East Fork Lewis River

Temperature and Fecal Coliform Source Assessment Study

Presentation of Technical Results

East Fork Lewis River Partnership Meeting, August 2018

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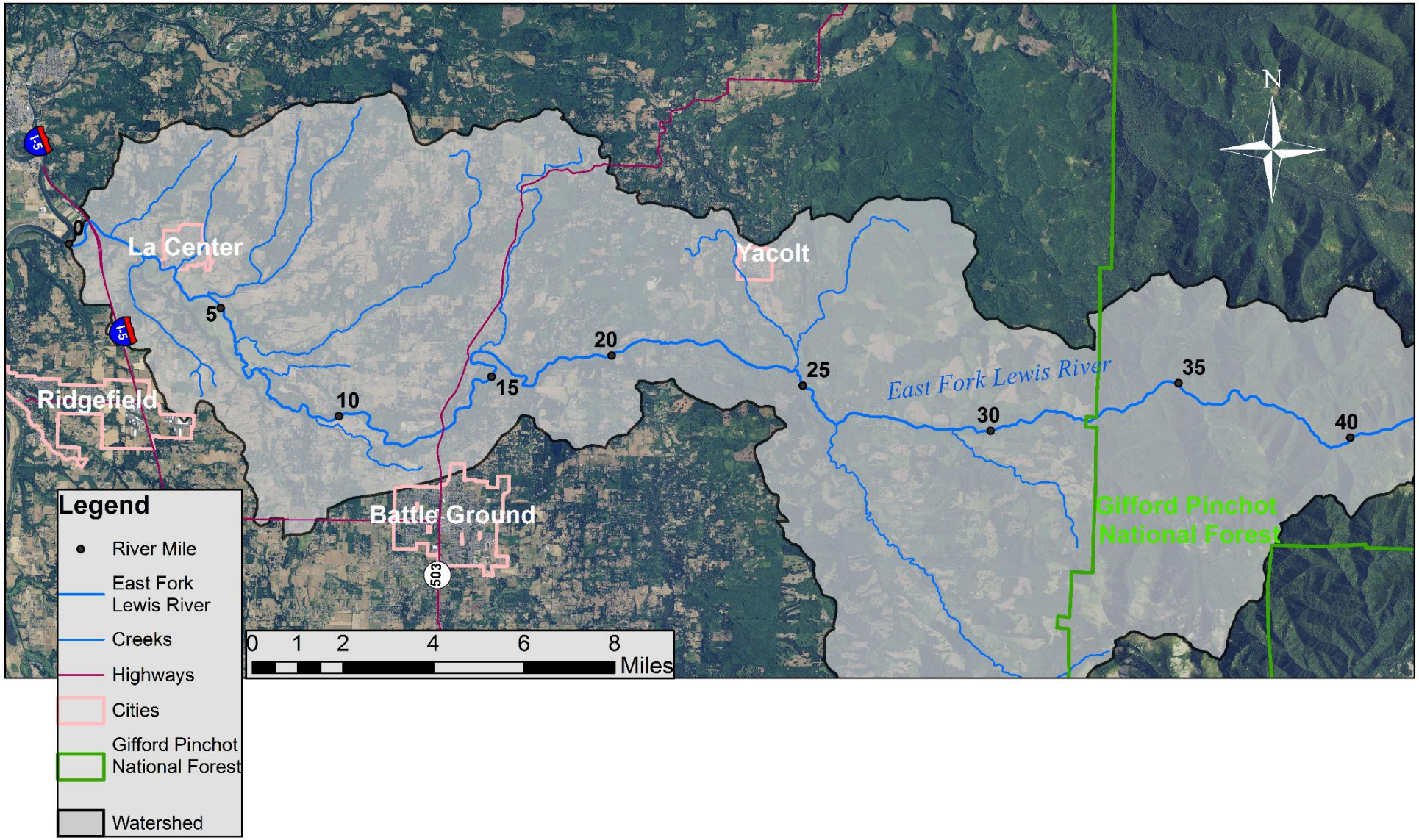
2004	East Fork Lewis River selected for TMDL
2005-06	*Quality Assurance Project Plan East Fork Lewis River Temperature and Fecal Coliform Bacteria* (Bilhimer et al., 2005) + Sampling (bacteria and temperature)
2009	*Streamflow Summary for Gaging Stations on the East Fork Lewis River, 2005-06* (Springer, 2009) *Surface Water/Groundwater Exchange Along the East Fork Lewis River, 2005* (Carey and Bilhimer, 2009)
2016	East Fork Lewis River selected for Source Assessment
2017	*Quality Assurance Project Plan East Fork Lewis River Fecal Coliform Bacteria and Temperature Source Assessment* (Raunig and McCarthy, 2017) + Sampling (bacteria)
2018	***East Fork Lewis River Temperature and Fecal Coliform Bacteria Source Assessment Report* (McCarthy, 2018)**

