Hood River Watershed Group

"…to sustain & improve the Hood River Watershed through education, cooperation, & stewardship"

FEBRUARY 23, 2021 MEETING MINUTES

Watershed Group Members Present

Chuck Gehling	Cindy Thieman	Alix Danielsen	Heather Hendrixson	Megan Saunders
Dick Iverson	Holly Coccoli	Gary Asbridge	Jim Wells	Greg Short
Megan Shearer	Brian Nakamura	Rick Larson	Jason Keller	Bernard Yoo
Lucius Caldwell	John Buckley	Annie Alsheimer	Jeff Hunter	Jennifer Euwer
Chuti Fiedler	Dan Ball	Nate Ulrich	Whitney Reynier	Rick Ragan
Corrie Podolak	Lauretta Burman	Elizabeth Gaar	Amanda Jones	Jeremy Hull
Susan Hess	Jurgen Hess	Rachel Wilson	Bengt Coffin	
Tim Mayer	Will Hudacek	Diedra Case		

** This meeting was conducted virtually via Zoom.

Welcome and Introductions

At 6:05pm, Chuck Gehling welcomed everyone to the February meeting and stated the mission of the Watershed Group. Alix read through the list of attendees and their affiliations and provided some general logistics about the meeting. There were 37 people in attendance. Cindy introduced the speaker, Gordon Reeves.

Gordon Reeves was a Research Fish Ecologist at the PNW Research Station in Corvallis, OR for 35 years, retiring in June 2018. His expertise is in the freshwater ecology of anadromous salmon and trout, conservation biology of those fish, and aquatic aspects of landscape ecology. He has studied the ecology of anadromous salmon and trout in the Pacific Northwest, northern California, Idaho, and Alaska and fish ecology in New Zealand and New York. He has published over 100 papers on the freshwater ecology of Pacific salmon and trout, effects of land management activities on the freshwater habitats of these fish, conservation plans, and dynamics of aquatic ecosystems in the PNW. He has led committees that developed and evaluated options for managing federal lands in the PNW and Alaska. He was also a member of the NOAA Fisheries Technical Recovery and Biological Review Teams for ESA listed Coho salmon in coastal Oregon and an EPA panel on Pebble Mine. His current work focuses on potential effects of climate change on Pacific salmon in Alaska and the PNW.

Monthly Informational Presentation

Gordon Reeves, Emeritus Scientist with the USFS Pacific Northwest Research Station, presented on ***Salmon and Steelhead Resiliency to Disturbance and Implications for Watershed Restoration.***

"Restoration: Meeting a Challenging Future" – Gordon began by noting that we have a lot of challenges facing us – climate change, population growth, endangered species. This is the perfect time to think about the basic expectations we have about aquatic ecosystems in terms of their behavior and performance and the organisms associated with them. It may be time to shift our assumptions and perceptions. As an example of challenging our assumptions, we can look at riparian areas prior to the Northwest Forest Plan versus after. After the NWFP, the definition of a riparian area was broadened significantly.

Now is an opportunity to examine the definition of resiliency. One definition is the capacity of a system to absorb disturbances and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedback (Walker et al. 2004). But literature shows us there are two types of resilience (Holling 1996). The first is engineering resilience, where the behavior of systems remains within a stable domain (quick return to equilibrium point if disturbed, predictable, focus on attributes). In terms of ecosystems, this is reflected in the River Continuum Concept, where there are predictable, defined sets of characteristics assigned to the different components of the system. Similarly, the Rosgen Channel Classification identifies channel types and their respective attributes, but there is no variation

considered in these definitions. Commonly used stream attributes are often associated with old-growth forest (e.g., number of pieces of wood, number of pools) – this is a limited set of attributes in which to describe aquatic ecosystems.

Gordon argues that across the aquatic landscape we expect that there is a given set of attributes at any given time, with some variation across locality. But there is a limited range of attributes and we expect that everything should be good everywhere. With a much more dynamic future ahead, is this the perspective we want to move forward with?

Another definition of resilience is ecological resilience, in which a system can reorganize from one stability domain to another; it has attributes across a range of conditions and not just within one domain. There is variability or heterogeneity, - features of the system change through time (something not reflected in traditional stream classifications) and the landscape is a dynamic mosaic. Ecological processes are important.

For example, if we look to our terrestrial counterparts, there is the concept of "natural succession" (forest succession). After disturbance, there is going to be a change of attributes *through time*. There is a shifting mosaic of change – nothing is stable. There is variability at spatial scales, or variation through time. The legacy of disturbance is what sets the stage for moving forward. For restoration projects, we can work with some disturbances by thinking about their legacies and accepting that nothing is stable.

For example, if we look at percentage of old growth across time and space (provincial, National Forest, and reserve scales), the level of variability decreases as you zoom out farther (the provincial scale looks relatively stable through time compared to much more variability at the reserve scale).

