Mid Coast Total Maximum Daily Loads - Local Stakeholder Advisory Committee

Upper Yaquina Watershed TMDLs Update

Watershed Management

April 14, 2022
9 a.m. – 11 a.m.
Virtual meeting

David Waltz, Kevin Brannan, Daniel Sobota | Oregon Department of Environmental Quality

Meeting agenda topics

1. Welcome, introductions and agenda review; Zoom logistics
2. DEQ/Project team updates and discussion

   Upper Yaquina 303d list status
   - Upper Yaquina watershed – Bacteria TMDL Technical Update
   - Discussion (DEQ and LSAC)

   Break (5 min)

3. DEQ/Project team updates and discussion
   - Upper Yaquina watershed – Dissolved Oxygen TMDL Technical Update
   - Discussion (DEQ and LSAC)
4. Overview of Upper Yaquina TMDLs issuance process and next steps
5. Wrap-up

Adjourn meeting

Status of stakeholder process and progress

Stakeholder Group	# of Meetings	Status of Group	Last meet date
LSAC	11	Paused until draft load allocations prepared (Now)	July 15, 2015
DO TWG	6	Provided input on Upper Yaquina and Siletz River DO analysis and models	April 2019
Temp TWG	7	Technical work was paused in April 2017 Review of Yachats Technical Appendix	March 9, 2017
Bacteria TWG	19	Provided extensive input on Upper Yaquina and Big Elk Ck models	Nov. 16, 2016
Sediment TWG	13	Technical work was paused in early 2015	Jan. 14, 2015
LSAC- written updates	7		Jan. 8, 2018

Factors affecting TMDL activities and schedules

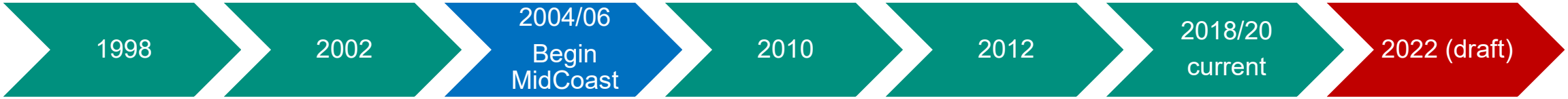
Primary Factors:

- Litigation (2012 and 2019: Court decisions on Temperature Standards and Temperature TMDLs Revision)
- Willamette Mercury TMDL (2017 Court-ordered TMDL deadline of April 2019)
- Staffing resources and shifts
- COVID-19 pandemic
- Wildfires (Labor Day 2020)

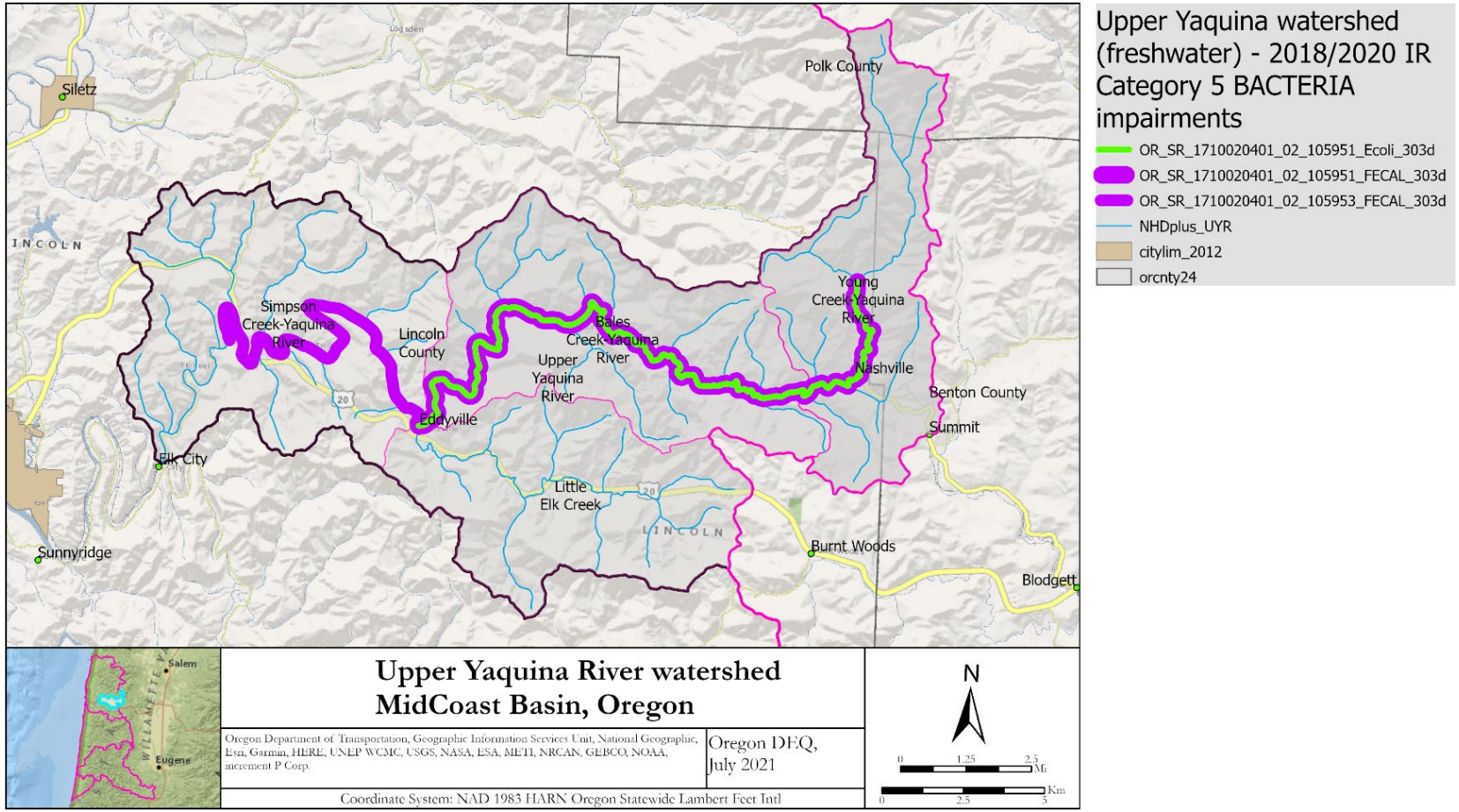
Parallel Processes:

- Mid-Coast Water Planning Partnership (IWRS)
- Private Forest Accord
- DEQ-ODF MOU (2021)
- Integrated Report / 303(d) List
- EQC Rulemaking – TMDLs by Rule (in process)

