

The King County Beaver Working Group: Utopia, Reality, and Liberating Structures

Calgary Symposium:
Putting Beavers to Work
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**BRITISH
COLUMBIA**

ALBERTA

**WASHINGTON
STATE**

← **King County**



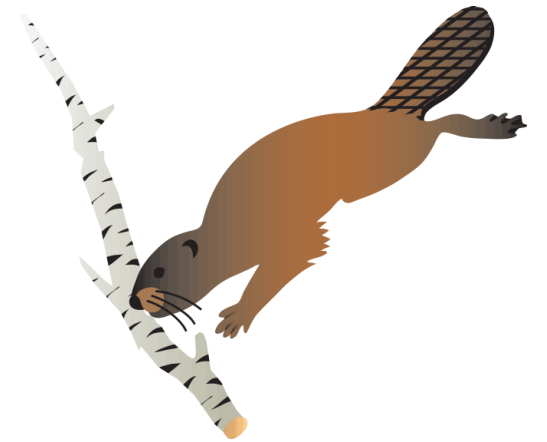
MONTANA

IDAHO

OREGON

What we'll cover

- Purpose of the King County Beaver Working Group
- Context of our work in the State and County
- Work products – done and in development
- Especially noteworthy work



King County Beaver Working Group

Purpose: Why the King County BWG formed

- Many County lands and staff interface with beavers
- We want to get everyone working from the same playbook
- We want to find and promote practical & effective solutions to coexist



