

Leveraging Multidisciplinary Research to Promote Climate Change Resilience

The National Institute of Environmental Health Sciences (NIEHS) **Superfund Research Program (SRP)** supports research to address public health concerns arising from hazardous substances in the environment, including the impacts that climate change may have on exposure to contaminants.

Conducting Research

Multidisciplinary scientific teams funded by SRP work to:

- Develop advanced chemical sampling techniques.
- Use innovative modeling approaches.
- Design sustainable cleanup strategies.
- Coordinate with communities to promote health and resilience.

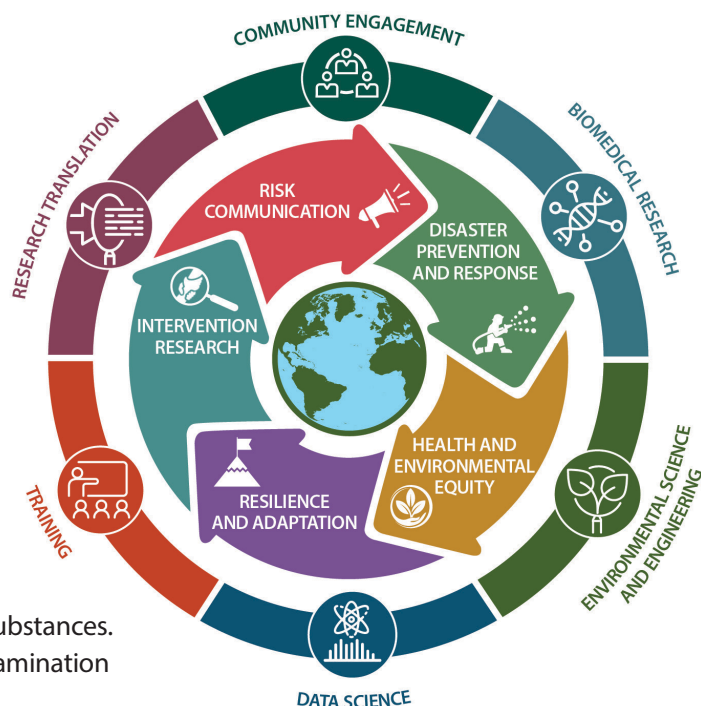
Their efforts have resulted in economic, human health, and other wide-ranging benefits.

Understanding Effects and Protecting Health

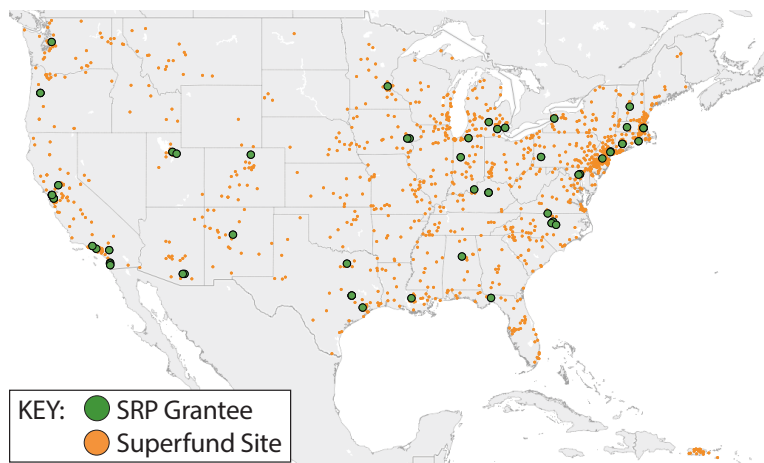
SRP-funded researchers, in collaboration with community partners and other stakeholders, reveal how harmful chemicals are dispersed during climate disasters and how they can affect people's health and well-being.

They also identify strategies to protect public health after a disaster and help communities better prepare for climate-related events. Examples include:





- Developing edible sorbents that reduce exposure to hazardous substances.
- Using green infrastructure to help cities lessen flooding and contamination issues after flood events.
- Making information interactive and actionable through online tools to help communities understand risk factors and mitigate exposures.
- Developing and hosting disaster response trainings.



SRP-Funded Institutions and Superfund Sites on the National Priorities List



Quick Facts About Superfund Sites

-  **2,000** official and potential Superfund sites are near a coast.
-  **>800** sites are at risk of flooding under different rates of sea level rise.
-  **>70 million** people live within three miles of a Superfund site.
-  **>25%** of all minorities and households below the poverty line live within three miles of a Superfund site.

