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## Another Successful Skywarn™ Recognition Day and Tampa HAM Fest Extravaganza!

By: Anthony Reynes



**Figure 1. Right to left:** Bill Barron (W1WAB), Cameron Badget (K4ACB), and NWS Tampa Meteorologist Anthony Reynes (KJ4FUO) operating the VHF, HF and Echolink stations respectively for WX4TOR during the 24 hour Skywarn Recognition Day celebrations on December 4 starting @ 00z.

Once again, the National Weather Service in Tampa participated in the annual edition of Skywarn Recognition Day (SRD 2010). The event was celebrated during the 24 hour period starting on December 3 at 7 pm. Skywarn Recognition Day was developed in 1999 by the National Weather Service and the American Radio Relay League (ARRL). It celebrates the contributions that volunteer Skywarn radio operators make to National Weather Service operations.

As in past years, we had the privilege of hosting members of our Amateur Radio Community who shared different time slots to operate the UH/VHF rigs under the National Weather Service Tampa call sign “WX4TOR”. William Barron (W1WAB-CERT/Citizen

Corps Coordinator) from Sun City Center, and Cameron Badget (N4KCB) from Saint Petersburg took turns on Friday night from 7-11 pm (see Fig. 1). Ron Eagles (WZ2O) worked the HF rig from 11pm-1am (see Fig. 2). NWS Staff operated the echolink stations during the 24 hours, including Meteorologists Anthony Reynes (KJ4FUO/Skywarn HAM Radio Program Coordinator), Ernie Jillson (KJ4FUJ), Nicole Carlisle (KJ4FUG) and Richard Rude (KE4EXL). On Saturday, Ken Young (K1KEY) operated the HF rig from 7 am and through the end of the event, with Janet Lee Hutchinson (KM4JLH), and Eldon Hutchinson (AK4TH) from the Saint Petersburg Club, as well as William Barron joining the action in the afternoon hours (see Fig. 3).

With this tremendous collaborative effort, we were able to easily surpass the number of contacts from the previous two years with a new record of [302 contacts](#), including stations as far as Canada, Australia and South Korea.

The National Weather Service (NWS) and the ARRL both recognize the importance that amateur radio provides during severe weather.

In addition, the Tampa Bay HAM Fest took place on that same Saturday and Sunday at the Manatee Civic Center in Palmetto, Florida. NWS Tampa was again present this year with a colorful informational booth, manned by Meteorologists Tyler Fleming and Anthony Reynes (see Fig. 4), which included a wide range of printed material and video displays with real-time weather information. It was one of the most crowded HAM Fest events in the last few years.

The celebrations for the weekend ended with a training class of Skywarn, conducted at the Tampa HAM Fest on Sunday afternoon (see Fig. 5). Some 17 new Spotter Observers received their certification after completing the two hour long class, covering both Basic and Advanced sessions.



**Figure 3. Right to left:** Bill Barron (W1WAB), Janet Lee Hutchinson (KM4JLH), and Eldon Hutchinson (AK4TH), were joining the SRD activities Saturday afternoon while Ken Young (K1KEY) works on contacts via HF.



**Figure 2. Right to left:** Cameron Badget (K4ACB), and Ron Eagles (WZ2O) working the “late night shift”, operating the HF rig.

With efforts like these the National Weather Service in Tampa is able to further strengthen the existing partnerships with the community, especially with the Amateur Radio Clubs whose members actively participate in our Skywarn operations, thus contributing an invaluable service to the mission of the National Weather Service when hazardous weather threatens.

On behalf of the Tampa Bay Weather Office, a big, big thank you to all who made it possible for us to have an enormous success during the Skywarn Recognition Day and Tampa HAM Fest 2010 extravaganza!



**Figure 4.** Meteorologists Tyler Fleming (left) and Anthony Reynes (right) at the Tampa HAM Fest in Palmetto FL (Dec 4 2010), manning the NWS Tampa Bay informational booth.



**Figure 5.** Meteorologist Anthony Reynes conducts a Skywarn Training class at the Tampa HAM Fest in Palmetto, FL (Dec 5, 2010). About 17 new Skywarn Spotters were certified after attending the Basic and Advanced sessions.