Utopian Model of Coexistence

Practical Solutions

- Policies
- Tools
- Incentives
- Acceptance



Coexistence

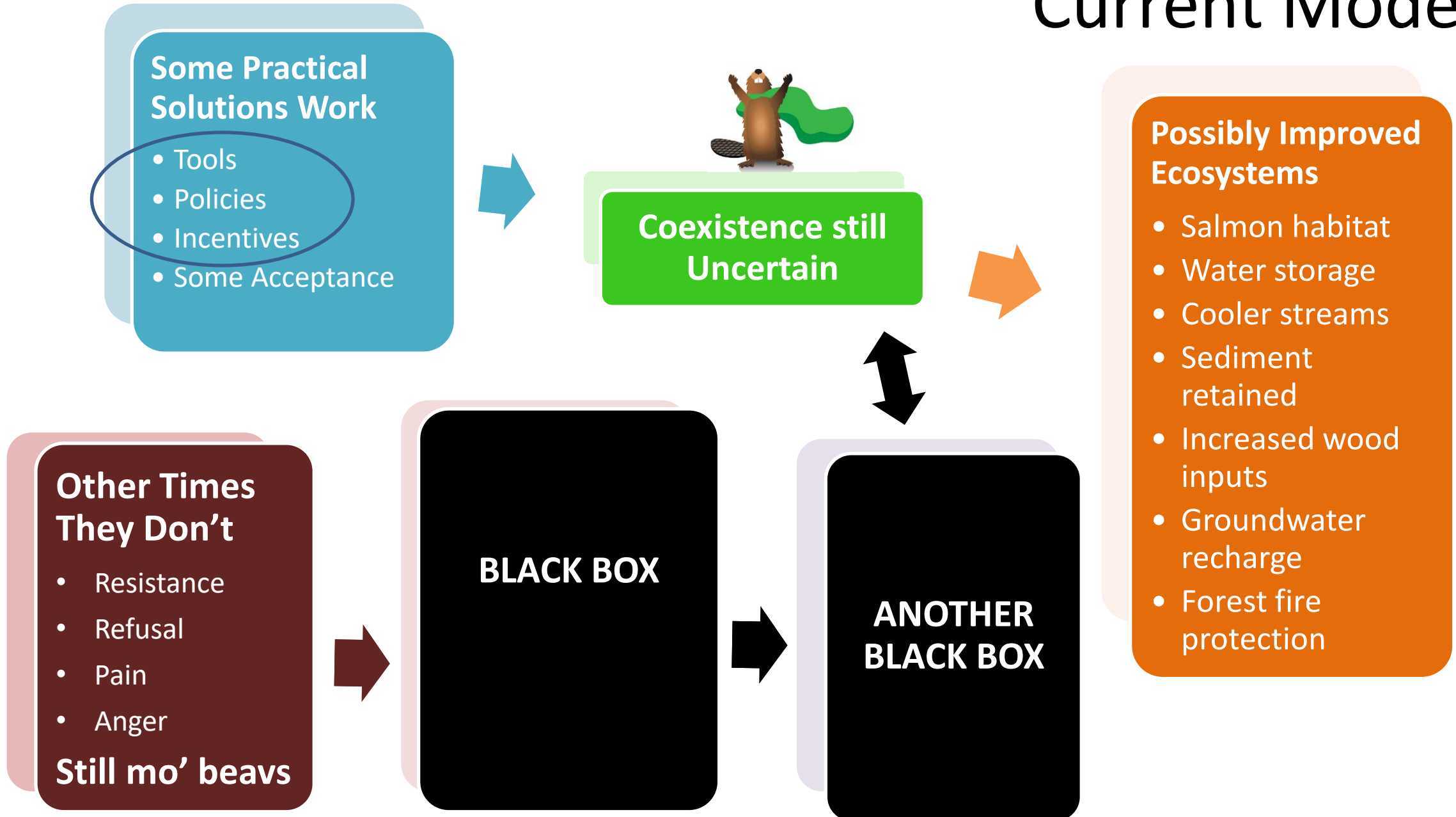


Improved Ecosystems

- Salmon habitat
- Water storage
- Cooler streams
- Sediment retained
- Increased wood inputs
- Groundwater recharge
- Forest fire protection



Current Model



Policy Context

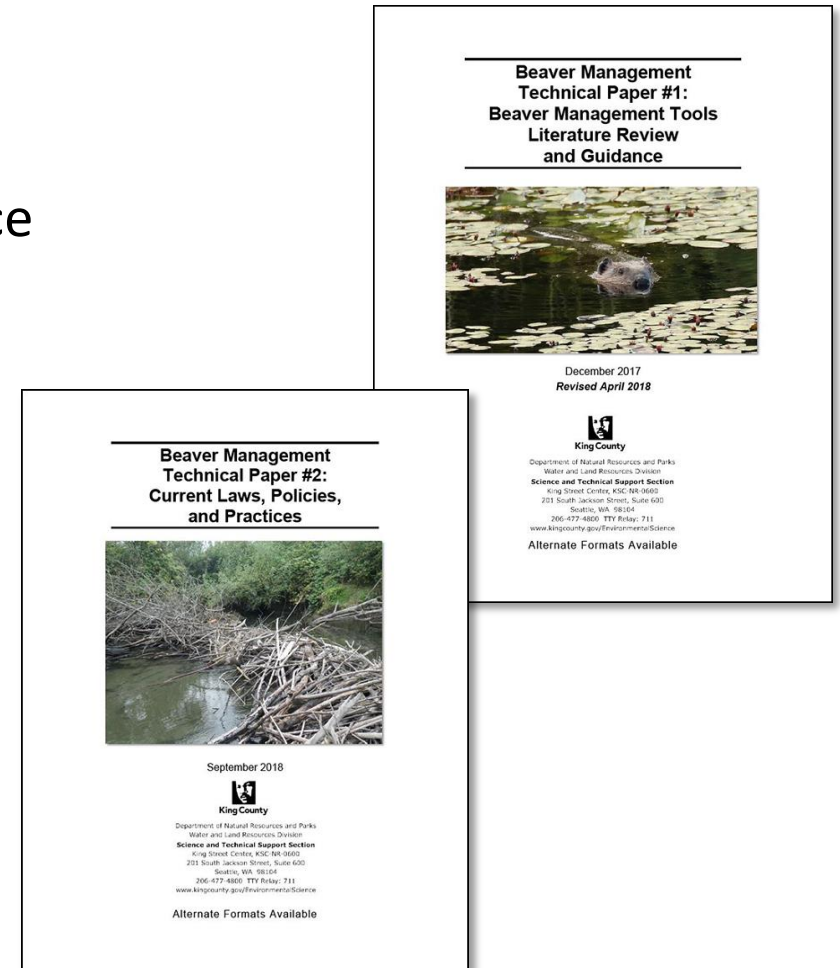
- Washington State laws and roles
 - Regulate beavers as furbearers
 - Issue HPAs
- King County's role in beaver management
 - Landowners
 - Surface water management
- County beaver policies
 - We have none
 - We are developing many