https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process/Directory-of-improvement-projects/East-Fork-Lewis-River

East Fork Lewis River Watershed



Project Goals

- Confirm and identify sources of fecal coliform bacteria to the East Fork Lewis River watershed.
- Assess existing shade and identify areas with the largest shade deficits along the East Fork Lewis River to help prioritize implementation strategies.
- Provide information on key areas to focus implementation efforts.

Fecal Coliform Bacteria

Seasons

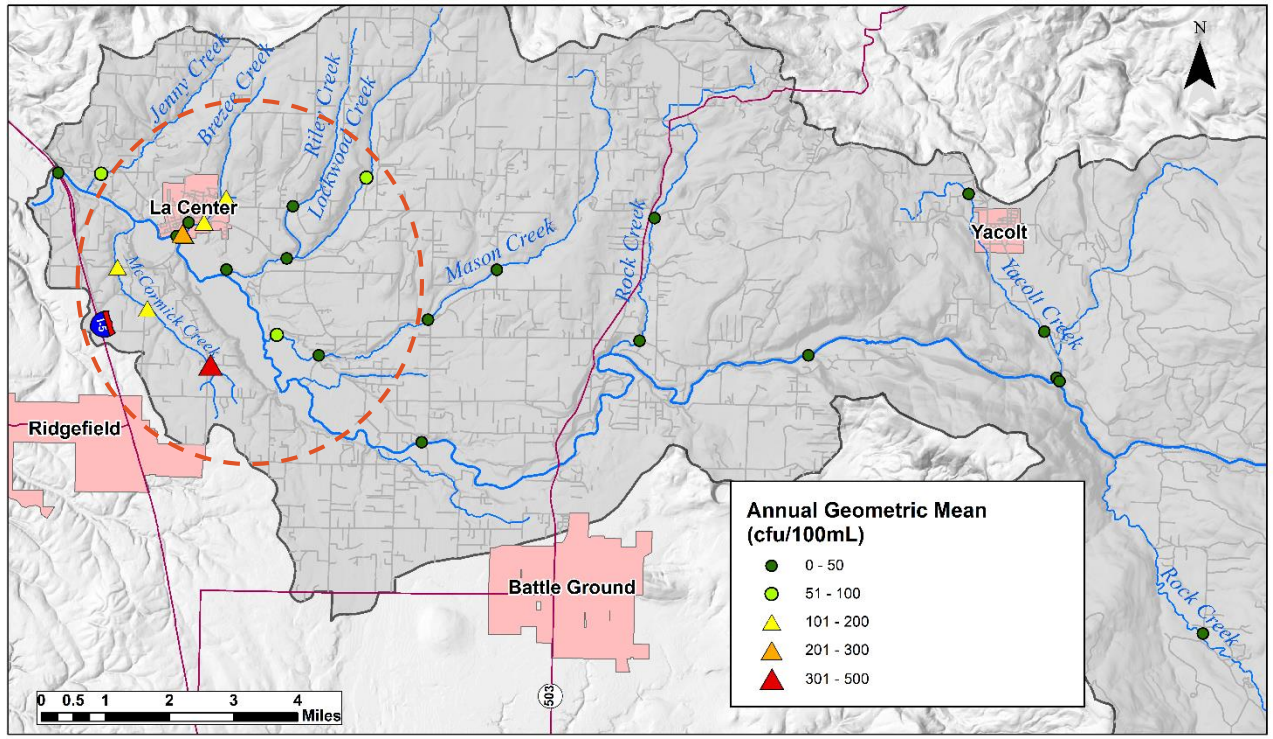
Dry Season
June - October

Wet Season
November - May

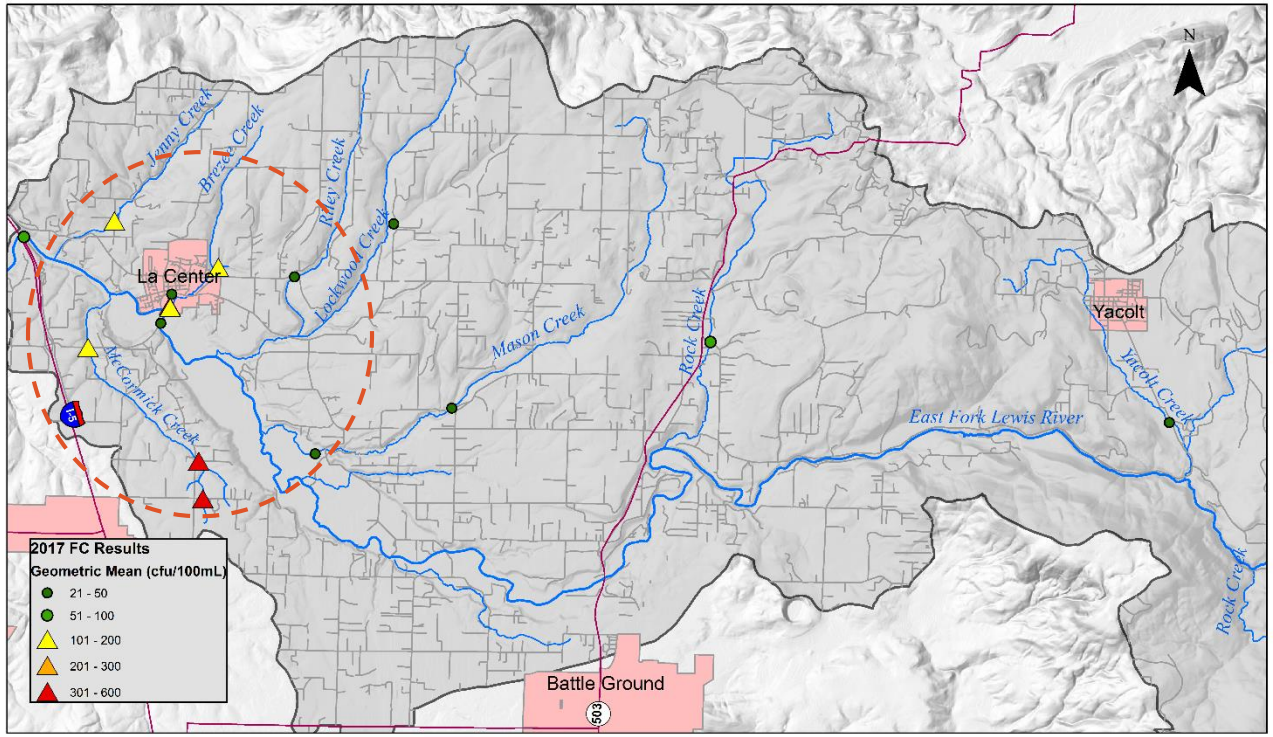
McCormick Creek (MCC 3.4)

