Weather Source Capabilities

Data Products

OnPoint Weather Product Suite

The OnPoint Weather Product Suite provides a curated continuum of historical, present, and forecast weather data. Our database reaches from the year 2000 to present with a 15-day forecast and an extended view out to 42 days.

OnPoint Forecast Data

The standard OnPoint Forecast data is based on the National Centers for Environmental Prediction (NCEP) Global Forecast System (GFS).

- **ECMWF Forecast**
  We offer European Centre for Medium-Range Weather Forecasts (ECMWF) data. This includes the ECMWF 240 hour or 10-day forecast in both hourly and daily format. In addition, we also have a long-range forecast that is delivered in six weekly views going out up to 42 days.

- **HRRR Forecast**
  With a native spatial resolution of 3km and a temporal resolution of 15 minutes, the HRRR forecast weather model is built on the GFS forecast. The HRRR forecast includes an 18 hour forward forecast view that is refreshed hourly. Although the HRRR is only available in North America, we are actively working to bring the same spatial and temporal resolution on a global scale.

- **GFS Forecast**
  The GFS forecast is processed by Weather Source then staged on our OnPoint Grid for statistical consistency with our other datasets. The GFS-based OnPoint Forecast currently provides a forecast of 240 hours or up to 15 days in daily format. This data is fully refreshed every six hours.

- **ECMWF Short/Mid Range Forecast**
  This currently provides a forecast of up to 240 hours in hourly format and up to 10 days in daily format.

- **ECMWF Long Range Forecast**
  This currently provides a forecast of six weekly views going out to 42 days. This forecast is updated two times per week and includes expected future

atmospheric and oceanic conditions, averaged over periods of one to three months.

- **GFS and ECMWF Ensembles**
  For each forecast run, Weather Source processes all of the forecast ensemble members (31 for GFS and 51 for ECMWF) in real-time and users have the ability to create business intelligence around the spread of the distributions of the ensembles to better understand the potential variances of each forecast which can be very useful for scenario planning but also understand the confidence level in the forecast skill score.

- **Extreme Weather Forecast Probabilities**
  This forecast service provides a forward forecast view of up to four weeks (28-days) with probability and confidence levels for extreme weather events and perils such as hurricanes, tornadoes, cyclones, severe convective weather, etc.

OnPoint Historical Data

- **OnPoint Weather Historical**
  OnPoint Weather Historical data provides hourly and daily weather values from the year 2000 to present. This database is a stable source of historical information because once the data is archived no further changes or edits are made.

OnPoint Historical Forecast

- **Historical GFS Forecast**
  Access GFS historical forecast data in pristine format back to January 2015.

- **Historical ECMWF Forecast**
  Access ECMWF Short / Mid historical forecast data in pristine format back to July 1, 2017 and ECMWF Long-Range forecast back to January 1, 2014.

Additional Data Products and Features

- **Airport Reporting Station Data**
  Weather Source has “cleaned” data for all global airport reporting stations dating back to 1973 or when the station came online. All Weather Source airport station data has been ‘cleaned’ to remove all gaps and null values and the data is available in both hourly and daily format.

- **Dynamic Elevation Adjustment**
  The concept of elevation adjustment is unique to Weather Source. Weather Source's Dynamic Elevation Adjustment applies true meteorological modeling to accurately adjust for terrain variations. With the addition of Dynamic Elevation Adjustment Weather Source is now able to dynamically resolve differences in elevation between the elevation of a location of interest and the elevation of the interpolating weather inputs.

OnPoint Climatology

Climatology is the statistical representation of weather over time. Discover how your business/customers respond during average (mean) conditions and how they respond during departures from normal (standard deviations). OnPoint Climatology can also be used as a long-range forecasting tool.

- **Extreme Weather Climatology**
  In addition to OnPoint Climatology, Weather Source has also developed Extreme Weather Climatology products for a number of extreme weather phenomena such as hurricanes, severe thunderstorms, tornados, storm surge, river flooding, hail, floods, and wildfires which provide a foundation for understanding and quantifying the probability of various weather phenomena under our planet's current climate conditions and act as (i) a reference for current climate means and variance for any location; (ii) current climate trends for any location; (iii) support scenario planning with respect to current climate trends; and more.

