

# NEWSLETTER

**National Weather  
Association**

NO. 10 – 6 JUNE 2010

## A Societal Impacts Focus within the National Weather Association

To be certain, “societal impacts” is a term being volleyed about the weather enterprise with increasing frequency over the past couple of years, and with good reason. Be it the 57 lives lost during the Super Tuesday tornado outbreak of 2008, the Southeast United States floods of this past September, the impacts on the aviation industry associated with the Mount Redoubt volcanic eruptions in 2009 and the ongoing Icelandic volcano eruptions, or the winter storms which pummeled the Midwest, Mid-Atlantic, and New England region this past winter, the impacts of natural, weather-related hazards on society are in need of assessment.

Above said, many ask “What is the definition of societal impacts?” In simplest terms, one can define societal impact as a significant effect on our world. For natural hazards, assessing societal impacts would include the quantification of damage amounts in dollars, structures

destroyed, and/or people killed or injured. Going beyond these traditional measures, societal impact-related information could also encompass (1) what information people had about a weather situation and how they interpreted that information, (2) how people perceived the situation, and (3) what decisions they made to protect themselves and their property. A proper assessment of this type of data and information will certainly require the integration of social science knowledge and research. This integration, as part of an in-depth look at social sciences, will be discussed in a future article.

A second question that often arises is “Why is an understanding of societal impacts within the weather enterprise so important?” With respect to community leaders, if we in the weather enterprise are to provide more detailed decision support services, we must have a thorough understanding of what impacts

*See IMPACT, page 7*

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## Great Weather Photographs Needed!

Get published on the front of the next *National Weather DIGEST* with your best shot: flooding, hurricanes, high wind ... Enter your best weather related photograph by July 30 for consideration.



Members can submit photos to [exdir@nwas.org](mailto:exdir@nwas.org) or on CD to NWA Headquarters (mailing address on back of newsletter).

Preferred formats are EPS or TIFF; however, high-resolution JPGs will be accepted.

The cover photo will be selected by the Publications Committee.



## Be Our Fan!

The NWA now has a Facebook Fan page.

View the Fan page [here](#), or search for National Weather Association in Facebook.

Click the “Like” button to see our fan page posts on your Facebook Wall.

We still maintain a **Facebook Group page**, where members can post items and participate in discussions, and a **Twitter account**. Find links to these sites at [www.nwas.org](http://www.nwas.org).

## NWA President: With Thanks to Our Council

The National Weather Association Council met in hot Dallas, Texas, for its 2010 Mid-year meeting on June 4 and 5. There is a lot of business that goes on with our Association, and it was good to see everyone face to face. I'd like to thank all of the Council members who participated in this meeting. We had a full agenda of items. The dedication and energy of the Council members who attended this meeting is why the NWA is the premier organization for operational meteorology. Being a volunteer organization, this participation often involves sacrifices of one's time, job and family. We are all proud of the work you do. One of the key discussion items at this year's Mid-year meeting was developing a more streamlined manner to handle the NWA's affairs. I'll have more details on this discussion in a future column, but during the meeting we discussed and developed a proposal for an "Executive Committee" that would consist of the NWA President, Vice President, President Elect, Secretary, Treasurer (voting members), and Immediate Past-President and Executive Director (non-voting). This committee will, in part, provide guidance on many of the day-to-day operations of the NWA, and they'll ultimately report to the full NWA Council. Over the next few months, we'll formalize the concept behind this Committee.

The NWA Council recently took swift action to review and comment on a high-visibility, potential adverse proposal by the Federal Communications Commission (FCC). According to a request for information found in "ET Docket No. 10-123" by the FCC's Office of Engineering and Technology, the FCC is examining a proposal to open up use of the 1675-1710 MHz band to wireless broadband systems. According to the request for comment, this frequency band *"...is allocated on a co-primary basis for federal and non-federal use for the Meteorological Aids Service and the Meteorological Satellite Service (Space-to-earth). Specifically, this band is used for downlinks from certain weather satellites and radiosondes (weather balloons) that are administered by the National Oceanographic and Atmospheric Administration (NOAA). ... We (FCC) expect that this band is relatively lightly used, both geographically and temporally, and thus could be shared by others."*

Ralph Ferraro, Remote Sensing Committee Chair and former NWA Council member, led efforts to investigate the proposal and work with key NWA partners, to draft an "NWA Advocacy Letter." This letter noted that the NWA community had serious concerns on the proposed opening of the 1675-1710 MHz band, and that there could be serious repercussions on dissemination now and in the future of various remotely sensed data, including from weather satellites and radiosondes. On June 28, we submitted an "Advocacy Letter" to the FCC. A copy of that letter is available on our NWA Web site. [www.nwas.org](http://www.nwas.org).

