

Elk Hoof Disease in Southwest Washington



Fish and Wildlife Commission
08 August 2014

WDFW Management Approach



Completed

- WDFW Elk Hoof Disease webpage
 - On-Line Hoof Disease Reporting Form
 - Frequently Asked Questions page
 - Hoof Disease Public Working Group page
- Information in 2013-2014 and 2014-2015 hunting pamphlet
- HD Brochure

Hoof Disease

Reports of lameness in elk have been observed since the mid-1990s. This problem appears to be increasing in the Cowlitz River Valley, and its geographic scope, and harvesting elk with this condition. One of the challenges in managing elk populations is that the disease does not appear to be limited to domestic or wild animal livestock in the area.

Because of the complexity of this problem, WDFW biological and veterinary experts are currently sampling and testing elk in the southwest Washington

Chronic

Elk Hoof Disease in Southwest Washington

Sporadic reports of lame elk or elk with overgrown or missing hooves have been received in southwest Washington since the mid-1990s. Reports of this "hoof disease" have been increasing, and hunters have regularly seen and sometimes harvested elk with this condition. At times, observers have reported many individuals in a group limping and showing signs of hoof disease, which has been noted in males and females and old and very young animals.

Dozens of hoof diseases occur in domestic livestock. They have many different causes: infectious, metabolic, toxic, nutritional, physical and varied modes of transmission, prevention and treatment.

The Washington Department of Fish and Wildlife (WDFW) is working with specialists, here and abroad, to better understand what is causing hoof disease in southwest Washington elk. So far, we have ruled out several potential causes and have narrowed the list of possibilities. Preliminary evidence suggests the involvement of an infectious bacterium, although additional results from animals collected in January 2014 will not be available for several months.

Given this complexity, more research is needed to help us better understand and manage this problem. We are coordinating with other agencies and universities to prioritize the work needed. Even if we are able to determine what is causing this hoof disease, it will be very challenging to address it as there are likely very few, if any, treatment options for wild elk. However, understanding the cause of the disease is an important step toward understanding and managing its impacts.

The department has established a technical advisory group composed of veterinarians and researchers to discuss research and management questions and options, and a public working group to share information and communicate with the public.

What is WDFW doing about Elk Hoof Disease?

WDFW veterinary and biological staff, working with national and international experts, have undertaken an exhaustive diagnostic effort to determine the cause of this disease.

For more information:
wdfw.wa.gov/conservations/health/hoof_disease/



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January 2014



Elk Hoof Disease in Southwest Washington



Sound Stewardship
of Fish and Wildlife

wdfw.wa.gov

Advisory Groups

- Hoof Disease Technical Advisory Group (WDFW, CSU, WSU, WDOH, ODFW, USDA)
 - composed of veterinarians and researchers to guide the diagnostic effort and discuss research and management questions
- Hoof Disease Public Working Group
 - discuss research and management questions and options, share information, and communicate with the public
 - 4 meetings to date since Oct 2013

Completed

- Developed proposed WAC (& emergency WAC) to leave hooves on site from elk harvested in SW Washington for FWC consideration
- Two citizen and three WDFW public meetings
- Reviewed and approved joint Department of Health and WDFW Game Meat Safety flyer
 - Posted on-line
- Developed management approach - multiple input
- Hired HD Coordinator
 - Coordinate Department response to hoof disease; conduct citizen science effort; management options implementation, etc.

Completed

- Poster at meeting of the Wildlife Disease Association – July 2009
- Paper published in the Journal of Wildlife Diseases - April 2014
- Article in Washington State Veterinary Medical Association online newsletter - July 3, 2014
- Paper presented at meeting of the Wildlife Disease Association - July 31, 2014
- Paper submitted to the Journal of Clinical Microbiology - August 6, 2014

New Funding for SFY15

- HD Coordinator
 - Funding from the 2014 \$200,000 supplemental budget
- Survival Study
 - \$180,000 prioritized from Pittman Robertson funds
- Rocky Mountain Elk Foundation
 - \$8,000 sample analyses
- 2015-17 Budget Request - \$250,000
 - Continue to understand cause, prevalence/distribution study, survival study, protocol development, management implementation, etc.

