



**Nurture Nature Center Receives Grant  
From National Oceanic and Atmospheric Administration  
To Study Flood Forecast and Warning Tools**

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*One of four national awards by National Weather Service  
to advance weather communication  
and understanding of weather decision-making*

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**FOR IMMEDIATE RELEASE**

**CONTACT:**

**RACHEL HOGAN CARR, DIRECTOR OF NNC:**  
**610-253-4432**  
[rhogan@nurturenature.org](mailto:rhogan@nurturenature.org).

(Easton, PA) - Nurture Nature Center, Inc., a non-profit organization in Easton, Pennsylvania, with a focus on flooding issues, has been awarded a two-year \$160,000 grant from the National Oceanic and Atmospheric Administration (NOAA) to fund a new social science study about weather decision-making. NNC's project will help National Weather Service (NWS) to understand how people living in the Delaware River Basin understand and use NWS flood forecast and warning tools in understanding their flood risk, and how they could be improved to better motivate flood preparedness and warning response by the public. The project, "Flood Risk and Uncertainty: Assessing the National Weather Service's Forecast and Warning Tools," supports NOAA's new Weather-Ready Nation initiative, designed to help the nation become better equipped to prepare for and respond to weather events.

For this project, NNC will partner with the NWS Middle Atlantic River Forecast Center and the Weather Forecast Offices in Mt. Holly, NJ/Philadelphia, PA and Binghamton, NY. NNC will also collaborate on the project with Dr. Burrell Montz, a social science researcher from East Carolina University with expertise in flooding and natural hazards.

NNC Director Rachel Hogan Carr, who will lead this project, said the study creates a tremendous opportunity to improve public response to flooding nationally. "Given the frequency and intensity of flooding not only in this region, but across the country, improving how people prepare for flooding is critical to reducing losses. This project provides an excellent opportunity to help NWS understand how the public uses its flood forecast and warning tools, and what

further refinements might improve public preparedness as people respond to news of impending flood events.”

For the project, NNC will organize a series of four focus groups among individuals living in the urban City of Easton, Pennsylvania, and the more rural community of Lambertville, NJ. Specifically, the focus groups will aim to reveal how people understand messages about uncertainty in forecasts, as well as how the timing, specificity, wording and graphic design of messages influence readability and understanding. The tools that will be analyzed in the focus groups include: the Advanced Hydrologic Prediction Service, which provides information about river heights during flood events ([water.weather.gov/ahps/](http://water.weather.gov/ahps/)); flood watch and warning messages issued in advance of forecast flood events; and a new “ensemble forecast” system that shares a range of forecast predictions (<http://www.erh.noaa.gov/mmefs/>). Additionally, the project team will create a series of “weather scenarios” using these tools that will test how the public responds to notifications and warnings about severe flood events.

This is NNC’s third partnership with National Weather Service in the Delaware River Basin. The first was through a flood education campaign in the Delaware River Basin, “Focus on Floods.” The second project was the installation and programming for NNC’s new Science on a Sphere exhibit. This newest award to NNC is one of four awards made by NOAA to improve communication about weather hazards and to motivate public response to weather warnings.

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For more information about Nurture Nature Center, please see Attachment A.

For a media release from NOAA about its larger social science initiative, see Attachment B.

## ATTACHMENT A

### **ABOUT NURTURE NATURE CENTER:**

NNC was formed in Easton, Pennsylvania, at the confluence of the Lehigh and Delaware Rivers, in response to repetitive flooding in that region in 2004, 2005 and 2006. The organization's mission is to use science, art and dialogue to help communities address local environmental risks. Since its formation in 2007, NNC has maintained a focus on flood issues, and has received funding from National Science Foundation, NOAA and other groups to advance public understanding of flood risk.

NNC is housed in an historic facility at 518 Northampton Street in Easton, PA, and is home to NOAA's famed Science on a Sphere exhibit, as well as other art and science exhibits addressing flooding and related topics. NNC offers programming for adults and families, school groups and others. For more information on the center and its public attractions, please visit [www.nurturenaturecenter.org](http://www.nurturenaturecenter.org).