Products of the King County BWG

Foundational work: Technical Information

- Beaver Management Tools Literature Review and Guidance ([Technical Paper #1](#))
- Current Laws, Policies, and Practices ([Technical Paper #2](#))
- Beaver Life History and Ecology Best Science Review (in progress)
- Beaver Effects and Impacts Best Science Review (in extremely slow progress)



Products of the King County BWG

Practical Application

- [Summary of Current Laws, Policies, and Practices](#)
- Beaver management tools [summary matrix](#)
- [Decision Flow Chart](#)
- [Planning for Beavers Manual](#) (more on this in a sec)
- [Easy Guides to all Technical Papers](#) (next few years)

Beaver Management in King County: Summary of Current Laws, Policies, and Practices

Washington Department of Fish and Wildlife (WDFW) sets and enforces the laws related to trapping and relocation of wildlife, including beavers. They also require permits for in-water work, including removal or manipulation of beaver dams.

Trapping

To summarize state trapping laws and regulations:

- The beaver is classified by Washington State as a furbearer ([WAC 220-400-010](#)). A trapping license and open season are required to recreationally trap a beaver. The recreational trapping season is set from November 1 to March 31. At any time of year, if an immediate threat to personal property exists, the property owner may kill or trap the beaver(s) on that property. In such cases, no special permits are necessary for the use of live traps.
- Body-gripping traps, defined as any trap that grips an animal's body or body part ([RCW 77.15.160](#), [WAC 220-417-040](#), and [WAC 220-400-010](#)), view require a [Special Trapping License](#), issued by WDFW and available by written application only. It is unlawful in Washington (RCW 77.15.194) to use a body-gripping trap to capture any mammal for recreation or commerce in fur, the intended to be used on animals causing property damage or threatening health or safety.
- The only body-gripping traps that may be authorized with a [Special Trapping License](#) include Comber-type traps submerged in water, padded leg-hold and non-strangling-type foot snares (WAC 220-417-040).
- Illegal traps with no exceptions are neck snares and unpadding, steel-jawed hold traps.
- Legal traps are cage or box traps and sublethal-type live traps, including ball Comstock traps. These are legal for use during recreational trapping season resolve a property damage issue.
- All live traps must be checked within 24 hours of setting ([WAC 220-417-010](#)).

body-gripping traps (lethal or not) permitted under a STP must be checked

[www.wdfw.wa.gov/beaver-trapping-licenses](#)

WHAT DO I DO IF I HAVE A BEAVER ISSUE?

Use our beaver management decision flowchart to help you decide what actions to take

