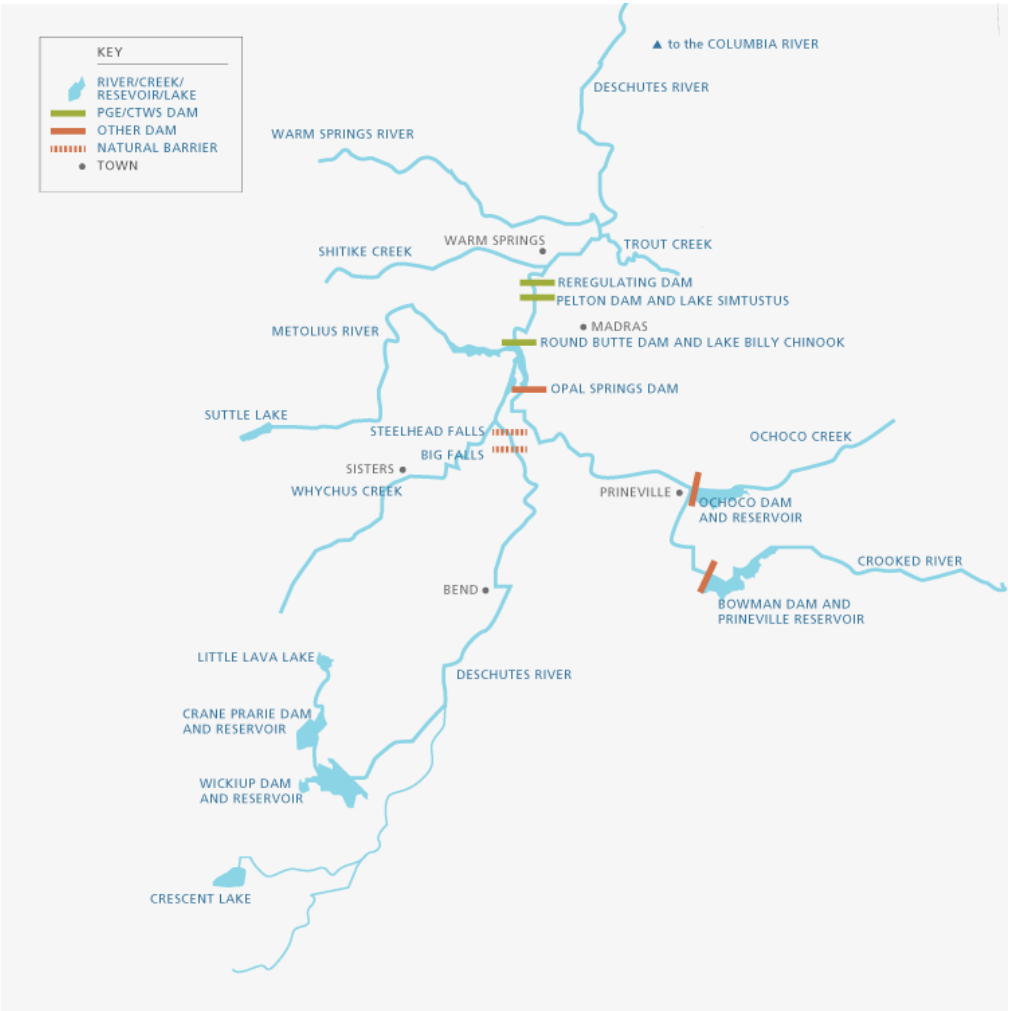
Environmental Quality Commission

Date: September 26, 2019
Location: Pelton Round-Butte Hydropower Project