Data Solutions

OnPoint Weather Solutions Suite

The OnPoint Weather Solutions Suite is built on Weather Source's patent pending data and all solutions are built to be modular, highly configurable, and scalable to any business size or use case.

The Weather Insights Platform™ (WIP™)

A dynamic, web-based application designed to allow retailers, restaurants, and e-commerce companies to create sales forecasts, optimize operations, and discover what types of weather impact their business.

Condition-Based Ad Triggering (C-BAT™)

Automatically trigger marketing based on preset weather conditions. Apply hyper-local targeting to connect customers with your brand where and when it matters most. CBAT fully integrates with all major ad platforms including DV360 and Facebook ads. Easily integrated with any ad platform or loyalty program that has an API.

OnPoint Risk Analytics

This is a service that provides climate & peril risk scores and probability of return by dynamically calculating the peril frequency rate and probability of each risk on a global scale. The climate and peril risk modeling at a spatial resolution of 30 square meters is especially important for flood modeling where slight changes in ground elevation can make big differences in flood potential for locations near rivers and coastlines. Each climate and peril risk model will provide relative risk rankings for any requested location(s). The relative risk rankings are provided as a percentage of the sorted distribution of event frequencies from a group of locations, where the group can be defined as the entire globe, a region, or a country.

In addition to providing relative risk rankings for many perils, the service will also provide return period event levels for common return period ranges, such as 20, 50, 100, 200, and 500 years (e.g., a 50-year return period for flooding for a location may be 1.5 meters of flood water and what this means is that on average for any 50-year period, the maximum expected flood level would be 1.5 meters).

Alerting

Dynamic Weather Alerting Service™ (DWAS™)

Easily configure and receive notifications and alerts for any weather parameter or severe weather alerts issued by various government agencies such as the U.S. National Weather Service and Canadian Ready Alerts. Easy tailored, user-defined alerts are available as well. DWAS is highly configurable and allows businesses the ability to set and receive notifications all working from an easy-to-use user interface.

Visualization

OnPoint Geospatial

All weather source data is available in tabular format or as Geospatial files. In addition, we also have Geospatial products for all significant perils such as flooding, hurricanes, tornadoes, storm surge, hail, severe convective weather and more. These Geospatial peril products incorporate metadata and a deep, historical context down to the meter-scale to provide powerful insights that integrate seamlessly into any GIS application or other visualization tool. These Geospatial files are available in a variety of formats including GeoJSON, raster and vector files.

Additional Products and Solutions

OnPoint Machine Learning (ML)-Ready Weather

ML-Ready Weather helps organizations analyze the effects of specific weather conditions. OnPoint ML-Ready Weather, an extension of OnPoint Weather, employs feature engineering to create datasets that help organizations analyze the effects of specific weather conditions on a wide range of weather-sensitive activities.

Weather Impact Indices

Consumer and Business Weather Impact Indices which are aggregations of weather and climate data that are engineered to correlate to numerous consumer and business activities. It is well known that weather can have a significant influence on consumer behavior and purchasing decisions and on business performance across many industries, but it is often challenging to relate weather values directly to consumer behaviors and business performance in ways that are statistically performant.

Rolling Anomaly Reports

Seasonal reports that look ahead or back 1, 3, 7, or 30 days - or across an entire season - that show departures from normal, year-over-year comparisons, and seasonal anomalies.

Delivery

Weather Source will work with you to select and tailor the delivery method that best suits your needs and business infrastructure. There are multiple ways to connect with Weather Source data.

- **OnPoint API**
  This is the link to our OnPoint API: https://developer.weathersourceapis.com/.

- **CSV File Formats**
  Email, SFTP, AWS S3 & ADX.

- **Business Intelligence Platforms**
  Snowflake, GCP, Microsoft Azure and Domo, AWS - ADX.

Support

Weather Source provides complimentary implementation assistance, consulting and support. Our support contact information is as follows; our team is available 24/7/365.

- **Technical Support**
  Toll free: (844) 813-2617. Select option 2, then option 1.
  Email: support@weathersource.com

- **Meteorological Support**
  Toll free: (844) 813-2617. Select option 2, then option 3.
  Email: support@weathersource.com