This year continues to see its share of significant weather events. The most tragic was the terrible flash flood on June 11 that killed 20 people. These people were camping in the popular Albert Pike Recreation Area in the Ouachita National Forest, located in Montgomery County in western Arkansas. This storm system was the same one that earlier on June 9 caused significant



flash flooding in central Texas. On the night of the 11<sup>th</sup>, the Little Missouri River that runs through the Pike recreation area rose almost 20 feet in just a few short hours after six to seven inches of rain fell over just a few hours time. A record crest of 23.4 feet occurred on the Little Missouri in nearby Pike County near Langley, which shattered the previous record flood crest by nearly 10 feet. Even though there was advance notice of the potential for flash floods, (a flash flood watch was posted) and flash flood warnings and statements were issued by the Little Rock NWS Weather Forecast Office, warning campers of the flooding proved difficult because the flooding occurred in the middle of the night combined

with the difficulty of effective communications to campers due to remoteness of the Pike campground. Already, the U.S. Forest Service, who runs this campground, has been asked by the U.S. Senate and House to work with the U.S. Geological Survey, NOAA and local and state officials *"...to determine how to improve emergency warning systems for campground visitors at Albert Pike (Recreation Area)..."*

The catastrophe caused by the Deepwater Horizon platform oil spill continues in the Gulf of Mexico. As response efforts continue, the beginning of hurricane season is a huge concern to recovery efforts. In addition to National Oceanic and Atmospheric Administration (NOAA) website mentioned last month, there is a joint website developed by NOAA, the Environmental Protection Agency, the U.S. Coast Guard and the Department of the Interior that provides an interactive online mapping capability to provide near-real time information on response efforts in the Gulf: [www.geoplatform.gov/gulfresponse/](http://www.geoplatform.gov/gulfresponse/). In addition, the U.S. Integrated Ocean Observing System (IOOS), comprised of government, academic and private partners, maintains this site: [rucool.marine.rutgers.edu/deepwater/](http://rucool.marine.rutgers.edu/deepwater/). It contains a wealth of data on efforts to monitor the effects of the spill. Also, the National Hurricane Center (NHC) has implemented an additional fixed point to its Tropical Cyclone Wind Speed Probability text product, corresponding to the location of the Deepwater Horizon oil spill. More information on this new point, along with a fact sheet on how tropical systems could impact the spread of the oil spill, can be found on the main NHC Web site: [www.nhc.noaa.gov/](http://www.nhc.noaa.gov/).

Finally, congratulations to NWA member Ray Ban, formerly of the Weather Channel; he was recently selected by NOAA's Administrator, Dr. Janet Lubchenco, as the new chair of NOAA's Science Advisory Board (SAB), the only federal external advisory committee charged with providing advice on long- and short-range strategies for research, education and the application of science to resource management and environmental assessment and prediction.

Any questions/comments, please feel free to send email to me: [President@nwas.org](mailto:President@nwas.org).

**Steve Zubrick**  
NWA President





*Council picture taken at 2010 midyear meeting. From left to right: Ruth Aiken, Steve Harned, Faith Borden, Jeff Waldstreicher, Steve Listemaa, John Gordon, Mike Vescio, Rusty Billingsley, Randy Graham, Jill Hasling, Bruce Thomas, Jeff Craven, Wendy Schreiber-Abshire, Pat Market, Elise Schultz, Jeff Evans, Steve Zubrick, John Scala, Bernard Meisner.*