**Figure 6.** *Top Left:* Meteorologist Nicole Carlisle (KJ4FUG) and Ken Young (K1KEY). *Top Right:* Meteorologist Ernie Jillson (KJ4FUJ). *Bottom Left:* Ken Young (K1KEY). *Bottom Right:* Meteorologist Richard Rude (KE4EXL).

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## Port Meteorological Officer David Dellinger Provides a Presentation and Training at the NWS Ruskin Office

By: Colleen Rhea

One of NOAA's 18 Port Meteorological Officers (PMO), David Dellinger, visited the National Weather Service (NWS) Tampa Bay Area Office the afternoon of January 12, 2011 to give a presentation and to provide training in support of the marine interest programs for Southwest Central Florida.

After introductions, Dave provided background on his career, and how he became the PMO attached to the NWS Forecast Office in Miami. Dave retired from the U.S. Navy after 20 years of service, which included weather observations and operational forecasting on Navy ships. He became involved with the National Weather Service and attained his position as PMO in Ft. Lauderdale in 2008. His area of responsibility covers Ports from Cape Canaveral to Tampa, and includes the Keys.



**Pictured Left to Right:** SCEP Andrew McKaughan, PMO Dave Dellinger, Met Intern Tyler Fleming, WCM Daniel Noah, IMET Rick Davis, Met Intern Nicole Carlisle and MIC Brian LaMarre. Not pictured: SOO Charlie Paxton, DAPM Colleen Rhea, ASA Karen Brown and HMT Tom Dougherty.

An overview of the NOAA Voluntary Observing Ship (VOS) Program followed. Dave explained how the program is a mutually beneficial partnership for NOAA and marine interests. Ship observations are an important addition to the data sources and contribute to the climatology records. This is due to the sparse data availability on the waters due to the required costs of maintaining data buoys and C-Man sites.

Dave reviewed the instrumentation used on most ships as part of the meteorological observing program that the VOS covers. This data is used to generate charts that display current weather conditions at sea. From these, forecasters can get a better understanding of conditions at sea and how the location of weather systems affects marine interests. This then allows for greater accuracy in the forecast of weather conditions.

Guidelines for a ship visit, responsibilities concerning proper inspection and calibration of the pressure instruments, as well as safety concerns were covered.



**Pictured:** PMO Dave Dellinger demonstrating an array of meteorological instrumentation used on ships.

In appreciation of Dave's visit and instructional guidance, NWS' Colleen Rhea presented him with an embroidered NWS Tampa Bay Area, FL cap.



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## 2010 Combined Federal Campaign-“Now More Than Ever”

By: Nicole Carlisle

The Combined Federal Campaign (CFC) is the annual fund-raising drive by federal employees in the workplace. It remains the largest and most successful employee workplace giving campaign in the world. The Suncoast CFC covers West Central Florida and includes more than 30,000 federal employees in 42 agencies, departments, or commands at 365 locations. The theme of the 2010 Suncoast CFC was “Now More Than Ever” and the employees of the Tampa Bay Area NWS Forecast Office contributed to this campaign wholeheartedly.

Twenty two staff members donated \$19,004.22 and as such, the staff members of the Tampa Bay Weather Forecast Office (WFO) have become a cornerstone of philanthropy for more than 2,500 charities around the world and 218 local agencies close to home. Six employees donated over \$1,000 each and were recognized with Gold Eagle Awards. The giving nature of the staff at the Tampa Bay Area WFO remains stronger than ever as they help others. It is remarkable that such a small number of dedicated employees donated so much.



**NWS employees from left to right: Brian LaMarre, Meteorologist-in-Charge; Colleen Rhea, Data Acquisition Program Manager; Tony Harper, Information Technology Officer; Karen Brown, Administrative Support Assistant; Charlie Paxton, Science and Operations Officer**

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## **Record Florida Cold and the Arctic Oscillation**

By: Tom Iovino, guest writer from Pinellas County Communications

The cold temperatures last January, February and this December neared, tied or broke records for severity and duration all across Florida. Just what caused this cold, especially in a place known for its glorious sunshine and warm winter temperatures?

To get to the bottom of this, you have to start at the top – the top of the world, so to speak, with a process known as the Arctic Oscillation or the North Atlantic Oscillation.

