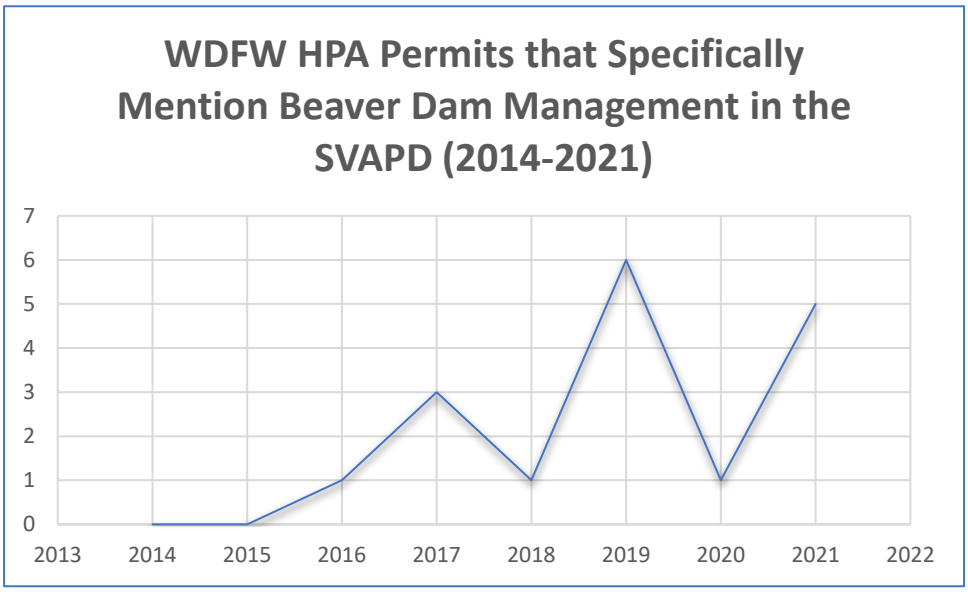
1.1.6: Beavers

Current Condition

Figure 8. WDFW HPA Permits Mentioning Beaver Dam Management[1]



In the last 5-10 years, the beaver population in the Snoqualmie Valley APD appears to have grown while policy for management of beavers has not yet caught up. Beavers can move into areas where dams and/or beavers were removed within as little as six hours. Impoundment of water by beaver dams can be a benefit for farms as it rebuilds surface and ground water supplies, helping with climate change impacts[2]. However, the water table is so close to the surface in the Snoqualmie Valley it is often above the surface where it remains during the growing shoulder seasons and sometimes into the main season and limits farmers abilities to plant and harvest under optimal conditions.

As shown in Figure 8, Washington Department of Fish and Wildlife (WDFW) reports an increase in 2019 and 2021 (note: 2020 Covid-19 pandemic outbreak) in the SVAPD for Hydraulic Project Approval (HPA) permits specific to beaver dam removal. WDFW also reports 612 beavers were trapped and culled in King County as a whole, between 2014-2021, 275 for recreational harvest and 337 for conflict-related trapping.[3] See Figure 9.

The SVWID offers a variety of services for drainage related to beavers including beaver trapping.[4] SVWID self-reports trapping 392 beavers in the SVAPD from February 1, 2017, through February 15, 2023.[5] The Tulalip Tribes offer free trapping and relocation of beavers to the uplands.[6] Since 2016, sixteen beavers have been relocated from the Snoqualmie Valley by the program.[7] In addition, the organization Beavers Northwest provides services on beaver coexistence solutions such as notch exclusion fences, flow devices, and installation assistance.[8] In 2022, Beavers Northwest worked on two beaver coexistence projects in the Snoqualmie Valley and met with one additional landowner who self-managed beaver impacts without removing the animals.[9]