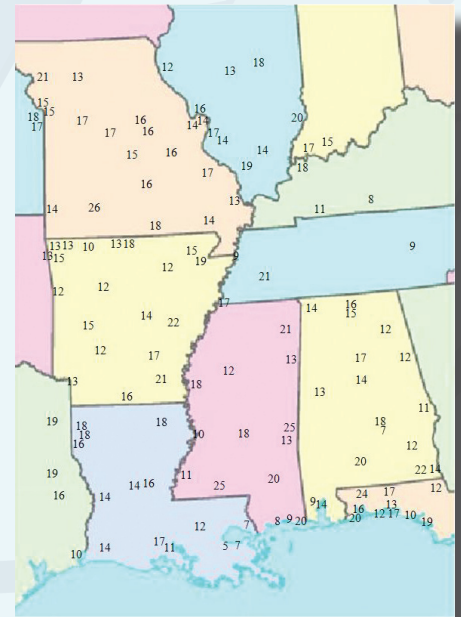
### EJOM Bring Icing Nowcasts and Temperature Guidance On-Line

Two new papers have been published in the 2010 edition of the NWA Electronic Journal of Operational Meteorology (EJOM). Find these papers at [www.nwas.org/ej/index.php](http://www.nwas.org/ej/index.php).

**NWA EJOM Paper 2010-EJ02:** "Evaluating Icing Nowcasts using CloudSat." The authors are Thomas F. Lee, Cristian Mitrescu, Richard Bankert (NRL), Cory A. Wolff (NCAR) and Steven D. Miller (CIRA). Profiles from the orbiting NASA CloudSat instrument offer unprecedented vertical cross sections of weather systems. In particular, cloud systems containing supercooled liquid water, and therefore aircraft icing, can be examined in detail. This paper presents several examples and then performs a statistical comparison of CloudSat vertical information to the Current Icing Potential (CIP) available through the Aviation Digital Data Service (ADDS).

**NWA EJOM Paper 2010-EJ03:** "Skillful Utilization of the GFS Ensemble MOS Temperature Guidance" authored by David Eversole of the NWS Mobile, Ala. Global Forecast System (GFS) model output statistic (MOS) temperatures (GMOS) and GFS ensemble MOS average temperatures (EMOS) and maxima and minima were analyzed to determine when the EMOS outperformed the GMOS. Three major groups were identified as opportunities for the EMOS to outperform: when the GMOS was equal to either the maximum or minimum of the GFS ensemble MOS temperature (Group H/L), a second in which the GMOS was within one degree (F) of the maximum

or minimum of the GFS ensemble MOS (Group +1/-1), and a third which contained the remainder of the data set (Group Rest). An algorithm was developed to evaluate each of the three main groups subdivided by forecast period, month and degrees (F) per standard deviation. Group H/L identified most of the situations in which the EMOS had higher skill. EMOS higher skill tended to be found in mid to long forecast ranges, with seasons and degrees per standard deviation also having a strong influence. Overall, the algorithm produced a 15.2% improvement in Root Mean Squared temperature error over the GMOS when the EMOS was utilized in lieu of the GMOS.



*Algorithm root mean square error percent improvement of EMOS over GMOS.*



## 1. Introduction: NPP and NDE

Though the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program is being re-structured, the NPOESS Preparatory Project (NPP) remains slated for launch in 2011. The NOAA NPOESS Data Exploitation (NDE) project will provide real-time operational civilian users with access to NPP observations. Through NDE, users can receive polar-orbiting satellite data to maintain their current mission capability, or take advantage of the improved and expanded suite of products that NPP sensors will make possible. NDE will tailor the generic NPP environmental, sensor, and temperature data records (xDRs) received from the Interface Data Processing Segment (IDPS) to satisfy user-required attributes for data format, coverage, product frequency, and map projection. In addition, NDE will apply value-added science algorithms to certain xDRs to generate NOAA-unique products (NUPs) that meet NOAA-unique mission requirements.

## 2. NPP Instrumentation

Four NPP sensors will be used to collect atmospheric, land, and ocean data globally for meteorological and climatological applications. These instruments are the Cross-track Infrared Sounder (CrIS), the Advanced Technology Microwave Sounder (ATMS), the Visible/Infrared Imager/Radiometer Suite (VIIRS), and the Ozone Mapping and Profiler Suite (OMPS).

## 3. NDE Product Development

NDE's tailoring toolkit will reformat the suite of xDRs ingested from the IDPS from the native HDF5 into user-required formats including NetCDF4, BUFR, and GRIB2, to facilitate assimilation into Numerical Weather Prediction models. NDE will create a NUP only if there is a documented NOAA requirement for a capability not met by the xDRs and resources are available to develop and implement the product. Since continuity of current capabilities from legacy polar satellites (POES, EOS and DMSP) is of the highest priority, initial NUPs will be atmospheric soundings, microwave surface and precipitation products, and derived sea surface temperature products. However, NOAA will also exploit new sensing capabilities from NPP. Subsequent NUPs for which science algorithms are being developed or considered include polar winds, green vegetation fraction and health, blended total precipitable water, atmospheric chemistry data records, and improved ocean color.

