

Deschutes River, Capitol Lake, and Budd Inlet TMDL Advisory Group Meeting

Thursday, May 24, 2012 –9:00 a.m. – 11:35 a.m.
Tumwater Fire Department, 300 Israel Rd. SW, Tumwater

Attendees

Citizen

- John DeMeyer
Capitol Lake Improvement and Protection Association (CLIPA)
- Bob Holman
Deschutes Estuary Restoration Team (DERT)
- Dave Peeler
Ecology, WA State Dept. of
- Anise Ahmed
- Kim McKee
- Mindy Roberts
- Lydia Wagner
Enterprise Services (DES), WA Dept. of
- Carrie Martin
Little Hollywood Blog, SPEECH
- Janine Unsoeld
LOTT Clean Water Alliance
- Karla Fowler
- Laurie Pierce

Olympia, City of

- Laura Keehan
- Patricia Pyle
Squaxin Island Tribe
- John Konovsky
Thurston County Environmental Health
- Sue Davis
Thurston County Storm & Surface Water Advisory Board
- Gary Larson
Thurston County Water & Waste Management
- Barb Wood
Thurston Public Utility District
- Chris Stearns
Tumwater, City of
- Dan Smith

General Updates

Alliance for a Healthy South Sound: Lydia was recently made aware of an organization working on issues related to the Deschutes River watershed. It is the Alliance for a Healthy South Sound (AHSS). It has approximately 40 members representing Kitsap, Mason, Pierce, and Thurston Counties and the Nisqually, Puyallup, and Squaxin Tribes. Lydia is meeting in June with Gabby Byrne, the South Sound LIO Program Manager to find out more about this organization and how their work may interface with the TMDL. She will provide an update at the next meeting. More information about AHSS is available at www.healthysouthsound.org. Their mission “is to support the coordinated and collaborative decision making aimed at restoring and protecting the ecological and socio-economic health of South Puget Sound.”

Deschutes TMDL Technical Report: The report is completed and in final form and will be posted on Ecology’s website by the end of June. Ecology will send out a notice when it is available online.

Model Scenario Results for the Deschutes River Watershed and Capitol Lake

Mindy Roberts and Anise Ahmed, Ecology, Environmental Assessment Program

The following are some highlights from their presentations. See the complete PowerPoint presentations for more information.

- **Mindy Roberts'** presentation is available online at <http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/advisorycomm/052412DeschutesAdvMtgDeschutesScenarios.pdf>
- **Anise Ahmed's** presentation is available online at <http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/advisorycomm/052412DeschutesAdvMtgCapitolLakeScenarios.pdf>

Deschutes River scenarios:

- Slide 4: The reach from 0-20 km does not gain much water. The flow increases midstream.
- Slide 8: Microclimate benefits include cooler air and relative humidity.
- Slide 9: Improvements in the headwaters will provide benefits downstream.
- Slide 12: Too much algae growth increases pH levels.
- Slide 15: The pH max is sensitive to channel widths, which generally allow for more solar radiation.
- Slide 20: The tributary nonpoint sources have more effect on the pH range than to dissolved oxygen.
- Slide 24: We need to decrease groundwater phosphorus influences. Groundwater has a bigger influence downstream. The area of influence for each tributary does not overlap much.
- Slide 26: Benefits are not needed in the entire zone. We need to focus on the problem areas.
- Slide 27: There is not a perfect way to establish populations. Mindy used the best available information. The numbers in this slide represent people and not individual on-site septic systems.
- Slide 28: Each person contributes 4-5 kg nitrogen/year.
- Slide 29: There are other nitrogen influences besides people. For those wanting more data, Mindy has a spreadsheet with the numbers she used to make these calculations.
- Slide 30: This information was derived from a spreadsheet calculation. The Deschutes River watershed is unusual. The load is groundwater driven. Land cover types include commercial, residential, agricultural, and forested.
- Slide 32: The Deschutes, Henderson, and McCallister watersheds are considered "hot spots". It is clear the Deschutes River watershed has a nitrogen problem.
- Slide 33: The Deschutes River is not as sensitive to nutrient contributions. The channel widens at km 20-30 which allows for more solar radiation.
- Slide 36: River restoration will help to increase channel complexity. Book recommendation, "River Ecology and Management: Lessons from the Pacific Coastal Ecoregion" by Robert J. Naiman and Robert E. Bilby.
- Slide 38: 1972 – This is around the time of the 600 ft. log jam. 2002 – Notice the channel migration from the previous photos.
- Slide 41: This is a photo of Seabeck Creek. This is a good example of how this type of channel complexity can capture wood and build up gravel.
- Slide 42: The Deschutes River needs a modified version of high channel complexity.
- Slide 43: The sixth-order channel is probably more of what the Deschutes River needs.

- Slide 44: There is not a specific number of LWD recommended for restoration. More study is needed to make this determination. LWD will help reduce channel erosion.
- Slide 49: The more time water stays in the gravel, the greater the benefits. Solar radiation is reduced or eliminated in the deeper pool levels.
- Slide 50: The top right photo is an example of a smooth system. The bottom left photo is an example of a more complex channel.
- Slide 55: The hyporheic exchange flow (HEF) and Manning's n are different technical specialties.
- Slide 56: Current – maximum temperature. LA19 – more water in the system. *What if we could restore historical flows?*
- Slide 57: Around km 30-40 there is an increase in nutrient loads. The Deschutes River is a complicated system. Estimates resulted from simplistic assumptions and calculations using USGS 7Q10 data.
- Slide 58: Here we see more benefits for pH.
- Slide 59: Solar radiation is an issue. We need to control nonpoint sources. Downstream waterbodies are more sensitive.

Capitol Lake scenarios:

Mindy's slides

- Slide 63: Residence time – how long the water stays in the lake. Loading rate refers to nutrients coming in from surface area flows and sediments.
- Slide 64: Bigger volume = longer residence time. The lake cannot be dredged enough to change it to a mesotrophic lake.
- Slide 65: Vollenweider compiled data from lakes around the world. Sediments release phosphorus into the water column. This maintains a eutrophic system.
- Slide 67: Ecology will present the results for scenarios 1-4 at the June 28 Advisory Group meeting.
- Slides 70-71: The numbers included in these slides are estimates only. Urine contains nitrogen. The conclusion derived is that recreational boaters and marinas are not a big nitrogen source (contributor) into Budd Inlet.

Anise's slides

- Slide 3: The model was set to calculate 10-20-50% reductions from human sources.
- Slide 5: This scenario did not result in much change to the lake.
- Slide 6: No significant difference in the maximum DO depletion.

Acronyms

- HEF: Hyporheic exchange flow
- LOTT: Lacey, Olympia, Tumwater, and Thurston County Clean Water Alliance
- LWD: Large woody debris
- NPS: Nonpoint sources
- OSS: On-site septic system
- UGA: Urban Growth Area
- WW: Wastewater

Open Comment:

LOTT Clean Water Alliance was asked about the Groundwater Recharge Scientific Study. They are currently in the scoping phase of the project and will seek public involvement at various phases. More information about this effort is available online at <http://www.lottcleanwater.org/pdf/groundwater.pdf>.

Next meeting

Date: Thursday, June 28, 2012
Time: 9:00 a.m. – 12:00 noon
Place: Tumwater Fire Department, 300 Israel Rd. SW, Tumwater