

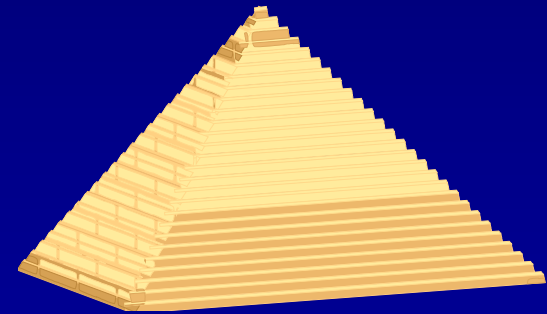


Random Draw



Bonus Point

Systems for Distributing Drawing Permits



Preference Point

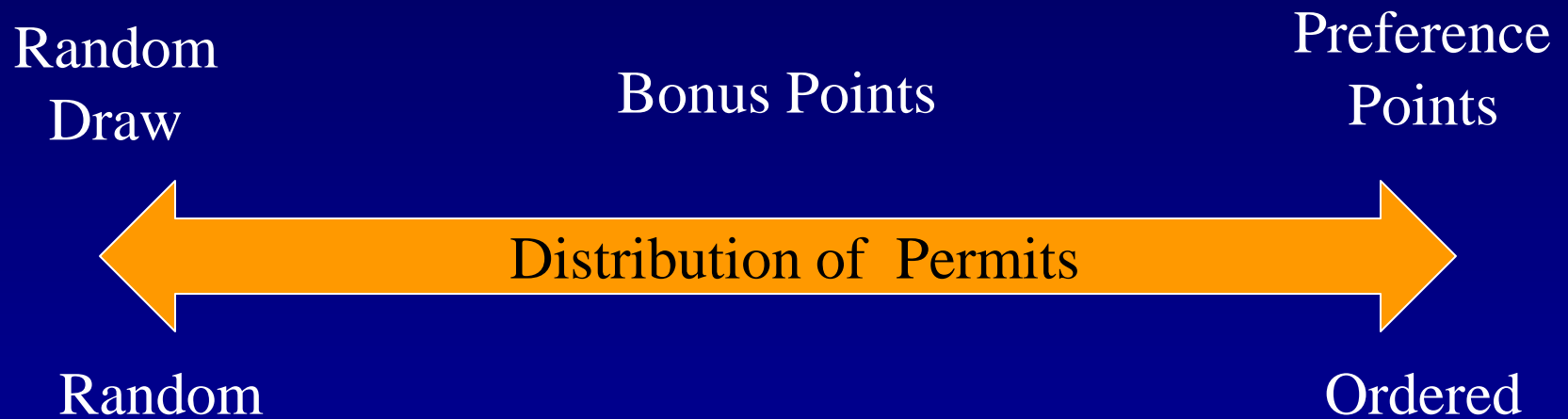
Hunter Desires / Concerns

Hunters desire a better chance to receive scarce drawing permits

- Some hunters believe a system that rewards perseverance is preferred

Fairness: some hunters receive scarce permits multiple times while others have never been drawn

Types of Selection Systems



Random Drawing



Put names in a “hat” and draw them out randomly to determine winners

No memory of previous year’s results

Relatively easy for hunters to understand

Random Drawing



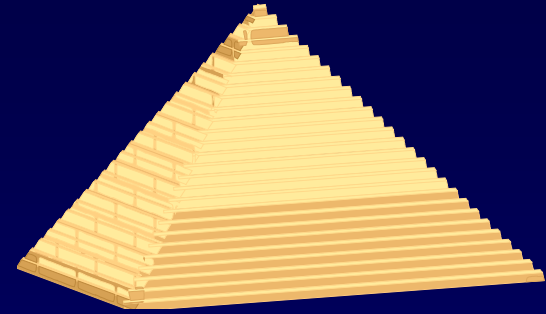
Pros

- Everyone has an equal chance each year
- No penalty to new / youth hunters
- Inexpensive to administer program

Cons

- Equal chance does not mean equal success

Preference Points

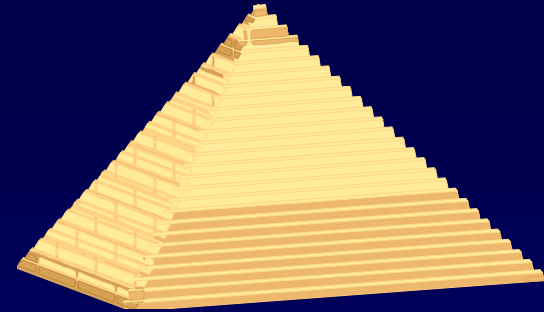


Points are awarded to hunters unsuccessful in previous drawings

Permits are awarded among applicants with highest number of points

Requires memory of drawing results from previous years

Preference Points



Pros

- Orderly distribution of hunting opportunity
- Rewards persistence

Cons

- May discourage new/youth hunters
- Complex rules – more difficult to understand
 - Points for species or points for hunts
 - Disqualification for non-participation
- More costly to administer

