

Oregon's OpenET Project



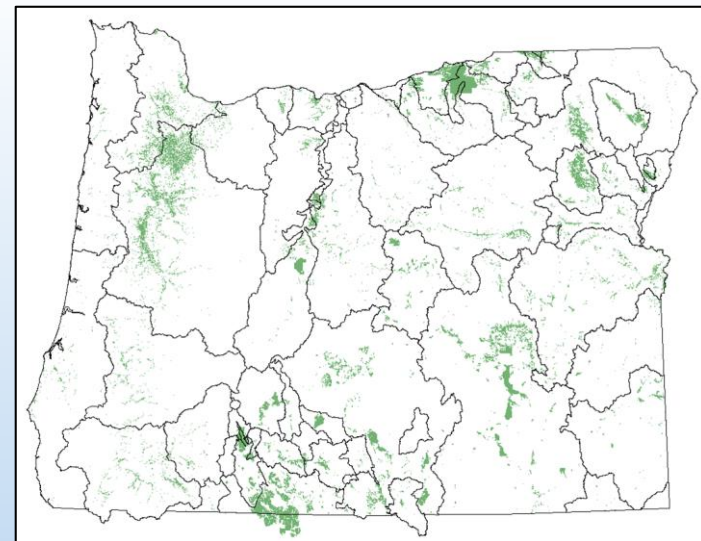
Use of Satellite Technology to Estimate Consumptive Water Use from Irrigated Agriculture: OpenET

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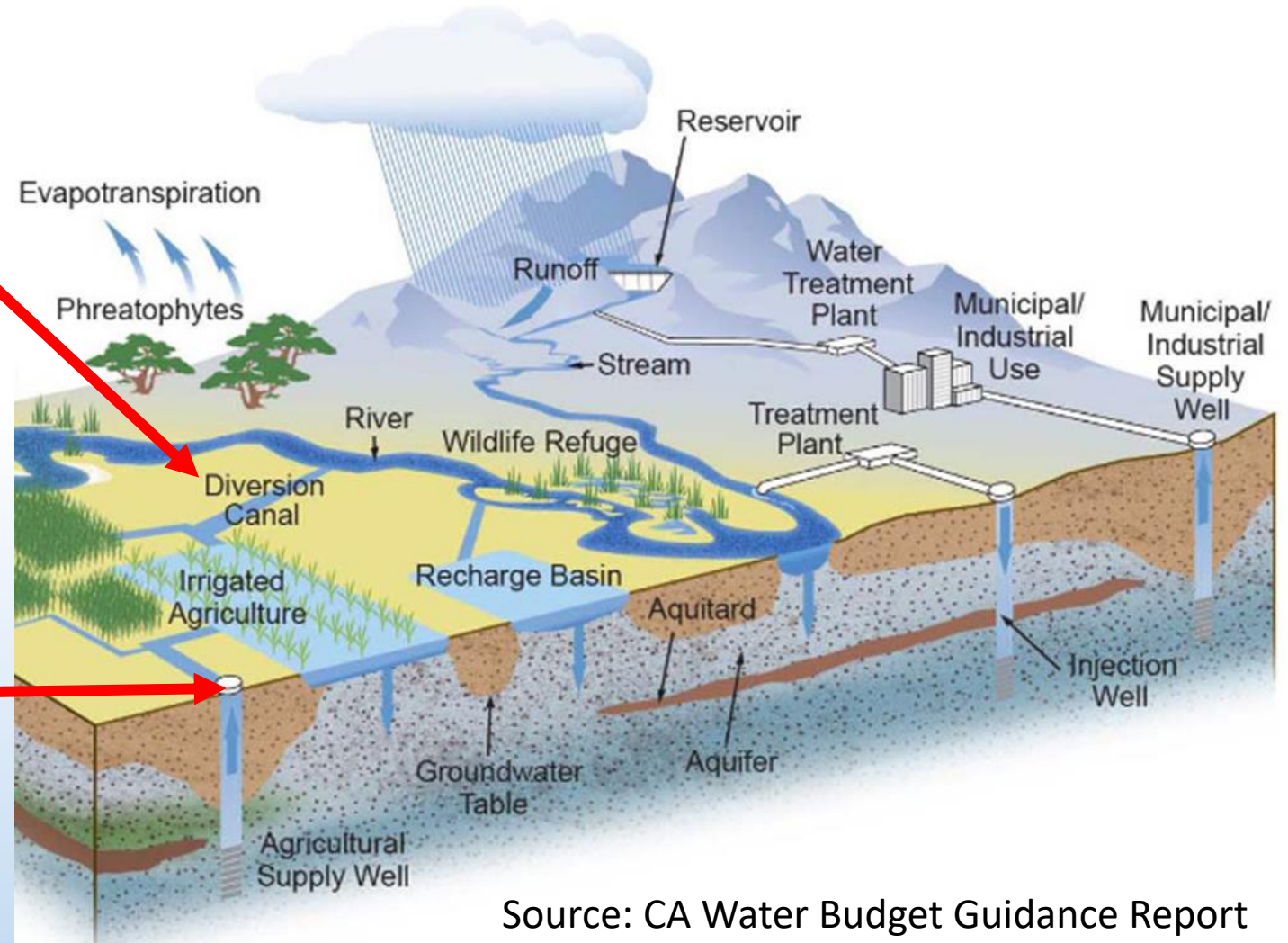
House Committee: Water
December 17, 2020