This is seen in salmon returns to Bristol Bay, Alaska. The total returns on the stream scale show large amounts of variability through time, but zoomed out to the Bristol Bay scale, variability is much less. As another example, Chinook and sockeye salmon production in the Nushagak River in Alaska over time (2011-2015) dramatically shifts around geographically. Stability is not part of these natural landscapes. As a side note, this data was collected using otolith microchemistry. The otolith is a boney structure in the head of the fish that is somewhat analogous to the human ear bone. The otolith lays down a ring every single day, which allows us to look at the chemical composition (Sr/Ca ratio) of each ring to determine where the fish was at any given time. In addition to movement tracking, this technique can also show steelhead and rainbow transition (Zimmerman & Reeves 2000). The Deschutes is the only river, based on current data, that steelhead do not give rise to rainbow and visa versa.

A final example of variability is looking at the number of pieces of large wood (physical attributes) in a river system. In the Elk River from 1989 – 2000, the wood counts varied dramatically. Debris flow variation over time is ecologically important in terms of the large wood and cold, high quality water that headwater systems supply. They deliver tremendous food and nutrients (50% or more of invertebrates were shown to come from these headwater streams in Alaska study).

Another example is the wet meadow system that is a focus of significant restoration on the east side currently. Gordon explained the hypothetical effect of fire on meadow riparian ecosystems (Wondzell et al. 2007). Traditionally after fire we try to restore areas that are susceptible to erosion, but erosion is what contributes to the development of these wet meadows.

Gordon briefly touched on glacial floods. In the upper Copper River, the glacial side channels were found to be highly productive. Chinook were feeding on midges that were feeding on the glacial flour. Additionally, Gordon stressed that we should not dismiss these glacial streams because they can quickly clear up as the temperatures drop and become very productive places for spawning.

What have we learned? Change is more important than stasis, understanding process and interaction is more important than description of conditions, extreme conditions are usually more important than average conditions (i.e., large wood input is often dependent on large events), general patterns are more important than details, uncertainty is certain, and the focus should be on diversity and not just quantity. With this in mind, landslide data can be used to determine priority areas for restoration work, such as road decommissioning and culvert replacement. Modeled water temperature variation can be used to determine priority riparian and floodplain areas.

How did fish adapt to these variable, highly dynamic systems? Genetic/life history flexibility, straying of adults (15% or more of a population may spread to new watersheds), high fecundity (number of eggs per unit of body weight; Pacific

salmon have some of the highest fecundity rates in the world; the "dandelions" of the fish world), and mobility of juveniles. A key point moving ahead is creating a landscape that allows for life history diversity to be expressed. In a survey of the Hood River, 40% of steelhead actually had rainbow parentage, so we need to think about how our restoration techniques accommodate for different life stages.

One final point: we are not going to be able to save everything. Some of the fish we are trying to save are not going to have the attributes to survive. Gordon did some work that showed winning and losing attributes, showing which species are at higher or lower risk for extinction. Go big or go home!

Questions:
Bernard Yoo asked about the nature of extreme changes, but in between there is an extended period of gradual change. Gordon explained that a large event is a re-set event that sets the stage for the gradual change. We should recognize that all these phases won't happen at the same time and the landscape may not be uniform. Bernard noted that one of the effects of climate change is that the extreme events will become more frequent and affect the "winner" species.

Cindy noted that related applications for the Hood River Watershed include thinking about the diversity of systems within the watershed (glacially influenced tributaries and clearwater tributaries) and their respective importance, and that we need to focus on both systems. Gordon noted that there is a common misconception that some headwater systems are too cold for fish, but he has done some research that compared headwater and groundwater systems and showed that coho spawned eight weeks earlier in the headwater system, but the juveniles emerged at the same time. The development process is based on the accumulation of heat. In the groundwater system, the temperature is stable over time and the populations can catch up.

Lucius Caldwell asked about disturbance and resiliency and how this is put into practice, particularly in terms of forest practices that attempt to mimic intensity of disturbance. Would clear cutting an entire catchment on a 30-year rotation be effective? Gordon described timber harvest as the new disturbance element on the landscape – it has replaced fire in many cases. We try to maintain stability on the landscape with timber harvest – we leave a riparian buffer to maintain stability, but maybe we should be setting the system up so that when it fails it can move in a positive direction. If there are longer rotations, there is more time to work with that legacy.

Elizabeth Gaar asked what the opportunities are for setting up experiments - for example in the Clackamas with recent fires - to put these ideas to test. Gordon suggested that Fish Creek, which was highly impacted in the fire, would be very productive in the next few years if it were left alone. There are still a lot of big trees and sediment on the landscape that can move and create good habitat for fish.

Susan Hess asked about what we can do about the damage to riparian areas in the urban environment. Gordon noted that there are limits to the ideas he is suggesting (flooding constraints in urban areas), but we should recognize that it will take a much more consistent and concerted effort to restore urban riparian areas and that our ability to be successful may be somewhat limited.

