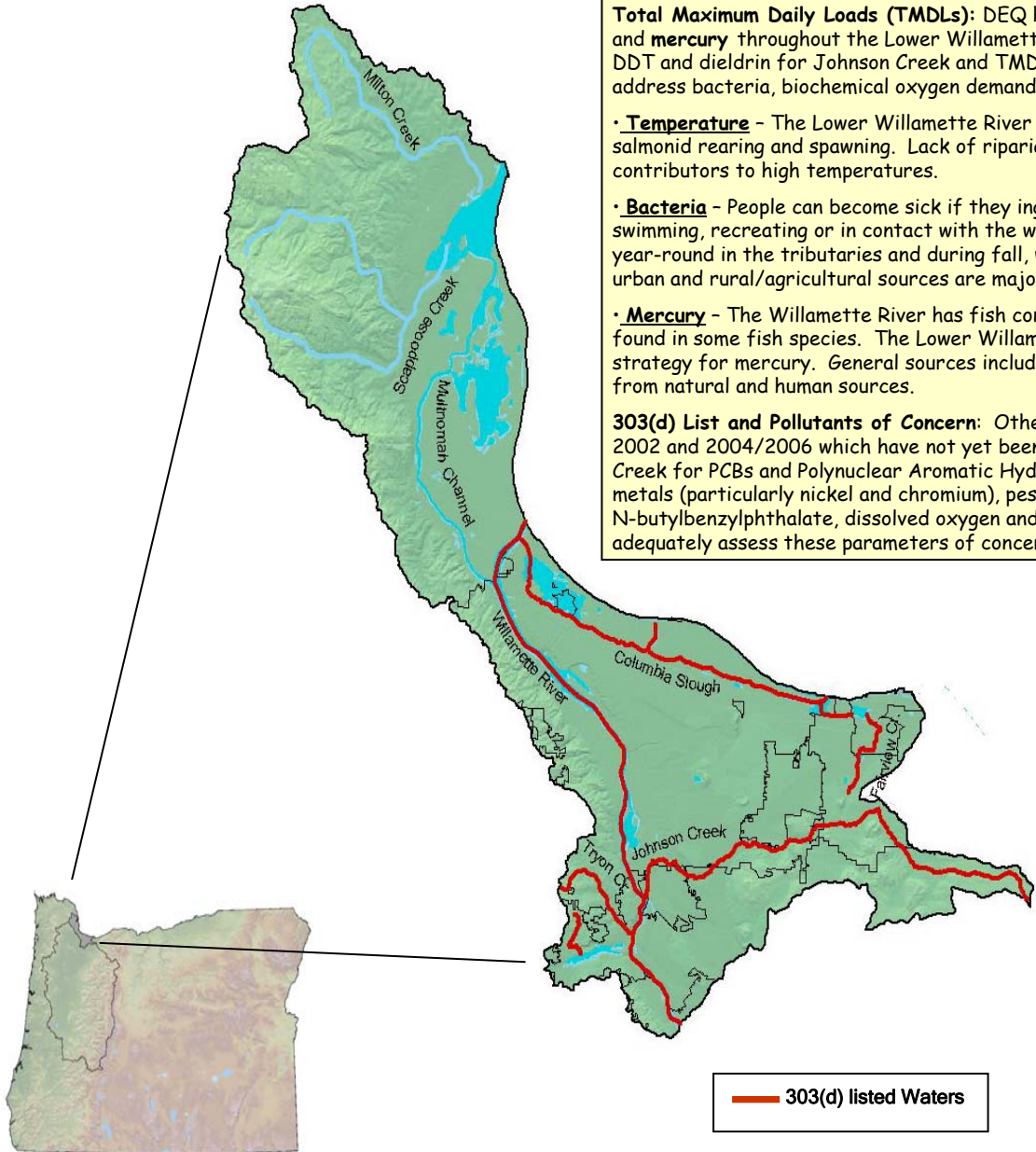


Lower Willamette Subbasin Water Quality Overview

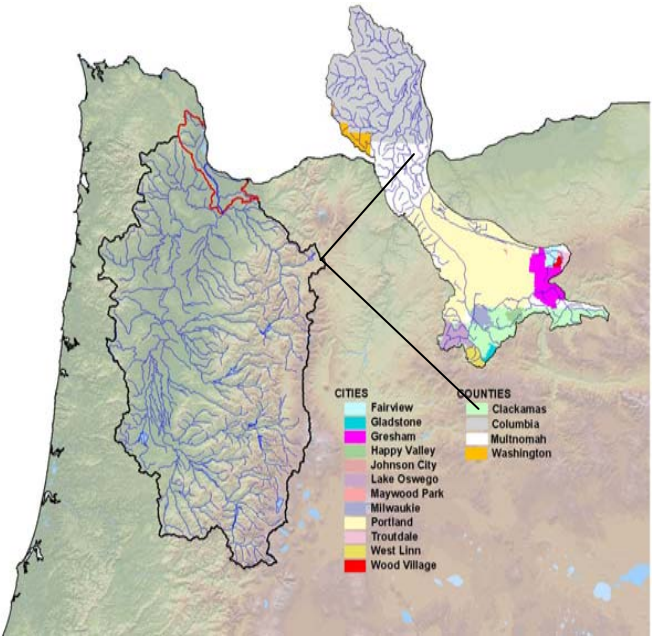
Total Maximum Daily Loads (TMDLs): DEQ has developed TMDLs to address **temperature, bacteria, and mercury** throughout the Lower Willamette Subbasin. Additionally, TMDLs have been developed for DDT and dieldrin for Johnson Creek and TMDLs were established in 1998 for the Columbia Slough to address bacteria, biochemical oxygen demand, phosphorus, DDE, DDT, PCBs, dieldrin, dioxins and lead.

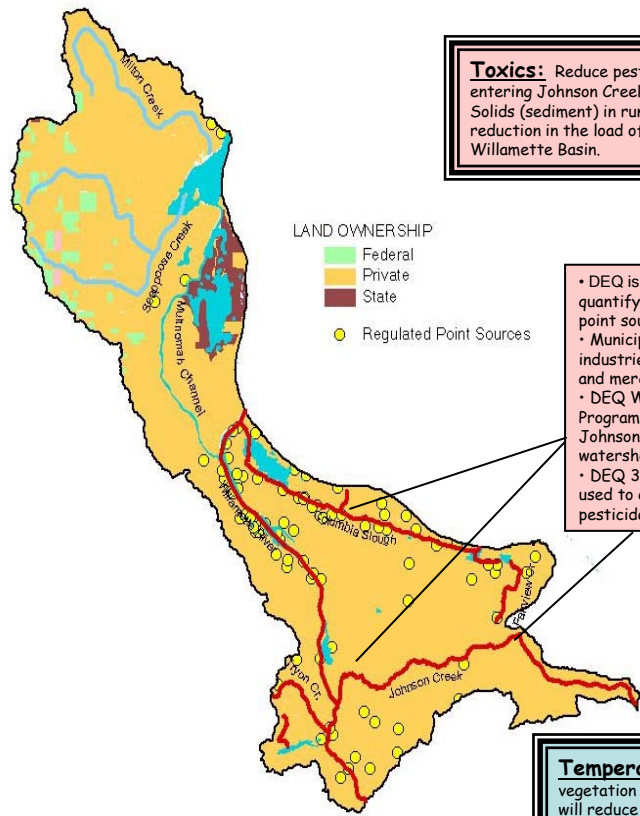
- **Temperature** - The Lower Willamette River and tributaries are warmer than is necessary to protect salmonid rearing and spawning. Lack of riparian vegetation and water withdrawals are the major contributors to high temperatures.
- **Bacteria** - People can become sick if they ingest water contaminated with bacteria when they are swimming, recreating or in contact with the water. Bacteria levels are high throughout the sub-basin, year-round in the tributaries and during fall, winter, and spring (storm events) in the mainstem. Both urban and rural/agricultural sources are major contributors to the high bacteria levels.
