



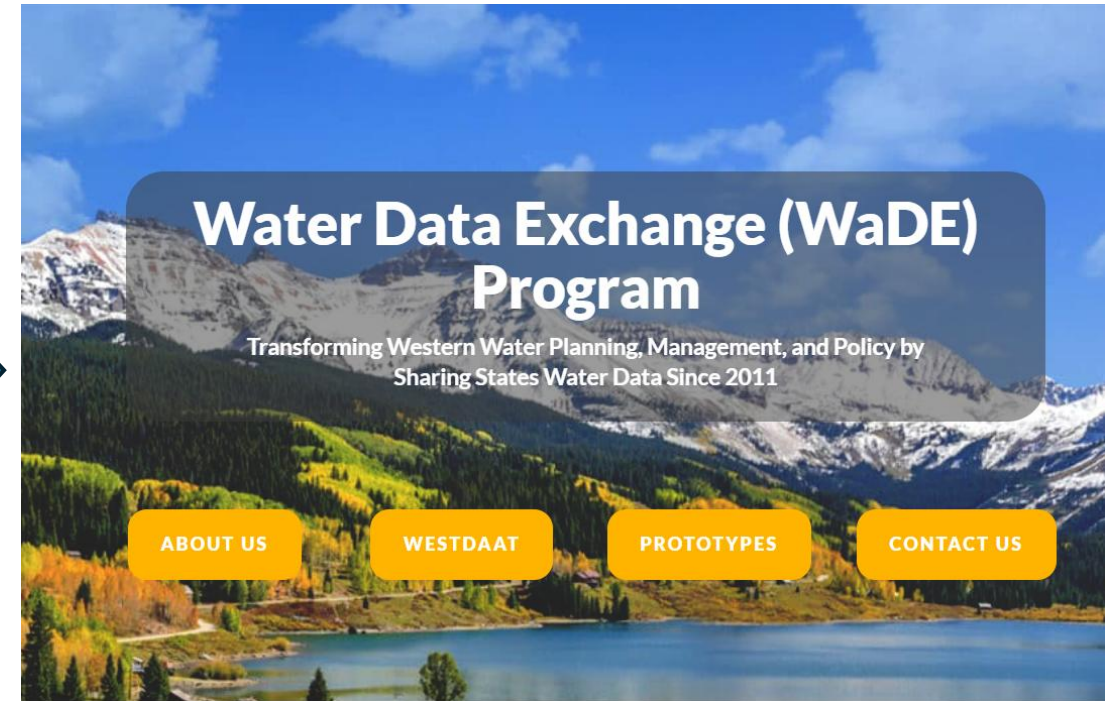
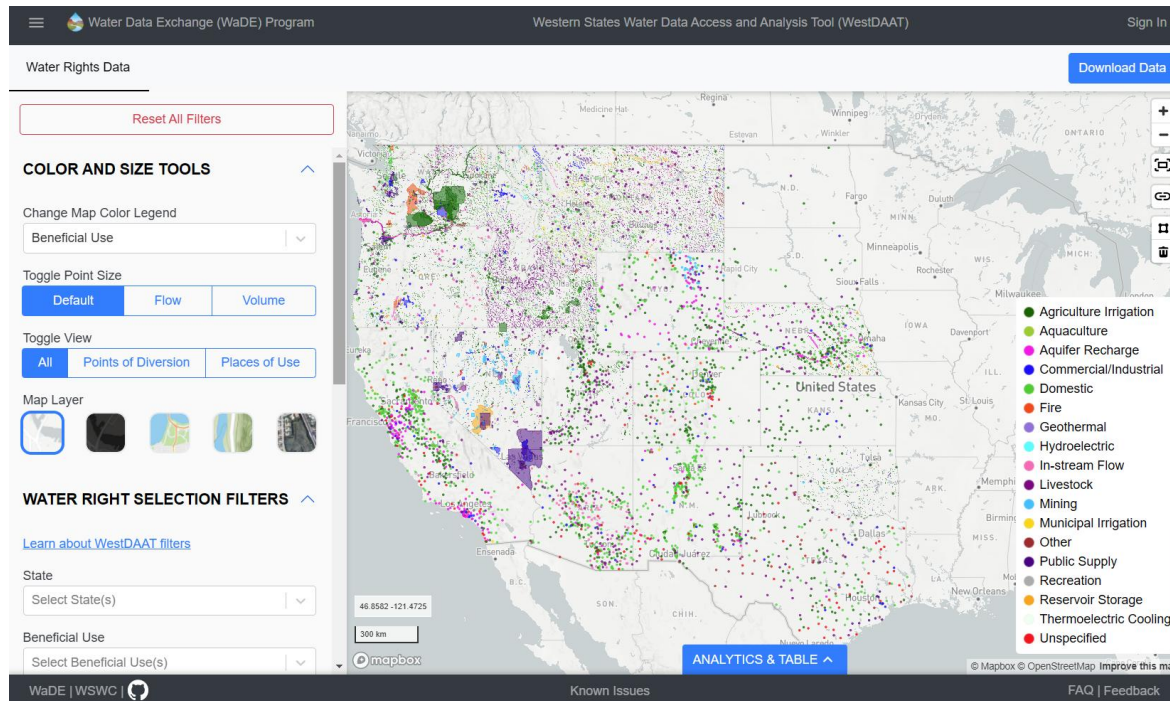
WESTERN STATES
WATER COUNCIL

The Western States Water Data Access and Analysis Tool – Updates and Improvements (2.0)

June 11, 2025

Ryan Jame – Data Analyst / Hydroinformatics Specialist

WestDAAT / WaDE



<https://westernstateswater.org/wade/>

The WaDE Program is committed to assisting WSWC member states in publicly sharing water rights, allocation, supply, and use data through a common streamlined and standardized service that enables regional analyses to inform water resources planning and policies

