



# Peak to Valley Weather

The Official Newsletter of the  
National Weather Service Grand Junction

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## Top Honors! GJT NWS SKYWARN Spotters

By Jim Pringle - Warning Coordination Meteorologist



The final results have been tabulated. The Grand Junction NWS participants in the 2010 SKYWARN™ Recognition Day contest came in first place in all three categories for the first time ever!

[www.wrh.noaa.gov/mtr/hamradio/2010/2010History.php](http://www.wrh.noaa.gov/mtr/hamradio/2010/2010History.php)

[www.wrh.noaa.gov/mtr/hamradio/2010/Photos2010.php](http://www.wrh.noaa.gov/mtr/hamradio/2010/Photos2010.php)

SKYWARN™ Recognition Day was developed in 1999 by the National Weather Service and the American Radio Relay League. It celebrates the contributions that volunteer SKYWARN™ radio operators make to the National Weather Service. During the event, SKYWARN™ operators set up

their equipment at NWS offices and contact other radio operators across the world.

The three SKYWARN™ Recognition Day contest categories include:

1. Most number of total contacts
2. Most number of states contacted
3. Most number NWS offices contacted

In recent years, the SKYWARN™ units from Mesa, Delta, and Montrose Counties have achieved first place in at least one category during the annual SKYWARN™ Recognition Day contest.

SKYWARN™ spotters are volunteer mobile storm spotters who use HAM radio to communicate eyewitness re-

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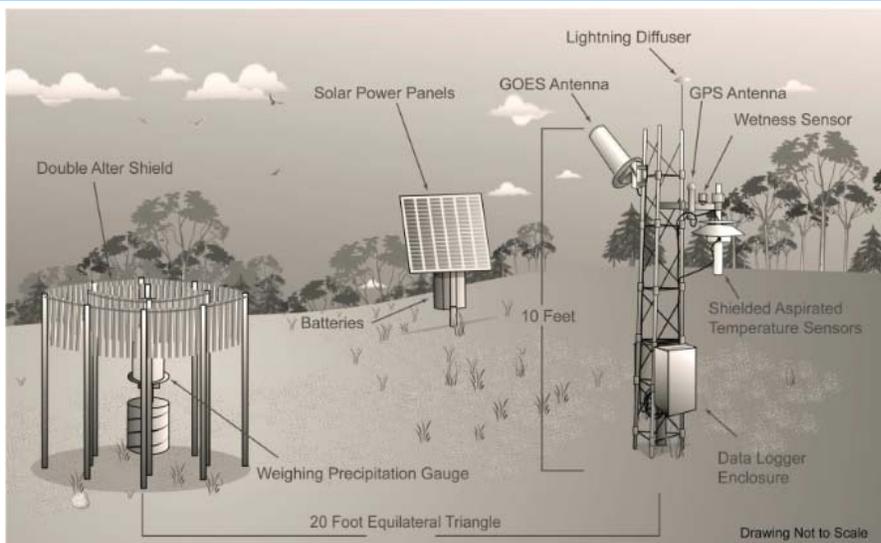
## Special Points of Interest

- ◆ *Upcoming!!!!  
[Spotter Training  
Schedule 2011](#)*
- ◆ *Storm Peak Lab  
Project*
- ◆ *IMPROVED  
Lightning Potential  
Index*
- ◆ *Montrose IS  
StormReady!*
- ◆ *Flood Safety*

## HCN-M - What is it?

By John Kyle, Data Acquisition Program Manager

A new network of stations called the **U.S. Historical Climatology Network - Modernization (USHCN-M)** is now being deployed by NOAA. Beginning with a pilot project in the Four Corners region, USHCN-M stations will be deployed at a 100 km spatial resolution to provide for the detection of regional climate change signals, focusing solely on temperature and precipitation. Following completion of the pilot project, the long-term vision is deployment in each of the nine NOAA climate regions of the United States. USHCN-M stations have triple redundancy and are placed in pristine environments. About



1000 locations in the United States will have one of these stations, or a similar one, at the end of deployment for this project. This project is managed by the Office of Science and Technology in NOAA's National Weather Service and operated in partnership with NOAA's National Climatic Data Center and

NOAA's Atmospheric Turbulence and Diffusion Division.

For more on the project, visit:  
<http://www.ncdc.noaa.gov/crn/hcnm/>

## Storm Peak Laboratory Cloud Property Validation Experiment (StormVEx)

By Michael Meyers, PhD - Science and Operations Officer

Scientists have been busy working at DRI's Storm Peak Lab at Steamboat Springs, Colorado, gathering in-cloud measurements and also verifying the data from radars and other instrumentation that is measuring clouds at four different elevations; one site in town and three within the Steamboat Springs ski area.

