2.2.15: Elk and Deer

Current Condition

Figure 41. Elk Herd on SVAPD Farm Pasture

Farmland in the Snoqualmie Valley provides important habitat for a wide range of native wildlife species. Since agriculture moved into the valley in the 1870's population levels of most wildlife have been manageable. However, as wildlife populations increase and profit margins tighten, farmers' tolerance for loss to wildlife diminishes and farmers need options to keep losses to a manageable level.

An initial survey of wildlife damage to farms in King County was conducted in 2021.[1] Although the response rate was low (only 35 farmers contacted), virtually all respondents reported significant damage by wildlife. Nearly half of all respondents reported significant crop losses to deer, with a mean annual crop loss estimated at approximately $4,500. Because elk distribution is more local, only 20 percent of respondents reported crop losses due to elk; however, mean annual losses on those farms was approximately $12,500. Extrapolated county wide, mean crop losses to deer and elk is approximately $5-10 million annually. Farms located adjacent to or near larger blocks of upland forest (virtually all farms in the Snoqualmie Valley) are most at risk to damage from deer and elk.

Those numbers are in line with reported losses from nearby counties. For example, Skagit county reported annual crop losses to elk at approximately $13,000 to $15,000 for each farm that had elk present.[2] As elk populations grow, farms in the eastern Puget Sound region are under increasing pressure.

Inexpensive options to control crop losses to deer and elk are limited. Both species can be effectively excluded by constructing sturdy fences around the farmed areas,

Desired Condition by 2048

Crop loss to elk and deer is considered manageable by individual farmers, and farmers have options that can reduce crop losses and compensate for excessive loss.

Timeline

2023

- Pilot alternative fencing designs

2024

- Amend King County Code to allow construction of seasonal/wildlife fences without obtaining building permit
- Conduct a more complete survey of farmers to better understand crop losses to deer and elk and effectiveness of employed exclusion practices
- Expand availability of compensation for deer and elk damage and simplify process for qualification
- Pilot growing specific crops in areas to pull elk and deer away from commercial farms

2025

- Increase special hunts when populations exceed target or if depredation losses are extreme
- Increase access to depredation permits
- Expand access to federal, state and local cost-share for non-lethal deer and elk exclusion options
- Initiate at least two projects that focus on reducing elk vehicle collisions in high collision areas
- Complete at least two projects that enhance the public's ability to observe and appreciate elk in their natural

but those are expensive to construct for large farms, require a building permit if taller than six feet (typically need to be seven to eight feet tall to be an effective barrier), and can be a management and permitting challenge in the floodway/floodplain (need to be removed during flood season). Multi-strand electric fences are a cost-effective alternative for smaller farms, but they are a bit more challenging to construct and require more frequent maintenance. Other options to reduce crop depredation by deer and elk are less effective. Hunting, either during the regular hunting season or with a special permit often may eliminate a few problem animals, but deer and elk will often adjust behavior and only visit farms at night. Non-lethal tactics have been effective in some places, but typically for limited time. Those options include scare tactics (e.g., scarecrows, bright lights, noise makers, motion sensor sprinklers), repellants applied around the perimeter of fields (e.g., predator urine, blood meal), and application of taste aversion mixes (commercial and home-made). Applying a combination of non-lethal strategies is likely to have the best long-term effect.[3,4]	habitat or increase public understanding of elk biology and their habitat requirements 2026 • Work with WDFW to find alternative hunting options on private land • Expand availability for deer and elk hunting clubs willing to pay farm landowners

Background	Service Providers	Priority
Deer and elk damage to commercial crops is a growing problem throughout the western US and it is difficult to balance the goal of maintaining healthy (often growing) populations of deer and elk with the need to protect farmland. There are an estimated 750 elk in Game Management Area 460 (GMU 460), which essentially covers the area between Interstate 90 and Highway 2, east of the Snoqualmie River.[5] Over half of that population is found between Fall City and North Bend (GMU 4601). Although elk in this region are concentrated in the southern portion of the APD, farmers as far north as the county line have experienced high levels of elk use/damage. Additionally, there are an estimated 400 elk in GMU 454, which covers the area between Enumclaw/Auburn and Everett, west of the Snoqualmie River. Combined, the elk population in those three GMUs meets the total target of 1,100 animals that was established in the 2020 herd management plan. Population data for black-tailed deer are lacking although the deer population in GMUs 460 and 454 are considered stable, based upon reported hunter harvest.[6] Elk and deer have a naturally diverse diet of plants, including grasses, forbs, and buds, leaves and stems of woody plants. Many commercial crops are attractive to elk and/or deer, especially when natural forage is in low supply, such as during periods of extended drought. Farmers in the Snoqualmie Valley have reported significant deer and elk damage to a broad spectrum of crops, including berries, pasture grass, legume-dominated cover crops, corn, flowers (including sunflowers, dahlias, lilies, and tulips), beans, tomatoes, peppers, lettuce, and brassicas. Deer and elk are also known to forage an many other commercial crops, including apples, pears, and industrial hemp. Direct crop loss is not the only challenge created by excessive numbers of deer and elk on farms. Those challenges can be classified as “overt” and “hidden,” and include damage to livestock fencing, increased collisions, crop and soil contamination and food safety concerns, opportunity cost by diverting attention from other farm management needs, not being able to grow preferred crops that can increase profits, and the emotional toll crop losses can have on farmers and their families.	Leads: • King County and WDFW Partners: • WSU Extension • WSDA • KCD • USDA NRCS • Upper Snoqualmie Valley Elk Management Group	HIGH

