

Application of Moose Breeding Biology in Harvest Management

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Introduction

In 2007 and 2008 Ecodomain Consulting with funding from the BC Habitat Conservation Trust Fund

conducted a review of moose management in the province related to both:

- the mountain pine beetle outbreak in the interior of British Columbia and
- the various harvest regimes practiced for moose in the province's seven moose management regions.

Objectives of presentation

This talk :

1. Describes the unique breeding behaviour of moose based on Anthony Bubenik's classic moose breeding behaviour studies,
2. Provides an example of the main findings of the HCTF moose harvest review between Cariboo & Omineca.
3. Compares population age class structures of several hypothetical sex ratios and
4. Makes recommendations for applying this understanding of moose breeding biology to a provincial moose management strategy.

Order of Priority

BC Policy states this order of priority:

1. conservation of the moose resource,
2. Aboriginal food and ceremonial harvest rights,
3. BC resident hunter harvests and
4. Guided non-resident harvest.

It is incumbent on the Wildlife Branch to apply the best management strategy available to ensure that all interests are met.

This can only be accomplished if the strategy considers the well-being of the moose resource first and not the demands of any particular sector that may conflict with this goal.

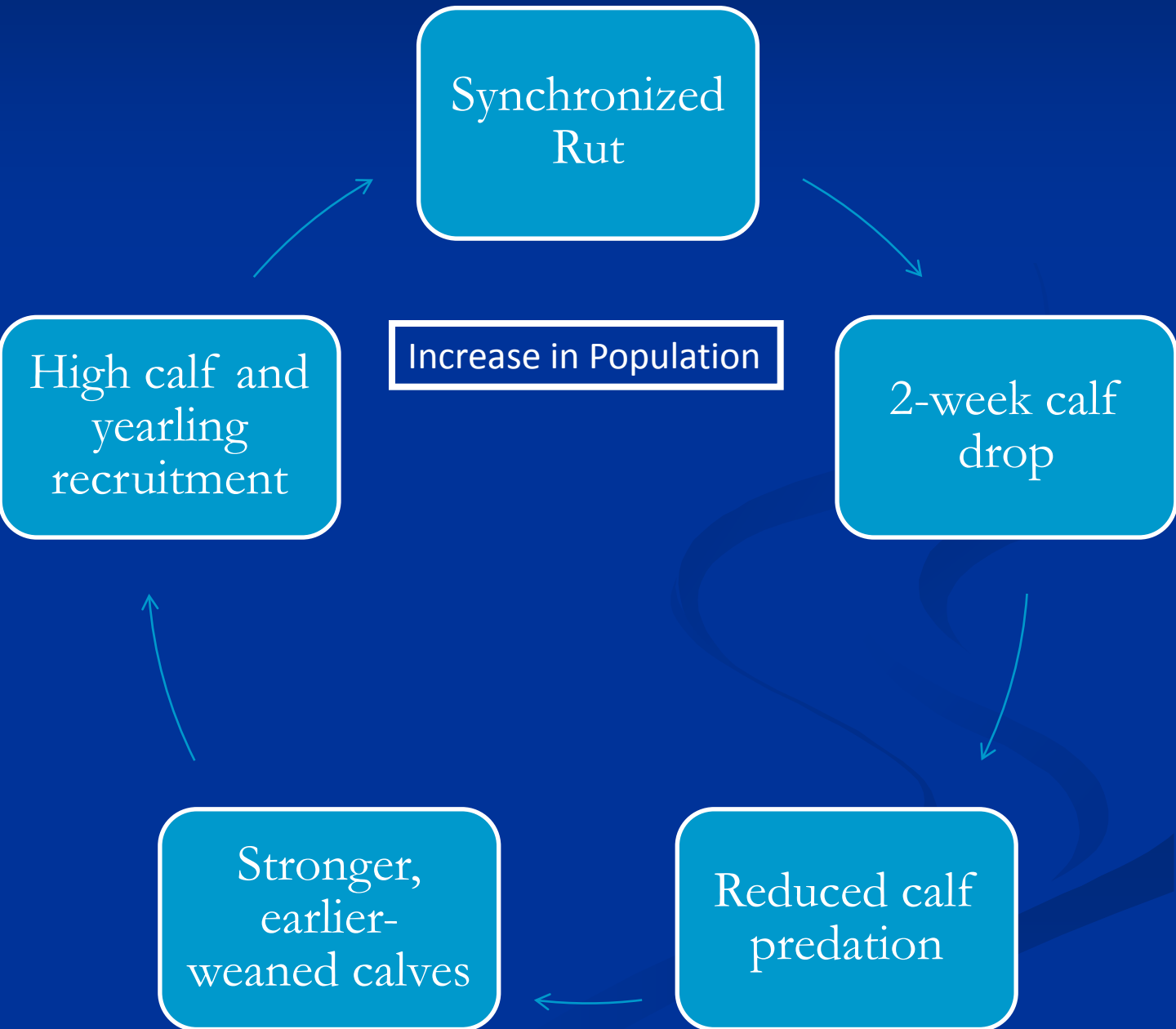
Moose Breeding Biology

- Moose, unlike elk and mule deer are serially monogamous or pair-bonders.
- A bull moose will tend a single cow for 4-6 days.
- Relative to their size, bull moose have the lowest sperm production of all ungulates.
- A cow that misses breeding does not come into heat for 28 days, thus extending the rut from four to six weeks or longer.

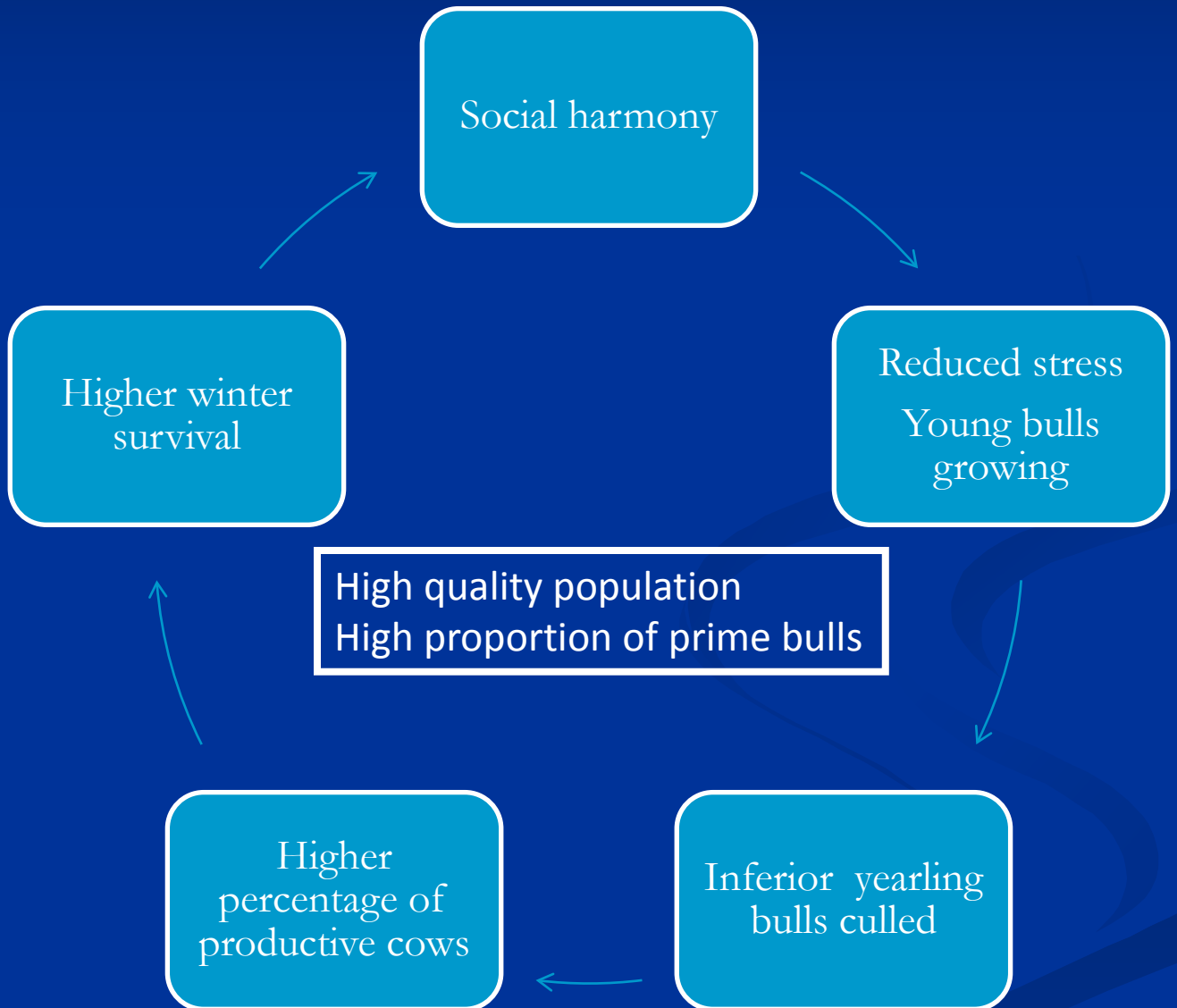
Thus, a high bull ratio is beneficial.

