



Evaluation of Risks to Federal Facility Superfund Site Remedies from Inland Flooding

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Background, Scope, & Methodology

The U.S. Environmental Protection Agency Office of Inspector General initiated an evaluation of the risks to federal facility Superfund site remedies from inland flooding. The Comprehensive Environmental Response, Compensation, and Liability Act, which is commonly called Superfund, authorizes the EPA to clean up contaminated sites to protect human health and the environment. The sites that the EPA identifies for cleanup under this program are referred to as Superfund sites. The Superfund sites that have been prioritized for cleanup are included on the EPA's [National Priorities List](#).

A Superfund site can be either a federal facility site that is owned or operated by the federal government or a nonfederal facility site. As of October 2025, there were 157 federal facility Superfund sites on the National Priorities List. Federal facility sites individually average more than 6,000 acres. According to the EPA, about three million people live within one mile of a federal facility Superfund site, while about 13 million people live within three miles of one.

When contaminants remain on a Superfund site at levels that require site-use restrictions after a remedy has been implemented to clean up the site, the EPA requires the lead agency for the site to review the remedy every five years. These five-year reviews assess remedy implementation and performance to ensure that human health and the environment are protected. Agency guidance specifies that the five-year reviews should address impacts from natural disasters, such as increased flooding risks.

Inland flooding occurs from sustained moderate rain, intense rain in a short period, or river overflow. These flooding events can increase the risk that Superfund site contamination may be released into the environment, exposing the surrounding communities. For example, after Hurricane Harvey in 2017, flooding at the San Jacinto River Waste Pits in Texas resulted in the release of toxic dioxin chemicals.

We conducted this evaluation from September 2025 to February 2026 in accordance with the *Quality Standards for Inspection and Evaluation* published in December 2020 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we perform the evaluation to obtain sufficient and appropriate evidence to support our findings. Using mapping software and the EPA's "Heavy Precipitation" and "Height Above Nearest Drainage" datasets, we identified which federal facility Superfund sites may be at risk from flooding and examined whether their five-year review reports, if available, addressed the potential impacts. These mapping data were not available for Hawaii, Alaska, and the U.S. territories. Thus, we were able to map and analyze only the 148 federal facility Superfund sites in the contiguous United States.

Findings

Of the 148 federal facility Superfund sites that we analyzed, 47 of them, or 32 percent, have potential inland flooding risks, as shown in Figures 1 and 2. These threatened sites are spread across the United States. We were able to review a report from the most recent five-year review period, 2021 through 2025, for 37 of these 47 at-risk sites. Twenty-one, or 57 percent, of the 37 reports acknowledged potential impacts from flooding, adhering to the EPA's guidance. The remaining 16 did not.

In this same five-year period, the United States experienced a catastrophic inland flooding event after Hurricane Helene made landfall in 2024. Although there were no reported releases of contaminants, the hurricane crossed or skirted several federal facility Superfund sites that did not address inland flooding risks in their five-year review reports. Figure 3 shows the proximity of federal facility Superfund sites to extreme rainfall during Hurricane Helene, highlighting that even sites not identified as threatened may still face inland flooding risks as site conditions change and underscoring that all federal facility Superfund sites should consider how such events may affect the efficacy of their cleanup remedies.