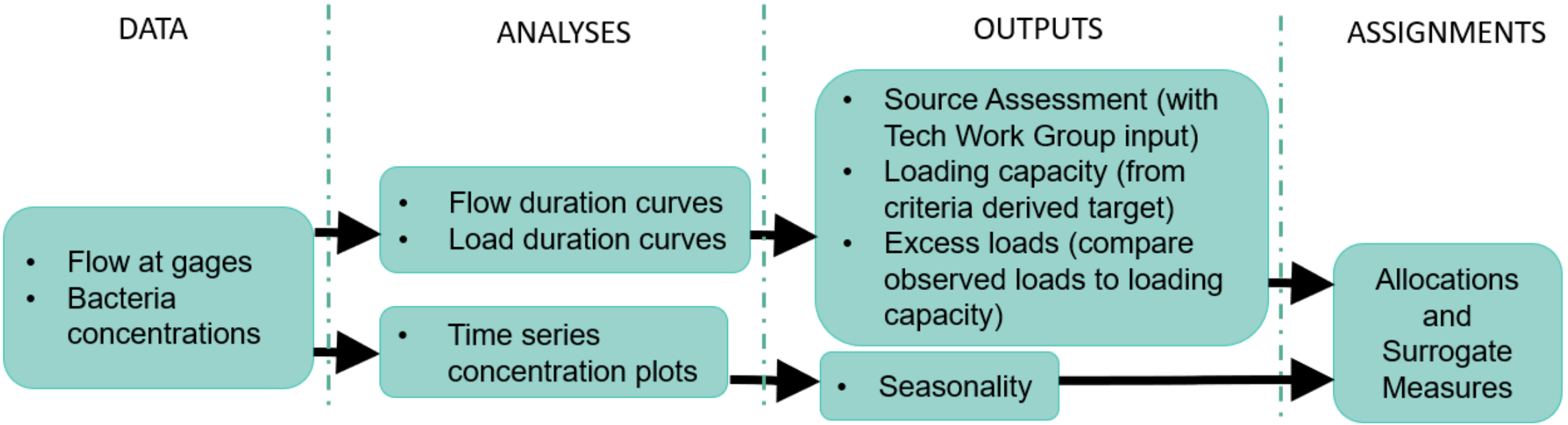
Integrated Reports / 303(d) List of Impaired Waters



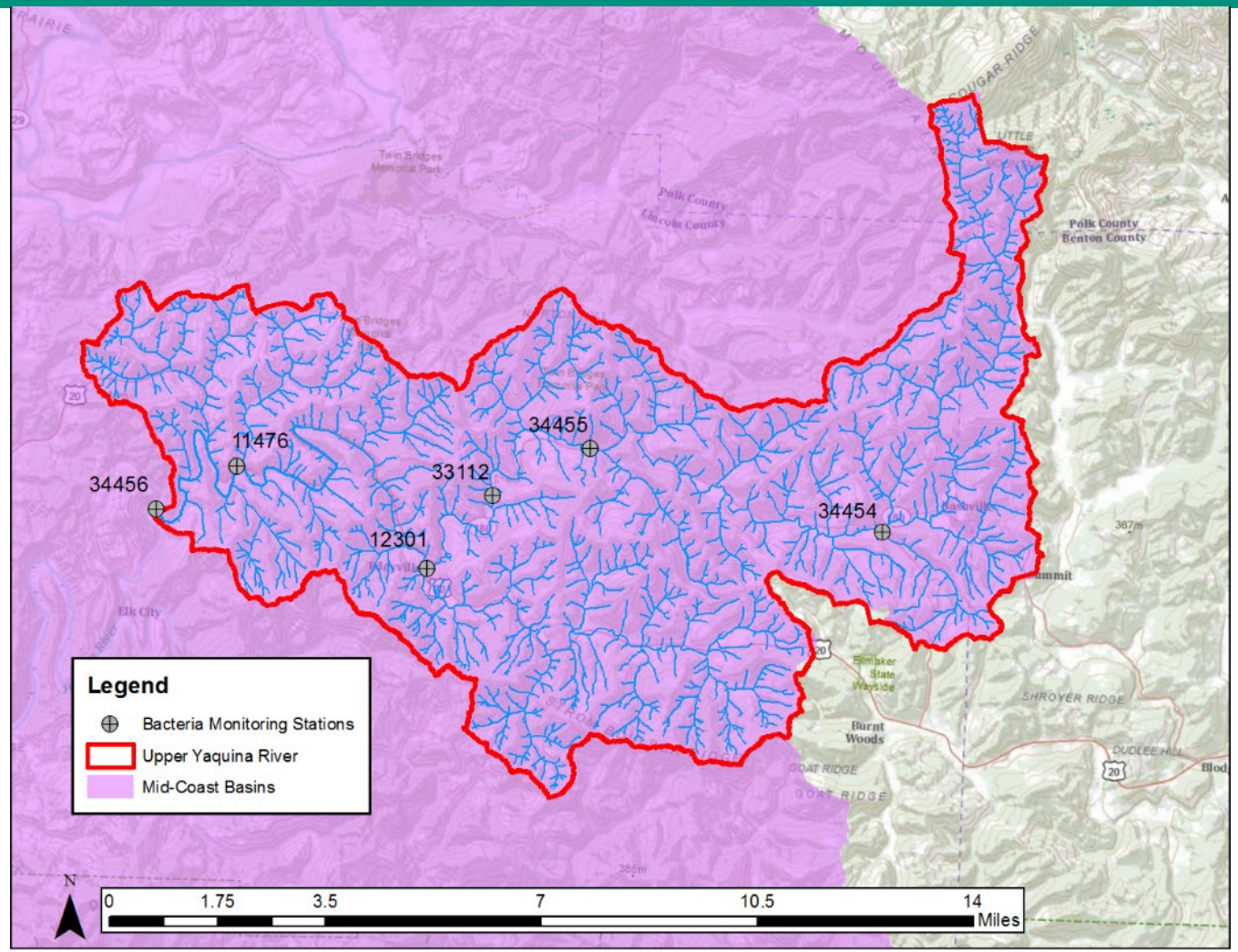
Upper Yaquina (freshwater) 303(d) List - Bacteria



