

# WAC 220-412-080 and 220-415-070

## Moose Seasons

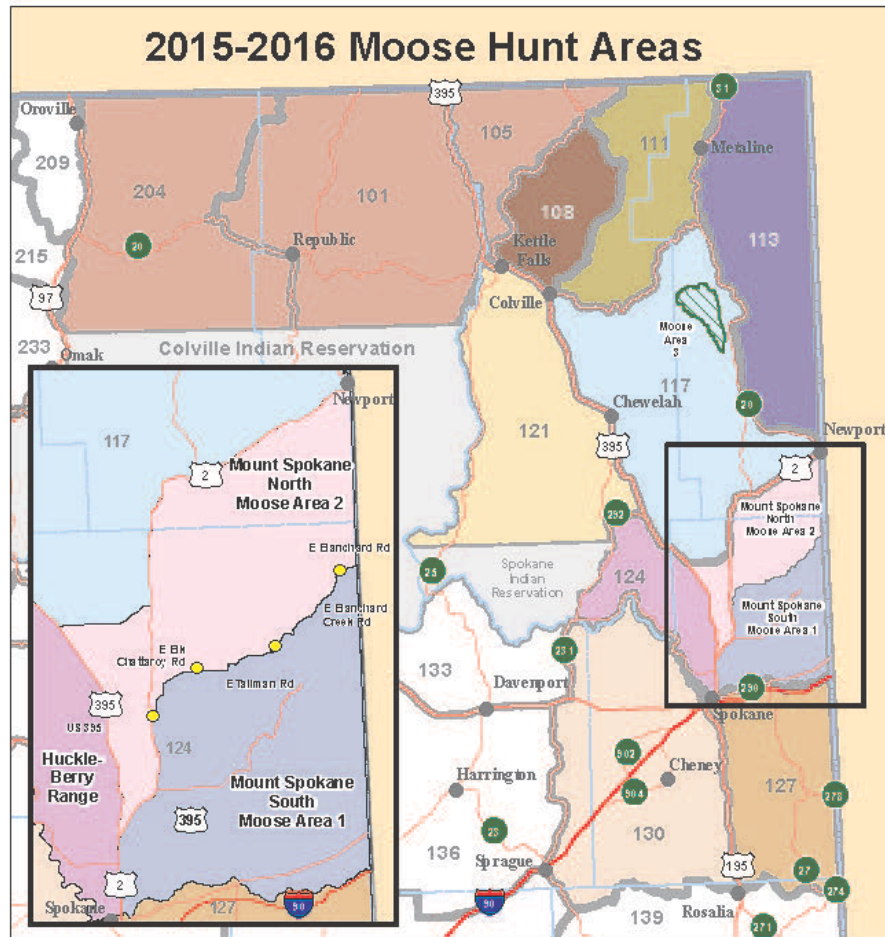


*Washington Department of*  
**FISH and WILDLIFE**

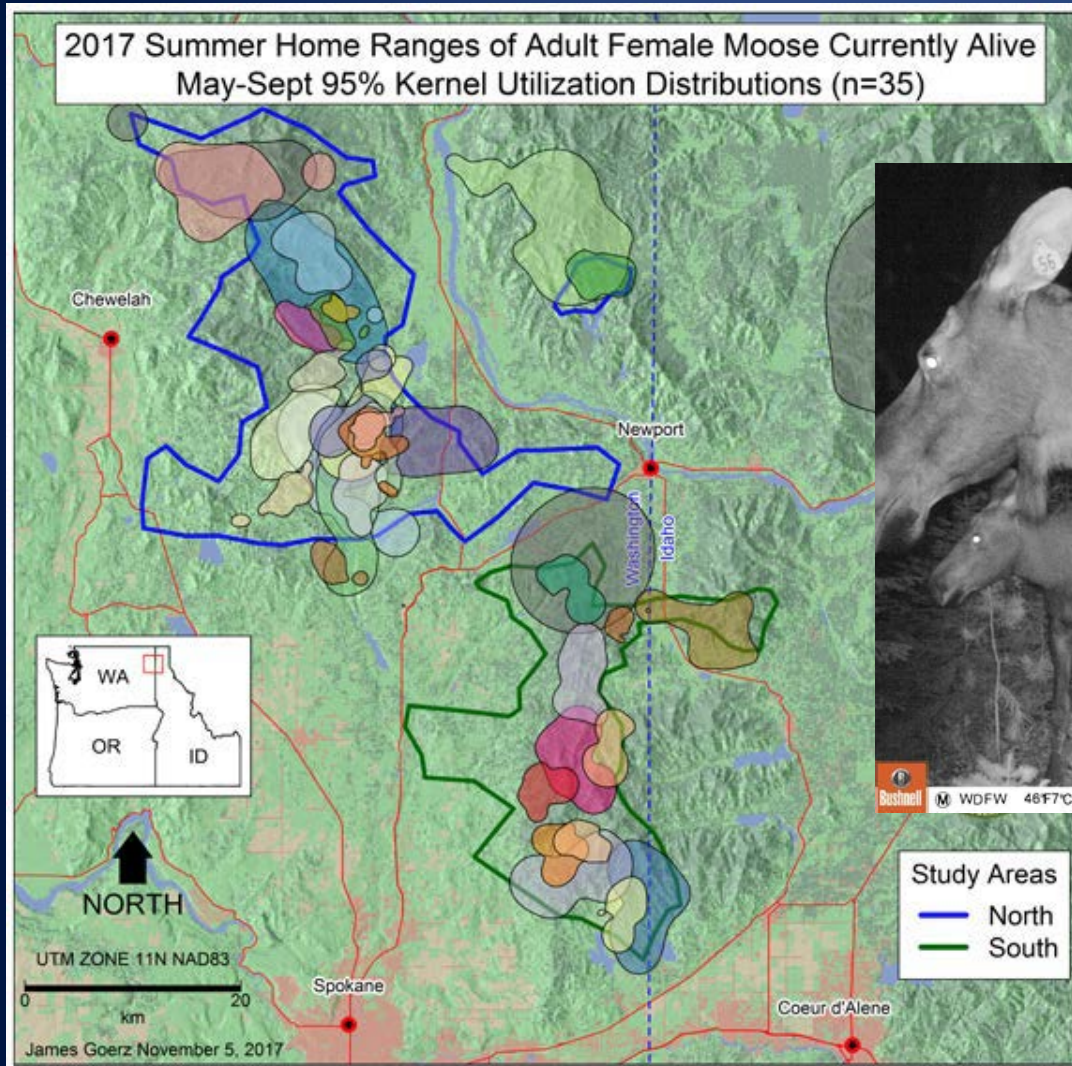
Rich Harris, Ph.D.