- **Mercury** - The Willamette River has fish consumption advisories due to elevated levels of mercury found in some fish species. The Lower Willamette Subbasin will be addressed as part of a basin-wide strategy for mercury. General sources include air deposition and erosion of soils which contain mercury from natural and human sources.

303(d) List and Pollutants of Concern: Other parameters and streams were added to the 303(d) list in 2002 and 2004/2006 which have not yet been addressed by a TMDL. These include listings on Johnson Creek for PCBs and Polynuclear Aromatic Hydrocarbons (PAHs). Parameters of concern include heavy metals (particularly nickel and chromium), pesticides including chlordane and toxaphene, dioxins, furans, N-butylbenzylphthalate, dissolved oxygen and sedimentation. Additional data are needed in order to adequately assess these parameters of concern. Other concerns include loss of fish habitat.



— 303(d) listed Waters



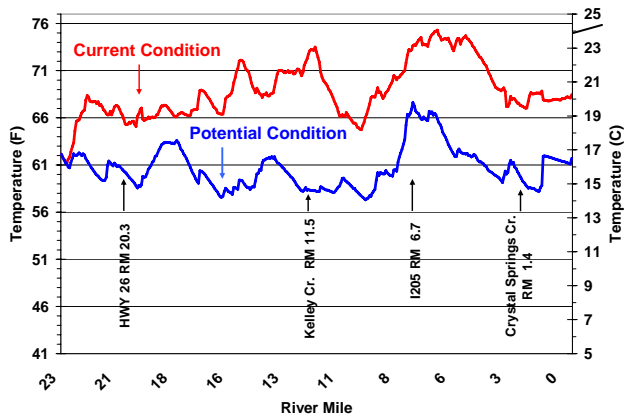


Toxics: Reduce pesticides (DDT and Dieldrin) entering Johnson Creek by reducing Total Suspended Solids (sediment) in runoff to 15 mg/l. A 27% reduction in the load of total mercury is needed in the Willamette Basin.