Positive Cycle

80–100 bulls : 100 cows

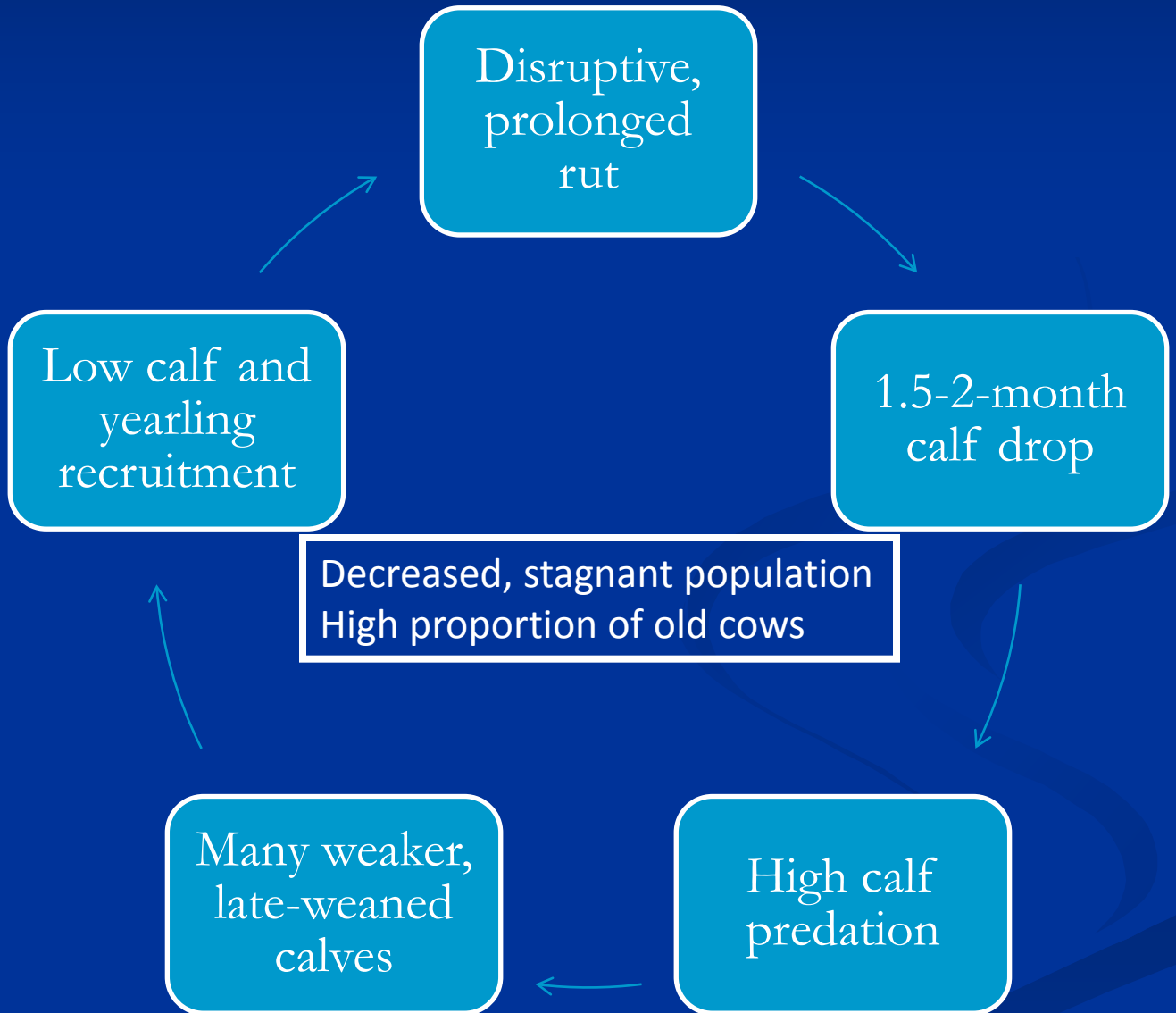


Other positive results

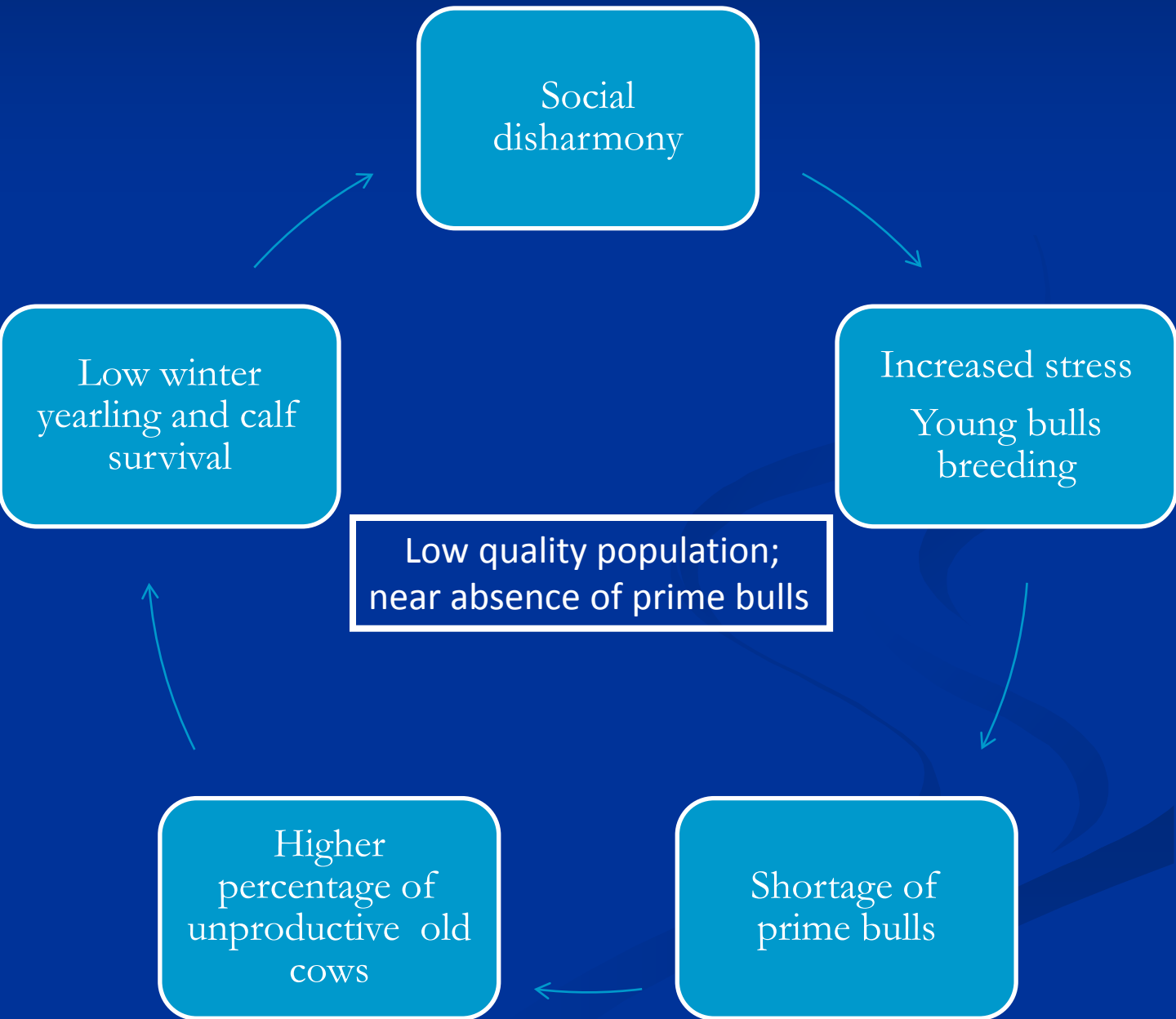


Negative Cycle

15-30 bulls : 100 cows



Other negative results



Harvest Principles for Moose

- All sexes and ages should be harvested to maintain a natural balance in the population.
- Closing antlerless seasons can have negative effects including exacerbating low calf survival
- Harvests and populations should be monitored on a regular basis

Comparison of Management

Cariboo