### 3.1 CrIS/ATMS

Hyperspectral infrared data improve knowledge of temperature, moisture, and ozone, for weather and climate applications. NDE will generate hyperspectral products from CrIS data collocated with the ATMS field of regard while using the VIIRS instrument for cloud clearing. These products will provide continuity for similar data currently available from Aqua AIRS/AMSU-A and Metop IASI/AMSU-A.

Simulated CrIS Radiance, Ascending, April 25, 2007

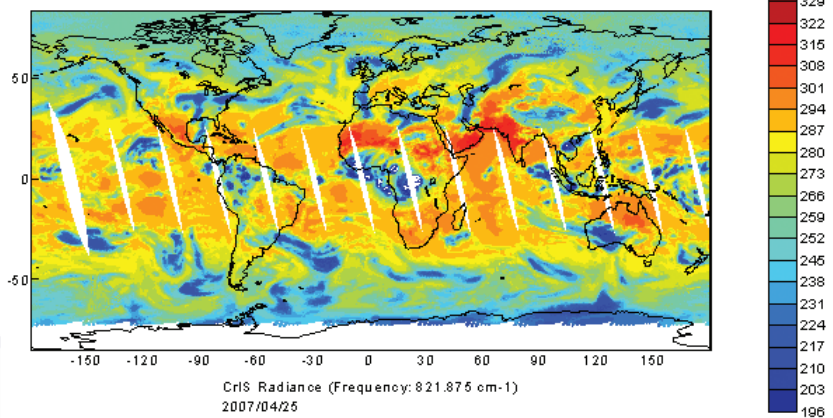


Fig. 1. Simulated CrIS radiances.

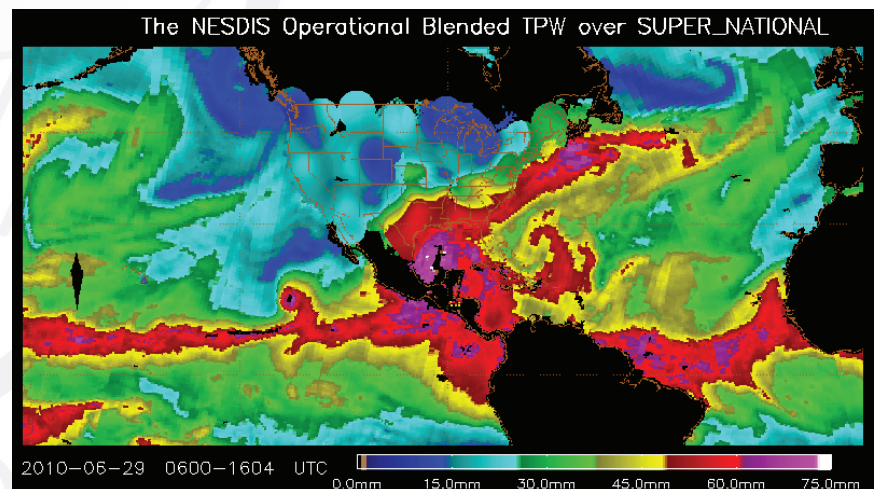


Fig. 2. Data from NPP's ATMS will be blended into the current operational TPW product.

CrIS/ATMS products will include channel radiances such as those depicted in Figure 1, principal components (compressing 1305 radiances into ~85 independent values), cloud cleared radiances, ozone retrievals, and retrievals of carbon dioxide, carbon monoxide, methane, and nitric acid. Additional products from CrIS/ATMS will include cloud top pressure and cloud fraction; stability products such as convective available potential energy, lifted index, and convective inhibition; and surface emissivity.

### 3.2 ATMS

Products from microwave instruments are generated for all weather and surface conditions. Microwave products are used to improve NWP models, provide estimations of rainfall, provide long-term continuity to monitor El Niño, water cycle changes, and long-term climate, and to nowcast tropical cyclones using microwave imagery. Products will include temperature and moisture profiles, land surface temperature and emissivity, snow water equivalent, snow cover, sea ice concentration, cloud liquid water, total precipitable water (TPW), ice water path,

instantaneous rain water path, and rain rate. These global products will continue to enhance NOAA's weather forecasting and climate monitoring capabilities. ATMS products provide for continuity with POES and Metop AMSU-A and MHS products.