Bacteria analyses overview



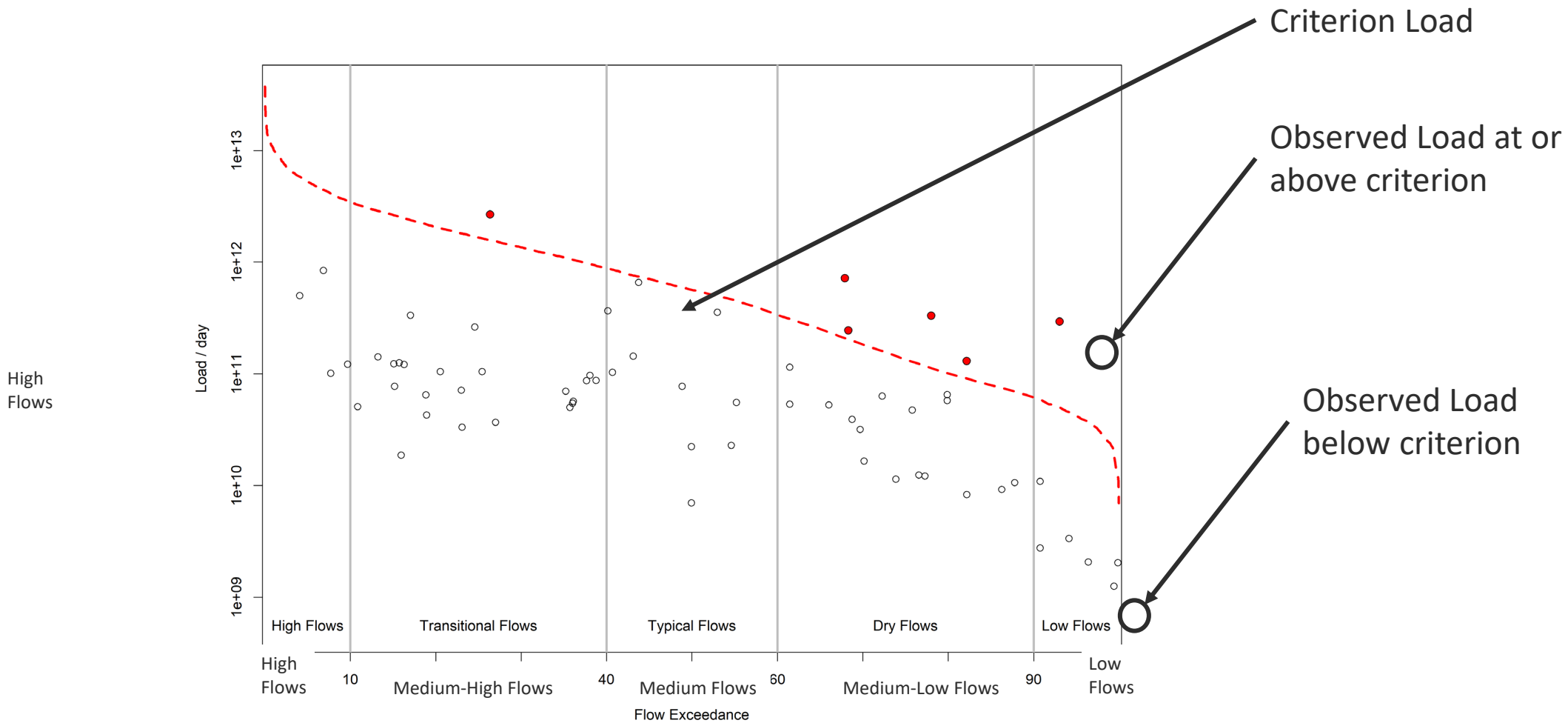
Bacteria sampling locations



Flow zone descriptions

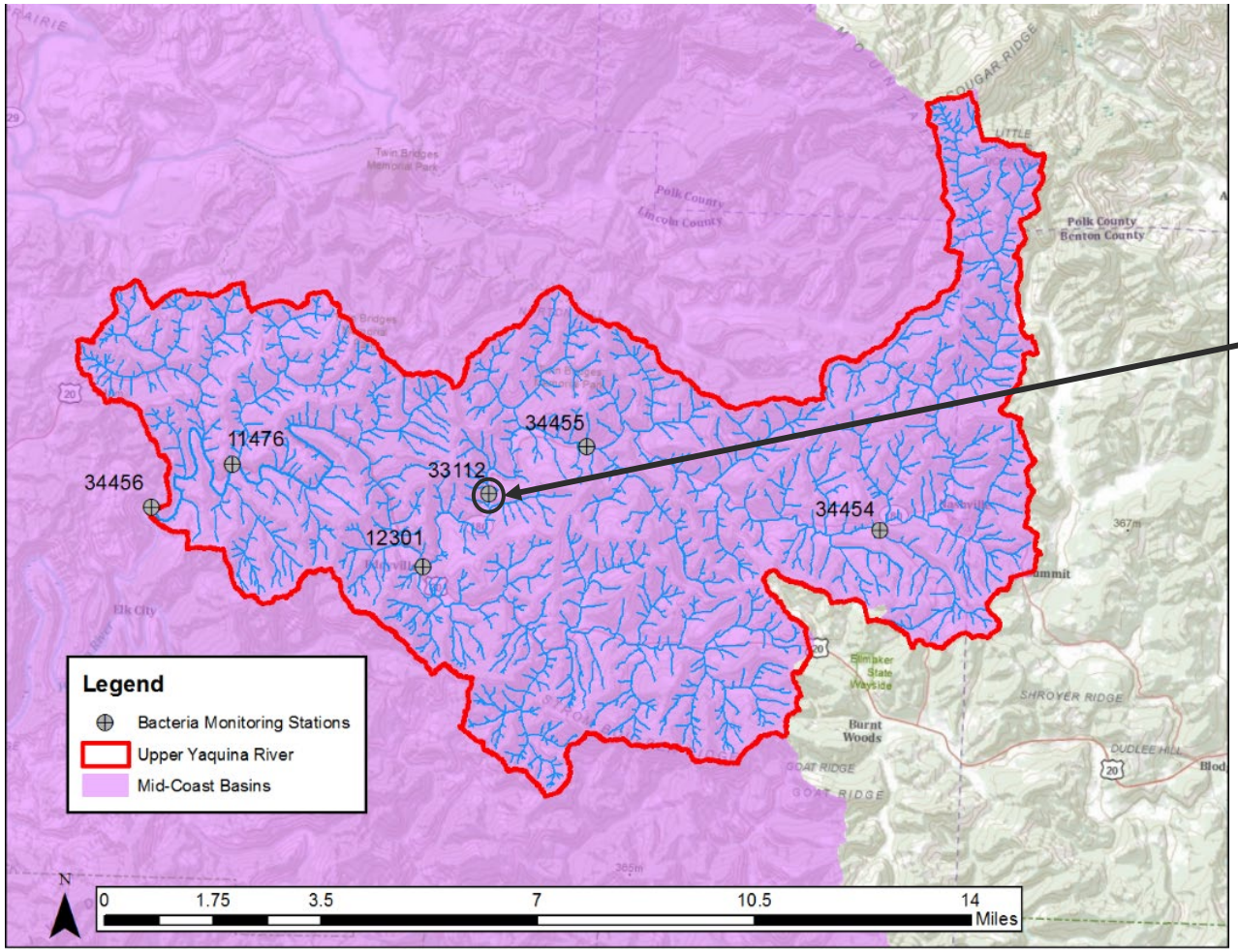
Flow Category	Exceedance Probability	Hydrologic Description
Low	90%-100%	Watershed soils dry, may be drought conditions, storage empty, channel levels near or below the lowest 7-day average flow that occurs (on average) once every 10 years (7Q10), long dry and warm periods between weather events, entirely groundwater return flow as source to stream flow
Medium-Low	60%-90%	Watershed soils much below saturated, storage empty, channels much less than bank-full, extended periods between weather events, some shallow subsurface, but mainly groundwater return flow as source to stream flow
Medium	40%-60%	Watershed soils partially saturated, storage almost empty, channels less than bank-full, typical size storms or snow melt events, surface, shallow subsurface and groundwater return flow as source to stream flow
Medium-High	10%-40%	Watershed soils partially saturated, storage partially full, channels near bank-full, moderate size storms or snow melt events, mainly surface or shallow subsurface flow as source to stream flow
High	0%-10%	Watershed soils completely saturated, storage near capacity, channels at or near flood stages, large storms or snow melt events, mainly surface or shallow subsurface flow as source to stream flow

