



# NOAA Central Region Collaboration Team

*2016 Report: Addressing Regional Challenges and Fostering Collaboration*



*The NOAA Central Region Collaboration Team is pleased to present this report and detail accomplishments from 2016 activities and projects developed to advance NOAA's mission and priorities.*

*The 2016 Report is organized by NOAA Regional Collaboration Goals:*

*Address regional challenges by connecting people and resources*

*Exchange both national and regional insights that inform action*

*Improve the understanding of and respect for NOAA's broad mission and regional capabilities*



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**Regional Collaboration  
Core Values:**

**Regional knowledge  
and context matter**

**Partnerships and  
shared responsibility  
are foundational**

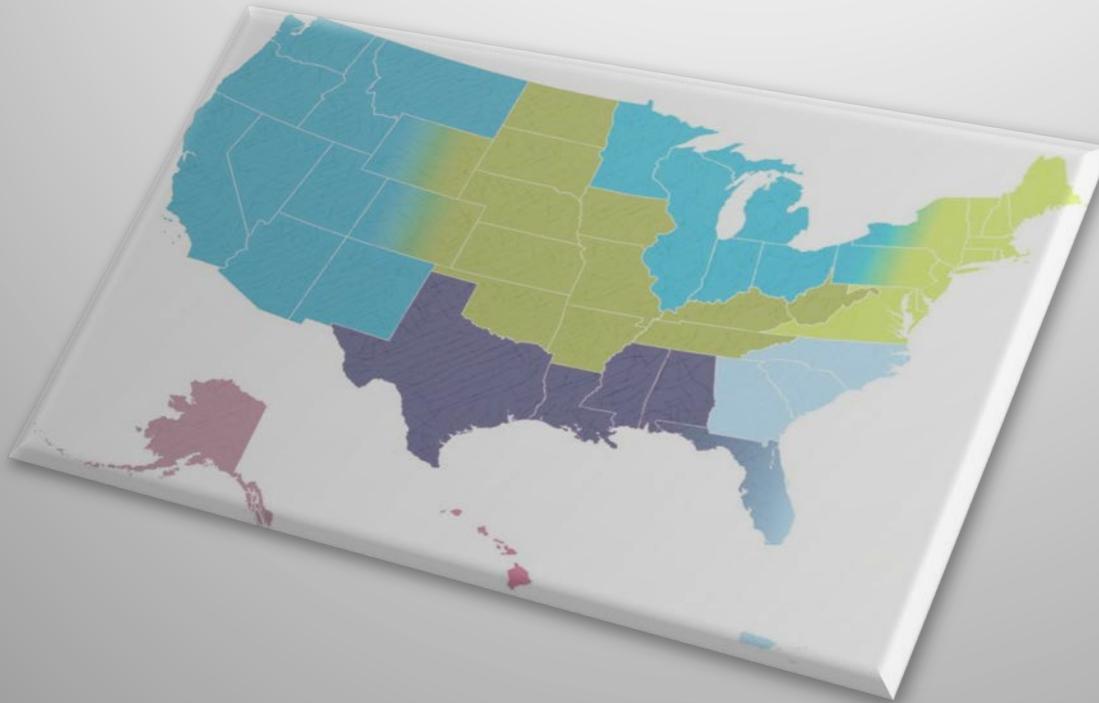
**Relationships are based  
on *mutual trust* and  
*respect***

**Collaboration is  
essential to successful  
leadership**

**Innovation and  
creativity are integral to  
executing NOAA's  
mission**

# NOAA Regional Collaboration

NOAA confronts complex challenges that are place-based and require interdisciplinary approaches and regionally tailored solutions. To support these endeavors, and work to help NOAA meet increasing demands for services, NOAA's Regional Collaboration Teams are positioned to facilitate collaboration at the regional level, as well as tap into resources and capabilities.



Established in 2007, NOAA Regional Collaboration is a network of NOAA employees and partners representing the agency's diverse capabilities across the country. The eight Regional Teams include a varying number of team members, are led by senior level Regional Team Leads and full-time Regional Coordinators. The Teams are supported through a National Regional Team Lead, HQ liaison and an Advisory Group representing headquarters-level Line Office Leadership. NOAA's Regional Collaboration Network is overseen by the NOAA Executive Panel. The network represents NOAA's broad mission and line office mission interests, and is connected both across NOAA and within regional and local communities.

