

ENERGY AND ENVIRONMENTAL JUSTICE

Advancing economic opportunities and protecting the wellbeing of all Americans



Sound energy and environmental policy should advance economic opportunities and protect the health of all Americans—regardless of economic or ethnic background.

For three decades, Argonne’s Environmental Science Division (EVS) has delivered pioneering research in fundamental and applied environmental science to better understand and solve global, national, regional, and local environmental challenges. Leveraging our core competency in predictive environmental understanding, our multidisciplinary teams of scientific experts aim to better understand how natural and human-made systems interact, allowing us to better forecast the consequences of those interactions.

EVS CAPABILITIES

The Division’s core discipline strengths include fundamental and applied research in human health and ecological risk, atmospheric sciences, climate science, ecological sciences, environmental chemistry, remediation, natural and cultural resources management, hydrology, remote sensing, environmental software development, and advanced spatial analysis. EVS assembles cross-disciplinary teams that apply these core capabilities to help stakeholders make decisions that meet energy and environmental justice goals and promote the health and economic well being of all Americans (see sidebar on page 2).

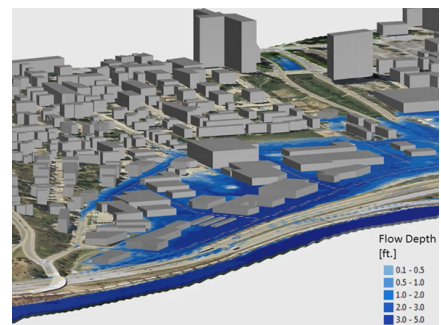


Image shows urban flooding simulation for Portland, Maine. (Image by Argonne National Laboratory).

CONTACT

Cristina Negri
 Division Director
 Environmental Science Division
 Phone: 630-252-9662
 Email: negri@anl.gov
www.evs.anl.gov/about-evs/departments

Social and Cultural Systems

- Development of Tribal agreements and performance of Tribal consultations
- Analysis of cultural and Tribal resources to reduce risks and impacts to these resources
- Collection of data and application of geographic information system (GIS) tools to analyze risks to underserved communities

Regional Climate Modeling

- Projection of climate impacts for local/regional scale adaptation and planning
- Analysis of social impacts of extreme rainfall and methods to mitigate impacts using green infrastructure
- Development of estimates for solar and wind resources planning
- Climate risk projections for the development of community-scale adaptation plans

Human Health & Environmental Risk Analysis

- Health risk assessments associated with environmental conditions in water, soil, and air, including for disproportionately impacted communities
- Health and ecological risk analyses of environmental resources on legacy waste sites near Tribal communities
- Evaluation of vulnerabilities and development of a tool to examine pandemic impacts on communities

National Environmental Policy Act

- Cultural and natural resources impact analysis and mitigation
- Hydrological, radiation, and chemical risk analyses; air and noise analyses; and environmental exposure and health assessments as they relate to impacts on underrepresented communities
- Assembly of multidisciplinary teams to identify cumulative impacts of federal actions

Background

Efforts to combat climate change, grow renewable energy capacity, and mitigate environmental impacts should protect the health of all Americans — regardless of economic or ethnic background. The economic opportunities associated with U.S. energy and environmental initiatives must be available to all.

The four tenets to help achieve these goals are:

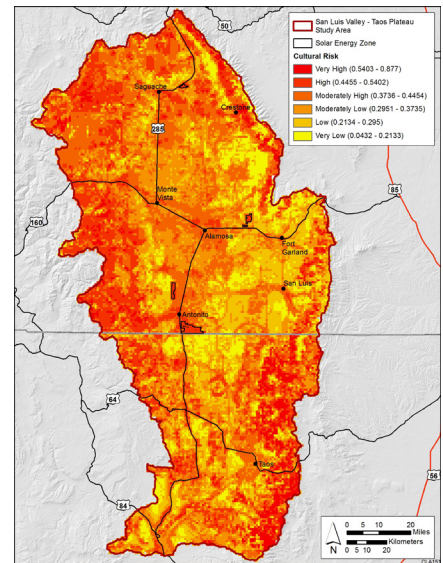
1. An inclusive and collaborative “all-of-government” approach
2. Decisions driven by data and science
3. Resources targeted to prioritize environmental and climate justice
4. Assessment and mitigation of risks to communities from the next public health emergency

Within these four broad tenets, significant actions to be taken are:

- Create a data-driven climate and economic justice tool
- Prioritize strategies to reduce traditional air pollution
- Develop a climate crisis strategy to address climate disaster risk reduction and response for heat waves, wildfires, air pollution, infectious diseases, hurricanes, and floods
- Launch an Infectious Disease Defense Initiative
- Ensure clean drinking water
- Develop technological solutions to assess risk and protect people and their property

Hydrology and Risk-Based Restoration

- Analysis and development of models to show impacts from extreme drought on thermoelectric power plants as they relate to underrepresented communities
- Analyses of the resilience of infrastructure and urban systems
- Analyses to protect drinking water using a suite of technologies to characterize contamination in air, soil, and water
- Use of specialized technologies to remediate and restore groundwater, surface water, and soil
- Characterizations of climate and hydrologic extreme events (e.g., flooding)



Argonne calculated the risk to cultural resources from development, wildfire, invasive species, and climate change in the San Luis Valley of Colorado and the Taos Plateau of New Mexico as part of a solar regional mitigation strategy for the Bureau of Land Management.