Example Load Duration Curve: observed concentrations and criterion



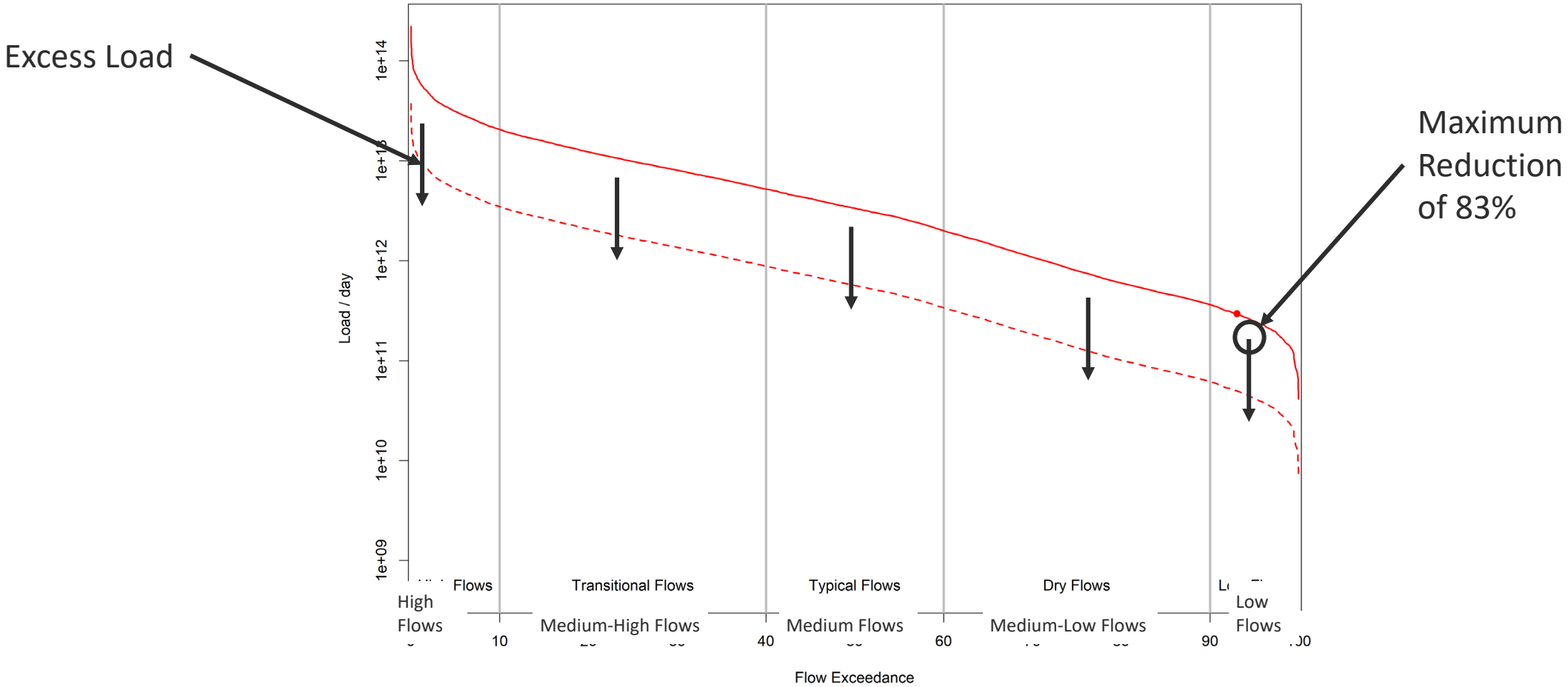
Maximum bacteria reductions for stations