Bacteria Sampling Results

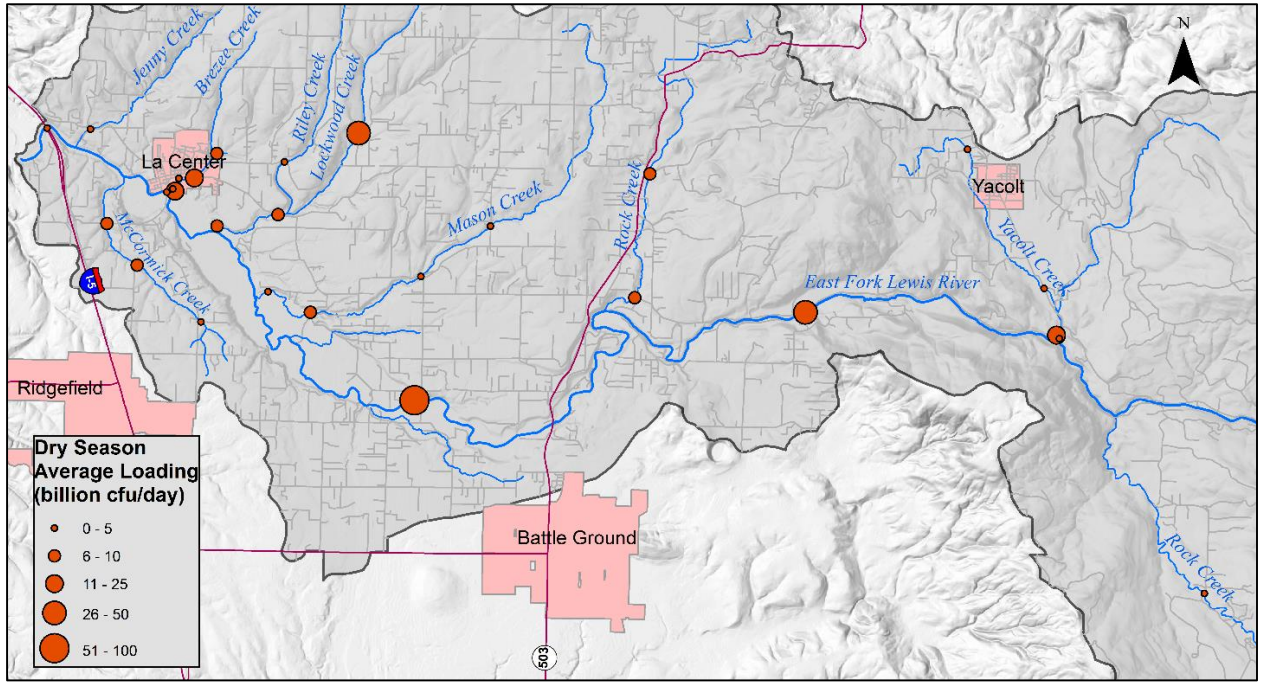
2005-06

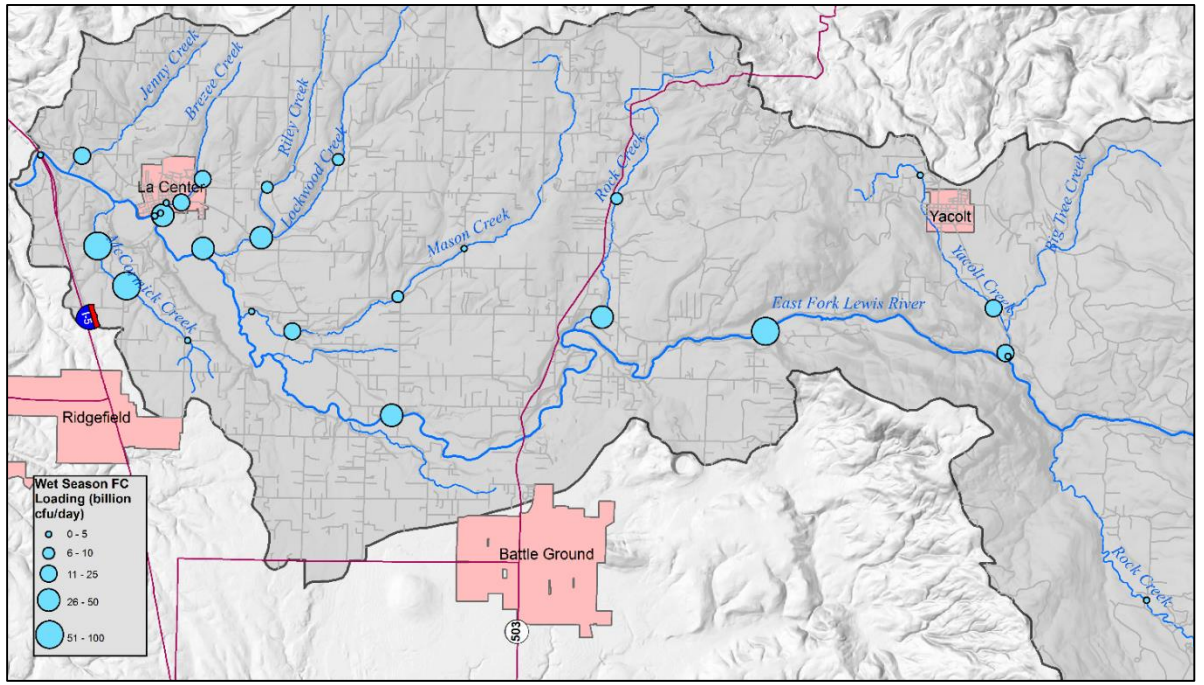


2017



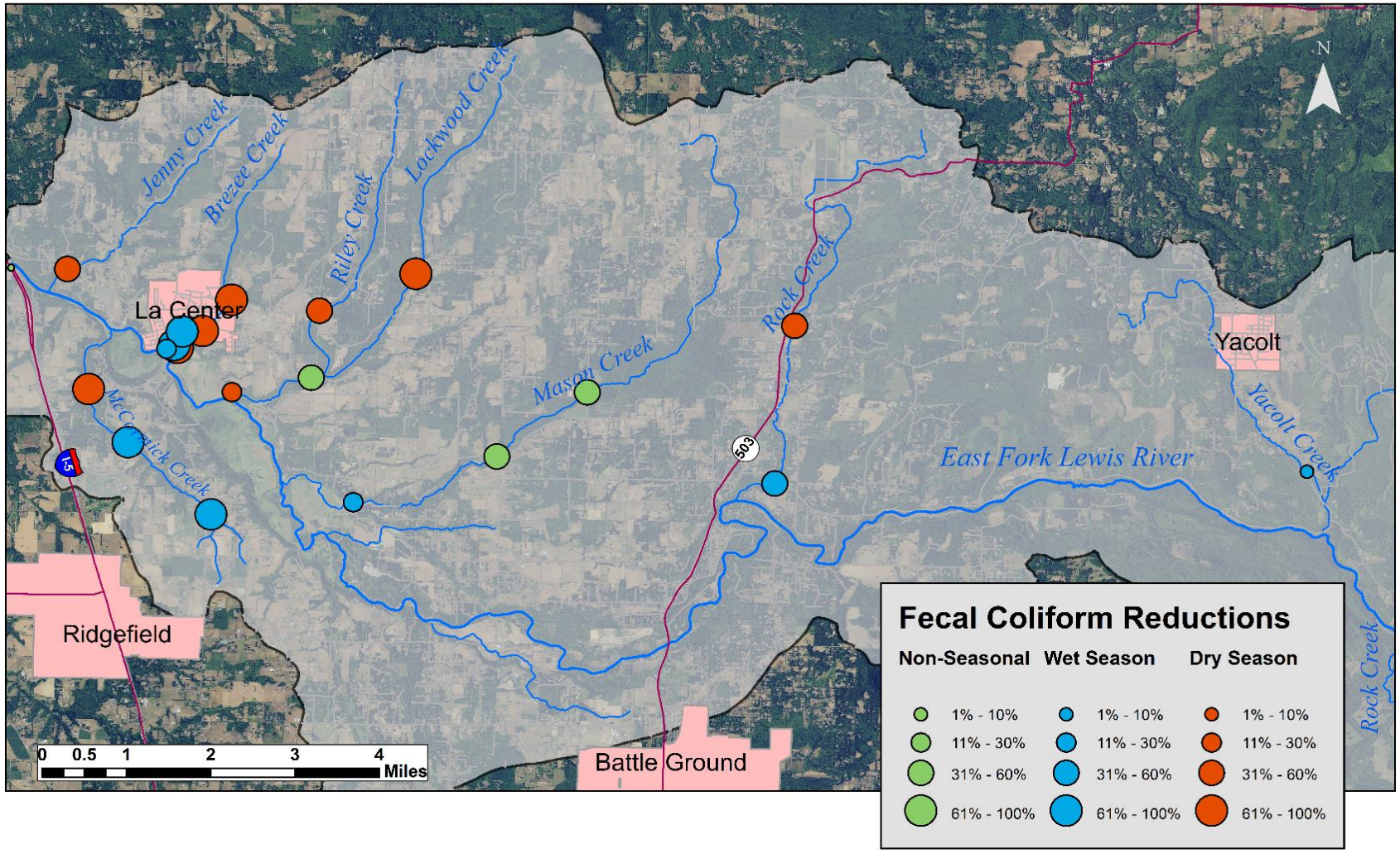
Bacteria Seasonal Loading





$$Load((billion\ cfu)/day) = Bacteria\ Concentration\ (\frac{cfu}{100mL})\ * Flow\ (cfs) * Conversion\ Factor$$