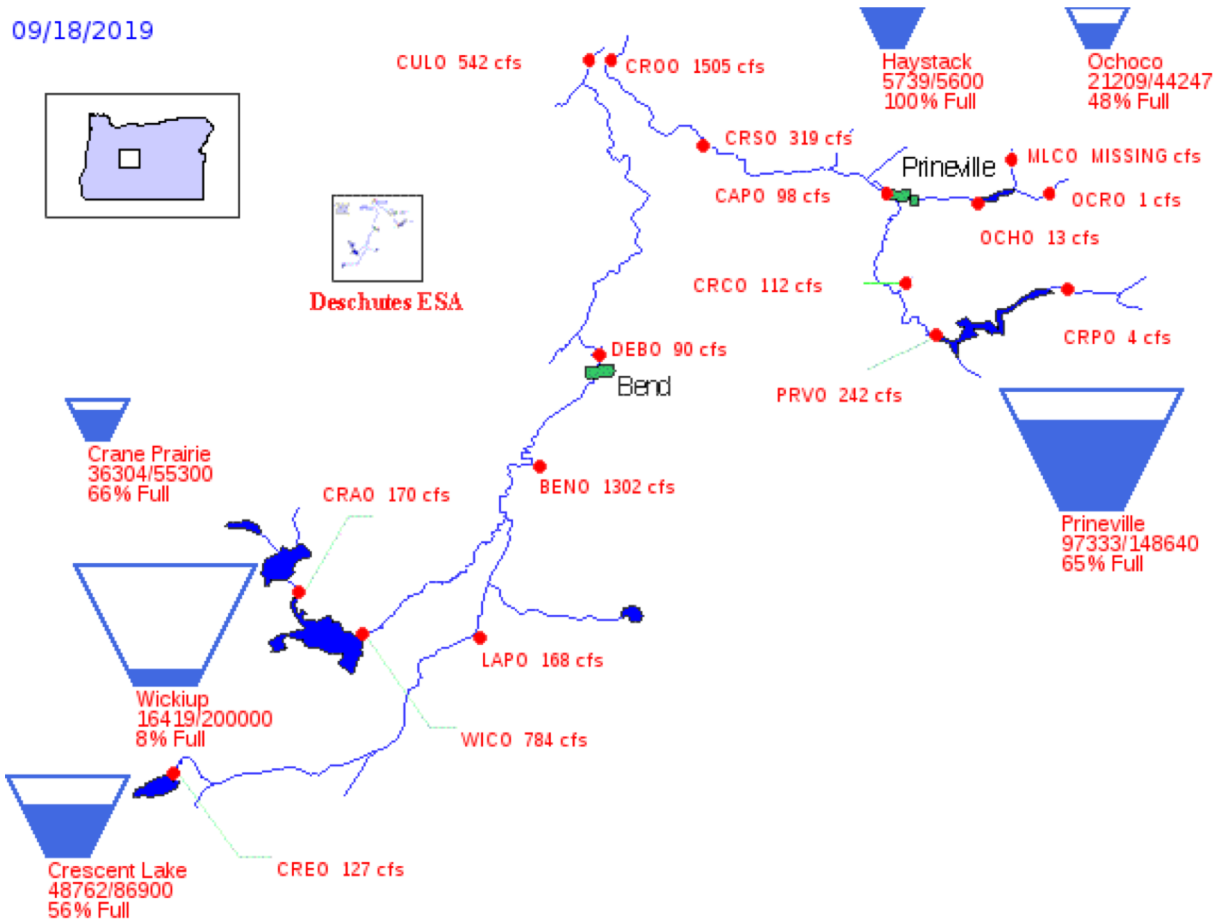
Topics

- Deschutes Basin Overview: Challenges
- Water Diversions
- 401 Certification
- Implementation
- DEQ Engagement


