

Alaska Sheep Hunter Survey



Credit: Steve Arthur

Dr. Todd Brinkman
Asst. Professor Wildlife Ecology
Institute of Arctic Biology
University of Alaska Fairbanks
Email: tjbrinkman@alaska.edu

Issue

- ⦿ Dissatisfaction with the quality of sheep hunting opportunities
- ⦿ Crowding, competition, and conflict among interest groups
 - Resident sheep hunters
 - Nonresident sheep hunters
 - Big-game guides
 - Transporters & Air Taxis
- ⦿ Increasing number of sheep proposals to BOG
 - Increasing concern expressed through other communication channels



Research Need

- ADF&G and BOG acknowledge that sheep hunter issues need to be addressed
- Insufficient information to evaluate issue



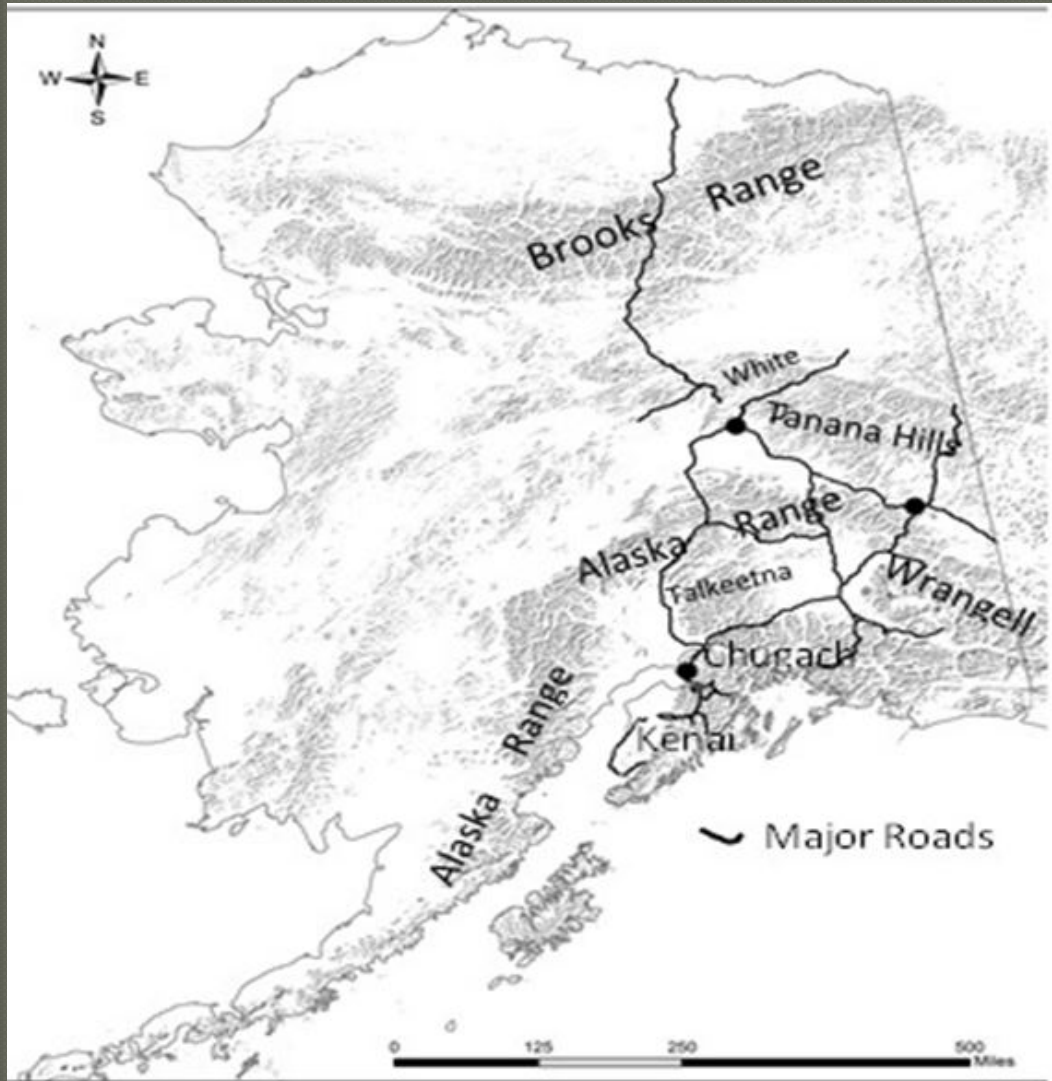
Overarching Goals

1. Systematically collect more information on what sheep hunting interest groups think about the situation

Research Plan

- ① Design a scientific survey that collected information on characteristics, attitudes, norms, and behaviors of interest groups
 1. Sheep hunters
 2. Commercial operators

Statewide Survey



Survey objectives

1. Is there a sheep hunter problem?
2. Why is there a sheep hunter problem?
3. How might sheep hunting be improved?

Methods

- Focus-group discussion (Jan-Feb)
- Questionnaire design and pretest (Mar-Apr)
 - Did the survey hit the target?
 - Does it effectively address the issue?
 - What important questions are missing?
 - What questions could be removed?
 - Is the wording clear and understandable to the typical sheep hunter?
 - **Do any questions seem biased, leading, or loaded?**
 - Equal number of positive and negative responses each question

Methods

- ◉ Questionnaire online and mailing (May-Sept)
- ◉ Data entry and analysis (Sept-Oct)
- ◉ Write-up (Nov-Dec)

Study Population

○ Between 2009-2013

- Hunters
 - Hunted sheep
 - ~~• Received a sheep permit~~
 - ~~• Applied for a sheep permit~~
- Commercial operators providing services to sheep hunters
 - Guides
 - Transporters
 - Air Taxis

Refocused Efforts

- People that haven't hunted sheep were **NOT** responding to the survey
 - Apathy
 - Didn't feel qualified
- Third and Fourth mailings concentrated on people that **HAVE** hunted sheep

Group	Subgroup	Population	Sampled ²	Valid Responses	Response Rate	Survey Sampling Error at 95% CI
						±5% at 95% confidence level
Hunters	Res	5,901	1,889	698	37%	±3.5
	Nonres	1,941	522	269	52%	±5.5
	Total	7,842	2,411	967	40%	±3.0
Comm. Operators	Guides	~147	~122	62	51%	±9.0
	Transporters/ Air taxis	~32	~25	17	60%	±16.0
	Total	~171	~140	70	50%	±8.3

