

Overview of Goals:

Through the Beaver Intrinsic Potential (BIP) model, we have highlighted those areas across the Rogue Basin with high intrinsic potential for beaver. Now we are getting out into the field to assess if a given reach of high BIP is actually good beaver habitat. Our goals are both to inform restoration project planning and potential translocation of beaver, and the data we are collecting will inform these goals through assessing:

- Are beaver present now?
 - a. If yes, great! This survey will give regional stakeholders important data on how beaver are utilizing this reach and what habitat features correlate with beaver presence.
 - b. If no, what is the limiting factor in the habitat contributing to no beaver presence? This is likely to be one of four main categories*:
 - i. Lack of water
 - ii. Lack of appropriate beaver forage
 - iii. Lack of instream complexity and/or velocity barrier
 - iv. Current human conflict and trapping, or historic beaver extirpation.

The first three limiting factors are important to assess to inform future potential restoration projects such as riparian plantings or LWD and BDA placements. In the last case, where the habitat is good but there are no beaver, we can consider translocation of a “problem beaver” colony to this site, after being confident that it won’t result in further human/beaver conflict.

Choosing a Survey Reach

The BIP model called out intrinsic potential across the basin as:

- Poor = Gray
- Fair = Yellow
- Good = Green
- Best = Blue

We further narrowed this down by running a “hot spot” analysis, where stream reaches with high density of blue and green BIP were called out as “Focal Areas”. These Focal Areas are numbered (e.g. Steve Fork #11) and aggregated by watershed.

Furthermore, we are targeting public land for these surveys, due to the difficulties in relocating beaver to private lands, so only those Focal Areas of high BIP on public lands are being targeted by this survey effort. We generated a spreadsheet, where those prioritized Focal Areas (high BIP on public land) have been assigned to regional stakeholders and project participants to survey. Thus, as a project participant, you should have received a list of Focal Areas to survey and the corresponding PDF maps showing BIP and land ownership.

*There are of course more limiting factors than these, like if the stream banks are all bedrock and there is no place for a beaver to dig a den (e.g. Josephine Creek in the Illinois Valley)

You must determine a 0.75 mile reach within this Focal Area to walk. If the Focal Point is well over 0.75 miles long, choose a survey segment where you think the instream complexity is highest and there may be a dense riparian habitat of plants like willow, cottonwood, maple and red osier dogwood, etc. Zooming in on satellite imagery of the area can help you get an idea of this overall riparian structure. If you have been assigned a large focal point ≥ 1.5 miles long, you may choose to survey multiple segments as separate surveys within the same focal point.

Data Sheet Explained:

Our Site Assessment Data Sheet attempts to get at collecting all the data necessary for achieving our goals stated above, without wasting effort collecting data that won't be used. Check to make sure you are using at least version 6.0 (labeled in footer of the datasheet). Throughout this survey, we are not as interested in the precision of data as much as we are in getting an accurate picture of the habitat for beaver. The following are more detailed explanations of each area of the data sheet:

- Beaver Sign and Human Infrastructure
 - These are the features in the gold boxes that we record coordinates for, and the second line of text in each gold box tells you how to label that point. For example, if you come to an active dam, mark as "A Dam 1". If you come to a second dam on the survey, it will be marked as "A Dam 2". Mark coordinates as a point on a GPS or an app like Avenza. Please first take the GPS point, then photograph that point's details on the GPS unit with your camera before photographing the object (like the active dam). This easy habit allows you to quickly associate your photos with the corresponding GPS point when going through them back at the office. In the gray box beneath every gold box, you will record presence (Yes/No) if not marked with an asterisk (for example Fresh Chewings/Cuttings), or Count if marked with an asterisk (for example Active Dam*).
- Instream Condition
 - A simple of tally pools and large woody debris (LWD) to get at instream habitat complexity throughout the survey reach, specifically interested in cover and pools. LWD should be counted if within the Ordinary High Water Mark (OHW), even if it is not currently interacting with the stream flow. Large overhanging root masses from trees on a cut bank can be counted a single piece of LWD, or a jam if other logs have racked up on it.
- Riparian Vegetation
 - As you walk upstream, you will stop roughly every 1000' (0.25 miles) to record simple data on both the riparian conditions and the channel characteristics. These are your Points #1-4. Point #1 is at the beginning of your survey and Point #4 is at the survey's end.
 - Make sure to take coordinates and photographs of both the instream and riparian habitat.
 - Measure channel width and height from the OHW line in meters (or mark clearly if using the imperial system). Record both substrate and vegetation data as a snapshot of what you can see in the area you are standing, not a transect.

