



# Deschutes River, Capitol Lake, and Budd Inlet Water Cleanup Study

Thurston County Commissioners Briefing  
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## PURPOSE

- Water Quality Cleanup Plan Process Overview & Status (Lydia)
- Technical Report findings for the Deschutes River and tributaries to Budd Inlet (Mindy)
- Next steps (Lydia)

## GLOSSARY

- EPA: Environmental Protection Agency
- TMDL: Total Maximum Daily Load
- WQIP: Water Quality Implementation Plan
- WQIR: Water Quality Improvement Report

## WATER QUALITY CLEANUP PLAN (TMDL) PROCESS

*Put the Plan into Action!*

Water Quality Improvement Report (WQIR)

Who?

What?



*Technical Report + Implementation Strategy = Water Quality Improvement Report*

Water Quality Implementation Plan (WQIP)

Who?

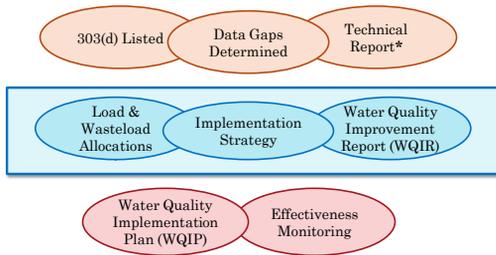
What?

When?

Where?



### TMDL STATUS- WHERE ARE WE NOW?



\*<https://fortress.wa.gov/ecy/publications/publications/1203008.pdf>

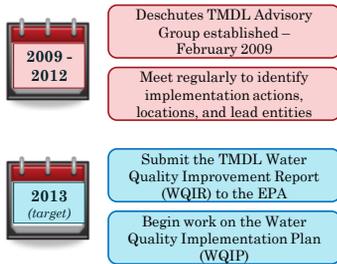
7

### Deschutes Advisory Group



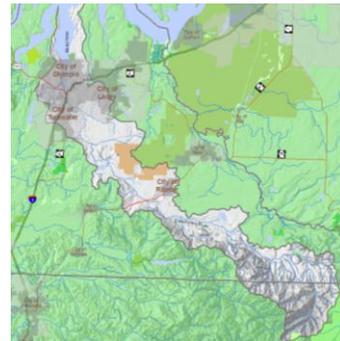
8

### TMDL PROCESS DRAFT TIMELINE



9

### TMDL STUDY AREA



10

### OVERVIEW OF TECHNICAL REPORT FINDINGS

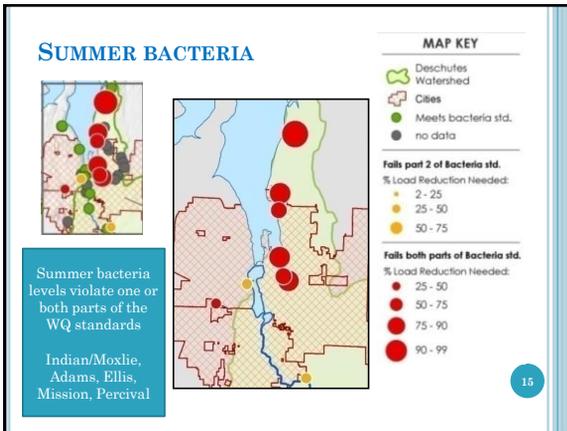
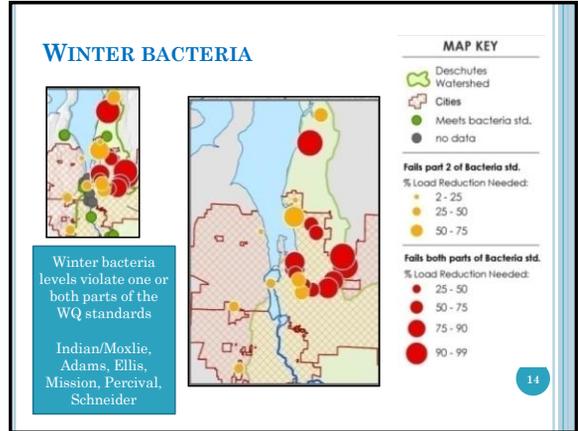
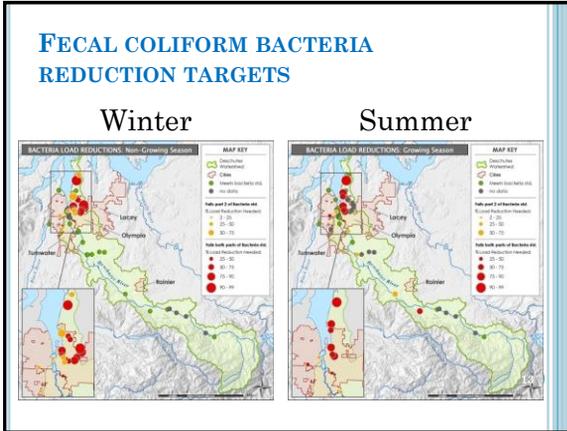
1. Fecal coliform bacteria – reduce summer and winter levels
2. Temperature – restore riparian and channel processes
3. Fine sediment – reduce fines that clog gravels
4. Dissolved oxygen and pH
  - Temperature benefits
  - Reduce nutrients; revisit with Budd Inlet and Capitol Lake