Management Challenge

- Once HD in a herd & landscape, extremely difficult to eliminate
- The challenge is to manage the disease
- Management Options and Research Questions
 - Reduce density, containment, treatment, let disease run its course, prevalence/distribution, survival/reproduction, continue to identify causative agents



Compilation of Information

- Compiled and assessed all HDPWG, HDTAG, and WDFW staff input and developed the following management approach



Photo by Nicholle Stephens

Need

- The current needs are to:
 - Continue to identify/understand the causative agents
 - Determine the prevalence and distribution of the disease in the population
 - Document the effects on elk population dynamics (survival, reproduction), and
 - Where feasible, manage the disease

Causative Agents

- Continue to identify/understand the causative agents:
 - Technical Advisory Group met to review latest results and developed a consensus statement about the likely cause(s) of the disease
 - Informational needs

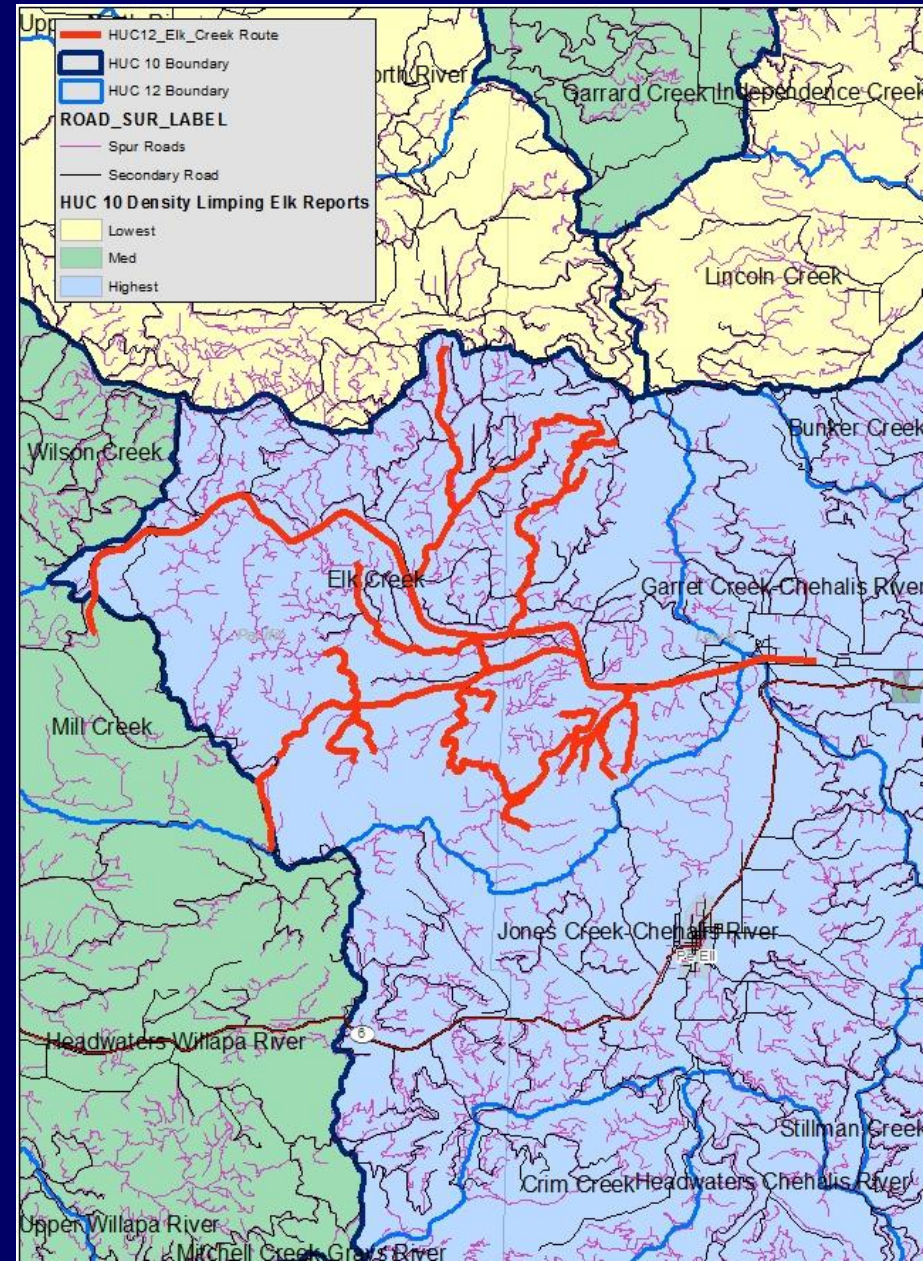
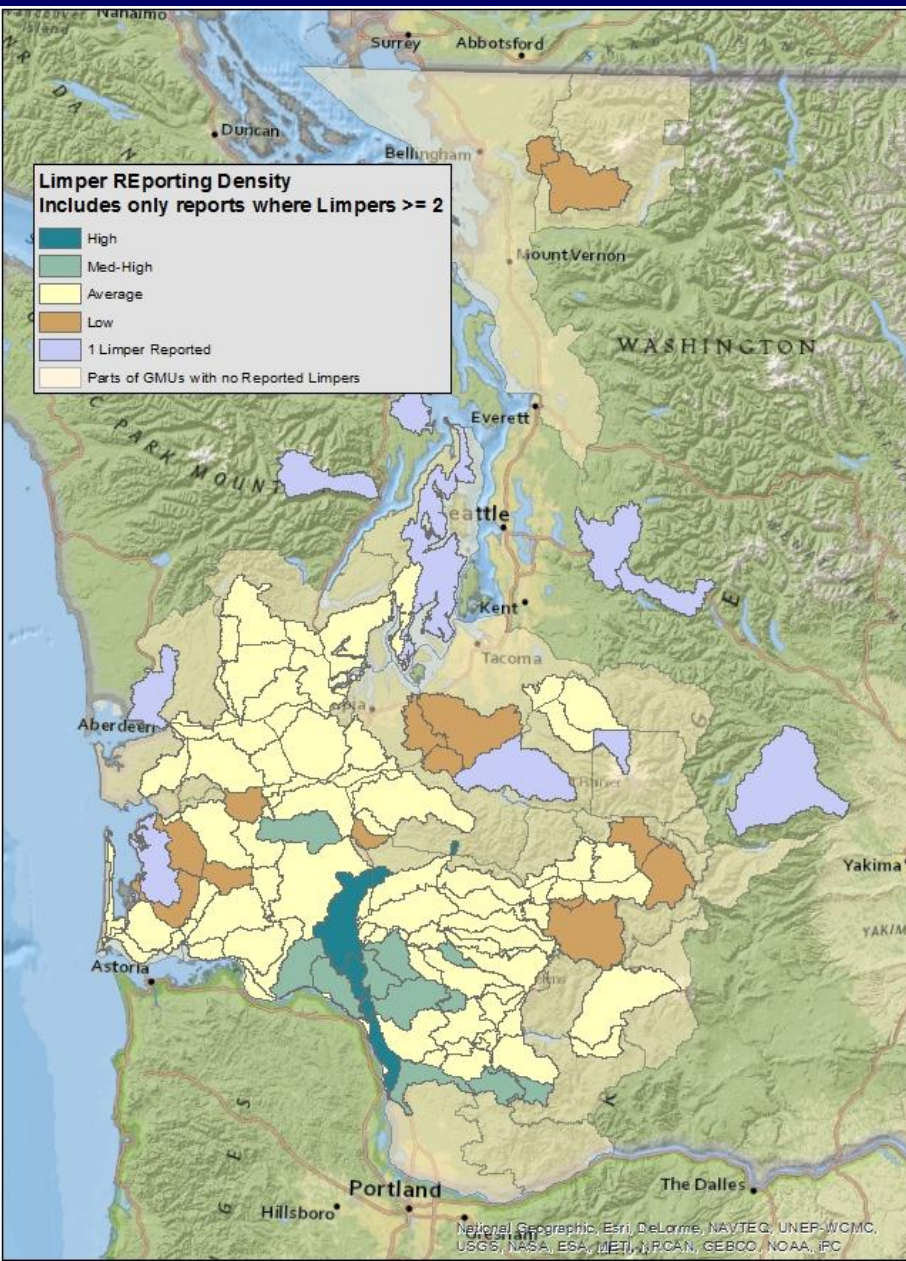


