	25	43	843	
1998	66	29	41	136	698	8	706	764	37	41	842	
1999	77	25	50	152	551	9	560	628	34	50	712	
2000	39	34	32	105	386	6	392	425	40	32	497	
2001	44	31	29	104	312	4	316	356	35	29	420	
2002	54	23	37	114	407	31	455	461	54	54	569	
2003	64	22	50	136	432	40	483	496	62	61	619	

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Table 3. Page 2 of 2.

Year	Harvests by residents of GMUs 11 and 13				Harvests by other Alaska residents				Total harvests by all Alaskans			
	State harvest ticket	State Tier II hunt	Federal permit	Subtotal	State harvest ticket	State Tier II hunt	Federal permit	Subtotal	State harvest ticket	State Tier II hunt	Federal permit	Total
	2004	48	28	36	112	458	28	14	500	506	56	50
2005	44	19	40	103	430	22	11	463	474	41	51	566
2006	53	23	34	110	533	28	13	574	586	51	47	684
2007	67	24	38	129	451	23	14	488	518	47	52	617
2008	41	44	NA	85	511	18	NA	529	552	62	NA	614
Recent 5- Year Average	51	28	40	108	477	24	13	511	527	51	50	619
Recent 10-Year Average	53	27	39	115	447	21	13	476	500	48	47	591
Average, 1990 - 2008	62	26	46	124	565	17	13	583	627	34	49	707

Source Division of Wildlife Conservation, ADF&G.

Note based on R Stadmler table. 9/9/06 and update 6/23/08.

NA = not available.

Table 4.—Mean annual number of hunters and successful hunters, and success rates, GMU 13 moose, 1980-1991 and 1992-2007.

	1980 to 1991 ^a		1992 to 2007	
	Annual mean	Range	Annual mean	Range
<u>GMU 13 residents only:</u>				
Number of hunters	696	366 - 1,166	885	743 - 961
Number of successful hunters	156	74 - 263	124	103 - 153
Success rate	22.3%	16.9% - 33.0%	14.0%	11.6% - 17.4%
<u>All Alaska residents:</u>				
Number of hunters	3,317	2,615 - 4,278	4,435	3,132 - 5,834
Number of successful hunters	764	450 - 1,084	716	428 - 1,158
Success rate	23.0%	17.1% - 27.9%	16.1%	12.5% - 21.3%

a. This is the 12-year period upon which the present ANS of 600 moose is based.

Table 5.—Annual average number of GMU 13 moose hunters by primary method of transport and area of residence, 1998-2007.

	Average annual number of moose hunters using:									
	Fairbanks North Star Borough			Kenai Peninsula Borough	Matanuska-Susitna Borough	Southeast Fairbanks Census Area		Valdez Cordova	Unit 13 residents	All hunters
	Anchorage	Denali								
Airplane	81	0	2	6	53	1	8	16	166	
Horse/dog team	7	0	0	0	20	0	0	6	34	
Boat	157	1	7	8	86	16	3	60	337	
3- or 4-wheeler	622	6	24	56	469	50	38	149	1,413	
Snowmachine	1	0	0	0	2	0	0	1	4	
Offroad vehicle	177	2	12	17	153	7	10	56	434	
Highway vehicle	323	6	14	22	178	68	20	255	884	
Foot	0	1	0	0	1	3	0	10	14	
Other	23	0	0	0	1	0	0	1	24	
Airboat	10	0	0	0	10	0	0	2	22	
Total Hunters	1,400	16	58	108	972	145	79	556	3,334	

Table 6.—Annual mean of moose hunters and successful hunters in 3 subareas of GMU 13 – 13A, 13B, and 13C, by area of residence, 1992-2007.

	Portion of GMU 13A ^a		Portion of GMU 13 B ^b		Portion of GMU 13C ^c	
	Total hunters	Successful hunters	Total hunters	Successful hunters	Total hunters	Successful hunters
GMU 13 residents	3.9	1.6	4.9	1.3	17.2	5.0
Anchorage Municipality	54.4	16.3	32.1	8.4	36.5	12.8
Mat-Su Borough	57.3	20.4	21.3	7.2	17.9	6.8
Fairbanks North Star Borough	1.9	0.6	4.8	1.1	4.7	2.4
Kenai Peninsula Borough	6.0	1.8	2.2	0.4	4.0	1.8
Other Alaska	5.1	2.9	10.6	3.2	28.0	11.4
TOTAL	128.6	43.7	75.9	21.5	108.3	40.1

a. UCUs: 1501, 1601, 1701, 1801, 1802, 1803, 1804, 1805, 1806, 2102, 2104.

b. UCUs: 101, 201, 301, 1403, 1501.

c. UCUs: 301, 302, 303, 304.

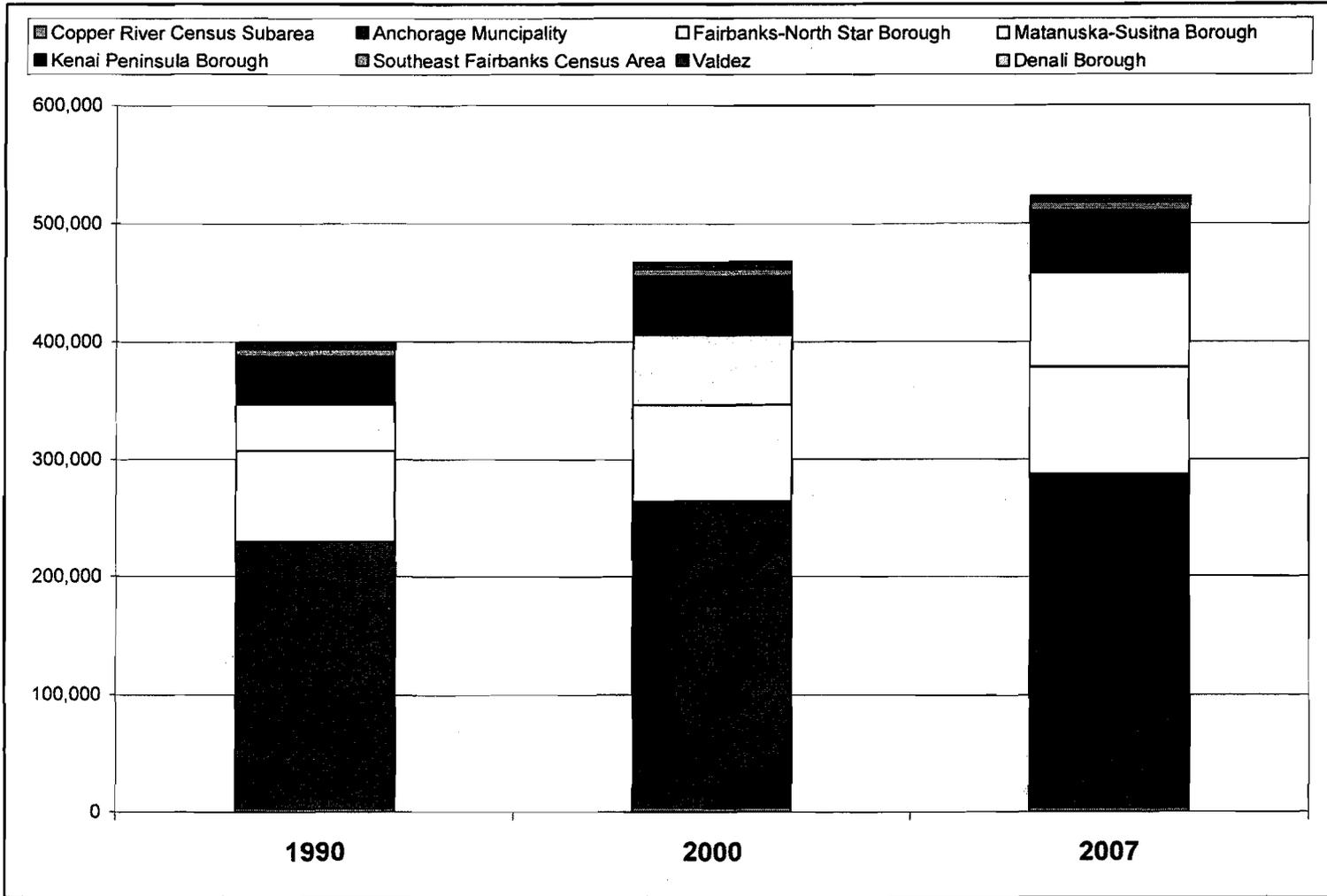


Figure 1.—Population of areas of Alaska connected by road to GMU 13, 1990, 2000, and 2007.

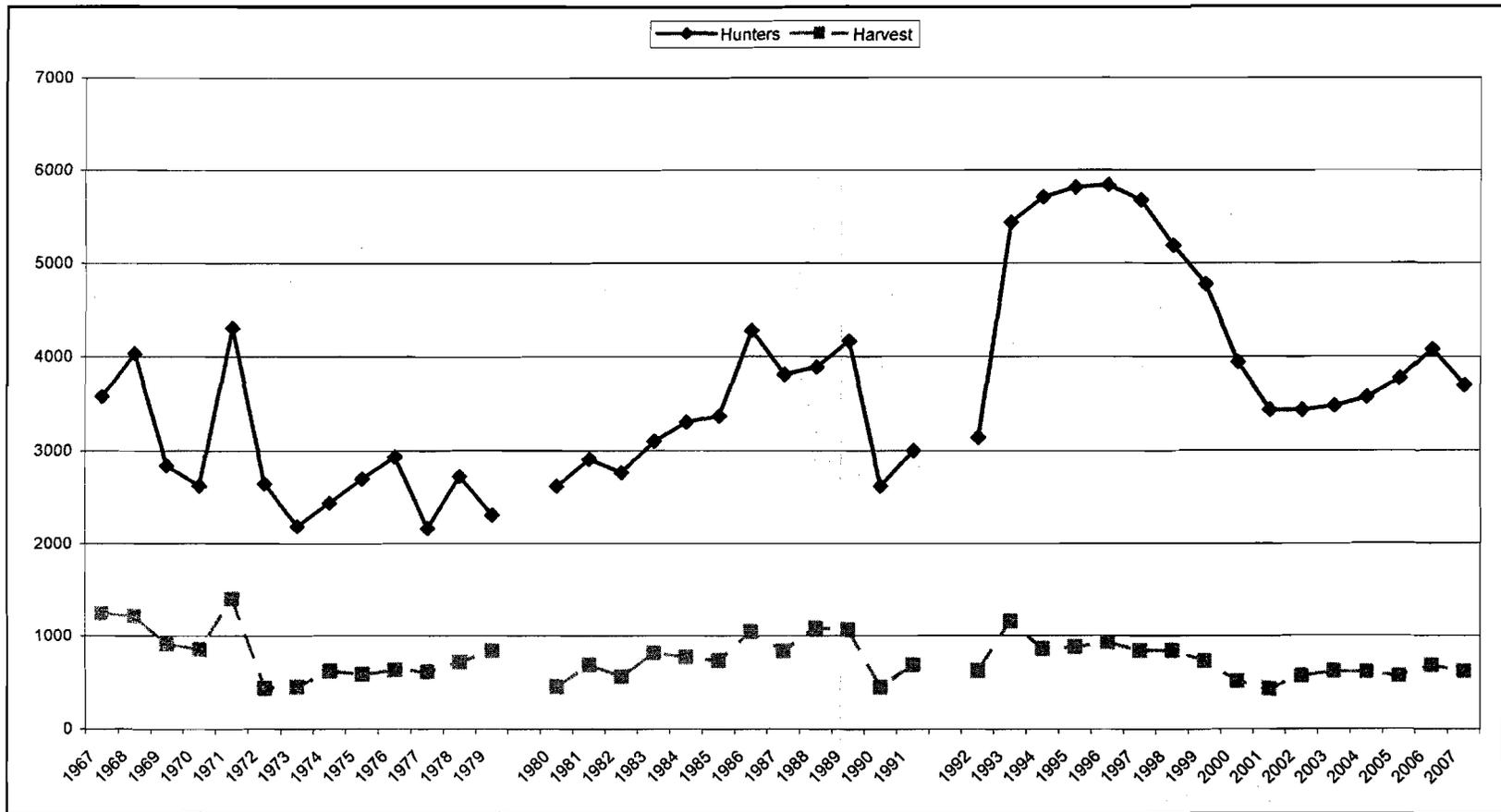


Figure 2.—Number of Alaska resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1967-2007.

