Testimony of WaterWatch of Oregon on House Bill 3217

By Brian Posewitz, Staff Attorney

SENATE COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

Introduction and Summary

Chair Edwards and members of the Committee:

My name is Brian Posewitz. I am a staff attorney for WaterWatch of Oregon.

WaterWatch is a nonprofit organization that works to protect and restore streamflow in Oregon for the benefit of people who enjoy fish, wildlife and recreation. This year, WaterWatch celebrates its 30th anniversary.

WaterWatch opposes HB 3217 in its present form.

WaterWatch supports innovation in watershed restoration and believes that use of artificial beaver dams in stream restoration deserves further study. However, HB 3217 lacks adequate safeguards to minimize risk to natural resources and to ensure the proposed pilot program is used only for its intended purpose. Most significantly, the bill fails to ensure fish passage on streams historically used by native migratory fish and fails to ensure that the dams are appropriately scaled.

Foundations for Testimony

- Conversations with proponents (meetings and phone calls)
- Testimony before House committee
- Conversations with the Oregon Natural Desert Association (meeting and phone calls)
- Observations of beaver dam support structures on Pine Creek and Bridge Creek (May 7, 2015)
- Tour of Silvies Valley Ranch with owner Scott Campbell (May 8, 2015)
- Observations of other parts of Malheur Lake Drainage Basin (May 9, 2015)
- Review of literature

What are “artificial beaver dams”

- People associate the term with a wide range of structures, including structures that are actually called something else (e.g., “beaver dam support structures”) by people using the technique.
- HB 3217 would define very broadly:
  - “Artificial beaver dams” means a series of low-profile structures constructed for the purpose of delaying or slowing, but not preventing, water flow to raise the water table and water surface elevations within incised or eroded streams, and to promote restoration of stream and habitat conditions suitable for beaver recovery.”

HB 3217 could pilot structures like these

But also like these (without specific review by DSL, without fish passage, and with assumption that no water right is required)

Most agree that real beaver dams are good for streams

- "Beaver dams will facilitate fluvial geomorphic changes that include sediment retention, streambed aggradation, increased stream sinuosity, pool formation, increased stream length, reduced stream slope, reduced bed shear stress, and a shift in the bed composition from cobble toward gravel (Pollock et al. 2007, Demmer and Beschta 2008). Beaver dams should also raise water tables in the alluvial aquifer and thus help to greatly expand the amount of riparian forest and reduce stream temperatures (Lowry 1993, Westbrook et al. 2006, Pollock et al. 2007). Previous research has shown that these are reasonable outcomes to expect from the presence of stable beaver dams, particularly in streams with high sediment loads (Scheffer 1938, Pollock et al. 2003, McCullough et al. 2005, Westbrook et al. 2010)." Pollock, et al, Working with Beaver to Restore Salmon Habitat in the Bridge Creek Intensively Monitored Watershed: Design Rationale and Hypotheses, p. 8 (2012).

Real beaver dams allow fish passage (either through or around). ONDA tracking studies; Pollock, et. al., . Hydrologic and Geomorphic Effects of Beaver Dams and Their Influence on Fishes, p. 16 (American Fisheries Symposium 2003)).

Small “beaver dam support structures” encourage real beaver dams

- “Our study provides evidence that some incised streams can begin to aggrade more quickly through the use of flow obstructions that reduce stream power, allowing sediment to accumulate on the streambed and floodplain while also reducing bank erosion. Beaver and vegetation are essential to this accelerated recovery.”
- “Our most successful structure for beaver dam assistance has been the post line with wicker weave. Beaver readily adopt them . . . .”

Pollock et. al. (2012)

For large ABDs of rock, dirt, etc., the effects are not well established

- "Although the visual effects of building ABDs are striking and dramatically changes landscapes rather rapidly (within 1-3 years), the full consequences of this restoration strategy are not well understood. " Gordon Grant testimony to House Committee on Rural Communities, Land Use and Water (March 31, 2015) (not on OLIS).
- Research at Sylvies Valley Ranch includes: "Evaluate the **hydrologic, geomorphic, and ecological impacts** of specific restoration projects intended to reduce or reverse channel incision." Caroline Nash, Timescales of response on streams treated with Artificial Beaver Dams, Silvies River, OR (River Restoration Northwest 2015).

Potential adverse effects

- Eliminate fish passage on historic fish streams (and defeat a key restoration goal)
- Increase water temperature at sites and downstream, which is bad for fish
  - "Specific to artificial beaver dams, it is important to note a potential drawback of this approach. Over the past field seasons, although we have documented benefits such as increased water tables, we have also documented higher water temperatures at dam sites." Testimony of Brent Fenty, Executive Director Oregon Natural Desert Association (ONDA), to House Committee on Rural Communities, Land Use and Water (March 31, 2015).
- Alter downstream flow
  - Impacts on fish (high flow also important for fish)
  - Impacts on downstream water rights

What should be done?

- Wait for results of studies at Silvies Valley Ranch (let that be the pilot program)
  - Oregon Natural Desert Association
  - OSU
  - Burns Paiute Tribe
  - Eastern Oregon Agricultural Research Center

Cottonwood Creek Watershed Observatory (Silvies Valley Ranch)

Payne Creek Partnership Study Project (Silvies Valley Ranch)

If proceed with pilot, provide further rulemaking direction to DSL

- Provide for fish passage on historic fish streams (where fish passage laws ordinarily apply)
- Limit size of dams (even if only by reference to real beaver dams)
  - Two feet above historic flood plain could be 20 feet or more from the bottom of an incised stream channel
  - "ONDA suggests that the term "Artificial Beaver Dam" in Section 2a should be further defined to ensure that structures are not overbuilt. Our experience has shown that although such structures may have short--term benefits to retain water, they need to be built in a way that allows the stream to reclaim its historic meander over time and therefore ultimately allow more natural conditions to develop." Testimony of Brent Fenty, Executive Director Oregon Natural Desert Association (ONDA), to House Committee on Rural Communities, Land Use and Water (March 31, 2015).
- Limit incompatible land uses (e.g., continued grazing)
  - "The identification and elimination of the stressors that caused the incision in the first place are also critical (Schumm et al. 1984)." Pollock, BioScience, p 287 (2014).

Further direction to DSL (cont.)

- Prevent unintended uses (e.g., dams to facilitate diversions out of stream)
- Require re-vegetation
- Ensure dams not permanent
  - "Like natural beaver dams, BDAs are temporary features on the landscape. The BDA is intended to invoke a process response, not to remain as a permanent hard structure." Pollock, et. al, Using Beaver Dams to Restore Incised Stream Ecosystems, p 287 (BioScience April 2014).
- Ensure dams removed if monitoring shows more harm than good

Conclusion

- Bill should wait
- If not, bill should be amended
- Proposed amendments from agencies would address biggest problems (fish passage and scale)
  - With those amendments, WaterWatch would not oppose
- Thank you for the opportunity to testify

For additional information

- Testimony of Brian Posewitz of WaterWatch to House Committee on Rural Communities, Land Use and Water
- House Floor Letter from Rep. Helm

(Both available on OLIS)