Part 1

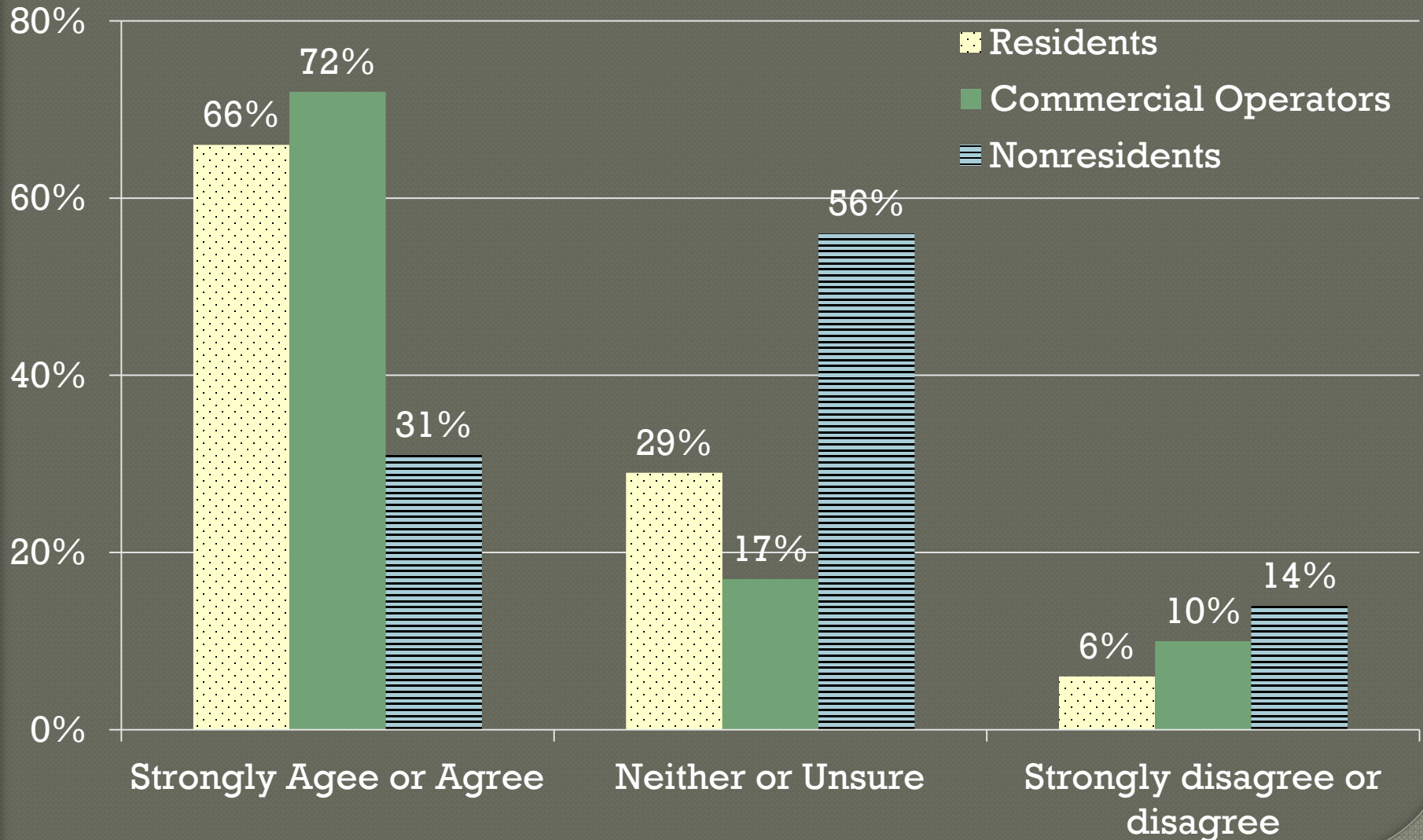
● Is there a sheep
hunter problem?

Question

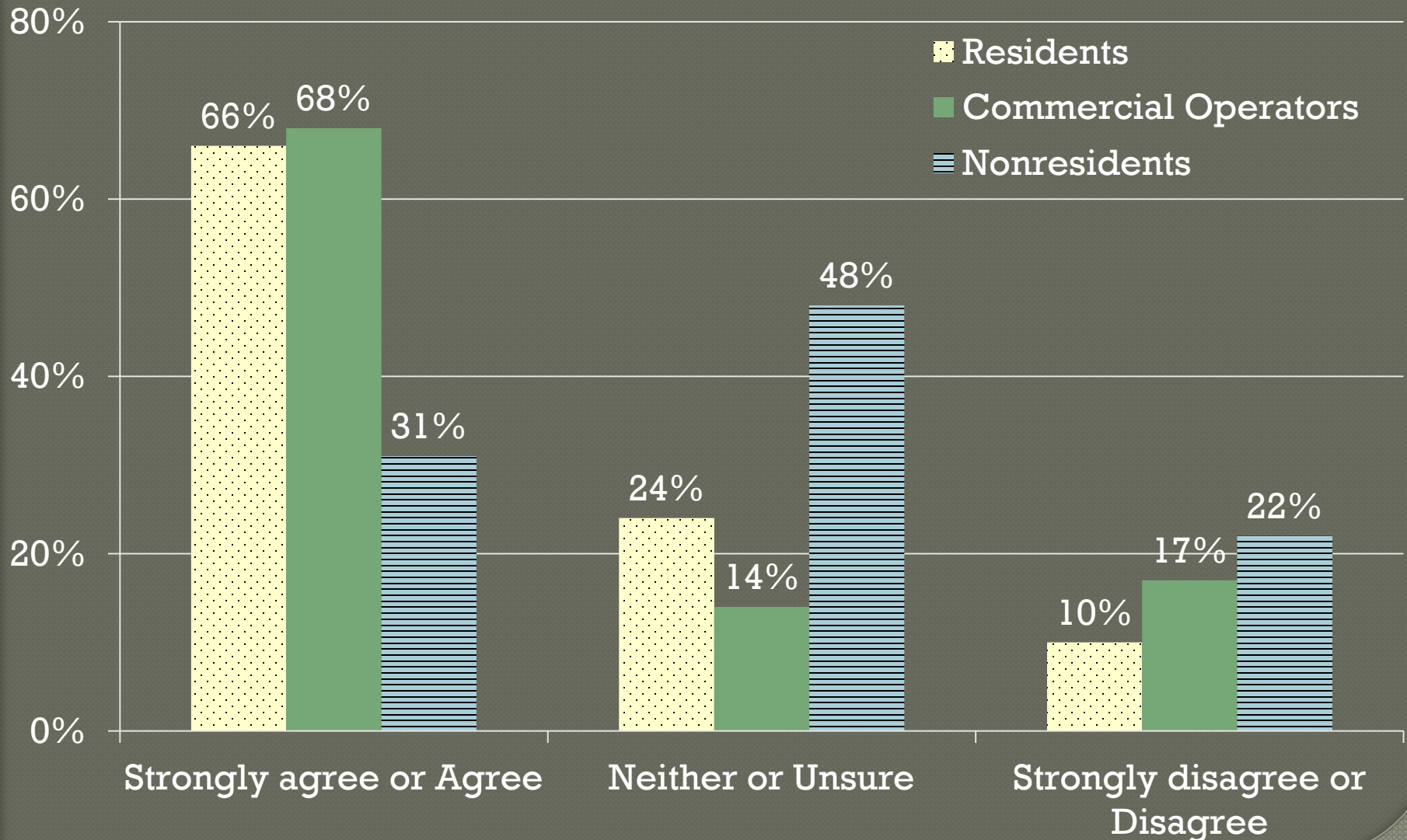
- To what extent do you agree or disagree that there is too much harvest pressure on the sheep population in the following areas?
 - In Alaska overall?
 - In the range most important to you?

Strongly agree	Agree	Neither	Disagree	Strongly Disagree	Unsure
-----------------------	--------------	----------------	-----------------	--------------------------	---------------

Hunter crowding in Alaska overall?



Hunter crowding in the range most important to you?



Sheep Hunter Crowding Problem?

Group	Strongly agree Or Agree	Strongly disagree Or Disagree
Residents	74%	11%
Commercial Operators	84%	15%
Nonresidents	35%	22%

What is the relative importance of “crowding”?

- How important or unimportant are the following factors to your sheep hunting satisfaction in Alaska? (Hunter questionnaire)
- How important or unimportant are the following factors to your client’s sheep hunting satisfaction in Alaska? (Commercial Operator questionnaire)