Each winter, an area of high pressure dominates in the Arctic and a persistent low pressure area sets up over the North Atlantic Ocean. When the high pressure area in the Arctic is lower than normal, this is known as a positive phase in the process. This phase tends to keep storms further to the north, preventing much of the bitterly cold air over Canada from spilling south.

However, as we have experienced in 2010, when the pressure is higher than normal in the Arctic, we are then in the negative phase. In this set up, cold air spills much further south, leaving areas such as Florida feeling the chill. Since the cold air doesn't pool in the northern latitudes, the temperatures further north tend to be a lot warmer than expected, which explains why Floridians were shivering last February while the Olympians in Vancouver were skiing through slush and rain.

Want More?

Check out the Arctic Oscillation (AO) story from NOAA Climate Services:

- <http://www.climatewatch.noaa.gov/2009/articles/climate-variability-arctic-oscillation>

Check the current status of the AO from the NWS Climate Prediction Center

- [http://www.cpc.ncep.noaa.gov/products/precip/CWlink/daily\\_ao\\_index/ao.shtml](http://www.cpc.ncep.noaa.gov/products/precip/CWlink/daily_ao_index/ao.shtml)

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## HURACANES 2010: NWS Tampa Teams Up with Telemundo Orlando

By: Anthony Reynes

The National Weather Service Tampa Bay Area (NWS Tampa) continued its efforts in expanding local Spanish outreach during the month of November by participating in the special program of Telemundo Orlando for the 2010 Hurricane Season Recap “Resumen de la Temporada de Huracanes 2010”. The show aired during primetime on Thanksgiving Day at 6 pm and 11 pm in place of the regular evening news.

Meteorologist and Spanish Services Liaison Anthony Reynes from NWS Tampa worked closely with Sergio Gonzalez, Telemundo’s Weather Anchor, during the planning and recording stages of the show in order to bring to the public a detailed in-depth analysis of the 2010 Hurricane Season’s outcome (see Fig. 1).



**Figure 1.** Lights, Camera, Action! Weather Anchor Sergio Gonzalez (left) and Meteorologist Anthony Reynes from the National Weather Service in Tampa (right) at the Telemundo Orlando Studios during the taping of the special program for the hurricane season recap “Resumen Temporada de Huracanes 2010” which aired on Thanksgiving Day at 6 pm and 11 pm.



**Figure 2.** “Temporada de Huracanes 2010” aired on Thanksgiving Day on Telemundo Orlando - WTMO which serves the expanding Spanish Central Florida market. The show discussed the happenings, impacts and highlights of the 2010 Hurricane Season, as well as individual summaries for each cyclone that formed in the Atlantic and Gulf basins during the six month season.

The show utilized a combination of hurricane footage, 3-D computer generated graphics, and narratives in order to present the information in a more engaging and dynamic format for the public. Specific subjects included the overall role of the El Niño/La Niña cycle, the climatology of hurricane activity across the Atlantic and Gulf basins, how did the outcome compare with the pre-season outlooks, and the unusual circumstances experienced during the month of August when the Gulf region was threaten by the potential of having a tropical cyclone moving through the area affected by the Deep Horizon oil spill (Fig. 2). All three segments of the show are still available on Telemundo’s affiliate website “Hola Ciudad.com” and can be viewed by clicking on the following link, <http://orlando.holaciudad.com/contenidos/alerta-de-huracanes-2010.html>, and look for the video screen to the right hand side of the webpage.



**Figure 3.** Telemundo Orlando Weather Anchor Sergio Gonzalez hosting NWS Tampa Meteorologist Anthony Reyes in this great collaborative effort.

Efforts like these reinforce the efforts of The National Weather Service in Tampa to proudly participate in media collaborations, as well as develop new and innovative ways of reaching out to our rapidly growing Hispanic community in the Tampa Bay Area and the Central Florida region.

¡Hasta la próxima!



**Figure 4.** *Left-to-Right:* With The Cast of “Telenoticias Orlando”, Weather Anchor Sergio Gonzalez, Reporter Daniela Sanchez, NWS Meteorologist Anthony Reyes, News Anchor Olga Aymat, and Sports Anchor Rafael Carderera.

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## A Historical Review of the National Weather Service (NWS) and Celebrating a 2010 Anniversary of NWS Tampa Bay Area, FL

By: Andrew McKaughan

In March of 2010, people from all over the Bay Area had the opportunity to come visit the National Weather Service (NWS) Weather Forecast Office (WFO) in Ruskin, FL as part of our Open House. The NWS is tasked with providing "weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy."

