

Water Use: Emerging Data and Tools for Water Budgeting

Update: September 2026 (2nd Ed.)

These bi-annual updates will be provided at least through 2028, providing a description of this developing work along with new tools and information as they're available. This issue's updates are found in the text boxes. This statewide evapotranspiration (ET) work is enabling OWRD and its partners to continue to strengthen its data-driven management approach. Investments from House Bill (HB) 2018 (2021), Policy Option Package 111 (2023), HB 2010 (2023), ARPA, and our agency partners are utilizing the best technologies of the day in service of optimizing the water that we have for consumptive use.

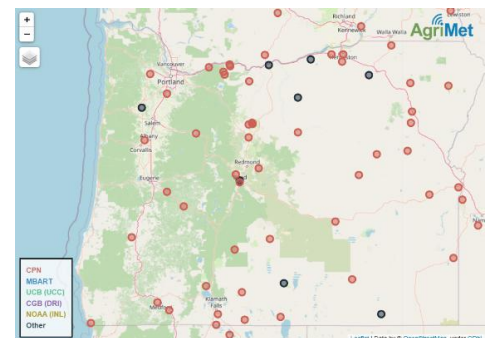
Description of the project:

Developing statewide data sets quantifying ET rates by individual field level:

The **Statewide Evapotranspiration (ET) Project** developed field- and watershed scale consumptive use and groundwater pumpage estimates for all irrigated fields and open water evaporation estimates for major reservoirs and lakes in Oregon. This collaborative project between Desert Research Institute (DRI), OpenET, and OWRD scientists involved satellite imagery, geospatial data, and hydrologic modeling (Huntington et al. 2025).

Expanding weather and ET data available for irrigators and water managers:

The AgriMet program is run by the Bureau of Reclamation to collect and transmit site-specific weather data, and translate it into crop-specific water use information for use by irrigators and water managers. The primary emphasis is on irrigation management – applying the right amount of water at the optimal time. While AgriMet's primary purpose is modeling evapotranspiration, or the amount of water used by a crop, there are many other uses of AgriMet data, including integrated pest management, frost protection, and other crop management activities. OWRD worked with project partners to expand the number of stations in Oregon and develop technical assistance and outreach products to promote their use.



This map, from the [Bureau of Reclamation](#), shows the current geographic spread of AgriMet stations in Oregon.

The Work Completed:

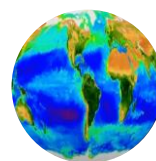
- In partnership with the Bureau of Reclamation and support from OSU Extension, OWRD added 30 AgriMet weather stations, filling important geographic gaps in [its network](#) in 2024.
- The Desert Research Institute (DRI) and OpenET Inc. completed the development of a statewide GIS dataset with over 250,000 mapped agricultural field boundaries, each with data on source type, system type, annual crop type, and monthly satellite-based consumptive use and groundwater pumpage going back to 1984.
- DRI published the 2025 report, [Crop Evapotranspiration, Consumptive Use, and Open Water Evaporation for Oregon](#), which describes the study and its results, and summarizes the data in support of basin water budgets, and other water management and planning activities.
- Open ET, Inc. published a [technical report](#) documenting a historical review of the OpenET satellite-based ET estimates was published in the fall of 2024.
- OWRD and its partners updated interested parties in January of 2025 about the data that has been developed and how the department is starting to use the data.

- **September 2026 Update:** Google Earth Engine applications are now available to visualize and access the ET datasets described above:
 - Oregon Hydrographic Area Historical ET-CU: [OWRD Oregon ETCU Field Summaries](#)
 - BOR Reservoir Evaporation: [bor-reservoir-evaporation](#)

The Work Underway:

For the 2025-2027 biennium the WRD ET and Water Use program goals include developing internal ET data storage and tools, and using the field and watershed-level ET data for a number of technical projects. These include the following:

- Harney Basin - Rulemaking and Conservation Reserve Enhancement Program (CREP),
- Walla Walla River Basin Study - water use estimates,
- Deschutes Basin - canal seepage study,
- Fifteenmile Creek Basin Study,
- Place-Based Planning,
- Supporting legal cases, and
- Developing the statewide Surface Water Information Modeling System (SWIMS).



OWRD is supporting the installation of new AgriMet stations by OSU, in partnership with the Bureau of Reclamation, in 2026. OSU anticipates installing 14 new stations to fill some geographic gaps, largely in Central and Eastern Oregon. Installations are now slated for the spring of 2027.

September 2026 Updates:

1. OWRD is contracting with Oregon State University (OSU) and DRI on an Oregon ET joint project. Under these contracts, DRI will finish building the operational system, OSU will replicate the DRI workflow to produce the ET products, and both will OSU and DRI help develop a long-term operating model for production after June 2027.
2. OWRD is formalizing a contract to participate in a NASA funded project developing an Operational Satellite Irrigation Reporting Information System (OSIRIS) tool for identifying and summarizing field-scale irrigated lands over time. The objective of the OSIRIS framework is to provide practical, consistent, field-level irrigation status maps across the contiguous United States.
 - **Benefits:** Access to historic and current irrigation status maps is key to several OWRD applications, from developing accurate basin-scale water budget estimates (when paired with ET data) to identifying irrigated status and acreage on an individual water right.
 - **Status:** The project team is organizing (PI: University of Oklahoma; Co-PIs: OWRD and other state water agencies, USGS, & USBR). OWRD is finalizing the contract to participate. The project team will conduct a survey to assess user needs.

Information and Technical Assistance Now Available:

ET Applications Memo: Drafted by OWRD in 2025, this memo is now available on OWRD's website. It describes the available datasets and appropriate applications for ET data.

AgriMet video: This 9-minute video introduces the AgriMet program to irrigators and other interested water users. It describes the data collected, how it's stored and used, and how to access it. The video also connects people to technical assistance resources.

Understanding Groundwater in Oregon: This story map, developed by the Oregon Water Science Center (USGS), provides information for the interested public about groundwater, ET, water budgets, and the water budget work underway.

AgTaps, or **Oregon State University (OSU) 's Agricultural Water Technical Assistance Program**, provides water users and managers current information and tools for more efficiently managing Oregon's water resources in agricultural areas. The program connects OSU's Research and Extension water community to practitioners, agencies, and other interested parties around the state to better understand and manage our water resources.

September 2026 Update: Recent resources developed at the OSU AgTaps program continue to expand the ET-related knowledge and tools available to the public -

- **AGHRI Lab: Agrohydrology Research & Innovation**
 - Irrigation Scheduling Tools | AHGRI Lab

For more information, please contact:

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