Bighorn Sheep, Moose, Mountain Goat, and Pronghorn  
Antelope Section Manager, Game Division  
Wildlife Program

# 2015-2016 Moose Hunt Areas

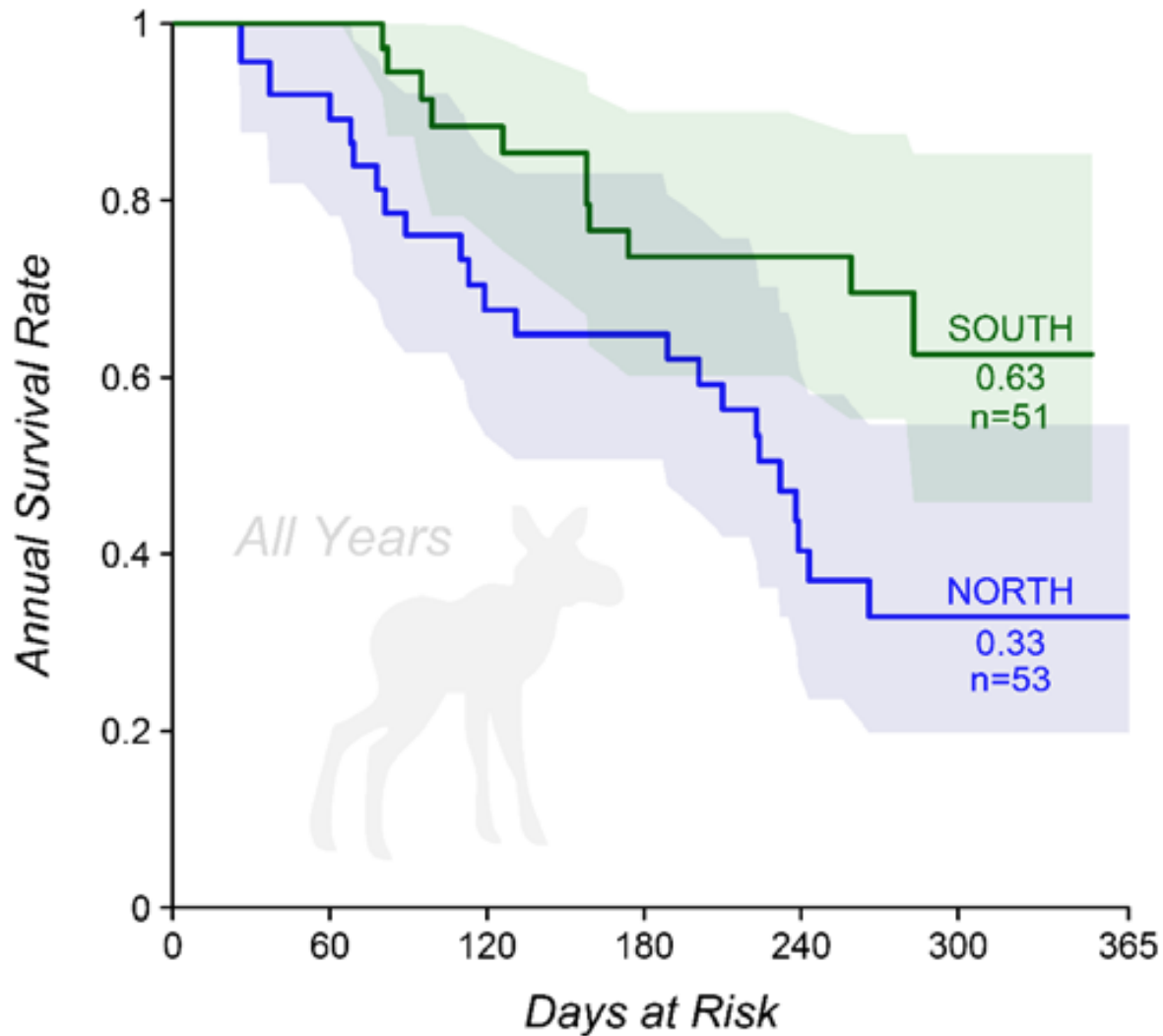


# Northern (blue outline) and southern (green outline) moose study areas north of Spokane, with female home ranges





# Kaplan-Meier Moose Calf Survival by Study Area Across All Years (1 June-31 May)





# WILDLIFE VIEWING

- Home
- About WDFW
- Conservation
- Fishing
- Hunting
- Enforcement
- Wildlife Viewing**
- Licensing & Permits
- Living with Wildlife

- Watchable Wildlife
- Watching Wildlife Responsibly
- Viewing Guides & Maps
- Report Wildlife Observations
  - Bats
  - Wolf
  - Elk - Hoof Disease
  - Freshwater Mussel Observations
  - Mountain Goat
  - Moose
  - Invasive Animals
  - Other Wildlife
- Weekender Report
- WildWatch Cams
- Species Fact Sheets
- Wildlife Areas
- Water Access Sites

For more information on wildlife viewing, please contact WDFW Wildlife Program.

Phone: 360-902-2515  
E-mail: [wildthing@dfw.wa.gov](mailto:wildthing@dfw.wa.gov)

### Found Injured Wildlife?

Contact a local Wildlife Rehabilitator

-- List by County --

For more information contact a WDFW [Regional Office](#)

## Report Wildlife Observations

### Moose Survey

*Please note: This does not take the place of regulation-required Hunter Reports after hunting season.*

[Click here to report moose observations with a phone app](#)

- Report observations directly on your phone, in the field (no cell phone reception needed).
- Account registration is first required at our *Partners in Conservation and Science* data collection portal.