Very important

Somewhat important

Neither

Somewhat unimportant

Very unimportant

■ Resident

● Level of crowding and competition

● Seclusion from other hunters

Number of legal rams seen

Opportunity to hunt sheep every year

Number of sheep seen

Opportunity to harvest a full-curl ram

Seclusion from plane traffic

Opportunity for walk-in hunts in non-motorized areas

Harvest success

Opportunity to harvest a very large (>40 inch) ram

Size of ram harvested

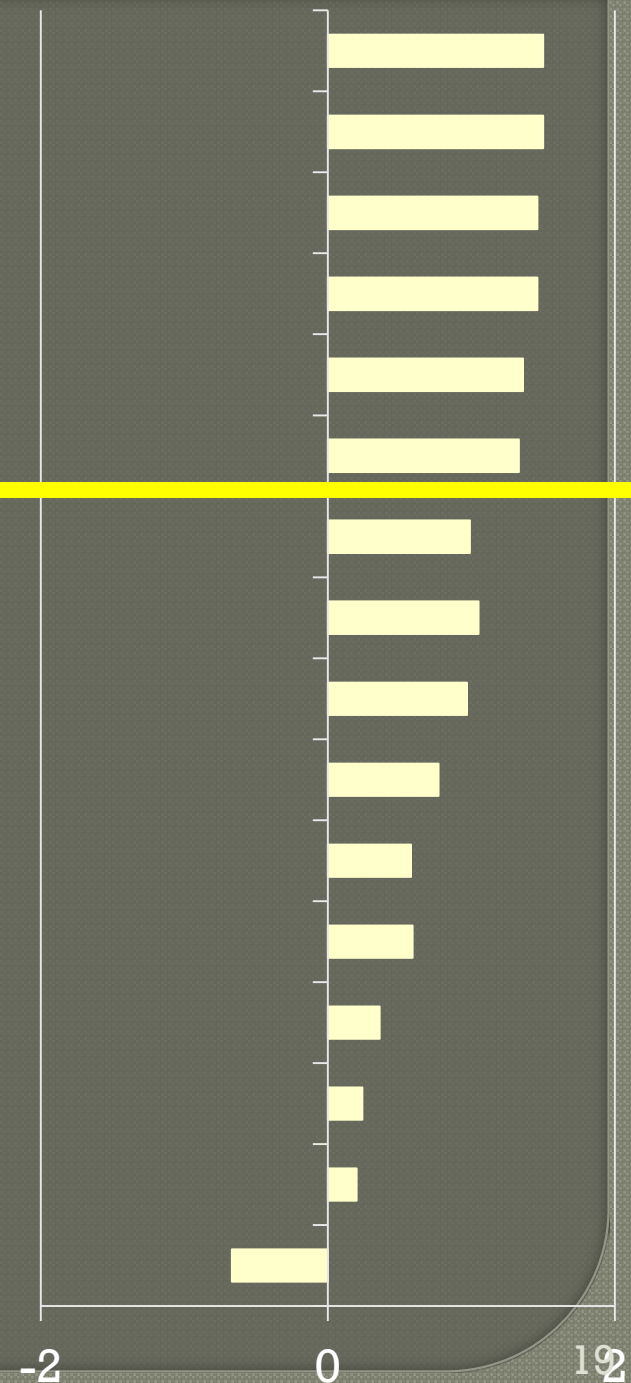
Cost of a sheep hunt

Weather

Physical difficulty of the hunt

Opportunity to harvest a sheep (any ram)

Opportunity to hire transporters or guides



-2

0

12

Opportunity to harvest a full-curl ram

Number of legal rams seen

● Level of crowding and competition

Opportunity to hire transporters or guides

● Seclusion from other hunters

Harvest success

Number of sheep seen

Size of ram harvested

Seclusion from plane traffic

Opportunity to harvest a very large (>40 inch) ram

Cost of a sheep hunt

Physical difficulty of the hunt

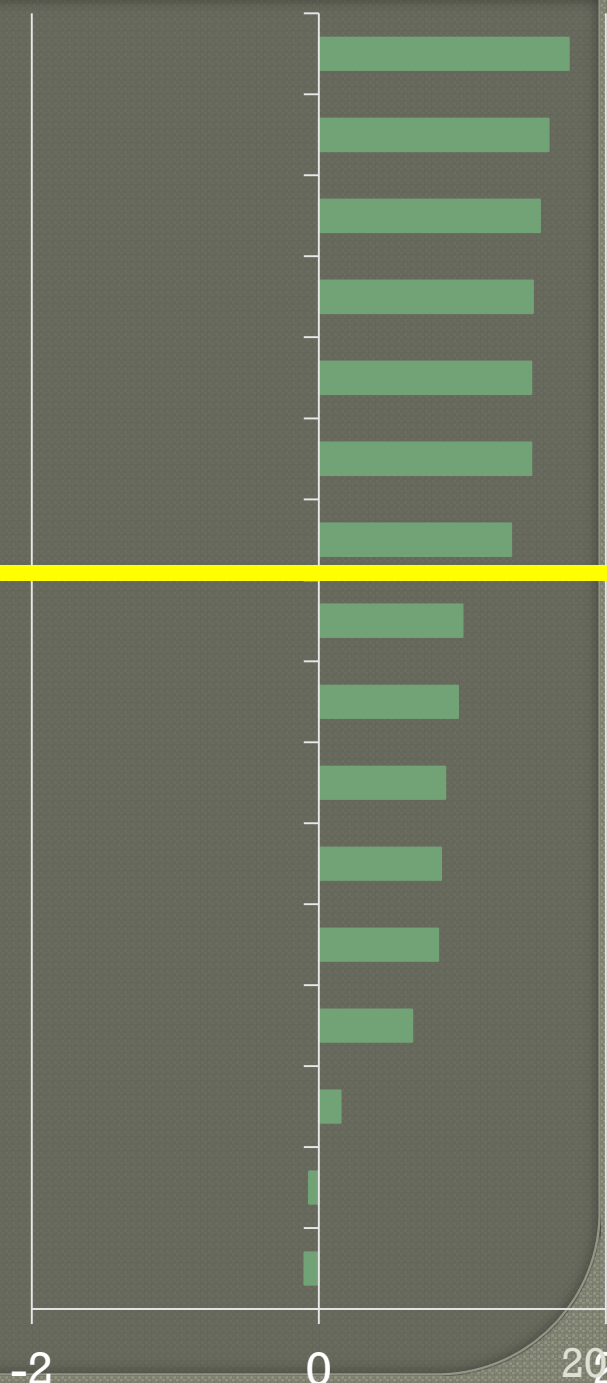
Weather

Opportunity for walk-in hunts in non-motorized areas

Opportunity to harvest a sheep (any ram)

Opportunity to hunt sheep every year

■ Commercial operators



Number of legal rams seen

Opportunity to harvest a full-curl ram

Number of sheep seen

● Seclusion from other hunters

● Level of crowding and competition

Opportunity to harvest a large (>40 inch) ram

Cost of a sheep hunt

Size of ram harvested

Harvest success

Seclusion from plane traffic

Opportunity to hire transporters or guides

Opportunity for walk-in hunts in non-motorized areas

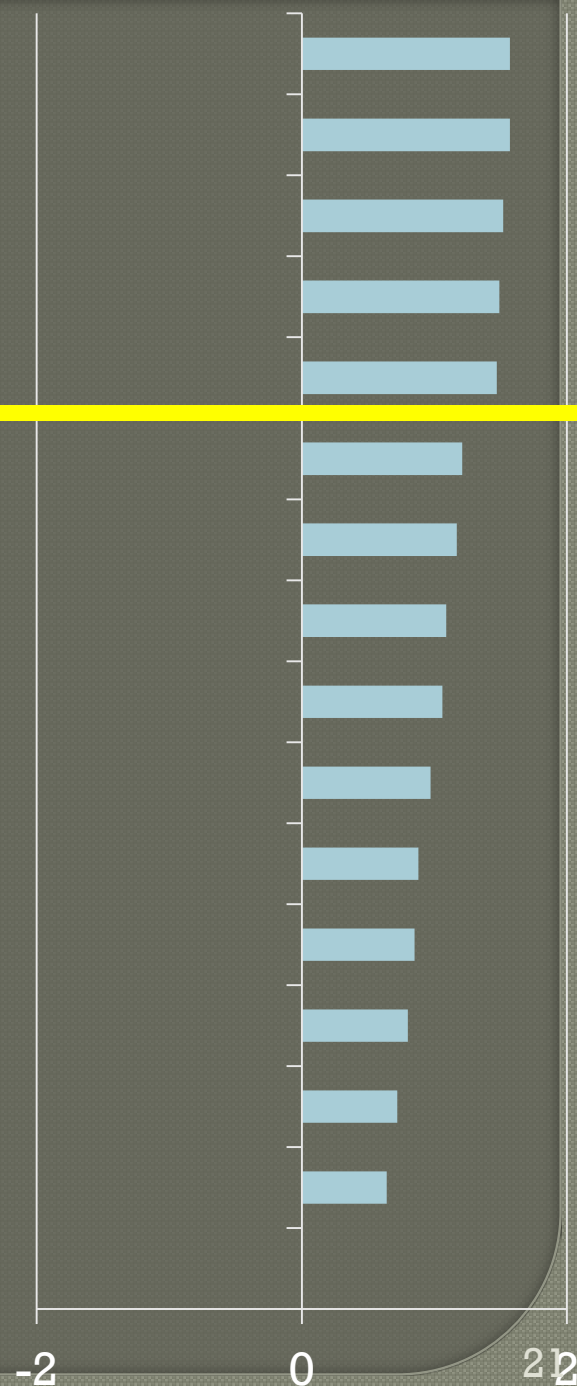
Opportunity to hunt sheep every year

Weather

Physical difficulty of the hunt

Opportunity to harvest a sheep (any ram)

■ Nonresident



-2

0

2

Important factors

(Very important + important)

== Statistically similar

Residents	Commercial operators	Nonresident
Legal rams seen 93% ==	Legal rams seen 97% ==	Legal rams seen 97% ==
Seclusion 92% Crowding 92% ==	Opp. to harvest full-curl 97% ==	Opp. to harvest full-curl 96% ==
# of sheep seen 90% ==	Opp. to hire comm. Operator 94% ==	# of sheep seen 96% ==
Hunt every year 88% ==	Seclusion 92% Crowding 91% ==	Seclusion 94% Crowding 92% ==
Opp. to harvest full-curl 88% ==	Harvest success 91% ==	Size of ram 85% ==
	# of sheep seen 91% ==	Harvest success 84% ==

What's most important?

