

TSR Polygon Data – Product Descriptions

This document describes the tropical cyclone tracking products which Tropical Storm Risk (TSR) is offering in polygon form for mapping onto business portfolios within a GIS framework. These products are available for tropical cyclones worldwide. They are provided free in beta test form until the 1st July 2008. Charges will be introduced from this date. The four products are:

- Surface Wind Probabilities to 120 hrs (39+ mph and 74+ mph)
- Surface Wind History (39+ mph and 74+ mph)
- Advanced Surface Wind History (all windspeed thresholds)
- Forecast Wind Swathe to 120 hrs (all windspeed thresholds)

Surface Wind Probabilities to 120 hrs:

This product maps the current likelihood of being struck by hurricane (74+ mph) and/or by tropical storm strength (39+ mph) 1-minute sustained winds over the next 5 days. Probability contours are displayed at 5% increments between 5% and 95%. These are provided as polygons in an Arc/Info file in ESRI GIS ungenerate format (see Access Instructions document). Separate polygons are provided for each probability level with the 5% polygon listed first, followed by the 10% polygon and continuing to the 95% polygon. The past and forecast storm track is also included and is represented by a series of polygons displaying rectangles linking different advisory times. The storm track polygons are listed in the Arc/Info file after the probability contours.

Business Benefit: Will allow companies to anticipate and manage better the value of their portfolio at risk as a tropical cyclone targets land.

Surface Wind History:

This product maps the regions already affected by a tropical cyclone's high winds (hurricane (74+ mph) and tropical storm strength (39+ mph) 1-min sustained winds only). Polygons are generated for each of these two thresholds. The storm track is also included as in the surface wind probabilities product.

Business Benefit: Will allow companies to assess better a tropical cyclone's immediate post-event impact on their portfolio.

Advanced Surface Wind History:

This unique product is an enhancement of the Surface Wind History product. It displays the surface wind history (1-min sustained winds and 3-second gusts) for all wind speed thresholds. The product maps the regions affected by 1-minute sustained winds for the following strengths: tropical storm, cat 1, cat 2, cat 3, cat 4 and cat 5. It also maps the regions affected by 3-second gusts of between 40 mph and 190 mph at 10 mph intervals. The product includes a correction for the change in surface roughness at landfall. Each windspeed contour is provided as a separate polygon within the Arc/Info file. Polygons are listed in order of increasing wind speed. The 1-minute sustained wind history polygons and the 3-second peak gust wind history polygons are written to separate files.

Business Benefit: Will provide companies with the best immediate post-event assessment of a tropical cyclone's impact on their portfolio.

Forecast Wind Swathe to 120 hrs:

This product maps the forecast 1-minute sustained surface wind and forecast 3-sec peak wind gust as contoured swathes out to 5 days ahead. The product maps the most likely wind swathe. It compliments the Surface Wind Probability product which gives the likelihood that surface winds will exceed two thresholds. The windspeed contour thresholds in the Forecast Wind Swathe are the same as in the Advanced Wind History product. The 1-min sustained wind polygons and 3 second gust polygons are written to separate files.

Business Benefit: By providing the most likely forecast wind swathe the product will allow companies to anticipate and manage better the value of their portfolio at risk.

Product Updates:

All the TSR polygon data files are updated after each forecast advisory issued by the US National Hurricane Center (NHC) and by the Joint Typhoon Warning Center (JTWC). These updates occur every 6 hours for the NHC, every 6 hours for the JTWC in the Northwest Pacific basin, and every 12 hours for the JTWC elsewhere. The TSR polygon data are issued/updated about 10 minutes after each NHC or JTWC update.

For information on accessing the TSR Polygon Data for each tropical cyclone tracking product please refer to the **TSR Polygon Data – Access Instructions** document.

Tropical Storm Risk (TSR)
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