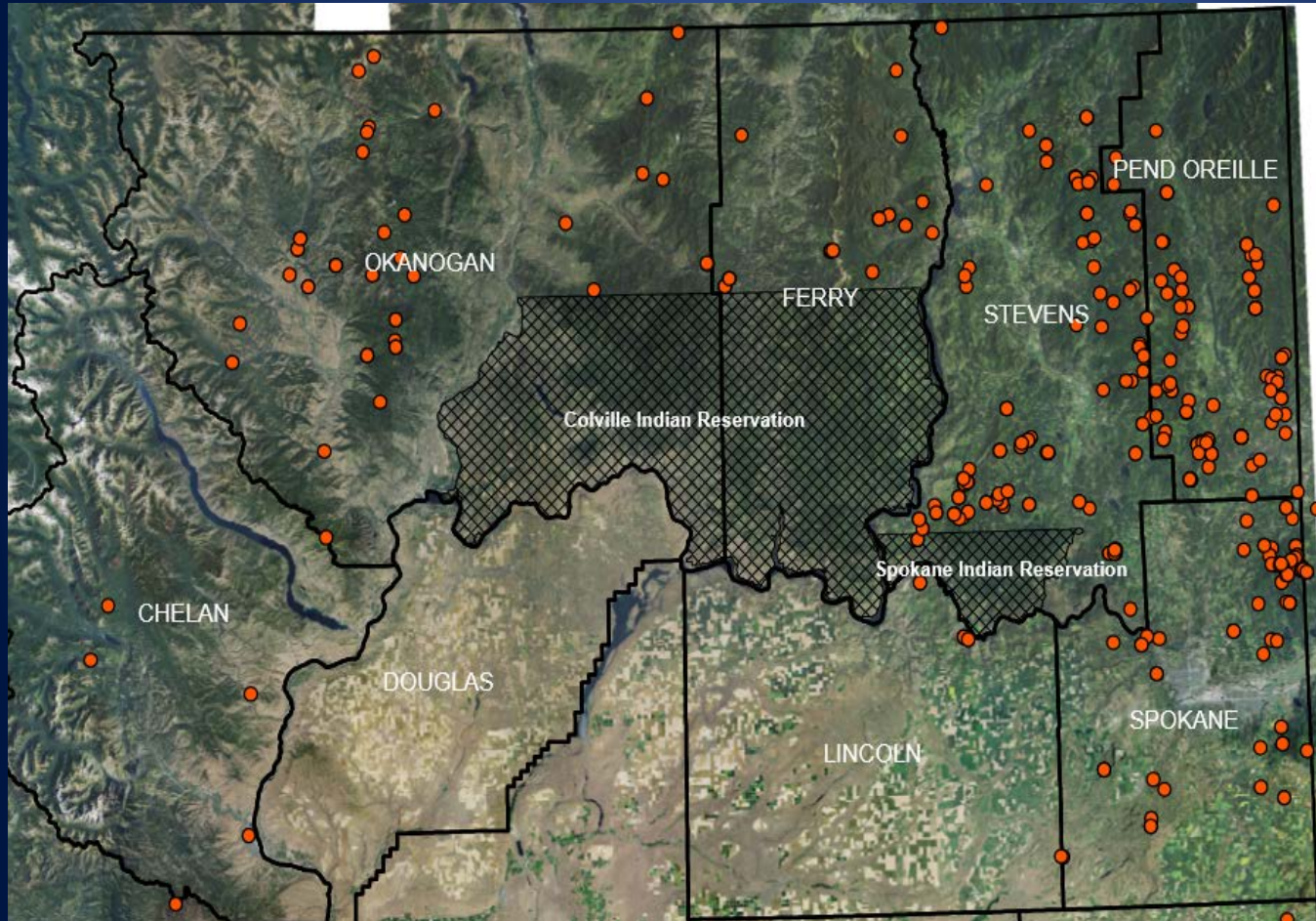
### • 2016 Public Moose Survey Results

If you spend time in undeveloped areas where moose may occur, your report can help inform moose management whether or not you see any moose. WDFW is most interested in reports from people spending time in natural areas in **Okanogan, Ferry, Stevens, Pend Oreille, and Spokane counties between September 1 and November 30.**

As you hunt, hike, fish, or otherwise spend time in these areas, keep track of how many hours you spend afield and how many cow, calf, or bull moose you see, then submit one report per day afield. Even if you don't see any moose, your report is valuable. The fall time period