



**Council
Minutes Meeting of
December 5, 2018**

Stakeholders Present:

Bob Baumgartner	Service Districts (Sewerage) Primary Representative, Clean Water Services
Ruby Buchholtz	Environmental Organizations Primary Representative, Tualatin Riverkeepers
Stephen Cruise	County Primary Representative, Washington County
Jan Miller	Citizen at Large Primary Representative
Greg Mintz	Citizen at Large Alternate Representative
Tom Nygren	Small Woodland Owners Primary Representative, Washington County Small Woodlands Association
Jon Pampush	Fisheries Primary Representative, Trout Unlimited
Erin Poor	Citizen at Large Primary Representative
Victoria Saager	Citizen at Large Primary Representative
Dyami Valentine	County Alternate Representative, Washington County
Rich Van Buskirk	Education Primary Representative, Pacific University
Ross Van Loo	Citizen at Large Primary Representative
Juli Waarvick	Soil & Water Conservation District Alternate Representative, Tualatin SWCD

Staff Present:

Scott McEwen	TRWC Executive Director
April Olbrich	TRWC Coordinator

Guests Present:

Amy Baur	Stillwater Sciences personnel
Simon Christensen	City of Hillsboro/Joint Water Commission personnel
Mike Conroy	Tualatin SWCD personnel
Jeremy Lees	Bio-Surveys LLC personnel, presenter
Glen Leverich	Stillwater Sciences personnel, presenter
Bethany Lund	Tualatin SWCD personnel
Wade Peerman	Oregon Dept. of Env. Quality, Tualatin Basin Coordinator
Laura Porter	Clean Water Services personnel
Jacob Rose	Metro/Verde personnel
Tim Sautter	Washington County LUT Operations Dept.
Chris Toole	Tualatin Basin resident
Steve Trask	Bio-Surveys LLC personnel, presenter

Welcome and Introductions: The meeting commenced at 7:02 p.m. with introduction of Scott McEwen, TRWC Executive Director, followed by TRWC members and guests. -Scott has completed his first week on the job, including meeting with stakeholders and undertaking a listening tour focused on the Council's unique value and important niche.

-Presentation of Certificates of Appreciation to Chris Toole (Volunteer), and Ruby Buchholtz and Greg Mintz (Co-Secretaries)

November 2018 TRWC minutes: Ross Van Loo made a correction to the minutes on the spelling of Hagg Lake; a motion was made by Ross Van Loo and seconded by Jan Miller to adopt November 2018 minutes with correction; the minutes were adopted by consensus.

Public Comment:

-None

Presentation: 1) Gales Creek/Clear Creek confluence project a) background & Clear Creek surveys; b) project design; c) monitoring.

*(See presentation slides under 2018 Council Meetings, December 5:
<http://trwc.org/about-us-categories/council-meetings/2018-council-meetings/>)*

Jeremy Lees (Bio-Surveys, LLC) – Gales Creek Temperature Dependent Fish Migrations

- Discussion of fish distribution surveys; analyzing distribution and density patterns; RBA snorkel inventories;
- Conducted inventories during peak temperature times in order to highlight the stream areas that fish use to get away from high temperatures (thermal refugia);
- Identified barriers to temp-dependent fish migration: Clear Creek falls, Iler Creek steps, Balm Grove Dam (slated for removal in summer of 2019).

Examples of findings:

- Gales Mainstem: high solar exposure and some of highest recorded temps in the basin (over 23 degrees C);
- Clear Creek Confluence: identified as a high priority for enhancement and protection; it has lost some pool complexity in recent years, but still maintains significantly lower temperatures and high counts of steelhead, coho, and cutthroat;
- Iler Creek Juvenile Barrier: about 1.3 degrees C cooler; hyporheic contribution from ponds; one pool contained the highest coho count in the basin (517).

Steve Trask (Bio-Surveys, LLC)

- Based on the survey described above, Bio-Surveys put together prioritized prescriptions for restoration efforts;
- Because of temperature severity, the assessment indicates that there is a bottleneck in Gales Creek in the summer when there's not enough viable habitat to support the fish population necessary to seed the rest of the habitat throughout the year;
- Therefore, work should focus on areas that provide thermal refuge for salmonids in the summer; identify the areas and figure out how to improve their functionality;
- Side channel habitats are good places to look for thermal refugia, but the key is they must be de-linked from the main stem in the summer time and be fed from hyporheic flows only; identifying these areas is a priority in the baseline inventory work, as they can

hold thousands of salmonids; in some cases, 60% of all rearing may take place in only a handful of side-channels;

- A concern exists regarding other water mixing in and overwhelming the habitat;
- Another concern exists about stratified temperature flows that can develop and force salmonids to use only the bottom of the channel.

