

Blue Mountains Elk

At-Risk Assessment, Monitoring, and Management

Kyle Garrison

Acting Ungulate Section Manager

Stephanie Simek

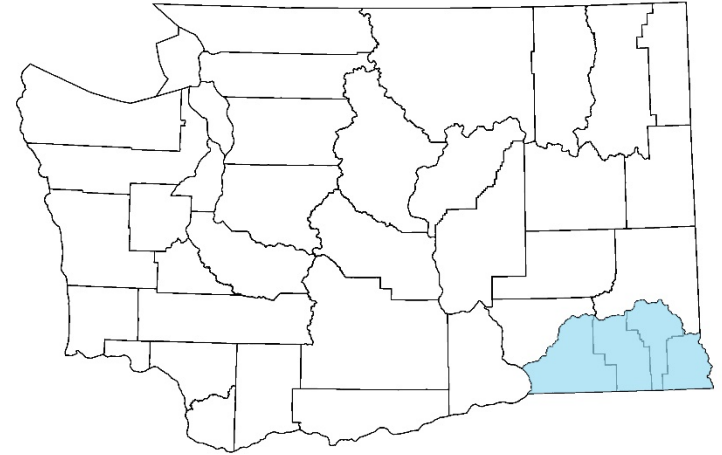
Carnivore Section Manager



At-risk assessment

Blue Mountains elk

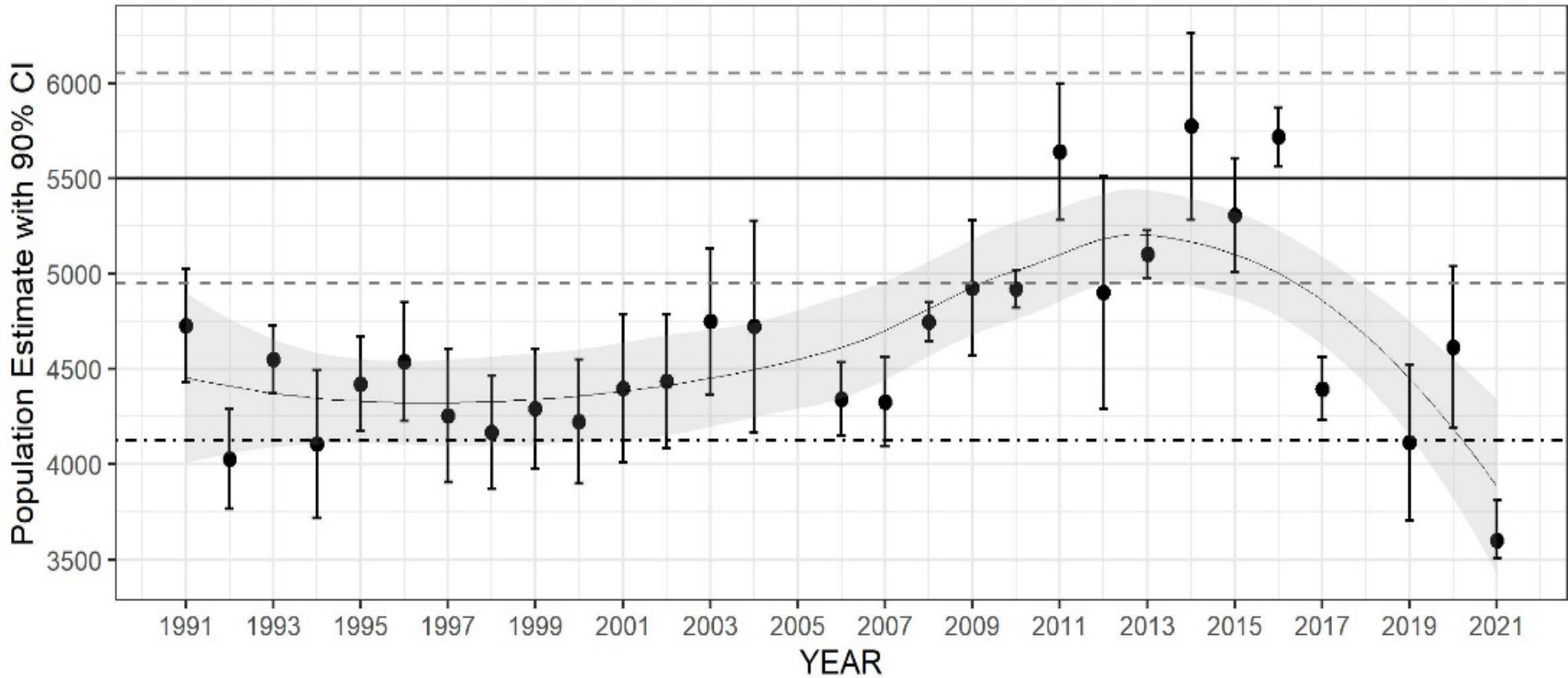
- Population objective is 5,500 ($\pm 10\%$)
- Abundance declined $\sim 20\%$ from 2015-2017
- Despite harvest reductions, population has not increased
- Since 2017, surveys indicate recruitment is insufficient to achieve replacement