Conclusion

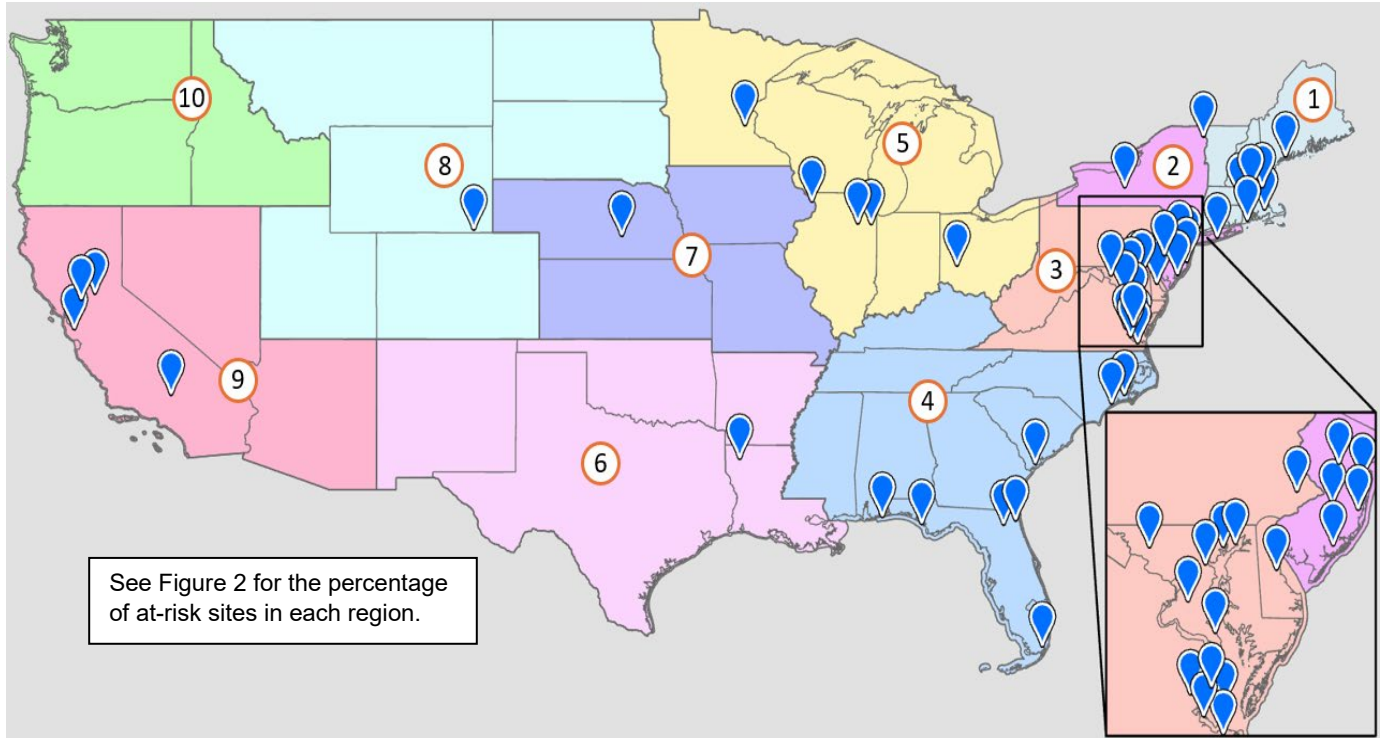
We issued this report to highlight the threat posed to federal facility Superfund sites and their surrounding communities by inland flooding. If these sites do not analyze inland flooding risks, there is an increased risk that such events may cause toxic contaminants to be released, threatening the health and environment of millions of U.S. residents. The EPA can help keep cleanup remedies effective and viable in the long term by ensuring that federal facility Superfund sites assess inland flooding risks as part of their five-year reviews. The EPA did not provide a formal response to our draft report but did provide technical comments, which we incorporated into this report as appropriate.

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Figure 1: Federal facility Superfund sites threatened by inland flooding by EPA region

