East Fork Lewis River TMDL Update Meeting

March 20, 2007
2:00 p.m. to 4:00 p.m.
Washington Department of Fish and Wildlife
2108 Grand Boulevard
Vancouver

Meeting Notes

Meeting Objectives:

1) Re-familiarize interested parties with the TMDL process and timeline as it pertains to the East Fork Lewis River watershed.
2) Discuss data collected by the Department of Ecology to support development of a fecal coliform and temperature TMDL for the East Fork Lewis River watershed, and describe next steps for data analysis and reporting.
3) Discuss the role and responsibilities of the East Fork Lewis River Advisory Committee and solicit participation**.**

Participants:

Jeff Schnabel, Rod Swanson and Ron Wierenga (Clark County Public Works-Water Resources); Randy Phillips (Clark County Department of Health); John Tyler (Clark County ESA Program); Denise Smee (Clark Conservation District); Steve Manlow (Lower Columbia Fish Recovery Board); Sue Lawrence and Jeff Sarvis (City of La Center); Amy Lieb (Gifford Pinchot National Forest); Heather Stephens (Kennedy/Jenks, for City of La Center); Richard Dyrland and Dean Swanson (Fish First and Friends of the East Fork Lewis River); Tony Meyer (Lower Columbia Fish Enhancement Group); Martha Turvey (EPA, by telephone); and Dustin Bilhimer, Stephanie Brock, Tonnie Cummings and Kim McKee (Department of Ecology).

Key points:

TMDL process and timeline

- This is year three of the multi-year TMDL process for the East Fork Lewis River. Data collection is complete, data analysis and modeling will occur over the next year, and stakeholder-based development of a water clean-up strategy will begin in 2008.

Temperature data and next steps

- Climate (wind speed, wind direction, precipitation, solar radiation, and air temperature data), streamflow, groundwater and in-stream temperature data were collected May through November 2005; additional in-stream temperature data were collected at a subset of sites through August 2006.
- Streamflow data identified alternating gaining and losing reaches from the Skamania County line downstream to the tidally-affected area near La Center (see map at bottom of notes).

- Vertical hydraulic gradient measurements at the instream mini-piezometers confirmed the seepage survey results that show groundwater moving up into the surface water, a gaining condition (see graph at bottom of notes).
- Dye studies indicate the Columbia River tidal bulge slows the average velocity on the East Fork Lewis River as far upstream as the confluence of Mason Creek and the East Fork Lewis River. This tidal bulge complicates the stream mass balance from Mason Creek downstream. Patterns in average velocities were consistent between the July and August studies with velocities fairly consistent from the headwater boundary at Sunset Falls campground to Daybreak Park. Ecology's Stream Hydrology unit could not develop a good relationship between stage height and discharge for the streamflow gage near Paradise Point State Park; however the stage height record can be used to define the daily tide height range.
- Monitoring above and below the Ridgefield pits indicated the pits typically increased the daily maximum stream temperature while decreasing the daily average stream temperature measured below Dean Creek (river mile 7.3).
- All mainstem stations and monitored tributaries violated water quality standards for instream temperature during some or most of the monitoring period during summer 2005 (see graph at bottom of notes).
- Hemispherical photography was used to calculate percent effective shade at sampling points along the mainstem East Fork Lewis River. Percent effective shade is defined as the ratio of solar radiation at the stream surface to solar radiation above the canopy.
- Channel geometry surveys, streamflows, aerial interpretation of riparian vegetation, shade measurements, and temperature data will be the components used to develop the Shade and Qual2kw models. Model documentation can be found at http://www.ecy.wa.gov/programs/eap/models.html. Computer models will be calibrated to observed data and validated using at least two time periods (warm and cool) to ensure that model predictions meet our data quality objectives.
- Riparian shade, flow, and channel width/depth ratio modifications, will be evaluated for average and "reasonable worst case" conditions to develop a number of optional management strategies.