After obtaining a permit issued by WA State Department of Fish and Wildlife, a property owner or the owner's immediate family, employee or tenant may kill a deer if it is damaging crops RCW 77.36.030 and WAC 232-36-310. Property owners that have annual gross sales or harvested value of agricultural products of at least $10,000, who experience repeated crop damage from deer may be eligible to receive cash compensation. To qualify for compensation, a farm owner must have an active Damage Prevention Cooperative Agreement or provide an approved checklist of the preventative and nonlethal means that have been employed to abate crop damage from deer or elk.[7] Farm owners need to work with their local WDFW wildlife conflict specialist, located in the North Puget Sound Regional Office in Mill Creek.		

Strategies

- Conduct a more complete survey of farmers to better understand crop losses to deer and elk and effectiveness of employed exclusion practices.
- Expand availability of compensation for deer and elk damage and simplify process for qualification.
- Pilot alternative fencing designs.
- Amend King County Code to allow construction of seasonal and/or wildlife fences without obtaining building permit.
- Pilot growing specific crops in areas to pull elk and deer away from commercial farms.
- Expand access to federal, state and local, including KCD, cost-share for non-lethal deer and elk exclusion options.
- Increase access to depredation permits.
- Increase special hunts when populations exceed target or if depredation losses are extreme.
- Work with WDFW to find alternative hunting options on private land such as Michigan's Hunting Access Program[8] (see Figure 42).
- Expand availability for deer and elk hunting clubs willing to pay farm landowners.
- Initiate at least two projects that focus on reducing elk vehicle collisions in high collision areas.[9]
- Complete at least two projects that enhance the public's ability to observe and appreciate elk in their natural habitat or increase public understanding of elk biology and their habitat requirements.[10]

Figure 42. Michigan Department of Natural Resources Hunting Access Program Sign [11]

[1] Parekh, J. 2021. Assessment of impacts of wildlife damage on farmers. Unpublished report. King County, Department of Natural Resources and Parks.

[2] Capital Press, "Washington County Tallying Elk Damage to Farms", August 15, 2018. Updated December 13, 2018. [LINK]. Accessed 9/26/22.

[3] Walter, D.W., M. . Lavelle, J. W. Fischer, T.L. Johnson, S.E. Hygnstrom, and K. C. VerCauteren. "Management of damage by elk (Cervus elaphus) in North America: a review" (2010). Wildlife Research 37(8): 630-646. [LINK]. Accessed 9/26/22.
[4] Johnson, H.E., J.W. Fischer, M. Hammond, P.D. Dorsey, W.D. Walter, C. Anderson, and K.C. VerCauteren. "Evaluation of techniques to reduce deer and elk damage to agricultural crops" (2014). Wildlife Society Bulletin 38(2): 358-365. [LINK]. Accessed 9/26/22.
[5] Washington Department of Fish and Wildlife, "North Rainier Elk Herd Management Plan". (2020). Wildlife Program, Washington Department of Fish and Wildlife, Olympia. [LINK]. Accessed 9/26/22. Page102.
[6] Washington Department of Fish and Wildlife, "2015-2017 Ungulat Assessment" (2016). Wildlife Program, Washington Department of Fish and Wildlife, Olympia. [LINK]. Accessed 9/26/22. Page 184.
[7] Washington Department of Fish and Wildlife, "Qualifying for a deer or elk damage claim". [LINK]. Accessed 9/26/22.
[8] Michigan Department of Natural Resources, "Hunting Access Program". [LINK]. Accessed 3/28/23.
[9] Washington Department of Fish and Wildlife, "North Rainier Elk Herd Management Plan". (2020). Wildlife Program, Washington Department of Fish and Wildlife, Olympia. [LINK]. Accessed 9/26/22. Page ix.
[10] Ibid.
[11] Michigan Department of Natural Resources, "Hunting Access Program". [LINK]. Accessed 3/28/23.