○ All groups:

- Seeing sheep (especially legal full curls) while in seclusion from other hunters.
- Followed by a successful harvest

○ Residents:

- Hunting every year is equally as important

○ Nonresidents:

- Size of the ram harvested is equally as important

How do hunters define “crowding”?

- Question: How tolerable or intolerable are the following levels of crowding while sheep hunting?

Very tolerable(-2)	Somewhat tolerable(-1)	Neither(0)	Somewhat intolerable(1)	Very intolerable(2)
---------------------------	-------------------------------	-------------------	--------------------------------	----------------------------

Crowding tolerance levels?

Other hunters interrupt my stalk on a sheep

I can't get away from other hunters

I see multiple hunters and camps while hunting

I have to change where I hunt to avoid other hunters

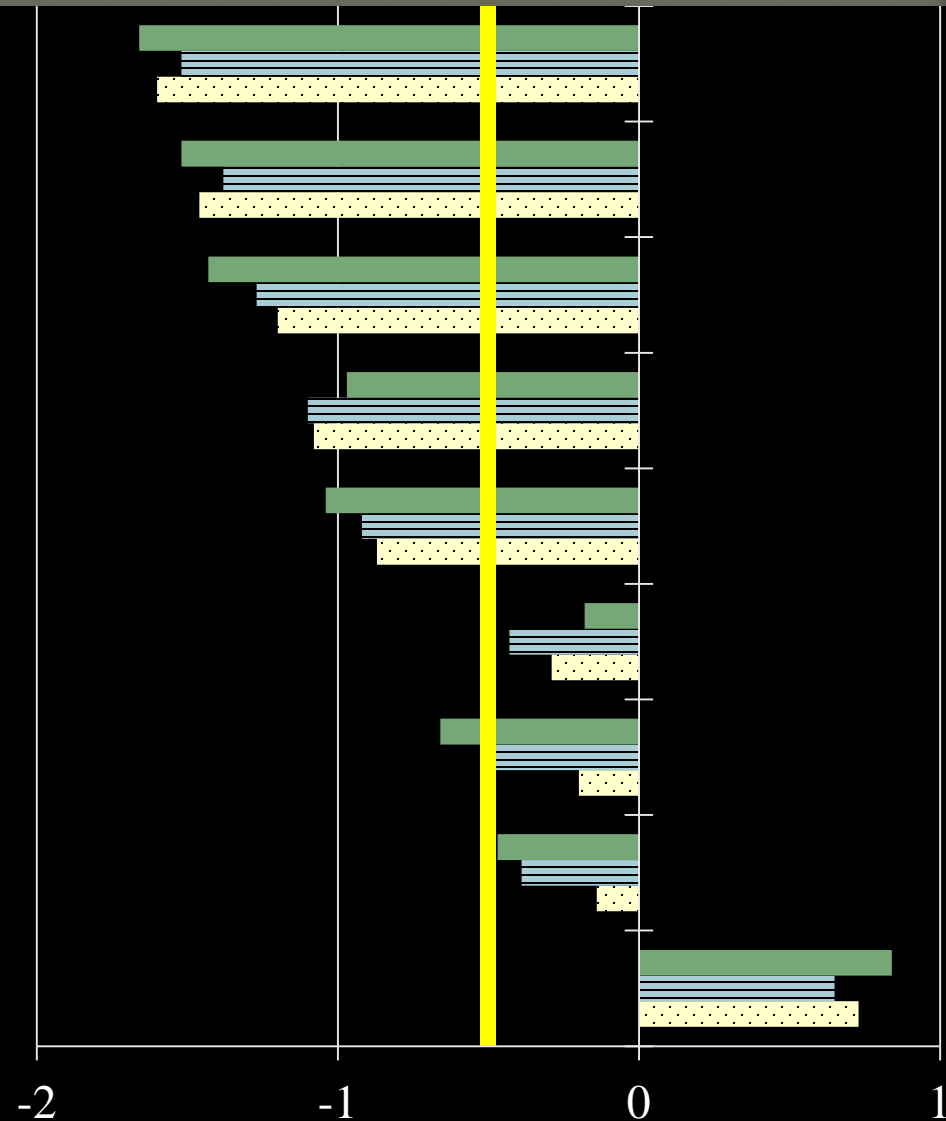
I see a small plane searching for sheep in the area I'm hunting

I see a small plane on the ground in the area I'm hunting

I see another hunter camp while hunting

I see another hunter while hunting

I see a small plane in the air passing over the area I'm hunting



■ Commercial Operators

≡ Nonresidents

▣ Residents

Part 2

- Why is there a sheep hunter problem?

Question

- If you feel sheep hunter crowding and competition is a problem, to what extent do you agree or disagree with the following causes of competition and crowding?

Strongly agree	Agree	Neither	Disagree	Strongly Disagree	Unsure
-----------------------	--------------	----------------	-----------------	--------------------------	---------------

Response options

- Fewer legal rams
- **More** resident hunters
- **More** nonresident hunters
- **More** professional guides
- **More** profession transporters/air taxis
- **More** Alaska residents with planes
- Decline in sheep distribution
- Drawing areas displacing hunters to general harvest areas
- Decline in hunter ethics

Response options (interpretation)

- Fewer legal rams
- **Number** or **Influence of** resident hunters
- **Number** or **Influence of** nonresident hunters
- **Number** or **Influence of** professional guides
- **Number** or **Influence of** profession transporters/air taxis
- **Number** or **Influence of** Alaska residents with planes
- Decline in sheep distribution
- Drawing areas displacing hunters to general harvest areas
- Decline in hunter ethics

Most agreed upon causes of crowding (strongly agreed + agreed)

== Statistically similar

Residents	Commercial operators	Nonresident
Fewer legal rams 83% ==	Transporters/air taxis 88% ==	Fewer legal rams 88%
Nonresidents 83% ==	Guides 78% ==	Residents 68% ==
Guides 82% ==	Fewer legal rams 77% ==	Guides 68% ==
Transporters/air taxis 76% ==	Residents 68% ==	Decline in sheep distribution 66% ==

What are you satisfied and dissatisfied with?

- Question: How satisfied or dissatisfied are you with the following current sheep management and regulation characteristics?