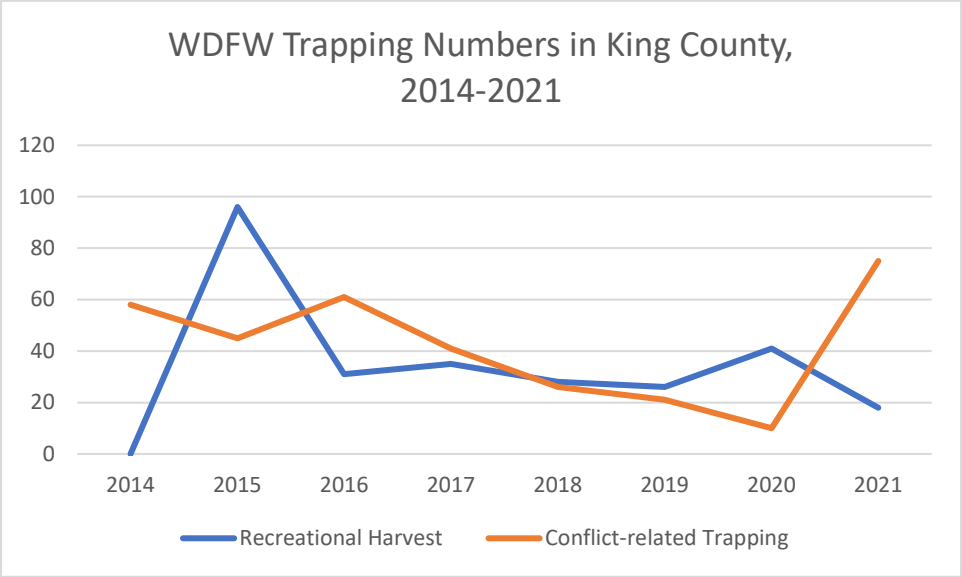
Desired Condition by 2048

Farmers manage beaver dams, beaver dam related flooding, and beaver populations on farm properties to ensure food production is not diminished while taking advantage of surface and groundwater captured by beaver dams for agriculture production when possible.

Timeline

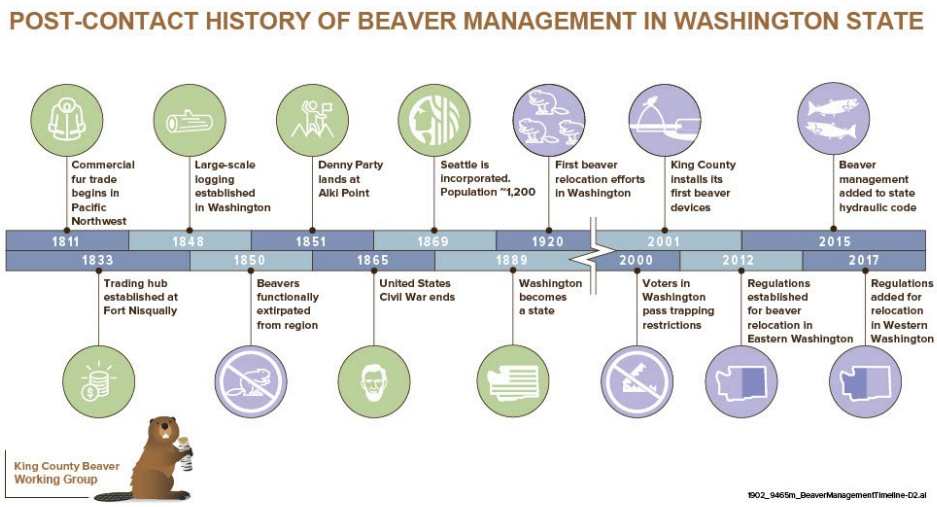
- 2025: Develop King County legislation to allow greater flexibility for managing beaver dams on farms
- 2026: Create guidance on regulations
- 2027: Adopt King County legislation
- 2028: Secure additional funding for technical assistance and research
- 2029: Conduct expanded research and technical assistance, including Population Study

Figure 9. WDFW Trapping Numbers in King County 2014-2021[10]



Background	Service Providers	Priority

Figure 10. Post-Contact History of Beaver Management in Washington State



Beavers are known as “ecosystem engineers” because they physically alter their environment by building dams in waterways, which leads to the creation of wetlands, changes in riparian vegetation, absorption of pollutants, and many other changes that increase stream complexity and contribute to ecosystem health. Beavers are found throughout the lower Snoqualmie Valley in agricultural waterways. Their presence in these waterways can create localized flooding, which inundates farm fields and leads to drainage problems for farming, some fields remain underwater throughout the season, and fence damage can be caused from beaver felled trees. ADAP will remove dams when encountered during projects, work with the Tulalip Tribes to trap and relocate beavers, or the SVWID to trap and cull beavers, and attempt to find longer-term solutions such as devices.