Station	Max Reduction
34456	0%
11476	37%
12301	0%
33112	83%
34455	0%
34454	80%

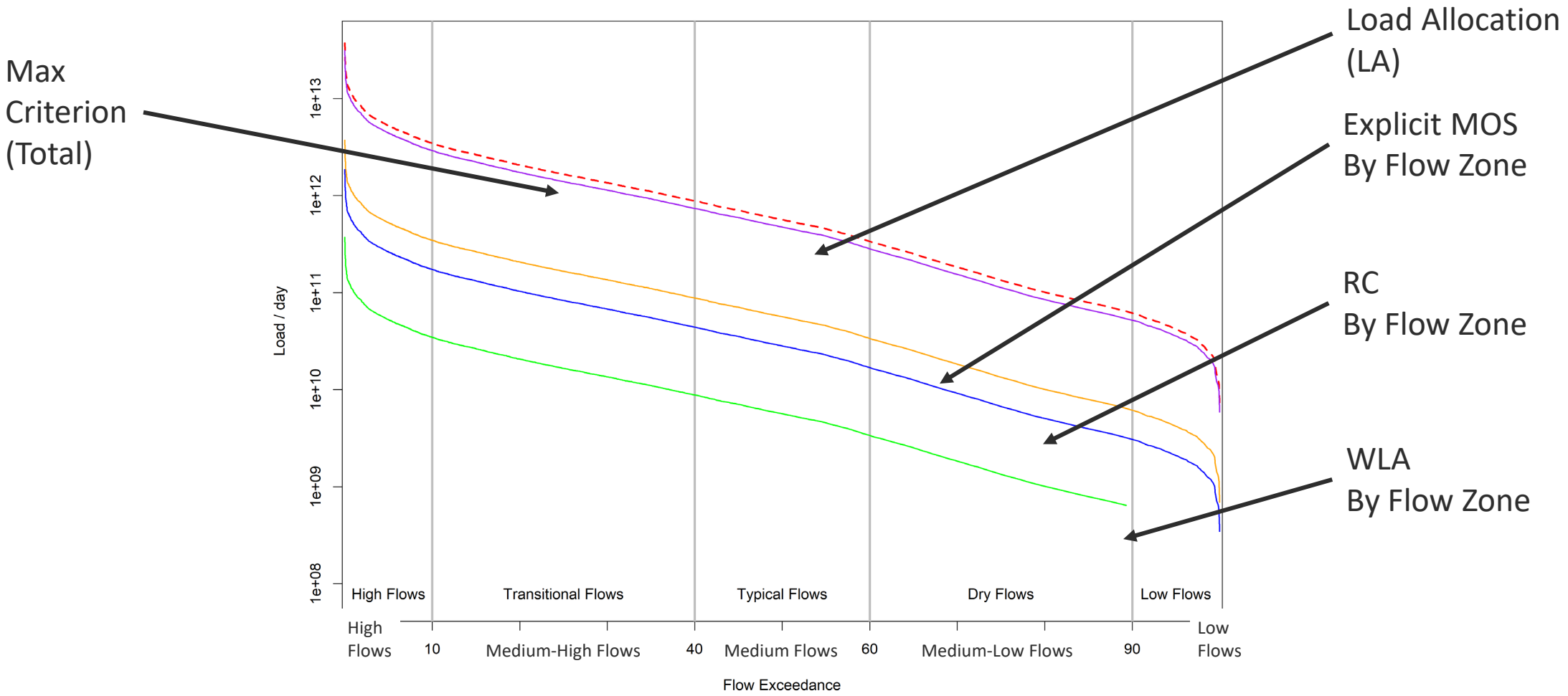


Maximum Reduction of 83%

Maximum reduction Load Duration Curve for watershed



Allocation Load Duration Curves



Bacteria draft allocations

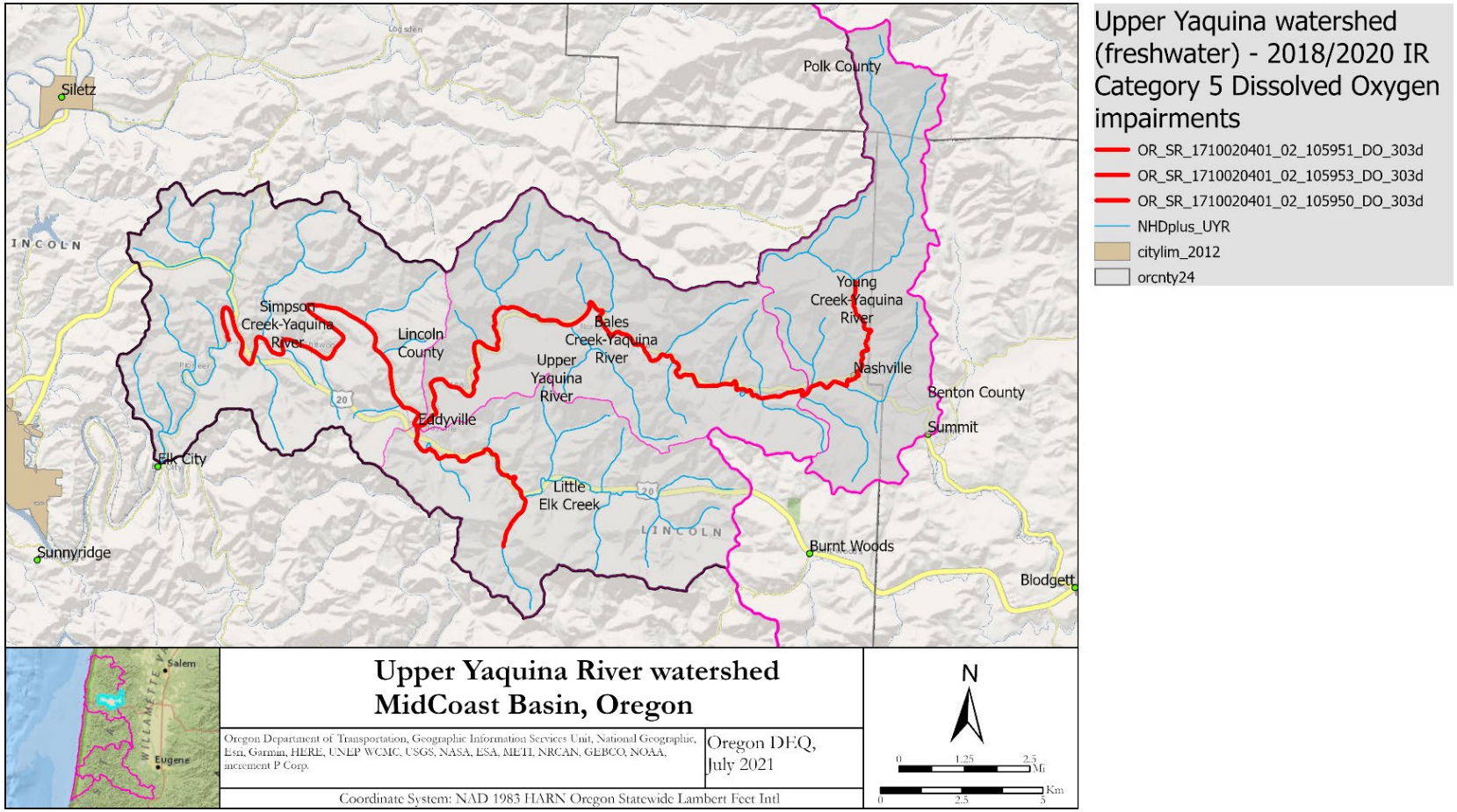
Sources		Relative Allocation of Load Capacity	
		Low Flows	All Other Flows
NONPOINT and BACKGROUND	Runoff in contact with failing septic systems and livestock grazing areas, livestock and elk in and around streams	85%	84%
POINT	ODOT MS4 Stormwater Permit	0%	1%
Reserve Capacity		5%	5%
Margin of Safety		10%	10%
TOTALS		100%	100%

Flow Category	High Flows	Medium-High Flows	Medium Flows	Medium-Low Flows	Low Flows
Flow Exceedance Range	0%-10%	10%-40%	40%-60%	60%-90%	90%-100%
Source	**Allowable Daily E. coli Loads (organisms/day)**				
Nonpoint and Background	5.31×10^{13}	4.59×10^{13}	9.76×10^{12}	3.96×10^{12}	3.52×10^{11}
Point (ODOT MS4)	6.32×10^{11}	5.46×10^{11}	1.16×10^{11}	4.71×10^{10}	0
Reserve Capacity	3.16×10^{12}	2.73×10^{12}	5.81×10^{11}	2.36×10^{11}	2.07×10^{10}
Margin of Safety	6.32×10^{12}	5.46×10^{12}	1.16×10^{12}	4.71×10^{11}	4.14×10^{10}

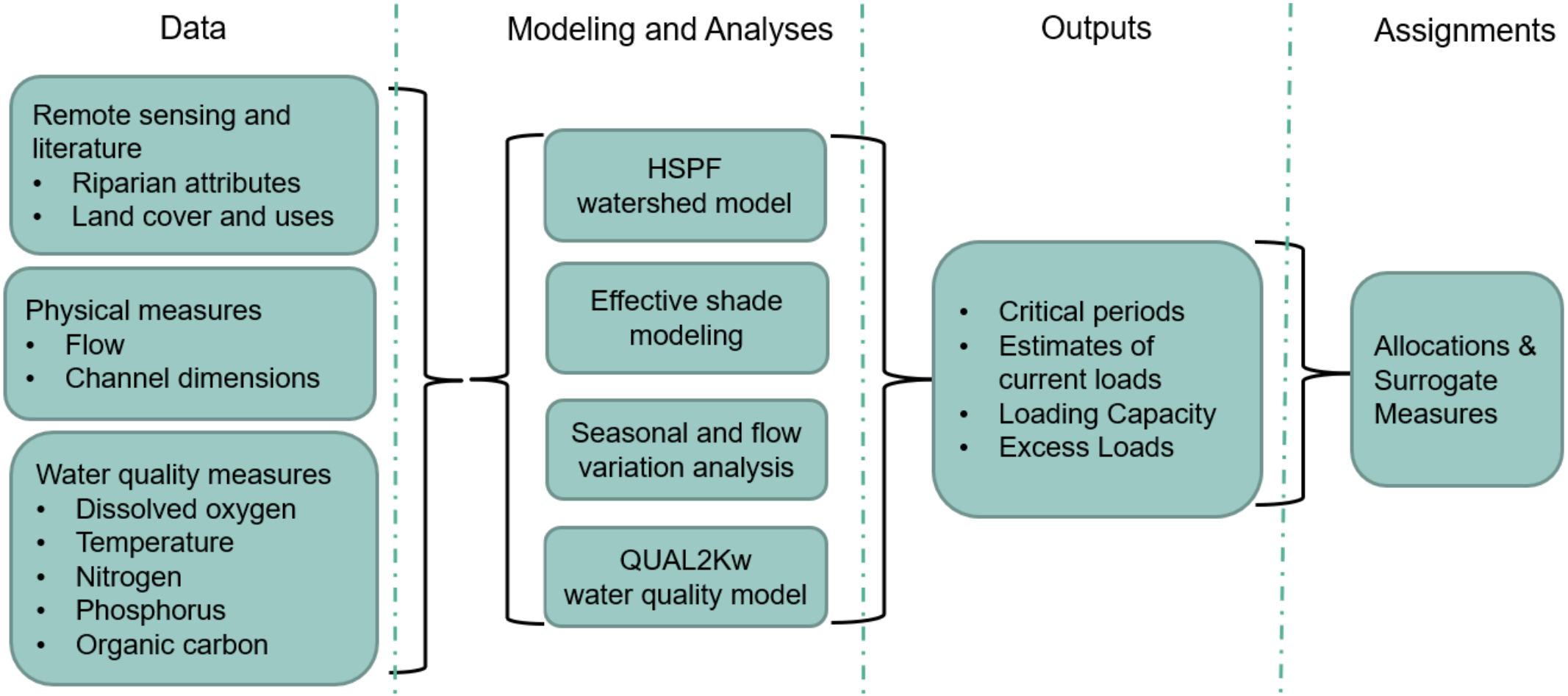
BREAK (5 min)