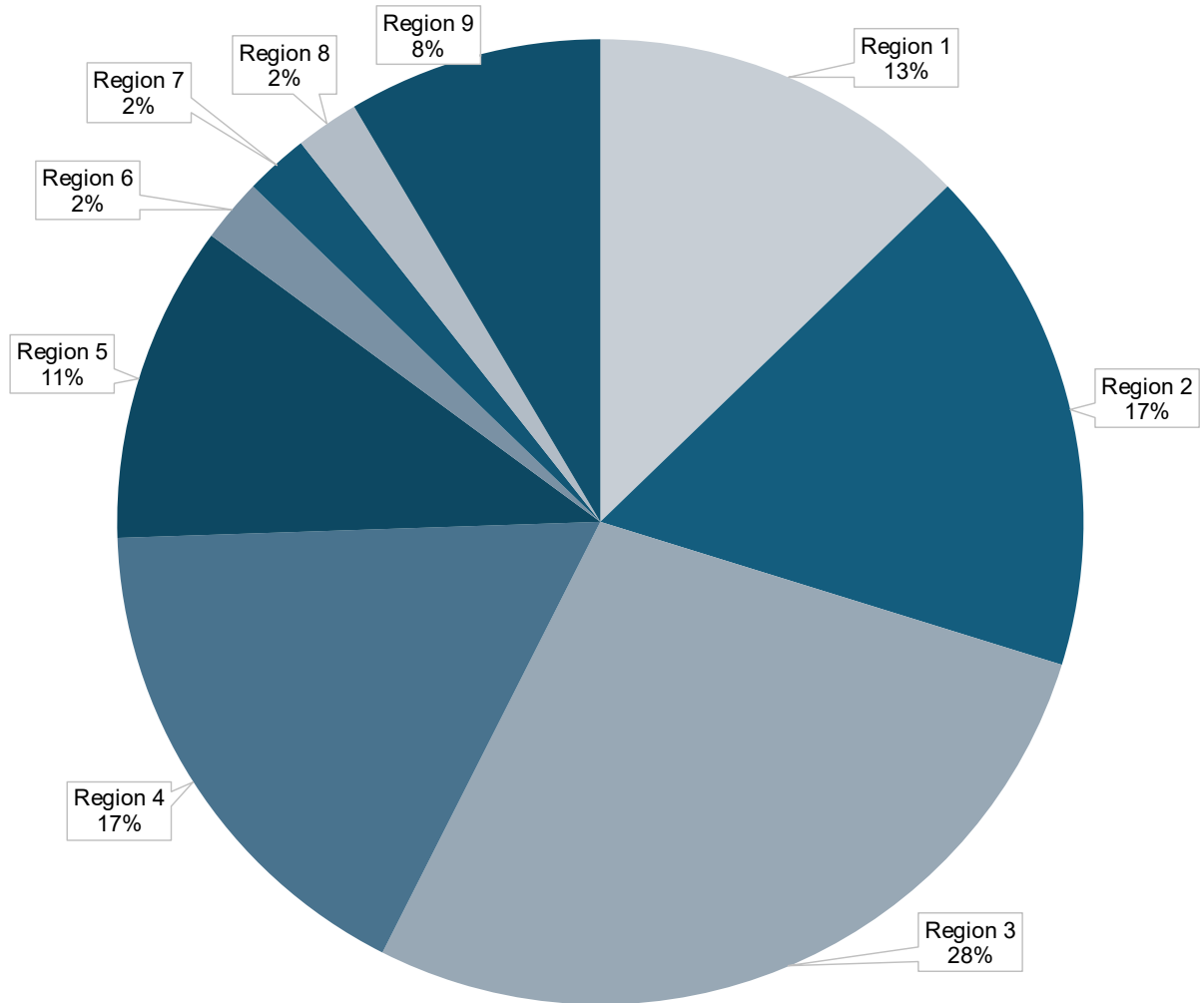


Source: OIG analysis of EPA datasets. (EPA OIG image)

Note: Inland flooding mapping datasets were not available for Hawaii, Alaska, and the U.S. territories. For the purpose of this evaluation, we classified a federal facility Superfund site as one “threatened by inland flooding” if EPA data indicated that it fell within the 40th percentile of a census tract block group for heavy precipitation and the lowest median height above nearest drainage.