Very satisfied	Somewhat satisfied	Neither	Somewhat dissatisfied	Very dissatisfied
-----------------------	---------------------------	----------------	------------------------------	--------------------------

Characteristics

Full-curl regulation

Length of sheep hunting season (Aug. 10 – Sep. 20)

Horn sealing requirements

Statute requiring nonresidents to hire professional guides

Sheep population size

Regulation of professional transporters

Allocation of tags to nonresident second-degree of kindred

Number of general harvest hunts

Number of other hunters seen while sheep hunting

Number of drawing hunts

Number of registration/subsistence hunts

Level of enforcement in the field


Allocation of tags to nonresident hunters

Regulation of professional guides

Factors most satisfied with (very satisfied + satisfied)

Residents	Commercial operators	Nonresident
Length of season 76%	Nonresident Guide- requirement 94%	Length of season 80%
Nonresident Guide- requirement 75%	Length of season 79%	Full-curl regulation 62%
Full-curl regulation 72%	Full-curl regulation 67%	Horn-sealing requirement 67%
Horn-sealing requirement 52%	Horn-sealing requirement 55%	Sheep population size 51%

Factors most dissatisfied with (very dissatisfied + dissatisfied)

Residents	Commercial operators	Nonresident
Nonresidents 60%	Regulation of transporters 81%	
Regulation of guides 56%	Allocation of tags to 2 nd degree kindred 60%	
# hunters seen while hunting 44%	Sheep population size 53%	
	Regulation of guides 46%	
	# hunters seen while hunting 44%	

Problem vs. No problem

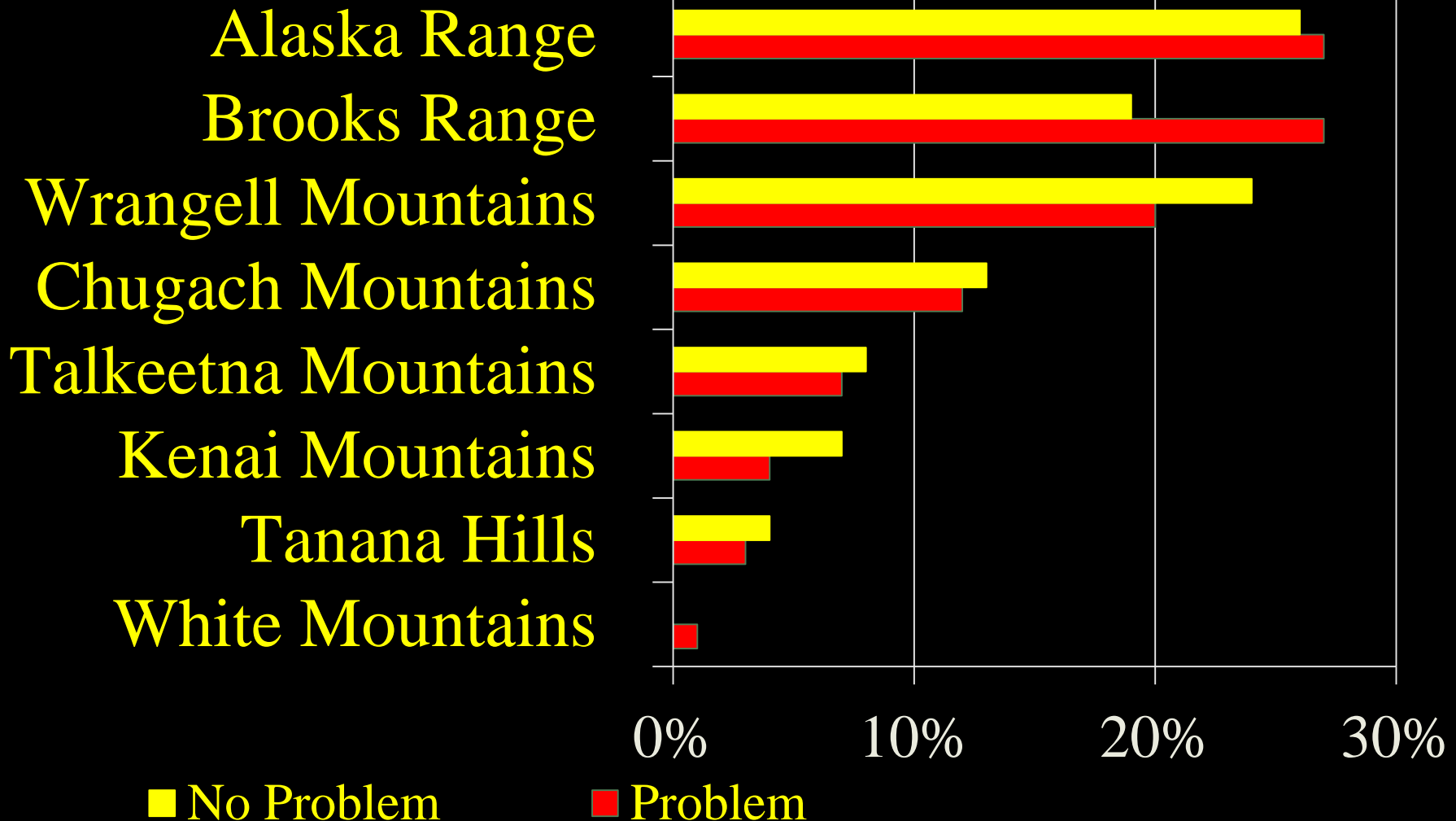
- Explore differences in resident hunter characteristics among groups
 1. **Problem Group:** Hunters that agreed or strongly agreed sheep hunter competition and crowding is a problem
 2. **No Problem Group:** Hunters that neither agreed or disagreed, disagreed, strongly disagreed, or were unsure if sheep hunter competition and crowding is a problem



Hunting, Harvest, and Demographic Characteristics?

	Problem	No problem	
Number of times hunted during the last 5 years	1.8 years	1.5 years	★
Number of sheep harvested during last 5 years	0.7 sheep	0.6 sheep	
Harvest success rate during last 5 years	0.35	0.33	
Year started sheep hunting	1998	1999	
Number of years sheep hunted	10 yrs	7 yrs	★
Age of respondent	46 yrs old	49 yrs old	★
Length of Alaska residency	26 years	26 years	
Household income in 2013	\$75-\$100K	\$75-\$100K	36

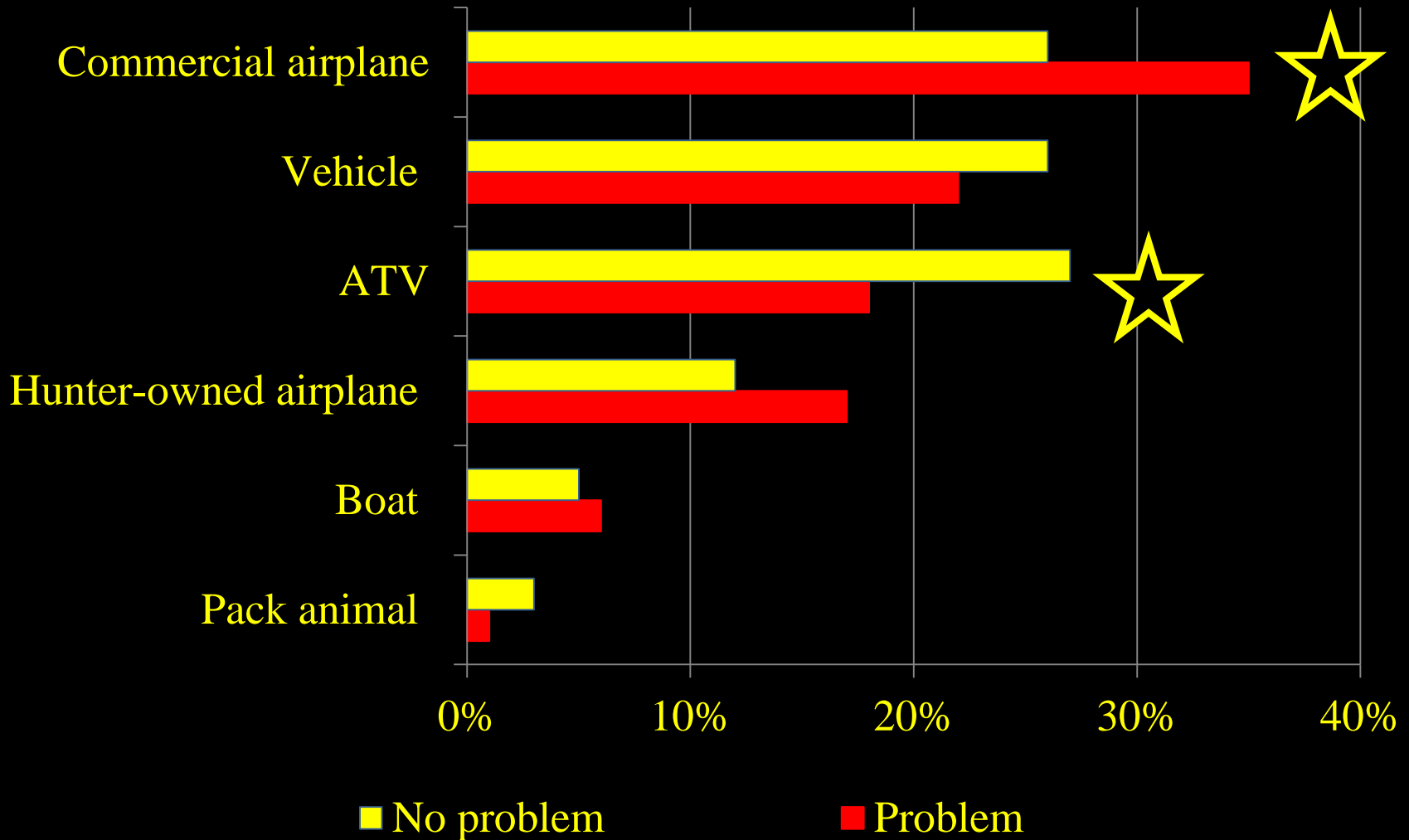
Most important mountain range for sheep hunting (statistically similar)