At-risk assessment

Blue Mountains elk

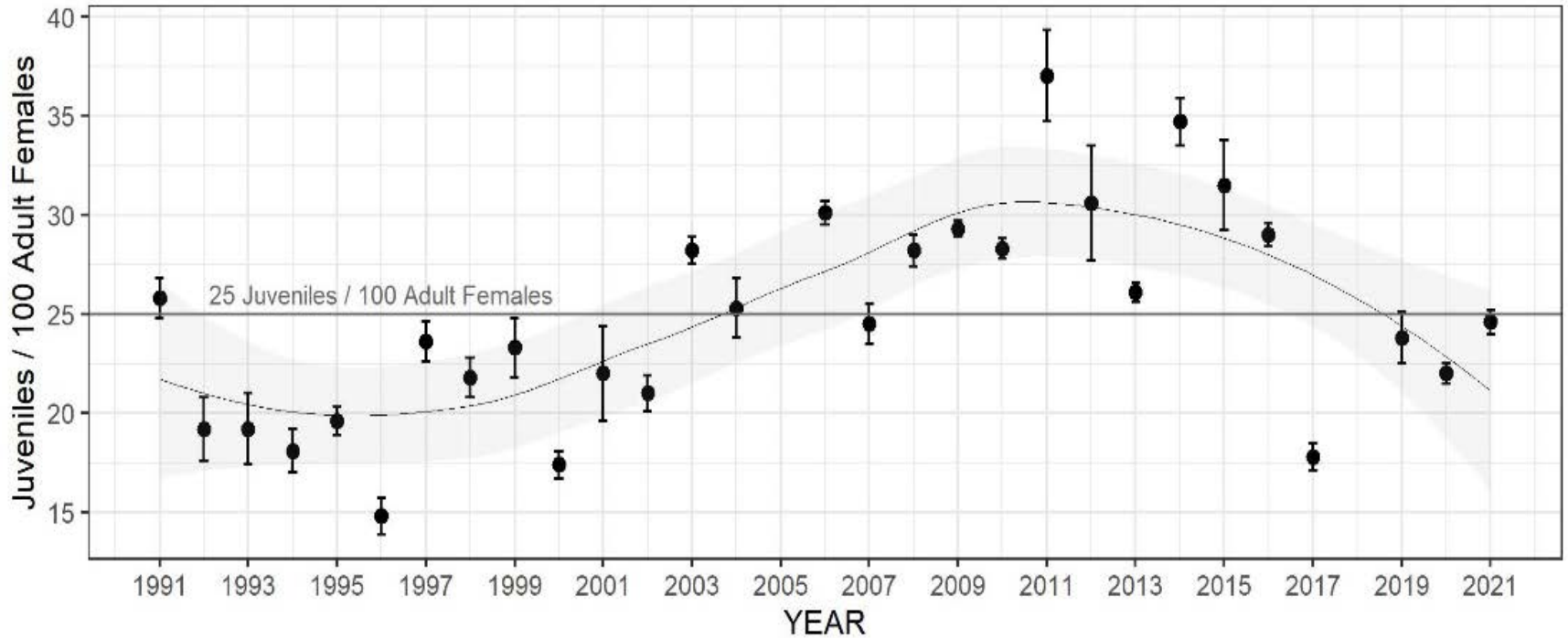
Aerial Population Estimates 1991-2021



At-risk assessment

Blue Mountains elk

Aerial Recruitment Ratio Estimates 1991-2021



At-risk assessment

Blue Mountains elk

- Survey data indicate a population “at-risk”; assessment initiated in late 2020
- The Department’s assessment review factors known to influence elk and elk populations:
 - Elk survival
 - Carnivores
 - Habitat
 - Human use
 - Climate
- Objectives were to:
 - Review available information (literature, data) to identify factors that may be limiting growth
 - Formulate management options to achieve growth