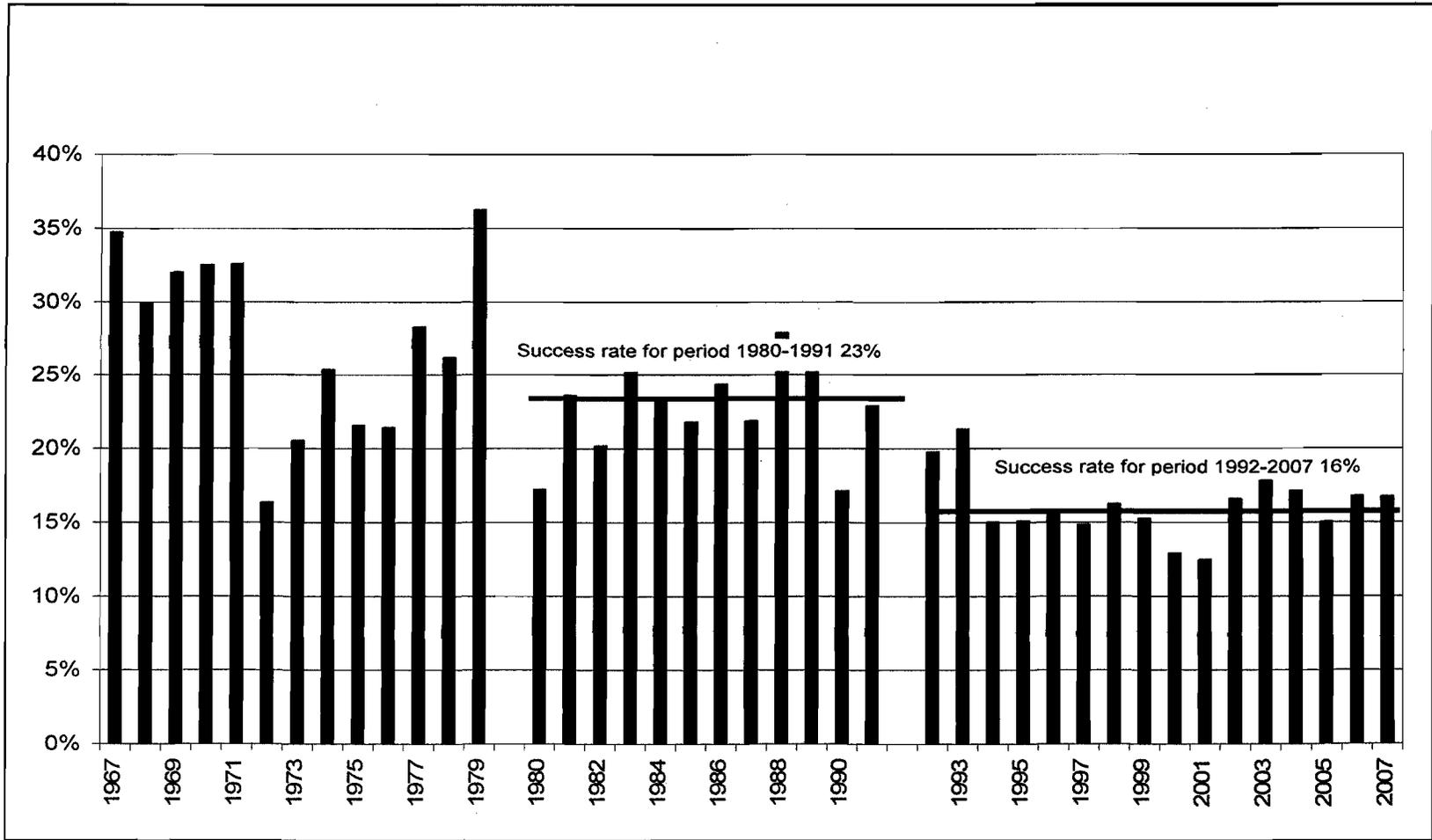


Figure 3.—Hunter success rates, Alaska resident hunters, GMU 13 moose, 1967-2007.

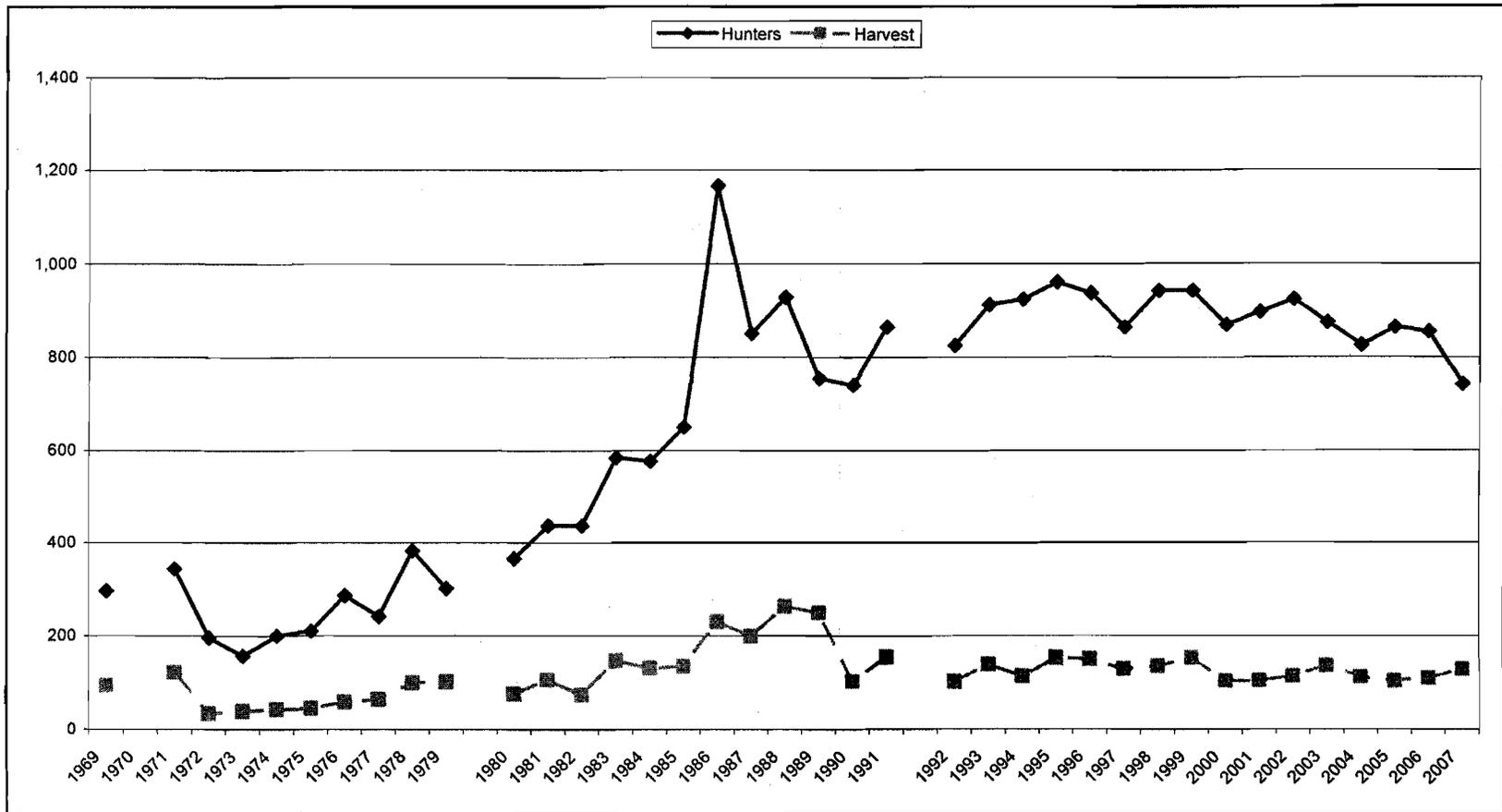


Figure 4.—Number of local resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1969-2007.

13

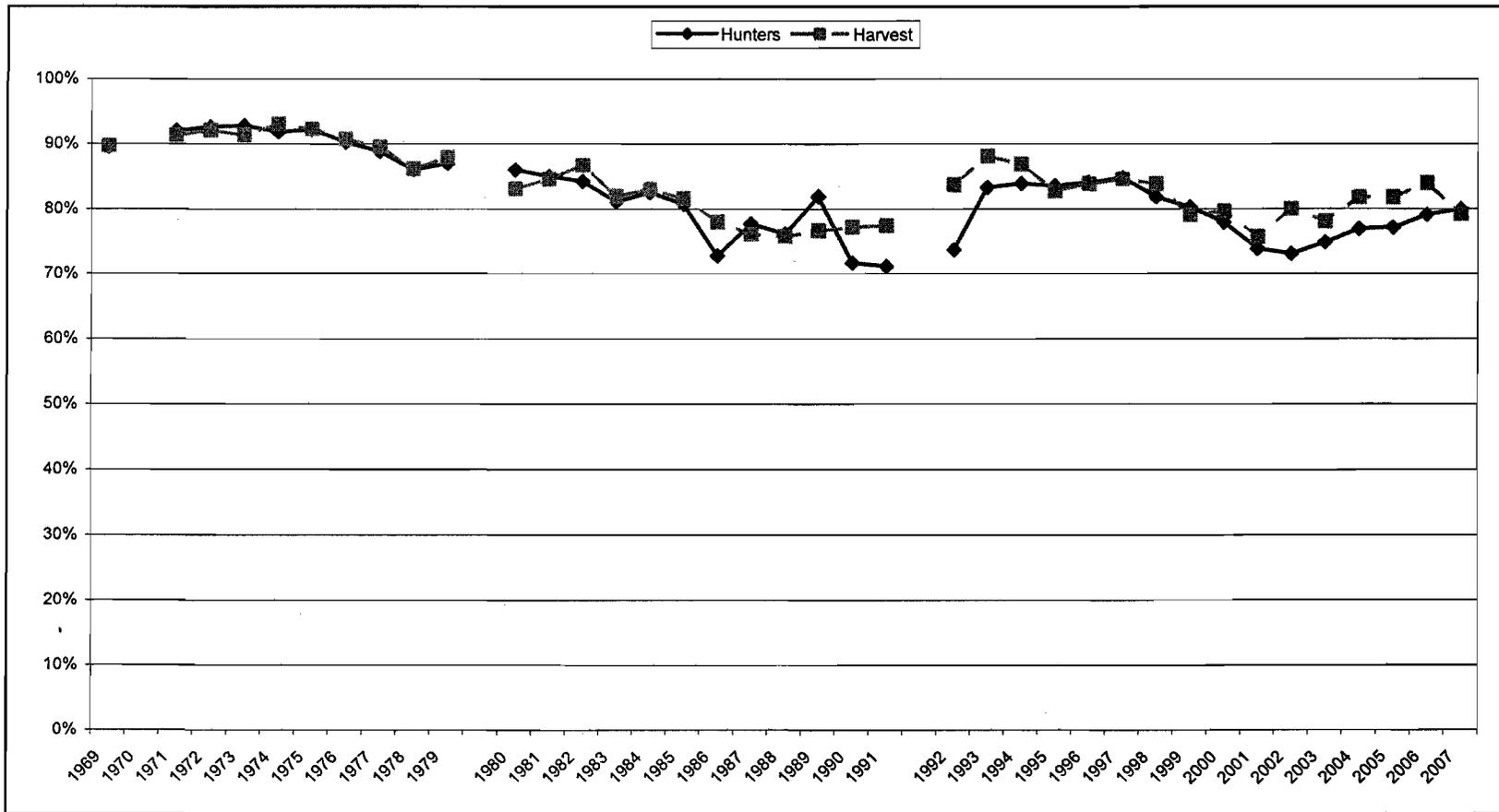


Figure 5.—Percentage of moose hunters in GMU 13 who were nonlocal residents and percentage of total moose harvested by nonlocal hunters, all hunts, 1969-2007.

D-13

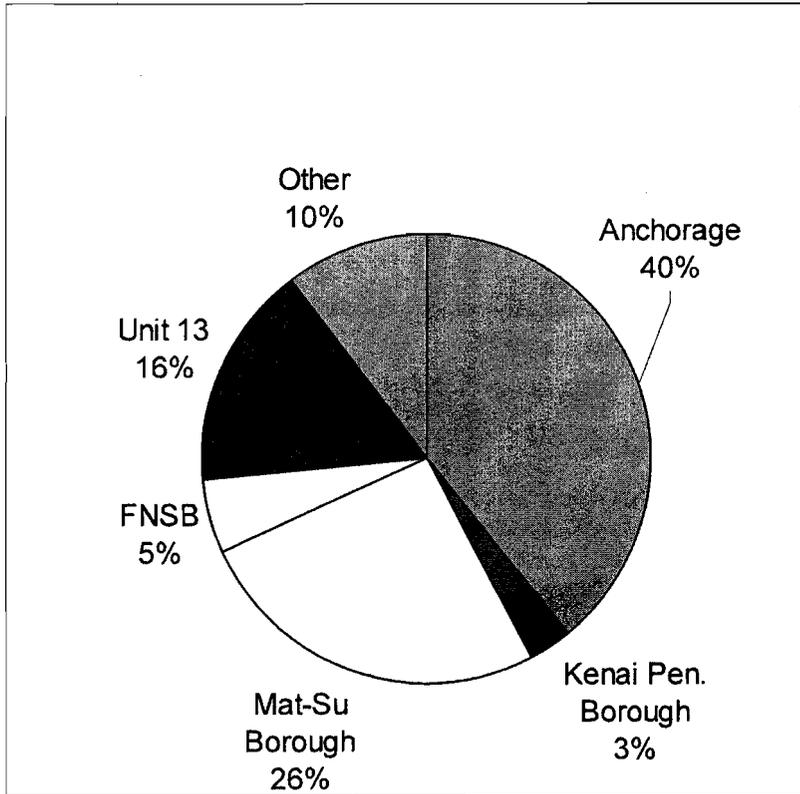


Figure 6.—Percentage of GMU 13 moose hunters by area of residence, 1992-2008.