Leads:

- Snoqualmie Valley Watershed Improvement District
- King County ADAP
- King County Beaver Working Group

Partners:

- The Tulalip Tribes
- Beavers Northwest

HIGH

The King County Beaver Working Group has developed technical papers and other tools to help landowners living near beavers[11]. Beaver dam management requires a Hydraulic Project Approval (HPA) from WDFW. King County currently has no formal policy and no established permitting system for specifically responding to beaver-related issues including backwater flooding that can result in the creation of or reversion to prior converted wetlands; currently they are regulated on a case-by-case basis under the King County Critical Areas Ordinance.		

Strategies

- Manage beaver dams and beaver populations on agricultural lands to increase farmland productivity.
- Leverage ADAP to provide maximum allowable range of drainage services (year-round) for beaver management, including dredging after beaver dam removal to solve sediment build up in emergencies.
- Streamline the King County permitting process within APDs for beaver dam removal so that clearing and grading permit for critical areas is not required and only WDFW HPA is needed.
- Streamline the existing King County clearing and grading permit process for critical areas by developing guidance that scales the County clearing and grading permitting requirements for non-ADAP-eligible waterways based on potential critical areas impacts from beaver dam management. (Note: No new permits are required for this process.)
- Create guidance on regulations for farmer/landowners showing what can be done to manage beaver dams with and without permits.
- Secure long-term funding to increase long-term beaver-related technical assistance, including educational workshops and cost-share options for landowners.
- Secure long-term funding to support research and pilot projects that explore alternatives to trapping and removal, such as increasing depth and width of ag waterways, pond levelers[12], water notch exclusion fencing, crop and planting modifications, new ideas and technology, and population studies over time.
- For buffer plantings, limit willows and tree species that beavers love to eat in favor of conifers and other species they don't like to eat.
- Ensure King County regulations continue to match the State regulations for fur-bearing trapping seasons and rules.

[1] Washington Department of Fish and Wildlife, "Hydraulic Project Approval (HPA) Issued Permits" [LINK]. Accessed 1.11.22.
[2] Climate Change Adaptation and Beaver Management Team. 2014. National fish, wildlife, and plants climate adaptation strategy: report of the climate change adaptation and beaver management team to the joint implementation working group implementing the national fish, wildlife, and plant climate change adaptation strategy. 25 pp.
[3] Washington Department of Fish and Wildlife, "Number of Beavers Trapped in King County since 2014". Public Records Request. February 2, 2023.
[4] Snoqualmie Valley Watershed Improvement District "Management Options for Snoqualmie Valley Beavers" [LINK]. Accessed 1.24.22.
[5] Ericson, Erin. Email Interview. March 20, 2023.
[6] The Tulalip Tribes, "The Tulalip Beaver Project"[LINK]. Accessed 5.6.21.
[7] Collins, Dylan. Email Interview. March 20, 2023.
[8] Beavers Northwest, "Conflict Resolution" [LINK]. Accessed 12.8.22.
[9] Kerr, Elyssa. Email Interview. December 7, 2022.
[10] Ibid.
[11] King County Beaver Working Group, "Post-Contact History of Beaver Management in Washington State" [LINK] Accessed 5.6.21.
[12] Lee, S.Y. et. al, "The Impacts of Pond Levelers on Beaver Dam Flow & Overtopping Frequency," Senior Design Team ENSC 22.1, Seattle University, 2021. Prepared for the Snoqualmie Valley Watershed Improvement District. Page 3-4.