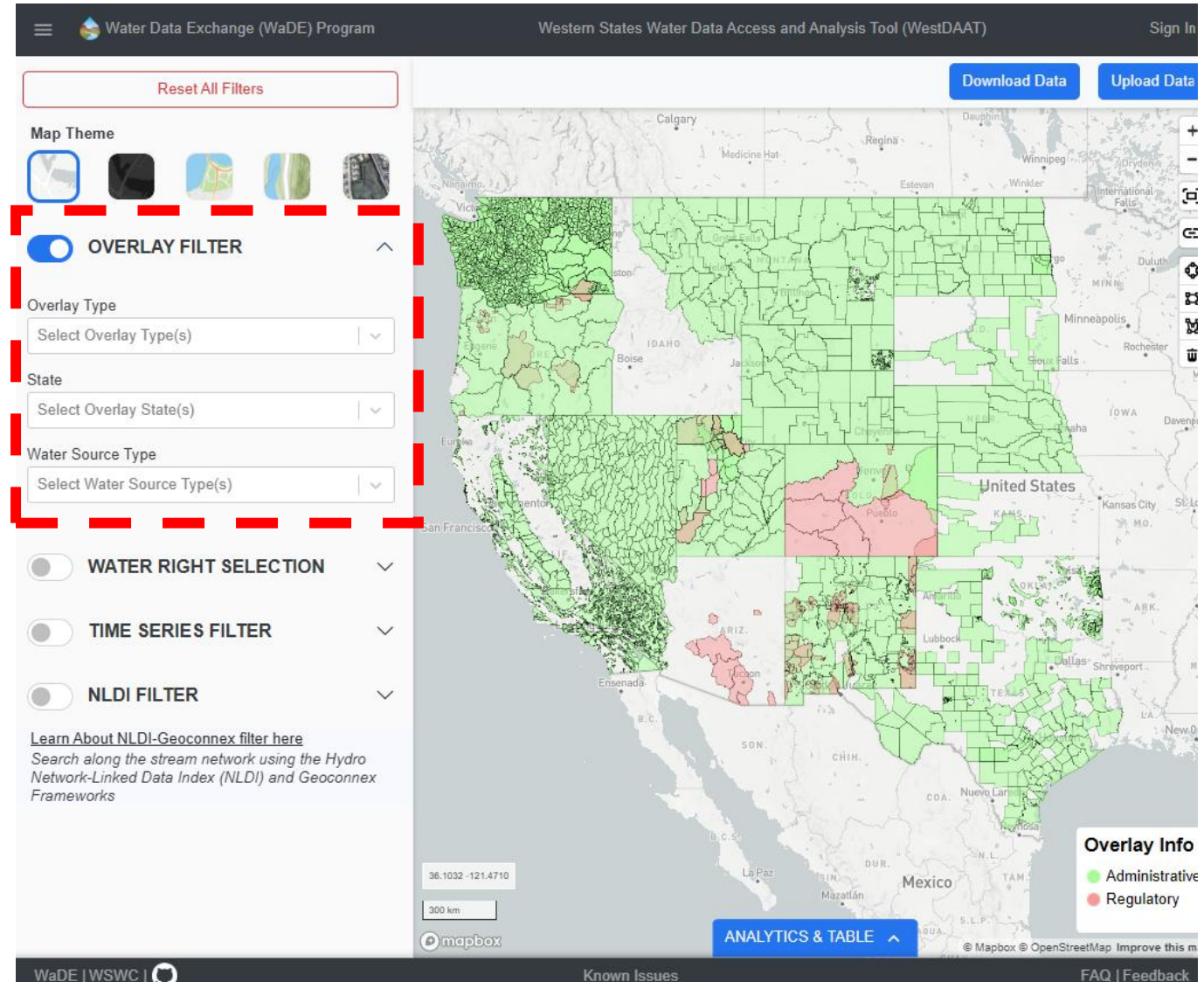
New Data: Overlay

Overlay: geospatial boundary data paired with site and water source type information.

Data includes 1) boundary name, 2) type of overlay, 3) the water source type it applies to, and 4) oversight agency information (if applicable).

Types of Overlay Data:

- **Administrative** (boundaries of districts or offices with authority over water)
- **Regulatory** (geographic areas that may follow basin or aquifer boundaries where specific rules or requirements apply to water use)
- **Etc**