The National Weather Service originally began as the Weather Bureau in 1870 and was placed under the Secretary of War. In 1890, the agency hired its first civilian employees when it became part of the Department of Agriculture. It remained there until 1940 when it became part of the United States Department of Commerce, where it remains today. In 1890, the local office of the Weather Bureau was located in downtown Tampa. After a few short stints throughout the city it was moved to Drew Field (Tampa International Airport) in 1946. In 1975, a National Weather Service Forecast Office (WFO) was placed in Ruskin, FL as part of NWS modernization to provide services for west central and southwest Florida. The office remained in Ruskin and was modernized in 1995 to a state-of-the art facility including the installation of the NWS Weather Surveillance Doppler Radar (WSR-88D).

As part of the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service has 122 WFOs throughout the continental U.S., Alaska, and Hawaii as well as in American territories such as Puerto Rico, Guam and American Samoa. There are also 13 River Forecast Centers (RFC) strategically placed throughout the country to monitor our nation's rivers. However, the WFOs and RFCs are just a small part of the National Weather Service. There are numerous different branches that study and predict the atmospheric and earth sciences of our planet. One branch even examines phenomenon that take place off of the Earth such as the [Space Weather Prediction Center](#). The following is a listing of a few other branches of the National Weather Service. All of these offices work together in an effort to meet our goal of protecting life and property through enhanced decision making.

- [Storm Prediction Center](#) (SPC)
- [National Hurricane Center](#) (NHC)
- [Hydrometeorological Prediction Center](#) (HPC)
- [Aviation Weather Center](#) (AWC)
- [Climate Prediction Center](#) (CPC)
- [All of the WFOs and other NWS Organizations can be found here!](#)

In celebrating the history of the local NWS Tampa Bay Area office, we opened our doors to the public during an open house on March 6, 2010. Visitors were welcomed to a detailed tour of the office and participated in an exciting day of learning! Numerous NWS employees greeted visitors and provided their meteorological knowledge in answering any questions. Guests participated in a three-part tour of the office learning different aspects of the NWS

mission, weather safety, and weather forecast and data collection activities. The tour began with a presentation explaining the NWS mission and the various forecasts we provide. The tour continued with a demonstration of the Advanced Weather Interactive Processing System (AWIPS) used by the NWS to monitor the weather and issue important forecasts and warnings. Visitors also learned about NOAA Weather Radio and its effectiveness in keeping the public safe during severe weather. The finale of each tour included a hands-on demonstration and explanation of the weather balloon program and the operations of the NWS Doppler Radar. In all, 180 visitors came to help commemorate the 15<sup>th</sup> anniversary of modernized NWS operations and the 35th anniversary of operating in the Ruskin area.



Met. Intern Nicole Carlisle demonstrates a balloon launch



Senior Forecaster Jennifer McNatt demonstrates AWIPS

There was also a raffle in which eight lucky individuals took home either a NOAA Weather Radio or a 4-inch Rain Gauge. Guests also enjoyed viewing our public appreciation wall, highlighting weather photos from around the area sent in from members of the community.

The Tampa Bay Area National Weather Service office in Ruskin will continue to provide west central and southwest Florida with accurate and informative weather information to help protect lives, property, and the enhancement of the national economy.



A view from outside our office in Ruskin

# Frost vs. Freeze

By: Paul Close

Although the terms *frost* and *freeze* are often interchanged, they describe two distinct phenomena. Frost is the formation of ice crystals on the ground or other surfaces in the form of scales, needles, feathers, or fans. A freeze on the other hand has to do with the actual temperature dropping to 32° F (0° C) or lower.