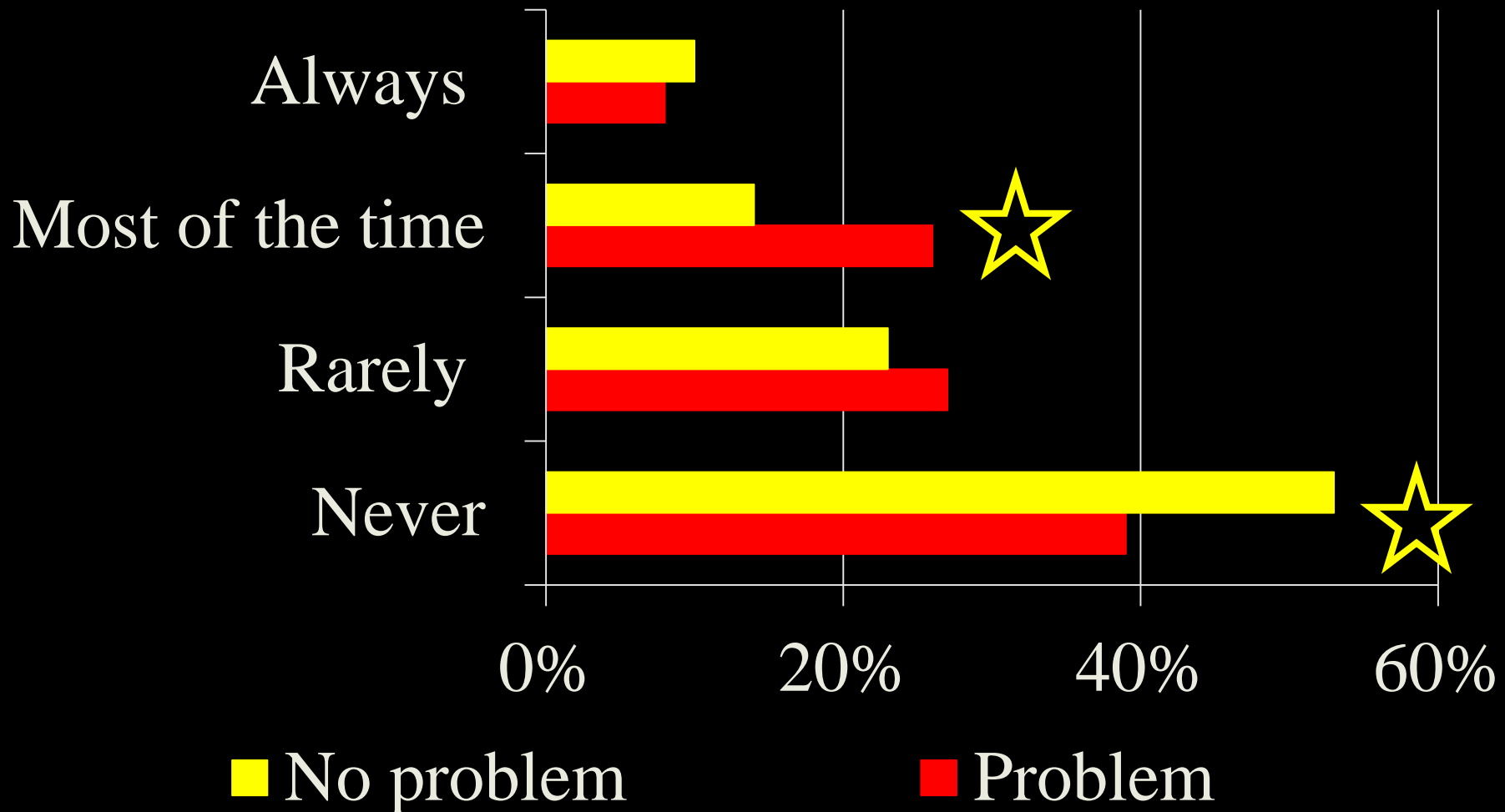
Note

- Variability of types of hunts and hunter densities varies within mountain range.
- Smaller spatial scale (GMU subunit or special management area) likely needs to be evaluated to look at the effects of location.

Mode of transportation to hunting area?



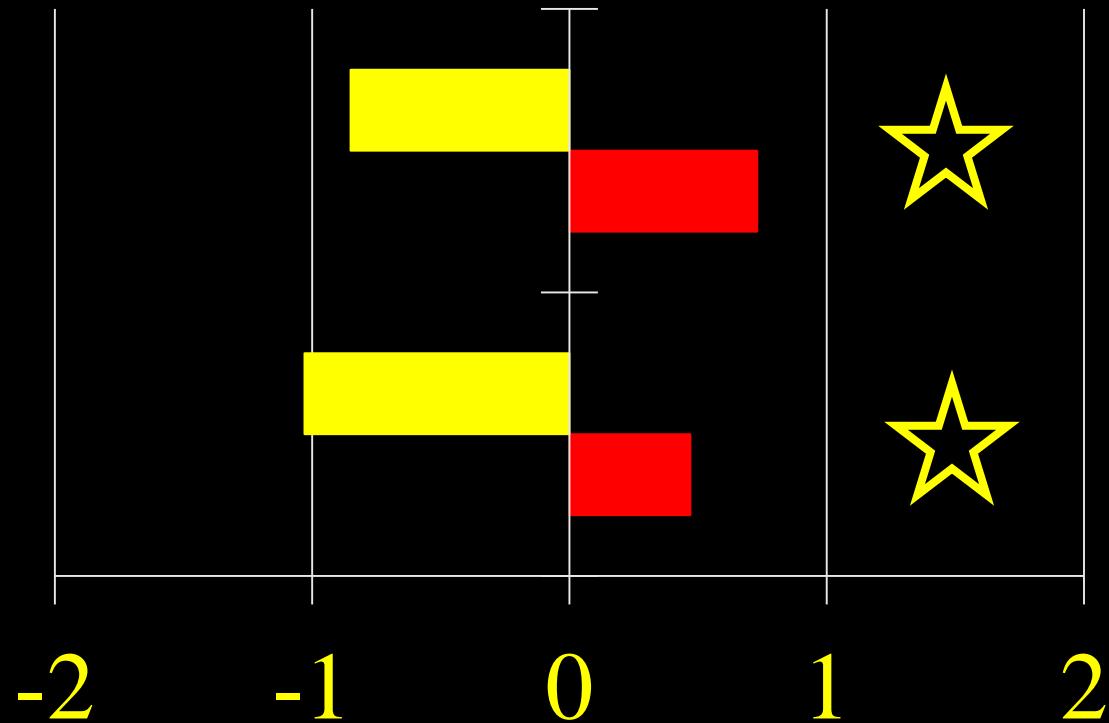
Transporter & air taxi use?