- Rank tree and shrub species by prevalence within roughly 20 yards of the streambank (including both banks in the ranking). For example, if there are Red Alder, Black Cottonwood and Bigleaf Maple along the creek's edge, with a few Douglas Fir and a single Pacific Yew, you will rank by which species has the most individual trees on the data sheet (e.g. Alder 1, Maple 2, Cottonwood 3, Fir 4, Other: "Yew" 5).
 - Record the overall percentage of trees, shrubs and herbaceous vegetation. This is obviously a subjective observation (requested by ODFW), and I believe the goal is a snapshot of forage availability. As such this is less a "basal area" or "cover", so much as it is a percentage of forage (think fine twigs and leaves). A single big cottonwood has a lot of biomass, but the canopy may actually yield a similar amount of forage to a beaver as a much shorter clump of thick Red Osier Dogwood — so these two plants should receive a similar percentage weight for their respective categories of tree and shrub. Give percentages that add up to 100%, and don't sweat this one too much.
- Focal Point
- This is a out-and-back survey, with this focal point as the only thing you need to do on your way back. As you walk on the way out, keep an eye out for the area of highest quality habitat; ideally a dense riparian community of beaver-preferred shrubs and trees, in conjunction with pools, LWD and herbaceous plants. This will be the area, or Focal Point, where you will conduct a more in-depth vegetation survey on the way back. This point will also serve as the coordinates for possible translocation of beaver. Watch for trees and shrubs that beaver prefer like willow, red-osier dogwood, cottonwood, ash, alder, maple, spirea, hazelnut, and herbaceous shrubs like salmonberry. Generally speaking, beaver prefer higher densities (16-17 trees per 30m by 10m plot) of trees with thin diameters (15-30 cm DBH). The focal point should have a pool \geq 1m deep in conjunction with this preferred riparian vegetation, and cover such as LWD or under-cut tree roots. The objective here is to target the safest place to release animals, so cover, pools and forage is all high priority.
 - Make sure to take coordinates and photographs of both the instream and riparian habitat.
 - This is basically the same data you took at the points 1-4, however this time it is split up by river bank right or left (facing downstream), with the addition of a vegetation plot. The vegetation plot is a rectangle 30 meters long and 10 meters in width, with the long edge along the stream bank and the short edge extending into the riparian forest.
 - Within this 30m by 10m plot, you will count every conifer, hardwood and shrub **stem**. Additionally, you will record 5 random (but representative) Diameter at Breast Height (DBH) measurements of each class (conifer, hardwood and shrub), which will be averaged for one value per bank. **These DBH measurements in centimeters** (if using inches please clearly note that you used the imperial system on the datasheet). Ocular estimates are also acceptable if the surveyor is practiced or competent in DBH estimates.
 - When counting stems, bear in mind that we are trying to get at available food, so rather than counting a large clumping willow as "1" shrub (which would than show a single

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narrow DBH measurement like 3.6 cm), we are counting all the stems. As such, one many-stemmed willow will be represented as by a count of say, “12” shrubs, with an average DBH of 3.6 cm (or whatever it is).

Sharing your data with the project:

Please organize your data in folders, as follows (using Jakob Shockey as an example):

- ❖ “Shockey_Incoming BIP Data” (Main folder)
 - “Squaw Creek_Upper Lake” (focal area survey folder. Name = “Focal area_Site Name”)
 - “BIP Assessment_Squaw Creek_Upper Lake.pdf” (PDF scan of Data Sheet)
 - “GPS Data_Squaw Creek_Upper Lake” (folder with all associated GPS points)
 - “I cut 1”
 - “I cut 2”
 - “A cut 1”
 - etc.
 - (Named as suggested in datasheet)
 - “Photos_Squaw Creek_Upper Lake” (folder with all photos from survey)
 - “AP-SC_Upper Lake_07032019_01”
 - “AP-SC_Upper Lake_07032019_02”
 - etc.
 - (Name using two letters for watershed-two letters for creek_ site name_date_nber in series)
 - “Upper Briggs Creek_Horse Meadow Wildlife Area”
 - Etc.