KEY
RIVER/CREEK/ RESEVOIR/LAKE
PGE/CTWS DAM
OTHER DAM
NATURAL BARRIER
TOWN
to the COLUMBIA RIVER
DESCHUTES RIVER
WARM SPRINGS RIVER
WARM SPRINGS
TROUT CREEK
SHITIKE CREEK
REREGULATING DAM
PELTON DAM AND LAKE SIMTUSTUS
MADRAS
METOLIUS RIVER
ROUND BUTTE DAM AND LAKE BILLY CHINOOK
OPAL SPRINGS DAM
SUTTLE LAKE
STEELHEAD FALLS
OCHOCO CREEK
BIG FALLS
SISTERS
WHYCHUS CREEK
PRINEVILLE
OCHOCO DAM AND RESERVOIR
CROOKED RIVER
BEND
BOWMAN DAM AND PRINEVILLE RESERVOIR
LITTLE LAVA LAKE
DESCHUTES RIVER
CRANE PRARIE DAM AND RESERVOIR
WICKIUP DAM AND RESERVOIR
CRESCENT LAKE

Basin Challenges

- Water Quality in the Upper Deschutes and entire Metolius are generally quite good.
- Substantial water diversions reduce flows in Deschutes and Crooked Rivers upstream of the PRB Project
- These two rivers are water quality limited in summer:
  - Agricultural return flows result in high nutrient loads in the Crooked River
  - Both are warmer than standards part of the year
  - Conditions in the Crooked River are generally poor
- Even with temperature moderation at the project, temperatures increase with distance over the lower 100 mi.


09/18/2019
Deschutes ESA
CULO 542 cfs
CROO 1505 cfs
Haystack
5739/5600
100% Full
Ochoco
21209/44247
48% Full
CRSO 319 cfs
Prineville
MLCO MISSING cfs
CAPO 98 cfs
OCRO 1 cfs
OCHO 13 cfs
CRCO 112 cfs
CRPO 4 cfs
DEBO 90 cfs
Bend
PRVO 242 cfs
Crane Prairie
36304/55300
66% Full
BENO 1302 cfs
CRAO 170 cfs
Prineville
97333/148640
65% Full
LAPO 168 cfs
Wickiup
16419/200000
8% Full
WICO 784 cfs
Crescent Lake
48762/86900
56% Full
CREO 127 cfs