**ATTACHMENT B: NOAA MEDIA RELEASE**



# NOAA

NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE



**Contact:** Linda Joy  
301-734-1165  
linda.joy@noaa.gov

**FOR IMMEDIATE RELEASE**  
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## **New NOAA awards to fund studies of weather warnings, social media, Internet tools and public response**

How do people sift important weather information out of the incessant buzz of 24/7 social media, text messages, smart phone app alerts, overflowing email inboxes, the blogosphere, and traditional print and broadcast media? Four new research awards funded by NOAA seek to answer this question and to improve the way potentially life-saving weather warnings reach those who need to act on them.

The awards, totaling about \$879,000 for four two-year projects, are being awarded by the Office of Weather and Air Quality in the NOAA Office of Oceanic and Atmospheric Research with funding from the U.S. Weather Research Program and the NOAA National Weather Service (NWS).

“These projects apply innovative social science research methods to the immense challenge of communicating crucial weather information in an increasingly complex world,” said Kathryn Sullivan, Ph.D., assistant secretary of commerce for environmental observation and prediction and NOAA deputy administrator. “The results are expected to improve communication within the weather community and motivate appropriate responses from the public when dangerous weather threatens.”

University and nonprofit social science and weather researchers will lead the projects, which support the [NOAA Weather-Ready Nation](#) initiative. NOAA experts from the [Storm Prediction Center](#), [National Severe Storms Laboratory](#), weather forecast offices, and river forecast centers will collaborate on them. Award recipients include the Cooperative Institute for Mesoscale Meteorological Studies, the University of Oklahoma, Arizona State University, East Carolina University, the University of North Carolina, and the Nurture Nature Center in Easton, Penn.

**Tornadoes and Twitter:** A two-year award of \$250,000 will fund research on how Twitter messages could be tapped as a source of local weather observations and how Twitter could be used to share weather updates. Carol Silva, Ph.D., associate director of the Center for Applied Social Research at the University of Oklahoma in Norman, Okla., will lead this project. Part of the project will explore the promise and possible pitfalls of using Twitter in severe weather forecasting operations. Another phase of the research will study the nature and content of tweets about severe weather events. In the final phase, researchers will work with the NOAA National Severe Storms Laboratory and the NOAA Storm Prediction Center to assess possible use of Twitter data in detecting and tracking storms, issuing warnings, and assessing damage after a storm.

**An inundation of flood data:** A two-year award of \$160,000 will fund research to develop strategies to improve online flood forecasting tools and to better motivate residents to

prepare for floods and respond to flood warnings. Rachel Hogan Carr, director of the Nurture Nature Center of Easton, Penn., will lead the project. The Nurture Nature Center is a non-profit organization that has previously partnered with NOAA and NWS on flood education. The center will partner with the NWS Middle Atlantic River Forecast Center and NWS Weather Forecast Offices in Mt. Holly, N.J., and Binghamton, N.Y., to assess NWS flood forecast and warning tools. The aim is to help NWS understand how people living in the Delaware River Basin use NWS online tools to understand and prepare for flood risk

**Deciding to seek shelter:** A two-year award of \$75,000 will fund research to explore factors that explain why some people rush for shelter when they receive a tornado warning and others do not. Renee McPherson, Ph.D., assistant professor of geography and environmental sustainability at the University of Oklahoma (OU), will lead this project. She is a fellow of the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS), a partnership between NOAA and OU. Researchers will identify the factors relevant to an individual's response to a tornado warning, specifically the NWS polygon warning tool which defines a geographic danger zone. They will collaborate with the NWS Warning Decision Training Branch and the NOAA National Severe Storms Laboratory.

**Managing a weather emergency:** A two-year award of \$394,000 will fund research on how NWS can improve its products and services to feed helpful information into the complex network of people who manage public emergency services. Kenneth Galluppi, director of the Arizona State University Decision Theater, will lead this multi-institution project with Arizona State University, East Carolina University, the University of North Carolina, and CIMMS at the University of Oklahoma. For several years this team has been studying how the emergency management network – managers of public services such as transportation, police and fire units, and utilities – processes weather information. This project will build on earlier studies and will produce recommendations for NWS forecasters.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Join us on [Facebook](#), [Twitter](#), and our other [social media channels](#).

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