[Department of Energy's Atmospheric Radiation Measurement \(ARM\) Climate Research Facility](#), is capturing a "vertical profile" of the clouds as they move across the mountain slopes. "This is the first time we're seeing clouds from the top to the bottom," said Gannet Hallar, Director of Storm Peak Lab and co-principal investigator for the project. "We have the entire mountain covered with remote-sensing instruments and we also have above the mountain covered with the aircraft. This is a very unique opportunity and will lead to a valuable record of cloud data."

To do this, scientists orchestrated by DRI's Ian McCubbin are using nearly two dozen remote-sensing instruments to take continuous measurements from three different elevations beneath Storm Peak Lab, and then verify the data at the lab. He has been working closely with federal agencies, local contractors, utility and internet providers to ensure the success of StormVEx. The [National Weather Service in Grand Junction](#) has been a key player in the project, providing daily forecasting support for StormVEx.

This data set will be crucial for validating ground-based

measurements of liquid, mixed-phase, and precipitating clouds systems and to verify the accuracy of measurements used in computer models of the Earth's climate system. "Some of the largest uncertainties in climate change models have to do with clouds, and in particular, these mixed-



**NWS Grand Junction Staff and StormVEx Scientists inspecting the instrument tower in Steamboat Springs, CO**

phase clouds that are part ice and part water. Those clouds are difficult to model. We have been fortunate to collect data from heavy storm systems and thin clouds, so it's a wide-ranging perspective," Dr. Hallar said. The project will begin wrapping-up this spring with final data collections, and then Dr. Hallar and her colleagues, including the National Weather Service, will begin compiling and organizing all of the data sets.

## Incident Meteorologists—The Hottest Resource in Emergency Response

By Michael Chamberlain, Forecaster and IMET

The National Weather Service (NWS) has a specialized group of Meteorologists that responds to complex wildfires called Incident Meteorologists (IMETs). They undergo formal training to perform these voluntary duties, in addition to regular forecasting, and are considered a national resource. There are approximately 70 IMETs nationwide dispersed among the 122 NWS offices, with the highest concentration being in the western states where wildfires are more prevalent.

When a wildfire reaches the point where local state and federal agencies can no longer control it, they request a national Incident Command Team. Depending upon the severity of the fire, either a Type 1 or Type 2 team may be requested. Type 1 teams are the most highly trained and almost always request an IMET, while about 80% of Type 2 teams request an IMET. All IMETs are dispatched via a NWS liaison in Boise, Idaho, who also coordinates all training.

Response teams follow the Incident Command System. Within this structure, an IMET works in the Planning Section with the Fire Behavior Analyst (FBA) and Plans Chief providing detailed forecasts. Based on this information, the FBA makes fire behavior calculations, including rates of spread and flame length, and then develops tactics for fire suppression. Additionally, the IMET provides crew briefings, daily weather watch and consultation.

Type 1 incidents maintain a "fire camp" consisting of up to 1000 personnel involved in logistics, fire support, suppression and is usually referred to as the Incident Command Post. It operates like a small city where food, laundry, and shower facilities are available. Nearly all firefighters and support people camp out in their own tents. Camp life can be grueling, with most days averaging 15 hours or more. For this reason, the maximum dispatch for all teams is 14 days



**Flat Top Mountains Big Fish Fire 2002**

*continued on page 4*

## National Weather Service Teaches Safety By Jim Pringle, Warning Coordination Meteorologist

Personnel from the Grand Junction NWS office staffed a weather safety booth at the 2011 Mesa County Safety Fair on March 3<sup>rd</sup> and 4<sup>th</sup>. NWS joined about 30 other local



vendors in their goal of keeping our kids safe. Approximately 2300 kids, mostly 2<sup>nd</sup> and 4<sup>th</sup> graders from Mesa County, attended the safety fair and were told how to stay safe from lightning and other potentially dangerous weather events.

The NWS booth provided various hands-on activities and demonstrations to help the children better understand weather and its impact.

Staff handed out about 75 teachers packets to public, private and home school teachers. Every child was given a sticker that says, "WHEN



THUNDER ROARS, GO INDOORS!" to help reinforce good decision making and avoid being caught in a storm.



### MONTROSE COUNTY, COLORADO, IS!

Officials from the National Weather Service praised Montrose County, Colorado, for completing a set of rigorous warning criteria necessary to earn the distinction of being

**StormReady®.**



Montrose County, CO joined over 1,700 counties across the country as a StormReady community, but it is only the third for the Western Slope. This voluntary program help communities develop plans to handle local severe weather and flooding threats.