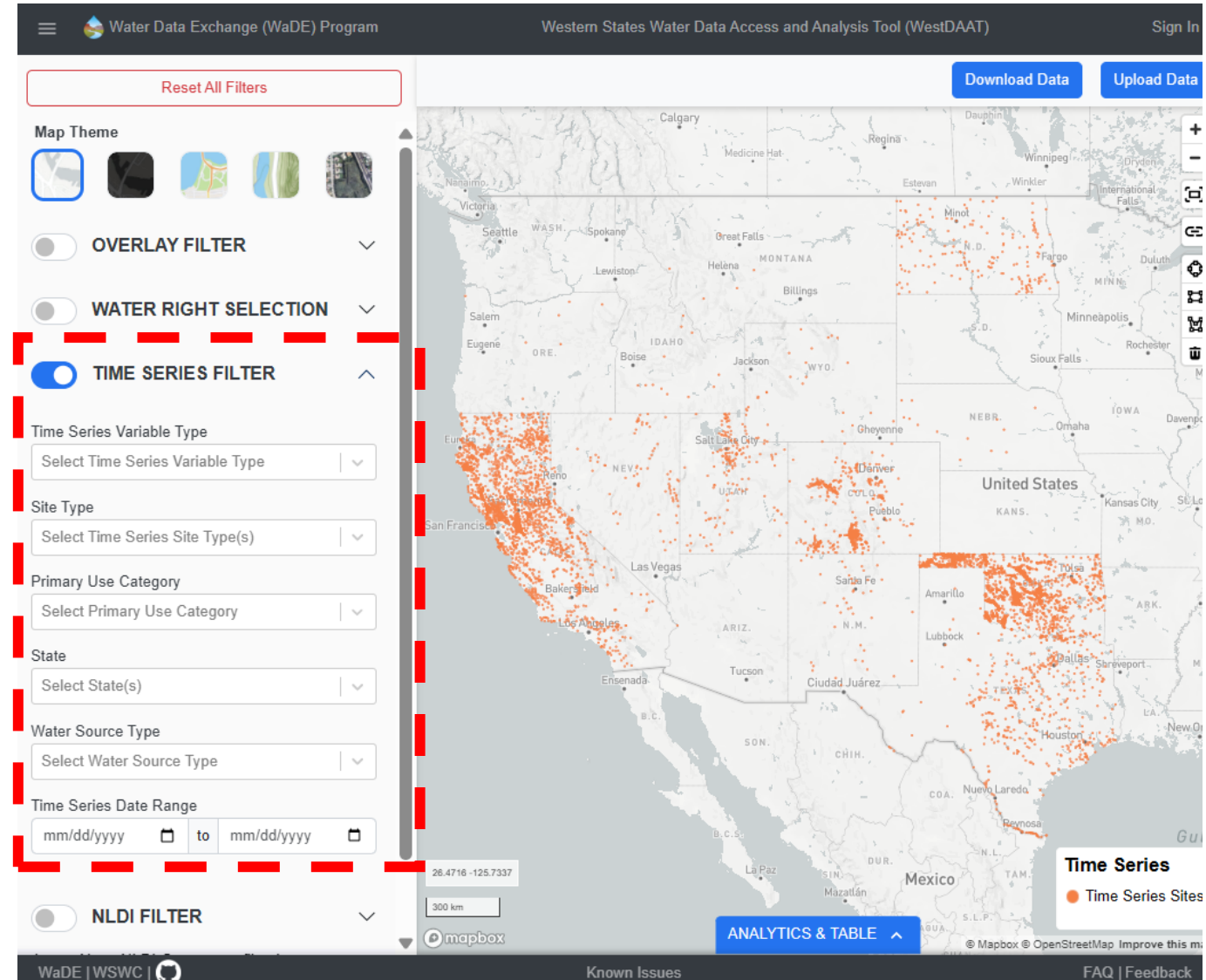
New Data: Time Series

Time Series: site-specific state historical time series data.

Data includes 1) generic site information, 2) recorded timeseries values, 3) paired to water right information (if applicable).

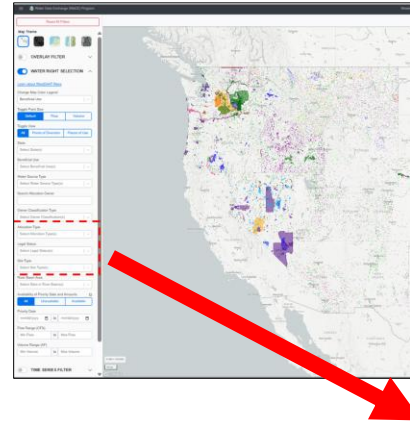
Types of Time Series Data:

- **Water Supply** (e.g., reservoir releases, streamgauge flow, and groundwater level or pumping measurements).
- **Water Use** (e.g., water use records include site-specific historical withdrawals related to an existing water right, and public-supply use related to geospatial areas).



New Filter Options: Water Rights

- **Allocation Type:** description of the type of water right (e.g., Underground Water Claim, Federal Reserved Water Right, etc).
- **Legal Status:** the state recognized legal status of the water right (e.g., proven, approved, perfected, adjudicated, etc.)
- **Site Type:** the high-level description of the site type recognized by the data provider (e.g., well, spring, reservoir, river, ditch, etc.).



Water Data Exchange (WaDE) Program

Reset All Filters

Allocation Type

Select Allocation Type(s) ▼

Legal Status

Select Legal Status(s) ▼

Site Type

Select Site Type(s) ▼

New Site Selection Drawing Tools

The screenshot displays the Western States Water Data Access and Analysis Tool (WestDAAT) interface. The main map shows the United States with numerous colored dots representing different water use sites. The sidebar on the left contains several filter options:

- Reset All Filters** button
- Map Theme** section with five theme icons
- OVERLAY FILTER** toggle (disabled)
- WATER RIGHT SELECTION** toggle (enabled)
- [Learn about WestDAAT filters](#) link
- Change Map Color Legend** dropdown menu (set to Beneficial Use)
- Toggle Point Size** buttons: Default, Flow, Volume
- Toggle View** buttons: All, Points of Diversion, Places of Use
- State** dropdown menu (Select State(s))
- Beneficial Use** dropdown menu (Select Beneficial Use(s))
- Water Source Type** dropdown menu (Select Water Source Type(s))

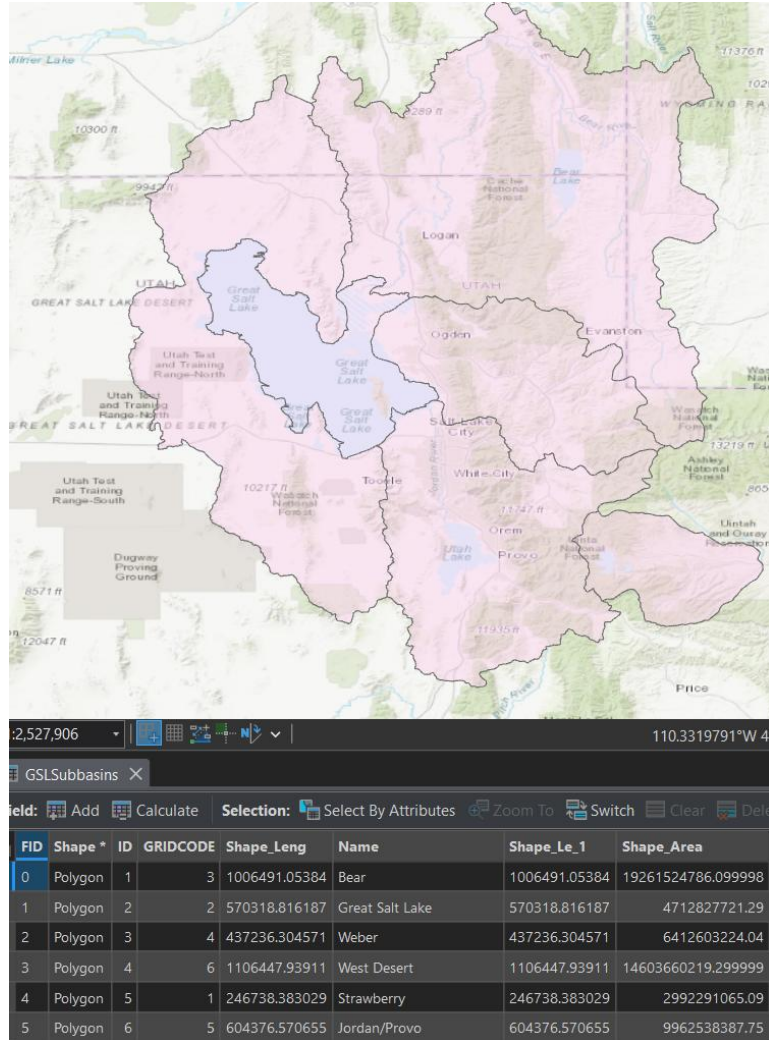
The right sidebar features a legend for Beneficial Use, listing various categories with corresponding colored dots:

- Aquifer Recharge
- Commercial/Industrial
- Domestic
- Fire
- Geothermal
- Hydroelectric
- In-stream Flow
- Livestock
- Mining
- Municipal Irrigation
- Other
- Public Supply
- Recreation
- Reservoir Storage
- Thermoelectric Cooling
- Unspecified

At the top right, there are buttons for **Download Data** and **Upload Data**. The bottom of the interface includes a **mapbox** logo, a scale bar (51.5410 - 122.0538), and a **Known Issues** link. The footer contains the text "WaDE | WSWC |" and "FAQ | Feedback".

Red dashed lines and numbered circles (1 and 2) highlight specific areas of the interface. Circle 1 points to the legend, and circle 2 points to the Download Data and Upload Data buttons.

New Selection Tools: Custom Shape Selection



Upload GeoJSON, JSON, or Shapefile
(.zip or .shp)

Select a .json, .geojson, .zip, or .shp file

Choose File No file chosen

Cancel



Water Data Exchange (WaDE) Program Western States Water Data Access and Analysis Tool (WestDAAT) rjames@wswc.utah.gov

Reset All Filters

Map Theme

OVERLAY FILTER

WATER RIGHT SELECTION

Learn about WestDAAT filters

Change Map Color Legend

Beneficial Use

Toggle Point Size

Default Flow Volume

Toggle View

All Points of Diversion Places of Use

State

Select State(s)

Beneficial Use

Select Beneficial Use(s)

Download Data Upload Data

Search

Beneficial Use

- Agriculture Irrigation
- Aquifer Recharge
- Domestic
- In-stream Flow
- Livestock
- Other
- Public Supply
- Reservoir Storage
- Unspecified