At-risk assessment

Elk survival

Adult and juvenile survival assessed through:

- Relevant literature review and summary
 - Previous WDFW data/research
 - Population status and harvest management review
- Both rates are important drivers of population trajectory; influenced by many factors
 - No contemporary data for adult or juvenile elk for Blue Mtns
 - WDFW harvest management set to maximize adult female survival
 - Survey data indicate poor juvenile recruitment/survival



At-risk assessment

Carnivores

Wolf, bear, and cougar impacts on elk assessed through:

- Relevant literature review and summary
- Population status and harvest management review

- Reported impacts are variable
- Predation can limit growth, but other influential factors confound simple conclusions
- Limited contemporary information; unknown impacts of predation on Blue Mtns elk



At-risk assessment

Other influential factors

Habitat, disturbance, development, land use, and climate assessed through:

- Literature review
- Summary of relevant research and management activity

- Long history of habitat improvement in Blue Mtns
- Impact of disturbance unclear
- Nutrition is highly influential on elk population performance
- Climate, land use, disturbance all influence elk through direct and indirect effects



At-risk assessment

Summary

- Decline appears to be driven by trends in 3 core GMUs
- Disentangling interactive top-down, bottom-up and climatic effects is challenging

- Nutrition is a potential limiting factor
 - Understanding nutritional limitation requires multi-year intensive investigation
 - Limited management control
- Predation is a potential limiting factor
 - Contemporary information needed:
 - Monitoring of juvenile elk survival and bear density estimation (*initiated*)
 - Cougar density estimation beneficial, but not initiated

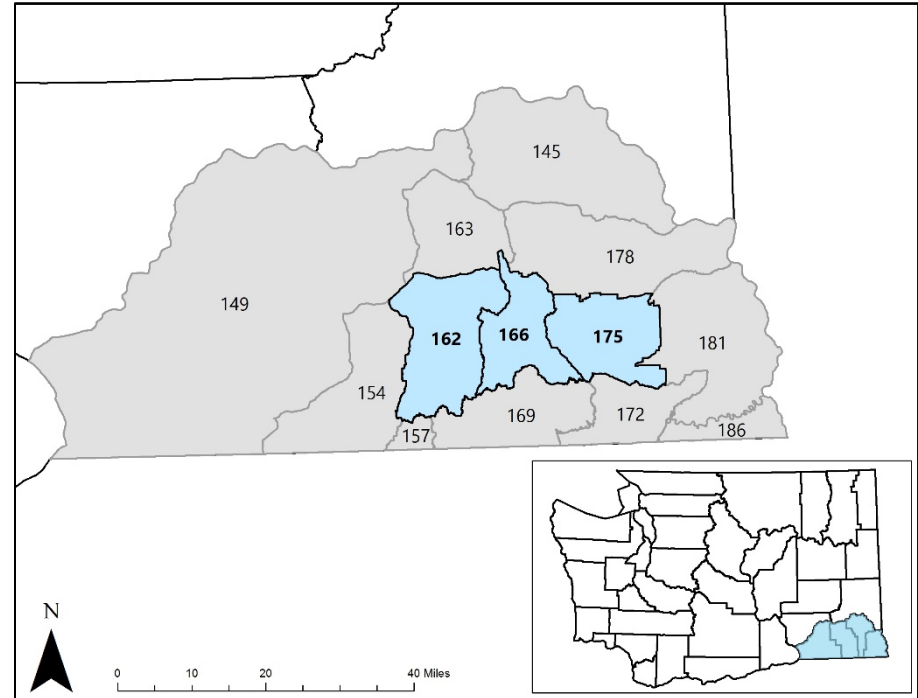


At-risk assessment

Calf monitoring

We captured 125 calves in May/June 2021

- Ground and aerial capture
- Instrumented calves with GPS collars
- Investigated mortality notifications to determine cause of death



At-risk assessment

Calf monitoring

Of 125 collared calves:

- 13 were censored in analysis
- 4 died in association with capture

- 9 are alive to-date
- 99 mortalities

- Predation = 77
 - Cougar = 57
 - Bear = 9
 - Cougar/bear = 5
 - Coyote = 3
 - Wolf = 1
 - Wolf/bear = 1
 - Bobcat = 1
- Unknown intact = 8
- Unknown scavenged = 7
- Infection = 5
- Starvation = 1
- Exertional myopathy = 1