provides the best information to better understand moose status, productivity, and population trends. WDFW biologists will use reports from this time period to inform scientific studies, conservation and management decisions.

Observations from other times of year are helpful but not as useful to inform of factors such as calving, sex ratios, or moose abundance indices. Specific locations from this form are not displayed publicly, but are considered and evaluated in our Moose Progress Report.

# Citizen-science Moose Observations: 2017

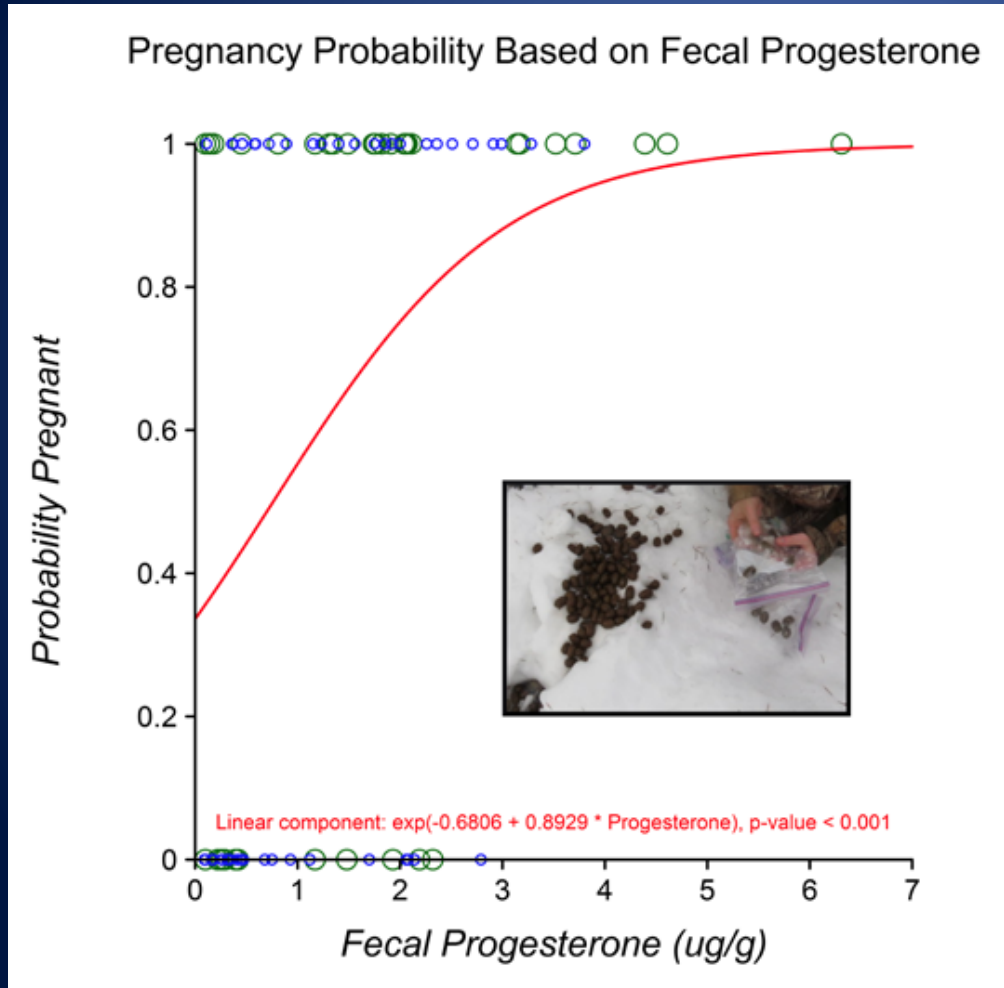


433 reports

- 70% from hunters
- Only 169 usable for recruitment
- Supplemented by aerial surveys