Yaquina River at Trapp Creek Rd (OWRD gage)

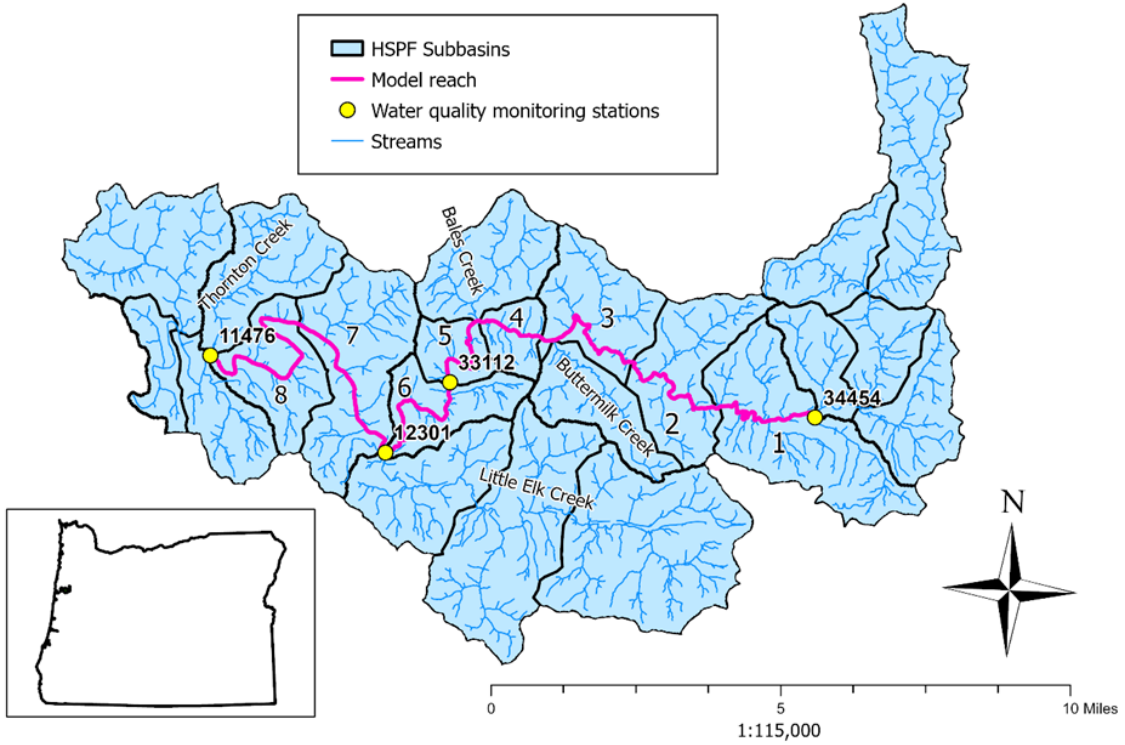
Upper Yaquina (freshwater) 303(d) List – Dissolved Oxygen