Fecal coliform data and next steps

- Sampling was conducted bi-monthly from May 2005 through August 2006. An additional storm event was sampled in November 2006.
- Data were evaluated as a whole, and were also evaluated for the dry season vs. the wet season.
- Water samples exceed water quality criteria during both the wet (November to May) and dry (June to October) season at most stations downstream of Moulton Falls.
- First flush storm events yield higher fecal coliform concentrations at mainstem and tributary sampling stations.
- Loading from storm events is 1-2 orders of magnitude higher than loading during dry sampling events.

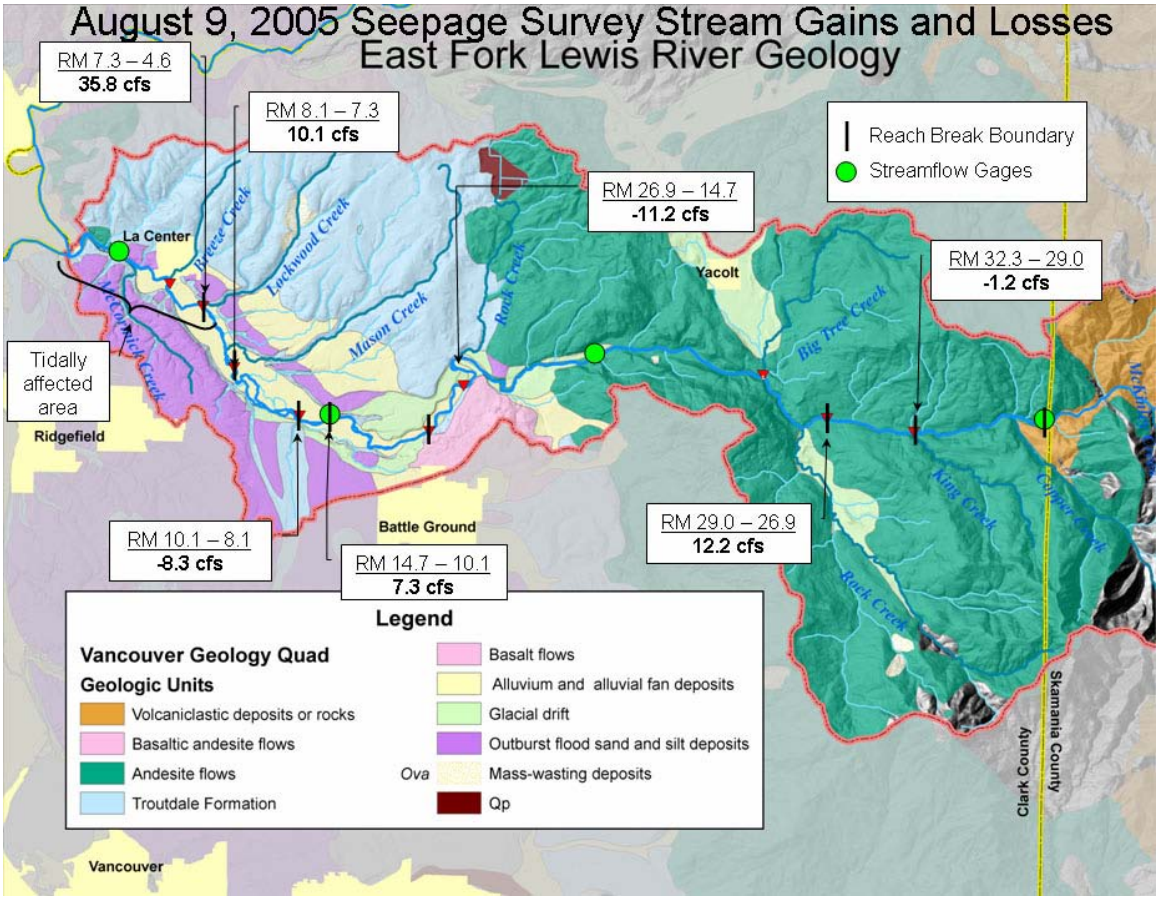
- Modeling will involve a rollback method to calculate reduction factors needed to meet water quality standards, and the technical report will include recommendations to achieve those reductions.
- The target completion date for the draft technical report is spring 2008.