Too much harvest pressure on sheep populations

In the range most important to you*

In Alaska overall*



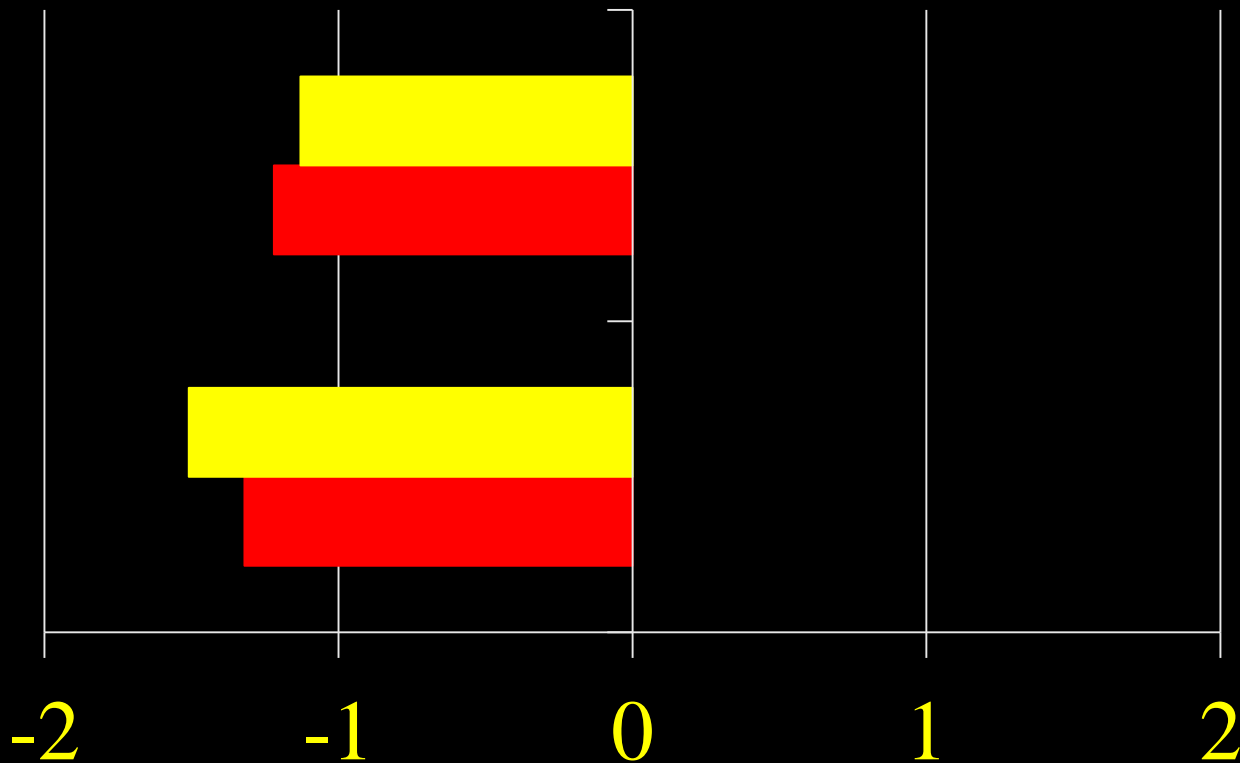
■ No problem

■ Problem

Perceptions of sheep population change

In the range most important to you

In Alaska overall



■ No problem

■ Problem

Part 3

● How might sheep hunting be improved?

Hunters and commercial operators were asked about approval or disapproval of potential changes to:

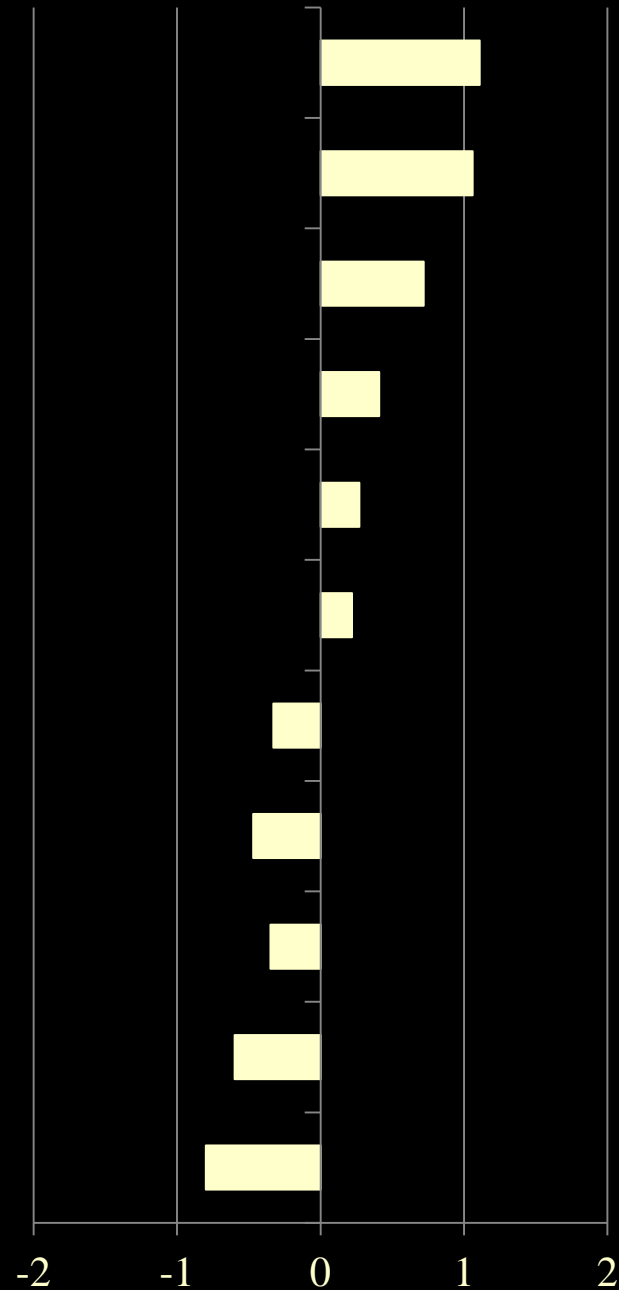
- Timing and length of the sheep hunting season
- Same-day airborne regulation
- Special hunts
 - Non-motorized, youth, trophy, etc...
- Characteristics of drawing hunts
- Permit allocation and tag fees

Approval or disapproval of potential changes?

- Question: To what extent do you approve or disapprove of the following changes to reduce sheep hunting pressure, competition, and crowding?

Strongly approve(-2)	Somewhat approve(-1)	Neither(0)	Somewhat disapprove(1)	Strongly disapprove(2)
-----------------------------	-----------------------------	-------------------	-------------------------------	-------------------------------

- Reduce tag allocation to guided nonresidents
- Increase nonresident tag fees
- Reduce tag allocation to nonresident kin
- Prohibit plane-spotting sheep during hunting season
- Reduce motorized access
- More drawing hunts
- Increase resident tag fees
- After harvest, must wait 3 years to hunt sheep again
- No changes should be made
- Limit hunters to 1 sheep tag every 3 years
- Reduce hunting season length