Elizabeth Gaar asked about prioritizing restoration in the face of a changing climate. Gordon suggested that we should do an honest assessment of what we have done to date and then be open to a new approach or a change of perspective, particularly in terms of scale. If we look at the literature, we tend to study fish between 10am-2pm during the summer, or $1/6^{th}$ of the day and $1/4^{th}$ of the year. That is 4% of the year. We make a lot of assumptions and it's important to challenge those assumptions.

Chuck noted that speaking of diversity, the Hood River Watershed has one of the most diverse assemblages of native fish in Oregon. The Watershed 2040 Strategic Action Plan is setting us up to potentially put some of these ideas that Gordon mentioned into practice here in the watershed.

** This presentation was recorded and can be found at: https://hoodriverwatershed.org/recording-available-for-salmon-and-steelhead-resiliency-to-disturbance-and-implications-for-watershed-restoration/

Review and Approval of Last Meeting Minutes
Chuck asked if there were any corrections to the January minutes. Alix noted several changes pointed out by Megan Shearer. Changes were made and the group approved the minutes.

Old Business

Officer & Operations Committee Elections
Officer candidates: Chuck Gehling, Chair; John Buckley, Vice Chair
Operations Committee candidates: Jim Wells (agriculture), Greg Short (at-large), Sam Doak (forestry), Chuti Fiedler (natural resources)

Chuck walked the group through the list of candidates.

The group provided second consensus to approve the officer and Operations Committee slate as presented.

HRWG 2021-23 Workplan

Cindy gave a brief reminder about the 2021-23 workplan, which is usually submitted to OWEB as part of the council capacity funding, but they are not required this year. The workplan includes project work in 2021 (Eastside Lateral, Neal Creek, West Fork at Red Hill), the strategic action plan, watershed stakeholder engagement, and organizational development.

The group provided second consensus to adopt the HRWG 2021-23 workplan as presented.

Updates on HRWG exploration of becoming a 501(c)3 non-profit organization

Chuck gave a brief update on the 501c3 process and progress since the last meeting. During the February meeting of the SWCD board, Heather Hendrixson suggested a conceptual framework for the process of moving forward, including the development of a core group of HRWG and SWCD people, working with a facilitator to move forward. In April, when the plant sale is complete and the Action Plan is complete, the process will progress. The core team will consist of Cindy, Chuck, Les Perkins and Alix for the HRWG and Heather, Brian Nakamura, and Pete Siragusa for the SWCD.

New Business

Neal Creek Phase 2 Instream Habitat Restoration Project grant
Alix provided the group with an overview of the Neal Creek Phase 2 project. The design is currently being developed by Parr Excellence with funding from CTWS. Alix explained that the Watershed Group would like to submit an OWEB restoration grant for the implementation of Phase 2 in the summer of 2022 and asked for first consensus.

Holly asked what the length of the project would be. Alix explained that the total length of the project would be about ¾ of a mile.

Rick asked what the features would be included in the project. Alix explained that the project would include side channel reconnections, alcove development, floodplain regrading, and large wood structures. Alix will send design around.

The group provided first consensus to submit an OWEB restoration grant for the implementation of the Neal Creek Phase 2 project.

ODOT Stream Signage – Letter from HRWG
Chuck noted that ODOT is going to be redoing their freeway signs from Cascade Locks to the border of Idaho and is looking for comments on the process. Chuck suggested that the HRWG submit a letter requesting a sign for the Hood River and other major tributaries along 84, which is something included in the Communications and Outreach Plan.

The group provided first consensus to submit a letter to ODOT requesting Hood River signage.

Announcements

Brian Nakamura shared that EFID made an offer to a candidate for the manager position and the candidate accepted. John Buckley will stay on to train the new manager.

John Buckley gave an update on the Eastside Lateral project. There will likely be another month worth of the project. The second phase will be delayed due to a funding shortage and assessment of the silt issues. The next phase will likely go to bid in April of 2022. Cindy added that Niklas Christensen submitted a grant to Bureau of Reclamation to scope out a system-wide sediment control plan, including a settling basin and filtration. This type of funding is available within watersheds that have had a basin study completed, so FID and MFID would also be eligible.

Brian Nakamura gave a shout out to Megan Saunders for her letter to DEQ.

Heather reminded the group about the SWCD plant sale.

Megan Shearer let the group know that Chris Brun is retiring and that this will be his last week with the Tribes. Ryan Gerstenberger will be the Acting Director until a new hire is made.

Chuck noted that SDS Lumber is selling out, which will affect all their lands. There is a group that is hoping to push for a responsible transition to protect the lands.

Summary of Consensus Items and Establishment of Next Meeting

Items that Received First Consensus:
Approval to submit an OWEB restoration grant for the implementation of the Neal Creek Phase 2 project.

Approval to submit a letter to ODOT requesting Hood River signage.

Items that Received Second Consensus:
Approval to adopt the officer and Operations Committee slate as presented.

Approval to adopt the HRWG 2021-23 workplan as presented.

The next meeting will be held virtually on March 23rd from 6-8pm.

Adjournment

Chuck thanked the group for attending and adjourned the meeting at 8:15 pm.

Reported by Alix Danielsen.