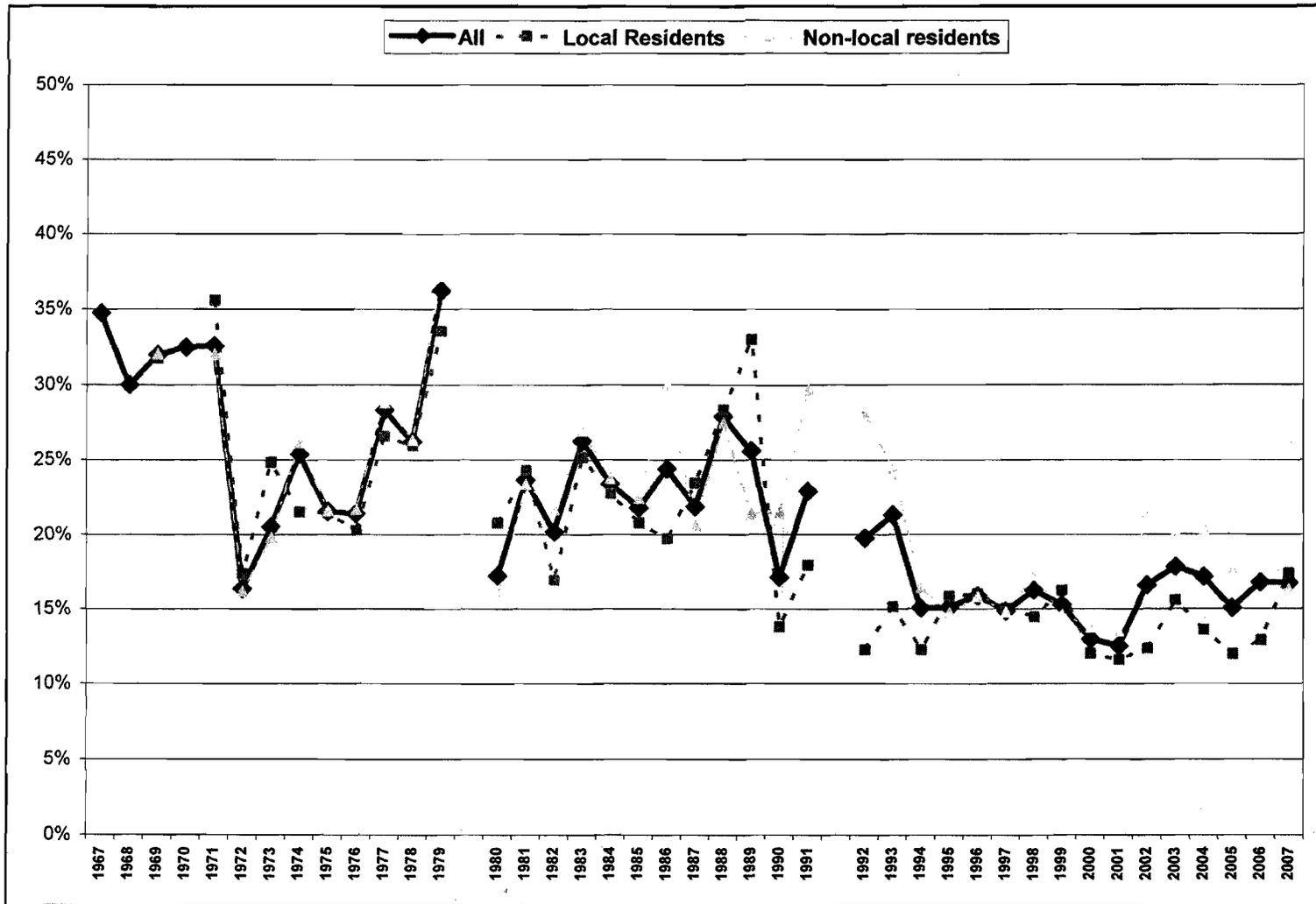


Figure 7.—Success rate, GMU 13 moose hunters, by area of residence, 1967-2007.

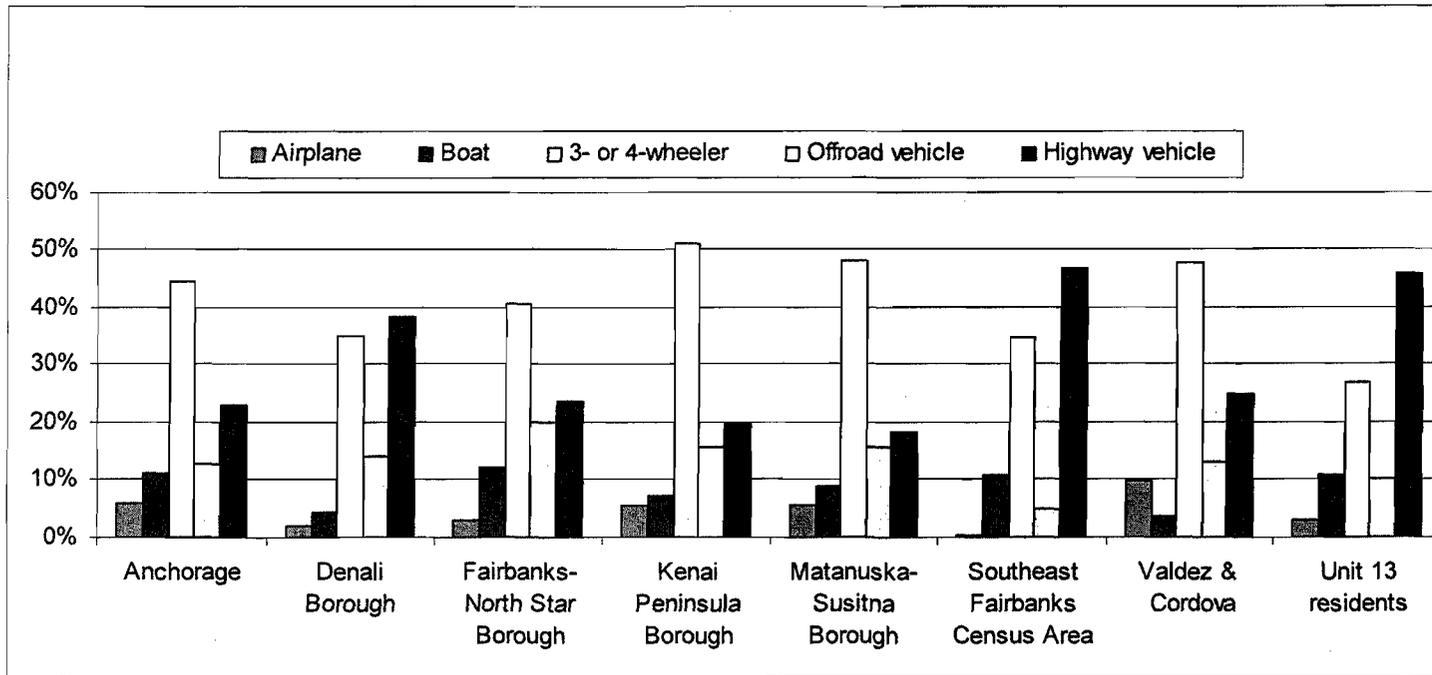


Figure 8.—GMU 13 moose hunters, method of transport by area of residence, 1998-2007.

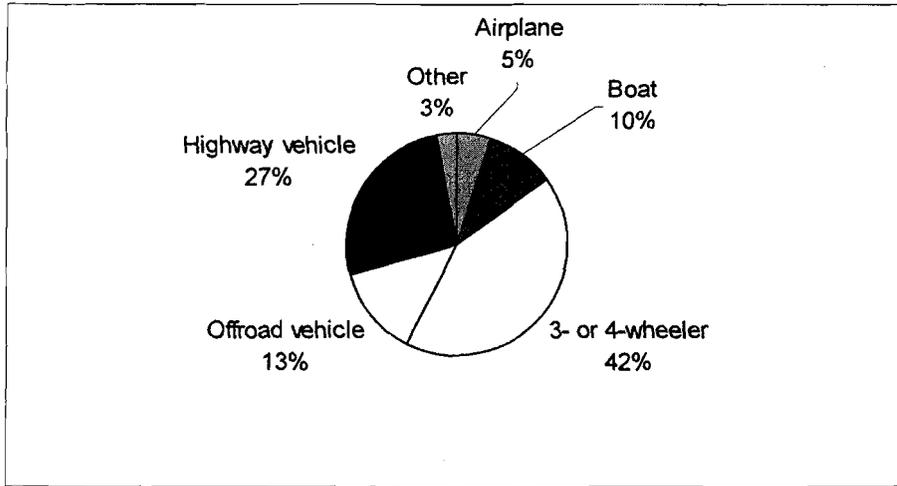


Figure 9.—Primary transport method, GMU 13 moose hunters, 1998-2007.

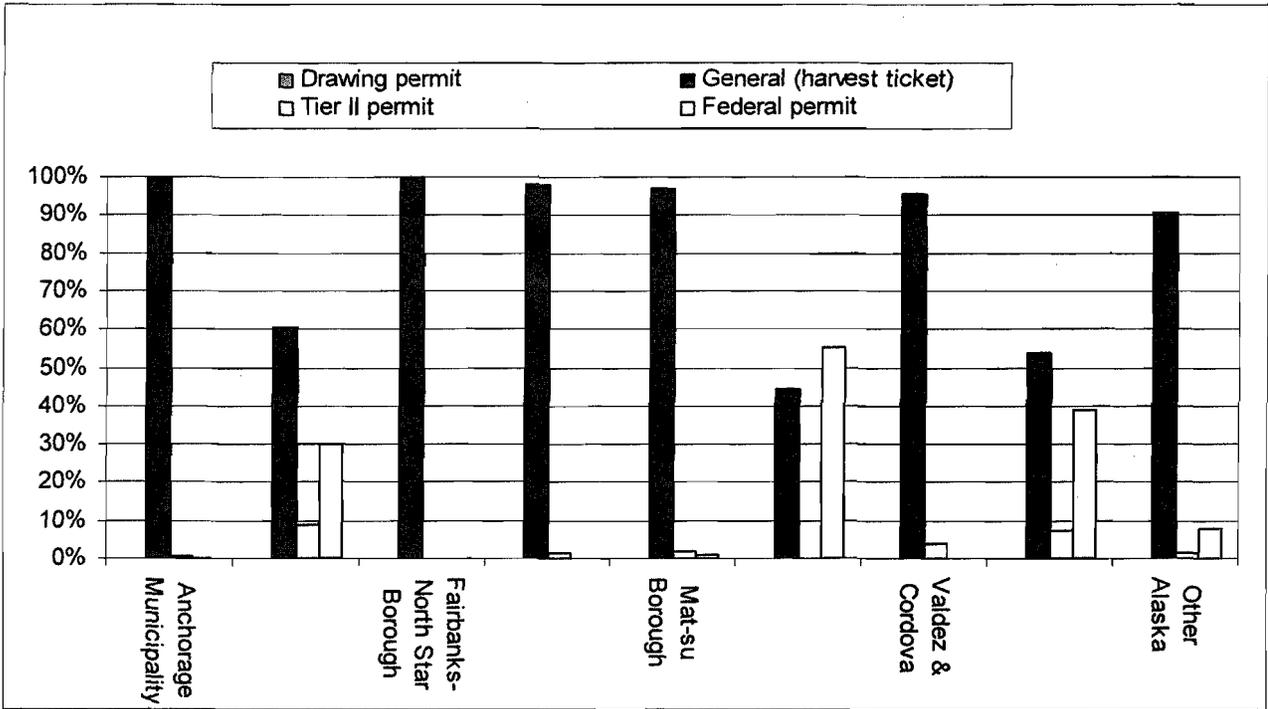


Figure 10.—Percentage of GMU 13 moose hunters by type of hunt and area of residence, 1992-2007.

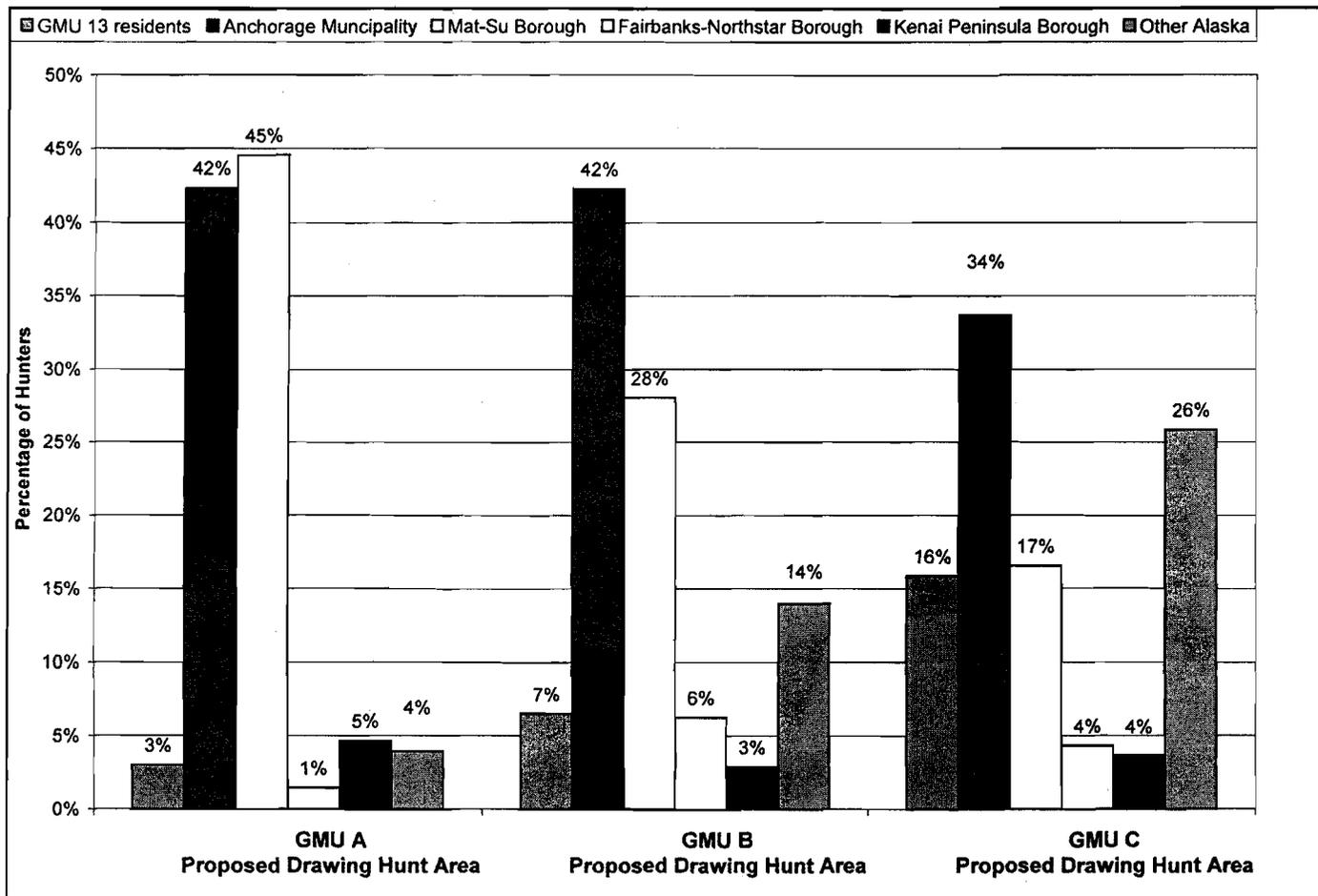


Figure 11.—Percentage of moose hunters by area of residence, 3 areas with GMU 13 proposed for drawing hunts, 1992-2007.

