Speedwell Weather Data

Gridded Data Services

Speedwell Weather offers access to a wide choice of gridded data series. The term "Gridded data" can mean many things. At Speedwell define gridded data as a geospatial dataset that has been produced via the interpolation of regular/irregular meteorological observations or reanalysis products. Reanalysis is a relatively young field in meteorology and is a product of the development in numerical forecast modelling which relies on establishing a uniform set of initial conditions to run the forecast. The inputs into these models may include observed data and satellite data and produce a multivariate, spatially complete, and coherent record of the global atmospheric / oceanic conditions. Two of the main sources for the generation of these hi-resolution derived products are the global North American and European reanalysis **MERRA2** and **ERA-Interim** (transitioning to ERA5) respectively.

Gridded data is becoming more important for the index-based weather risk market. Speedwell is able to provide a number of gridded data sets. These are available for no extra charge to SuperPack® Premium users. For SuperPack® Premium clients who also licence the Speedwell Weather System (SWS) , these gridded data sets can be browsed and accessed directly allowing immediate data download for pricing. Alternatively, gridded data requests can be made directly to the Speedwell Data Team for FTP delivery or via API.

ECMWF ERA-Interim Reanalysis

The ERA-Interim is the latest global atmospheric reanalysis product produced by ECMWF (European Centre for Medium-Range Weather Forecasts).

- Period of record: 1979 to present

- Geographical Extent: global

- Gridded data resolution: T255 resolution (approx. 80km x 80km)

- Variables: temperature, sea surface temperature, wave height and direction, wind speed and direction, soil moisture and temperature, snow-depth, solar radiation, dew point, surface pressure and precipitation

- Reporting: 3-hourly time steps as well as daily observations

- Update schedule: updated on a monthly basis (with a 2-3 month reporting lag)

ECMWF ERA-Interim dataset coverage
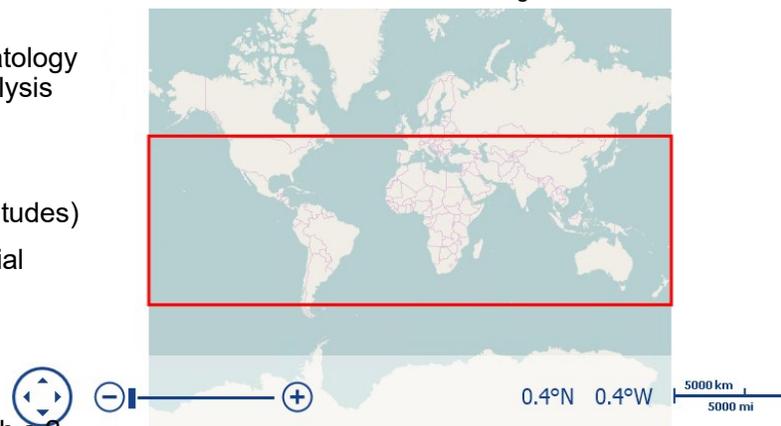
81.4°N   180.0°E   5000 km / 5000 mi
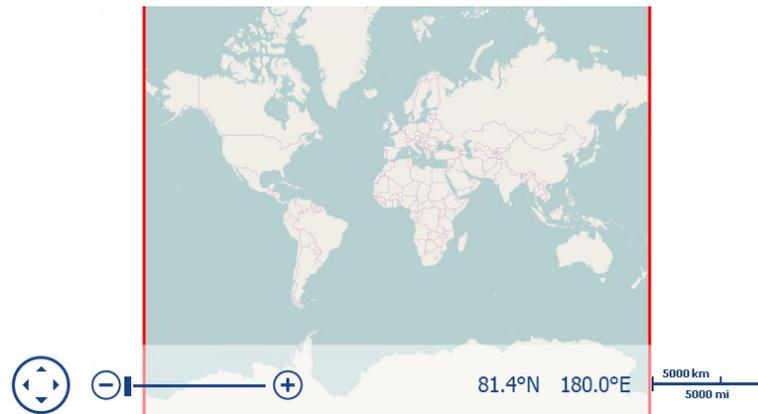
CHIRPS version 2.0

The Climate Hazards Group Infra-Red Precipitation with Stations dataset (CHIRPS) is a blend of rainfall station observations, satellite cloud temperature data, and climatology fields. The dataset was originally produced for trend analysis and seasonal drought monitoring

- Period of record: 1981 to present

- Geographical Extent: 50.0°S-50.0°N (and all longitudes)

- Gridded data resolution: 0.05°×0.05° degree spatial resolution (approx. 5km x 5km)

- Variables: precipitation

- Reporting: daily observations

- Update schedule: preliminary data is available with a 2-day lag, final data is published with a lag of 3 weeks

CHIRPS version 2.0 dataset coverage

0.4°N   0.4°W   5000 km / 5000 mi

![Speedwell Weather Data — Gridded Data Services]

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Gridded Data Services

Bureau of Meteorology (Australia)

Speedwell Weather can provide access to three datasets derived from those produced by the Australian Bureau of Meteorology: rainfall, solar radiation and temperature. .

