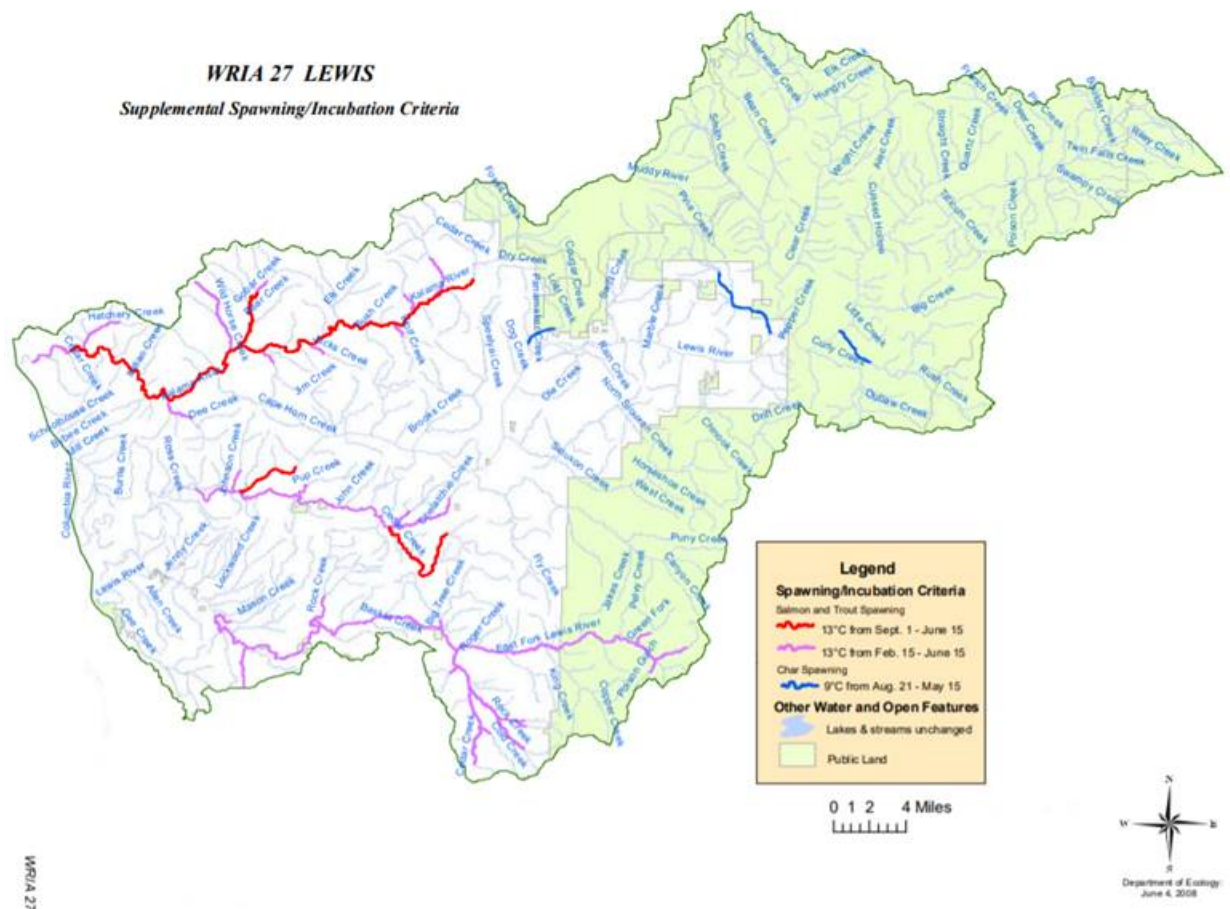


Greetings Technical Team for the Ridgefield Pits Restoration Design Project (Paul, Keith, and Gardner)

Thank you for providing the Technical Oversight Group with the opportunity to review the Ridgefield Pits Restoration Project Memo from July 8, 2020. I apologize for my delayed review. I have been busy publishing the [Draft East Fork Lewis River Water Cleanup Plan](#) but I hope my comments are helpful. Please let me know if you have any questions or want to discuss.

1. **Page 1:** Minor edit - Page 1 – Amelia Johnston should be corrected to Amelia Johnson.
2. **Page 5:** Temperature Water Quality Standards.
 - a. The temperature water quality standard for the East Fork Lewis River is 16 degrees Celsius (68 degrees Fahrenheit) to support core summer salmonid habitat. This memo says the standard is 18 degrees. Reference [WAC 173-201A-020](#).
 - b. The watershed also has supplemental spawning and incubation criteria of 13 degrees Celsius applicable from February 15 to June 15 for protection of salmonid species. In the East Fork Watershed, this supplemental spawning criteria overlaps with your project area. Please note there is no “TMDL Limit,” as referenced on page 5. The goal or target is to meet the water quality standards in the watershed (16 degrees year round, 13 degrees February to June).