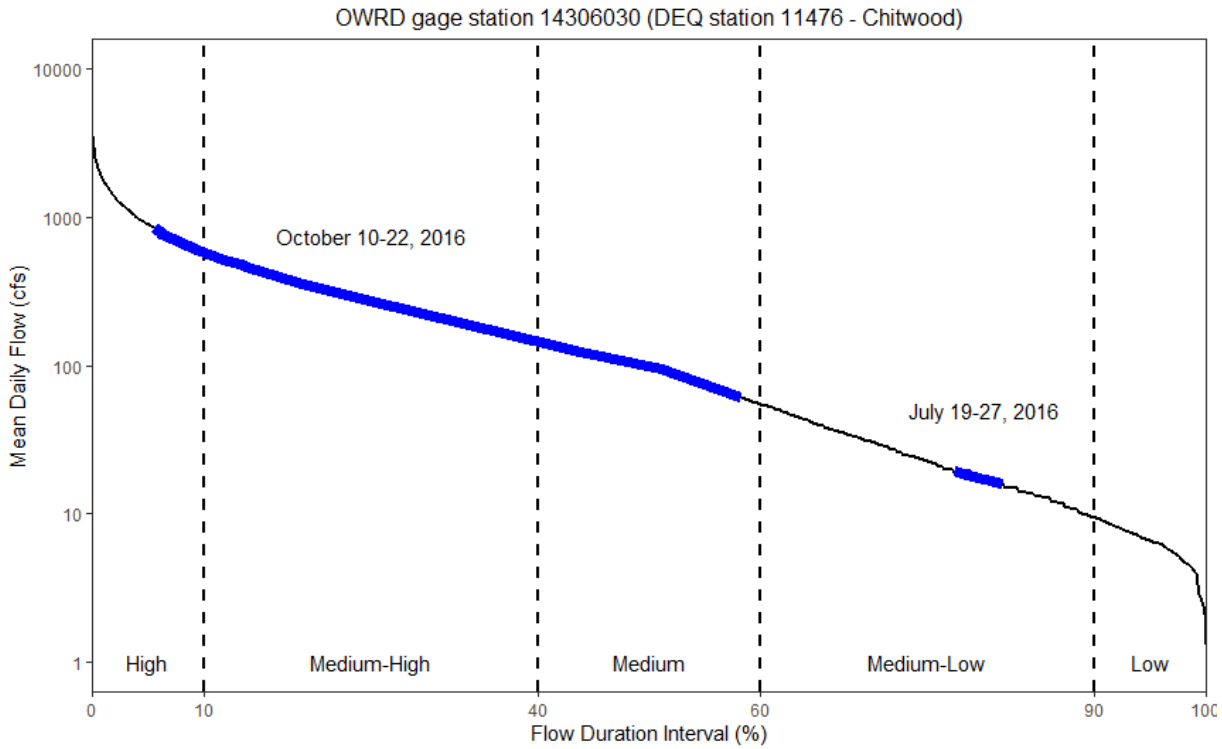


Dissolved oxygen analyses overview

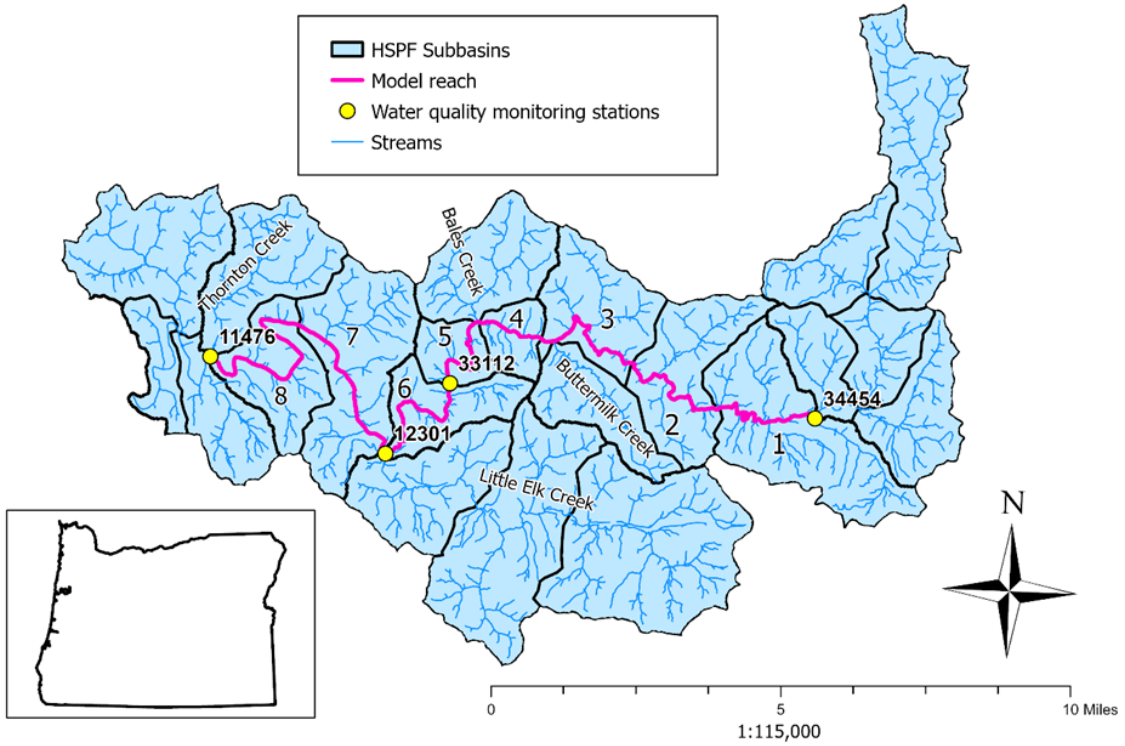


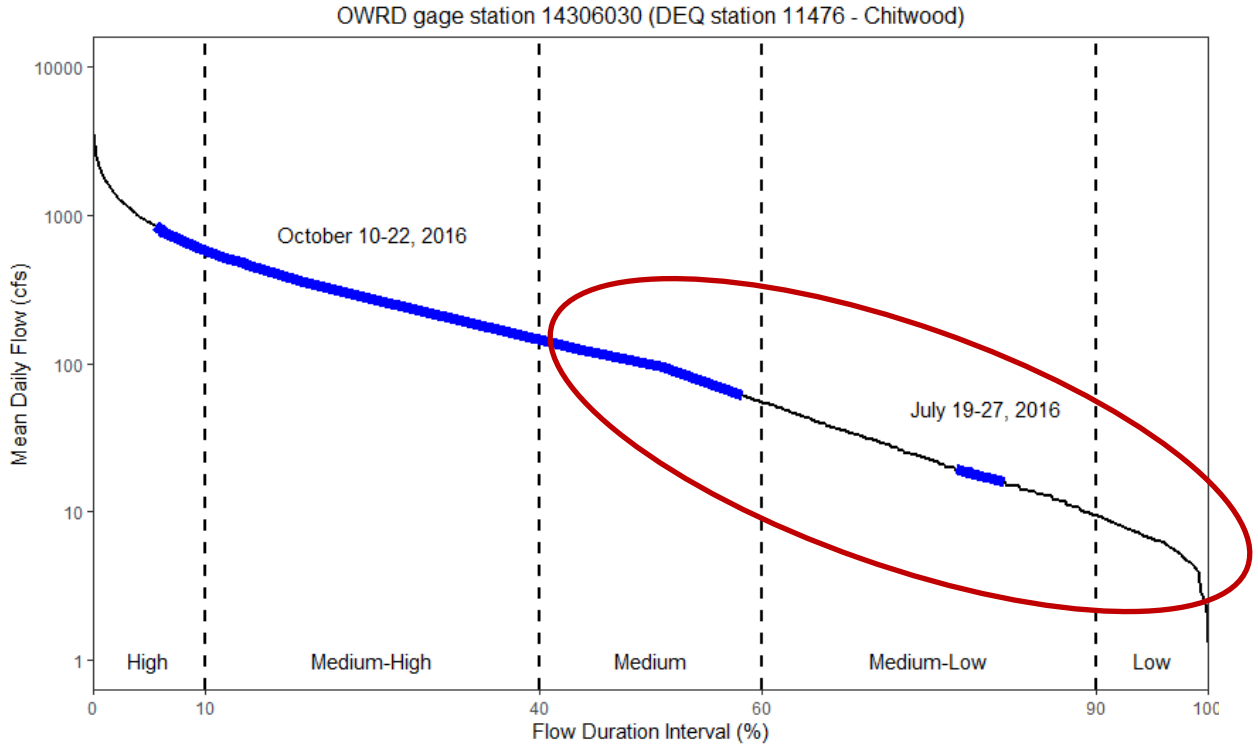
Dissolved oxygen TMDL studies, 2016



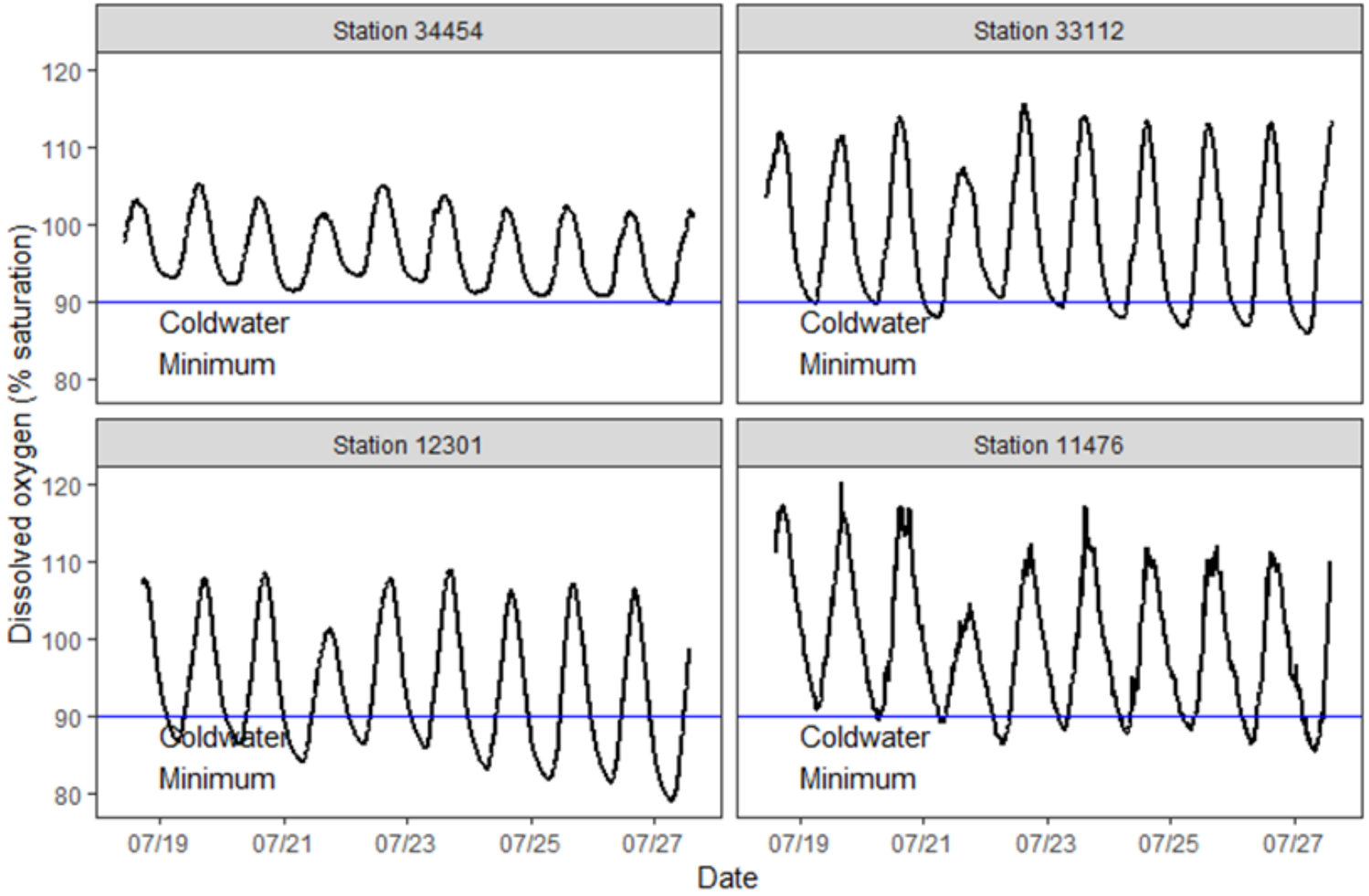


Dissolved oxygen TMDL studies, 2016

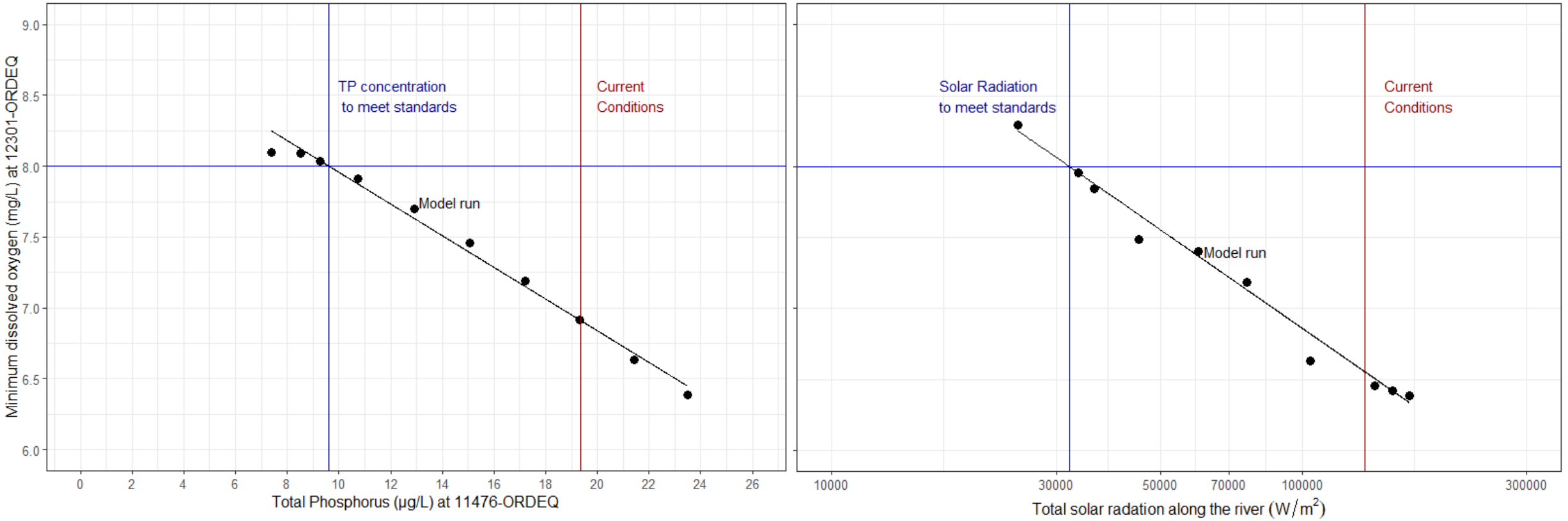




July dissolved oxygen TMDL study, 2016



Identifying controlling factors from TMDL model



Analysis summary

- Mid-summer to early fall identified as the critical period

- A linked watershed-water quality model identifies the following as surrogates for meeting standards:
  - Solar radiation (effective shade)
  - Total phosphorus

Draft pollutant loads - dissolved oxygen

Pollutant	Loading Capacity	Excess Load	Reductions Needed
Solar Radiation (Model Reach during mid-summer/early fall)	397,223 kW/day	1,257,874 kW/day	77%
Total Phosphorus (Watershed Load during Medium to Low flows)	2.15 lbs/day	2.13 lbs/day	51%

Solar radiation draft load allocations

Nonpoint Sources	Solar Radiation Loading Capacity: 397,223 kW/day during mid-summer/early fall				
	Existing Load (kW/day)	Relative Contribution to Total Load	Percent Reduction Needed	Allocation (kW/day)	Relative Allocation of Loading Capacity
Lack of riparian vegetation	1,655,096	100%	77%	380,672	99%
Bank and channel topography					
Reserve Capacity				(16,551)	1%
Margin of Safety				Implicit	
TOTALS		100%		397,223	100%

Phosphorus draft load allocations

Sources		Total Phosphorus Loading Capacity (Watershed to station 11476): 2.15 lbs/day for Medium to Low flows				