If you have any questions, contact project coordinator:




Jakob Shockey

Applegate Partnership and Watershed Council

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Tree and Shrub ID:

 <p>UGA5001082</p>	<p>← COYOTE WILLOW Image credit: Mary Ellen (Mel) Harte, Bugwood.org</p> <p>→ BOOTH'S WILLOW Image credit: 2008 Steve Matson</p>	
	<p>← PACIFIC WILLOW Image credit: Woodbrook Native Plant Nursery</p> <p>→ BOOTH'S WILLOW Image credit: Woodbrook Native Plant Nursery</p>	
	<p>← RED OSIER DOGWOOD Image credit: Maryland DNR Nursery</p> <p>→ RED OSIER DOGWOOD Image credit: Chief River Nursery</p>	

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←

CASCARA

Image credit: Oregon State University

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CASCARA

Image credit: Portland Nursery



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CHOCKECHERRY

Image credit: Gardenerdy.com

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CHOCKECHERRY

Image credit: Homefamily.net



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BLUE ELDERBERRY

Image credit: Burnt Ridge Nursery

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BLUE ELDERBERRY

Image credit: Paul Slichter



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 A close-up photograph of a branch of a Black Hawthorn plant. The branch is covered with clusters of small, dark, round berries. The leaves are green and serrated.	<p>← BLACK HAWTHORN Image credit: Bryan Kelly-McArthur</p>	 A close-up photograph of several leaves of a Black Hawthorn plant. The leaves are green with prominent veins and serrated edges. Some leaves show signs of damage or discoloration.
 A close-up photograph of several large, green, serrated leaves of a Hazelnut plant. The leaves have a prominent vein pattern and are arranged in clusters.	<p>← Hazelnut Image credit: Oregon State University</p>	 A close-up photograph of several green, serrated leaves of a Mock Orange plant. The leaves are arranged in clusters and have a slightly glossy appearance.
 A close-up photograph of two clusters of small, white, five-petaled flowers of a Pacific Ninebark plant. The flowers are arranged in dense, rounded clusters. The leaves are green and serrated.	<p>← Pacific Ninebark Image credit: Mount Pisgah Arboretum</p>	 A close-up photograph of several clusters of small, round, pinkish-red berries of a Pacific Serviceberry plant. The berries are arranged in clusters and are surrounded by green, serrated leaves. The text "Slichter 2006" is visible in the bottom right corner of the image.

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←
Snowberry
Image credit:
Gardenia.net

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**Vine
Maple**
Image credit: Native
Plants PNW



←
**Douglas
Spirea**
Image credit: UK
Wildflowers

→
**Indian
Plum**
Image credit: NW
Visual Plant ID



← **Oregon
Ash**
Image credit: Peel's
Nurseries





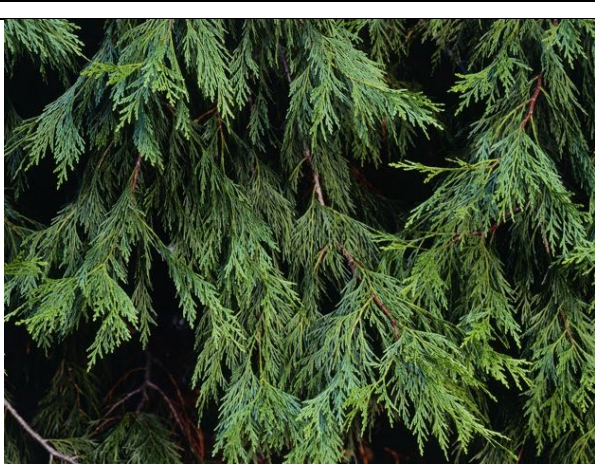
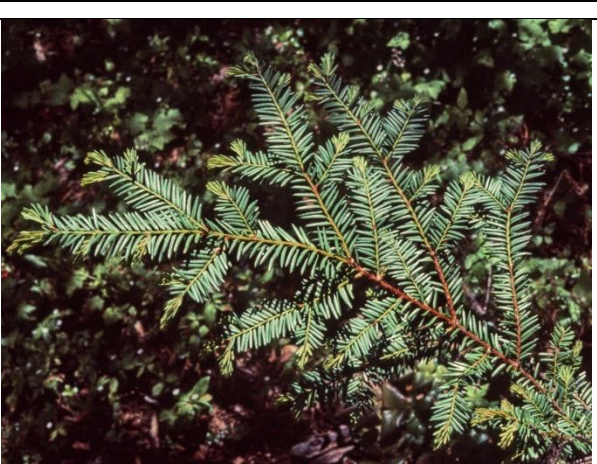
→
**Oregon
Ash**
Image credit: Arbor
Day Foundation



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	<p>← Red Alder Image credit: Just-green.com</p>	 <p>© 2008 Arbor Day Foundation</p>
	<p>← Black Cottonwood Image credit: Woodbrook Native Plant Nursery</p>	
	<p>← Incense Cedar Image credit: Getty Images</p>	
	<p>→ Pacific Yew Image credit: University of Puget Sound</p>	