We will cover:

- Crop consumptive use, why it matters, and how it differs from diversion measurements
- New technology to monitor crop consumptive use – remote sensing
- How this technology currently, and will, benefit Oregon
- What we need to be successful
- OpenET Team and Demonstration



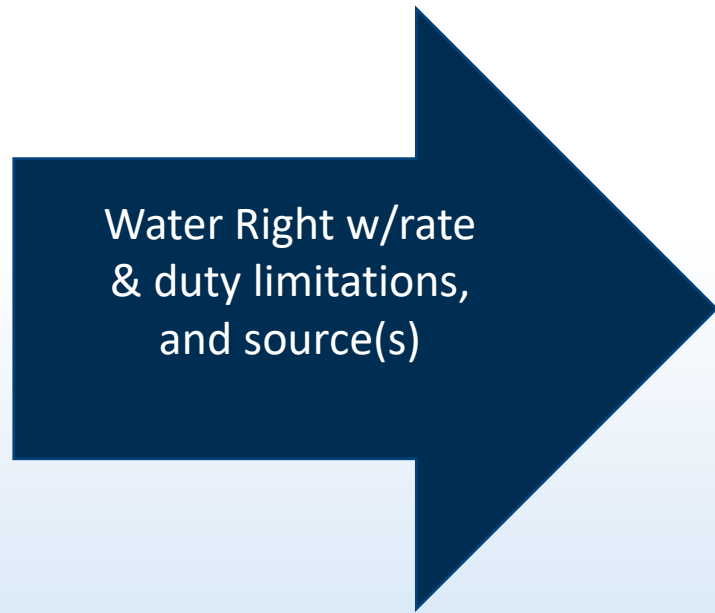
Measuring water diversions