**BOARD OF GAME
FINDINGS ON UNIT 13 MOOSE SEASON AND BAG LIMITS
ADOPTED JUNE 23, 1992**

The Board of Game has considered the establishment of a 1992 season and bag limit for moose in Game Management Unit 13, which comprises generally that area east and south of the Alaska Range, north of the Talkeetna Mountains and west of the Wrangell Mountains, in the Copper River and Susitna River drainages.

The Board referred consideration of the season and bag limit for moose in Unit 13 to itself as a quasi committee of-the-whole. The actions and report of the quasi committee of-the-whole are part of the official record of the proceedings of this board and are an integral part of the board's deliberations. The record of the board proceedings is incorporated herein, inclusive of all staff reports, documents, public comments and board deliberations.

There are two primary components in determining reasonable opportunity: (1) the opportunity to participate in a hunt, and (2) the opportunity to kill an animal during a hunt. The "opportunity to participate" in a hunt is a function of the number of hunters allowed to hunt and of the percentage of interested hunters allowed to hunt. The "opportunity to kill" during a hunt is a function of the percentage of hunter success on the area's game population, the duration of successful hunts (mean days to kill and the time to achieve a percentage of the kill), as well as the duration of unsuccessful hunts. The latter function is important for determining the period of time before which a hunter loses interest and ceases to use additional opportunity.

Both primary components are important in determining reasonable opportunity. For example, if there are 300 hunter days of hunting opportunity available, using only opportunity to kill could result in one person being given 300 days to hunt. Using opportunity to participate only could lead to 300 people hunting for one day. The Board must strike a balance between the two components and focus on the range of numbers of hunters and length of season that will achieve a reasonable expectation of success for participants.

In determining reasonable opportunity for subsistence use, the board took the following factors into consideration:

the traditional seasons of different use groups;
transportation and access, methods and means, competition
created by number of participants; hunter success rates; prey
population cycle; the customary and traditional level of use;
traditional season times and lengths including opportunity to
participate within a season.

The Board recognizes there are other considerations as well. Hunters like the freedom to select the time to hunt, they like to have a "quality" hunt, and there is interest expressed in selecting the sex, age or size of the animal. Information provided by the Alaska Department of Fish and Game (department) staff indicates the relative importance of the primary components. For example, during the 1990 Nelchina (Unit 13) registration hunt for caribou (a three day registration hunt) many people were willing to compromise flexibility and "quality" in order to get the opportunity to hunt.

Based on information provided by the department and written public comment, the Board makes the following findings under the 1986 subsistence law - AS 16.05.258:

1. The Board reaffirms the previous findings of customary and traditional use of moose in Game Management Unit 13 as found by the Board in 1983 and again in 1986.
2. The Board accepts the department recommendation that 600 bull moose (based on harvest range of 500 to 700) are available as a harvestable surplus consistent with the sustained yield principle mandated by the Alaska Constitution. Based on the current department estimate, the moose population in Unit 13 ranges between 19,000 and 21,000.
3. The Board determined there are approximately 3000 subsistence users who hunt in Unit 13. Approximately 600 of these hunters are local residents of Unit 13.

Although the Board reviewed harvest data for the past 20 years the board determined that data for the past 12 years was more reliable due to improved data gathering techniques and more relevant due to changing human demographics, access to the hunt area and moose abundance and distribution. Based on this 12 year data (1980 - 1991), there was an average of 3400 Alaska residents hunting moose in Unit 13. This 12 year average included five years when the moose population was at a recent high. During the last two years, when the moose population declined significantly due to weather and wolf predation and the season length was reduced, the average number of hunters was 2844. Considering the range of numbers, the Board decided 3000 was the number of subsistence users who would hunt moose in Unit 13 in 1992.

4. Working under the all Alaskans policy which states that all Alaska residents are eligible to be subsistence users, the Board determined that all 600 harvestable moose were needed to provide a "reasonable opportunity" for subsistence uses.

This number was reached by looking at historical statistics on the number of moose harvested and the number of hunters

participating. Once again the board reviewed harvest data for the past 20 years, however again focused on the last 12 years for the same reasons cited in number 3 above. The success rate of Unit 13 resident subsistence moose hunters ranged from 19 percent to 28 percent with a median of 22 percent. Success rates for non-local hunters ranged from 19.5 percent to 28 percent, virtually the same as for local hunters. A harvest of 600 moose by approximately 3000 hunters yields a success rate of 20 percent, which is within the recent historical range.

5. The Board determined that there was no harvestable surplus of moose available for non subsistence uses.

See no. 4 above.

6. Based on the foregoing findings and considerations, the Board hereby adopts a regulation to allow moose hunting in Unit 13 during an open season of September 1-14 with a bag limit of one bull moose per household and the same antler restrictions that were in place in 1991-92. The use by hunters of all motorized vehicles, except boats, is prohibited from September 1-7 except on borough- or state-maintained roads or highways.

The majority of the board felt that the seven day season established for 1991 provided reasonable opportunity based on harvest information and success rates presented by the department. (Attached and incorporated herein to these findings are two tables showing average number of days hunted by local Unit 13 residents and non-local residents. In 1991 the averages were 6.5 days and 4.3 days.) By establishing a 14 day season with restrictions, the board extended the window of opportunity to hunt by seven days, including two full weekends. This seven day extension gives access to the greatest number of subsistence hunters while still addressing conservation of the moose resource. By restricting the use of ORVs and aircraft during the first seven days, it will improve the quality of the hunt of those in the field but will not be detrimental to local subsistence hunters who traditionally use highway vehicles as their mode of transportation for hunting. In addition, a week of hunting opportunity for aircraft and ORV hunters is still provided during the second half of the season.

The board determined that one moose per household is consistent with use patterns and had previously been recommended by Ahtna Corporation and several local advisory committees in proposals to the board. Based on information provided by the department at this meeting, a one moose per household bag limit would satisfy the vast majority of the subsistence users.

The board took into consideration the federal subsistence season on federal land in Unit 13 which is open only to federally qualified subsistence hunters who reside in Unit 13. The federal season is open for 27 days, from August 25 to September 20. The federal season will open seven days before the state hunt, will be open during the state hunt and for six days following the state hunt.

Attached and incorporated herein is the new regulation for Unit 13.

Dated: June 29 1992
Fairbanks, Alaska


Richard Burley, Chair
Alaska Board of Game

Note to Publisher: When a subsection, paragraph, subparagraph, etc. is indicated by the appropriate number or letter and no text follows that symbol, then the omitted text is the same as that set out in the previous register containing the section. Amended text to be added is underlined. Amended text to be deleted is capitalized and enclosed in brackets.

EMERGENCY REGULATIONS

Register , 1992 FISH AND GAME

PART 3. GAME

CHAPTER 85. HUNTING SEASONS AND BAG LIMITS

Article 2. Seasons and Bag Limits

5 AAC 85.045(a)(11) is amended to read:

5 AAC 85.045. HUNTING SEASONS AND BAG LIMITS FOR MOOSE. (a) .

	Resident	
	Open Season	
	(Subsistence and	Nonresident
Units and Bag Limits	General Hunts)	Open Season

(11)

EMERGENCY REGULATIONS

Register , 1992 FISH AND GAME

Unit 13(A), that portion Sept. 1[5]--Sept. 14[11] No open season.

northwest of Black River

1 bull with spike-fork

or 50-inch antlers per

household; the use of any

motorized vehicle, including

aircraft but excepting boats,

for hunting moose or for

access to hunt moose

from Sept. 1--Sept. 7 is

prohibited, including

transportation of moose

hunters or parts of moose;

however, this does not apply

to a motorized vehicle on

a State or borough-main-

tained highway/road

Unit 13(A), that portion Sept. 1[5]--Sept. 14[11] No open season.

west of the Lake Louise

road, Lake Louise, Lake

Susitna, Tyone River, and

southeast of Black River

1 bull with spike-

fork antlers per household;

EMERGENCY REGULATIONS

Register , 1992 FISH AND GAME

the use of any motorized vehicle, including air-craft but excepting boats, for hunting moose or for access to hunt moose from Sept. 1--Sept. 7 is prohibited, including transportation of moose hunters or parts of moose; however, this does not apply to a motorized vehicle on a State or borough-maintained highway/road

Remainder of Unit 13 Sept. 1(5)--Sept. 14(11) No open season.

1 bull with 36-inch antlers per household;
the use of any motorized vehicle, including air-craft but excepting boats, for hunting moose or for access to hunt moose from Sept. 1--Sept. 7 is prohibited, including transportation

EMERGENCY REGULATIONS

Register . 1992 FISH AND GAME

of moose hunters or
parts of moose; however,
this does not apply to
a motorized vehicle on
a State or borough-main-
tained highway/road

(Eff. 8/20/89, Register 111; am 12/30/89, Register 112; am
8/9/90, Register 115; am 12/27/90, Register 116; am 6/16/91,
Register 118; am 8/10/91, Register 119; am 1/7/92, Register 122;
em am / /92-- / /92, Register)

Average Number of Days Hunted: Successful, Unsuccessful, All Hunters, Moose General (Sport) Hunts, Unit 13.

Year	Successful Hunters			Unsuccessful Hunters			Total Days		
	No. hunters	Total # days	Ave. # days	No. hunters	Total # days	Avg. # days	No. hunters	Total # days	Avg. # days
1981	767	4382	5.7	2123	13,698	6.5	2890	18,080	6.2
1982	611	3440	5.6	2189	14,790	6.8	2800	18,230	6.5
1983	862	5854	6.7	2257	12,702	5.6	3119	18,556	5.9
1984	810	4843	5.9	2489	15,340	6.2	3299	20,183	6.1
1985	787	4835	6.1	2564	15,228	5.9	3351	20,063	5.9
1986	947	5651	5.9	2673	16,050	6.0	3620	21,701	5.9
1987	764	4959	6.4	2737	16,748	6.1	3501	21,707	6.2
1988	950	5745	6.0	2551	15,298	6.0	3501	21,043	6.0
1989	876	5256	6.0	2680	15,984	5.9	3556	21,240	5.9
1990	378	1489	3.9	1612	7,337	4.6	1990	8,826	4.4
1991	577	2522	4.3	1862	9,634	5.2	2439	12,156	4.9

Average Number of Days Hunted: Successful, Unsuccessful, All Hunters, Moose Subsistence Hunts, Unit 13.

Year	Successful Hunters			Unsuccessful Hunters			Total Days		
	No. hunters	Total # days	Ave. # days	No. hunters	Total # days	Avg. # days	No. hunters	Total # days	Avg. # days
1983 ^a	32	140	4.4	46	371	8.1	78	511	6.6
1984 ^a	19	150	7.9	53	426	8.0	72	576	8.0
1985 ^b	31	254	8.1	118	873	7.4	149	1127	7.5
1986 ^c	174	929	5.3	596	4659	7.8	770	5588	7.2
1987 ^c	152	772	5.0	371	3050	8.2	523	3822	7.3
1988 ^c	191	939	4.9	371	2719	7.3	562	3658	6.5
1989 ^c	212	928	4.3	386	2888	7.5	598	3816	6.3
1990 ^{b+d}	149	452	6.4	231	1470	6.4	301	1922	6.4
1991 ^d	99	651	6.5	413	3570	8.6	512	4221	8.2

^a Drawing permit hunt.
^b Tier II permit hunt.
^c Registration permit hunt.
^d Federal subsistence hunt.

Customary and Traditional Use Worksheets:

Caribou (Feral Reindeer) in GMU 8, Kodiak Island;

Brown Bears in GMU 10, Unimak Island;

and

Dall Sheep in GMU 13A, Nelchina-Upper Susitna

Prepared by the

Alaska Department of Fish and Game

Division of Subsistence

for the February-March 2009 Anchorage Board of Game meeting

February 2009

Alaska Department of Fish and Game

Division of Subsistence



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the *Système International d'Unités* (SI), are used without definition in the reports by the Division of Subsistence. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft ³ /s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols

alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of) pH	
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

all commonly-accepted abbreviations
e.g., Mr., Mrs., AM, PM, etc.

all commonly-accepted professional titles e.g., Dr., Ph.D., R.N., etc.

Alaska Administrative Code AAC
at @

compass directions:

east	E
north	N
south	S
west	W

copyright

©

corporate suffixes:

Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.

District of Columbia D.C.

et alii (and others) et al.

et cetera (and so forth) etc.

exempli gratia (for example) e.g.

Federal Information Code FIC

id est (that is) i.e.

latitude or longitude lat. or long.

monetary symbols (U.S.) \$, ¢

months (tables and figures): first three letters (Jan,...,Dec)

registered trademark ®

trademark ™

United States (adjective) U.S.