■ Resident

Reduce motorized access

After harvest, must wait 3 years to hunt sheep again

More drawing hunts

Prohibit plane-spotting sheep during hunting season

Increase resident tag fees

Limit hunters to 1 sheep tag every 3 years

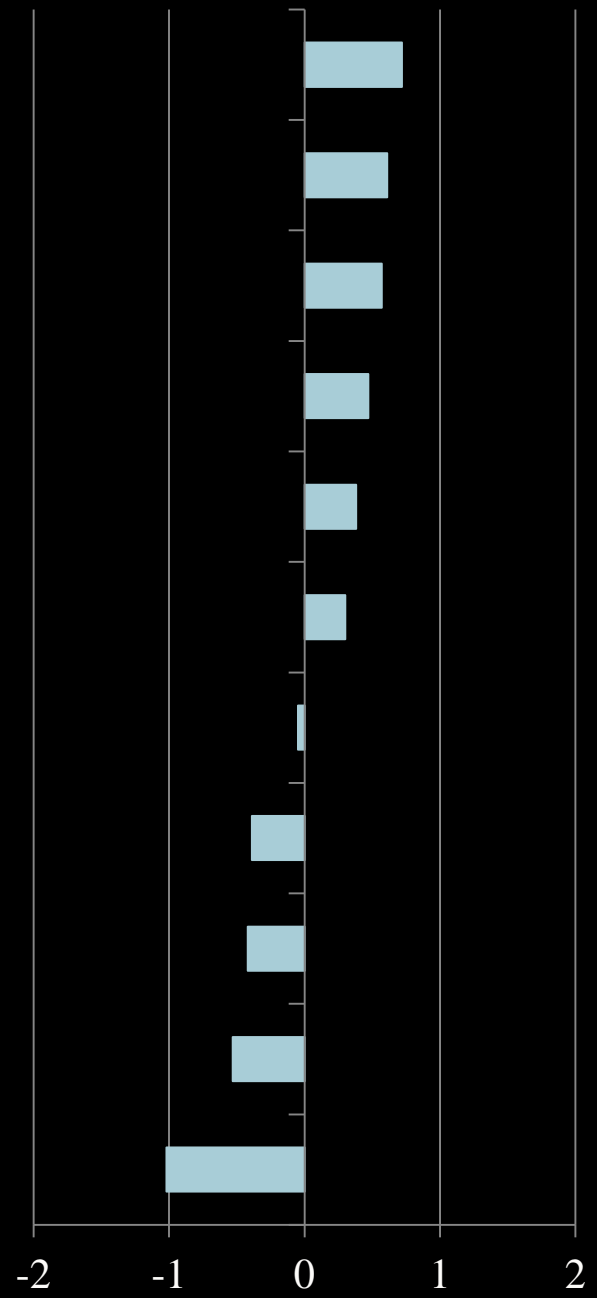
No changes should be made

Reduce tag allocation to nonresident kin

Reduce hunting season length

Increase nonresident tag fees

Reduce tag allocation to guided nonresidents



■ Nonresident

Increase resident tag fees

After harvest, must wait 3 years to hunt sheep again

Reduce tag allocation to nonresident kin

Increase nonresident tag fees

Limit hunters to 1 sheep tag every 3 years

Prohibit plane-spotting sheep during hunting season

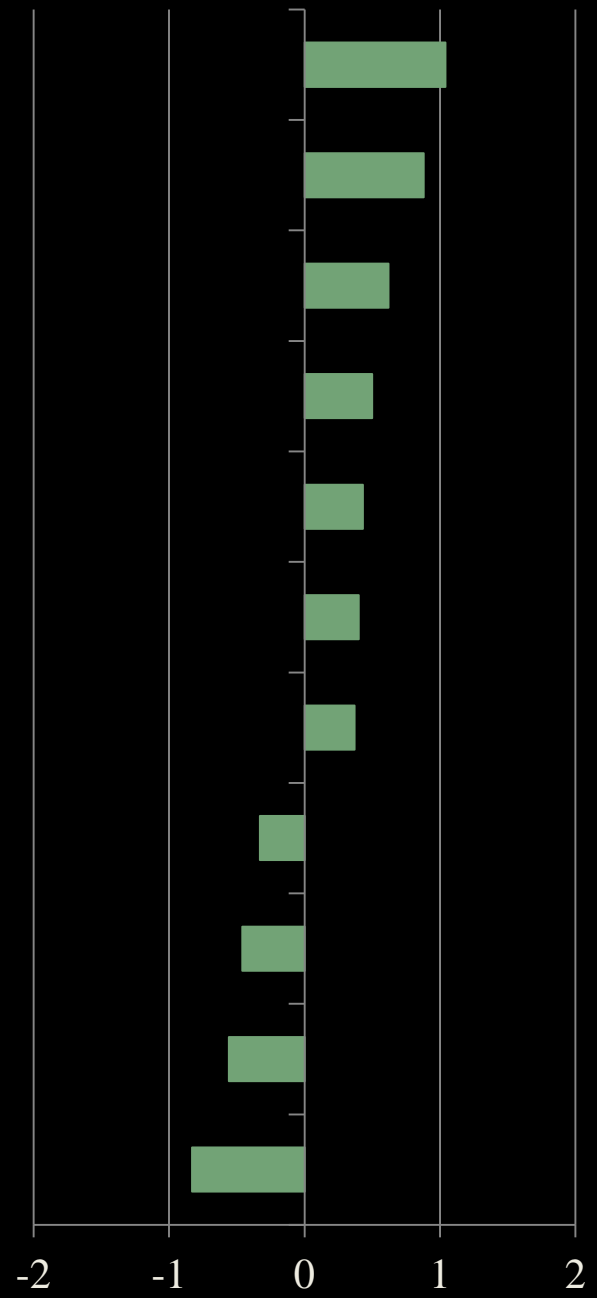
Reduce motorized access

More drawing hunts

Reduce hunting season length

No changes should be made

Reduce tag allocation to guided nonresidents



■ Commercial operators

Potential changes receiving most approval (Strongly approve + approve)

Residents	Commercial operators	Nonresident
Reduce # of permits to nonresidents 77%	Increase resident tag fees 74%	After harvesting a sheep, wait 3 years to hunt 74%
Increase nonresident tag fees 73%	After harvesting a sheep, wait 3 years to hunt 74%	Reduce motorized access 62%
Reduce permit allocation to nonresident hunting with kin 64%	Reduce permit allocation to nonresident hunting with kin 63%	More drawing hunts 60%
Prohibit plane-spotting of sheep 53%	Increase nonresident tag fees 62%	Limit hunters to 1 sheep tag every 3 years 54%
	Limit hunters to 1 sheep tag every 3 years 60%	Prohibit plane-spotting sheep 52%
	Prohibit plane-spotting sheep 59%	Increase resident tag fees 47%

Potential changes receiving most disapproval (Strongly disapprove + disapprove)

Residents	Commercial operators	Nonresident
Reduce hunting season length 66%	Reduce permit allocation to guided nonresident 67%	Reduce permit allocation to guided nonresidents 71%
Limit hunters to 1 tag every 3 years 61%	Reduce hunting season length 58%	Increase nonresident tag fee 52%
Hunter must wait 3 years after harvesting a sheep 56%	More drawing hunts 54%	Reduce hunting season length 49%
Increase resident tag fees 49%	No changes should be made 49%	

Primary perceptions of causes of crowding and competition not included as response options

- Hunters and commercial operators agreed that “Regulation of Guides” was contributing to crowding and competition.
- BOG requested that questions exploring suggestions for improvement focus on issue that BOG could adequately address
- License & tag fees remained because of the more substantive connection between fees and ADF&G operations

Permit allocation and tag fees

Question	Resident	Nonresident	Commercial operator
Should limits be placed on allocation of sheep tags to nonresidents	Yes 88%	Yes 25%	Yes 39%
If yes, what % of total allocation should nonresidents receive	10%	25%	20%
Should Alaska residents pay for a sheep tag	Yes 40%	Yes 92%	Yes 87%
If yes, how much should a resident pay (med)	\$50	\$100	\$100
Should the price of a nonresident sheep tag change	Yes 77%	Yes 32%	Yes 57%
If yes, how much should a nonresident pay (med)	\$1000	<\$425 (33) \$750 (47)	\$500

Generalizing the survey

- Survey respondents were proportionally representative of where all resident sheep hunters reside (urban, rural) and choose to hunt (mountain range).
- Harvest success of respondents (35%) higher than average (25%).

Summary

- ◉ Do sheep hunters and commercial operators perceive a crowding problem?
 - **Yes**
- ◉ Is the level of crowding important to hunters and commercial operators?
 - **Yes**

Summary

- What is the perceived cause of the problem?
 - Conflict and competition among different interest groups
 - Not enough legal sheep to go around

Residents



Nonresident influence & regulation of guide and transporters

Nonresidents



Resident influence & regulation of guide

Commercial operators



Resident influence & regulation of guide and transporters

Summary

- Common characteristic among group perceiving a problem has been elusive.
- Perceptions may be more related to **expectations** than an individual demographic or behavioral characteristic

$$\text{Hunter Satisfaction} = \frac{\text{Expectations}}{\text{Experience}}$$

Quality vs. Quantity of sheep hunting opportunities

◉ Short-term fix:

- An increase in quality requires a decrease in quantity of one or more interest groups

◉ Long-term fix:

- Might (very speculative) be possible to maintain quantity while increasing quality
 - Potentially increase supply and distribution of legal rams to meet demand
- Reduce hunter and commercial operator expectations

Questions or Comments

- Funding was provided by ADF&G
- Thanks to all the hunters, guides, transporters, and air taxi operators that participated.
- A special thanks to focus group participants