## *Regional Collaboration Mission:*

*To identify, communicate, and respond to regional needs, catalyze collaboration, and connect people and capabilities to advance NOAA's mission.*

## *Regional Collaboration Vision:*

*A unified and regionally integrated NOAA*

# NOAA's Central Region

NOAA's Central Region includes 13 states in the interior of the country. Serving as the “bread basket” of the world, the effects of severe weather, climate extremes, water quality and water quantity issues have great economic and ecological impacts to the nation.

The Central Region includes a variety of ecosystems, a highly diverse climate, and large geographic variation in temperature and precipitation across the region. The four largest watersheds in the nation are located in the Central Region– the Mississippi, Missouri, Ohio and Arkansas Rivers. In addition to flooding and drought events, water draining into these basins makes up the balance of the fresh water flow into the Gulf of Mexico and has a profound impact on ecosystems.

The Central Region is home to a diverse cultural, geographical, and economic population. The need for NOAA products, services and information to make informed decisions is increasing. From drought planning, building resilient communities, preventing agricultural runoff, and working with core partners to prepare and respond to severe weather events – NOAA's expertise and role as a trusted source of environmental information is vital. Regionally tailored information to address unique needs and apply specific resources is an effective way to ensure decisions are made with the best information available.

*NOAA assets in the Central Region include more than 1,500 employees and a host of facilities ranging from weather forecast offices to research laboratories.*

*NOAA staff are concentrated in three large office centers in Boulder, CO, Kansas City, MO and Norman, OK.*



# NOAA Central Region Team Members

Team members represent the diversity of programs within the region, provide expertise and connections to address regional challenges, and improve the understanding of NOAA's mission.

## ***NWS***

**Dianne Suess** – NOAA Space Weather Prediction Center  
Boulder, CO

**David Hintz** – Weather Forecast Office  
Rapid City, SD

**Wendy Pearson** - NWS Central Region Hydrology Division  
Kansas City, MO

**Steve Buan** – North Central River Forecast Center  
Minneapolis, MN

## ***OAR***

**Lans Rothfusz** – National Severe Storms Lab  
Norman, OK

**Lisa Darby** – Earth System Research Lab  
Boulder, CO

## ***Regional Team Lead***

**John Ogren**  
Acting NWS Chief Learning Officer  
Kansas City, MO

## ***Regional Coordinator***

**Bethany Perry**  
Kansas City, MO

## ***NESDIS***

**Doug Kluck** – Regional Climate Services Director  
Kansas City, MO

## ***NOAA Public Affairs***

**Keli Pirtle** – National Weather Center  
Norman, OK

## ***Partner Member***

**Natalie Umphlett** - High Plains Regional Climate Center  
Lincoln, NE



# Advancing Community Partnerships and Collaboration

*Regional Collaboration Goal: Connecting People and Resources*

The Integrated Warning Team (IWT) philosophy was born out of the desire to bring together those in a local community involved in the warning process - NWS, broadcast media, and emergency managers. IWTs, or similar concepts, now exist in numerous communities throughout the country and members include representatives from school districts, businesses, transportation and health agencies, charity organizations, hospitals and more.

The Central Region Team works closely with Weather Forecast Offices (WFOs) to provide planning and staff support, as well as travel funding for guest speakers for an IWT Workshop. The workshops have the same foundational principles, but each is tailored by the WFO to meet the needs and objectives for their community. IWTs have been held at the state level, individual NWS WFO forecast areas, neighboring WFO areas of responsibility, river and lake basins, large metropolitan areas and rural communities. The Central Region Team has supported 12 workshops since 2009, bringing together well over 700 partners now working together as Integrated Warning Teams. In 2016 the Central Region Team sponsored Workshops in Bismarck, ND and Minneapolis, MN and will host an IWT Workshop in Rapid City, SD in February 2017.

**A common goal of IWT members is the desire to provide accurate and timely information for the public to make informed decisions for their safety before, during, and after an extreme event.**



Development of Integrated Warning Teams begins with an engagement workshop to bring together core partners to build relationships, identify collective challenges, and discuss opportunities to improve planning and response to events.