Prevalence and Distribution

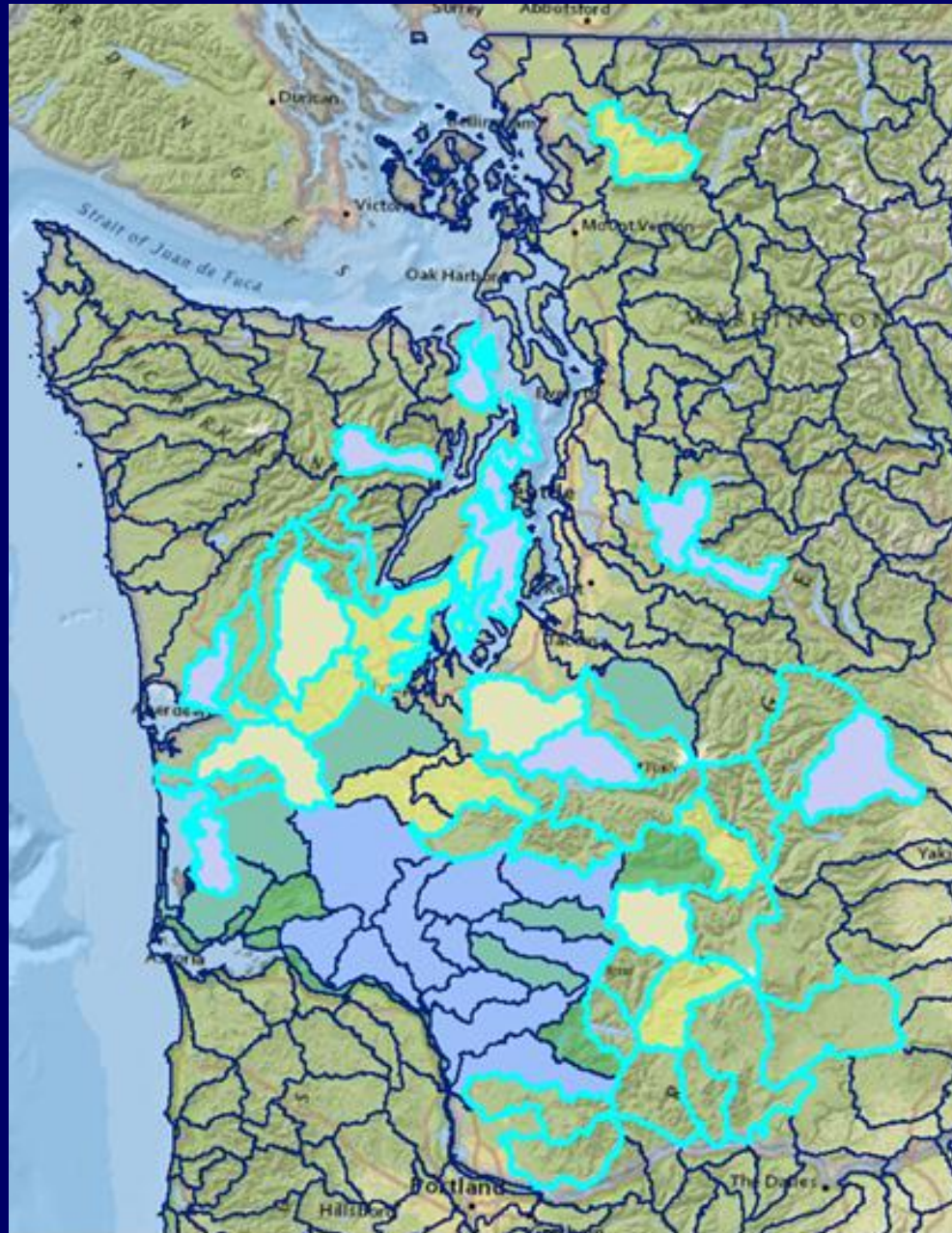
- Determine the prevalence/distribution of the disease in the population:
 - Working closely with a cadre of citizen science volunteers to collect prevalence and distribution information
 - Protocol being finalized
 - Test survey data collection effort in August
 - Broader call for volunteer assistance to collect distribution data this fall