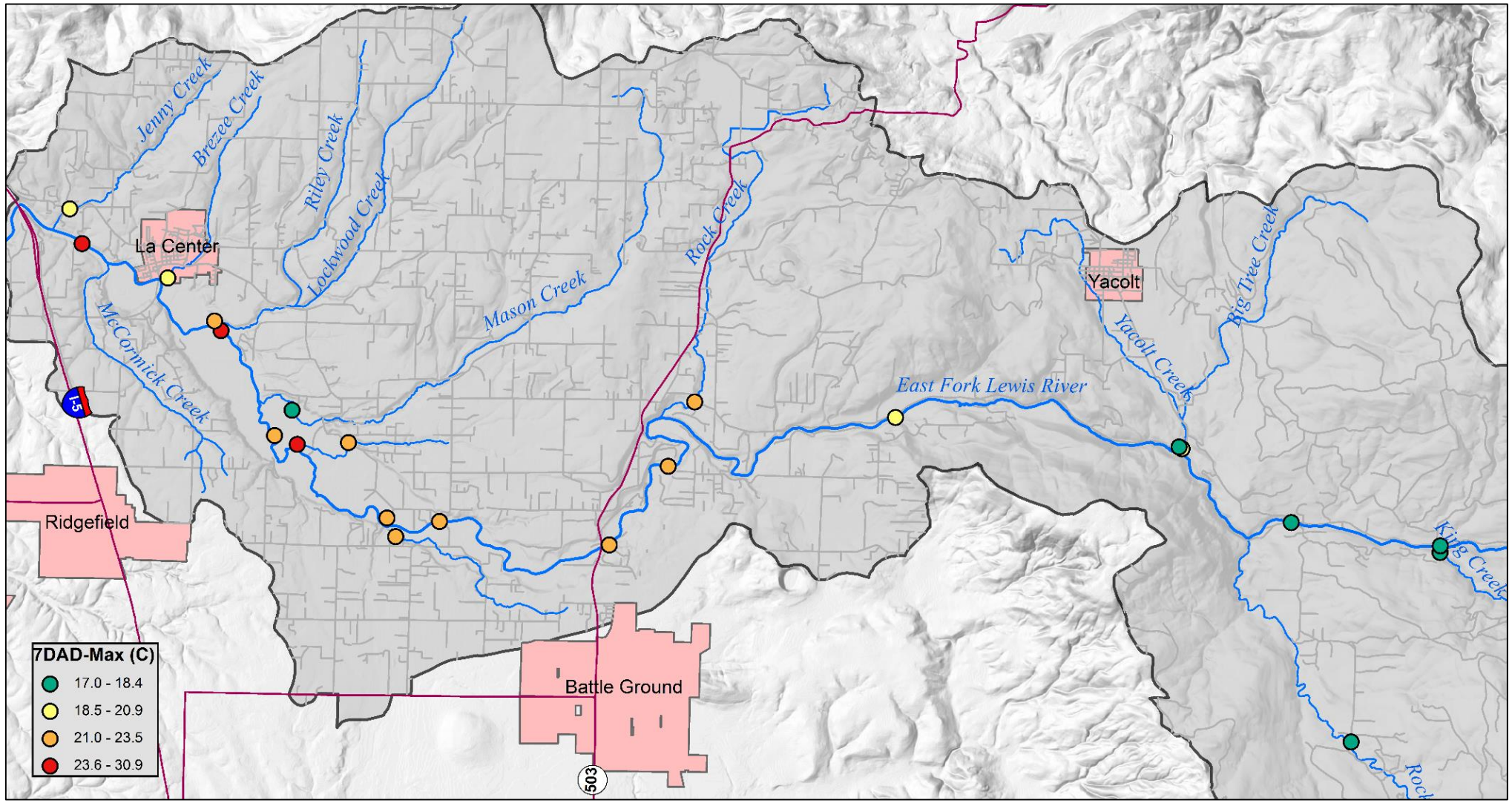
Bacteria Recommended Reductions



Completed using Statistical Rollback Analysis

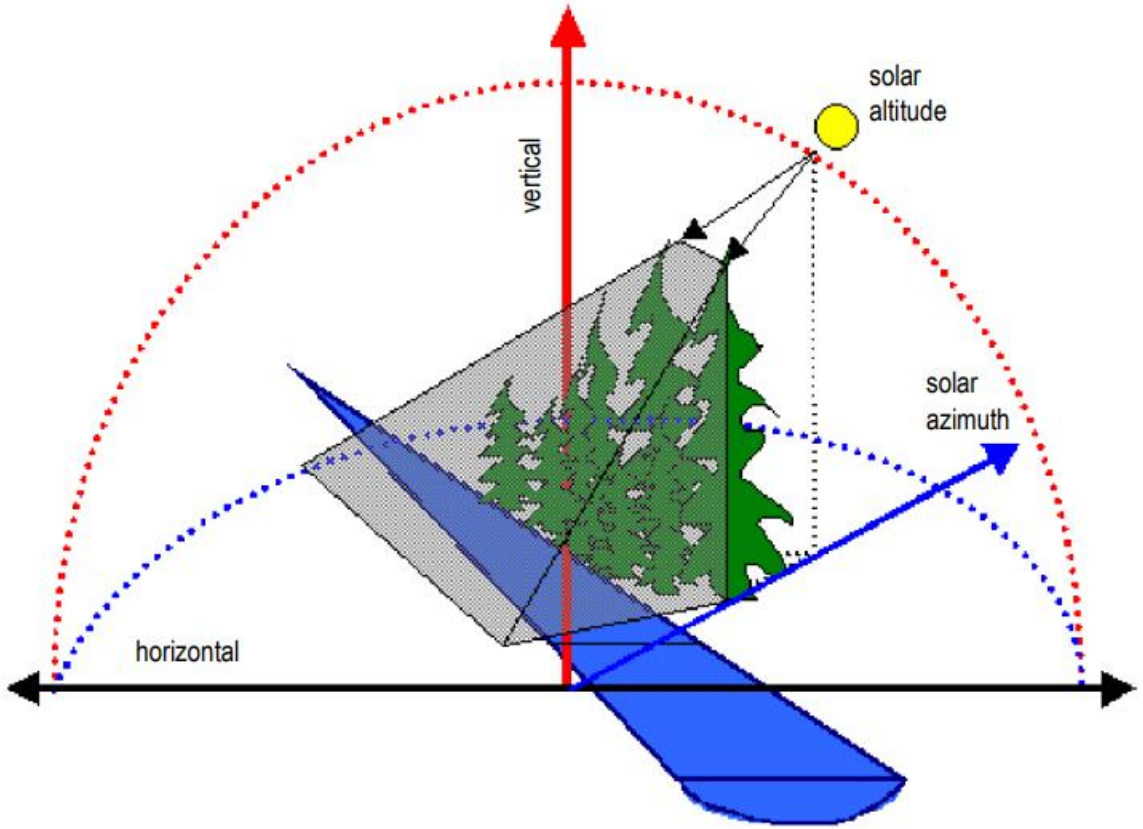
Temperature

Temperature Results