ANALYTICS & TABLE

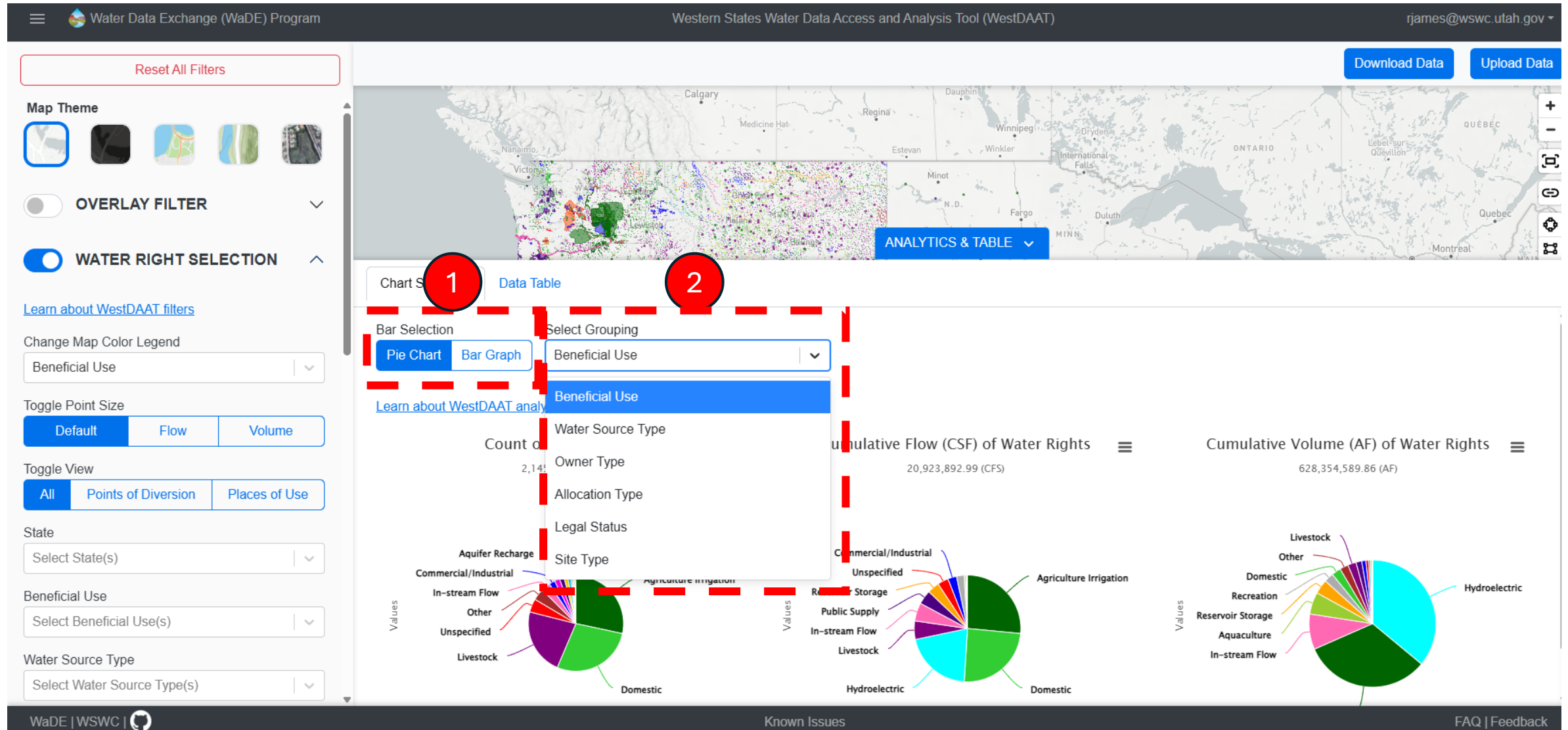
Water Sources Map

WaDE | WSWC

Known Issues

FAQ | Feedback

New Water Right Analytic Visuals



New WaDE API Data Delivery



Example:

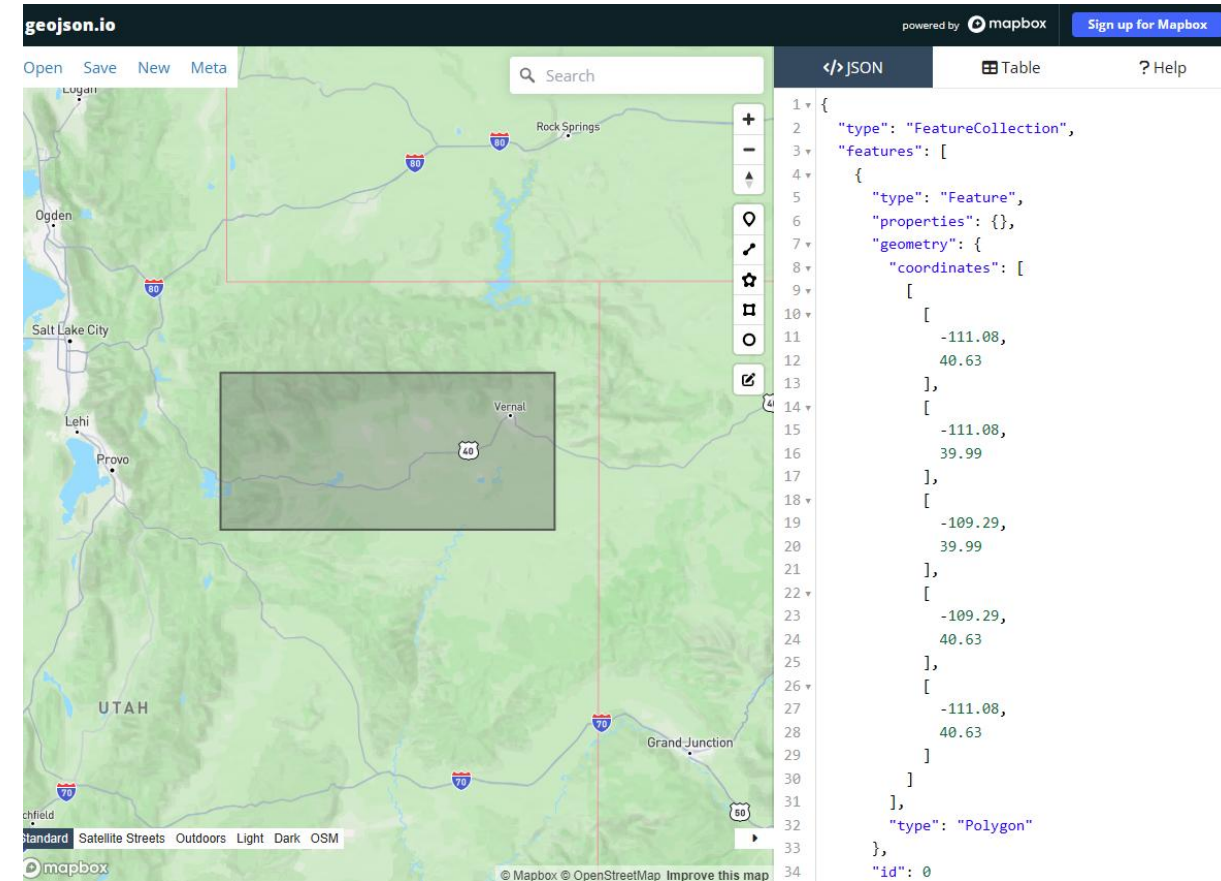
[https://wade-api-uat.azure-api.net/api/v2/collections/sites/area?coords=POLYGON\(\(-111.08 40.63,-111.08 39.99,-109.29 39.99,-109.29 40.6,-111.08 40.63\)\)&key=38f422d1ada34907a91af4532fa4669](https://wade-api-uat.azure-api.net/api/v2/collections/sites/area?coords=POLYGON((-111.08 40.63,-111.08 39.99,-109.29 39.99,-109.29 40.6,-111.08 40.63))&key=38f422d1ada34907a91af4532fa4669)

