WEATHERBELL ANALYTICS LLC

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2011 Weather Has Wreaked Havoc

Were You Prepared?

The global reinsurance industry has already suffered more than twice the losses that were expected for all of 2011. Record floods, unprecedented tornadoes, hurricanes and severe winter weather are among the natural disasters that blindsided the $464 billion industry.

In any year, there are substantial weather-related risks to the insurance industry including tornadoes, hurricanes, drought, high winds, flooding, wildfire, snow and ice . Severe weather can be seemingly volatile difficult to predict, leaving many insurance professionals underprepared when natural disasters occur.

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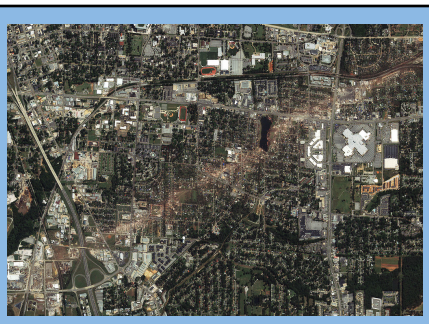
WeatherBELL Analytics possesses two of the world's leading meteorologists, **Joe D'Aleo and Joe Bastardi.** Our team has unmatched expertise and skill in the long-range predictions of extreme weather events and other medium- range forecasts that will give insurance companies a more accurate read of upcoming weather events, locations and probability.

WeatherBELL Analytics advises clients months in advance by predicting storms more accurately using analog forecasting and climatology – for example, sunspots, volcanic activity and sea surface temperatures in the Pacific and Atlantic. While it is impossible to forecast with certainty, the range of outcomes is becoming more accurate and decision-relevant for the insurance industry.



TORNADO TRACK Tuscaloosa, Alabama tornado on April 29, 2011.

Image: DIgitalGlobe

MINOT, NORTH DAKOTA Flooding on June 24, 2011 in Minot, N.D.

Photo: Reuters

TEXAS DROUGHT Cotton field during the summer 2011 drought in Texas.

Photo: Associated Press

Better Forecasting Tools for the Insurance Industry

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Statistical models using climate data continue to be used by the majority of insurers. Emerging forecasting methods and techniques provide risk experts with additional options to further develop and refine their modeling practices. Insurers need to be alerted of these extreme events and the techniques of long-range forecasting provide a welcome addition to the debate on how to do so. For instance, recent Lloyd's research reported on how long-range forecasting can be a valuable asset to insurance companies to predict future events.

Lloyd's noted, "Such longer-range forecasting techniques will have an increasingly important role to play in the insurance market and help to significantly improve and develop existing practices – particularly as the impacts of climate change are increasingly felt."

The use of forecasts adjusted to support the constraints within the insurance industry is thought to be possible with the current level of forecast information that is already available in the market place. Using skillful long-range forecasts would likely mean a certain amount of asymmetry in the response to a high hazard activity forecast compared to a low one, which can enhance profit. For a low hazard activity forecast, it is likely there would be a lower limit to how far capital requirements or prices could be reduced, as even a quiet year could have a significant loss making event.

Disaster Costs Keep Rising

Globally, the industry is seeing about $80 billion/year in weather-related economic losses, of which $20 billion are insured. Weather-related losses represent about 90% of all natural disaster losses, and the data do not include an enormous amount of aggregate losses from small-scale or gradual, non-catastrophic events (e.g., lightning, soil subsidence, gradual sea-level rise).

- ✓ Aon Benfield reported there has already been an estimated $22 billion in damage from severe weather in 2011. This figure was calculated prior to the start of hurricane season.
- ✓ $1.8 billion (2011 adjusted) is the average cost per Atlantic hurricane that makes US landfall.
- ✓ Flooding of the Mississippi River (Illinois to Louisiana) caused between $850 million and $2 billion of damage.
- ✓ In Minot, N.D., $90 million is the preliminary estimate for flood damage.
- ✓ The National Climatic Data Center estimates damage from droughts and wildfires in the Southwest is between $1 and $3 billion.
- ✓ Along the East Coast, Hurricane Irene is estimated to have caused at least $1.5 billion in damage.

WeatherBELL Analytics utilizes long-range forecasting skill to provide insurance firms with advanced warning of upcoming major weather events, weeks and months in advance. Just take a look at how we provided advanced warning to the 2011 tornadoes and flooding as a prime example of how we can be an asset to your risk services. Read more about our 2011 WeatherBELL Tornado/ Flooding Forecasts.

"GLOBALLY WE ARE SEEING ABOUT $80 BILLION/YEAR IN WEATHER- RELATED ECONOMIC LOSSES"

Mississippi River Flooding.
May, 2011
Photo: Reuters

Huntsville, Alabama tornado.
April, 2011
Photo: NOAA

- Alabama Tornado Outbreak
- Minot, N.D Flood
- Mississippi River Flooding
- Wallow Fire
- Texas Drought and Fires
- Hurricane Irene and the Atlantic Hurricane Season

WeatherBELL Analytics' Value to Insurance Companies

1. Premium and capital decisions should be based on more than just long-term averages.
Sea surface temperature - conditioned models are already recommended as one of the best practices for analyzing catastrophe risk for insurance. WeatherBELL Analytics takes weather forecasting even further by using an advanced approach that combines analogs, current data and models into a precise forecast. Accurate long-range forecasts will keep you better informed of the risk of damaging weather. The industry can use this to further inform pricing and capital decisions.

2. Skillful long-range forecasts
Our forecasters identify the large scale oceanic and atmospheric patterns that impact weather events, and use this data to determine risk levels for specific events occurring. The forecasts from WeatherBELL Analytics take into account the effects, as seen by analogs to previous years, that oscillations in patterns such as PDO, AMO, and ENSO (includes El Nino and La Nina) have on weather, which enhances statistical approaches to forecasting.

3. First Adopters Have A Competitive Advantage
The use of models that bring together ocean and atmospheric interactions is still relatively new. However, the combination of increasingly sophisticated models, along with WeatherBELL Analytics's unique approach that enhances model guidance by including well chosen analogs and a full understanding of the current weather patterns, results in forecasts which will be useful for insurers. Additionally, academics are increasingly keen on tackling the issues and questions most relevant to insurers.

Forecast Package

WeatherBELL Analytics Forecast Package for the insurance industry is designed to help professionals anticipate the strength of severe weather and to know where and when it will occur. Used correctly, these forecasts will aid in the appropriate planning and pricing of potential hazards and proactively mitigate risk.

Available from WeatherBELL Analytics:

- **Monthly Insurance Forecast** – Released on a weekly basis, this forecast takes a look at the month ahead, with particular focus on the next two weeks. The forecast will identify the areas of highest risk for severe weather.
- **Tropical/Winter Weather Updates** – Updated daily whenever tropical conditions (during the summer) or severe winter weather (during the winter) are posing imminent risk.
- **180 Day Outlook** – Released once per month, this features forensics behind developing trends in weather patterns. This report, written by meteorologists Joe Bastardi and Joseph D'Aleo offers compelling evidence to what weather conditions will exist and over a six-month period of time, including early looks at each season, including hurricane and winter weather forecasts.

Contact us to receive more information on our services and how you can receive a free trial and gain access to our meteorologists and our long-range forecasts.

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