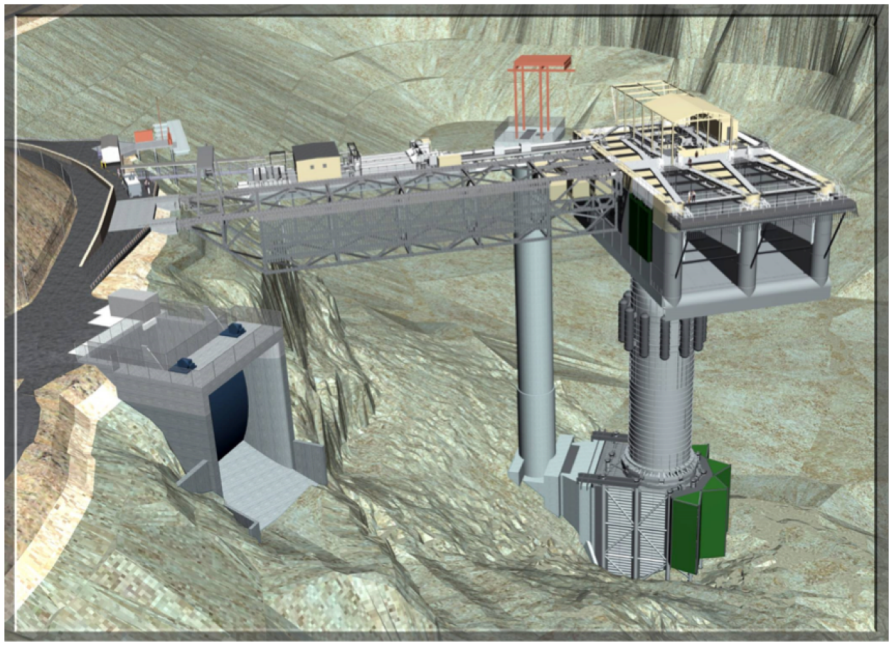
Project Certification

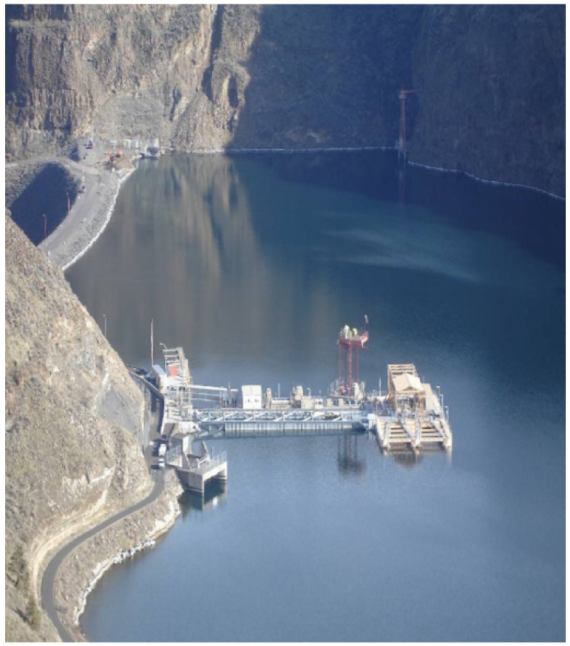
- Hydropower Project includes 3 dams, each with hydropower facilities
- Project is co-operated by Portland General Electric and the Confederated Tribes of the Warm Springs
- Both DEQ and CTWS issued Section 401 certifications for the FERC license in 2004
- Conditioning of the license was informed by a settlement agreement among 22 parties

Settlement

- Settlement Agreement placed emphasis on fish passage and Water Quality
- Primary Water Quality Concerns were temperature, dissolved oxygen and pH downstream, and nuisance algae in the reservoirs.
- Conditions in Certifications and subsequent plans included a selective water withdrawal structure fitted with a sophisticated fish handling facility

Selective Water Withdrawal





Interim Agreements

- Modified Requirements for Operations
- Water Quality Criteria Consistent with Currently Approved
- Tolerance around matching the estimated temperatures
- Coordinated with the CTWS for consistent implementation
- Foretold the modification of the 401 certification
- PGE anticipates submitting an application in December 2019