A blended TPW product will use ATMS data, as well as microwave data from other satellites. This single product provides forecasters with a more complete observation of the movement of moisture in the atmosphere and gives the ability to track moisture plumes. This is not possible using individual sensors due to the orbital gaps. The blended TPW product such as is depicted in Figure 2, provides forecasters with continuity on the changing levels of moisture from the ocean areas and helps pinpoint the location of heavy precipitation for use in flood forecasting. It is also used to track tropical waves and their temporal evolution. TPW anomaly products show the departure from climatology and help to quickly identify areas of strong flooding potential or the potential for fire hazards. These products will be generated globally and will also be sectorized into AWIPS regions.

### 3.3 VIIRS

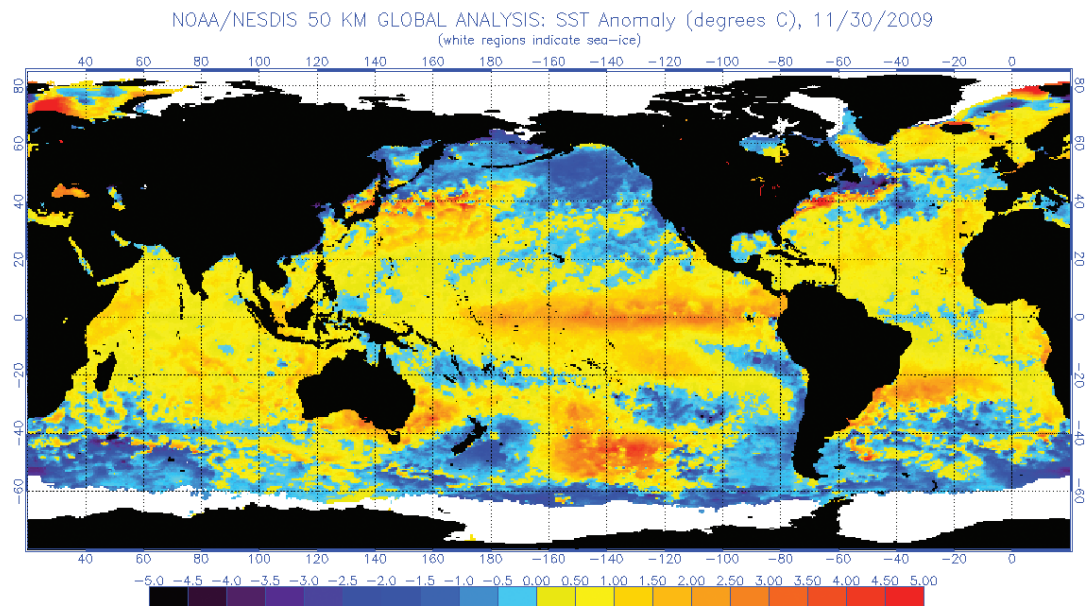
Sea surface temperature (SST) products are used as an input to environmental models and in climate and ecosystem analyses. SST anomaly products (Figure 3) provide early warnings of coral bleaching, assessment of El Niño and La Niña development, and monitor the cooling following hurricane passage. Several derived products will be generated from NPP's VIIRS data, including SST anomalies, hot spots, and degree heating weeks; global and regional SST analyses; global analyses of aerosol optical thickness (AOT); monthly means of SST and AOT; coral bleaching indices and alerts; and blended products.

NDE will generate polar winds from VIIRS for the Arctic and Antarctic from 65 degrees latitude poleward. Tropospheric winds are measured by tracking the motion of cloud features in the overlapping region of three successive orbits. A triplet of images is used to facilitate consistency checking and quality control. Wind products include wind speed, direction, and height at high latitudes.

Green vegetation fraction (GVF) is used as an input to land surface models to provide a better characterization of the surface. NESDIS will evaluate the vegetation environmental data records, compare VIIRS composites to the legacy baseline for consistency, implement algorithm enhancements, and tailor the products for use by NWP models and continuity requirements. NDE's SST, GVF, and other VIIRS-based products will provide mission continuity from the AVHRR on POES and Metop.