- Are beavers impacting one or more properties?**
MORE THAN ONE: GO TO 2.
ONLY ONE: MINE: GO TO 3.
- Are property owners private or public?**
PRIVATE: All landowners need to agree about the problem and desired outcome before proceeding. Once everyone is in agreement, GO TO 3.
PUBLIC: Beaver-related flooding/line damage is on public property. Contact the jurisdiction where the beavers are located. Need help understanding options for beaver management? GO TO 3.
- Can you live with beavers as long as they don't damage trees or cause flooding?**
YES, but I would like more information. Go to the King County Beaver Management Program: [problems and solutions](#) page at [www.kingcounty.gov/beavers](#)
NO: GO TO 4.
- Can you live with beavers if there is no flooding?**
YES. Beavers can stay if we can find a way to control flooding. GO TO 7.
NO. I would like to have the beavers trapped/relocated. GO TO 9.
- Flooding may occur in areas that also coincidentally have beaver activity. Have you had anyone verify that a beaver dam is causing the flooding?**
NO. Have site evaluated by King County Stormwater Services. Call 206-477-4811.
YES. The beaver dam is definitely causing flooding. GO TO 6.
- Are beavers plugging a culvert or building free-standing dams away from culverts?**
PLUGGING CULVERTS: Culvert fencing may help. Refer to the Beaver Management [Tools Matrix](#) or Section 2.3.1 of the Beaver Management [Technical Paper](#).
FREE-STANDING DAMS AWAY FROM CULVERTS: NO, relocation is not an option. Hire a trapper for more information go to the King County Beaver Management Program Resources page at [kingcounty.gov/beavers](#).
- What type of property is the flooding impacting?**
FLOODING IS COVERING ROADS: Contact King County Roads Division at 206-477-8900. For more options, GO TO 8.
FLOODING IS ENTERING MY HOME OR AG LANDS:
• **Within unincorporated King County?** Contact King County's Drainage Compliance line at 206-477-4811.
• **Inside city limits?** Go to [stormwater/water-and-land-use/department/technical-support](#) link to find out who can help.
For more information, GO TO 8.
- Are beavers plugging a culvert or building free-standing dams away from culverts?**
PLUGGING CULVERTS: Culvert fencing may help. Refer to the Beaver Management [Tools Matrix](#) or Section 2.3.1 of the Beaver Management [Technical Paper](#).
FREE-STANDING DAMS AWAY FROM CULVERTS: Pond weavers may help. Refer to Section 2.3.2 in the Beaver Management [Technical Paper](#). Beaver Management Tools Literature Review for more information. Note that state and county permits may be required.