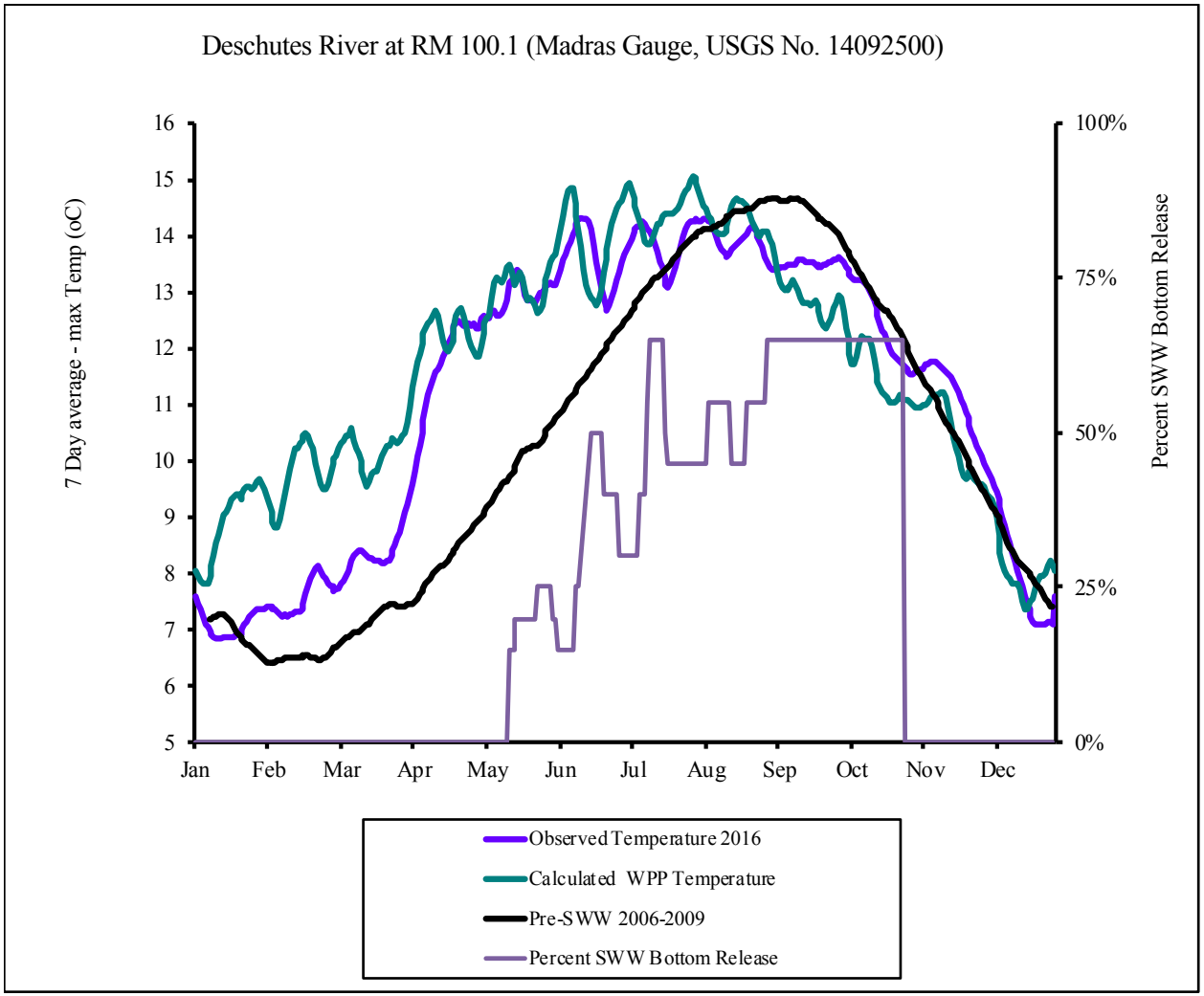


Figure 1. Calculated without-project temperatures (as 7dAM) for the PRB Project compared to the pre-SWW 3-year average (2006-2009) and observed 2016 7dAM discharge temperatures. Brown line reflects the percent bottom water withdrawal.