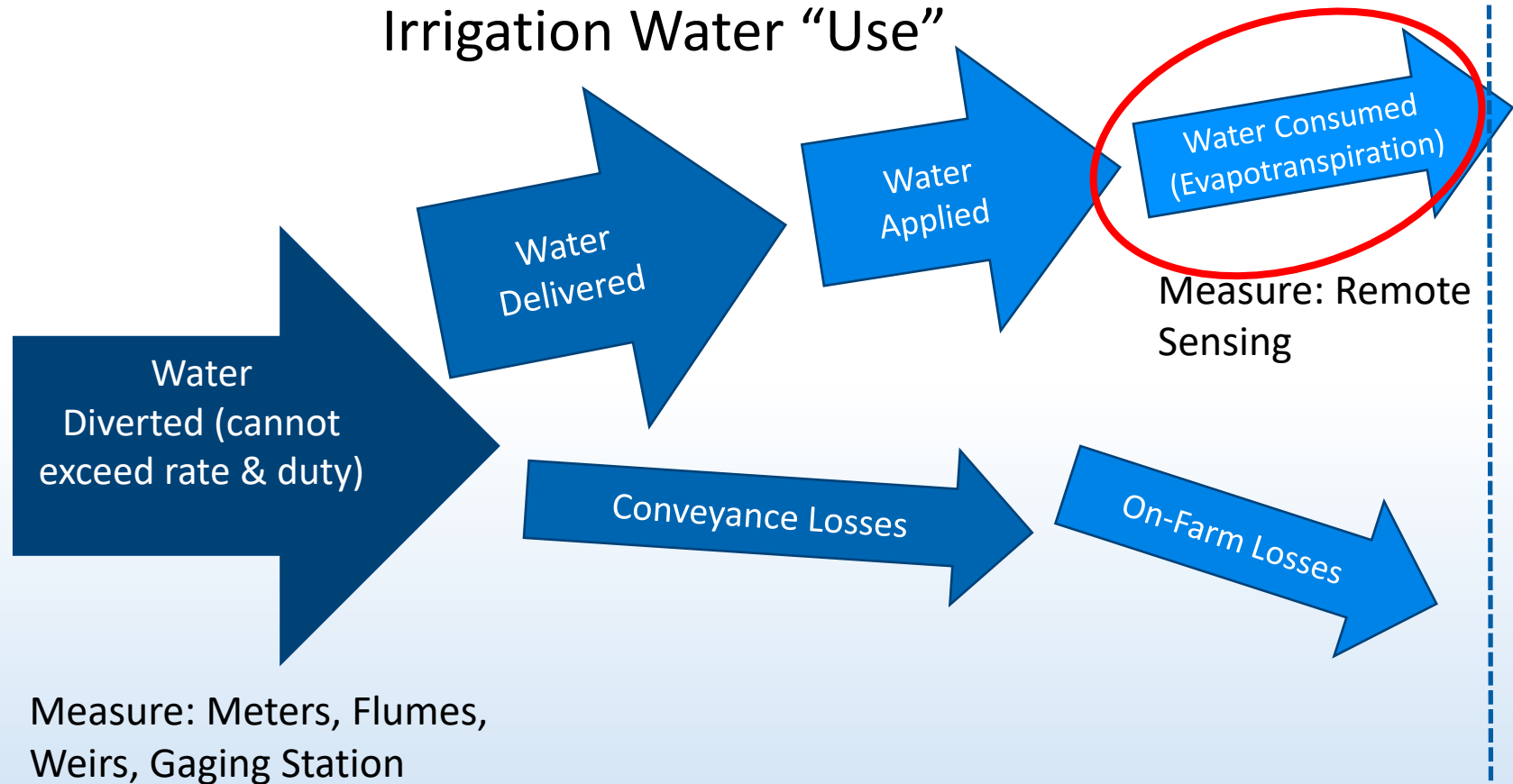
Source: CA Water Budget Guidance Report

From water right to consumption

Water Rights

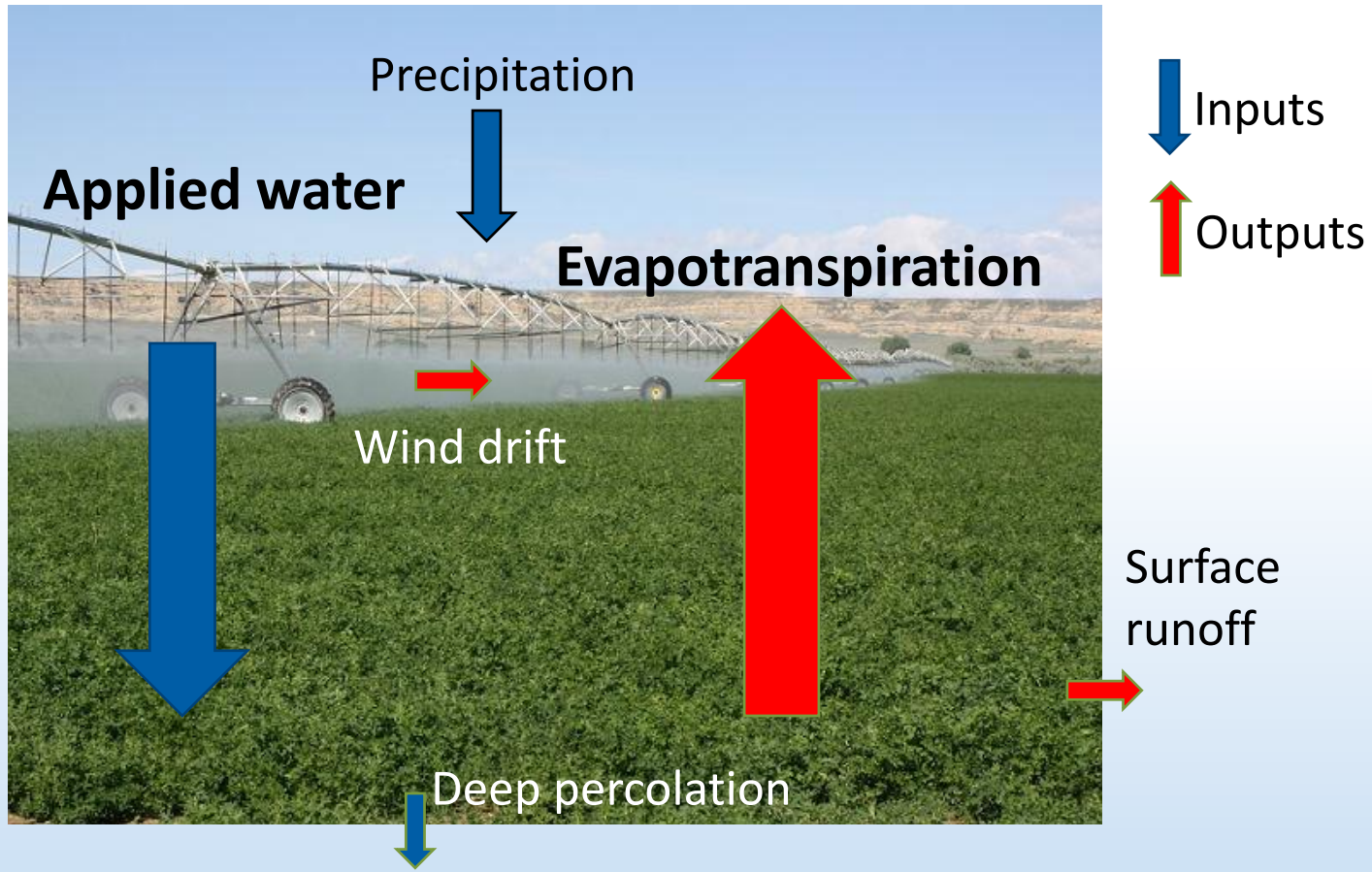


Irrigation Water "Use"



