



Background

- Communities that have endured disasters, caused either by natural phenomena or human activities, may be more experienced in preparing for and responding to similar disasters in the future.¹
- After approval for governmental assistance, affected communities gain access to aid programs intended to improve their capability to prepare for, protect against, respond to, recover from, and mitigate hazards.²
- The number of declared disasters identifies which communities are more likely to remain socially, economically, and physically resilient after exposure to a disaster, due to previous experience.¹
- Lower values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE NUMBER OF DECLARED DISASTERS.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
FEMA – Historical Disaster Declarations – Federally-Declared Disaster Areas	Number of federal disaster declarations by county	County	1964-2014; updated when federal disasters are declared
U.S. Census Bureau – Counties Shapefiles	Shapefiles of Census 2010 counties	County	Every 10 years; minor revisions yearly

This Indicator Was Used to Assess the Vulnerability of One of USACE's Eight Business Lines

Business Line	Importance Weight (Varies from 1 to 2 for USACE)
Emergency Management	1.85

Calculation

- Identify which counties are within each HUC-4 watershed (i.e., spatially link counties to the intersecting HUC-4 watersheds within a GIS).
- Sum the number of disaster declarations within each HUC-4 watershed. For counties located within multiple HUC-4 watersheds, proportionally allocate the number of disaster declarations to the intersecting HUC-4 watersheds based on area.

¹ Balica, S.F., Douben, N., and N.G. Wright. 2009. Flood Vulnerability Indices at Varying Spatial Scales. *Water Science & Technology*. 60(10): 2571-2580.
² FEMA. 2014. Disaster Survivor Assistance: Declaration Process Fact Sheet. Available online at: <https://www.fema.gov/declaration-process-fact-sheet>



LOW

LOW INDICATOR VALUE
 A house in a flood-prone area in Iowa lacks flood mitigation features and is susceptible to future disasters.

HIGH INDICATOR VALUE
 A house in a flood-prone area in Louisiana is deliberately built on raised land and is therefore better protected from disasters.



HIGH

Cameron, LA - Courtesy of FEMA

Waverly, IA - Courtesy of USGS