<p>EPA Region 1:</p> <ol style="list-style-type: none"> Hanscom Field/Hanscom Air Force Base, MA Natick Laboratory Army Research, Development, and Engineering Center, MA Naval Weapons Industrial Reserve Plant, MA South Weymouth Naval Air Station, MA Brunswick Naval Air Station, ME Davisville Naval Construction Battalion Center, RI <p>EPA Region 2:</p> <ol style="list-style-type: none"> Naval Weapons Station Earle (Site A), NJ McGuire Air Force Base #1, NJ Middlesex Sampling Plant, NJ Naval Air Engineering Center, NJ Federal Aviation Administration Technical Center, NJ Seneca Army Depot, NY Plattsburgh Air Force Base, NY Brookhaven National Laboratory, NY <p>EPA Region 3:</p> <ol style="list-style-type: none"> Dover Air Force Base, DE Aberdeen Proving Ground (Edgewood Area), MD Aberdeen Proving Ground (Michaelsville Landfill), MD Curtis Bay Coast Guard Yard, MD 	<ol style="list-style-type: none"> Patuxent River Naval Air Station, MD Brandywine Defense Reutilization and Marketing Office, MD Fort Detrick Area B Ground Water, MD Willow Grove Naval Air and Air Reserve Station, PA Fort Eustis, VA Langley Air Force Base/National Aeronautics and Space Administration Langley Research Center, VA Naval Weapons Station Yorktown, VA Naval Weapons Station Yorktown—Cheatham Annex, VA Norfolk Naval Base (Sewells Point Naval Complex), VA <p>EPA Region 4:</p> <ol style="list-style-type: none"> Tyndall Air Force Base, FL Naval Air Station Cecil Field, FL Jacksonville Naval Air Station, FL Homestead Air Force Base, FL Pensacola Naval Air Station, FL Cherry Point Marine Corps Air Station, NC Camp Lejeune Military Reservation, NC Parris Island Marine Corps Recruit Depot, SC 	<p>EPA Region 5:</p> <ol style="list-style-type: none"> Joliet Army Ammunition Plant (Packing Area), IL Joliet Army Ammunition Plant (Manufacturing Area), IL Savanna Army Depot Activity, IL New Brighton/Arden Hills/Twin Cities Army Ammunition Plant, MN Wright-Patterson Air Force Base, OH <p>EPA Region 6:</p> <ol style="list-style-type: none"> Louisiana Army Ammunition Plant, LA <p>EPA Region 7:</p> <ol style="list-style-type: none"> Cornhusker Army Ammunition Plant, NE <p>EPA Region 8:</p> <ol style="list-style-type: none"> F.E. Warren Air Force Base, WY <p>EPA Region 9:</p> <ol style="list-style-type: none"> Edwards Air Force Base, CA Laboratory for Energy-Related Health Research/Old Campus Landfill, CA Moffett Field Naval Air Station, CA Sacramento Army Depot, CA <p>EPA Region 10:</p> <p>None</p>
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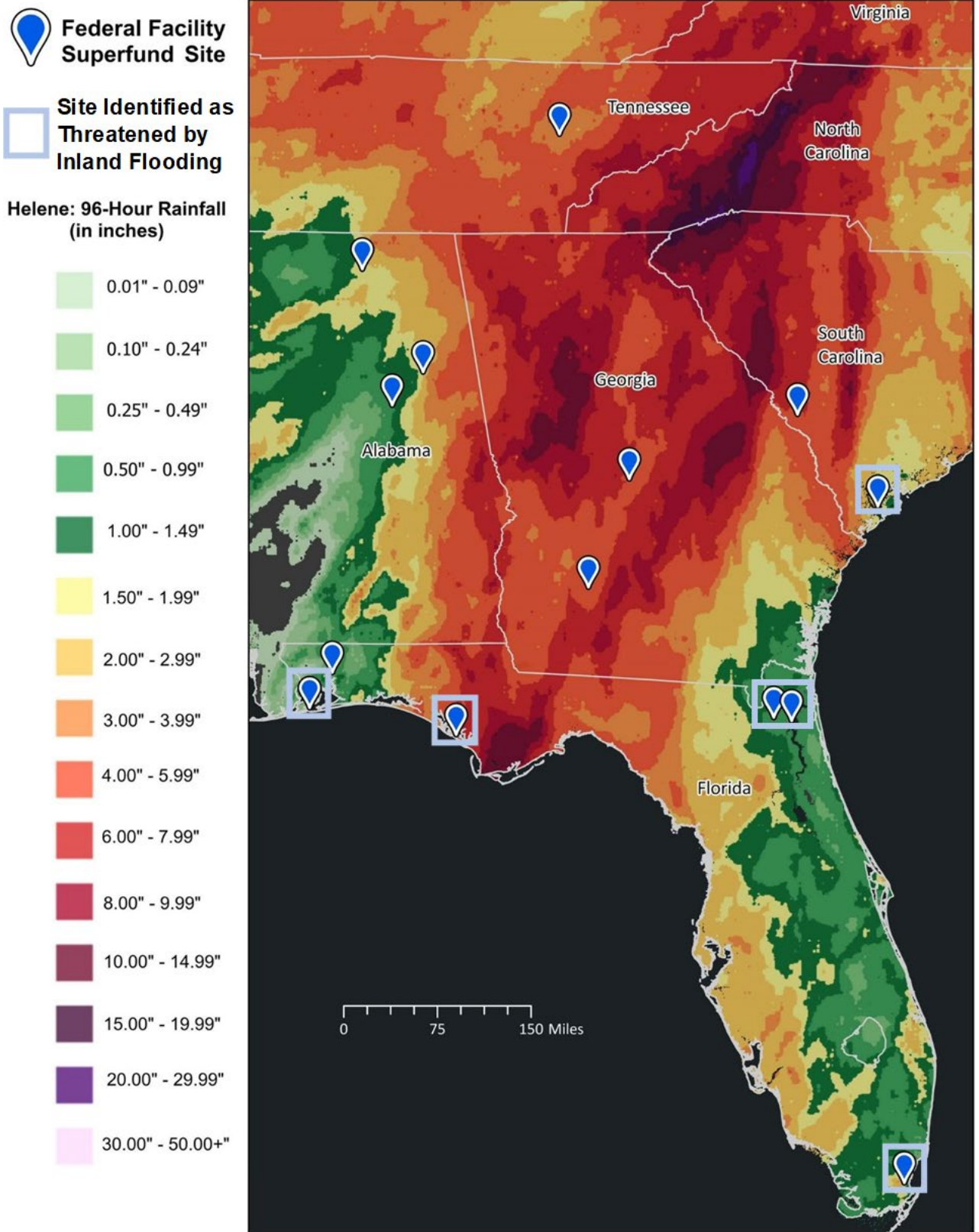
Figure 2: Percentage of the 47 federal facility Superfund sites threatened by inland flooding located in each EPA region



Source: OIG analysis of EPA datasets. (EPA OIG image)

Notes: Region 10 is not featured in this figure, as we did not identify any at-risk sites in that region. For a list of the at-risk sites in each region, see Figure 1.

Figure 3: 96-hour rainfall during Hurricane Helene and federal facility Superfund sites in the Southeast



Source: Datasets from the EPA and the National Oceanic and Atmospheric Administration. (EPA OIG image)

Note: The federal facility Superfund sites identified as threatened by inland flooding, as shown in Figure 1, are depicted in light blue boxes. The other sites shown on this map may still face inland flooding risks as site conditions change and rainfall and associated floods increase.