Focus: Consumptive Water Use from Irrigated Agriculture

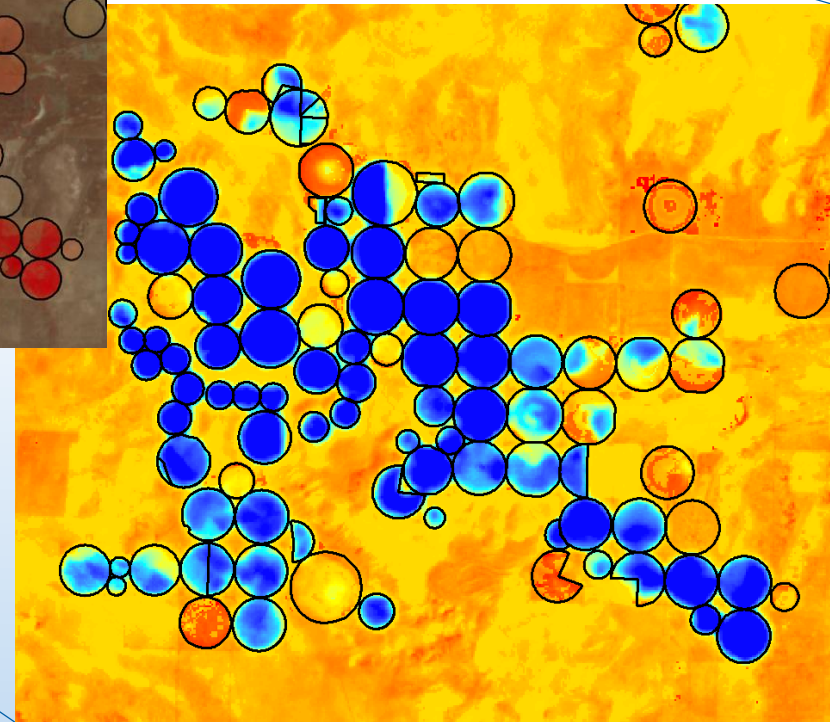
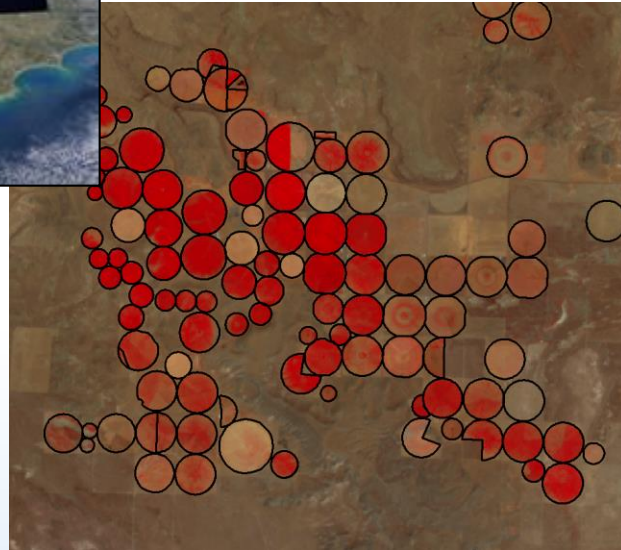
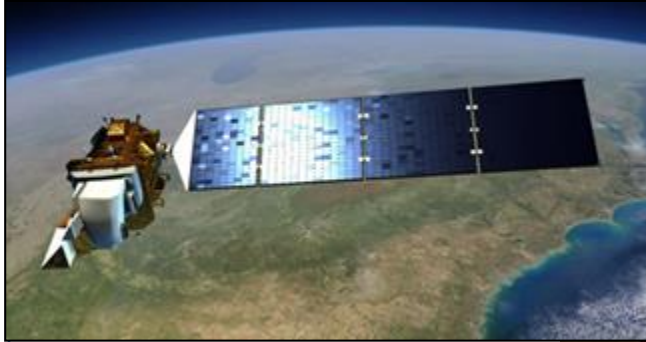
Evapotranspiration (ET)



- Crop water consumed via evapotranspiration is one way water leaves the water system
- ~85% of diverted water is for crop irrigation
- ET is a key part of estimating a basin water budget