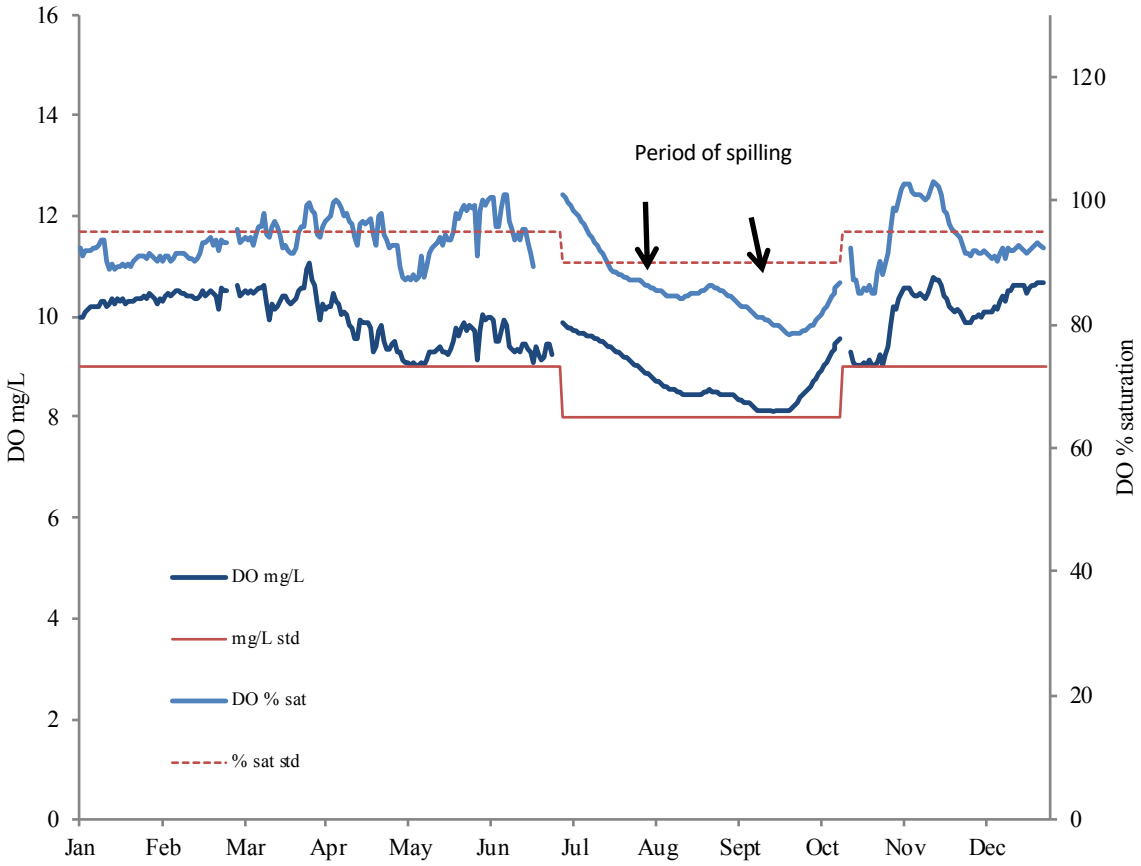


Figure 2. Daily minimum of dissolved oxygen (mg/L and percent saturation) for Reregulating Dam tailrace (Site 2) in 2016. Spill events are shown by arrows. The state and tribal standards are shown in red. The DO standard followed in 2016 was 9.0 mg/L and or 95% saturation between October 15 - June 30, and 8.0 mg/L and or 90% saturation from July 1 - October 14, according to the interim agreements.