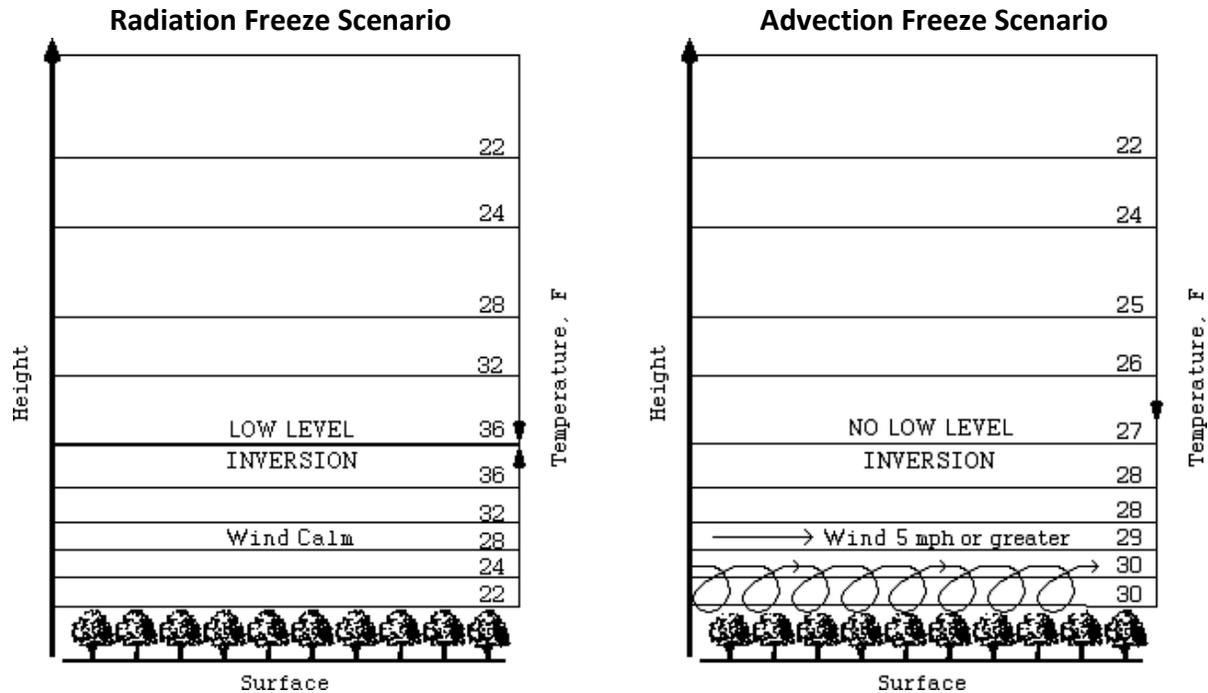
Frosty Morning at NWS TBW, 1/22/09

Frost develops under conditions similar to dew, except the temperatures of the Earth's surface and earthbound objects fall below 32° F (0° C). Because frost is primarily an event that occurs as the result of radiational cooling, and it can occur with a temperature reading in the mid 30's (~2° C). How's that possible; how can there be frost with a temperature reading in the mid 30s (~2° C)? What is important is not what the temperature is at the thermometer, but what the temperature is where the frost forms, and if frost has formed, then the local temperature has dropped below freezing. A thermometer indicates the temperature where the thermometer is, which at official NWS observation sites is at approximately 5 to 6 feet (~1.5 to 2 meters) above the ground. Therefore, because cold air is heavier and sinks relative to warmer air, and because the ground can cool very quickly, the temperature at ground level can be a few degrees cooler than a few feet higher where the thermometer is. Also, certain materials like car metal and glass radiate heat quickly and therefore cool quicker. Areas like rooftops or high plateaus, because of their exposure, lose heat through re-radiation very quickly and tend to receive frost before sheltered areas. On marginal nights you may only see frost on rooftops, cars, and spotty grassy areas. Because of the location or materials, these could cool below freezing while nearby areas remained just above freezing and received no frost.

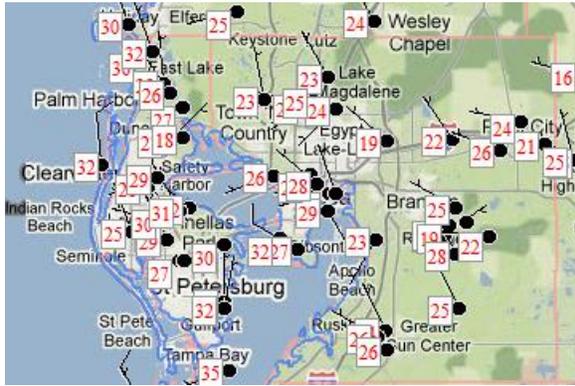
When it comes to freezes there are actually two types, Radiation and Advection. Each of these can cause damage to cold sensitive plants, but frost only forms during a radiation freeze. The table below lists the basic differences between a Radiation Freeze and an Advection Freeze.