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New WaDE API Data Delivery

geojson.io powered by mapbox Sign up for Mapbox

Open Save New Meta Search

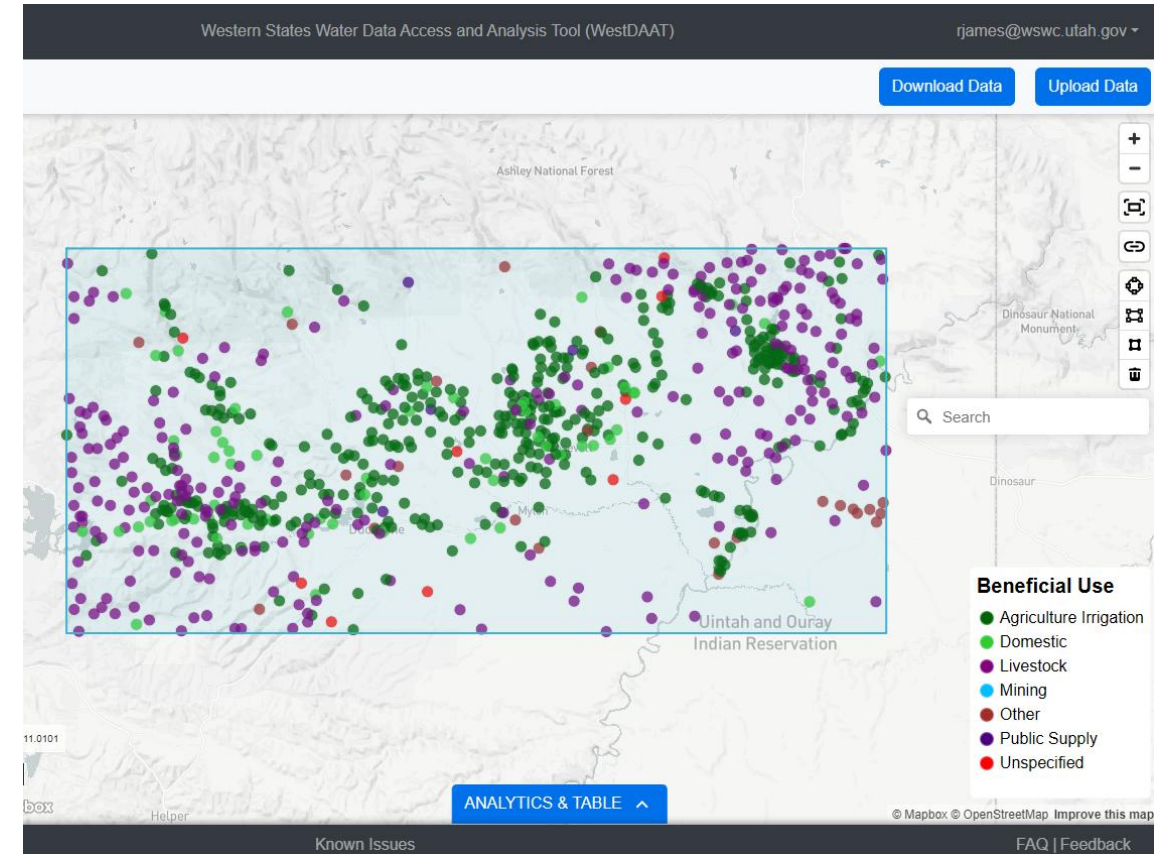


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9           [
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13            ],
14            [
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16              39.99
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18            [
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32        },
33        "id": 0
34      }
35    ]
36  }
```



Western States Water Data Access and Analysis Tool (WestDAAT) rjames@wsdc.utah.gov

Download Data Upload Data



Beneficial Use

- Agriculture Irrigation
- Domestic
- Livestock
- Mining
- Other
- Public Supply
- Unspecified

ANALYTICS & TABLE

Known Issues FAQ | Feedback



WESTERN STATES
WATER COUNCIL

Western Water Conservation Application Tool (WestCAT)

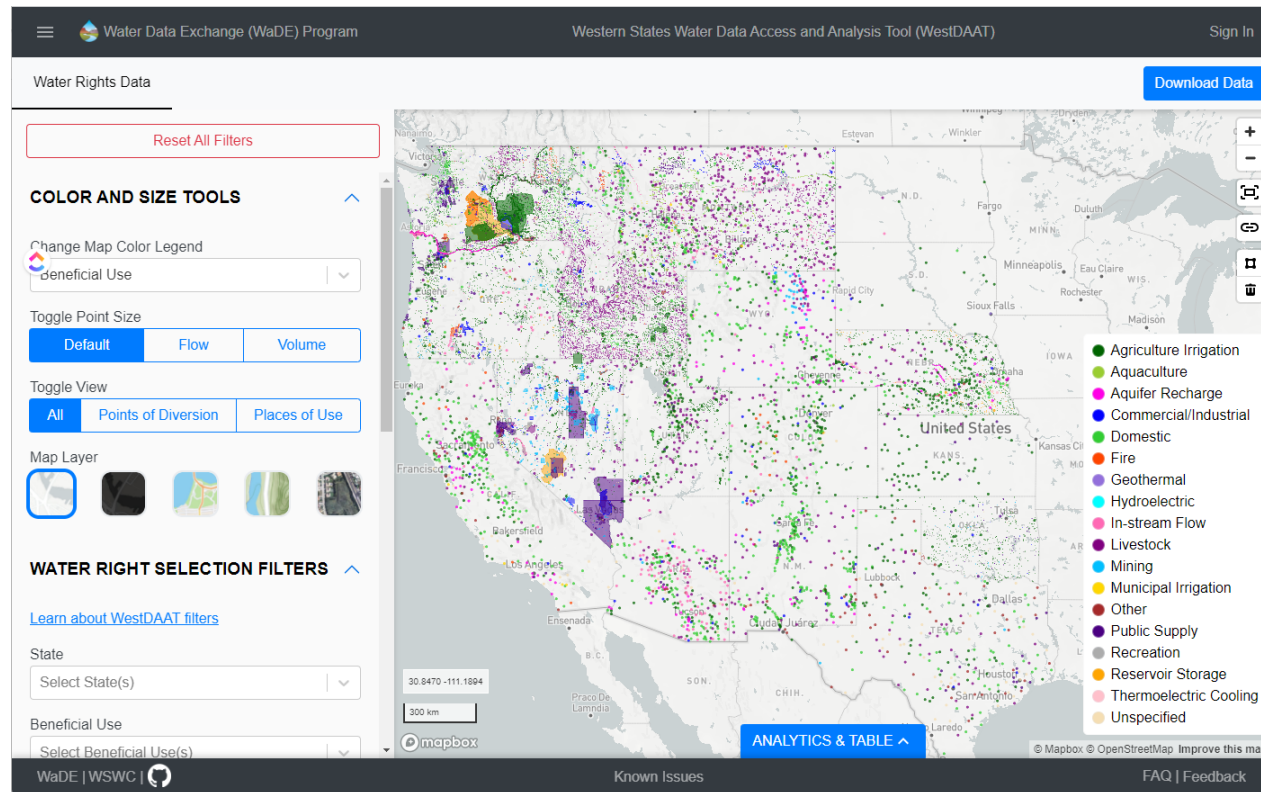
April 24, 2025

Ryan Jame – Data Analyst / Hydroinformatics Specialist

What is WestCAT?

WestCAT is a ***water conservation application tracking service*** that integrates WestDAAT and OpenET data.

Used to help facilitate voluntary, temporary, in-state, and compensated conservation programs through efficiency, fallowing, or switching to a different less water-intensive crop