**While each IWT is unique with specific objectives, a significant outcome is participants recognizing the importance and value of consistent communication - which is fundamental to meet the shared goal of improving public response. IWT Workshops sponsored by the Central Region Team are designed with this outcome in mind and include careful planning, the use of a meeting facilitator/MC, social science guest speakers, and discussions to encourage engagement as well as foster relationship building and collaboration.**

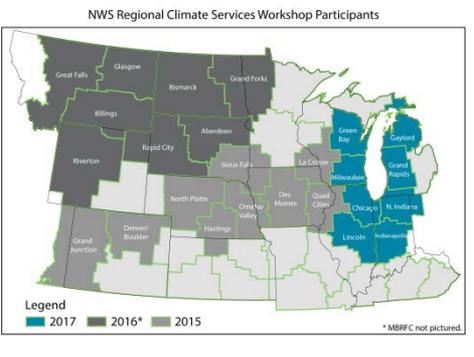
# Enhancing Regional Climate Services

## Regional Collaboration Goal: Connecting People and Resources

With such a vast amount of climate data and information currently available, having knowledgeable NOAA staff in the field to help provide and translate these resources is imperative to enhancing Regional Climate Services in the Central Region and beyond. The NOAA Central Region Collaboration Team, in conjunction with the High Plains Regional Climate Center, developed a workshop tailored for NWS Climate Focal Points and other staff who are not only knowledgeable of Regional Climate Services, but can participate and collaborate in applied climate research, outreach, and decision support activities within the NOAA Central Region. The Team piloted the event in 2015 and held another successful workshop in September 2016.

Designed to showcase available products and services in the region, as well as foster new connections, workshops provide: An introduction to Regional Climate Services and key regional partners; hands-on experience with climate data and information tools and other online products; site visits to instrumentation labs, Automated Weather Data Network (AWDN) stations, U.S. Climate Reference Network sites, and more.

The Team is providing support to the Great Lakes Regional Collaboration Team for a Regional Climate Services Workshop, hosted by the Midwestern Regional Climate Center in September 2017. Opportunities to conduct Regional Climate Services Workshops for 2018 and beyond will be explored with local offices and regional partners.



Regional Climate Services Workshops are structured to enhance the abilities of NWS Forecast Offices to provide decision support services by:

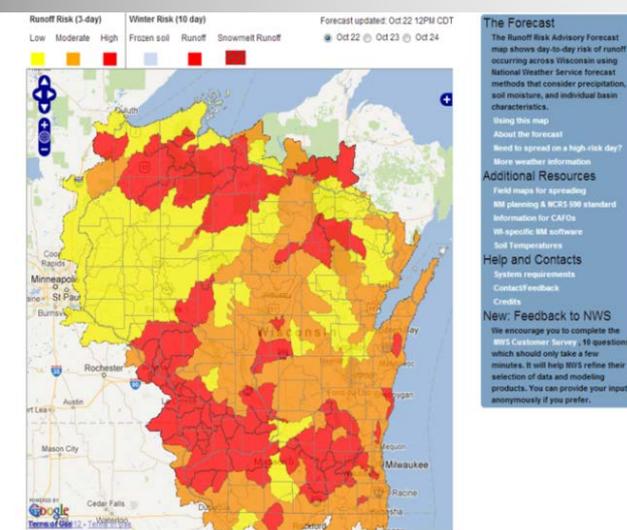
- Delivering a consistent workshop model to support NWS regional climate services capacity building
- Sharing knowledge about Regional Climate Services through presentations and discussions
- Strengthening connections and collaboration opportunities within the NWS climate community and to meet unique regional and local needs
- Improving skills by working with climate products and tools in hands-on exercises led by Regional Climate Center staff and partners
- Building relationships through engagement and interactions

Forecasters from 17 NWS Offices have attended a Regional Climate Services Workshop in 2015 – 2016 and eight offices will participate in 2017.



# Expanding Runoff Risk Knowledge by Capacity Building

*Regional Collaboration Goal: Exchange both national and regional insights that inform action*



Wisconsin's Runoff Risk Advisory Forecast provides short term planning to avoid recently applied nutrients being transported off the fields into nearby waterbodies.



Agricultural runoff has a large role in nutrient loading to water bodies, which can eventually concentrate in coastal areas .

