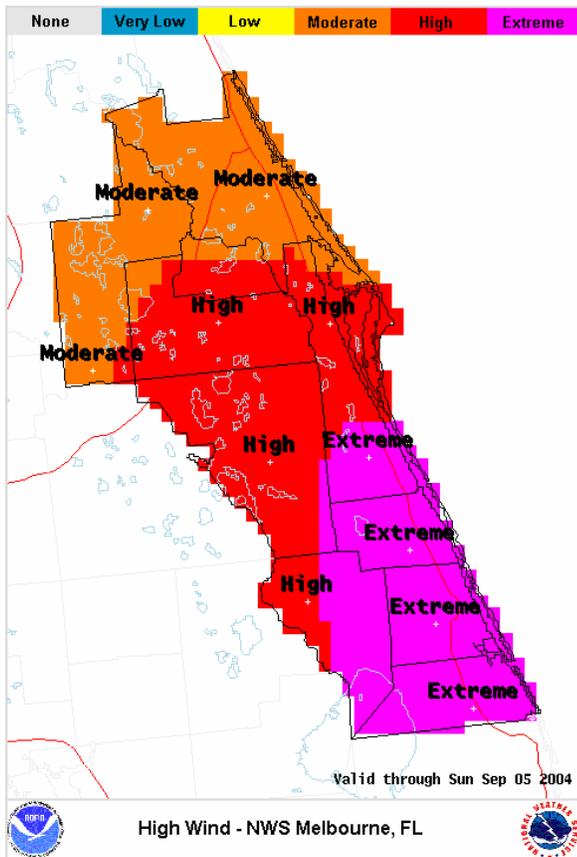




Experimental

Tropical Cyclone Wind Impact Product



Description: Issued by the local Weather Forecast Office (WFO) during tropical cyclone situations, the *Tropical Cyclone Wind Impact* product depicts the potential impact of the associated wind hazard from a location-centric perspective. It responsibly converts the most relevant threat assessment information into descriptions of potential impact using a color-coded index scale ranging from 0 to 5, *None* to *Extreme*. It combines the forecasting expertise of the National Hurricane Center and the local WFO by considering the larger-scale maximum wind speed forecast along with local-scale enhancements, while also accounting for inherent forecast uncertainties in track, intensity, and size of the tropical cyclone. Thus, it effectively employs both deterministic (e.g., wind speed) and probabilistic (e.g., uncertainty) components of the forecast for a more complete expression of the wind threat and corresponding impact. Product release is triggered by the issuance of a tropical cyclone Watch or Warning anywhere within the defined area. Routine updates are provided shortly after each official advisory and are continued until tropical cyclone winds are no longer an immediate threat to local communities.

Utility: The *Tropical Cyclone Wind Impact* product uses an index scheme to distill an abundance of wind information into a single plan-view map that is easy-to-understand. The product is designed to motivate less-sophisticated users to action regarding preparedness activities, while helping to prevent information paralysis. Importantly, it highlights the minimum actions to be taken and relates them to generalized impacts. For more-sophisticated users, this product serves as an excellent starting point for critical decision-making and is a coherent briefing tool. In gridded form, it can be ingested into Geographic Information Systems to address specific vulnerabilities, in context of the actual meteorological situation, for a more detailed assessment of the potential impact from high wind.

For Example: Upon the issuance of a tropical cyclone Watch or Warning, a small business owner might investigate the *Tropical Cyclone Wind Impact* product to determine the extent to which their company's interests are being threatened by the associated wind, accompanied by a generalized description of potential wind impacts within the community. Store managers would be equipped to make responsible decisions. Pickup and delivery schedules may be altered, trucks and buildings secured, and employees released from work as necessary. More so, government officials at all levels would have greater indication of the extent to which certain locations are being threatened, as well as those areas in danger of being hardest hit. Response and recovery resources can be better positioned and managed, with other resources safely secured.

Note: The example image depicts the potential wind impact associated with Hurricane Frances (2004) as expressed within 24 hours of landfall in east central Florida. Graduated definitions are based on the forecast strength of the wind, but also accounting for inherent forecast uncertainty in the track, intensity, and size of Frances.

Tropical Cyclone Wind Impact Definitions

Impact Levels	Description
Extreme	<ul style="list-style-type: none"> • Threat - An extreme threat to life and property; the likelihood for major hurricane-force winds (greater than 110 mph) of Category 3, 4, or 5 intensity. • Minimum Action - Prepare for the likelihood of extreme to catastrophic wind damage. • Potential Impact – An extreme impact to communities within the specified area. Winds capable of causing structural damage to buildings, some with complete wall and roof failures. Complete destruction of mobile homes. Numerous large signs and trees blown down. Many roads impassible due to large debris. Widespread power outages. Damage is consistent with that realized by winds of Category 3, 4, or 5 strength on the Saffir-Simpson Scale.
High	<ul style="list-style-type: none"> • Threat - A critical threat to life and property; the likelihood for strong hurricane-force winds (96 to 110 mph) of Category 2 intensity. • Minimum Action - Prepare for the likelihood of major wind damage. • Potential Impact – A high impact to communities within the specified area. Winds capable of causing significant damage to roofing material, doors, fences, and windows of buildings, but with some occurrences of structural damage. Considerable damage to mobile homes. Many large signs and trees blown down with further damage to standing trees. Some roads impassible due to large debris. Widespread power outages. Damage is consistent with that realized by winds of Category 2 strength on the Saffir-Simpson Scale.
Moderate	<ul style="list-style-type: none"> • Threat - A significant threat to life and property; the likelihood for hurricane-force winds (74 to 95 mph) of Category 1 intensity. • Minimum Action - Prepare for the likelihood of moderate wind damage. • Potential Impact – A moderate impact to communities within the specified area. Winds capable of causing significant damage to mobile homes, especially if unanchored. Some damage to roofing material, doors, fences, and windows of buildings. Several large signs and trees blown down, especially shallow-rooted and diseased trees. A few roads impassible due to large debris. Scattered power outages, but widespread in areas with above ground lines. Damage is consistent with that realized by winds of Category 1 strength on the Saffir-Simpson Scale.
Low	<ul style="list-style-type: none"> • Threat - An elevated threat to life and property; the likelihood for strong tropical storm-force winds (58 to 73 mph). • Minimum Action - Prepare for the likelihood of minor to locally moderate wind damage. • Potential Impact – A low impact to communities in the specified area. Winds capable of causing damage to unanchored mobile homes, porches, carports, awnings, pool enclosures and with some shingles blown from roofs. Large branches break off trees, but several shallow-rooted and diseased trees blown down. Loose objects are easily blown about and become dangerous projectiles. Winds dangerous on bridges and causeways, especially for high profile vehicles. Scattered power outages, especially in areas with above ground lines.
Very Low	<ul style="list-style-type: none"> • Threat - A limited threat to life and property; the likelihood for tropical storm-force winds (39 to 57 mph). • Minimum Action - Prepare for the likelihood of minor wind damage. • Potential Impact – A very low impact to communities within the specified area. Winds capable of causing damage to carports, awnings, and pool enclosures. Some damage to unanchored mobile homes. Small branches break off trees and loose objects are blown about. Winds becoming dangerous on bridges and causeways, especially for high profile vehicles. Isolated to widely scattered power outages, especially in areas with above ground lines.
None	<ul style="list-style-type: none"> • Threat - No discernable threat to life and property; winds to remain below tropical storm-force, but windy conditions may still be present. • Minimum Action - Evaluate personal and community disaster plans and ensure seasonal preparedness activities are complete. • Potential Impact – Wind damage is not expected; impact should be negligible.