Prevalence



Distribution



Survival and Reproduction

- Determine the effects of HD on elk population dynamics:
 - Accomplish by an extensive, new effort by existing biological staff to radio-collar afflicted animals and monitor survival, reproduction, and movements relative to non-afflicted animals
 - Study design is being developed;
 - Coordinated by Elk Specialist in concert with both Regions and HD Coordinator

Infectious Hoof Disease Management

INDIVIDUAL ANIMALS/HERDS

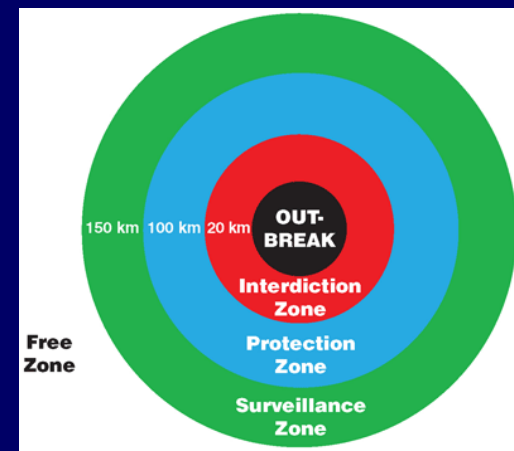
- Good biosecurity
 - ~~quarantine new animals~~
 - isolate newly infected animals from the rest of the herd?
- ~~Aggressive treatment (clean and pare out hoof, apply topical antibiotics, bandage, injectable antibiotics)~~
- ~~Regular footbaths~~
- ~~Keep on clean dry ground~~
- ~~Rotate pastures~~
- ~~Vaccinate if effective vaccine available~~
- Select for genetically resistant animals?
- Cull individuals that are severely affected or fail to respond to treatment?

Animal Disease Eradication

- Requires the following:
 - Ability to identify all infected animals, even if they are not showing signs of disease yet
 - Ability to locate and remove all infected animals
 - Ability to prevent movement of infected animals
 - Access to property inhabited by animals
- Difficult to do on a large scale without extensive resources
 - Try to approximate it

Animal Disease Eradication

- **Concept:**
 - Core animal removal and disinfection area
 - Remove all animals in core
 - Buffer control zone surrounding core disease area
 - Remove only affected animals, quarantine the rest
 - Perimeter surveillance area
 - Enhanced disease surveillance outside infected area



Manage

- It is very important to acknowledge up front that any approaches that have successfully been used to manage disease in domestic animals will be entirely experimental when applied to free-ranging elk



Manage

- Work with landowners on possible fencing options:
 - pro-actively reduce possible risk of transmission
 - address elk crop damage
- Coordinate staff and others to respond to sightings of elk with severe clinical symptoms to remove them from the population
 - with a focus:
 - in core areas of disease to reduce prevalence and
 - in the observed perimeter of the disease to attempt to reduce spread of the disease

Next Steps

- Implement prevalence (Aug) and distribution (Fall) effort
 - Test data to inform comprehensive effort
 - Implement additional prevalence and distribution data collection in spring 2015 and beyond
- Implement removal of severely affected animals
 - Staff and possibly Master Hunters
 - Protocol and criteria to be developed
- Develop and implement survival study
 - (~February/March) 2015

Next Steps

- Develop policy to no longer translocate elk outside of SW Washington
- Continue working with HDPWG and HDTAG as moving forward
- Assess feasibility of monitoring of live animals with hoof disease
- Reach out to National Academy of Science on guidance and assistance (e.g., HD work conducted to date, future research, herbicide, etc.)
- Landowner and hunter outreach on HD information

Thank you
....any questions....