Bonus Points



Applicants are given additional opportunities to be drawn based on previously unsuccessful applications

Many formulas for defining “additional opportunity”

Requires memory of previous years

Bonus Points



Pros

- Rewards persistence
- Everyone has some chance to win – albeit unequal

Cons

- Persistence does not guarantee success
- May discourage new/ youth hunters
- Difficult to understand / predict success
- Costly to administer

Probability 101

A random drawing hunt has 10 permits available and 1000 hunters apply for the permits

- Probability of winning a permit can be expressed as:
 - $10/1000 = .01 = 1\%$
 - 1:100 -- means after 100 years of drawings from this group of hunters, on average a person would expect to be selected one (1) time

Proposed Preference Regulation

- Only apply to Bison and Sheep
- Bonus Points apply to all drawing hunts within the species
- All Bonus Points for a species go away after being drawn
- 50% by Random Lottery drawing and 50% by Bonus Point drawing
- Points awarded through Bonus Point drawing double each year not successful (1, 2, 4, 8, 16, etc.)
- Applicants lose their Bonus Points if they fail to apply for a species hunt for two consecutive years

Alaska's Situation – Drawing Hunt Statistics

Drawing hunts: ~ 400

Permits Available: ~ 7,500

Applicants (hunters): ~ 26,000

Applications: ~130,000

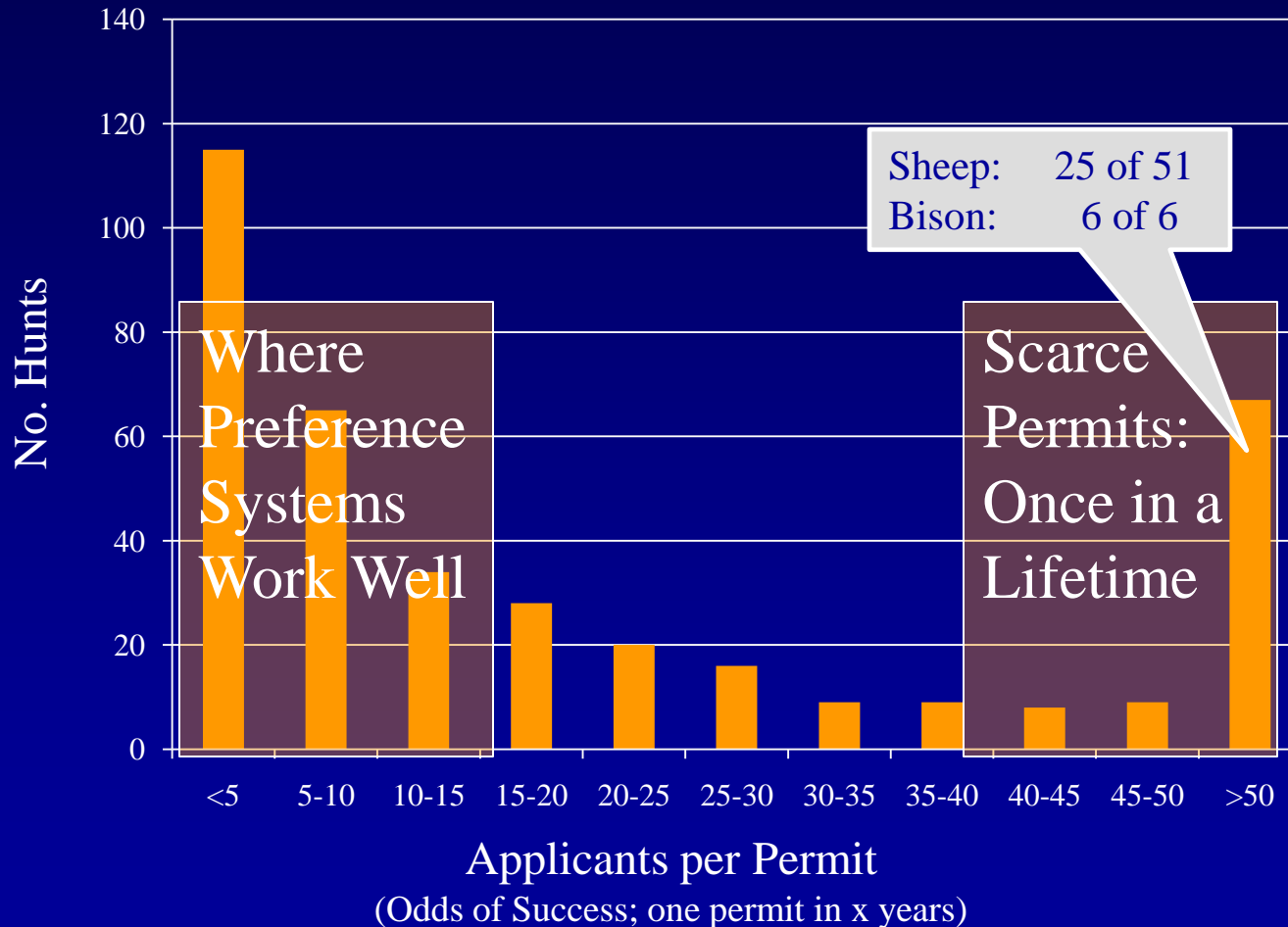
Ave. applications / hunter: 5

Odds of Success: average: 1:3.5 range: 1:1 - 1:500

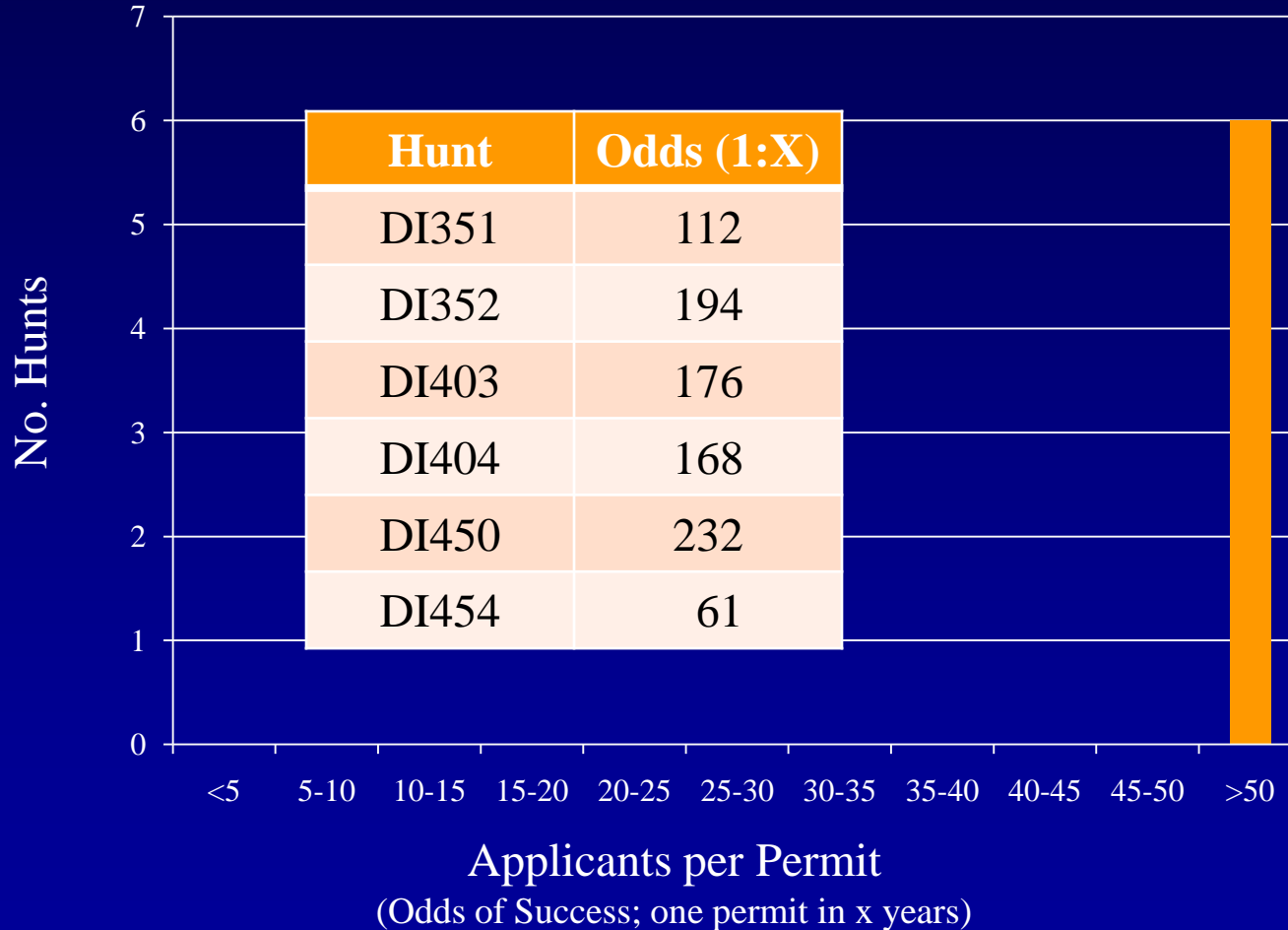
Drawing Hunts – Characteristics

Species	# Draw Hunts	Random Draw Odds
Bison	6	1:60 – 1:200
Brown Bear	103	1:1 – 1:175
Caribou	4	1:12 – 1:25
Elk	12	1:3 – 1:65
Goat	36	1:5 – 1:200
Moose	117	1:1 – 1:100
Muskoxen	5	1:16 – 1:65
Sheep	51	1:3 – 1:500