11

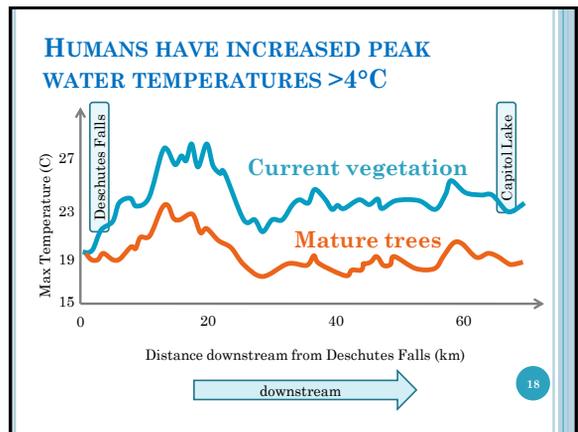
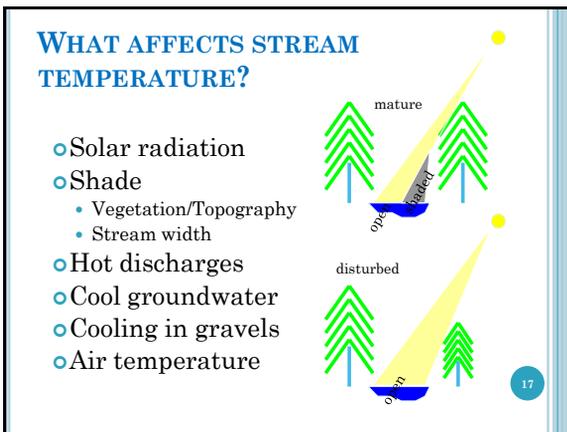
### 1. FECAL COLIFORM BACTERIA

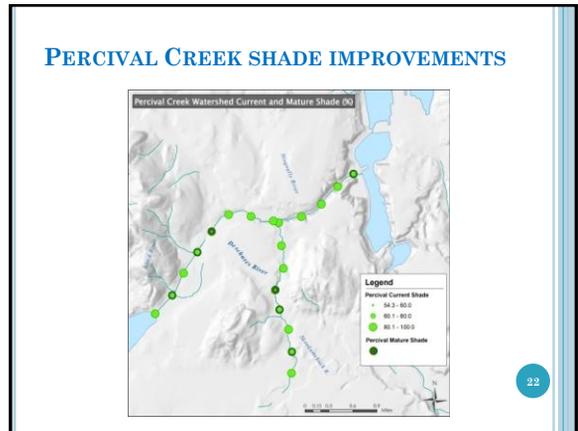
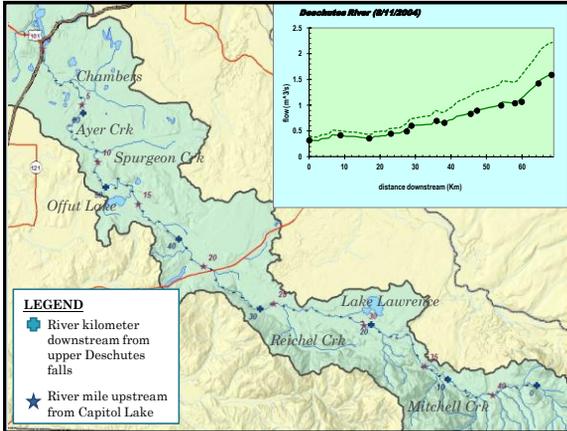
- Upper Deschutes River and Percival Creek:
  - **Protected Use:** *Extraordinary primary contact recreation*
  - Geometric mean < 50 bacteria/100 mL \*and\*
  - ≤ 10% of samples > 100 bacteria/100 mL
- Lower Deschutes River and Budd Inlet tributaries:
  - **Protected Use:** *Primary contact recreation*
  - Geometric mean < 100 bacteria/100 mL \*and\*
  - ≤ 10% of samples > 200 bacteria/100 mL
- **Approach:** *Monitor mouths of tributaries and segments of Deschutes River and calculate reductions*