- Bulls only LEH
- GO quotas
- Unknown
Aboriginal
harvest of all ages
and both sexes

Omineca

- Bulls LEH
- GO quotas
- Cow/calf LEH
- Spike/fork GOS
- Calf GOS
- Unknown
Aboriginal
harvest of all ages
and both sexes

Table1. Changes effected in resident and non resident moose hunters and harvests in Region 5 Cariboo- Chilcotin and Region 7A Omineca, British Columbia based on annual averages between the first 12 and the last eight years of the 1981 to 2006 period. BC Hunter Sample and BC Guided Hunter Return data.

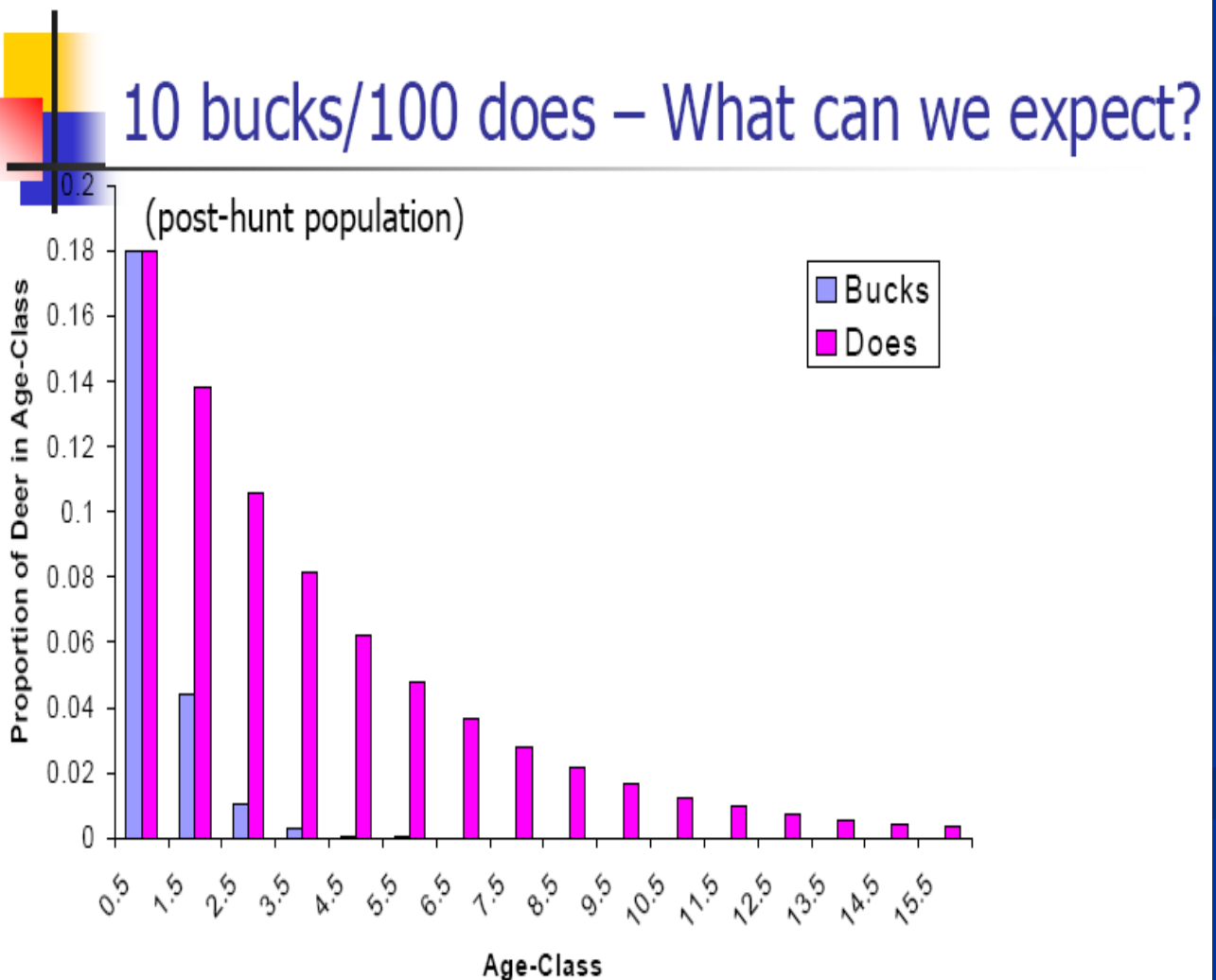
	Region 5 Cariboo- Chilcotin	Region 7A Omineca
No. Resident Hunters	Decreased by 70%	Increased by 3%
No. Resident Hunter Days	Decreased by 74%	Increased by 16%
No. Bulls Harvested	Decreased by 38%	Increased by 50%
No. Antlerless Harvested	Decreased by 98%	Decreased by 13.5%
No. Non-Resident Hunters	Decreased by 19%	Increased by 32%
No. NR Hunter Days	Decreased by 26%	Increased by 23%
No. Bulls Harvested	Decreased by 6%	Increased by 33%
No. Antlerless Harvested	Decreased by 27%	Increased by 2%