- DEQ is conducting a pilot study to quantify mercury emissions from point sources in the basin
- Municipalities and certain industries will complete monitoring and mercury minimization planning
- DEQ Water Quality and Cleanup Programs working together in Johnson Creek and Columbia Slough watersheds.
- DEQ 319 grant funding is being used to evaluate the sources of pesticides in upper Johnson Creek.

Temperature: The planting of riparian vegetation to increase stream-side shading will reduce solar radiation loading by 51%. This will result in significantly cooler stream temperatures. Efforts to improve base flow during the summer are needed.

Daily Maximum Johnson Creek Temperatures: Current Condition and Potential Shade (July 31, 2002)



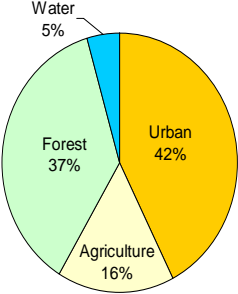
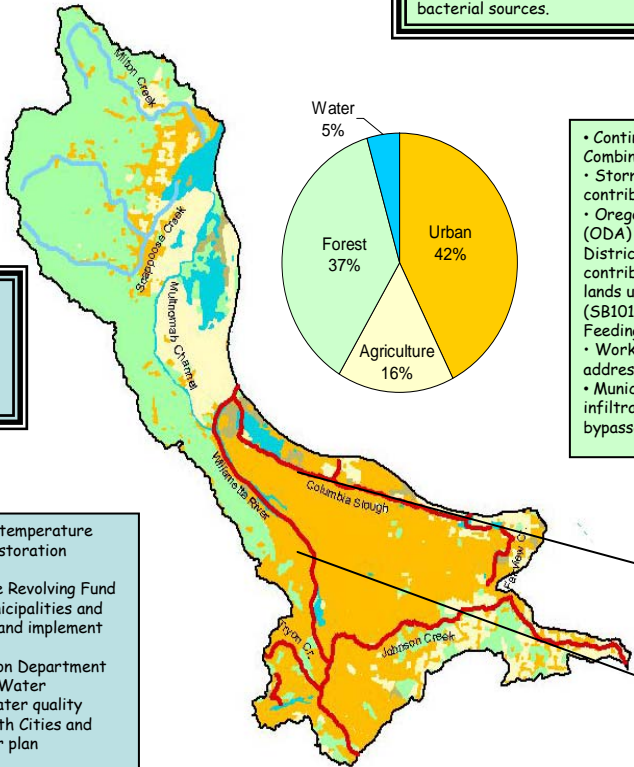
Resources are available for temperature improvement and habitat restoration projects:

- DEQ 319 Grants and State Revolving Fund Loans are being used by municipalities and watershed councils to fund and implement projects.
- DEQ is working with Oregon Department of Agriculture and Soil and Water Conservation Districts on water quality implementation plans and with Cities and Watershed Councils on their plan implementation.

Partners: DEQ has been working with a variety of partners during TMDL development and will need to include a wide variety of partners for successful TMDL implementation. These partners include the cities, counties, Watershed Councils, local Soil and Water Conservation Districts (SWCDs), state and federal agencies. Watershed Assessments and Action Plans have been completed by most Watershed Councils and DEQ has funded a number of projects related to TMDL implementation. DEQ also participated in the development of the Agricultural Water Quality Management (SB1010) Plan for the subbasin.

Major DEQ activities include: NPDES permitting of stormwater and industrial dischargers, TMDL development, Cleanup Program activities, grant and loan funding for source identification and TMDL implementation activities

Bacteria: Reduce bacteria loads in tributary streams 66-80% by addressing direct discharges and runoff of bacterial sources.



- Continue to oversee City of Portland's Combined Sewer Overflow Project
- Storm water permits will address contributions from urban areas.
- Oregon Department of Agriculture (ODA) and Soil and Water Conservation Districts (SWCD) will manage contributions from agricultural and rural lands under water quality improvement (SB1010) plans and Confined Animal Feeding Operation (CAFO) permits.
- Work with counties to identify and address failing septic systems.
- Municipalities will address inflow and infiltration problems that cause sewage bypasses.

Celebrate Success:

- Combined Sewer and sanitary overflow (CSO) discharges to Columbia Slough were virtually eliminated in 2000 resulting in improved water quality.
- The Westside project for the lower Willamette became operational in September 2006.
- Future milestones for CSO removal are 2011 for eastside outfalls.