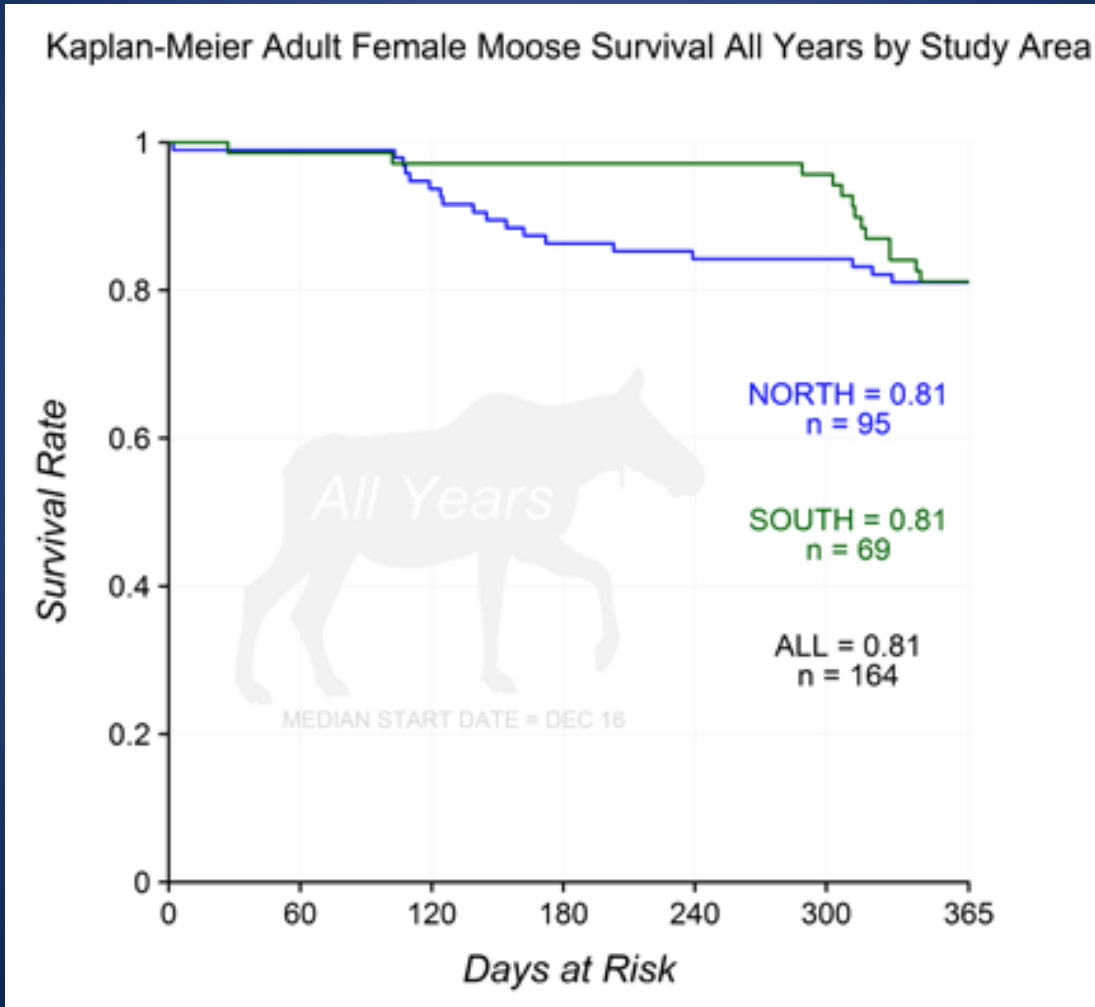


# Estimated Pregnancy Rates: 3 winters 2015-2017



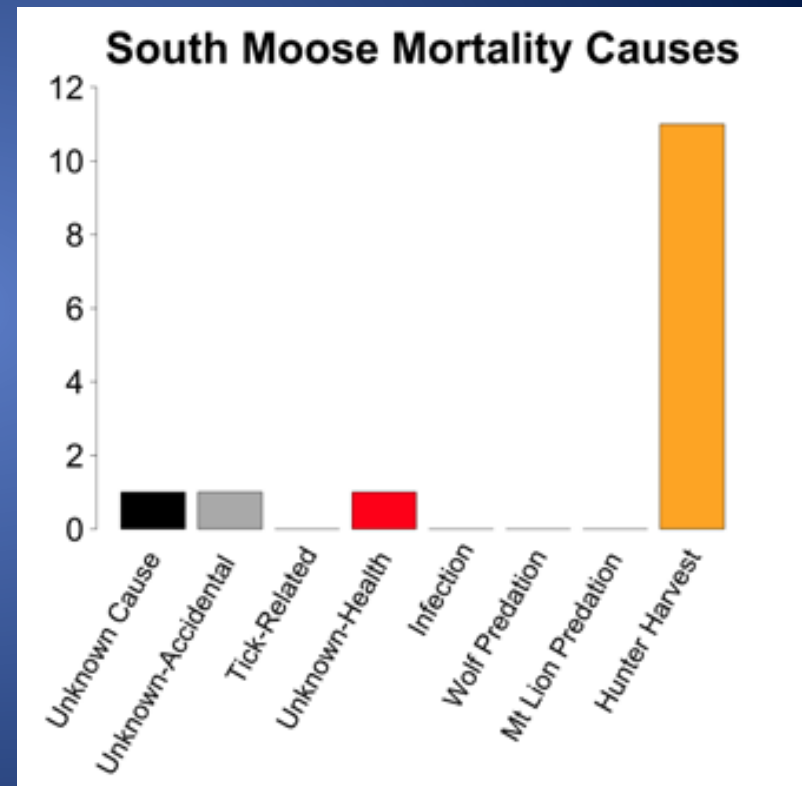
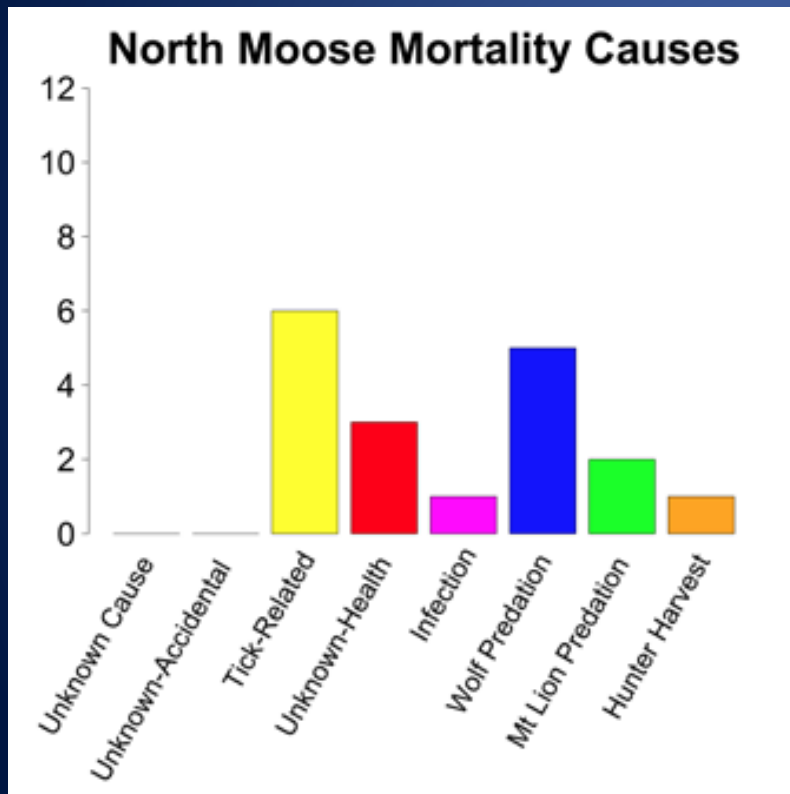
- Overall mean: 0.60 ( $n=87$ )
  - Northern: 0.50 ( $n=49$ )
  - Southern: 0.71 ( $n=38$ )

# Adult Female Moose Survival





# Causes of Adult Female Mortality



# Reduction in Antlerless Permits Around Mt. Spokane

2018					2017					
<b>Antlerless only -</b>					<b>Antlerless only</b>					
Mt Spokane South B		Oct. 1 - Nov. 30	Moose Area 1 (within 124)	4	Mt Spokane South B		Oct. 1 - Nov. 30	Moose Area 1 (within 124)	8	-4
Mt Spokane North B		Oct. 1 - Nov. 30	Moose Area 2 (within 124)	4	Mt Spokane North B		Oct. 1 - Nov. 30	Moose Area 2 (within 124)	7	-3
<b>Youth Only - Antlerless</b>					<b>Youth Only - antlerless</b>					
49 Degrees North Y		Oct. 1 - Nov. 30	GMU 117	0	49 Degrees North Y		Oct. 1 - Nov. 30	GMU 117	2	-2
Mt Spokane South Y		Oct. 1 - Nov. 30	Moose Area 1 (within 124)	1	Mt Spokane South Y		Oct. 1 - Nov. 30	Moose Area 1 (within 124)	8	-7
Mt Spokane North Y		Oct. 1 - Nov. 30	Moose Area 2 (within 124)	0	Mt Spokane North Y		Oct. 1 - Nov. 30	Moose Area 2 (within 124)	8	-8

Concomitantly, reduce Hunter Education Instructor Incentive antlerless permits from 4 (in 2017) to 1

# Fewer Moose in NE Washington's Future

- Moose still fairly abundant
- Have probably exceeded long-term capacity
- (Except where noted), hunting probably a minor component of survival probability
- At what abundance will decline stop?
  - Need as precise monitoring as possible to know