Integrating Biological & Human Dimensions of Wildlife Management

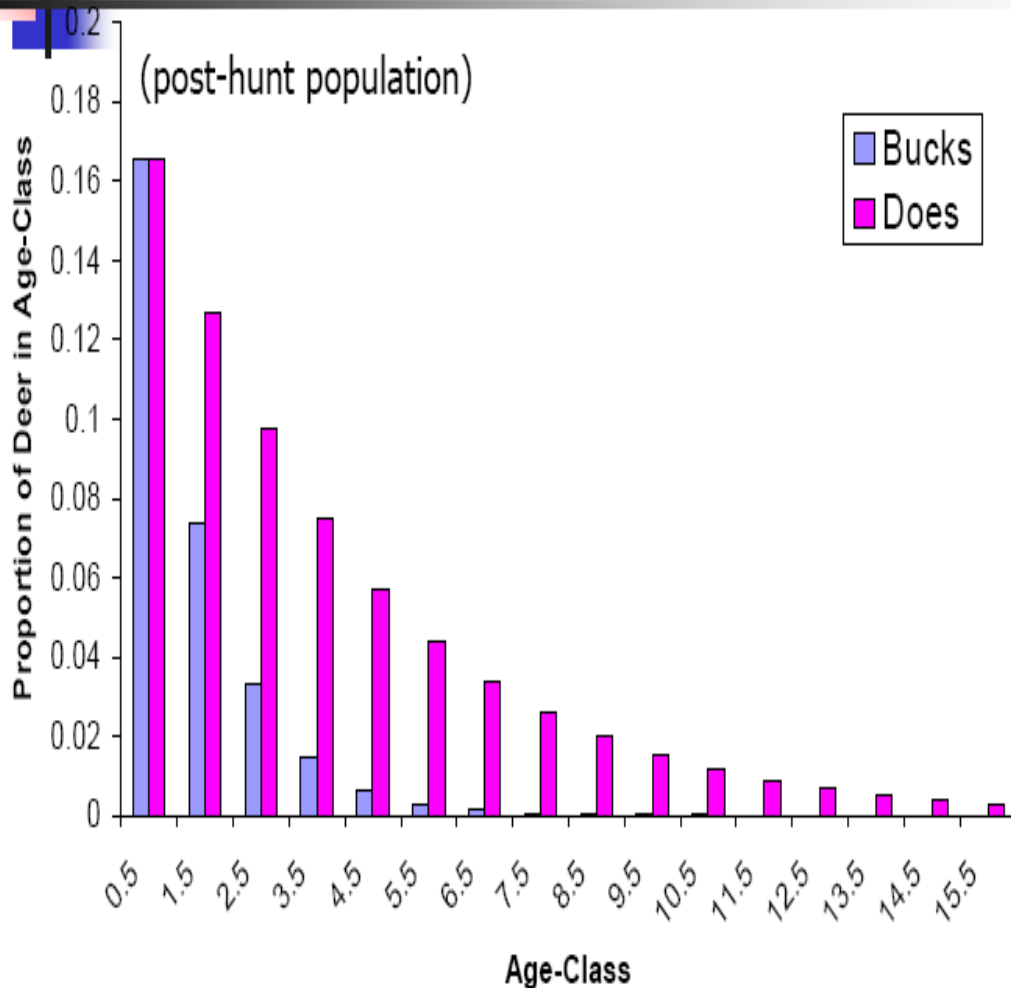
Presented at Cranbrook Regional Wildlife Meeting

