

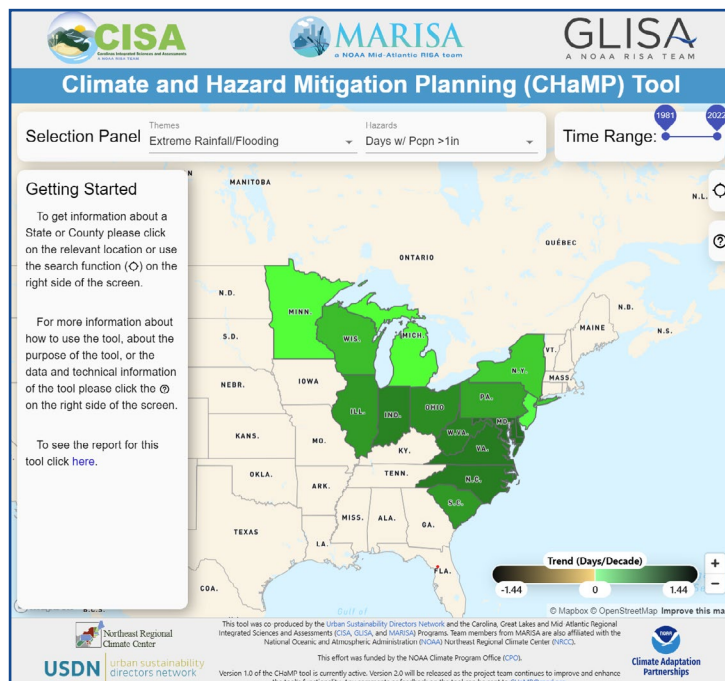
## Overview

- Summary:** CHaMP is a single entry-point for regional and county-level data on past hazard events and historical and future climate information to support the development of local or regional climate-related plans.
- Opportunity:** Version 1.0 of CHaMP is publicly available and GLISA seeks partners to use the tool to develop hazard mitigation plans or other types of plans with community, county, or state partners. GLISA can offer free technical assistance to use the tool and welcomes feedback to inform future updates and improvements.
- To Learn More:**
  - [Video tutorial](#)
  - [CHaMP version 1.0](#)
  - [User guidance](#)
  - [GLISA webpage](#)

**Intended Audience:** The intended audience for CHaMP is any user who needs localized climate or hazard information, which includes but is not limited to: planners, emergency managers, engineers, consultants, climate service providers, community leaders, or residents.

**Applications:** CHaMP was designed specifically to support the development of FEMA hazard mitigation plans, although the information can be used for any type of plan or document requiring localized climate or hazard information. Organized around climate-hazard themes, the tool displays climate metrics, hazard data, and hazard impacts in a visual format with downloadable figures and tables that are accompanied by explanatory text. Users can navigate through the features of the tool from the CHaMP homepage, selecting a climate or hazard variable and setting the time period or interest, or by clicking a state and zooming in to a specific county. A key feature of CHaMP is the automatic creation of customized narrative text that can be copied and pasted directly into planning documents with localized descriptions of events or variables and quantifications of trends. Help is available by clicking on the question mark panel to view support resources and documentation.

**Data Sources:** The [historical](#) climate data are from the [PRISM](#) gridded dataset and the climate projections are from the [LOCA](#) downscaled data set and are based on CMIP5 models. The hazards and impacts information comes from the NOAA Storm Events [database](#). Notably, the information in the tool is linked to databases that update monthly so that the information will stay current over time.



Homepage of the CHaMP tool showing the regional coverage of version 1.0 and example data categories and functionality. Credit: Northeastern Regional Climate Center (NRCC).

## Available Information on Hazards and Impacts:

### Winter Weather:

Blizzard  
Cold/Wind Chill  
Extreme Cold/Wind Chill  
Frost/Freeze  
Heavy Snow  
Ice Storm  
Sleet  
Winter Storm  
Winter Weather

### Extreme Rainfall/Flooding:

Coastal Flood  
Flash Flood  
Flood  
Heavy Rain  
Lakeshore Flood

### Extreme Heat:

Excessive Heat  
Heat

### Severe Weather:

Flash Flood  
Hail  
Heavy Rain  
High Wind  
Strong Wind  
Thunderstorm Wind  
Tornado

### Tropical Storms/ Hurricanes:

Hurricane  
Tropical Storm

### Coastal Hazards:

Coastal Flood  
High Surf  
Rip Current  
Storm Surge/Tide

### Great Lakes Hazards:

Lake-Effect Snow  
Lakeshore Flood

### Other:

Wildfire  
Dense Fog

### Reported Impacts:

Total Reported Episodes  
Reported Crop Damage  
Reported Property Damage  
Total Reported Deaths  
Total Reported Injuries

### Precipitation & Projections:

Days w/ Pcpn >1in  
Days w/ Pcpn >2in  
Total Spring Precipitation  
Total Summer Precipitation  
Total Fall Precipitation  
Total Winter Precipitation  
Total Annual Precipitation

### Temperature & Projections:

Days w/ High >90F  
Days w/ High >95F Days w/ High >100F  
Summer Maximum Temperature  
Days w/ Low >0F  
Days w/ High >32F Winter Minimum  
Temperature

**Motivation:** To be eligible to receive federal disaster mitigation funding, FEMA requires all state, local, and tribal governments to have up-to-date hazard mitigation plans. While not required, communities of all sizes and types are beginning to integrate climate information into these plans, but at a limited scale. Historical data on the frequency and impacts of hazardous events are often scattered across multiple data sources and once data are located, appropriate interpretation can be challenging for public agencies whose staff are stretched thin. Climate projections are available from a large and growing number of new tools and portals, but require specialized expertise to interpret and incorporate into plans. CHaMP was developed to provide a single, free point of entry for past and future climate and hazard information to simplify this process.

**History:** CHaMP version 1.0 was developed by three Climate Adaptation Partnership (CAP, formerly RISA) teams with funding from the National Oceanic and Atmospheric Administration and guidance from the Urban Sustainability Directors Network (USDN). Earlier versions of the tool were tested and improved by local planners in the Carolinas, Great Lakes, and Mid-Atlantic regions.

**Limitations:** The project team is aware that the NOAA Storms Database is not complete and needs to be supplemented with local or state-level records. It is also exploring ways to incorporate socioeconomic information into the tool. The team is seeking feedback to improve the tool (can be sent to [CHaMP@rand.org](mailto:CHaMP@rand.org)).

**Contact:** Omar Gates, GLISA Climatologist, [gateso@umich.edu](mailto:gateso@umich.edu)

## About GLISA

GLISA was established in 2010 and is a collaboration between the University of Michigan, Michigan State University, The College of Menominee Nation, and the University of Wisconsin. GLISA is the NOAA CAP (formerly RISA) team for the Great Lakes region. GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities' capacity to understand, plan for, and respond to climate impacts now and in the future.

**Learn more at:**  
[glisa.umich.edu](http://glisa.umich.edu)

**Contact us:**  
[glisa-info@umich.edu](mailto:glisa-info@umich.edu)