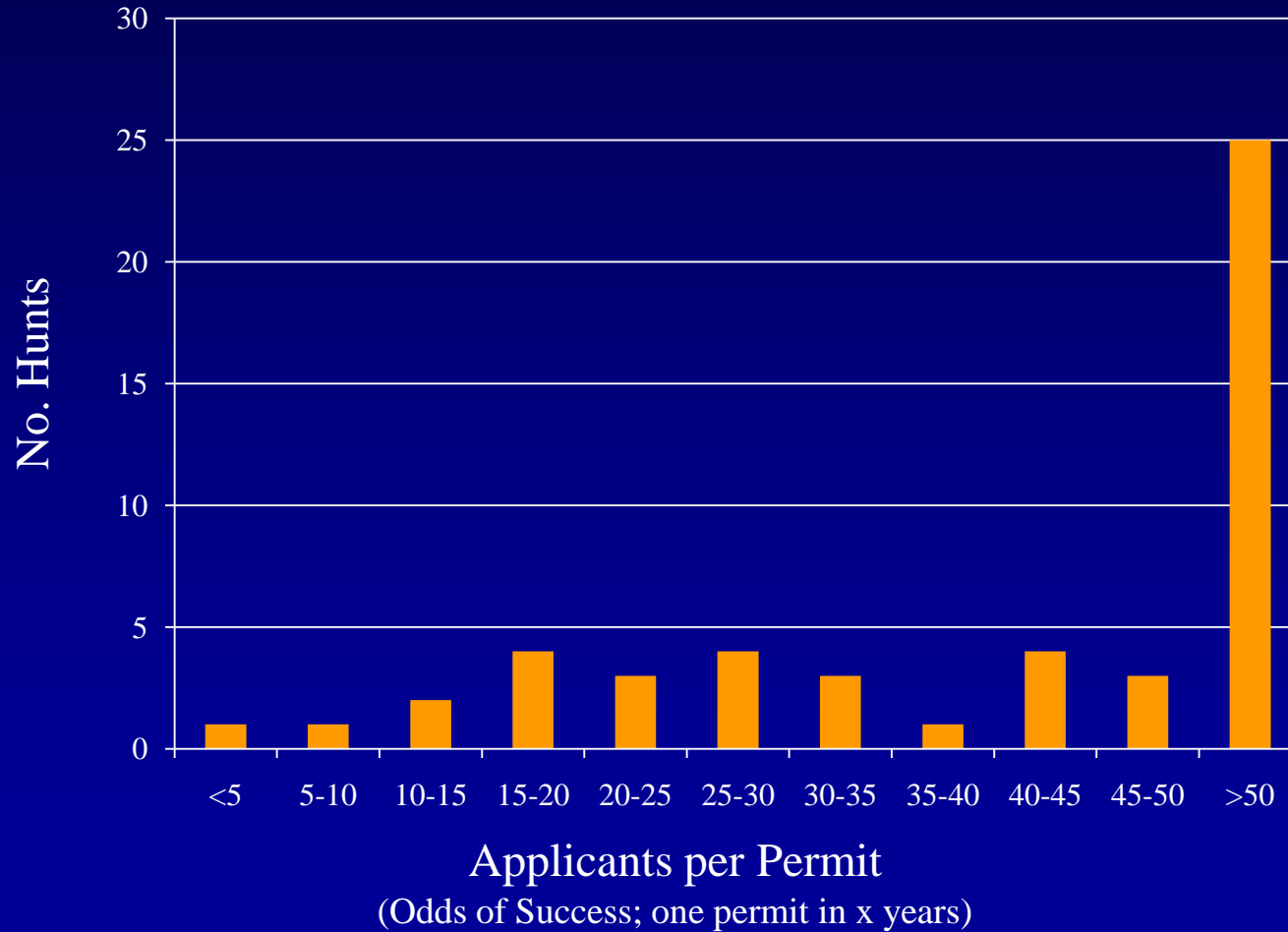
The Issue: Supply and Demand



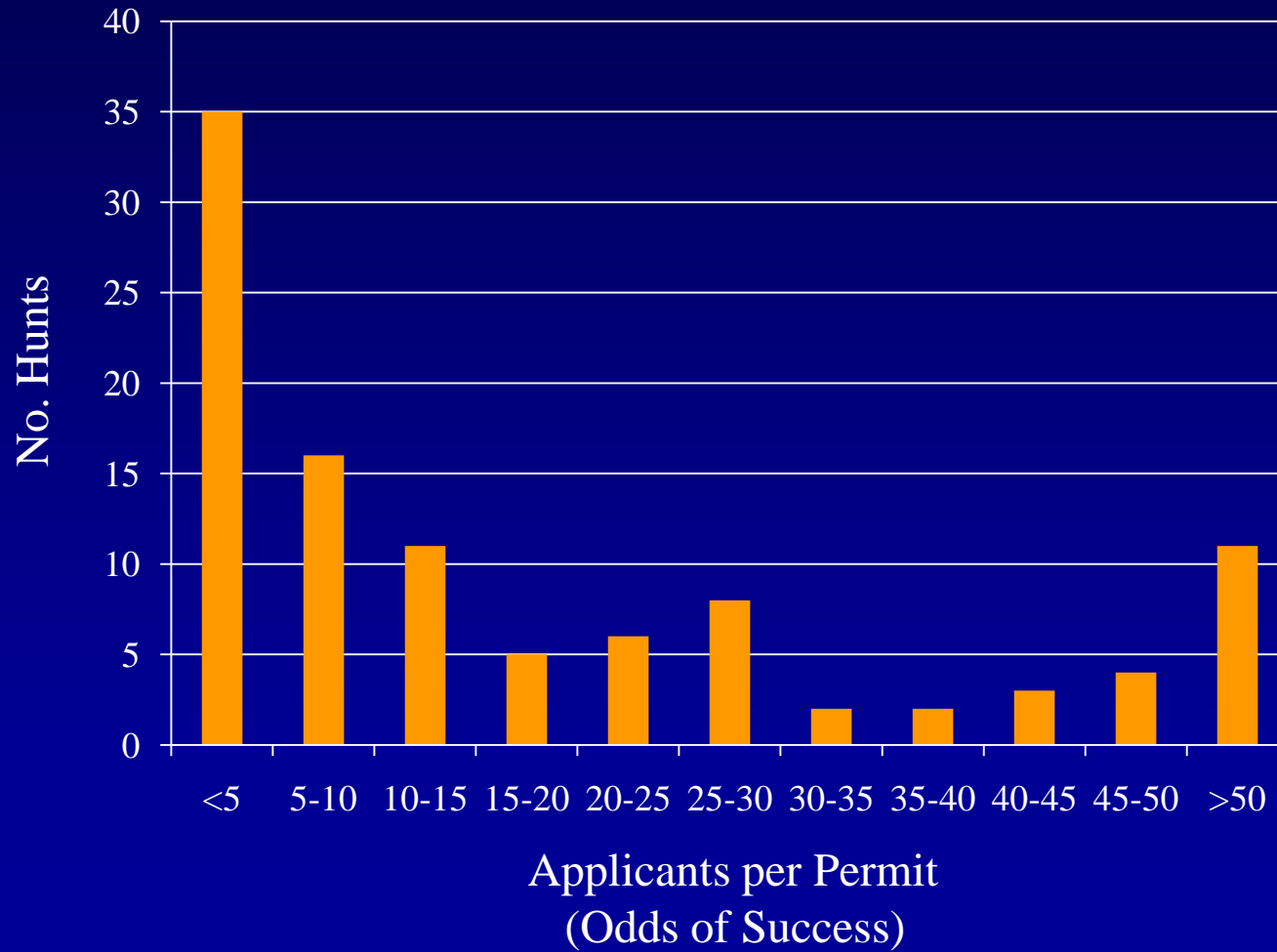
Bison



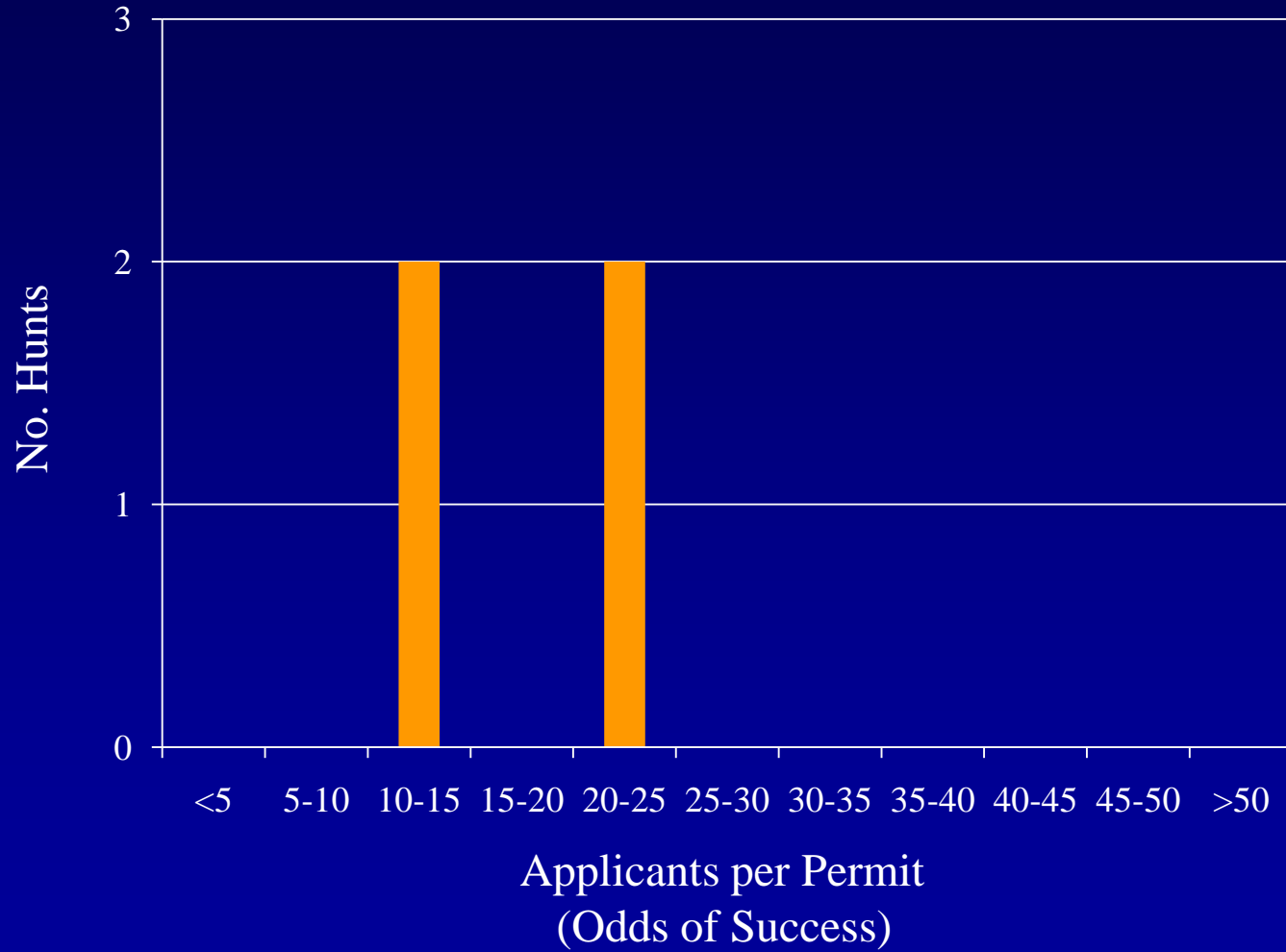
Sheep



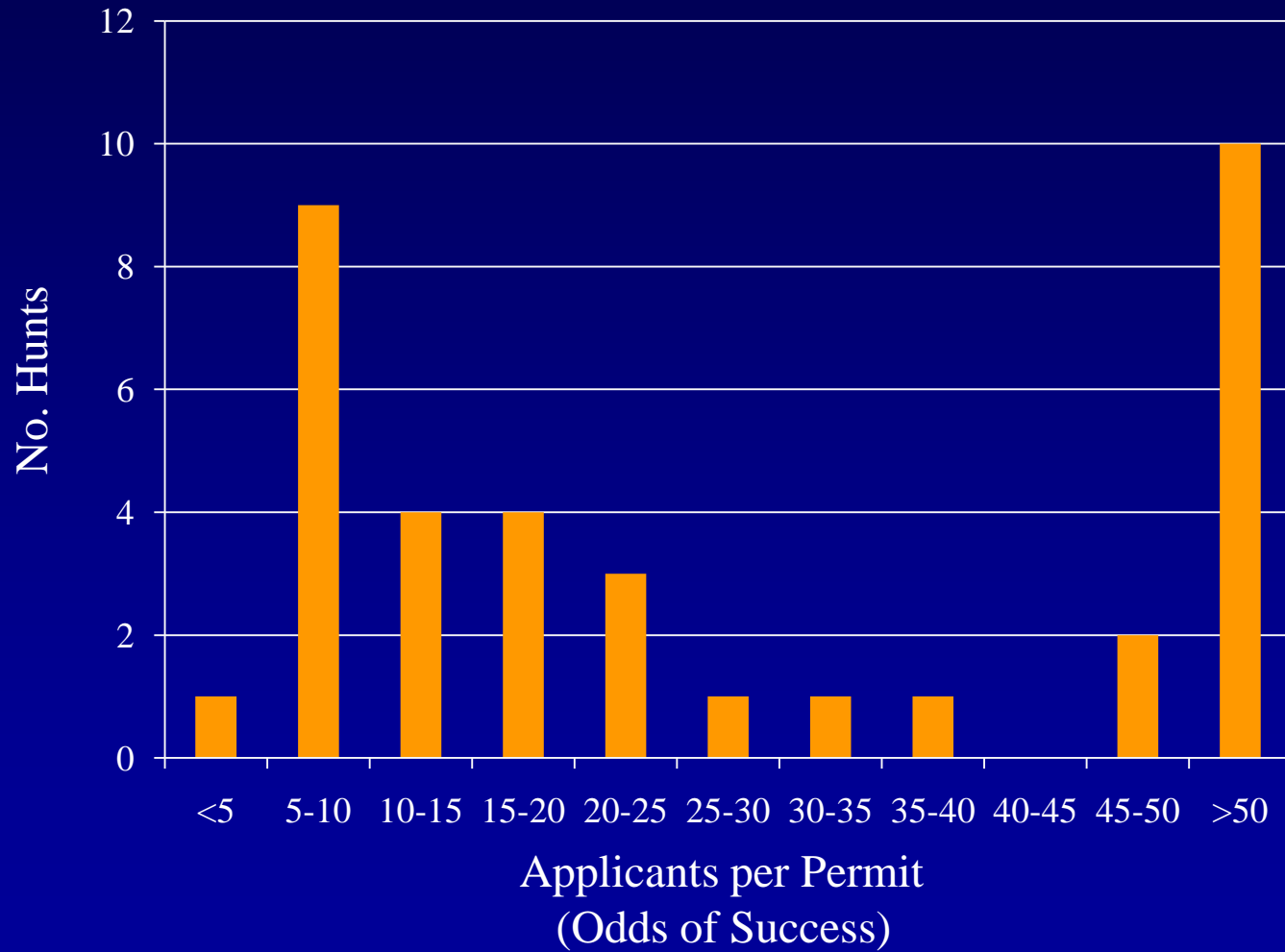
Brown Bears



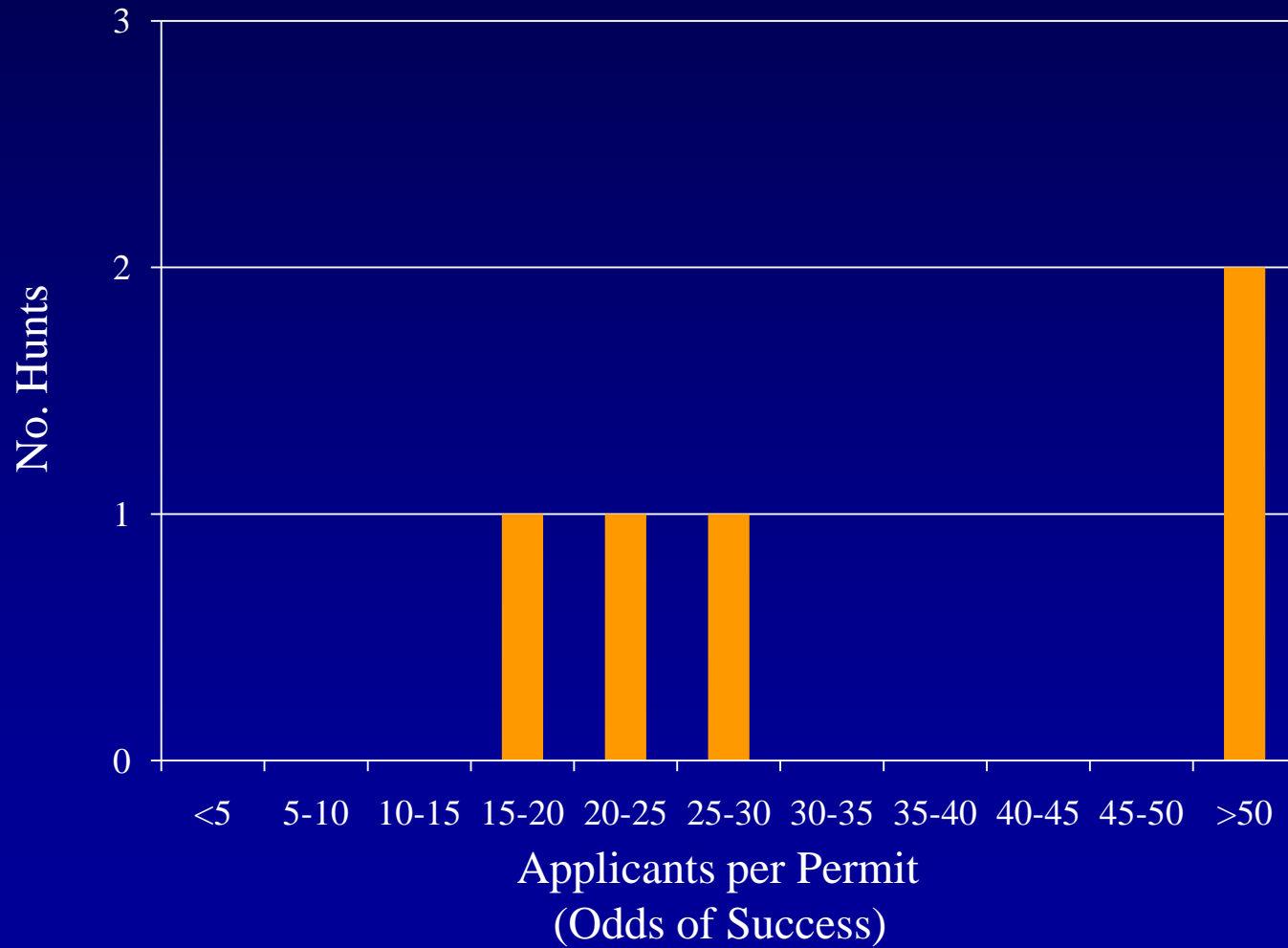
Caribou



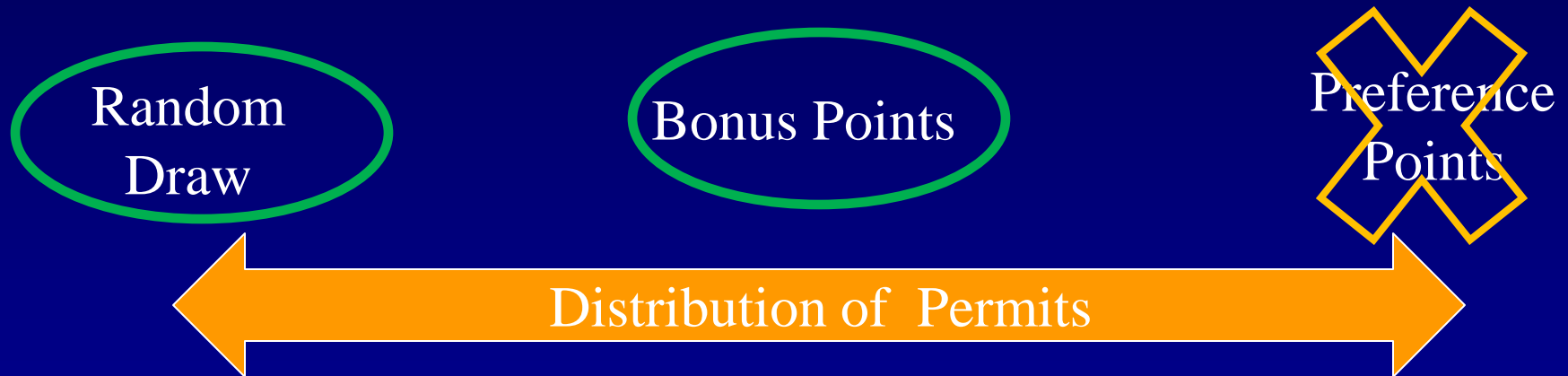
Goats



Muskoxen



Types of Selection Systems



Random

