OpenET

Filling the biggest data gap in water management

As pressure on water resources intensifies across the country, decision-makers need credible, reliable data to support water management and natural resource policy. OpenET delivers a foundation of transparent, science-backed, satellite-based evapotranspiration (ET) data, making field-scale water use data openly available and accessible.

Transparent | Open | Trusted



Evapotranspiration (ET) = Evaporation + Transpiration

ET is the transfer of water from the Earth's surface to the atmosphere

Evaporation from soil, open water, and other surfaces + ***transpiration*** from plants

Why ET Data Matter for Water Policy

1. ET represents consumptive water use: water that cannot be recaptured or reused. It is the most direct measure of how much water is being used across a landscape.

2. Knowing how much water is being consumed is essential for effective water budgeting, informed water program implementation, and proactive freshwater supply management for communities, producers, and ecosystems.

3. OpenET makes previously limited and expensive data publicly available and open access, putting it in the hands of all water users and decision-makers.

Partnerships

OpenET is a neutral, nonprofit-backed consortium, built through an unprecedented public-private collaboration, that brings together leading experts in remote sensing, cloud computing, web design, and water management applications.

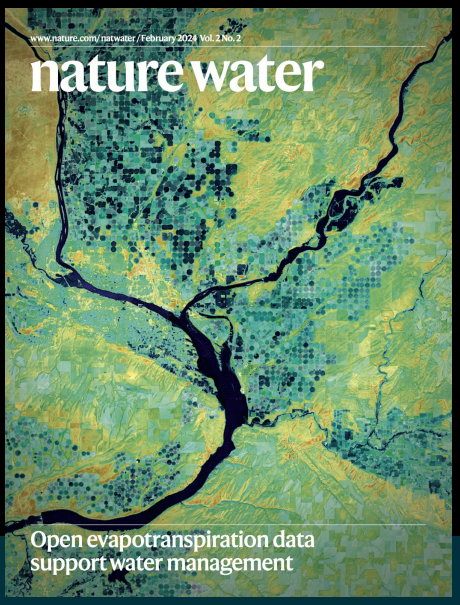
USGS | USDA ars | NASA | DRI | Environmental Defense Fund | Cal State Monterey Bay | UFRGS Universidade Federal do Rio Grande do Sul | University of Nebraska Lincoln | Google Earth Engine

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Accuracy & Scientific Rigor

OpenET uses proven, science-backed methods to produce ET data at the field-scale from six independent, peer-reviewed ET models, trusted by government agencies responsible for water management: ALEXI/DisALEXI, eeMETRIC, geeSEBAL, PT-JPL, SIMS, SSEBop (plus an ensemble).

OpenET published the largest-ever intercomparison of field-scale, satellite-driven ET models in Nature Water (2024). As a neutral, nonprofit resource, OpenET focuses on earning trust by advancing the accuracy, transparency, accessibility, and operational relevance of ET data.



How Policymakers and Agencies Use OpenET Data

OpenET data are informing water management and policy decisions across the country, supporting nonpartisan priorities from agricultural resilience and drought planning to groundwater sustainability and interstate water agreements.

Drought resilience and operations: States in the Colorado River Basin and the U.S. Bureau of Reclamation are using OpenET to calculate current and historical water uses, plan for future drought events, and support water conservation programs.

Water accounting and reporting: Montana and Idaho are using OpenET to quantify consumptive use for water accounting. California is conducting water use reporting and irrigation efficiency.

Groundwater sustainability: Kansas, Oklahoma, and Texas are using OpenET to support management of the Ogallala Aquifer. Nebraska is improving groundwater management and water accounting in the Twin Platte District. Nevada and Oregon are conducting groundwater management in the Diamond Valley and the Harney Basin. California is using OpenET to support Sustainable Groundwater Management Act (SGMA) implementation.

Access and Tools

OpenET data are publicly available — open to federal and state agencies, research institutions, and constituents alike. Data can be accessed through an intuitive web interface for quick exploration or via an API for large-scale integration into agency tools and programs.

OpenET provides field-scale ET calculations across the contiguous United States at 30-meter resolution, with free data access through the Data Explorer, API, FARMS tool, and Google Earth Engine Catalog.

Visit
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OpenET is built on open data, open access, and open science. We partner across sectors to ensure data is relevant, user-friendly, and continuously improving.