HydroForecast
Seasonal

See further into the future by extending your Short-term forecasts to the upcoming months

Trusted by organizations across **five continents**, including:

Brookfield Renewable

Sonoma Water

WWF

Seattle City Light

NorthWestern Energy

TACOMA POWER
TACOMA PUBLIC UTILITIES

Benefits

Improved seasonal forecasts can help water resource managers manage their valuable and increasingly volatile water supplies further ahead in the future.

- Optimize seasonal reservoir drawdown and refill decisions

- Improve long-term hedging or water purchase decisions

- Forecast quarterly and annual revenue

- Schedule maintenance during low-flow periods

- Ensure compliance with flow-driven regulations

- Redirect time from wrangling data to making data-informed decisions

Link: How organizations use HydroForecast

Best in class

HydroForecast Seasonal predicts water supply for the coming months using cutting edge techniques. *This includes:*

Industry-leading insights

- Inflow rate and volume forecasts out to 90 days (can be extended out to 12 months at many locations)
- Forecasts produced in 10-day intervals; can be aggregated by month & quarter or upsampled to daily
- Daily updates that incorporate the latest ground conditions and weather forecasts
- Fully probabilistic predictions showing the range of possible outcomes
- Access to underlying inputs for context, including snow & vegetation states, as well as weather forecasts
- User notifications ahead of large potential events

Scalable delivery

- Easy-to-use web dashboard
- Secure API to connect directly to systems like RiverWare, FEWS, and PLEXOS

Built for a changing climate

- Methods based on peer-reviewed research
- Ongoing improvements delivered regularly
- Validated performance during extreme weather, including floods of record and droughts
- Automatic adaptation to changing basin conditions (e.g., forest fires or development)

Link: Read about HydroForecast's features

Proven, unique, and science-led

Trained on 500+ hydrologically diverse basins...

Improving accuracy during extreme events that occur outside of a single basin's historical record and in **ungauged** basins. In new basins, the core model is further tuned using local data.

Link: Read more about it.

Link: Read the research behind HydroForecast here.

Applying the latest technology to trusted methods

HydroForecast Seasonal's "Similarity Analog" approach brings the latest in theory-guided machine learning to tested seasonal forecasting approaches.
**It works by:**
1. Monitoring current basin conditions, including remote-sensing and in-situ snow and vegetation data
2. Applying historic water years to current conditions to identify a range of futures
3. Identifying "similar" years using upcoming weather forecasts
4. Accounting for increasing climate variability using synthetic traces
5. Predicting runoff using HydroForecast's award-winning neural network

Link: Read more about how Seasonal works here.

In action
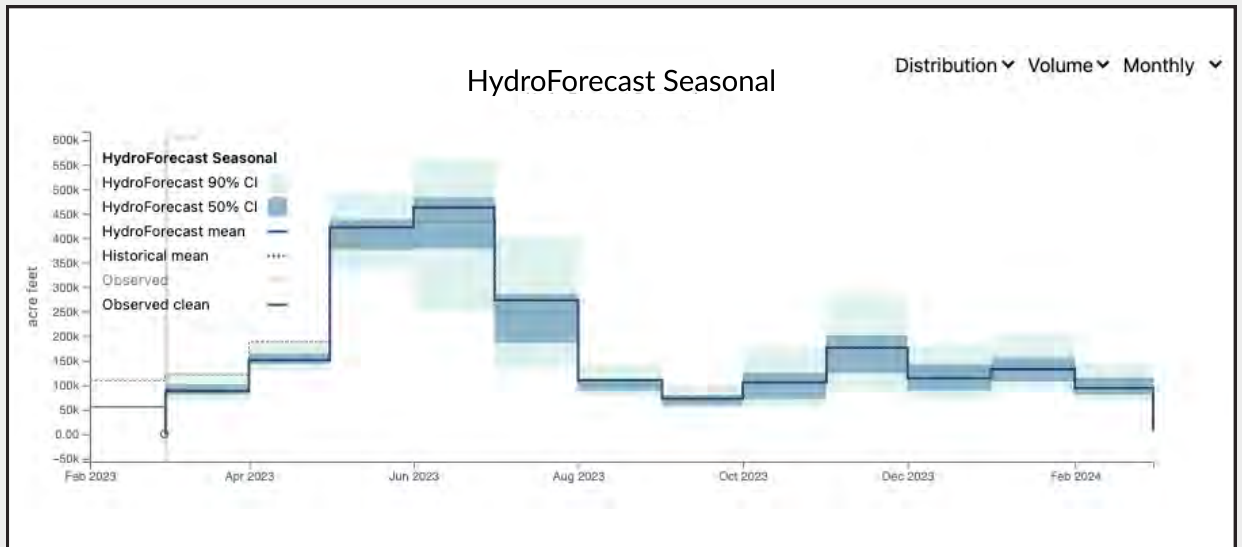
[Fig A]   Easy to use dashboard to inspect forecasts and communicate with partners

Category	Region				
	US West	US Southeast	Alabama	Québec	US mtn west
All arounder All metrics	📶	📶	📶	📶	📶
Flood forecaster Highest flow range	📶	📶	📶	📶	
Quick draw Shortest forecast	📶	📶	📶	📶	📶
Eagle eye Longest forecast horizon	📶	📶	📶	📶	📶
Straight shooter Lowest bias	📶		📶	📶	📶

[Fig B]   In a yearlong forecast competition, **HydroForecast Short term took 1st in 23 out of 25 categories**

Must watch

Improving water supply forecasts in the face of extreme weather and a changing climate →

Need a different time scale?

HydroForecast provides information across vastly different timescales, from the past to the far future. Many of our customers who use our Short-term forecast also use our seasonal.

Learn more here or browse our other offerings, below.

PAST

Historical
Create records for data-poor places

PRESENT

Virtual gauge
Near real-time now-casts

Short-term
0 to 10 days ahead

Seasonal
90 days to 1 year ahead

Long-term
Climate-informed, multi-decadal analyses

FUTURE

Upstream Tech is trusted by dozens of leading hydropower producers, water utilities, governMent agencies, and conservation organizations on six continents and is backed by leading investors, including the Bill Gates-led Breakthrough Energy Ventures.