United States of America (noun) USA

U.S.C. United States Code

U.S. state use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mid-eye-to-fork	MEF
mid-eye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations

alternate hypothesis H_A

base of natural logarithm e

catch per unit effort CPUE

coefficient of variation CV

common test statistics (F, t, χ^2 , etc.)

confidence interval CI

correlation coefficient (multiple) R

correlation coefficient (simple) r

covariance cov

degree (angular) °

degrees of freedom df

expected value E

greater than >

greater than or equal to ≥

harvest per unit effort HPUE

less than <

less than or equal to ≤

logarithm (natural) ln

logarithm (base 10) log

logarithm (specify base) log₂, etc.

minute (angular) ' ,

not significant NS

null hypothesis H₀

percent %

probability P

probability of a type I error (rejection of the null hypothesis when true) α

probability of a type II error (acceptance of the null hypothesis when false) β

second (angular) "

standard deviation SD

standard error SE

variance

population Var

sample var

SPECIAL PUBLICATION NO. BOG 2009-05

CUSTOMARY AND TRADITIONAL USE WORKSHEETS:

CARIBOU (FERAL REINDEER) IN GMU 8, KODIAK ISLAND; BROWN BEARS IN GMU 10, UNIMAK ISLAND; AND DALL SHEEP IN GMU 13A, NELCHINA-UPPER SUSITNA

by

Alaska Department of Fish and Game, Division of Subsistence
Anchorage

Alaska Department of Fish and Game
Division of Subsistence
333 Raspberry Road, Anchorage, Alaska, 99518

February 2009

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TABLE OF CONTENTS

	Page
CUSTOMARY AND TRADITIONAL USE WORKSHEET: CARIBOU IN GAME MANAGEMENT UNIT 8	1
INTRODUCTION.....	1
THE EIGHT CRITERIA.....	1
CUSTOMARY AND TRADITIONAL USE WORKSHEET: BROWN BEARS IN GMU 10 (UNIMAK ISLAND).....	6
INTRODUCTION.....	6
THE EIGHT CRITERIA.....	6
CUSTOMARY AND TRADITIONAL USE WORKSHEET: DALL SHEEP IN GMU 13A, NELCHINA – UPPER SUSITNA.....	9
INTRODUCTION.....	9
THE EIGHT CRITERIA.....	9
REFERENCES CITED	13

LIST OF TABLES

Table	Page
1. Uses and estimated harvests of feral reindeer in GMU 8, Kodiak Island Borough communities.	4
2. Reported harvests of caribou (feral reindeer), GMU 8, 1998-2007.	5
3. Uses and estimated harvests of brown bears, False Pass, King Cove, and Sand Point, 1988 and 1992.....	8
4. Number of hunters of sheep and number of successful hunters, GMU 13A, by area of residence, 1998-2008.	12

CUSTOMARY AND TRADITIONAL USE WORKSHEET: CARIBOU IN GAME MANAGEMENT UNIT 8

INTRODUCTION

This worksheet contains background information on the uses of caribou *Rangifer tarandus* (feral reindeer) on Kodiak Island. The Alaska Board of Game (board) requires this information in order to determine whether there are customary and traditional (subsistence) uses of caribou (feral reindeer) in this Alaska Department of Fish and Game (ADF&G) Game Management Unit (GMU) prior to acting on Proposals 159 or 160. It is intended that the information in this worksheet be supplemented by written and oral public testimony delivered during the board meeting. The board will evaluate this information before reaching its decisions.

Note that hunting of this wildlife population occurs under regulations for caribou in GMU 8. Hunters are required to have a hunting license and a caribou harvest ticket. There is no bag limit and no closed season. Same-day-airborne hunting of caribou is allowed in GMU 8.

This worksheet has been reprinted, with updated formatting, from the ADF&G Division of Subsistence worksheet prepared for the March 1991 meeting of the Alaska Board of Game.

THE EIGHT CRITERIA

CRITERION 1: LENGTH AND CONSISTENCY OF USE

A long-term consistent pattern of noncommercial taking, use, and reliance on the fish stock or game population that has been established over a reasonable period of time of not less than one generation, excluding interruption by circumstances beyond the user's control, such as unavailability of the fish or game caused by migratory patterns.

Reindeer arrived at Kodiak Island in 1921, as part of a program organized by the U.S. Bureau of Indian Affairs. Fifty reindeer from Lapland were landed at Lazy Bay near Akhiok, two years before deer were transplanted on Kodiak Island. Akhiok residents participated in reindeer herding, used the animals for meat, and sold the surplus to the canneries at Olga Bay and Cape Alitak. A fire in the early 1950s burned a great deal of the reindeer pasture. The replacement corral was not effective, and the reindeer scattered. In the 1960s, the reindeer were declared feral (Rostad 1988; Woodward-Clyde Consultants 1981). Presently, the herd occupies the more remote portions of the Ayakulik and Sturgeon river drainages, with occasional reindeer observed along the Karluk River or Olga Bay.

The reindeer population has declined since the late 1950s. A 1977 population estimate put the herd at 250 animals, down from 740 in 1957. Over the last 30 years, estimates of herd size have been stable, in the 250 – 300 range (L. Van Daele, ADF&G Wildlife Biologist III, Kodiak, personal communication, February 2009).

The Division of Subsistence has conducted household harvest surveys in Kodiak Island communities in various study years from 1983 through 2003. Specific questions about uses and harvests of “feral reindeer” (separate from questions about caribou) were asked beginning in

1986. Survey findings are summarized in Table 1. As shown, most uses and harvests of feral reindeer documented in these harvest surveys have occurred in Larsen Bay and Karluk.

Table 2 summarizes harvest information for GMU 8 caribou (feral reindeer) compiled by ADF&G Division of Wildlife Conservation Kodiak staff, based on harvest ticket returns, from 1998 through 2007 (L. Van Daele, ADF&G Wildlife Biologist III, Kodiak, personal communication, February 2009). These reported harvests should be considered minimums because unreported harvests likely occur. Over that 10-year period, the average annual reported harvest was about 16 animals by 11 hunters. Of all hunters, about 41% were GMU 8 residents, 36% were other Alaska residents, and 21% were non-Alaska residents.

CRITERION 2: SEASONALITY

A pattern of taking or use recurring in specific seasons of each year.

We have no information on this criterion specific to caribou/feral reindeer for local communities.

CRITERION 3: MEANS AND METHODS OF HARVEST

A pattern of taking or use consisting of methods and means of harvest that are characterized by efficiency and economy of effort and cost.

We have no information on this criterion specific to caribou/feral reindeer for local communities.

CRITERION 4: GEOGRAPHIC AREAS

The area in which the noncommercial, long-term, and consistent pattern of taking, use, and reliance upon the fish stock and game population has been established.

The Division of Subsistence has not mapped areas used to hunt caribou/feral reindeer by community residents. As noted under Criterion 1, the herd generally inhabits portions of the Ayakulik and Sturgeon river drainages, with some presence along Olga Bay and the Karluk River.

CRITERION 5: MEANS OF HANDLING, PREPARING, PRESERVING, AND STORING

A means of handling, preparing, preserving, and storing fish or game that has been traditionally used by past generations, but not excluding recent technological advances where appropriate.

We have no information on this criterion specifically related to caribou/feral reindeer.

CRITERION 6: INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE, SKILLS, VALUES, AND LORE

A pattern of taking or use that includes the handing down of knowledge of fishing or hunting skills, values, and lore from generation to generation.

We have no specific information on this criterion related to caribou/feral reindeer. See Criterion 1.

CRITERION 7: DISTRIBUTION AND EXCHANGE

A pattern of taking, use, and reliance where the harvest effort or products of that harvest are distributed or shared, including customary trade, barter, and gift-giving.

General information about patterns of sharing of wild resources in Kodiak Island communities is available based on Division of Subsistence research and can be provided if needed. Table 1 reports the percentage of households that received or gave away meat from feral reindeer in each year for which household surveys were conducted.

CRITERION 8: DIVERSITY OF RESOURCES IN AN AREA; ECONOMIC, CULTURAL, SOCIAL, AND NUTRITIONAL ELEMENTS

A pattern that includes taking, use, and reliance for subsistence purposes upon a wide variety of fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life.

Detailed harvest data for 1982-1983, 1986, 1989, 1990, 1991, 1992, 1993, 1997, and 2003 are available for Kodiak Island Borough communities based on Division of Subsistence research and can be provided as needed (CSIS¹; Fall 2006). Harvests of fish and wildlife are relatively high and diverse in borough communities, consisting primarily of Pacific salmon, Pacific halibut, and other fishes; deer; harbor seals and sea lions; numerous species of marine invertebrates and birds; and wild plants. The entire borough is outside the nonsubsistence areas as identified by the Joint Board of Fisheries and Game, recognizing that subsistence uses of fish and wildlife are a principal characteristic of the economy, culture, and way of life of borough residents.

¹ ADF&G Division of Subsistence Community Subsistence Information System (CSIS): <http://www.subsistence.adfg.state.ak.us/CSIS>.

Table 1.--Uses and estimated harvests of feral reindeer in GMU 8, Kodiak Island Borough communities.

Community	Study year	Percentage of Households					Estimated Harvest
		Using	Hunting	Harvesting	Receiving	Giving	
Akhiok	1986	0.0	0.0	0.0	0.0	0.0	0
Akhiok	1992	0.0	0.0	0.0	0.0	0.0	0
Akhiok	2003	0.0	0.0	0.0	0.0	0.0	0
Karluk	1986	0.0	0.0	0.0	0.0	0.0	0
Karluk	1990	23.5	5.9	5.9	17.6	5.9	4
Karluk	1991	15.4	7.7	7.7	7.7	7.7	2
Kodiak City	1991	2.0	0.0	0.0	2.0	0.0	0
Kodiak City	1992	2.0	0.0	0.0	2.0	2.0	0
Kodiak City	1993	1.9	0.0	0.0	1.0	0.0	0
Kodiak Coast Guard	1991	3.2	0.0	0.0	3.2	0.0	0
Kodiak Road	1991	2.6	0.0	0.0	2.6	0.0	0
Larsen Bay	1986	0.0	0.0	0.0	0.0	0.0	0
Larsen Bay	1990	25.7	2.9	2.9	22.9	5.7	2
Larsen Bay	1991	10.5	2.6	2.6	7.9	2.6	3
Larsen Bay	1992	21.6	8.1	8.1	13.5	8.1	7
Larsen Bay	1993	7.5	0.0	0.0	7.5	0.0	0
Larsen Bay	1997	3.8	0.0	0.0	3.8	0.0	0
Larsen Bay	2003	0.0	0.0	0.0	0.0	0.0	0
Old Harbor	1986	0.0	0.0	0.0	0.0	0.0	0
Old Harbor	1991	2.4	0.0	0.0	2.4	2.4	0
Old Harbor	1997	0.0	0.0	0.0	0.0	0.0	0
Old Harbor	2003	0.0	0.0	0.0	0.0	0.0	0
Ouzinkie	1986	2.9	0.0	0.0	2.9	0.0	0
Ouzinkie	1990	0.0	0.0	0.0	0.0	0.0	0
Ouzinkie	1991	0.0	0.0	0.0	0.0	0.0	0
Ouzinkie	1992	0.0	0.0	0.0	0.0	0.0	0
Ouzinkie	1993	0.0	0.0	0.0	0.0	0.0	0
Ouzinkie	1997	2.1	0.0	0.0	2.1	0.0	0
Ouzinkie	2003	0.0	0.0	0.0	0.0	0.0	0
Port Lions	1986	3.1	1.5	1.5	1.5	0.0	7
Port Lions	1993	0.0	0.0	0.0	0.0	0.0	0
Port Lions	2003	0.0	0.0	0.0	0.0	0.0	0

Sources CSIS; Fall 2006.

Table 2.—Reported harvests of caribou (feral reindeer), GMU 8, 1998-2007.

Year	Residency of Successful Hunters				Total Successful Hunters	Total Reported Caribou Harvest ¹
	Other Alaska Resident	Local (GMU 8) Residents	Non-Alaska Residents	Unknown Residence		
1998	4	1	3	0	8	11
1999	3	3	0	0	6	12
2000	2	0	0	0	2	5
2001	4	1	2	0	7	9
2002	2	6	6	0	14	18
2003	3	7	1	1	12	19
2004	5	7	1	1	14	22
2005	6	3	4	0	13	17
2006	5	5	4	0	14	18
2007	7	13	3	0	23	31
2008	No data yet available					
Average, 1998 - 2007	4.1	4.6	2.4	0.2	11.3	16.2

¹ These reported harvests should be considered minimums, as unreported harvests likely occur.

Source L. Van Daele, ADF&G Wildlife Biologist III, Kodiak, personal communication, February 2009.

CUSTOMARY AND TRADITIONAL USE WORKSHEET: BROWN BEARS IN GMU 10 (UNIMAK ISLAND)

INTRODUCTION

This worksheet contains background information on the uses of brown bears *Ursus arctos* on Unimak Island, the only portion of GMU 10 with a population of brown bears. The Alaska Board of Game requires this information in order to decide whether there are customary and traditional (subsistence) uses of brown bears in this area in the context of deliberations on Proposal 48. It is intended that the information in this worksheet be supplemented by written and oral public testimony delivered during the board meeting. The board will evaluate this information before reaching its decisions.

Presently, brown bear hunting in GMU 10 (Unimak Island) is managed through a drawing permit system. Hunts occur during fall (October 1 – December 31) and spring (May 10 – May 25) seasons, with a limit of 1 bear every 4 regulatory years.

This worksheet has been reprinted, with updated formatting, from the ADF&G Division of Subsistence worksheet prepared for the March 1991 meeting of the Alaska Board of Game.

THE EIGHT CRITERIA

CRITERION 1: LENGTH AND CONSISTENCY OF USE

A long-term consistent pattern of noncommercial taking, use, and reliance on the fish stock or game population that has been established over a reasonable period of time of not less than one generation, excluding interruption by circumstances beyond the user's control, such as unavailability of the fish or game caused by migratory patterns.

In November 1988, the Division of Subsistence interviewed 20 of the 22 year-round households in False Pass, the only permanent community on Unimak Island. None of the interviewed households reported using or hunting brown bears in 1988, the study year (Table 3). The final report on this research includes the following statement concerning use of brown bears (Fall et al. 1996):

No sampled households in False Pass used or hunted brown bear during the study year. Respondents reported that brown bears are no longer used for subsistence in the community, although they had been in the past. For example, a village elder said that brown bear had not been eaten at False Pass "in years" in part because the meat is in the best condition in the spring but bears are not available near the village at that time of year. A middle-aged woman from another household reported that when she was a child at Belkofsky (in GMU 9D), men hunted brown bears which were taken for their meat and hides.