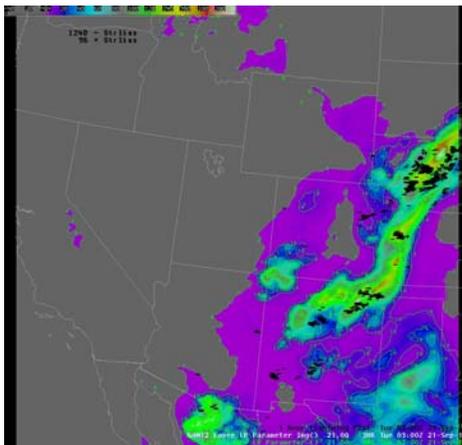
**\*PRESS RELEASE\***

## Improving the Lightning Forecasting By Paul Frisbie, Senior Meteorologist

The Lightning Potential Index (LPI) illustrates the daily lightning threat for planning purposes, for example, a day hike or fishing expedition in the great Colorado outdoors.

The forecasting technique to create the LPI continues to improve as new ideas enhance the methodology. If an improvement in the forecast technique is noted, the algorithm is updated for a better LPI. Weather parameters in the computer models, such as moisture, instability, and wind speed, are used to calculate the LPI. Visual verification is used to check whether the LPI algorithm is useful.

Since 2009, the year this product



became operational, the technique has been updated once. In 2011, the technique will be updated again to reflect the latest ideas that appear to improve lightning fore-

casting.

The National Weather Service currently provides a daily lightning forecast for three time periods, 9 AM – 3 PM, 3 PM – 9 PM, and an outlook for the next day. This forecast can be retrieved online at [www.crh.noaa.gov/gjt/?n=lightningpotentialindex](http://www.crh.noaa.gov/gjt/?n=lightningpotentialindex).

When Thunder Roars,  
Go Indoors!  
[Lightning Safety Week](#)  
June 19-25, 2011

# Flood Safety Awareness

Although Flood Safety Awareness week was recognized March 14-18, 2011, the information is relevant any time during the season. Check out the national [flood safety](#) page to locate valuable resources related to flooding and how to stay safe.



## Will the Chicken Cross This Road? Find out....

UA graduate student Ashley R. Coles sought to understand reasons why people choose to cross flooded washes, finding that most people in her study who crossed had made a calculated, rational decision.

Read Ashley's research here: [FLOODS](#)

*"As little as 6 inches of rapidly moving water can sweep you off your feet."*

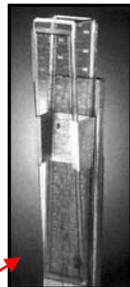
## Gauging the Rain

Precipitation reports are an integral part to the NWS records. They help verify watches, warnings and forecasts issued by meteorologists and serve as a comparison tool against RADAR data.

As soon as it looks like the chance for freezing temperatures will no longer occur:

**wedge rain gauge:** please set your wedge gauge back outside;

**4-inch cylindrical rain gauge:** insert the inner tube back inside the 4-inch cylinder and place the funnel back on the top. Thank you for your reports!



## IMET continued from page 2

before rest and recuperation become mandatory.

Within the last 10 years the IMET mission has transitioned to support of all types of hazards, not just wildfires. They helped with the Columbia Space Shuttle Recovery in Texas in 2003, the Deepwater Horizon oil spill in the Gulf of Mexico in 2010 and during the severe fire seasons in Australia from 2004-2007.

Several large fires in western Colorado which required IMET services, include Storm King, Coal Seam, Missionary Ridge, Big Fish and Cone Mountain. Over the past 10 years, the Grand Junction NWS IMETs have been dispatched to over 30 fires in every state in the west (even Alaska) except Oregon, as well as

twice to Australia.

For more information regarding this program, please visit the following sites:

**Grand Junction Fire Weather -** [www.crh.noaa.gov/gjt/?n=firewx](http://www.crh.noaa.gov/gjt/?n=firewx)

**National Fire Weather -** <http://radar.srh.noaa.gov/fire/>



**Firefighters "foaming" a structure at the Big Fish fire**

## SKYWARN continued from page 1

ports of significant and severe weather to NWS forecasters. SKYWARN™ spotters are a vital component of the NWS' storm warning program for protecting lives and property.

For more information on the SKYWARN™ program visit the [National Weather Service SKYWARN™](#) page or the national [SKYWARN™](#) page.



**SKYWARN™ Spotters gather during local exercise hosted by the Grand Junction, CO NWS office 2010**