Research has shown non-point pollution sources, such as agricultural runoff, have a large role in nutrient loading to water bodies. Nutrients can eventually concentrate in coastal areas such as the Great Lakes and Gulf of Mexico and contribute to harmful algal blooms (HABs) and hypoxia, resulting in both economic and ecological impacts. The Runoff Risk project provides decision support for short-term planning to avoid recently applied nutrients being transported off fields and into nearby waterbodies.

The project started with the development of a decision support tool in collaboration with the state of Wisconsin, federal agencies, academic, and agricultural partners focused on improving management of manure and fertilizer application timing to reduce agricultural nutrient transport to water bodies and improve water quality. Many states are developing nutrient reduction strategies containing suggested conservation practices farmers can implement to meet state goals. Since there are few tools providing real-time application guidance, and the forecast created for Wisconsin proved to be successful, the NWS North Central River Forecast Center partnered with the Environmental Protection Agency (EPA) and the Great Lakes Restoration Initiative (GLRI) to expedite development for Runoff Risk Advisory Tools. This allows for improvements and refinement so each state will have the opportunity to fine-tune the tool to meet their state-specific application guidelines. State working groups, led by state agricultural departments, in Minnesota, Wisconsin, Michigan and Ohio are scheduled to complete development of their tools in 2017.

The Central Region Collaboration Team leverages skills, knowledge, and connections to identify and coordinate NOAA staff, regional partners, and key stakeholders. This ensures regional networks are identified so broad group of stakeholders can benefit. In addition, the team provides expertise and capabilities to support communication and outreach efforts. In 2016 the Team produced a [full length video](#) and [short trailer](#) to educate on hypoxia and HABs, the role agricultural practices can play, and a decision support tool for Wisconsin aimed to help reduce nutrient runoff and improve water quality. The videos are an effective way to continue outreach and education efforts on the impact of nutrient loading as well as decision support tools available to help improve economic and ecological challenges related to agriculture. Video distribution will commence in February 2017.

# Fostering Research to Operations Peer Relationships

*Regional Collaboration Goal: Exchange both national and regional insights that inform action*

As one way to foster early communication and collaboration between OAR researchers and NWS operations staff, the NOAA Central Region Team developed the OAR/NWS Shark Tank and held the pilot event December 1, 2016 at the National Weather Center in Norman, Oklahoma. The Shark Tank is modeled after the popular TV show “Shark Tank”. With a panel of five representatives from NWS field operations, NWS headquarters and OAR research, Sharks provide expertise in an environment designed to nurture ideas. The objective of the OAR / NWS Shark Tank is to provide an opportunity for forecasters and researchers to engage with OAR and NWS staff to bridge the gap between research and operations.

For the 2016 OAR / NWS Shark Tank, eight participants were selected to pitch an operationally -relevant research idea. During the Shark Tank, each participant offered a three-minute presentation, followed by seven minutes of open dialogue with the Sharks to further discuss the pitch and merits of the idea. Sharks suggested points for consideration and new areas to explore, provided valuable feedback, offered to facilitate connections and encourage participants to continue their endeavors. Guidance offered led to introductions for potential collaborations in more than one case. A second Shark Tank is scheduled for February 2017 in Boulder, Colorado.



A five member panel is the centerpiece of the OAR / NWS Shark Tank .  
2016 Sharks included:

- Pam Heinselman - OAR National Severe Storms Lab
- Gary Wick – OAR Earth System Research Lab
- Todd Lindley – NWS Weather Forecast Office, Norman
- Paul Schlatter – NWS Forecast Office, Boulder
- Tim McClung – NWS Science and Technology Integration

# Developing Space Weather Outreach and Education Tools

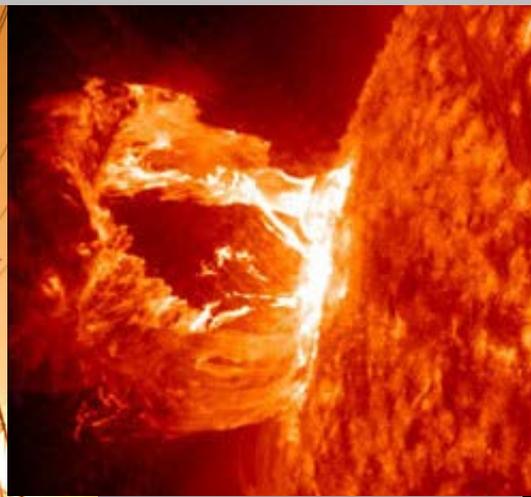
*Regional Collaboration Goal: Improve the understanding of NOAA's broad mission and regional capabilities*