In 1993, the Division of Subsistence conducted systematic household surveys in King Cove and Sand Point, two communities in GMU 9D that conduct subsistence activities on Unimak Island. One percent of households in Sand Point reported using brown bears that had been received from

other households for food. No surveyed Sand Point households hunted brown bears in the study year. In King Cove, 1.3% of households hunted and harvested brown bears, for an estimated harvest of 2 bears. These bears were not used for food, and the location of the harvest was not recorded (Table 3).

For the period from 1983 through 1989, based upon ADF&G Division of Wildlife sealing records, a total of 40 brown bears were harvested in GMU 10 (Unimak Island). Of these, 6 were taken by "local residents" living in Cold Bay (3), King Cove (2), and Port Moller (1). Most of the rest were taken by Alaska residents of road system communities (20 bears), 4 were taken by nonresidents, and 3 were taken in defense of life and property (DLP) (ADF&G 1983-1989).

During the period 1981-1996, annual harvests of brown bears on Unimak Island averaged about 6 bears, and for the period 1997-2005, the annual average was about 11 bears. For the period 2001-2005, nonAlaska residents accounted for 41% of the permits and 60% of the harvest (Butler 2007:122,124).

CRITERION 2: SEASONALITY

A pattern of taking or use recurring in specific seasons of each year.

We have no information for this criterion.

CRITERION 3: MEANS AND METHODS OF HARVEST

A pattern of taking or use consisting of methods and means of harvest that are characterized by efficiency and economy of effort and cost.

We have no information for this criterion.

CRITERION 4: GEOGRAPHIC AREAS

The area in which the noncommercial, long-term, and consistent pattern of taking, use, and reliance upon the fish stock and game population has been established.

We have no information for this criterion.

CRITERION 5: MEANS OF HANDLING, PREPARING, PRESERVING, AND STORING

A means of handling, preparing, preserving, and storing fish or game that has been traditionally used by past generations, but not excluding recent technological advances where appropriate.

We have no information for this criterion; see Criterion 1.

CRITERION 6: INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE, SKILLS, VALUES, AND LORE

A pattern of taking or use that includes the handing down of knowledge of fishing or hunting skills, values, and lore from generation to generation.

We have no information for this criterion; see Criterion 1.

CRITERION 7: DISTRIBUTION AND EXCHANGE

A pattern of taking, use, and reliance where the harvest effort or products of that harvest are distributed or shared, including customary trade, barter, and gift-giving.

Resources are widely shared in False Pass, as well as in King Cove and Sand Point, but brown bears appear to be no longer part of these exchange patterns.

CRITERION 8: DIVERSITY OF RESOURCES IN AN AREA; ECONOMIC, CULTURAL, SOCIAL, AND NUTRITIONAL ELEMENTS

A pattern that includes taking, use, and reliance for subsistence purposes upon a wide variety of fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life.

See also Criterion 1. The communities of GMUs 10 and 9D are outside the nonsubsistence areas as defined by the Joint Board of Fisheries and Game. Subsistence uses are a principal characteristic of the economy, culture, and way of life of the residents of these communities. Information about fish and wildlife harvests is available in the Division of Subsistence CSIS and in Fall and Stanek (1996), Fall et al. 1993a), and Fall et al. 1993b).

Table 3.—Uses and estimated harvests of brown bears, False Pass, King Cove, and Sand Point, 1988 and 1992.

Community	Study Year	Percentage of Households					Estimated Harvest
		Using	Hunting	Harvesting	Receiving	Giving	
False Pass	1988	0.0	0.0	0.0	0.0	0.0	0
King Cove	1992	1.3	1.3	1.3	0.0	0.0	2 ^a
Sand Point	1992	1.0	0.0	0.0	1.0	0.0	0

^a These bears were not eaten. The location of the harvest was not recorded.

Source ADF&G CSIS.

CUSTOMARY AND TRADITIONAL USE WORKSHEET: DALL SHEEP IN GMU 13A, NELCHINA – UPPER SUSITNA

INTRODUCTION

This worksheet contains background information on the uses of Dall sheep *Ovis dalli* in the eastern Talkeetna Mountains (Game Management Unit 13A). The Alaska Board of Game (board) requires this information in order to determine whether there are customary and traditional (subsistence) uses of Dall sheep in this Alaska Department of Fish and Game (ADF&G) Game Management Unit (GMU) prior to acting on Proposal 108. It is intended that the information in this worksheet be supplemented by written and oral public testimony delivered during the board meeting. The board will evaluate this information before reaching its decisions.

Sheep hunters in GMU 13A are required to have a hunting license and a sheep harvest ticket. The bag limit is one ram with full-curl horn or larger. The season is August 10 – September 20.

THE EIGHT CRITERIA

CRITERION 1: LENGTH AND CONSISTENCY OF USE

A long-term consistent pattern of noncommercial taking, use, and reliance on the fish stock or game population that has been established over a reasonable period of time of not less than one generation, excluding interruption by circumstances beyond the user's control, such as unavailability of the fish or game caused by migratory patterns.

Traditionally, Dall sheep in the Talkeetna Mountains were hunted by Ahtna and Dena'ina Athabascan communities.

The Division of Subsistence has conducted comprehensive household harvest surveys in communities of GMU 13 pertaining to harvests during 1983 and 1987, as well as a 1987 study that mapped areas in which residents of GMU 13 communities hunted sheep and other large game animals. Almost all the sheep hunting reported by GMU 13 residents during these studies took place in GMU 11 (Wrangell Mountains) or in GMU 13C. Virtually no contemporary sheep hunting was reported in GMU 13A by individuals who were interviewed for these studies.

Table 4 summarizes harvest information for GMU 13A sheep derived from harvest ticket returns compiled by the Division of Wildlife Conservation for the period 1998 through 2008. An annual average of 209 individuals hunted sheep in GMU 13A during this period, and an average of 32 were successful. An annual average of about 5 GMU 13 residents hunted sheep in GMU 13A from 1998 through 2008, with fewer than one hunter per year having success. Most individuals who hunted sheep in GMU 13A during the period 1998 through 2008 lived in the Matanuska-Susitna Borough (94 per year), Anchorage (78 per year), and outside Alaska (22 per year).

CRITERION 2: SEASONALITY

A pattern of taking or use recurring in specific seasons of each year.

We have no information for this criterion.

CRITERION 3: MEANS AND METHODS OF HARVEST

A pattern of taking or use consisting of methods and means of harvest that are characterized by efficiency and economy of effort and cost.

We have no information for this criterion.

CRITERION 4: GEOGRAPHIC AREAS

The area in which the noncommercial, long-term, and consistent pattern of taking, use, and reliance upon the fish stock and game population has been established.

We have no information for this criterion.

CRITERION 5: MEANS OF HANDLING, PREPARING, PRESERVING, AND STORING

A means of handling, preparing, preserving, and storing fish or game that has been traditionally used by past generations, but not excluding recent technological advances where appropriate.

We have no information for this criterion.

CRITERION 6: INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE, SKILLS, VALUES, AND LORE

A pattern of taking or use that includes the handing down of knowledge of fishing or hunting skills, values, and lore from generation to generation.

We have no information for this criterion.

CRITERION 7: DISTRIBUTION AND EXCHANGE

A pattern of taking, use, and reliance where the harvest effort or products of that harvest are distributed or shared, including customary trade, barter, and gift-giving.

We have no information for this criterion.

CRITERION 8: DIVERSITY OF RESOURCES IN AN AREA; ECONOMIC, CULTURAL, SOCIAL, AND NUTRITIONAL ELEMENTS

A pattern that includes taking, use, and reliance for subsistence purposes upon a wide variety of fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life.

Detailed harvest data for 1983 and 1987 are available for Copper Basin (GMUs 13 & 11) communities based on Division of Subsistence research and can be provided as needed (CSIS²).

² ADF&G Division of Subsistence Community Subsistence Information System (CSIS): <http://www.subsistence.adfg.state.ak.us/CSIS>.

Harvests of fish and wildlife are important, and consist primarily of Pacific salmon and other fishes; caribou; moose; small game and birds; and wild plants. All of GMU 13 is outside the nonsubsistence areas as identified by the Joint Board of Fisheries and Game, recognizing that subsistence uses of fish and wildlife are a principal characteristic of the economy, culture, and way of life of the residents of these GMUs.

Table 4.—Number of hunters of sheep and number of successful hunters, GMU 13A, by area of residence, 1998-2008.

	Municipality of Anchorage		Matanuska-Susitna Borough		Kenai Peninsula Borough		GMU 13		Other residents		Nonresident hunters		All hunters	
	Total	Successful	Total	Successful	Total	Successful	Total	Successful	Total	Successful	Total	Successful	Total	Successful
1998	90	9	102	12	5	0	3	0	7	0	28	20	235	41
1999	83	9	111	14	7	0	9	2	10	1	26	15	246	41
2000	82	5	98	3	4	0	11	0	4	1	35	15	234	24
2001	67	6	70	9	3	0	9	1	5	1	20	6	174	23
2002	76	17	103	19	3	1	6	0	6	0	25	15	219	52
2003	78	11	113	24	4	0	2	0	7	0	21	10	225	45
2004	93	8	111	18	2	0	6	0	2	0	24	12	238	38
2005	66	5	86	6	9	2	5	1	4	0	20	6	190	20
2006	65	6	91	10	4	0	3	0	4	0	16	5	183	21
2007	76	6	87	15	5	1	4	0	3	0	14	9	189	31
2008	84	6	56	7	8	1	0	0	4	0	8	3	160	17
Average	78.2	8.0	93.5	12.5	4.9	0.5	5.3	0.4	5.1	0.3	21.5	10.5	208.5	32.1

REFERENCES CITED

- ADF&G (Alaska Department of Fish and Game). 1983-1989. Brown bear sealing records. ADF&G Division of Wildlife Conservation, Anchorage.
- Butler, L. B. 2007. Unit 10 brown bear management report. Pages 121-124 in P. Harper, editor. Brown bear management report of survey and inventory activities 1 July 2004-30 June 2006. Alaska Department of Fish and Game Division of Wildlife Conservation, Juneau.
- Fall, J. A., *editor*. 2006. Update of the status of subsistence uses in *Exxon Valdez* oil spill area communities, 2003. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 312, Juneau.
- Fall, J. A., D. B. Andersen, L. Brown, M. Coffing, G. Jennings, C. Mishler, A. Paige, C. J. Utermohle, and V. Vanek 1993a. Noncommercial harvests and uses of wild resources in Sand Point, Alaska, 1992. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 226, Juneau.
- Fall, J. A., R. Mason, T. Haynes, V. Vanek, L. Brown, G. Jennings, C. Mishler, and C. Utermohle 1993b. Noncommercial harvests and uses of wild resources in King Cove, Alaska, 1992. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 227, Juneau.
- Fall, J. A., R. T. Stanek, L. Brown, and C. Utermohle 1996. The harvest and use of fish, wildlife, and plant resources in False Pass, Unimak Island, Alaska. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 183, Juneau.
- Rostad, M. 1988. Time to dance: Life of an Alaska native. A.T. Publishing, Anchorage.
- Woodward-Clyde Consultants. 1981. Kodiak Island Borough coastal management program: progress report. Kodiak, Alaska.

Deliberation Materials: Oral Reports

**Proposals 87, 88, 89, and 90: Tier II subsistence hunting permit point system
(5 AAC 92.070)**

**Proposal 96: Customary and traditional uses of game populations
(5 AAC 92.025)**

by

Alaska Department of Fish and Game

Division of Subsistence for the

February 2009 Board of Game Meeting in Anchorage, Alaska

February 2009

Alaska Department of Fish and Game

Division of Subsistence



PROPOSALS 87, 88, 89, and 90 RC-24

Tier II subsistence hunting permit
point system (5 AAC 92.070)

Prepared for
Alaska Board of Game
February/March 2009



Current State Regulations

- Factor A is up to 85 points (for all Tier II hunts).

The applicant's "customary and direct dependence on the game population for human consumption as a mainstay of livelihood."

- 1) Number of years applicant has eaten from or hunted the Tier II population *(up to 50 pts)*;
- 2) Number of years a member of the applicant's household has eaten from or hunted the Tier II population *(up to 10 pts)*; and
- 3) Number of days the applicant has hunted or fished in the Tier II hunt area *(up to 25 pts)*.

State Regulations, cont'd.

- Factor B is up to 55 points.

The "ability of a subsistence user to obtain food if subsistence use [of the Tier II population] is restricted."

For GMU 13 hunts TC566 and TM300 only:

- 1) Availability of food to purchase (*up to 15 pts*);
- 2) Availability of gasoline to purchase (*up to 20 pts*); and
- 3) Household income (*up to 20 pts*).

State Regulations, cont'd.

- Factor B is up to 55 points.

The "ability of a subsistence user to obtain food if subsistence use [of the Tier II population] is restricted."

For all other Tier II hunts:

- 1) Availability of food to purchase (*up to 25 pts*);
- 2) Availability of gasoline to purchase (*up to 30 pts*); but
- 3) No household income question.

State Regulations, cont'd.

- In addition, for GMU 13 hunts, if the applicant's score for income is 0, then the applicant's score for all questions that measure Factor B is 0; and,
- If the applicant scores 0 points for either Factor A or Factor B, then the applicant's score is 0 for the entire application.

