

Headwaters Hydrology Project API

An API to deliver streamflow predictions from the Headwaters Hydrology Project ML model for ungaged basins across the contiguous USA.

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Base URL

<https://data.climate.umt.edu/streamflow-api>

Endpoints

1. Get Predictions

Endpoint: /predictions

Description: Retrieves streamflow predictions with optional aggregations.

Query Parameters

- **aggregations** (*optional*): Aggregation function(s) (e.g., min, max, mean, median, stddev, iqr).
- **locations** (*optional*): HUC10 ID(s) for data retrieval.
- **latitude** (*optional*): Latitude(s) of the region of interest.

- `longitude` (*optional*): Longitude(s) of the region of interest.
- `date_start` (*optional, default: 1980-01-01*): Start date for predictions.
- `date_end` (*optional, default: 2100-01-01*): End date for predictions.
- `units` (*optional, default: cfs*): Streamflow units (`cfs` or `mm`).
- `version` (*optional, default: vPUB2025*): Model version.
- `as_csv` (*optional, default: false*): Return data as CSV (`true` or `false`).

Responses

- **200:** Successful response with JSON data.
 - **422:** Validation error.
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2. Get Raw Predictions

Endpoint: `/predictions/raw`

Description: Retrieves raw streamflow predictions without aggregation.

Query Parameters

(Same as `/predictions`, excluding `aggregations`.)

Responses

- **200:** Successful response with raw JSON data.
- **422:** Validation error.

Data Models

ReturnPredictions

- `location` (*array of strings*): Locations of predictions.
- `date` (*array of dates*): Dates of predictions.
- `version` (*array of strings*): Model version used.
- `metric` (*array of strings*): Aggregation metric applied.
- `value` (*array of numbers*): Predicted streamflow values.

RawReturnPredictions

- `location` (*array of strings*): Locations of predictions.
- `date` (*array of dates*): Dates of predictions.
- `version` (*array of strings*): Model version used.
- `model_no` (*array of integers*): Model number identifier.
- `value` (*array of numbers*): Predicted streamflow values.

Streamflow Units

- `mm` (*millimeters*)
- `cfs` (*cubic feet per second*)

Versions

- `v1.0`
- `vPUB2025`