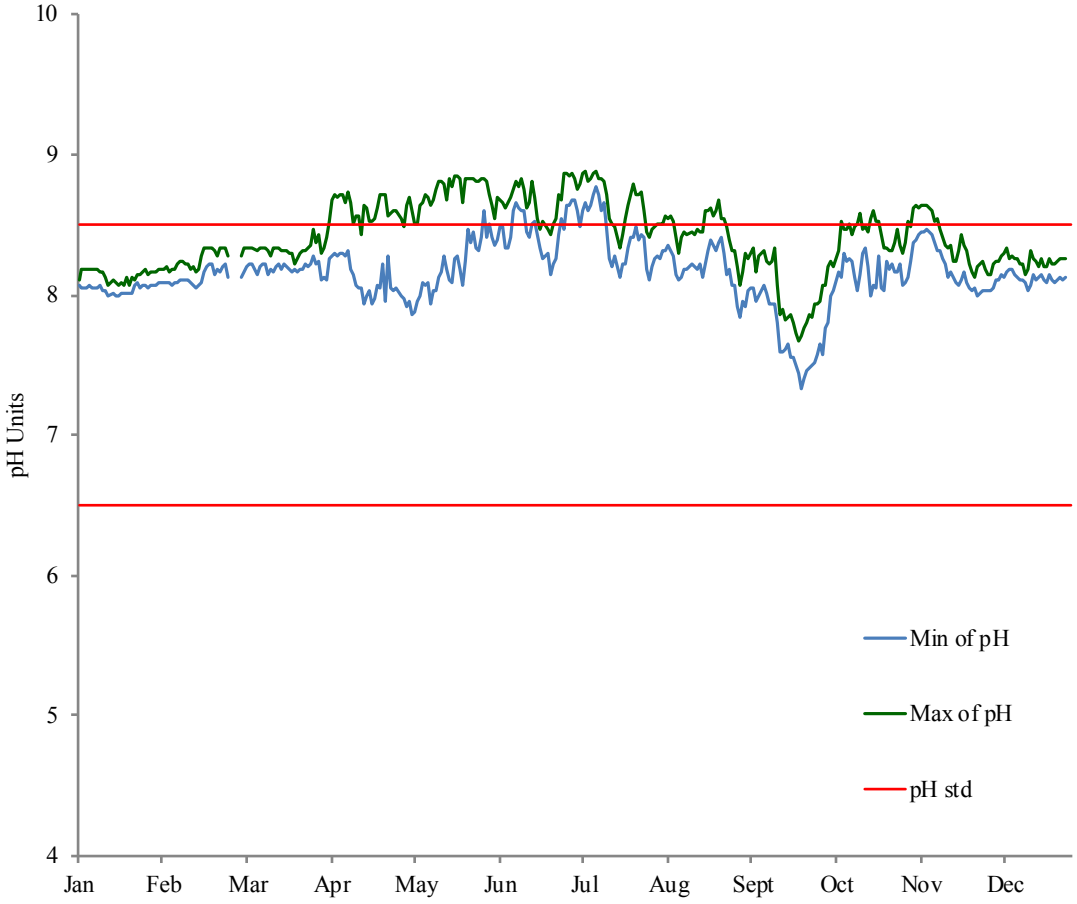


Figure 3. Daily maximum and minimum of pH for Reregulating Dam tailrace (Site 2), 2016. The state and tribal standard for pH occurs in red.

DEQ Engagement

- DEQ staff are members of the Fish Committee
- Ongoing conversations with PGE/CTWS on operations
- Ongoing Conversations with Stakeholders
- Certification Implementation
- Modification of Certification
- TMDL Development