Gridded Daily Rainfall

- Period of record: 1900 to present

- Geographical Extent: northern latitude = 9.975°S, southern latitude = 44.525°S, western longitude = 111.975°E, eastern longitude = 156.275°E

- Gridded data resolution: 0.05°×0.05° degree spatial resolution (approx. 5km x 5km)

- Variables: precipitation

- Reporting: daily observations

- Update schedule: annual basis

- Based on a reanalysis of quality controlled surface rainfall observations

Aus BOM Rainfall dataset coverage

Gridded Daily Solar

- Period of record: 1990 to present

- Geographical Extent: northern latitude = 10.025°S, southern latitude = 43.975°S, western longitude = 112.025°E, eastern longitude = 153.975°E

- Gridded data resolution: 0.05°×0.05° degree spatial resolution (approx. 5km x 5km)

- Variables: total solar energy (J/M2)

- Reporting: daily observations

- Update schedule: data is updated in real-time

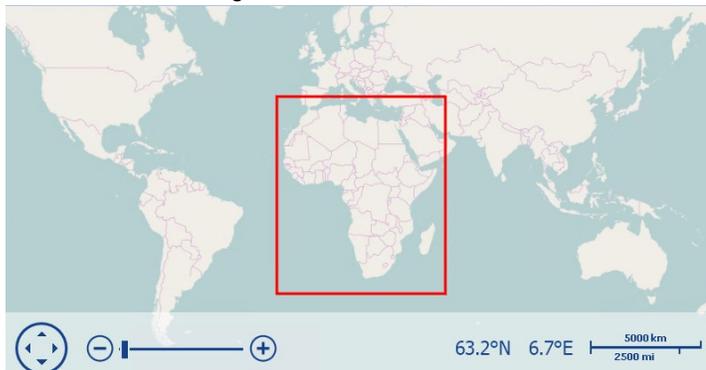- Model generated climatology based on satellite data and hourly cloud albedo

Aus BOM Solar dataset coverage

ARC2

The African Rainfall Climatology Version 2 (ARC2) was developed for the purposes of a famine early warning system and has been used for weather risk transfer. The data set is a daily climatology of gridded rainfall built to cover the entire African continent.

- Period of record: 1983 to present

- Geographical Extent: northern latitude = 40.0°N, southern latitude = 40.0°S, western longitude = 20.0°W, eastern longitude = 55.0°E

- Gridded data resolution: 0.1°×0.1° degree spatial resolution (approx. 11km x 11km)

- Variables: precipitation

- Reporting: daily observations

ARC2 dataset coverage

Speedwell Weather
Data

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Gridded Data Access

1 By FTP
2 Via API: coming soon
3 Via *Speedwell Weather System (SWS v12)*

- Regional selection - users are able to select multiple grid points by drawing a polygon around the area of interest. Once selected the user can then apply a mathematical function to the selected data (eg average, maximum..)

- Point selection - user enters a latitude / longitude or selects a point on the map

Speedwell Weather System Gridded Data Interface
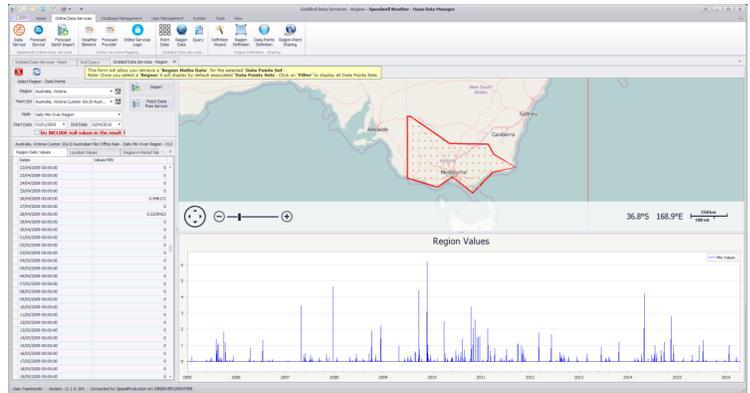
Understanding the Limitations of Gridded Data

It is important that gridded data is not seen as a "magic bullet" that solves all data needs. The effective use of gridded data depends on a deep understanding of how it is created and its possible limitations.
Speedwell Weather have produced a number of papers providing detailed information on a number of data sets.
Please contact us to request these documents.

List of Gridded Data Sets

Please contact us for the latest list of available gridded data sets

Gridded Data Settlement Data

Settlement Data is weather data used to calculate the value of a weather index on which a weather protection contract has been based.

Speedwell Settlement Services Limited is a major provider of Settlement Data and has been involved in a wide range weather risk transactions including energy market hedges, event insurance, exchange traded products and the largest weather transactions on record. Settlement Data can be produced for gridded datasets.

The role of Speedwell Settlement Services in any weather transaction is:

- To define the process, data quality, data source, delivery cycle and methods used to address errors and missing data in a Settlement Contract. This ensures total transparency in the process.

- To provide a feed of data to the counterparties during the life cycle of the contract term. The data supplied is with no missing data points and gross errors removed with notifications issued to all parties for transparency.

- At the end of the contract term, to provide the final Settlement Data (Index) to all counterparties at the same time along with an accompanying Settlement Certificate to enable any payout to be calculated, documented and actioned.

Please contact us for more information: Support@SpeedwellSettlementServices.com

Contact Us
To subscribe or to discuss specific project needs please contact: GriddedDataRequest@speedwellweather.com