3. System potential shade targets

- a. The [East Fork Lewis River Source Assessment](#) determined that from river mile 0 to 7, the average tree height potential is around 75 feet, with an estimated overhang potential of approximately 7.5 feet. Above river mile 7 the average 100-year tree height potential is around 150 feet, with an estimated overhang potential of approximately 15 feet. Ecology recommend maximizing site-potential tree height and overhang potential.
- b. On page 10, goal 2C suggests a shade target of 50% for riparian vegetation. The system potential vegetation target in the watershed is 85%. However, the 50% target seems reasonable for this area. Here is a breakdown of potential shade, current effective shade, and shade deficits by river mile. You may consider matching your targets for reforestation with the potential shade that can be achieved at each river mile.

Table 48. Shade deficit results in the middle watershed.

River Mile	Average Potential Shade (%)	Average Effective Shade (%)	Average Shade Deficit (%)
6-7	47	15	31
7-8	42	5	36
8-9	42	12	30
9-10	54	15	40
10-11	65	21	40
11-12	55	13	45
12-13	67	16	49
13-14	72	39	37
14-15	70	43	29
15-16	69	40	25
16-17	71	36	38
17-18	71	41	28
18-19	74	46	27
19-20	80	47	34
TOTAL	63%	28%	35%

4. Overall

- a) Please describe how this Ridgefield Pits Restoration Design Project and proposed alternatives are related to the East Fork Lewis River Thermal Assessment and the recent award for the East Fork Lewis River Habitat Improvements project. How will the Thermal Assessment inform restoration at Ridgefield Pits? How will the Thermal Assessment and Ridgefield Pits project influence the new East Fork Lewis River Habitat Improvements project? Are there plans in place for work upstream at Daybreak Park or north of Daybreak Bridge?
- b) Have you considered quantifying the streamflow restoration / baseflow augmentation benefits from this restoration effort? Having an understanding of how much CFS would be restored to the river with each restoration alternative could help support decision making and make this project eligible for [streamflow restoration funding](#).
- c) I appreciate that you include an estimated "level of effort" for each of the restoration efforts. A cost-benefit analysis for each restoration alternative might also help support future decision-making.

- d) Outlining which restoration alternatives are most feasible from a permitting standpoint could also support decision making. Similarly, understanding the feasibility of each project within the boundaries of the shoreline management act and critical areas ordinances could be helpful. If critical areas will be impacted, or impacts to fish and wildlife are expected, how will these impacts be avoided, minimized or mitigated for each alternative?
- e) Attached are two maps showing WSDOT priorities for stormwater retrofits / fish passage barriers in the watershed. Do any of these priorities overlap with Mill Creek?
5. If you need additional information on Ecology's work in the watershed and the priorities that have been established, the [Draft East Fork Lewis River Water Cleanup Plan](#) was recently published for [public comment](#). Priorities for riparian restoration are the middle watershed which has average shade deficits of 35%. River miles 9 to 13 have shade deficits over 40% and river miles 6 to 8 have shade deficits over 30%. Priorities for streamflow restoration, based off the *Surface/Groundwater Exchange Along the East Fork Lewis River* include river miles 4.6 to 7.3 and 7.3 to 8. These priorities directly overlap with your project area. If you plan to seek implementation funding from Ecology through the [Water Quality Combined Funding Program](#), it will be important for you to communicate in grant applications how this project will make progress towards lowering water temperature, restoring streamflow, and increasing shade in priority areas.

Table 52. Priority river miles for groundwater inflow.

River miles	Location	CFS of groundwater inflow per mile (cfs/mile)
4.6 to 7.3 Lower and middle watershed	Lower and middle watershed	13.3
7.3 to 8 Middle watershed	Middle watershed	6.3
26.9 to 29 Upper watershed	Upper watershed	6.1
10.1 to 13.2 Middle watershed	Middle watershed	2.0

6. In addition to augmenting streamflow at priority river miles, the following recommendations were provided in the *Surface Water/Groundwater Exchange Along the East Fork Lewis River* report.
- Track and analyze water levels over time in the Sand and Gravel Aquifer, which is the main water source for the East Fork Lewis River
 - Determine where the river is directly connected with the Sand and Gravel Aquifer to help clarify where the river is gaining groundwater.

Will any of the information from the *Surface Water/Groundwater Exchange Along the East Fork Lewis River* report be considered in your restoration alternatives or future work?

I hope my thoughts and feedback are helpful. I am excited to see this project to move forward and get closer to implementation!

Please let me know if you have additional questions

Best Regards,
Devan Rostorfer

Devan Rostorfer - Water Quality Implementation Specialist - TMDL Lead

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[East Fork Lewis River Partnership](#) | [East Fork Lewis River Partnership Meeting Materials](#)