Western Water Rights Data Access and Analysis Tool (WestDAAT)



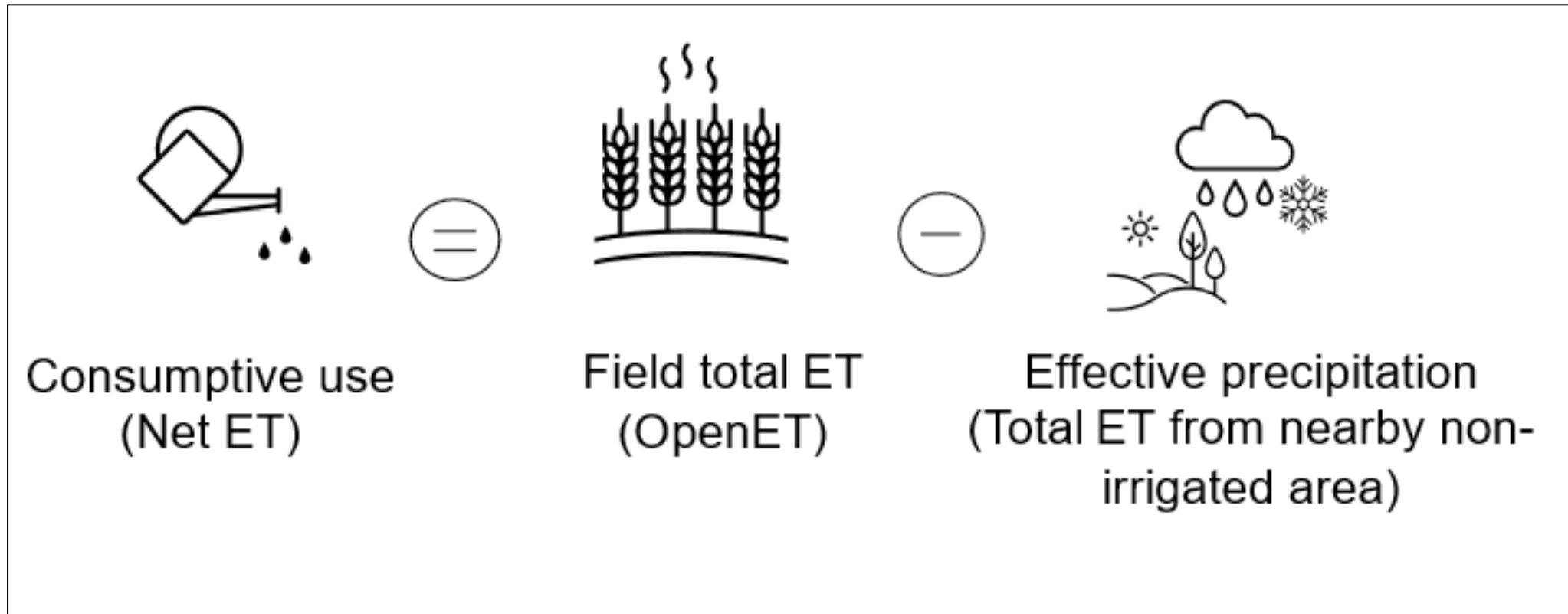
The screenshot shows the 'New Application' form in the WestCAT application. The form is titled 'New Application' and 'Application for Water Right Native ID: ORwr_WR223936'. It includes a status indicator 'In Technical Review' and a list of application details: 'Water Right Native ID: ORwr_WR223936', 'Application ID: 2025-WestCATEX-0003', and 'Funding Organization: Western States Water Council Example Org'. Below this, there's a note: 'Complete the below fields in order to submit your application to your state agency for verification. Be sure everything is filled out accurately and truthfully.' The form is divided into several sections: 'Applicant Information' with fields for 'Landowner Name' (Ryan), 'Email Address' (rjames@wswc.utah.gov), 'Phone' ((801) 685-2555), and 'Address' (Suite St #7); 'City' (Murray), 'State' (Utah), and 'Zip Code' (84043); 'Representative / Agent Contact Information' with a note 'Is this application being submitted by a representative of the water right's holder? If yes, please provide the representative's contact information.' and fields for 'Name / Organization' (Western State's Water Council), 'Email' (rjames@wswc.utah.gov), and 'Phone' ((801) 