12



- ### 2. TEMPERATURE
- Upper Deschutes River and Percival Creek:
    - Protected Use:** *Core summer salmonid habitat*
    - 7-day average of the daily maximum temperature < 16 °C (60.8 °F)
  - Lower Deschutes River and Budd Inlet tributaries:
    - Protected Use:** *Salmonid spawning, rearing, migration*
    - 7-day average of the daily maximum temperature < 17.5 °C (63.5 °F)
  - Approach:** *Monitor mouths of tributaries and segments of Deschutes River, calculate current and potential shade, develop computer model of critical conditions*





### 3. FINE SEDIMENT

- Narrative standard only; no numeric targets set in standards
- WAC-173-201A-260(2) "... deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters..."
  - Protected Use:** Core summer salmonid habitat and salmonid spawning, rearing, migration
  - <12% fine sediments = good habitat quality (Washington Forest Practices Board, 1997, Table F-2)
- Approach:** Monitor % fines in gravels along Deschutes and target healthy levels

### FINE SEDIMENT

- Squaxin Island Tribe conducted field work
- EPA funding
- Gravel samples
- Percent fines (<0.85 mm)

River Mile above Capitol Lake	2004 (%)	Target (%)
31.4-35.4	~18	~12
28.0-30.4	~18	~12
20.0-24.4	~22	~12
14.5-17.2	~22	~12
0.5-2.7	~22	~12

30-46% reductions needed

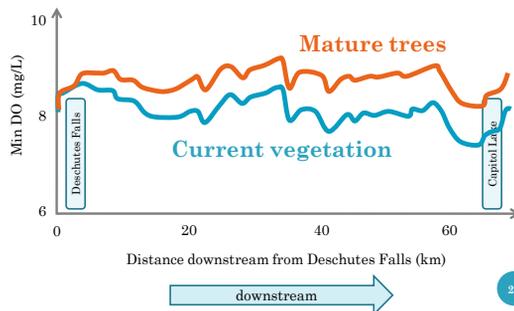
Source: Konovsky and Pahn, 2003

### 4A. DISSOLVED OXYGEN AND PH

- Upper Deschutes River and Percival Creek:
  - Protected Use:** *Core summer salmonid habitat*
  - Minimum DO > 9.5 mg/L
  - pH between 6.5 and 8.5 and humans can't change >0.2 SU
- Lower Deschutes River and Budd Inlet tributaries:
  - Protected Use:** *Salmonid spawning, rearing, migration*
  - Minimum DO > 8.0 mg/L
  - pH between 6.5 and 8.5 and humans can't change >0.5 SU
- Approach:** *Monitor mouths of tributaries and segments of Deschutes River, calculate shade, develop model*

25

Humans have decreased minimum DO levels by >0.5 mg/L (just shade effect)



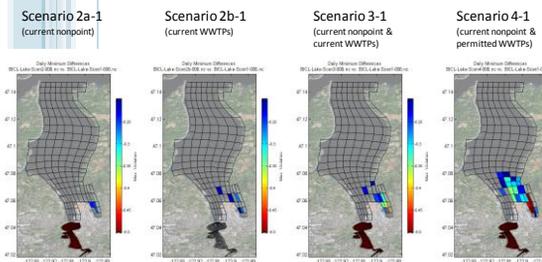
26

### 4B. DISSOLVED OXYGEN AND PH

- Capitol Lake:
  - Protected Use:** *Aquatic life*
  - Humans cannot cause dissolved oxygen to degrade by >0.2 mg/L
- Budd Inlet (south of Priest Point Park):
  - Protected Use:** *Aquatic life*
  - Minimum DO > 5.0 mg/L \*or\*
  - Humans cannot cause dissolved oxygen to degrade by >0.2 mg/L
- Approach:** *Develop model*

27

### Areas that violate the DO water quality standard in Capitol Lake and Budd Inlet (with lake)



### CHANNEL AND RIPARIAN RESTORATION GOALS (OPTIONAL SLIDE)

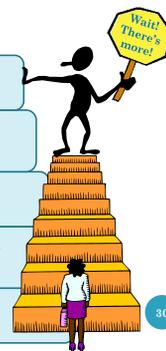
- Goal:** identify and reestablish the conditions under which natural states create themselves
- Goal is not** to remove or control all disturbance



29

### NEXT STEPS

- Ecology submits WQIR to the EPA
- WQIR out for Public Review and Comment
- Ecology drafts the WQIR
- Advisory Group helps develop Implementation Strategy
- Ecology determines the final WQIR submittal strategy



30

### WORK CONTINUES




Waterbodies removed from the 303(d) list

Listed waterbodies meet the Water Quality Standards

Improved water quality

Effectiveness Monitoring

Implementation begins or continues

Advisory Group works on the WQIP

31

### TMDL PROCESS *DRAFT* TIMELINE



Deschutes TMDL Advisory Group established – February 2009



Meet regularly to identify implementation actions, locations, and lead entities



Submit the TMDL Water Quality Improvement Report (WQIR) to the EPA



Begin work on the Water Quality Implementation Plan (WQIP)

32



Thank you!

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33