King County

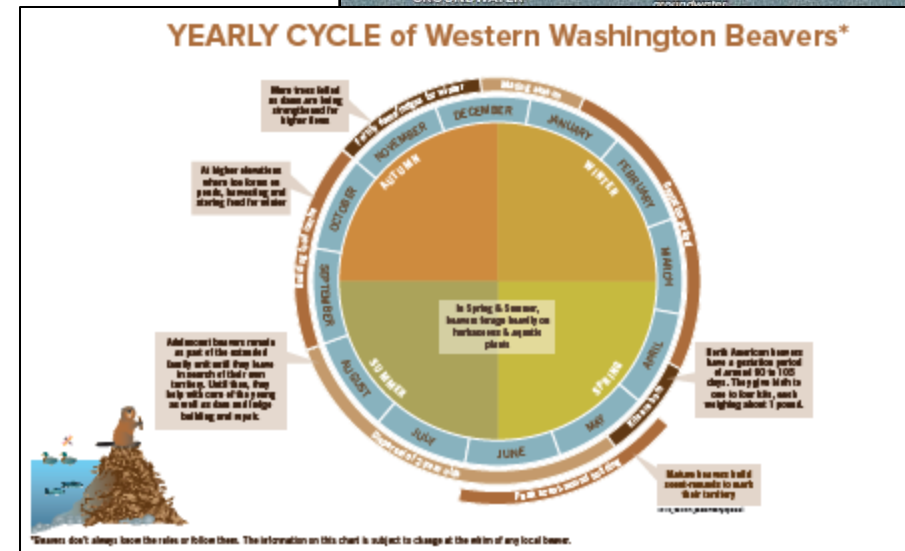
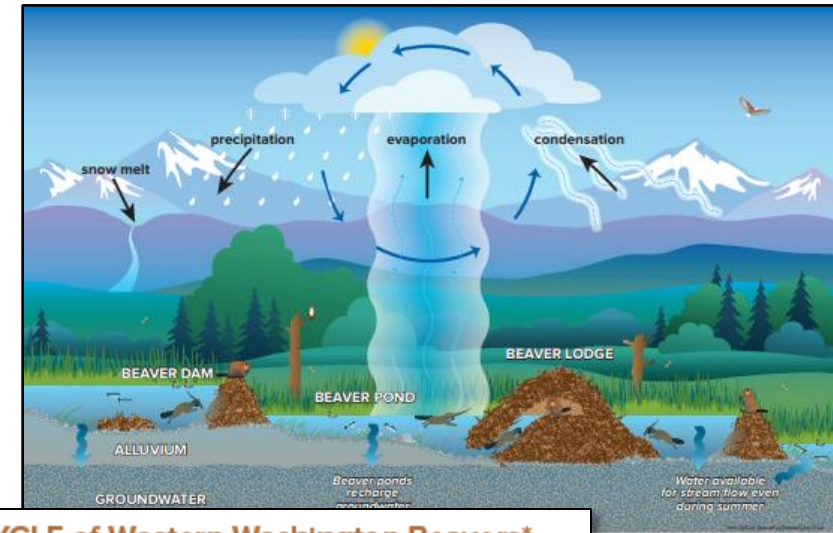
Tool Name	Intervention	Cost / Funding	Intended Use	Interventions	Implementation
Beaver Management Matrix	Summary of beaver management tools and their intended uses.	Varies by tool.	Used to select the most appropriate tool for a specific situation.	Summary of beaver management tools and their intended uses.	Used to select the most appropriate tool for a specific situation.
Decision Flowchart	Flowchart to help decide what actions to take based on the type of beaver issue.	None	Used to guide the user through the decision-making process.	Flowchart to help decide what actions to take based on the type of beaver issue.	Used to guide the user through the decision-making process.
Summary of Current Laws, Policies, and Practices	Summary of state and local laws, policies, and practices related to beaver management.	None	Used to provide background information on the legal and regulatory context.	Summary of state and local laws, policies, and practices related to beaver management.	Used to provide background information on the legal and regulatory context.
Planning for Beavers Manual	Manual providing detailed information on planning for beaver management.	None	Used to provide detailed information on the planning process.	Manual providing detailed information on planning for beaver management.	Used to provide detailed information on the planning process.
Easy Guides to all Technical Papers	Easy-to-read guides to all technical papers related to beaver management.	None	Used to provide quick access to technical information.	Easy-to-read guides to all technical papers related to beaver management.	Used to provide quick access to technical information.