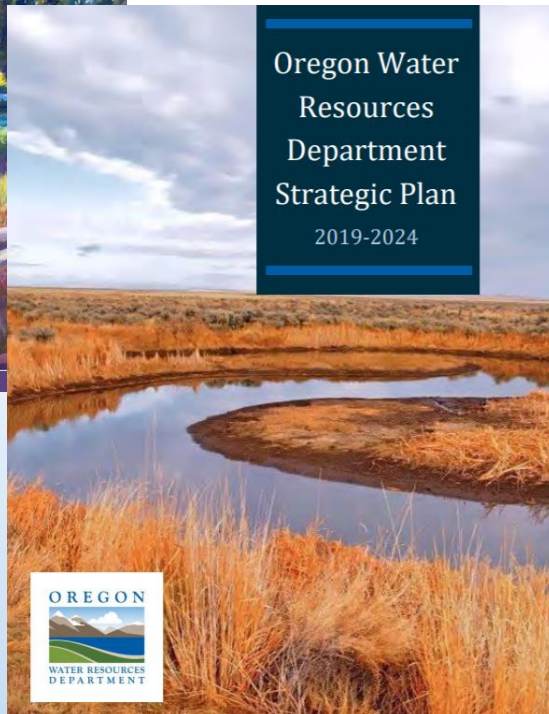


Quantifying consumptive use



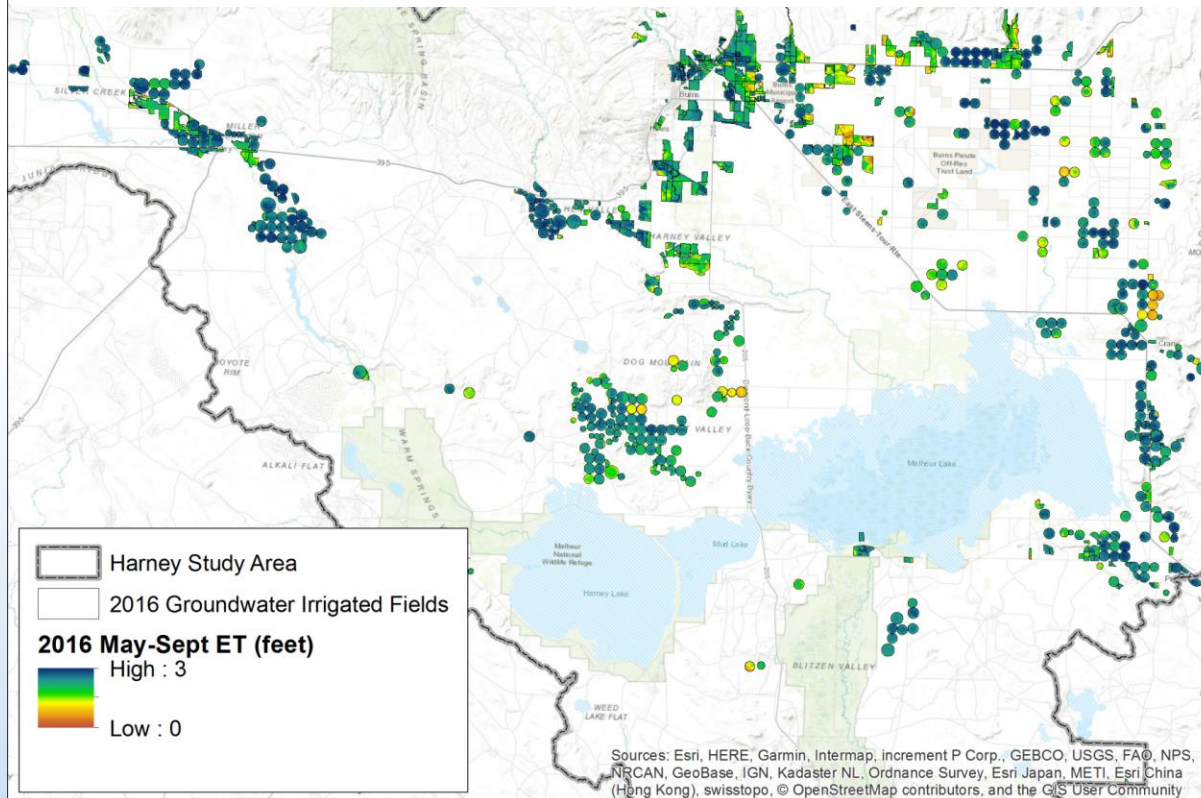
Remote sensing assesses and quantifies historical water use across **large areas** and over **time**

Understanding & meeting water needs



- Integrated Water Resources Strategy
 - Recommended Action 1.B – Improve water resources data collection and monitoring
 - OWRD Monitoring Strategy
- Strategic Plan
 - Modernize our management of Oregon's water resources
 - Equip basins to plan for their water future