	Age 0	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9+	Effort	Total Catch	Catch/Effort
<b>Year 1</b>	2001	0	3	1	2	0	1	2	1	0	1.5818	2011	1271.3365
<b>Year 2</b>	2002	0	2	4	6	3	3	0	3	1	0.9477	2024	2135.6970
<b>Year 3</b>	2003	0	2	9	7	7	0	2	1	5	0.6341	2036	3210.8500
<b>Year 4</b>	2004	1	7	5	2	2	0	1	2	3	1.1250	2027	1801.7778
<b>Year 5</b>	2005	1	5	5	9	1	2	1	2	2	0.6477	2033	3138.7988
<b>Year 6</b>	2006	1	1	2	3	5	1	0	1	1	0.8864	2021	2280.0090
<b>Year 7</b>	2007	1	0	1	1	0	2	1	0	0	0.5727	2013	3514.9293
<b>Year 8</b>	2008	0	3	9	3	4	2	1	3	4	0.8182	2037	2489.6113
<b>Year 9</b>	2009	3	2	1	7	3	2	1	0	5	0.9682	2033	2099.7728
<b>Year 10</b>	2010	1	3	6	0	3	2	3	1	4	0.6409	2033	3172.1017
<b>Year 11</b>	2011	0	1	3	4	0	1	1	2	1	0.7295	2024	2774.5031
<b>Year 12</b>	2012	1	1	5	3	1	2	2	1	6	0.9750	2034	2086.1538
<b>Year 13</b>	2013	4	0	3	1	0	2	4	2	3	1.0568	2032	1922.7858
<b>Year 14</b>	2014	2	1	2	6	1	1	0	1	5	0.9750	2033	2085.1282
<b>Year 15</b>	2015	3	1	3	7	4	4	2	0	17	2.4409	2056	842.3123

Model Summary

**Harvest Data**  
 File: Female harvest b  
 Years:  
 Age classes:  
 Pooled:

**Harvest Probability**  
 Last distinct age: 0  
 Range: 0.02 - 0.15  
 Random effects? No

**Survival Probability**  
 Last distinct age: 0  
 Range: 0.60 - 0.95  
 Random effects? No

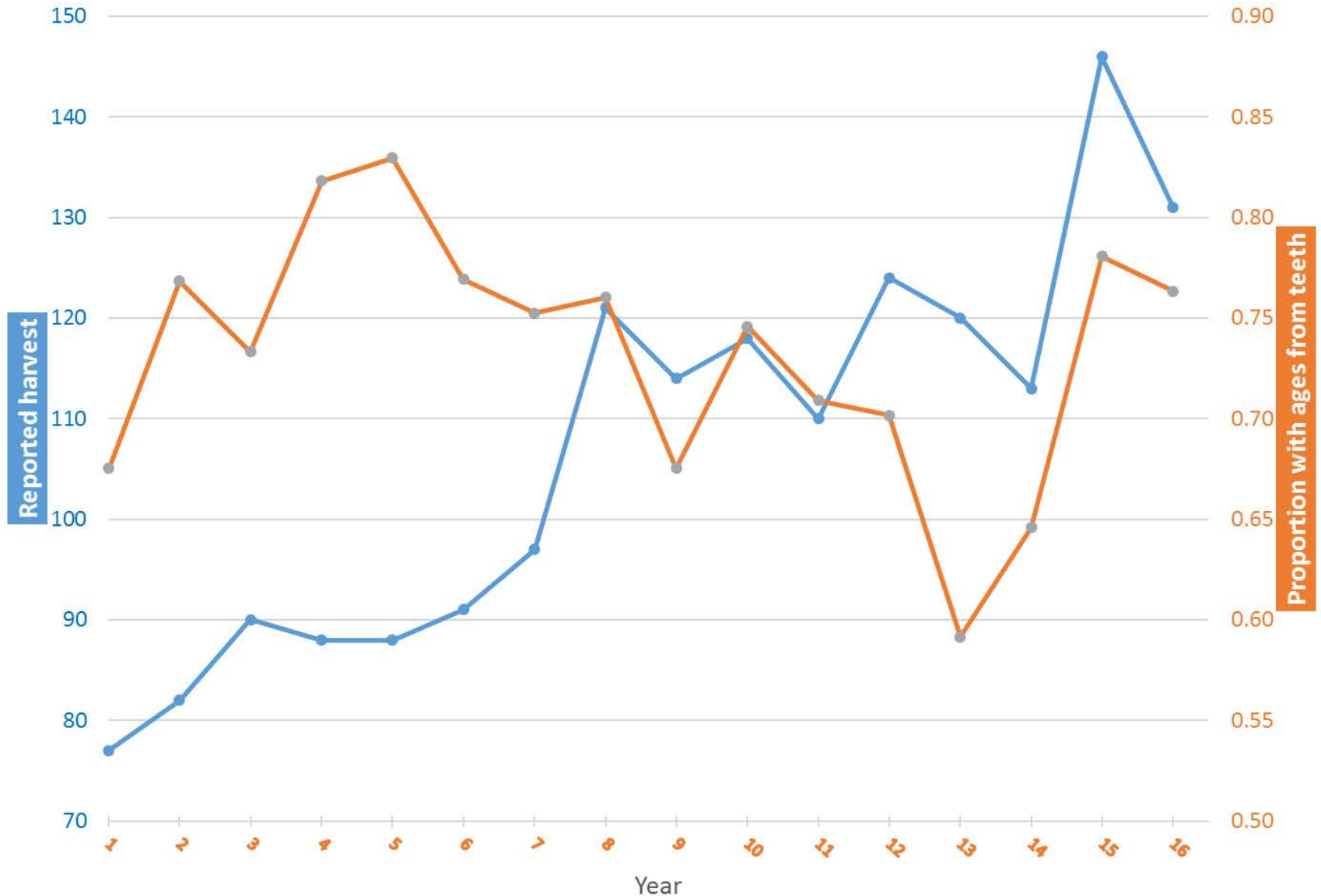
**Aging/Reporting**  
 Year-specific

**Auxiliary Data**  
 Harvest: loaded  
 Survival: loaded

**Model**

Need to know the age of harvested animals....

