



On the eve of the anniversary of the 2008 flood, Congressman Dave Loebsack led a press conference at the Iowa Flood Center (IFC) to introduce a proposal for a National Flood Center. The National Flood Research and Education Act (NFREA) would establish a consortium with NOAA to conduct flood-related research that would build on and expand the work of the IFC and apply it to the rest of the country.

IFC UPDATE

Research and Activities at the Iowa Flood Center

Spring 2017

IFC Completes Iowa Statewide Floodplain Mapping Project



In 2010, the Iowa Flood Center and Iowa Department of Natural Resources (IDNR) began a six-year, \$15M program to create and update floodplain maps throughout the state. Funded by the U.S. Department of Housing and Urban Development in response to the 2008 flood, the Iowa Statewide Floodplain Mapping Project helped identify and communicate Iowa’s flood hazards, providing communities and individuals with the information needed to make informed decisions on managing floodplain areas. Working with the IDNR, the U.S. Army Corps of Engineers, FEMA, and the Iowa Natural Heritage Foundation, the IFC team created maps showing probability, extent, and depth of flooding for every Iowa stream draining more than one square mile. The project

INSET: Reporters interview IFC Associate Director Nathan Young at the event celebrating completion of the Iowa Statewide Floodplain Mapping Project.

ABOVE: Screenshot of the flood map website showing Audubon, Iowa.

ended in December 2016, and the floodplain maps and data are freely accessible online at www.iowafloodmaps.org.

“Completion of the statewide floodplain maps is the Iowa Flood Center’s most important project so far.”  IFC Director Witold Krajewski



Unseasonable September Floods

Unseasonable heavy rainstorms in September caused one of the worst flood events in Iowa's history. Some areas in northeast Iowa received more than seven inches of rainfall in less than 24 hours, forcing thousands to evacuate their homes and the declaration of 19 counties as Federal Disaster areas.

As unusual as the event was for the time of year, Iowans responded quickly and used new technology and resources developed by the Iowa Flood Center to assess and mitigate their flood risk. During the height of the flood event, more than 80,000 users visited the Iowa Flood Information System (IFIS), an online source of real-time flood information.

"Fortunately for us, we did not have to test the accuracy of these maps on this go-around ... We were able to build our temporary system and keep back the water," said Cedar Rapids Public Works Director Jen Winter.

IFIS provides a suite of free online tools to help users understand their flood risks and prepare for flood events.



NEWSFLASH



IFC and NASA Study Soil Moisture

This past summer, students and researchers at the Iowa Flood Center partnered with NASA on a project to help the scientific community better understand and monitor soil moisture.

The IFC team compared soil-moisture data collected by the Soil Moisture Active Passive (SMAP) satellite to information gathered on the ground near Ames in the South Fork Watershed. The experiment looked at how vegetation and agricultural practices affect satellite-based soil-moisture measurements. IFC students participated in field experiments in May when vegetation was small and again in August when the plants were mature, looking at soil moisture conditions and surface roughness.



Iowa Watersheds Project Leads to New Flood Mitigation Project

In 2016, the Iowa Flood Center (IFC) marked the end of one watershed project and began a new one. In 2010, the IFC received a \$4.4M grant (\$8.8M awarded to the state of Iowa) for the Iowa Watersheds Project (IWP), which aimed to reduce flood risk in four watersheds. Working with Watershed Management Authorities (WMAs) in each basin, three sub-watersheds were identified to receive \$1.5M each for the construction of small-scale flood mitigation projects. The project ended in September 2016, having constructed over 150 projects, including 6 wetlands, 40 ponds, and over 100 terraces.

In October 2016, the Iowa Watershed Approach (IWA) officially got underway. The \$96.9M statewide project expands the work of the IWP to eight rural watersheds and three urban communities. The IWA addresses flooding and water-quality issues working in coordination with local and state partners. The IFC team attends quarterly WMA meetings in each watershed to share progress updates. For more information, visit www.ihr.uiowa.edu/iwa.

CLOCKWISE FROM UPPER LEFT:
Hesco Barriers in Cedar Rapids.
IFC PhD Student Mohamed Ali ElSaadani (far right) measuring surface roughness with co-workers.
Perrin Park in Greene, Iowa, inundated by the Shell Rock River.
The Sutliff Bridge near Lisbon, Iowa, moments before the bridge was closed.



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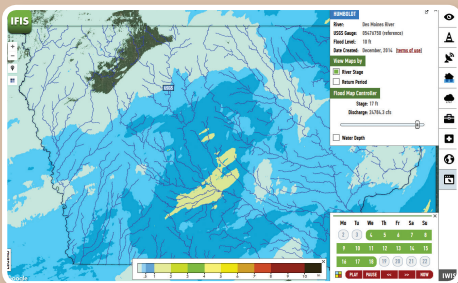
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IFIS

Iowa Flood Information System New Features!

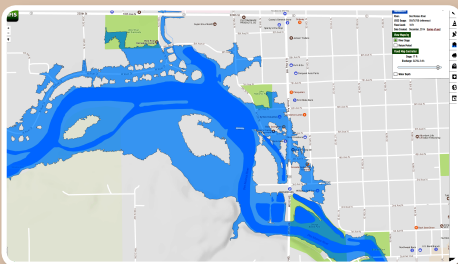
IFIS is a free, easy-to-use online application that helps Iowans prepare for flooding. Based on Google Maps, IFIS displays up-to-the-minute community-specific information on rainfall, stream levels, and more, including:

- Real-time stream levels at nearly 250 locations in Iowa;
- Flood alerts and forecasts for more than 1,000 Iowa communities;
- Weather conditions including current and past rainfall accumulations; and
- Flood inundation maps for select communities



ABOVE: IFIS cumulative rainfall display.

BELOW: IFIS flood inundation map for Humboldt, Iowa, at a stage of 17 feet.



NEW AND UPCOMING:

- Locations of Red Cross Iowa shelters
- Interactive map showing streamflow in river networks
- Driving directions that include flood information
- IFIS mobile app and voice recognition



IFC is a Weather Ready Nation Ambassador committed to working with partners to strengthen national resilience against extreme weather.

IFC Outreach and Education



In 2016, the Iowa Flood Center marked its greatest year

so far for outreach across the state. IFC researchers and staff interacted with thousands of Iowans by attending STEM (Science, Technology, Engineering, and Math) festivals and Watershed Management Authority (WMA) meetings, as well as hosting dozens of visitors from around the state, the United States, and even the world.

“I enjoy the diverse audiences we have the opportunity to interact with on a day-to-day basis,” said IFC Outreach Coordinator Breanna Shea. “It’s rewarding to know that the services we provide impact Iowans of all ages and backgrounds, ranging from K–12 students to WMA representatives.” These outreach events often lead to new partnerships and collaborative efforts that allow the center to expand its work and continue to grow.

Over the course of the year, the IFC participated in the Iowa State Fair, attended over 10 science/STEM festivals, and presented at dozens of WMA meetings. In addition, the IFC was featured in the media numerous times, highlighting the information and resources available to individuals and communities in Iowa. The IFC is dedicated to creating tools and developing strategies to help Iowans understand their flood risks and become more resilient to future floods.

ABOVE: IFC staff visit to Williamsburg High School.

BELOW LEFT: IFC students demonstrate an interactive watershed model at a Girl Scout STEM event in Coralville.

BELOW RIGHT: Ibrahim Demir (left) demonstrates IFIS to newly-installed University of Iowa President Bruce Harreld at the IFC open house.