		Existing Load (lbs/day)	Relative Contribution to Total Load	Percent Reduction Needed	Allocation (lbs/day)	Relative Allocation of Loading Capacity
NONPOINT and BACKGROUND	Livestock	2.46	57%	51%	1.21	56%
	Runoff from non-state roadways, silviculture, water impoundments, and background*	1.80	42%	51%	0.88	41%
	Failing Septic Systems	0.03	<1%	51%	0.02	1%
POINT	ODOT MS4 Stormwater Permit	0**	0%**	0**	0.02	1%
Reserve Capacity					(0.02)	1%
Margin of Safety					Implicit	
TOTALS			100%		2.15	100%

Notes:
***Background includes atmospheric deposition and erosion/soil leaching wildlife**
****Highway stormwater captured in roadways nonpoint source**

TMDLs process next steps

- Issue TMDL by rule or order – EQC decision May 2022
- DMA outreach; convene Rule Advisory Committee or continue with LSAC
- Internal review, EPA review, EQC briefing (as needed)
- Public comment and hearing
- Finalize TMDL/WQMP and prepare response to comment
- Propose for adoption by EQC or DEQ issue as Order
- Submit TMDLs to EPA for approval/disapproval

Discussion

Recognizing that the draft TMDL documents have not been distributed for public review, and EQC will decide on TMDLs-by-Rule process in May:

- Is the overall process to determine the pollutant load allocations clear for each impairment?
- Are the primary steps in the administrative process to release, review and finalize the TMDL documents clear?
- Other comments?

Adjourn

Yaquina River at bridge on HWY 180 upstream of Eddyville