Contaminant Movement

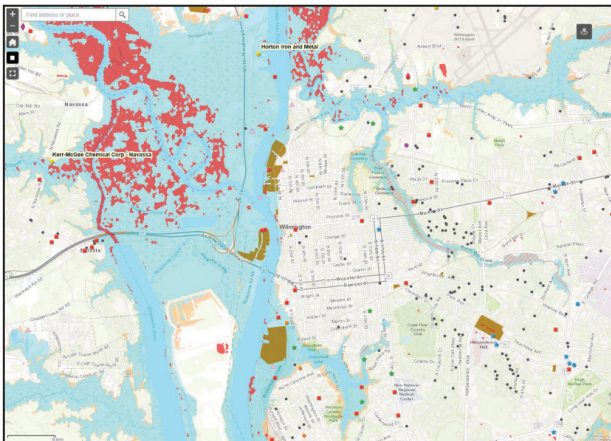
SRP researchers develop and use cutting edge tools to detect contaminants in air, water, and soil.

Teams have used tools, such as silicone wristbands and biosensors, during and after disasters, such as Hurricane Florence in North Carolina and South Carolina, Hurricane Maria in Puerto Rico, Hurricane Harvey in Texas, and wildfires in California.



In the aftermath of Hurricane Harvey, an SRP-funded graduate student collects and marks soil and water samples to be analyzed for environmental contaminants. (Photo courtesy of the Texas A&M University SRP Center)

Potential Sources of Contamination



A mapping tool shows the location of potential sources of contamination, such as found in Superfund sites, to help people prevent exposures during a flood. (Photo courtesy of the Duke University SRP Center)

For more information about SRP grantee activities related to climate change, please refer to: Amolegbe et al. 2022. Adapting to Climate Change: Leveraging Systems-Focused Multidisciplinary Research to Promote Resilience. Int J Environ Res Public Health 19:14674. doi:10.3390/ijerph192214674

Sustainable Cleanup

Funded by SRP, investigators develop innovative, sustainable strategies to clean up contaminants in the environment.

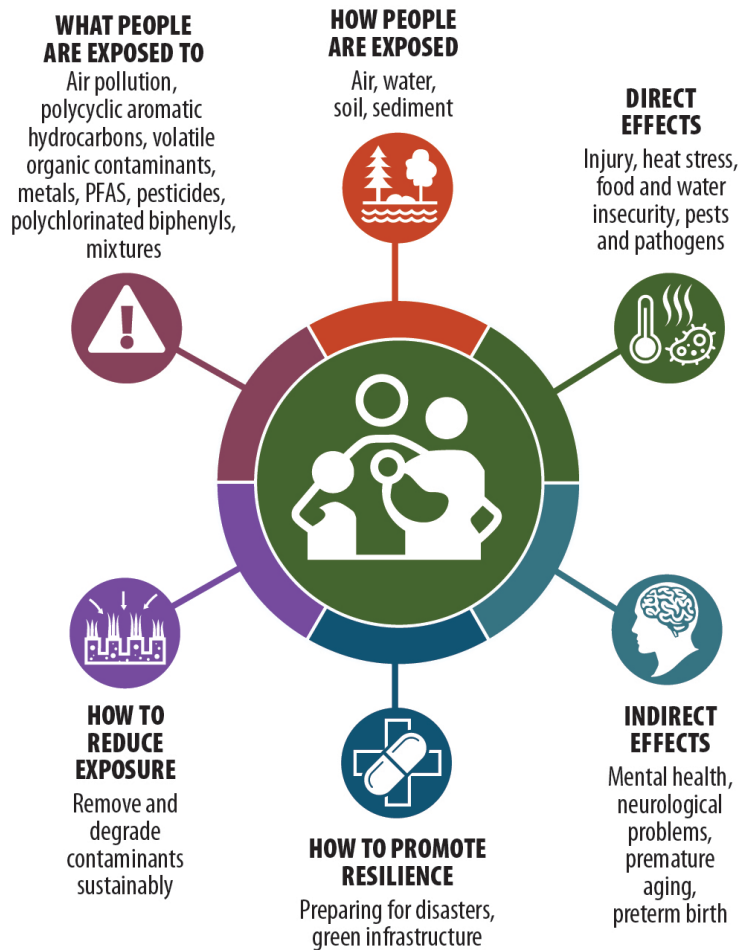
Promoting vegetation cover to trap contaminants and other sustainable strategies can be used in low-resource settings under a wide range of environmental conditions, including extreme weather events.



Under the pink glow of special lighting, SRP-funded graduate students prepare seedlings to be planted to stabilize mine tailings in arid lands.

(Photo courtesy of the University of New Mexico SRP Center)

What SRP Grantees Study



The National Institutes of Health is working to reduce health threats from climate change across the lifespan, and to build health resilience in individuals and communities, especially among those at highest risk. For more information about the NIH Climate Change and Health Initiative, visit www.nih.gov/climateandhealth.