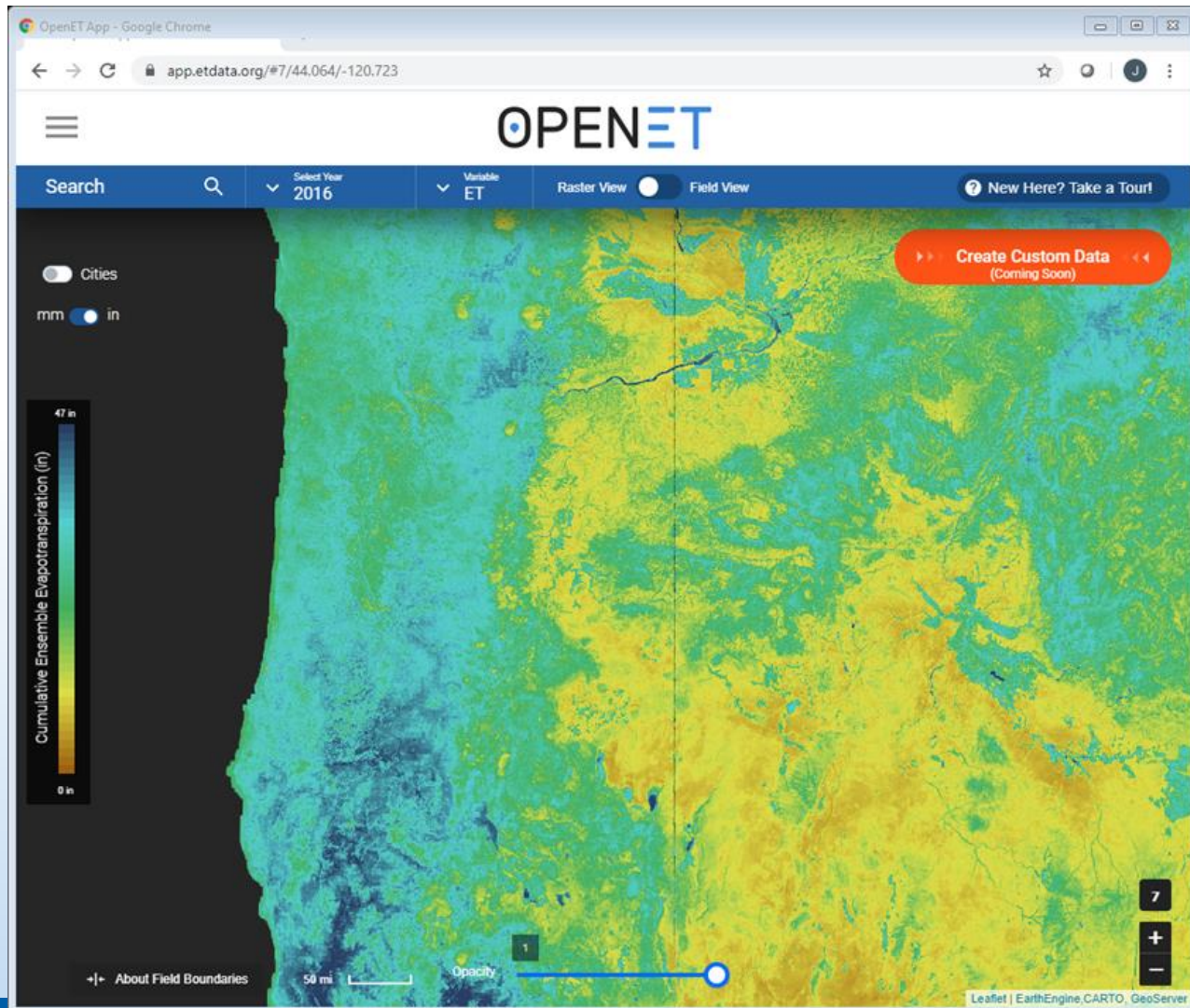
Evapotranspiration from Groundwater Irrigated Fields