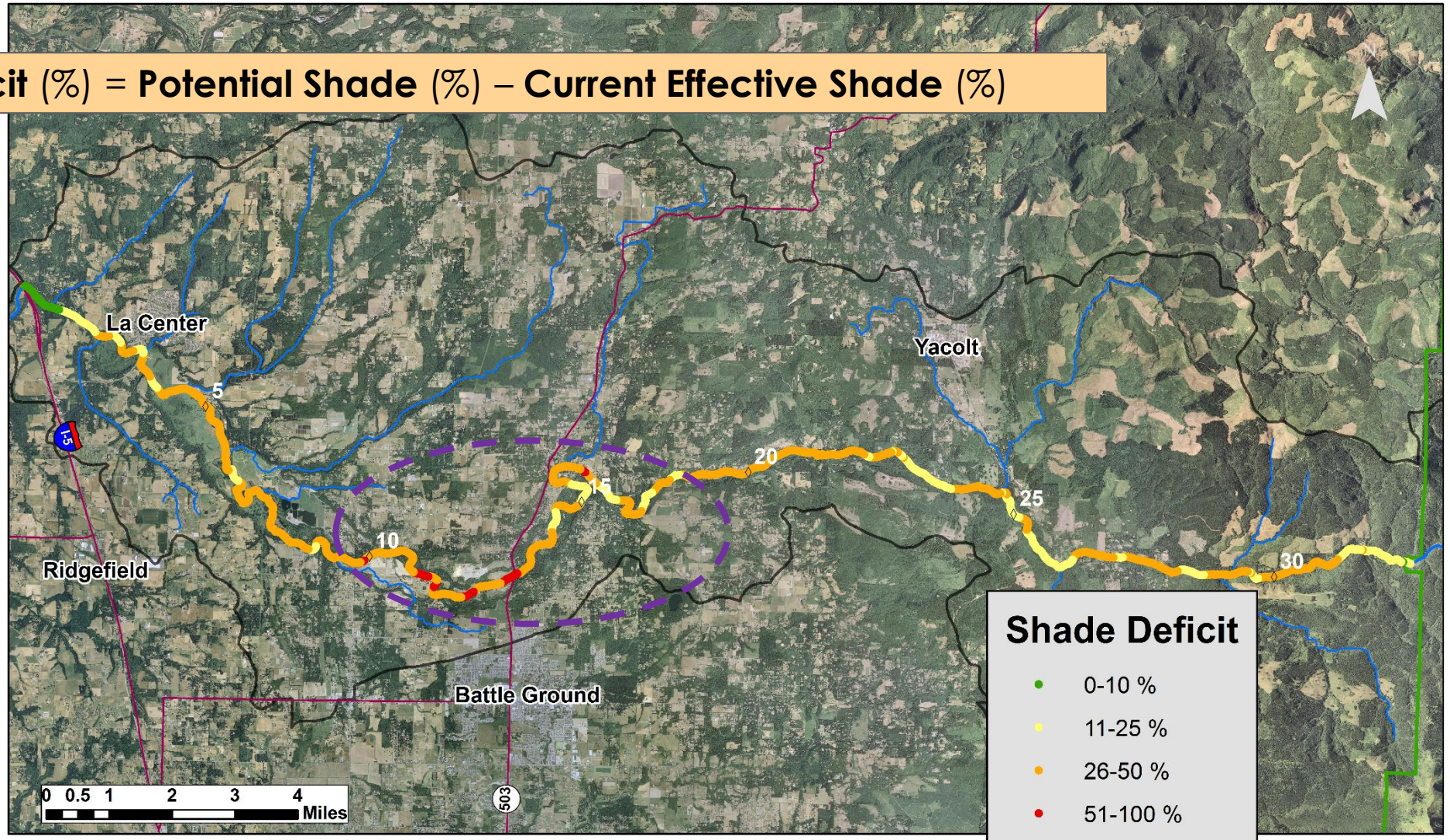
7-DADMax is the 7-day average of the daily maximum temperatures

Measuring Effective Shade



Shade Analysis Results

Shade Deficit (%) = **Potential Shade** (%) – **Current Effective Shade** (%)



Detailed methodology in QAPP (Raunig and McCarthy, 2017) and Report (McCarthy, 2018)

Questions?

East Fork Lewis River Website

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