Products of the King County BWG

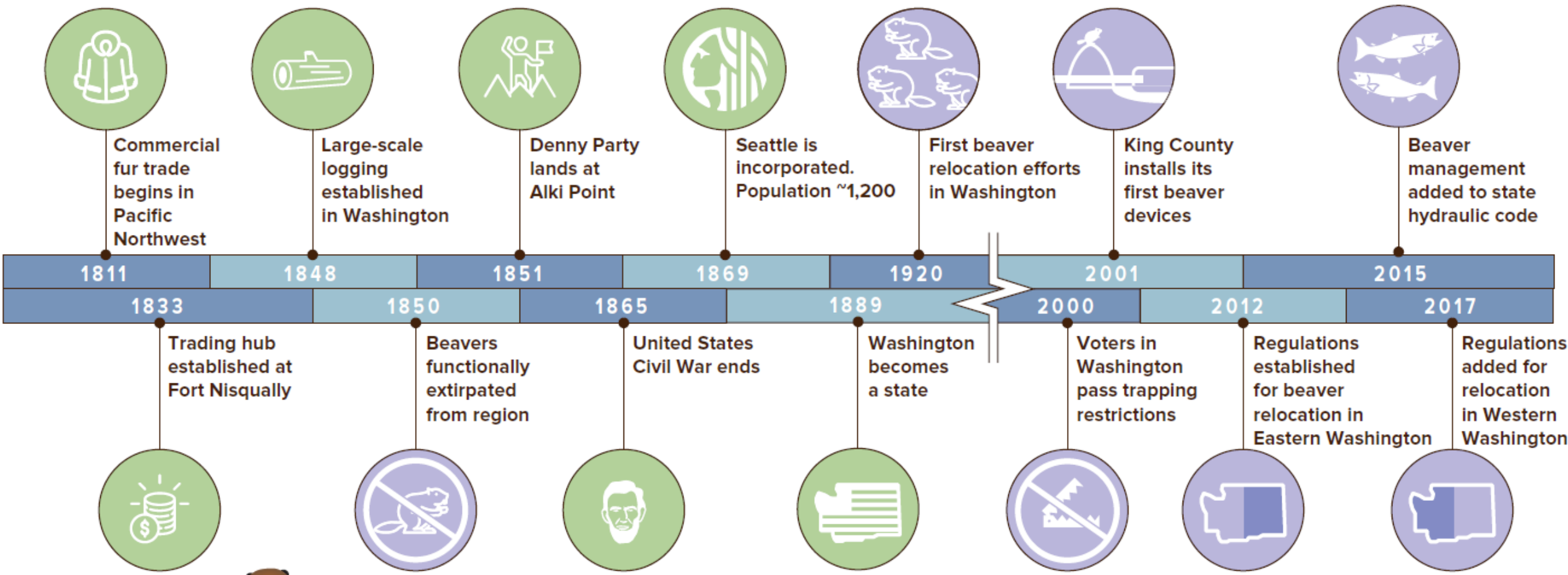
Educational Materials

kingcounty.gov/beavers

- [Beaver FAQs](#)
- [Hydrology Poster](#)
- [Beaver yearly cycle](#)
- [Post-contact history of beav management](#)
- Sign up for email list to stay informed



POST-CONTACT HISTORY OF BEAVER MANAGEMENT IN WASHINGTON STATE



King County Beaver Working Group



Especially noteworthy work

- Fish Passage
- Planning for Beavers Manual
- Good Neighbor Workshops



Fish Passage Subcommittee

Dams with devices - are they fish passable?

- Hearing concerns of Tribes and State
- Designing studies
 - PIT tags with arrays
 - eDNA
 - Trail cams / underwater cams?



Especially noteworthy work

- Fish Passage
- **Planning for Beavers Manual**
- Good Neighbor Workshops



Planning for Beavers Manual

- We plant trees along streams for salmon
- How can we anticipate beavers?
- Changing how we plan, budget, and design projects

IN PROGRESS



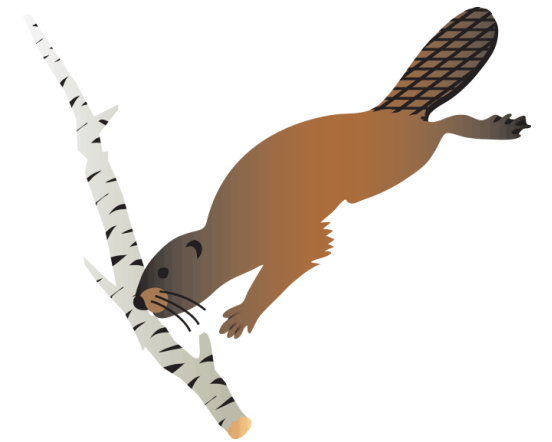
Planning for Beavers Manual

Chapter 1

- How to Use the Manual
- What this Isn't, and What it Is
- Introduction to the Case Studies