Proportion of reported moose kills having tooth ages, all districts



# WAC 220-415-070

(2) (d) Submitting moose teeth: Successful moose hunters must submit an incisor tooth from the lower jaw, either in person at a WDFW office, or via the postage-paid envelope supplied, no later than sixty days after harvest.

**SS 001637 THIS ENVELOPE FOR MOOSE AND MOUNTAIN GOAT ONLY**

Species: Moose \_\_\_\_\_ Mountain Goat \_\_\_\_\_ Transport Tag Doc. # \_\_\_\_\_

Kill Type: General Season \_\_\_\_\_ Special Permit \_\_\_\_\_ Depredation \_\_\_\_\_ Landowner \_\_\_\_\_ Poached \_\_\_\_\_ Roadkill \_\_\_\_\_ Other (specify) \_\_\_\_\_

Wild ID# \_\_\_\_\_ Date of Kill (month/day/year) \_\_\_\_/\_\_\_\_/\_\_\_\_

Hunter's Name (Last, First, Middle Initial): \_\_\_\_\_

Weapon Type: Modern Firearm \_\_\_\_\_ Archery \_\_\_\_\_ Muzzleloader \_\_\_\_\_

Comments: \_\_\_\_\_

GMU of Kill: \_\_\_\_\_ County of Kill: \_\_\_\_\_

Location of Kill: (drainage, road, or other specifics): \_\_\_\_\_

Sex of Kill: Male \_\_\_\_\_ Female \_\_\_\_\_ Age Class of Kill: EUS/Calf \_\_\_\_\_ Yearling \_\_\_\_\_ Adult \_\_\_\_\_

Length of Antler / Horn: LEFT \_\_\_\_\_ RIGHT \_\_\_\_\_ Incisor teeth collected: Yes No

Tissue Sample Collected for DNA Analysis? Yes No Vial Number: \_\_\_\_\_ CWD Sample collected: Yes No Jar Number \_\_\_\_\_

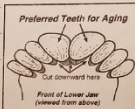
Did the animal have an ear tag (or a hole in the ear)? (please circle one): Yes No Tag Number: \_\_\_\_\_ Tag Color: \_\_\_\_\_

Did the animal have a radio-collared? (please circle one): Yes No Frequency: \_\_\_\_\_

Officer / Biologist \_\_\_\_\_

**ONLINE**  
\$-5.618  
1-800-295-5310  
wdfw.com

**Preferred Teeth for Aging**  
Cut downward here  
Point of Lower Jaw  
(removed from above)





# Closer prediction of gender of harvest from hunting categories

- Eliminate “any moose” hunt category and replace with “antlered bull moose”
- Defined as having “visible antlers”
- Previously accumulated points for “any moose” transfer to “antlered bull moose”
- With few exceptions, this allows managers to anticipate hunting mortality by gender

# Eliminate Master Hunts for Moose

- Originally conceived as way to provide hunter opportunity when problem moose needed to be removed (mostly around suburban Spokane)
- Started with 20/year – but few used
- Later reduced to 10/year – typically have used only 2-3/yr
- Region One is emphasizing non-lethal resolution to problem moose issues; has only used 1 MH permit in last few years
- Often selected hunters live several hours from the site (but time is of the essence); officers often required to accompany hunter and assist with carcass; big time commitment
- Region One Enforcement has found program administration to far outweigh its benefits. A better option, when lethal removal is required, is to have Enforcement dispatch the animal, having volunteer group process the carcass and donate to charity (food bank)

# Proposal: WAC 220-412-080

- Require hunter education requirement be met (or appropriately exempted) for all (including youth) before application can be made for special permits for moose, bighorn sheep, and mountain goats (including 'points only' option).
- This would disallow the current practice of 'banking' points for youth who are too young to hunt.
- Prospective, not retrospective (accumulated points would be retained).



# Rationale: WAC 220-412-080

- Consistency in approach toward licensing
  - Hunters must possess the qualifications of the hunt category if selected (e.g., > 65 years old)
  - Applicants in other categories need hunter education (or appropriate exemption) – adding it here would make it consistent
- Discourage “gaming” the system
  - Hunters unaware that they system currently allows this puts them at a disadvantage
- Other opportunities to recruit youth beside early moose hunt

# Public Comments

## Supporting Comments

- 13 supported the proposed changes
- 4 specifically supported changing “any moose” permits to “antlered bull moose only” permits (none registered specific opposition)

## Opposing, Neutral, and Other Comments

- 11 objected to the requirement that youth hunters for mountain goat, moose, and/or bighorn sheep permits must have passed the hunter education requirement (new section (2)(b)) prior to submitting an application
- 15 opposed the reduction in the number of youth permits
- 12 expressed unhappiness with management of predators
- 4 supported more conservative permitting for antlerless moose
- 2 recommended making antlerless tags once/lifetime

# Questions?