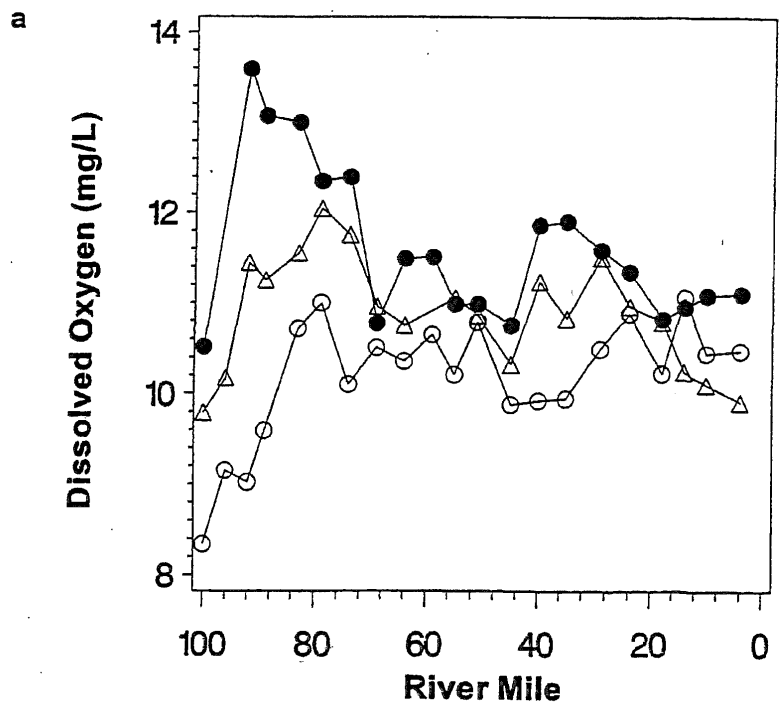
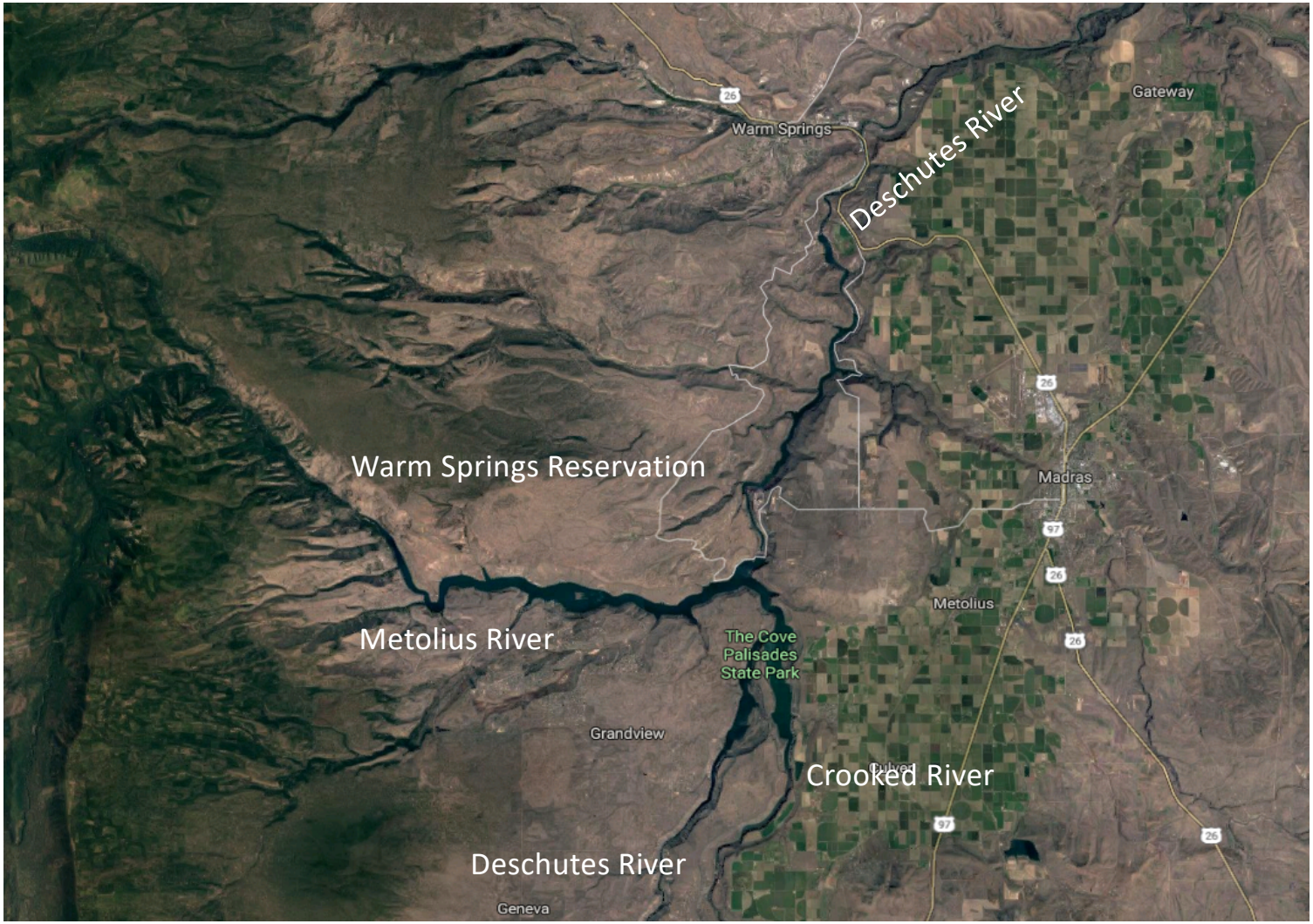


Figure 6. Dissolved oxygen (a) concentration (mg/L) and (b) percent saturation of the Deschutes River measured at approximately 5-mile intervals during daylight hours in May (•), July (Δ), and September (o), 1997.


Deschutes River
Gateway
Warm Springs
Warm Springs Reservation
Madras
Metolius
Metolius River
The Cove
Palisades
State Park
Grandview
Crooked River
Deschutes River
Geneva