Chapter 2

- Risk and Risk Tolerance
- Outreach
- Pre-project Monitoring



Planning for Beavers Manual

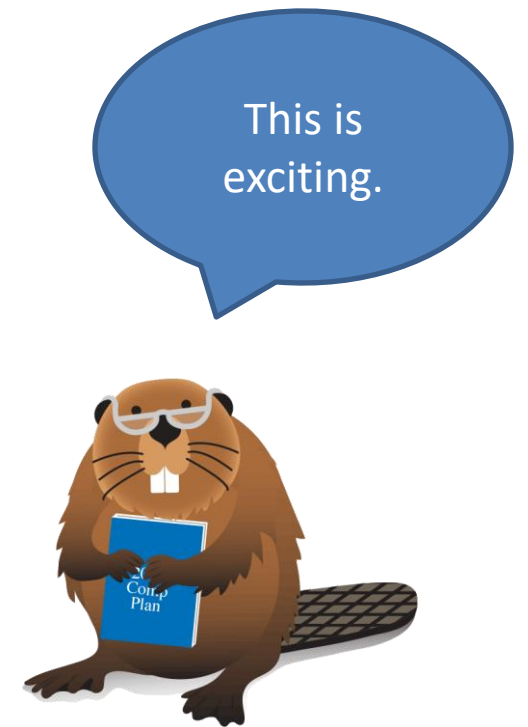
Chapter 3 – Potential Flooding

- Predicting Flood Risk
- Responding to Flood Risk
 - Includes Planting for Changing Water Levels



Planning for Beavers Manual

- ▲ 3.0 Potential Flooding
 - ▲ 3.1 Predicting and Analyzing Flood Risk (Ess...
 - 3.1.1 Information used to predict floodin...
 - 3.1.2 Predictive Mapping
 - ▲ 3.2 Responding to Flood Risk
 - 3.2.1 Potential impact to neighbors (Esse...
 - 3.2.2 Easements & acquisition and payin...
 - 3.2.3 Anticipating pond levelers
 - 3.2.4 Change the topography
 - ▲ 3.2.5 Planting for changing water levels
 - 3.2.5.1 Future flooded areas
 - 3.2.5.2 Planting along a continuum
 - 3.2.5.3 Perpendicular patches
 - 3.2.5.4 Wait and See
 - 3.2.5.5 Hummocks
 - 3.2.5.6 Floodable terraces



Planning for Beavers Manual

Chapter 4 – Plant Survival & Sustainability

- Predicting Herbivory
- Planning for Herbivory



Planning for Beavers Manual

- ▲ 4.0 Plant Survival & Sustainability
 - 4.1 Predicting Herbivory
 - ▲ 4.2 Planning for Herbivory
 - 4.2.1 Tree and shrub species selection
 - 4.2.2 Tactical riparian planting
 - 4.2.3 Herbaceous salad bars
 - 4.2.4 Planting quantities and densities
 - ▲ 4.2.5 Fencing
 - 4.2.5.1 Budget your schedule
 - 4.2.5.2 Wear the beavers out with fence
 - 4.2.5.3 Passage for people and other a...
 - 4.2.5.4 Fence longevity
 - 4.2.5.5 Zero tolerance fencing
 - 4.2.5.6 Fencing along rivers
 - 4.2.6 Natural barriers
 - 4.2.7 Combining methods and assessing...

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Planning for Beavers Manual

Chapter 5 – Getting Beavers to Work for You

Chapter 6 – Budgeting for Beavers

Chapter 7 – Post-project Monitoring & Problem Solving

Chapter 8 – Critical Path Checklist

Appendices:

- Worksheets
- Templates and tip sheets for “Outcome” plans
- Case Studies



Especially noteworthy work

- Fish Passage
- Planning for Beavers Manual
- **Good Neighbor Workshops**



Good Neighbor Workshops

Purpose:

- Engage with residents of properties that neighbor County lands
- Learn what it means to them for King County to be a good neighbor where beavers are concerned



Good Neighbor work

Why

- Many cases of beavers on County lands impacting neighbors
- Foster good relations
- Hear from neighbors what they think & want
- To inform formulation of policies and new programs



Good Neighbor work

What & How

- Mailing list of ~3,000 neighbors
- Two 4-hour workshops
- Liberating Structures



Creating group purpose – “9 Whys”