Ian Hatter, BC Fish and Wildlife Branch.

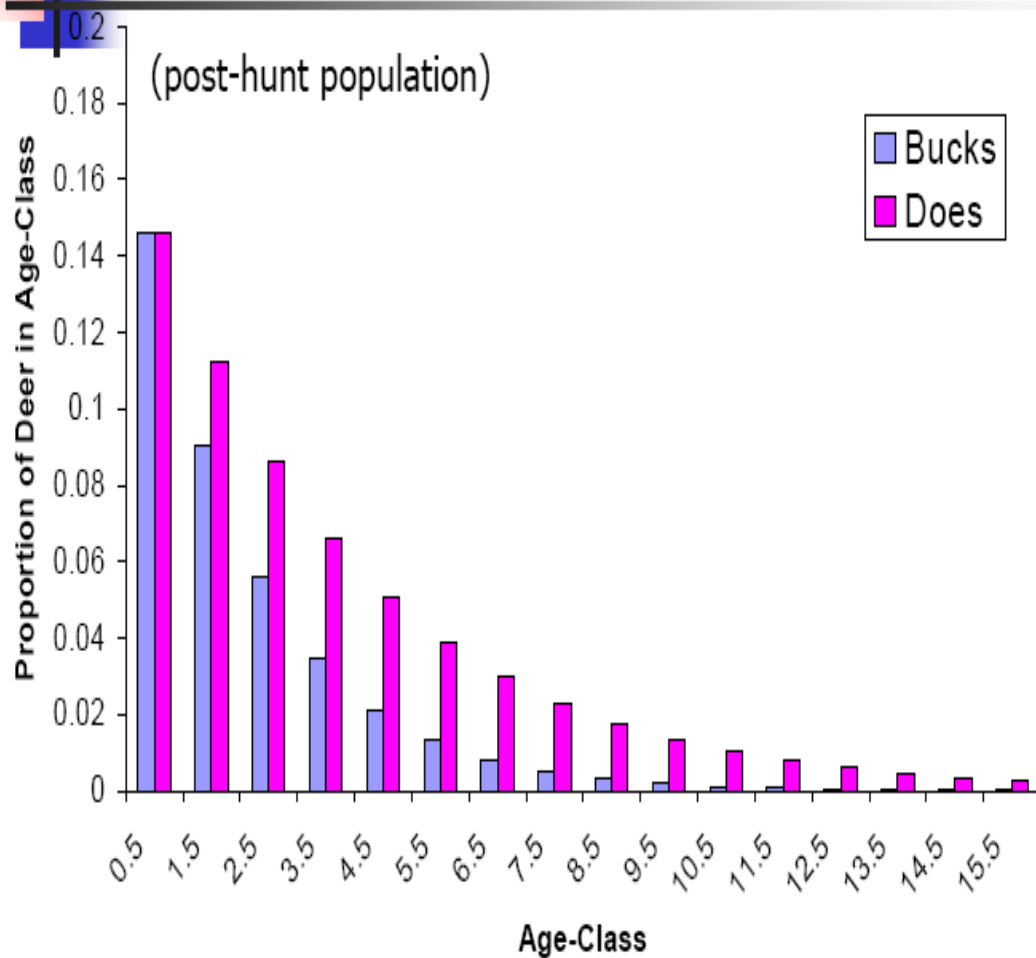
29 March 2008



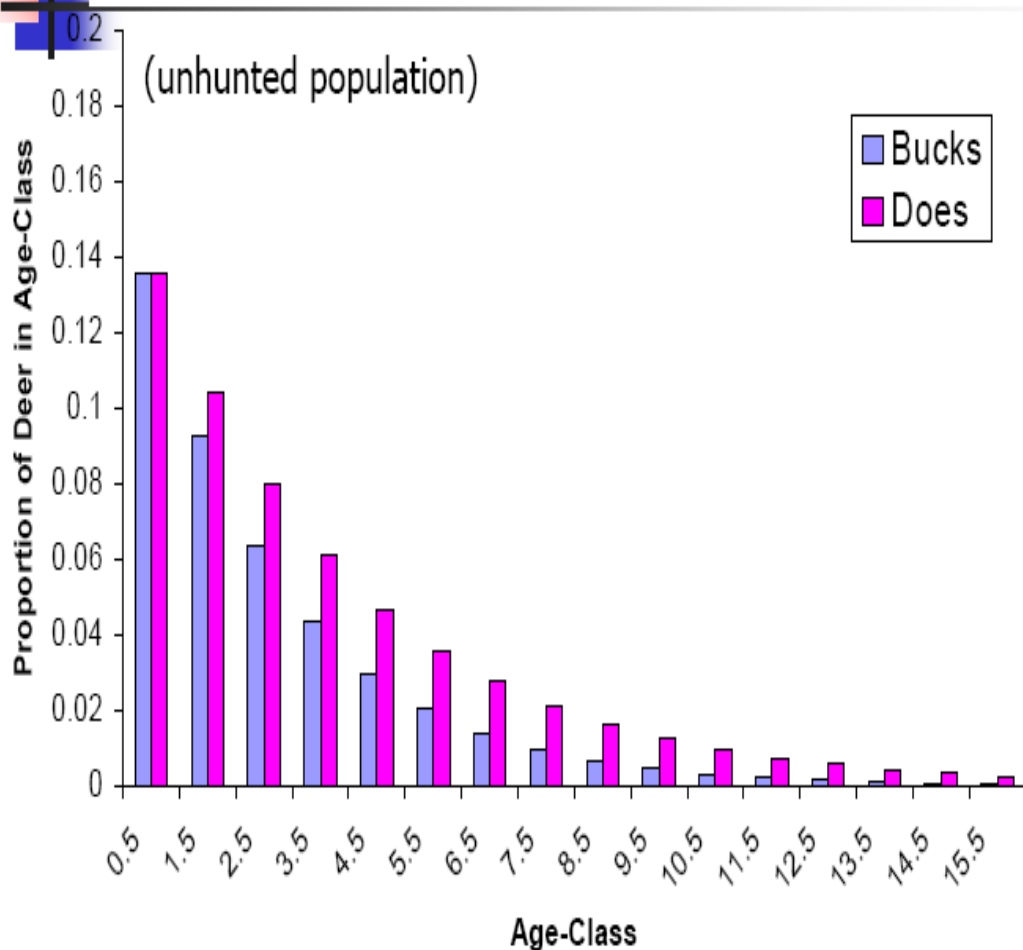
25 bucks/100 does – What can we expect?



50 bucks/100 does – What can we expect?



67 bucks/100 does – What can we expect?



Omineca Model

Several reports have demonstrated that the model that best meets the policies of the British Columbia Wildlife Harvest Strategy is the Omineca moose management regime.

- Child 1996;
- Hatter 1998; and
- Demarchi and Hartwig 2008.

Evidence has also been compiled that shows that over the past 28 years, the moose population in Omineca:

- Has increased and
- Is believed to have benefitted from the selective harvest strategy.

Conclusion

First Nations, resident hunters and guide outfitters should all:

1. become more aware of the unique breeding biology and requirements of moose and
2. support the Wildlife Branch in expanding the Omineca model to other regions of the province.

This will benefit the wide range of moose resource interests including the moose resource.

Selected References

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