Total probability of survival to 240 days (~Jan 26) = 13.6%



At-risk assessment

Management

Calf survival is anticipated to produce another year of decline for the northern core GMUs

- The at-risk assessment technical team developed a suite of options that may promote rebuilding the elk population
- Options are evaluated for feasibility and likelihood of near-term success
 1. Continue to maximize adult female elk survival
 2. Implement actions to promote increased calf survival
 - Improving elk habitat, mitigating conflict and disturbance
 - Adaptive management of cougar population



At-risk assessment

Management

Management priority is to reduce the cougar population to benefit calf survival

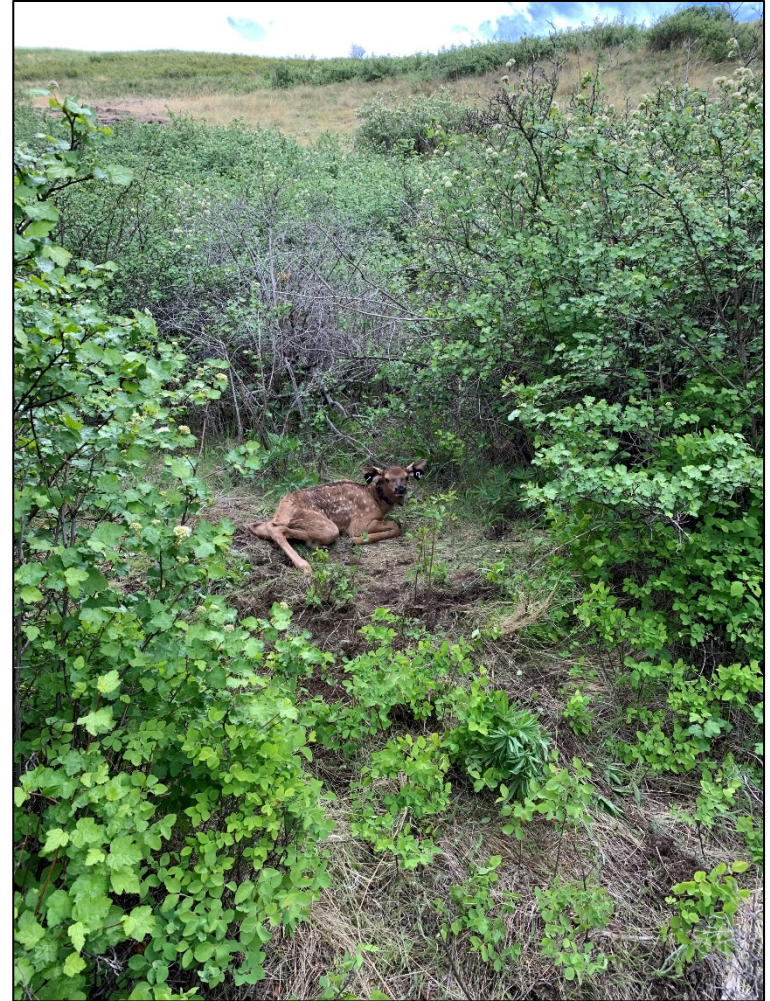
1. Increase recreational harvest
 - Proposals for modified harvest guidelines, bag limits, seasons, special permits may be forthcoming
2. Department removal
 - RCW 77.15.245 prohibits the use of dogs to pursue/remove cougars
 - Limited to trapping
3. Trap and translocate



At-risk assessment Management

Moving forward

- Continue monitoring calves and initiate new monitoring through 2022
- Implement available strategies
 - Rule change proposals forthcoming to FWC
 - Implement actions within Director authority, where feasible



Acknowledgements

- **William Moore**, WDFW Ungulate Specialist
- **Melia DeVivo**, WDFW Ungulate Research Scientist
- **Brian Kertson**, WDFW Carnivore Research Scientist
- **Richard Beausoleil**, WDFW Statewide Bear and Cougar Specialist
- **Paul Wik**, WDFW District Wildlife Biologist
- **Mark Vekasy**, WDFW Assistant District Wildlife Biologist
- **Benjamin Maletzke**, WDFW Wolf Specialist
- **Brock Hoenes**, WDFW Region 2 Director (former Ungulate Section Manager)
- **Stephanie Simek**, WDFW Carnivore Section Manager
- **Scott Peckham**, CTUIR Wildlife Biologist



Questions?