### 4. NDE Data Distribution

NDE users will subscribe to NPP xDRs and NUPs through a Web-based interface. An NDE database will contain the definitions of products, algorithms, product generation rules, files, user profiles, subscriptions, interfaces, and resources. NDE



*Fig. 3. Sea surface temperature anomaly products will be generated from VIIRS.*

will make products available based upon the rules in each user's subscription. The subscription database will contain a list of xDRs and NUPs, along with their pre-defined tailoring options. Optional parameters that may be selected will include limiting the distribution by spatial coverage area, data quality threshold, file compression type, delivery mechanism, and notification options. During post-launch testing, NDE will ensure that the NOAA user community, including NWS, NOS, and NMFS, has access to priority products to evaluate them and prepare to use them in operations.

### 5. Summary

NDE will link the NPP satellite to real-time civilian data users. The NDE Project will begin providing tailored products from NPP to NOAA's user community after the launch and checkout of the satellite. NESDIS has started product development projects to prepare for NPP data and is developing capabilities to process and disseminate those products. The primary focus of NDE will be to ensure that legacy capabilities from POES, EOS, and DMSP are maintained and exploited using NPP data. As new user requirements are defined and validated, NDE will develop and implement additional NPP products.

### References

- NPOESS Data Exploitation  
<http://projects.osd.noaa.gov/NDE/>
- Operational Blended Total Precipitable Water  
<http://www.osdpd.noaa.gov/bTPW/>
- Operational Coral Bleaching Products  
[http://www.osdpd.noaa.gov/ml/ocean/coral\\_bleaching.html](http://www.osdpd.noaa.gov/ml/ocean/coral_bleaching.html)
- Operational IASI Products  
<http://www.osdpd.noaa.gov/IASI/>
- Operational MIRS Products  
<http://www.osdpd.noaa.gov/ml/mirs/>
- Operational Vegetation Products  
<http://www.osdpd.noaa.gov/ml/land/vegetation.html>
- Polar Winds Products  
<http://stratus.ssec.wisc.edu/projects/polarwinds/>



## 35th NWA Annual Meeting: Pre-register Now!

The NWA 35<sup>th</sup> Annual Meeting will be held from Oct. 2 – 7, 2010 at the Marriott Tucson University Park Hotel, Tucson, Ariz.

**ANNUAL MEETING PREREGISTRATION** (through Sept. 24): The preregistration fee includes a preprint volume with program and abstracts. For the period of days registered, it also includes: admission to all oral presentations, poster sessions, and exhibit sessions plus coffee/refreshment breaks. Full registration includes the Wednesday Awards Luncheon. Registration after the preregistration period will result in fee increases of \$15 to \$50.

### Annual Meeting Hotel Information:

Marriott Tucson University Park

NWA room rates (reserve by Sept. 1 to get these rates!):

Single & Double room rate: \$106.00

Standard Suites: \$139.00

Call 1-800-228-9290 and request the National Weather Association 2010 Annual Meeting rate to reserve your room.

[www.marriott.com/hotels/travel/tusup-tucson-marriott-university-park/](http://www.marriott.com/hotels/travel/tusup-tucson-marriott-university-park/)

### Pre-registration Fees (through Sept. 24):

#### Sun., Oct. 3: Broadcast Workshop and DVD Swap (8 a.m.–11 p.m.)

- \$100 NWA members and presenters
- \$50 students and retired members
- \$140 for non-members
- \$95 for non-member students and retired

#### Sun., Oct. 3: Student Seminar and Resume night session (1 p.m.–11 p.m.)

- \$35 NWA student members
- \$50 for non-member students

#### Mon.–Thurs., Oct. 4 - 7: General Sessions/Activities

- \$240 NWA members and presenters
- \$125 students and retired members
  - \$280 for non-members
  - \$175 for non-member students and retired

#### Special One-Day Rates for period Oct. 4 – 7

- \$95 NWA members and presenters
- \$50 students and retired members
- \$120 for non-members
- \$90 for non-member students and retired

#### Special: All events Sun.–Thurs.

- \$330 NWA members
- \$410 for non-members

#### Special Student: All events, Sun.–Thurs.

- \$145 NWA members
- \$215 for non-members

### Pre-Register On-Line by credit card (MC or Visa):

- Attending Broadcast Workshop and/or most of the General Session register at: [www.nwa-registration.org/register.shtml](http://www.nwa-registration.org/register.shtml)
- Attending Broadcast Workshop and/or only a day or two of the General Session register at: [www.nwa-registration.org/registerbyday.shtml](http://www.nwa-registration.org/registerbyday.shtml)

### Pre-Register by Mail:

**Mail this form with full payment of fees by Sept. 24, 2010** to: NWA Meeting, 228 West Millbrook Road, Raleigh NC 27609-4304 USA. Make payment to "NWA" in U.S. funds by a U.S. bank check, money order or government/institution purchase order.