Ruling in Ahtna Tene Nene' Subsistence Committee vs. Alaska Board of Game

- Among other things, ruled that: 1) the board may use income to measure Factor B, but must adjust scores to account for cost of living differences; and 2) may use income or other measures to “zero out” scores for Factor A or Factor B, but may not use any single measure to zero out an entire application.
- No up-to-date data on cost of living differences throughout Alaska were available in 2008.
- Consequently, by emergency action in July 2008, the board directed the department to score GMU 13 Tier II hunt applications with the same procedures as were used for other Tier II hunts for the 2008/2009 regulatory year only.

Proposal 87

This proposal

- Recommends several changes to the Tier II hunt scoring system for GMU 13 hunts.
- These include: 1) eliminating income as a scoring factor; 2) changing the balance of points that measure Factor A and Factor B; 3) reducing the number of years needed to obtain maximum points for questions 14 and 15 from 50 to 30; 4) increasing points for cost of food and cost of gasoline; and 5) revising scoring for days spent hunting and fishing in the Tier II area.

Department Recommendation:

No recommendation.

Proposal 88

This proposal

- Recommends eliminating income as a factor in scoring Tier II hunt applications.

Department Recommendation:

No recommendation.

Proposal 89

This proposal

- Recommends increasing the percentage of points awarded to questions that measure Factor B, “the ability to obtain food.”
- The proposal does not include a recommendation for the apportionment of points between Factors A and B.

Department Recommendation:

No recommendation.

Proposal 90

This proposal

- Recommends basing points awarded for household income on a fixed set of categories that are not based on federal poverty guidelines or household size (as is now the procedure).
- Also recommends reducing the maximum number of points awarded for income from 20 to 5.

Department Recommendation:

No recommendation.

Analysis of some potential effects of changes to Tier II scoring system recommended in Proposal 87

- See full report: RC 22.
- Analysis focuses on geographic distribution of Tier II permits as a tool for discerning the effects of changes in the scoring system.
- Analysis examines 6 scoring scenarios.
- Analysis is based on 2008/2009 applicant pool.

Table 1. Tier II Hunt Scoring Scenarios Used in Analysis of Proposal 87

Question	Maximum Points Awarded					
	Scoring System Used in 2008/2009	GMU 13 Scoring System in Regulation ¹	Scenario A	Scenario B	Scenario C	Scenario D
<i>Part A: customary and direct dependence for human consumption as a mainstay of livelihood</i>						
Q 14. Number of years applicant has hunted or eaten meat from the population	50 (max at 50 yrs)	50 (max at 50 yrs)	50 (max at 50 yrs)	50 (max at 30 yrs)	50 (max at 50 yrs)	50 (max at 30 yrs)
Q 15. Maximum number of years any member of applicant's household has hunted or eaten from the population	10 (max at 50 yrs)	10 (max at 50 yrs)	10 (max at 50 yrs)	10 (max at 30 yrs)	10 (max at 50 yrs)	10 (max at 30 yrs)
Q 16. Number of days spent hunting and fishing in the Tier II hunt area	25	25	10	10	10	10
Subtotal	85	85	70	70	70	70
(% of total maximum score)	61%	61%	50%	50%	50%	50%
<i>Part B: ability to obtain food if subsistence use is restricted or eliminated</i>						
Q 17. Community in which most food purchased.	25	15	20	30	20	30
Q 18. Community in which most gasoline purchased.	30	20	25	40	25	40
Q 20. Household adjusted gross income.	Not asked	20	25	Not asked	25	Not asked
Subtotal	55	55	70	70	70	70
(% of total maximum score)	39%	39%	50%	50%	50%	50%
Total	140	140	140	140	140	140

¹ Under the GMU 13 scoring procedure, applicants receive a score of 0 for Part B if they receive no points for Question 20 (income).

Figure 1. Number of Tier II Permits Issued by Area of Residence for Hunt TM300 (GMU 13 Moose) if 150 Permits are Available, Using 6 Scoring Scenarios

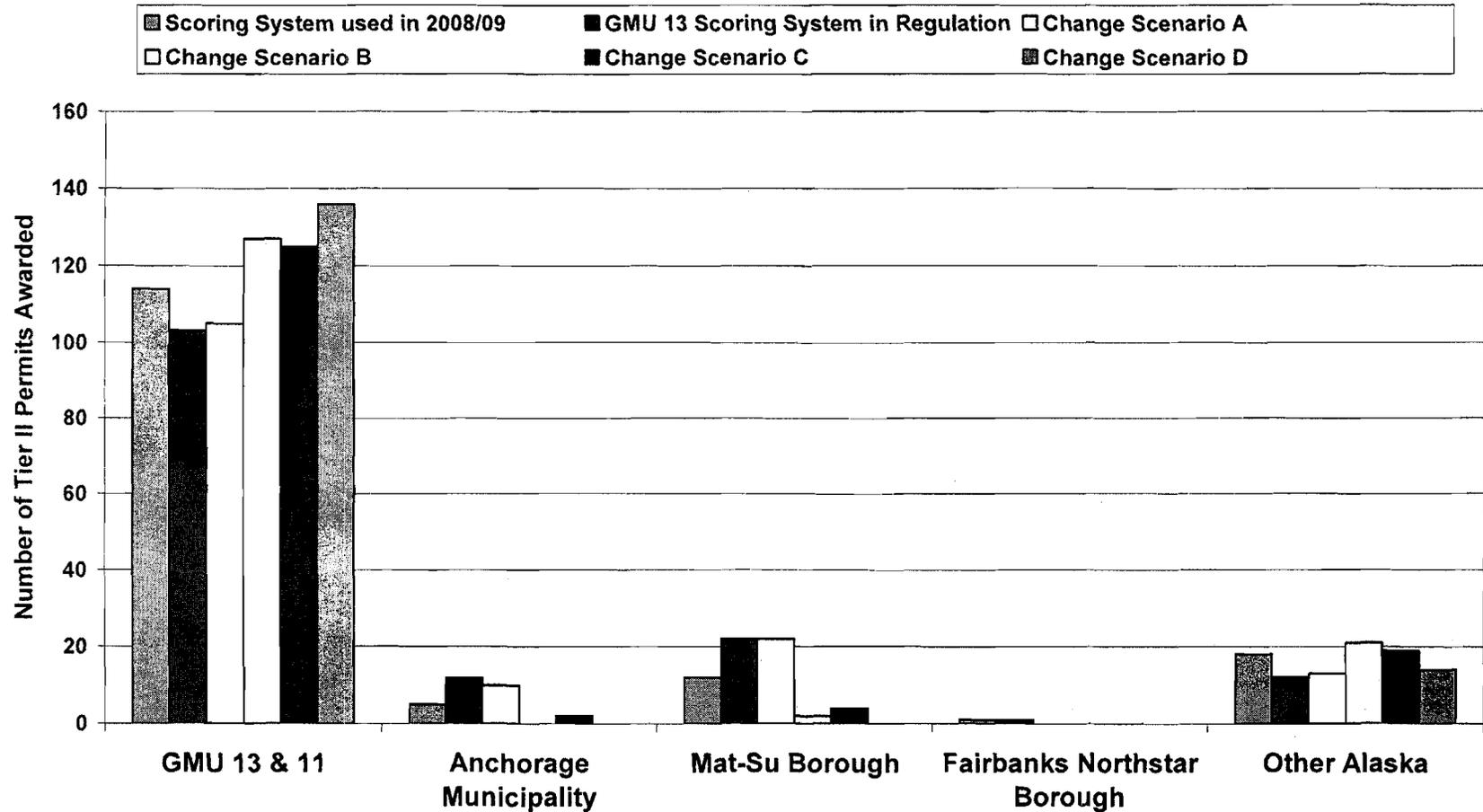


Figure 3. Number of Tier II Permits Issued by Area of Residence for Hunt TC566 (GMU 13 Nelchina Caribou) if 1000 Permits are Available, Using 6 Scoring Scenarios

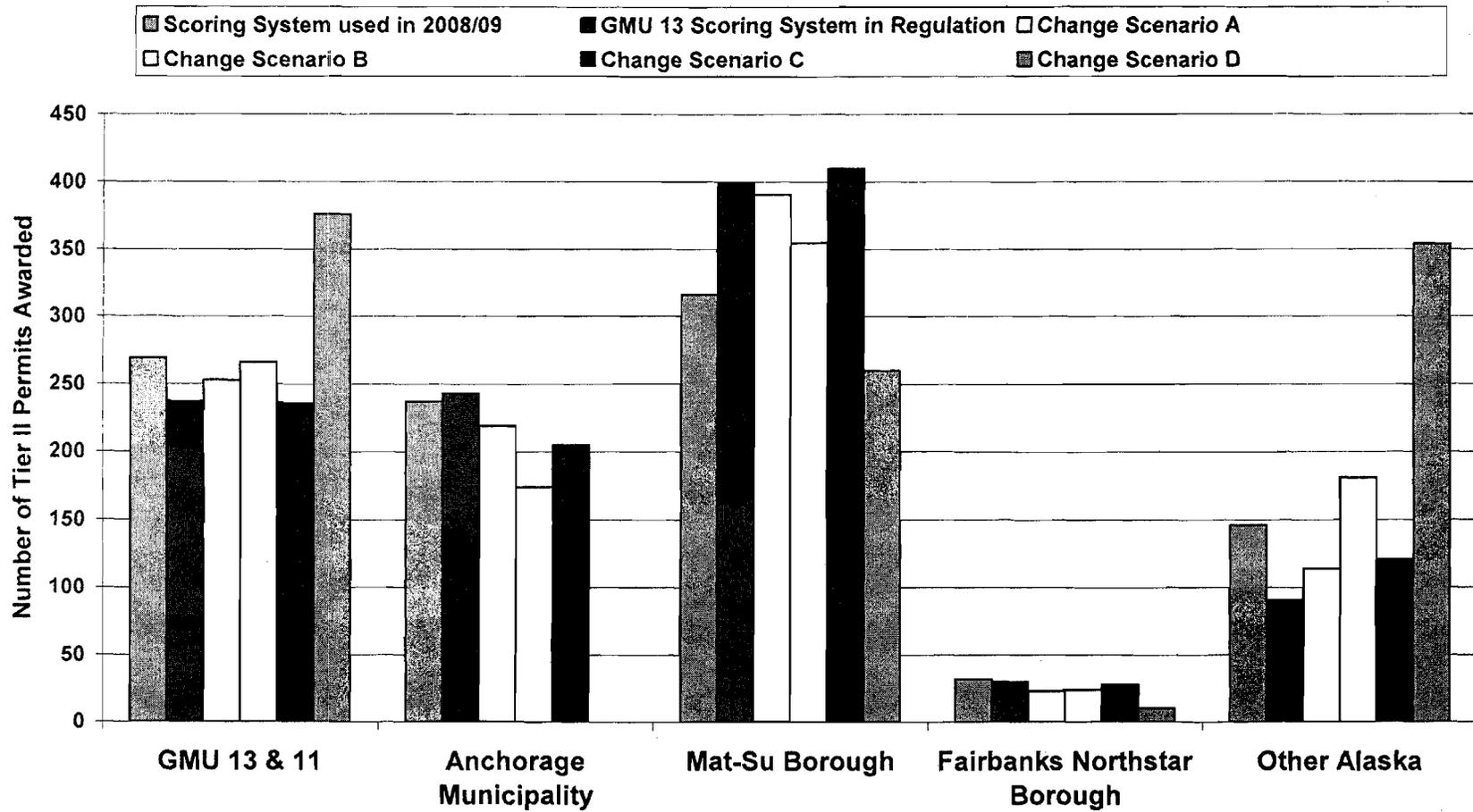


Figure 9. Number of Tier II Permits Issued by Area of Residence for Hunt TC566 (GMU 13 Nelchina Caribou) if 2500 Permits are Available, Using 6 Scoring Scenarios

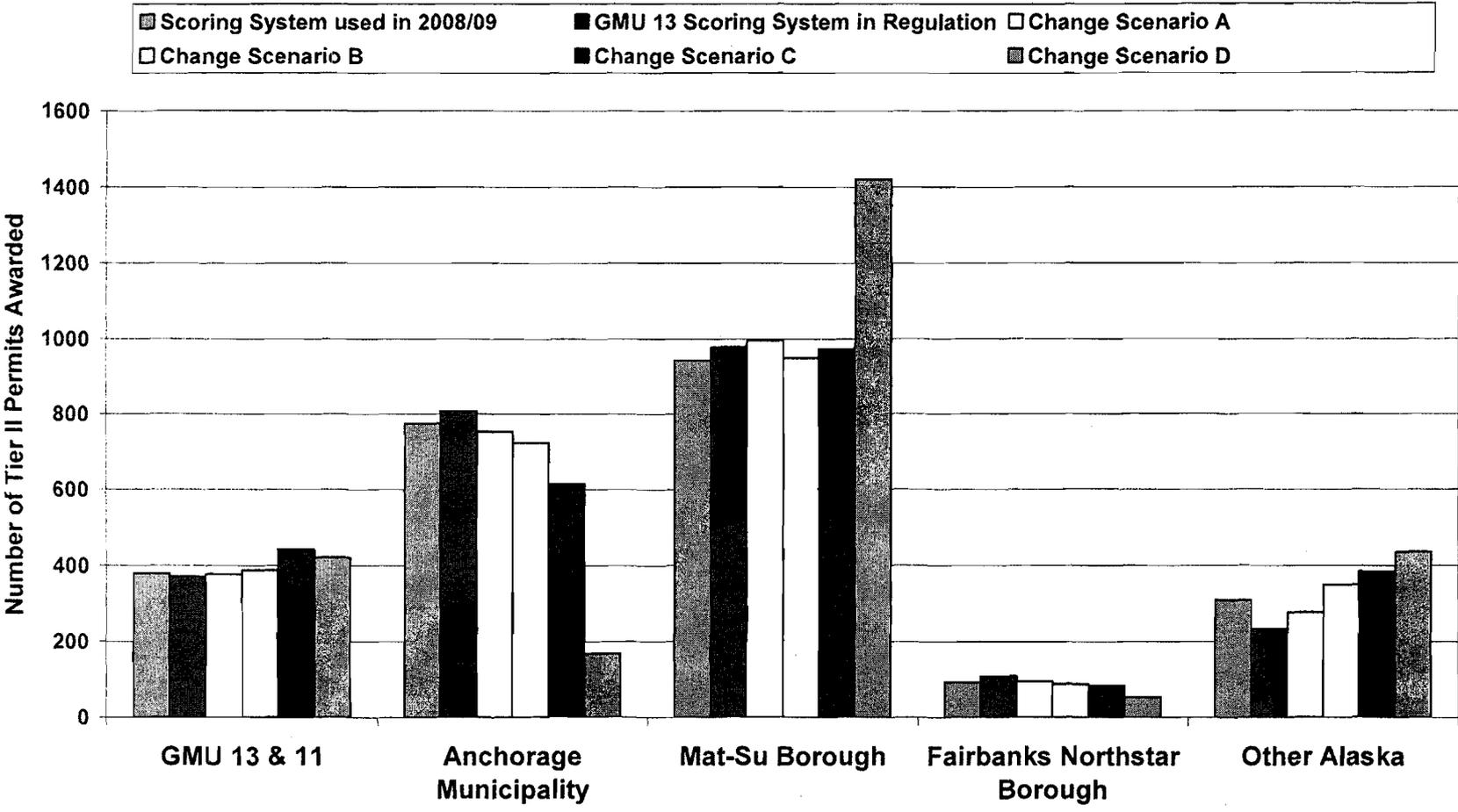


Figure 13. Number of Tier II Permits Issued by Area of Residence for Hunt TC566 (GMU 13 Nelchina Caribou) if 4000 Permits are Available, Using 6 Scoring Scenarios