Groundwater Basin Studies

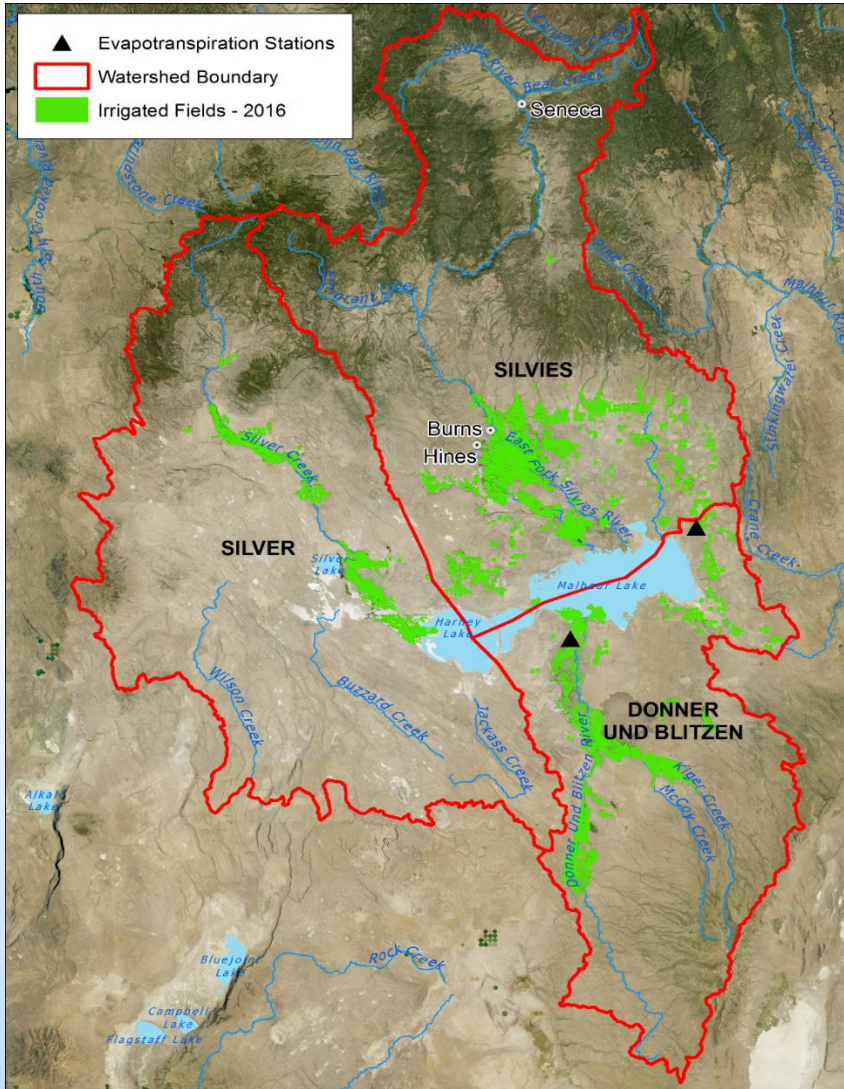
- Improves accuracy of water budget
- Pilot: Harney Basin – Using METRIC tool found majority of irrigation water loss is from evapotranspiration
- Future: Use OpenET for groundwater basin studies

Use of Remote Sensing in Oregon



Oregon OpenET Project

- Critical step needed to make OpenET operational for Oregon water managers and users to monitor consumptive use
- Access to Oregon ET and field data for 2016-2020
- Report will be published in 2021-2022



Basin-scale Planning

- Accuracy of water budgets at the basin-scale is a need identified by all place-based planning groups

Improving Outcomes of Management Actions and Projects (potential future uses in the Harney Basin)

- Tool for on-farm irrigation management
- Quantify water savings of actions/projects
- Facilitate water markets/trading

Modernizing water management

- OWRD exploring other applications for OpenET
 - Updating water availability
 - Evidence of use/claims of beneficial use
 - Transfers
 - Monitoring climate change impacts
- Benefits others outside of the Department
 - Other state and federal agencies
 - Watershed councils, conservation groups
 - Irrigation districts, etc.
- Learning from and collaborating with other western states

Take Aways:

- Measuring diversion of water at pumps, wells, ditches and canals needed for real-time distribution of water
- Open ET may provide a starting point for estimating
- OpenET is a powerful tool for using remotely sensed ET for water management, planning, and forecasting
- Value of partnership with OpenET in developing, testing, and using this technology