Name (for nametag): \_\_\_\_\_

Employer, School or other Affiliation (for nametag): \_\_\_\_\_

City/State (for nametag): \_\_\_\_\_

Telephone number: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Arrival Date at meeting: \_\_\_\_\_

Departure Date from meeting: \_\_\_\_\_

Preregistration fees: \$ \_\_\_\_\_

Extra Luncheon tickets (\$30 each): \$ \_\_\_\_\_

Attending Icebreaker, Mon. evening, Oct. 4 (No cost): ☐ Yes ☐ No

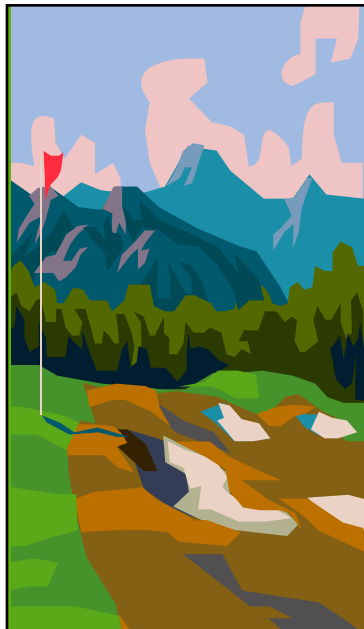
"Golfing for Scholarships", Sat., Oct. 2 (\$75): \$ \_\_\_\_\_

Total funds included: \$ \_\_\_\_\_

### Please Circle ALL following phrases that apply to you:

|  |                                     |            |         |
|--|-------------------------------------|------------|---------|
| NWA member   | NWA local chapter member            | Non-member | Student |
| Retired  | Session Chair                       | Presenter  |         |
| Program committee member   | Local Arrangements committee member |            |         |
| Bringing a DVD to the DVD Swap                                       | Attending DVD Swap without a DVD    |            |         |
| Student with broadcast DVD for critique at Sunday Resume/DVD session |                                     |            |         |

If a non-member joins, they will immediately be eligible for the member rates



*8<sup>th</sup> Annual*  
**National Weather Association**  
**Golf Outing** *to benefit NWA Scholarships*

Saturday, October 2

Randolph Golf Course, Tucson

Tee times: 11 AM or 1 PM

**\$75**

(includes fees, cart, lunch, range, and donation to scholarship fund ... rental clubs available for \$20)

Info and reservations: [betsykling@wkyc.com](mailto:betsykling@wkyc.com)

*IMPACT from front*

their operations, so that we can tailor our messages to meet their needs. Effective message delivery to the public is even more challenging given our diverse country. Research within the weather enterprise has illustrated the complexities of how the public receives and responds to weather information. The entire weather community must better understand the myriad ways in which people gather and interpret warning information, perceive it, and ultimately make their decisions. This integrated approach will foster enhanced products and services and more effective communication. Again, the integration of social science knowledge and research will be necessary.

To effectively address these challenges, we have to take a holistic approach. Such an effort must encompass public and private-sector providers of weather information, academia, emergency response and safety officials, and the public whose lives depend on receiving and understanding the information and taking protective action. To assist in this effort, the NWA has chartered the Committee on Societal Impacts of Weather and Climate. The Committee's mission is to (1) advise and serve the NWA in matters related to societal impacts of weather and climate, (2) raise awareness, encourage, and support efforts within the NWA relating to societal impacts of weather and climate, (3) support the application of social science principles into operational meteorology and decision support for hazardous weather and high impact events, as well as day-to-day forecasting

and operations, and (4) develop and strengthen relationships between social scientists, operational meteorologists, and decision makers, particularly those responsible for public safety. Please visit the Committee Web page at <http://www.nwas.org/committees/societalimpacts> to learn more about the efforts of the Committee, to view a listing of its members, and to access an exhaustive list of societal impacts resources, including a link to join the Societal Impacts Program Discussion Board.