Advisory committee role and membership

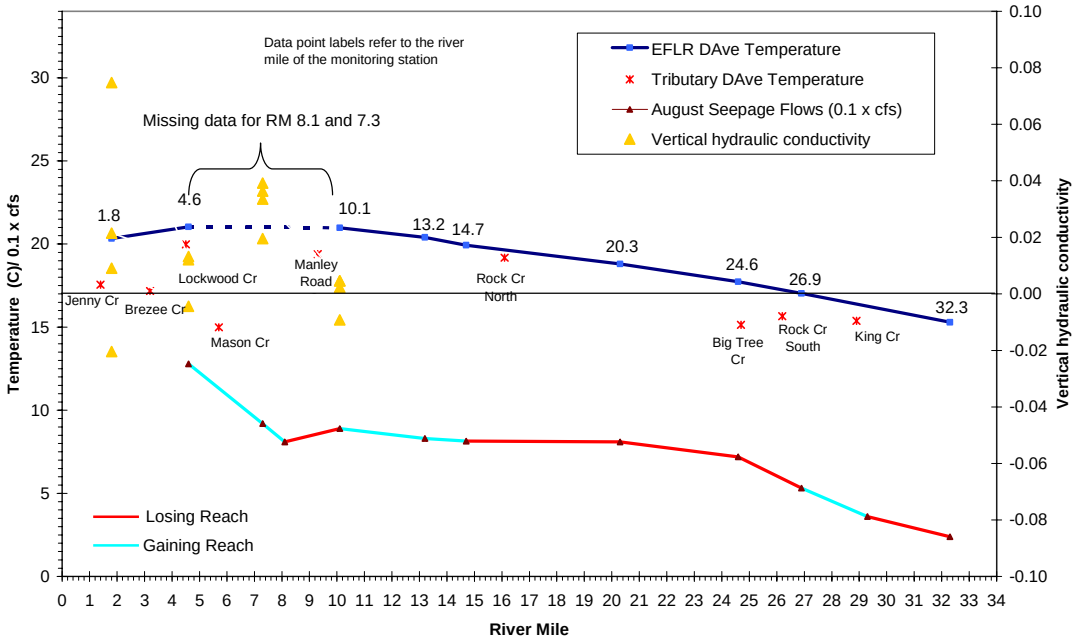
- We need volunteers for the advisory committee!

Questions/Comments

- Dick Dyrland commented that an increase in stream width/depth ratio is likely contributing to increased stream temperatures.
- Dick said Friends of the East Fork has data showing that one stream reach switches between gaining and losing flow. He offered to provide the Friends of the East Fork streamflow data to Ecology.
- Sue Lawrence has bi-weekly temperature data collected above and below the La Center Wastewater Treatment Plant discharge. She offered to provide these data to Ecology.
- Dustin will send Martha Turvey his temperature animation files.
- Stephanie discussed an Ecology publication which recommends replicate precision targets or Measurement Quality Objectives for various water quality parameters, such as fecal coliform and other nutrients, this document can be downloaded from https://fortress.wa.gov/ecy/publications/SummaryPages/0603044.html.
- Dean Swanson asked if Ecology monitored any other parameters, e.g., heavy metals. Dustin said no additional parameters were monitored as part of this study, but other parameters are monitored at the long-term site at Daybreak Park. Those data are available on the Ecology website.
- Randy Phillips asked if Ecology conducted any "hotspot" sampling for fecal coliform as part of this study. Stephanie said they tried doing "bracket" sampling on Breezee Creek, but no matter how far upstream they sampled, they still found a problem.
- Jeff Sarvis asked about the process for providing input on the technical report. Stephanie said that she will touch base with the advisory committee while modeling and drafting the report and that she plans to do a presentation at a public meeting when the draft report is available. Tonnie pointed out that there are a couple of ways to provide input; one is to be involved in the advisory committee, and another is to comment during a public comment period.



East Fork Lewis River Longitudinal Daily Average (DAve) Temperature Profile for 8/9/05



7 Day Average of the Daily Maximum (7DADMax) Summary for the East Fork Lewis River TMDL
Instream Temperature Stations .