What about the impact of the formula used to structure a Bonus Point system?

Ordered

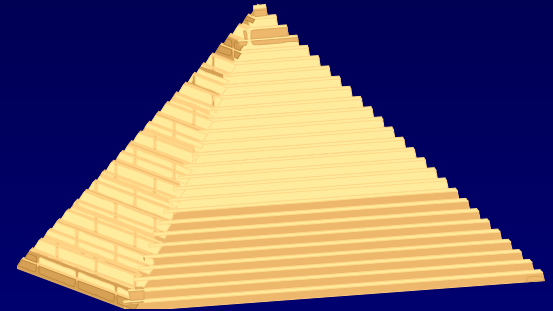
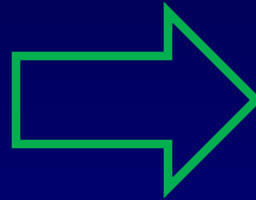
Delta Bison – Scenario

Assume: 5% attrition; 100 permits; points double each year

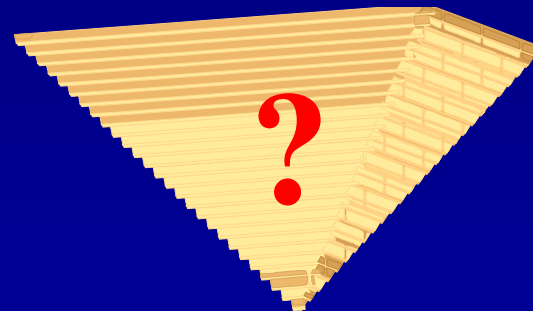
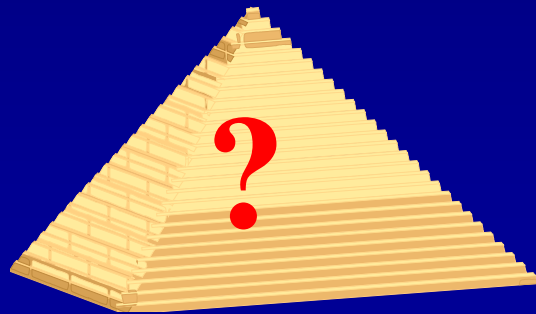
Year	Applicants	“Marbles” per Applicant	“Marbles in the Jar”
1	10000	1	10,000
2	9405	2	18,000
3	8840	4	35,000
4	8303	8	66,000
5	7793	16	125,000
10	5600	512	2,800,000
20	2590	524,288	1,300,000,000
30	790	536,870,912	423,000,000,000
35	180	17,179,869,184	3,000,000,000,000

Developing a Preference Pyramid for Delta Bison Hunt

Year 1 – 12,000 Applicants



After x years



Random Draw with Removal

Drawing Hunt	Odds of Success	Current Restrictions (after permit award)	Proportional Removal Period (70% of odds)
Delta Bison	1:170	10 years	120 years (once in a lifetime)
Tok Sheep	1:70	4 years	50 years (once in a lifetime)
Muskoxen	1:25	1 year	15 years

Bonus Point System: Summary

- Does not work well for hunts with low odds of success (1:40+)
- Amount of preference is dependent on formula used
- Using preference to favor persistence is a tradeoff with discouraging new/youth hunters
- Systems are complex and difficult for user to understand and evaluate

Hunter Desires / Concerns

Hunters desire a better chance to receive scarce drawing permits

- Some hunters believe a system that rewards perseverance is preferred

Fairness: some hunters receive scarce permits multiple times while others have never been drawn