Radiation Freeze	Advection Freeze
Winds less than 5 mph	Winds 5 mph or greater
Clear skies	Clear to Cloudy, doesn't matter
Frost possible	No Frost
Inversion develops	No inversion
Plant protection can be successful*	Plant protection not very successful*

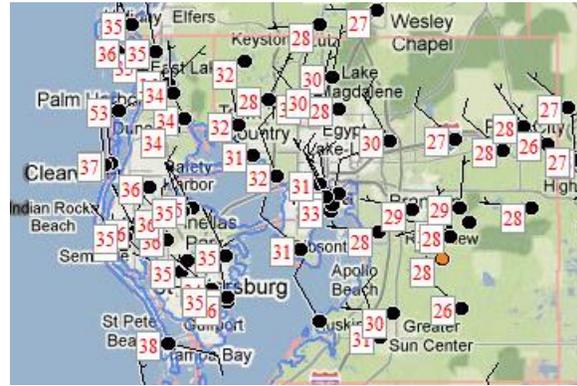
Most of the things in the table above are pretty easy to understand, however the one thing that may not be is Inversion. An inversion is generally a departure from the usual increase or decrease in an atmospheric property with altitude. Specifically in this case, it refers to a temperature inversion, i.e., an increase in temperature with height, or to the layer within which such an increase occurs. During a Radiation Freeze, a low level inversion will develop with nearly calm winds near the surface, while during an Advection Freeze the wind keeps the air mixed which doesn't allow the inversion to form. An example of this can be seen in the images below.



The end result is still freezing temperatures, but with a Radiation Freeze you can get a wide range of temperatures over a relatively short distance due to microclimates such as near lakes and ponds, or low lying areas, while during an Advection Freeze the wind keeps the air mixed and you only see a small difference in temperatures over relatively short distances. An example of this can be seen in the low temperature plots below (taken from the [MesoWest](http://MesoWest) web site) from January 11, 2010 when we had a Radiation Freeze and December 14, 2010 when we had an Advection Freeze.



**Radiation Freeze on January 11, 2010**



**Advection Freeze on December 14, 2010**

In the temperature plot of the Radiation Freeze on January 11, 2010 you can see that temperatures vary by several degrees over rather short differences, while in the Advection Freeze on December 14, 2010 the temperatures only vary by a degree or two over the same distance. And of course the main reason for this difference was the wind. Looking back at the observations from these two nights, the winds were light, less than 5 mph, on January 11, 2010, while on December 14, 2010 the winds were between about 7 and 15 mph.

We here at the NWS Tampa Bay in Ruskin, FL issue a few different products when a frost or freeze is expected. The definitions below are for the fifteen counties within our County Warning Area as shown on the map following the list of products.

- Freeze Watch** – usually issued 24 to 48 hours in advance of when temperatures are expected to be 32° F (0° C) or less over a widespread area for at least 3 hours.
- Hard Freeze Watch** – same as Freeze Watch, but issued when the temperature is expected to drop to 27° F (-3° C) or lower for at least 3 hrs.
- Freeze Warning** – usually issued within 18 hours (sometimes up to 30 hours if confidence is high) that temperatures will fall to 32° F (0° C) or lower over a widespread area for at least 3 hours.
- Hard Freeze Warning** – same as Freeze Warning, but issued when the temperature is expected to drop to 27° F (-3° C) or lower for at least 3 hours.
- Frost Advisory** – issued when frost is expected over a widespread area with temperatures forecast to fall into the lower to mid 30s (~-1° to +2° C), but not to 32° F (0° C) or below for three or more hours. Usually issued when the low temperature is forecast to be near or just above 32° F (0° C), with light winds and clear skies allowing widespread frost to form.



\* For some good information about plant protection from cold visit the following web site and check the several other links found on this page:

[http://gardeningsolutions.ifas.ufl.edu/giam/potpourri/weather/cold\\_myths.html](http://gardeningsolutions.ifas.ufl.edu/giam/potpourri/weather/cold_myths.html)

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### Thank You to all!

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