Site-specific details:

- Clear Creek Confluence area has good potential (alluvial fan that delivers hyporheic flow; cooler water seeping in); however, lacking in pool surface area;
- Project area at Gales/Clear confluence is shaded by a dense stand of alder trees;
- The pool at the confluence shows high densities of fish; it's cooler, making it an obvious site for refuge; however, a smaller pool nearby also had extremely high density, so there is a goal to figure out why and possible recreate similar sites nearby;
- There are remnants of an old dike that prevents winter flows from entering historic channel; however, do not want to overwhelm and inundate existing good refugia areas.

Examples of work completed:

- Work was undertaken to expose and express hyporheic flows to create additional rearing areas;
- Due to concerns about inundating existing refugia, only dug down to an elevation that would inundate on 2-4 year cycle, introducing flow down backside of the terrace, through a culvert, and supporting an existing pond that is on site both summer and winter (adds to hyporheic flow that feeds the channels and, ultimately, rearing areas);
- We do want to encourage some high flows to keep excavated pools scoured out (not sedimented in during every winter event);
- Today, the pools are all completely linked and stair-stepped; will be linked all winter and maybe even into July; completely accessible to salmonids; the theory really looks like it's working in practice so far;
- Logs are placed to create edge habitat and break up straight channel; held in place between trees on the bank.

Q: Hitting gravel when excavating?

A: Not really, we try to avoid that because you lose ability to store water when you hit gravel; instead, try to stay within clay layers; water is pressurized and boils up through clay and sediments.

Q: What about stranding when linkage dries up?

A: stranding is guaranteed; some fish will have to stay there, but the remaining water will not dry up, so they can stay there through the summer; research has shown that fish utilizing these isolated pool habitats can actually have a higher survival rate from smolt to adult.

Q: Minimum pool size to avoid predation?

A: the water in some of the pools has a lot of tannins that keeps it dark, so avian predation is low.

Q: Is there food available for fish that are stranded in the pools?

A: There is not food in the summer ponds, it's survival only.

Glen Leverich and Amy Baur – Stillwater Sciences

- Goals of collecting data at the site include answering questions such as how water moves through the site and how will design concepts perform;
- Identified clear trend of temperatures increasing along the stream toward Gales;
- Examining and learning about relationships between creeks, water exchange, groundwater, channel morphology, biological response to enhancements;
- Collecting data to establish a baseline and monitoring how things change;

Categories of observation:

- Hydrologic (rainfall trends; streamflow and groundwater patterns; extent, timing, and duration of floodplain inundation);
- Geomorphic (channel geometry and substrate texture);
- Water quality and biological (water temp patterns; salmonid species abundance and habitat use).

Example hydrologic results:

- In summer and fall, Gales Creek and Clear Creek are hydraulically “losing” with subsurface flow directed from creek to upstream end of floodplain (recharging the upland end of the site);
- In winter to spring, Gales Creek is hydraulically “gaining with flow directed to creek from upstream end of floodplain (Clear Creek still losing).
- Mapped surface water floodplain inundation (expected to increase after the project).

Example temperature results:

- Surface water is cooler than air temperature during spring, summer, and fall;
- Greater temperature differential in summer;
- Clear Creek is cooler than Gales in summer (similar in winter);
- Gales Creek warms as it moves past floodplain and then cools at confluence;
- Cooler groundwater temperature as you move away from Gales Creek.

Geomorphology

- Completed first-year cross section surveys, but no other years to compare it to yet;

Q: What are the land features that force the most cooling? What cools groundwater best?

A: It's a mix of factors; gravel is important, perched on bedrock is important, shading is important; and storage and shelter of flow for it to be available at the right time.

Q: If there were a willing landowner, is there potential to create additional connectivity with delinked ponds below Clear Creek Confluence?

A: The water level in those ponds is at the water table; pretty barren around the perimeter; if supplying cooler water to the creek, could plant trees around it to keep cool, but wouldn't recommend construction to divert fish into the ponds. The pools are acting as storage, draining vertically and cooling; providing access wouldn't accomplish the

goal, as the water is actually probably pretty hot until it becomes groundwater later; however, maybe refilling, planting, and sheltering it would help.

Council Business:

1) Election of TRWC vice chair

Vice-Chair election:

- Two candidates for the position include Stephen Cruise and Erin Poor.
- Candidates delivered remarks.
- Vote take and results confirmed: Erin Poor

Award of Recognition

- April Olbrich, Council Coordinator, recognized for 15 years of service!

2) Update of transition plan

No update at this time.

Council Coordinator, Council Committee, and Member updates:

Coordinator updates:

- Discussion of project progress –
 - Gales/Clear confluence documentation finishing up;
 - Trask got western red cedar in place;
 - Project on track to finish up by the end of December (deadline)
- Working with Scott to get him up to date
- Coho now in East Fork Dairy Creek
- Some encouraging instances of fish in other creeks, i.e., McKay Creek and Clear Creek

Adjournment:

The meeting adjourned at 8:45 p.m.

Respectfully submitted,

Greg Mintz
Co-Secretary

January 9, 2019 TRWC refreshments: Dyami Valentine

Roving Steering Committee member for December 10 meeting: None