Since its inception, the Central Region Collaboration Team has included membership from the Space Weather Prediction Center located in Boulder, CO. This unique NWS National Center operates 24x7 to continually monitor and forecast space weather. Space weather has the potential to impact not only the United States, but wider geographic regions. Complex events can have significant economic consequences and have the potential to negatively affect numerous sectors, including communications, satellite and airline operations, manned space flights, navigation and surveying systems, as well as the electric power grid.

The Team has undertaken many projects over the years to connect expertise and support outreach and education about Space Weather with the goal of sharing knowledge with a broad audience. In 2016 the Central Region Team developed a Space Weather Toolkit designed to organize and consolidate the resources created by the team as well as quickly and easily provide access to additional space weather information and resources. The Toolkit is scheduled for formal release early in 2017.

## *Space Weather Outreach and Communications Resources Developed by the NOAA Central Region Collaboration Team*

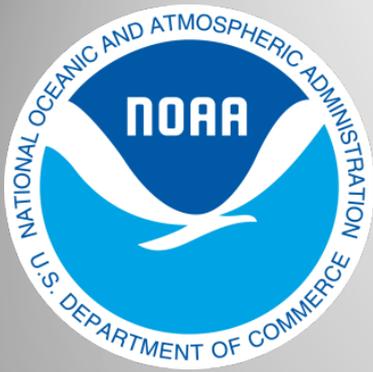
- Space Weather Outreach and Education Resources Two-Pager
- Space Weather and the Space Weather Prediction Center Two-Pager
- Visualizations for Science on a Sphere Displays
- YouTube Video Series:
  - An Introduction to Space Weather and the Space Weather Prediction Center
  - Space Weather Impacts on Communications
  - Space Weather Impacts on GPS
  - Space Weather Impacts on Power



# Looking Ahead to 2017

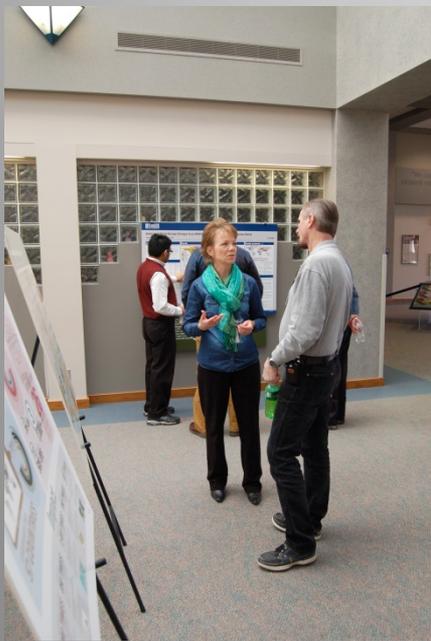
**NOAA values collaboration and the importance of developing and implementing activities and projects most needed and supportive of the issues at a regional scale. Bringing expertise together - both internally and with stakeholders and partners - contributes significantly to the support of NOAA's mission and priorities.**

**In 2017 the NOAA Central Region Collaboration Team will continue to advance efforts to address regional challenges, inform action, and improve the understanding and respect for NOAA's broad mission. The Team will strive to promote opportunities which foster collaboration between research and operations communities, support regional climate services, and advocate the use of NOAA's products and information to make informed decisions.**



*The success of the NOAA Central Region Collaboration Team activities results from the close partnerships, shared responsibility, collaboration, innovation, creativity and leadership of numerous partners and colleagues within the region.*

*The Central Region would like to thank all of those who have contributed to 2016 projects and specifically acknowledge the High Plains Regional Climate Center, State Climatologist Offices from ND, SD, WY, MT and NE, staff from the National Weather Center, the NOAA Gulf of Mexico Regional Collaboration Team and Wisconsin Runoff Risk partners including Wisconsin Discovery Farms, Sea Grant, and the state of Wisconsin.*



*For more information visit [www.regions.noaa.gov/central](http://www.regions.noaa.gov/central) or contact [bethany.perry@noaa.gov](mailto:bethany.perry@noaa.gov)*