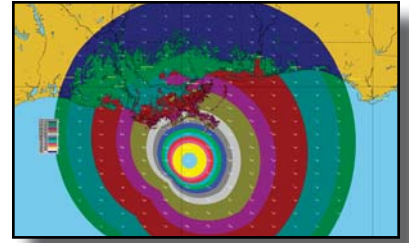


The "Top Ten" Unique Capabilities of Hurrtrak

Hurrtrak software products are essential for anyone who needs to know the most detailed information possible about a storm's impact to assets; and for those responsible for communicating both high level and detailed information to "superiors"...whether they be county commissioners, Governors or CEO. This can all be done with one software package because Hurrtrak has a wealth of both graphical and reporting capabilities. Customers have repeatedly told us that...



"No other product offers the same benefits as the Hurrtrak product line."

Advanced Wind Estimation

This is a state of the art function with a patent pending. It uses the characteristics of the surrounding area to determine likely wind speeds during the passage of a hurricane. It reduces wind speed estimate errors from 50% (using standard methods), down to 15%. AWE is integrated throughout the system and is utilized on all reports and most graphics. No other software has this capability.

Highly Detailed Mapping

Extremely detailed and versatile mapping capabilities are the foundation for all of the graphics within the system. This includes a versatile pan and zoom feature which allows the user to view large scale maps which cover the entire ocean down to street level detail when viewing storm surge inundation information.

Automation

The system allows for automatic forwarding of "Alerts" or "Summary Reports" via Email when new forecasts are issued by the National Hurricane Center. Your associates will be kept informed 24/7. Email alerts are defined for a location when conditions are expected to exceed trigger values.. which include forecast wind speeds, Rainfall totals, Wind probabilities and Strike Probabilities. Users can also set up email alerts when a storm is either in or forecast to enter a geographical region (i.e. the Gulf of Mexico). It looks like you are working 24/7!

Reports

We offer extensive and flexible reporting capabilities identifying the forecast wind speeds for multiple locations during a hurricane. Users can set up a group of locations in order to view one report showing potential impact to all of their assets. Reports include Spreadsheets, Summary Reports and User friendly Narrative Reports.

Google Earth Interface

Hurrtrak has extensive GE export capabilities. With a single click of the mouse, you can view storm animation, wind bands, tracks & observations, wind fields, wind patterns, watch & warning areas, forecast path including average error, rainfall & hurricane models... and a wealth of other weather information.

Tray Alert Messaging (TAM)

We found that Hurrtrak users, busy at their workstations, desired a way to be alerted to new and changing conditions in the tropics. No problem! In 2009 we are introducing a "tray alert messaging" (TAM) system. TAM notifies our users, via pop-up tray messages, of several noteworthy conditions including: the formation of new storms, storm strengthening or weakening, the issuance of watches or warnings, updated storm data, issuance of the last advisory, new tropical weather outlooks, or new tropical disturbance statements.

Narrative Impact Statements

In addition to the summary and detailed impact reports, in 2009 we have added the ability to show a "computer AI generated" narrative description of the impact to a location. This can be viewed for the base location, any location in a summary impact report and/or in the auto generated summary report. Both standard and "executive" formats are available.

SLOSH Inundation Analysis

Perform storm surge inundation analysis viewing information on detailed maps (down to street level) in addition to creating location based storm surge reports. The SLOSH database includes both MOM and MEOW (storm specific) data.

Display of Wind and Storm Surge Probabilities

Users can view the probability of 40 MPH, 58 MPH and 74 MPH winds as well as probability of storm surges (from 2 - 25 feet)...both graphically and via reports.

ESRI Shape file Import & Export

The system has the ability to display Shape files as layers on the hurricane tracking maps. In addition, users can export most of the storm's outputs to Shape files for viewing in GIS software applications. The list of outputs is similar to the Google Earth list noted above.

PC Weather Products

Advanced Wind Estimation Case Study - Hurricane Rita

The following study demonstrates how Advanced wind estimation (AWE) greatly improved the wind estimation accuracy, over standard methods, for Hurricane Rita.

The analysis was done using 20 METAR & research stations whose data reliability is well established.

NOTE: AWE = Advanced Wind Estimation; All wind speeds are for sustained winds... in knots

Location	State	Estimated Max Wind Standard Method	Estimated Max Wind AWE Method	Actual Measured Max Wind	Standard Method Error	AWE Method Error	Standard Method Pct Error	AWE Method Pct. Error
Port Arthur (FCMP) *	TX	105	80	82	23	2	28%	2%
Port Arthur (TTU) **	LA	105	80	81	24	1	30%	1%
KBPT - Beaumont	TX	105	80	70	35	10	50%	14%
Lake Charles Cal. Parish ag	LA	89	61	66	23	5	35%	8%
Orange (FCMP) *	LA	105	62	65	40	3	62%	5%
Nederland (FCMP) *	TX	105	57	57	48	0	84%	0%
KEYW - Key West	FL	63	60	54	9	6	17%	11%
KAEX - Alexandria	LA	55	34	43	12	9	28%	21%
KIAH - Houston	TX	57	39	39	18	0	46%	0%
KHOU - Houston	TX	54	42	38	16	4	42%	11%
KBTR - Baton Rouge	LA	45	28	36	9	8	25%	22%
KMTH - Marathon	FL	47	32	36	11	4	31%	11%
KARA - New Iberia	LA	60	37	34	26	3	76%	9%
KCXO - Conroe	TX	59	41	33	26	8	79%	24%
KLJH - Houston	TX	54	33	33	21	0	64%	0%
KESF - Alexandria	LA	51	36	31	20	5	65%	16%
KUTS - Huntsville	TX	55	36	30	25	6	83%	20%
KMSY - New Orleans	LA	38	21	30	8	9	27%	30%
KLBX - Angleton	TX	45	31	28	17	3	61%	11%
KDWH - Houston	TX	54	35	27	27	8	100%	30%
Average					21.9	4.7	52%	12%

Advanced Wind Estimation improved wind estimation errors from 53% down to 12%

* FCMD station ; ** Texas Tech Univ. site

Additional Comments:

Observed sustained wind speeds ranged from 82 to 27 knots

Locations with error <= 5 knots, AWE - 60%, Standard- 0%

Locations with error <= 10 knots, AWE - 100%, Standard - 15%

Locations with error <= 15 knots, AWE - 100%, Standard - 25%

Locations with error <= 20 knots, AWE - 100%, Standard - 45%

Hurrtrak RMPRO/Advanced 2009 hurricane analysis software was used for this study

This study was compiled and is copyrighted © by PC Weather Products, Inc., 2009

[More case studies are available at http://www.pcwp.com/advancedwindestimation.html](http://www.pcwp.com/advancedwindestimation.html)

Any questions can be directed to George Sambataro (wx@pcwp.com)