As we strive to better understand how our weather, water, and climate forecasts impact the lives of the people we serve, and the many people who work to protect those same people from weather-related hazards, **our 2010 National Weather Association Annual Meeting's theme directly addresses this expanding need: *Fire and Ice; Science and Society***. In the past year, many of us dealt with these critical issues first-hand as we experienced some of the worst winter, severe weather, and flood events in many years. Trying to convey the seriousness of these events in a measured and informative manner, while trying to motivate the public and key decision makers to take appropriate action, became just as important as the weather and water forecasts themselves.

**Kevin Barjenbruch**  
*Chair, Committee on Societal Impacts of Weather and Climate*

**Erik Pytlak; Chair, 2010 Annual Meeting Program Committee**

## NWA Sponsored Annual Meetings & Conferences

### Aug. 12–13: The 14<sup>th</sup> Annual High Plains Conference

Sponsored by the High Plains American Meteorological Society/NWA Chapter, it will be at the Student Union Building on the campus of Dodge City Community College in Dodge City, Kan. Abstracts including student competition entries are due 15 July.

<http://www.highplains-amsnwa.org/>

### Sept. 17-18: Ninth Annual Southeast Severe Storms Symposium

Sponsored by the East Mississippi Chapter of the NWA and AMS, it will be on the campus of Mississippi State University. Abstract submission is open until Aug. 15. Registration is open until Sept. 10. A Conference Scholarship is also available.

<http://www.msstate.edu/org/nwa/>

### Oct. 2–7: 35<sup>th</sup> Annual Meeting of the National Weather Association

This meeting will be in Tucson, Ariz. See page 6 and [www.nwas.org](http://www.nwas.org) for details.

### Oct. 24-26: The National Flood Workshop

This conference, sponsored by many agencies including the NWA, will be held in Houston, Texas.

## Other Meetings and Conferences

### Sept. 27-30: 17<sup>th</sup> Conference on Satellite Meteorology and Oceanography

Sponsored by the AMS, it will be in Annapolis, Md.

<http://www.ametsoc.org/MEET/meetinfo.html>

### Nov. 2-4: 14<sup>th</sup> Annual Great Divide Workshop

This workshop will be held at the Crowne Plaza in Billings, Mont. Send abstracts to [Wr.Great.Divide.Workshop@noaa.gov](mailto:Wr.Great.Divide.Workshop@noaa.gov) by Oct. 1.

[www.wr.noaa.gov/byz/greatdivide/welcome.php](http://www.wr.noaa.gov/byz/greatdivide/welcome.php)

# don't miss these important Tucson deadlines

Sept. 1 – Last day to obtain NWA rate at the  
Marriott Tucson University Park

Sept. 24 – Last day for discounted pre-registration fees

The 35<sup>th</sup> Annual NWA Meeting : Oct. 2 – 7, Tucson, Ariz.

(see page 6 for details)

## Dates 2 Remember

**Aug. 12-13:** 14<sup>th</sup> High Plains Conference, Dodge City, Kan.

**Sept. 1:** Deadline for obtaining NWA conference rates at Tucson Hotel

**Sept. 24:** Deadline pre-registering for Annual Meeting and getting reduced rates on the conference

**Sept. 17-18:** 9<sup>th</sup> Southeast Severe Storms Symposium

**Oct. 2-7:** 35<sup>th</sup> National Weather Association Annual Meeting, Tucson, Ariz.

**Oct. 24-26:** National Flood Workshop, Houston, Texas

*See page 7 for more Professional Development Opportunities and details about attending the 35<sup>th</sup> NWA Annual Meeting!*

### NWA Newsletter (ISSN 0271-1044)

*Contributing Editor:* Janice Bunting

*Editor and Publisher:* Steve Harned, Executive Director

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Submit newsletter items directly to the NWA office or to [nwanewsletter@nwas.org](mailto:nwanewsletter@nwas.org). Material received by the 25<sup>th</sup> will be considered for the next month's issue.

Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Printed Newsletter subscriptions are available for \$25 per year plus extra shipping costs outside U.S. Single copies are \$3. **Address, phone number, email and affiliation changes can now be made online at the member portal.**

*Supporting and promoting excellence in operational meteorology and related activities since 1975.*

**National Weather Association**  
228 W. Millbrook Rd.  
Raleigh, NC 27609-4304  
*Address Service Requested*