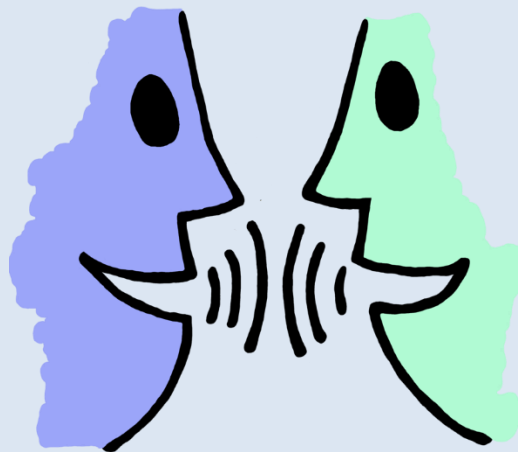
Steps:

1. Pair up with someone new.
2. Person 1 asks partner one of these questions.
3. Partner responds.
4. Person 1 asks “why” to the responses 9 times.
5. Switch roles at the horn.

4 minutes



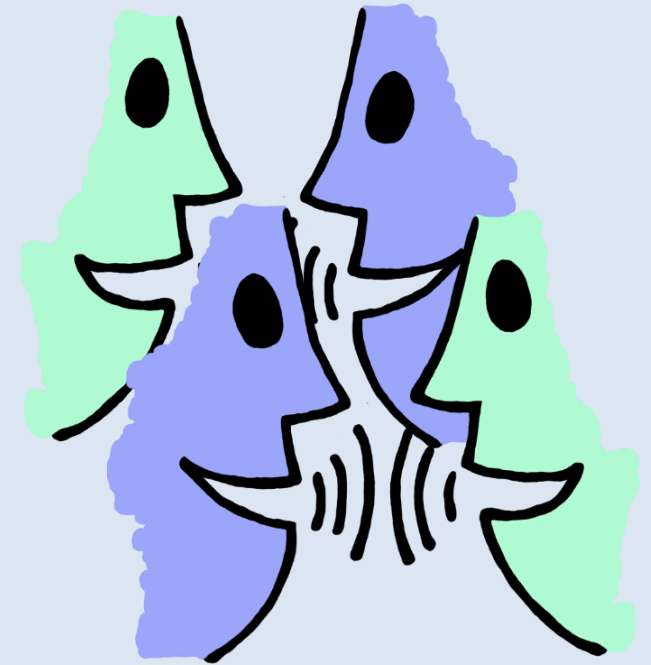
- What do you want to happen as a result of this workshop?
- Why is this **outcome** important to you?
 - Why ?
 - Why ?
 - Why ?



Creating group purpose - 2

1. Each pair gets together with another pair.
2. Person 1 from Pair 1 describes Person 2's responses to Pair 2. Trade for each Person/Pair.
3. Come to an agreed-upon **outcome** for today's workshop.

5 minutes



Good Neighbor work

Preliminary Observations

- Anyone with opinions on beavers showed up – not just neighbors (shows need for broader beaver engagement)
- People appreciated the engagement and said they want to stay engaged
- Beaver education is needed – and sometimes wanted
- First workshop did not produce innovative ideas





Future Reality Model



Some Practical Solutions Work

- Tools
- Policies
- Incentives
- Some Acceptance

Coexistence

Improved Ecosystems

- Salmon habitat
- Water storage
- Cooler streams
- Sediment retained
- Increased wood inputs
- Groundwater recharge
- Forest fire protection

Other Times They Don't

- Resistance
- Refusal
- Pain
- Anger

Still mo' beavs

New Paradigm After:

- Land cover modeling
- Economic analyses
- Crazy new tools
- New generations

New Land Uses & Regs:

- Wetlands can be wetlands
- Riparian areas can have trees and beavers

Needs

- New messaging:
 - The words we use.
 - Devices do require maintenance.
 - Devices should be installed by professionals.
- Incorporate beavers into models.
- Economic analyses.





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