685-2555); 'Additional Details' with a text area; 'Property & Land Area Information' with fields for 'Field 1' (Acres: 73.17, Location: (43.342825, -119.092711)), 'Field 2' (Acres: 32.27, Location: (43.343633, -119.086477)), and 'Additional Details' (water fallowing); and a 'Static map here' section with a note 'This will be implemented in a future release.' The form is styled with a light blue header and a white body with blue borders.

WestCAT Application

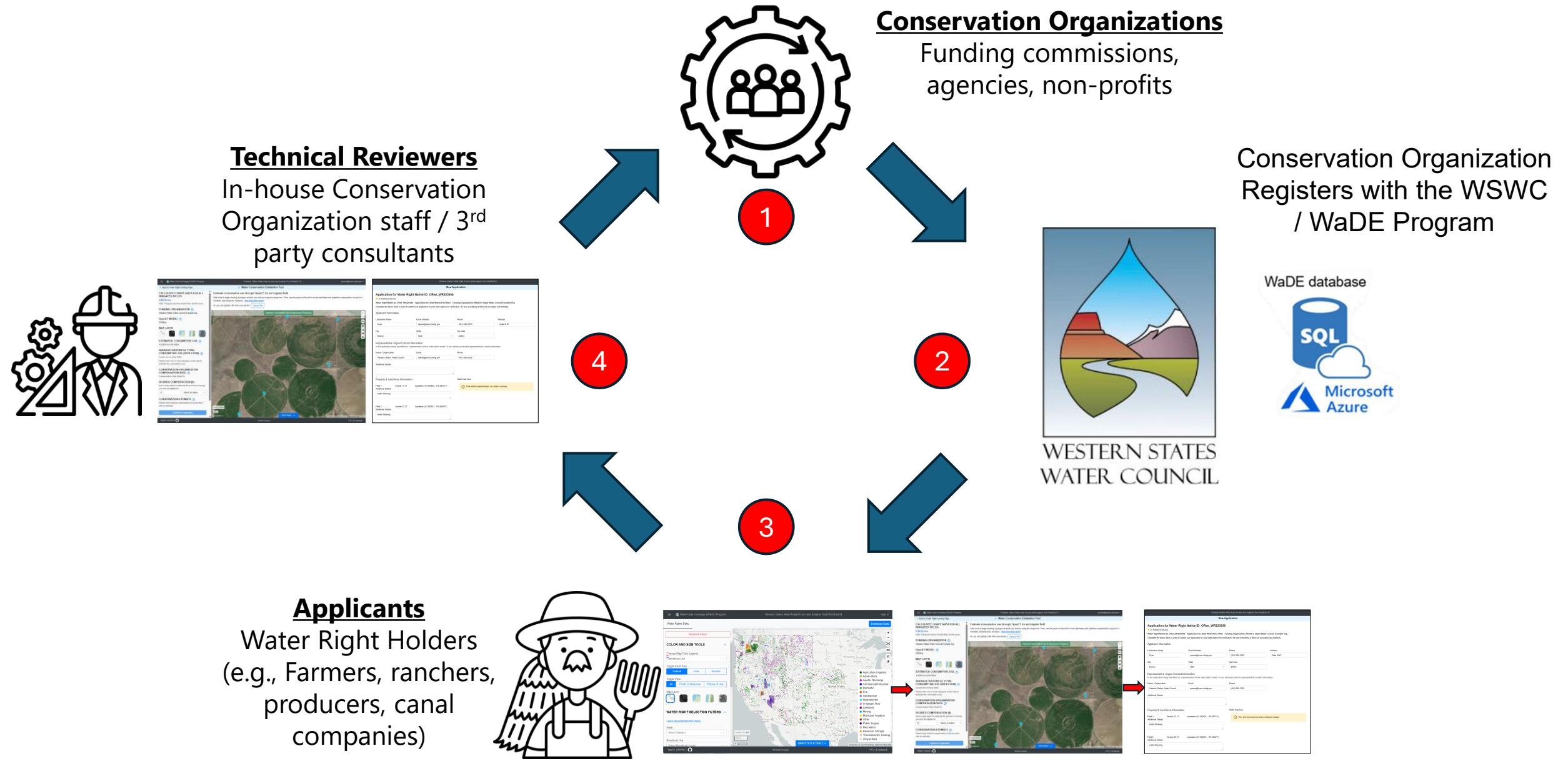
How is the Consumptive Use Estimated via OpenET?

OpenET uses an ensemble of satellite-driven models to estimate evapotranspiration (**ET**). The models currently included in the OpenET ensemble are: ALEXI/DisALEXI, eeMETRIC, geeSEBAL, PT-JPL, SIMS, and SSEBop. These models utilize Landsat satellite data and other sources to calculate ET at a 30-meter by 30-meter spatial resolution.

Consumptive Use (**Net ET**) is then the amount of estimated ET of an area / crop of interest minus the Effective Precipitation (**Total ET**) of that area.



How Does WestCAT Work?

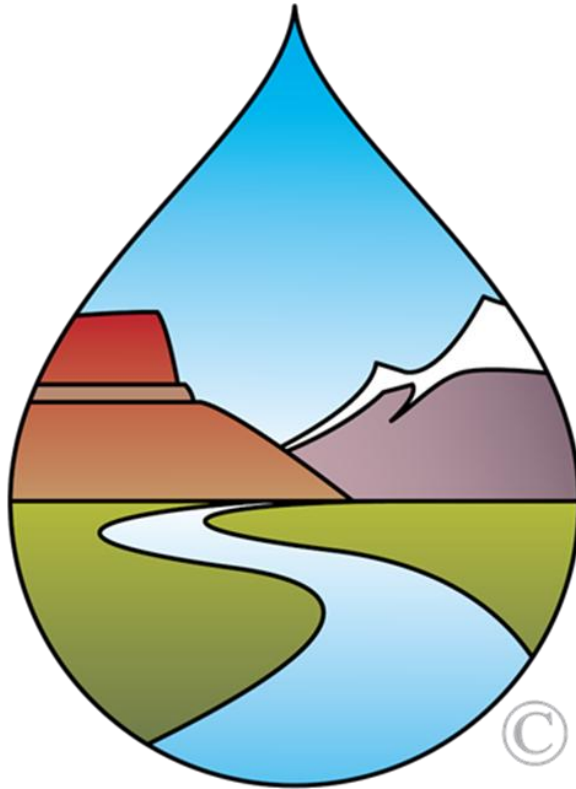




LIVE DEMO



PRESENTATION



<https://westernstateswater.org/wade/>

Thank You!

- Tony Willardson (WSWC Executive Director)
- Adel Abdallah (former WaDE Program Manger)
- Western States Water Council
- Don't Panic Labs