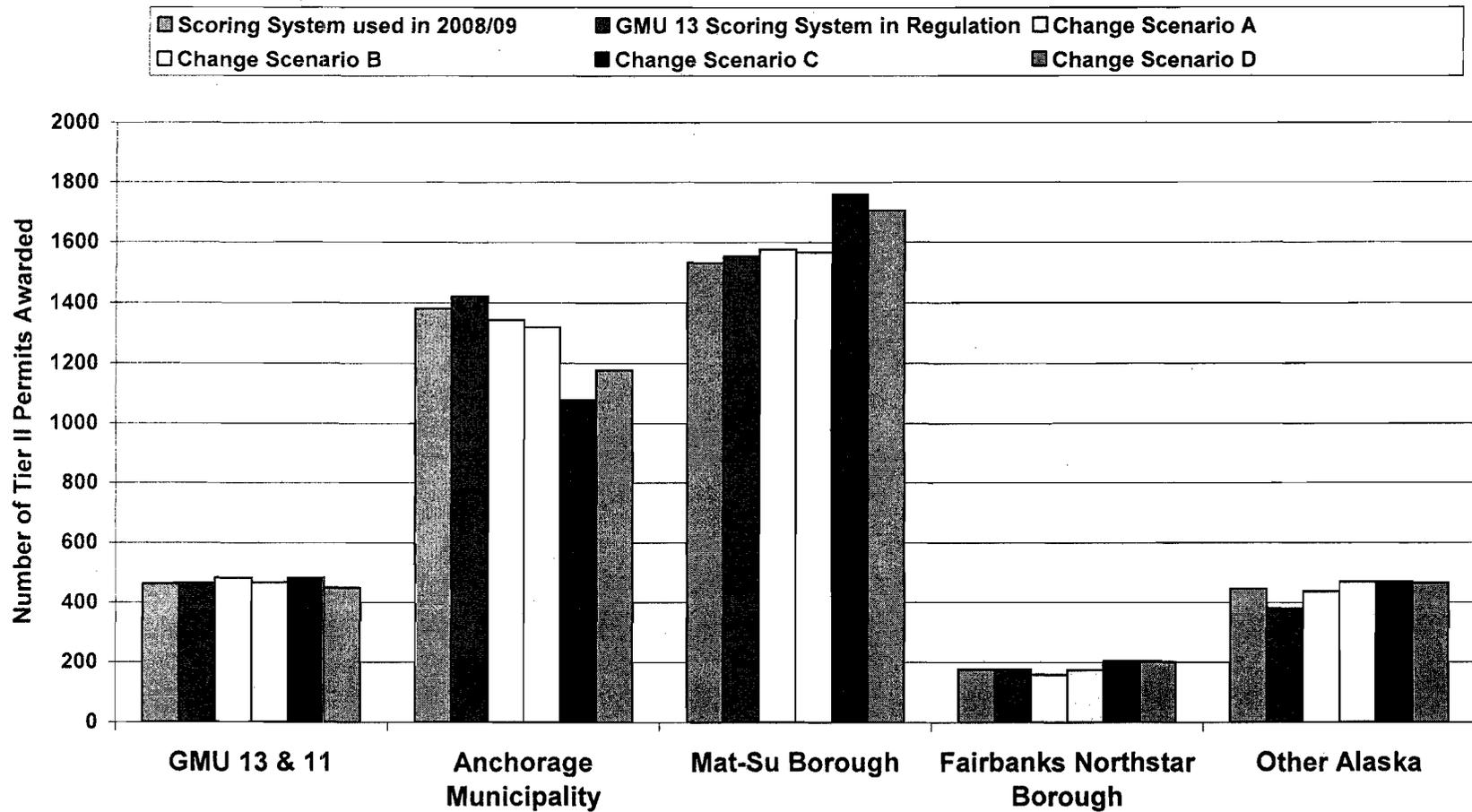


Figure 15. Number of Permits Awarded to Applicants Residing in GMU 13 & 11, Tier II Hunt TC566 (GMU 13 Nelchina Caribou), 6 Scoring Scenarios

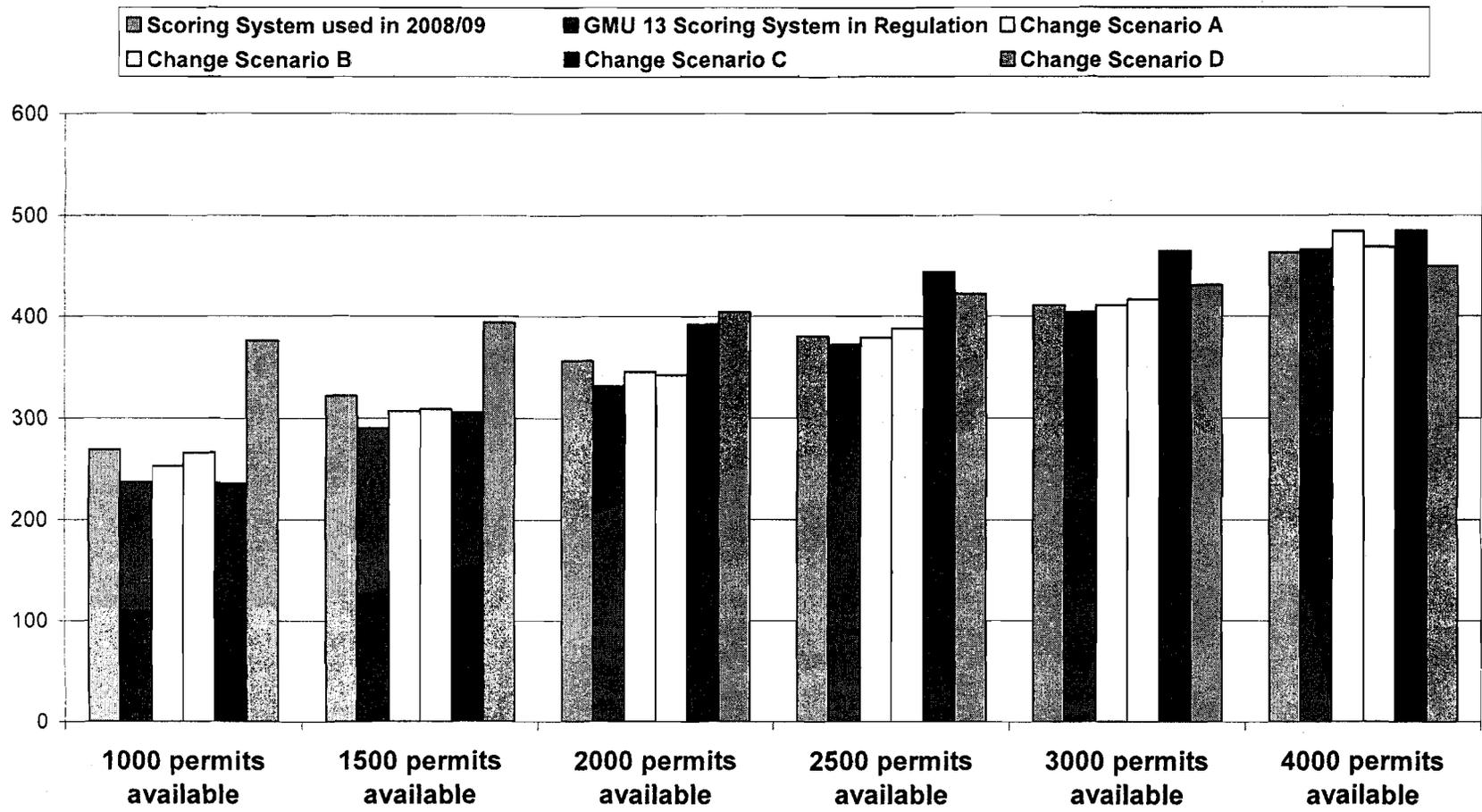
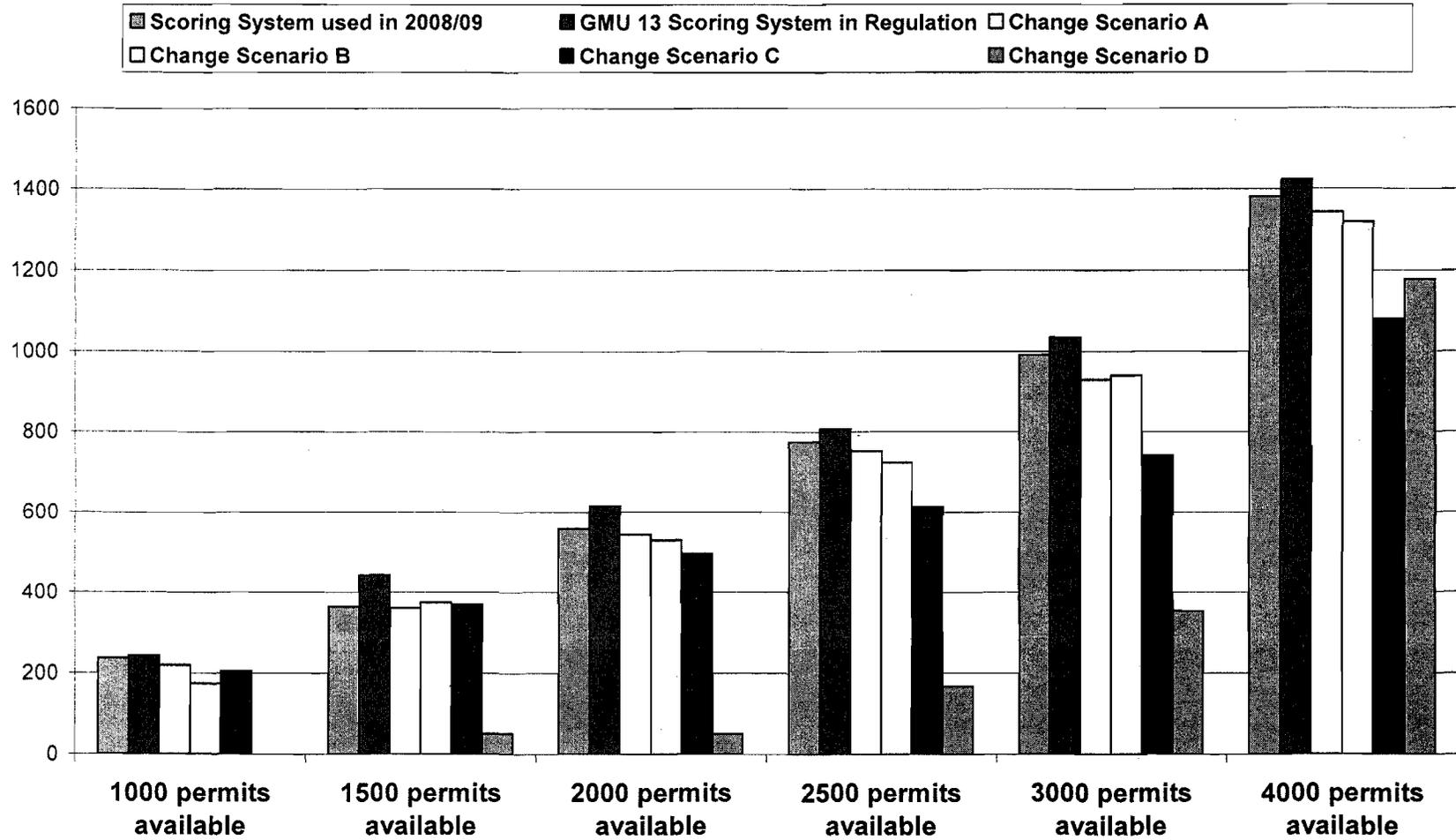


Figure 17. Number of Permits Awarded to Anchorage Applicants, Tier II Hunt TC566 (GMU 13 Nelchina Caribou), 6 Scoring Scenarios



Some observations about the effects of the scenarios

- Residents of GMU 13 & 11 communities (“local residents”) receive the fewest permits under the present GMU 13 scoring system, and receive the most under Scenario D, when costs of living are emphasized and income is deleted.
- Anchorage applicants receive the fewest permits under Scenario D.
- Mat-Su Borough applicants receive an advantage over Anchorage applicants in Scenario D.

Questions?



Thank you!