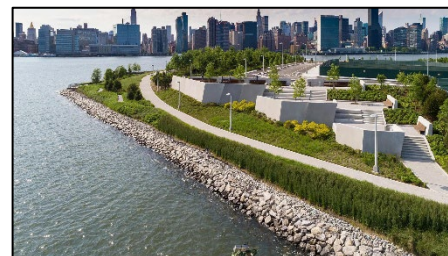


Environmental Hazard & Risk Assessment is the discipline focused on identifying, evaluating, predicting, and managing risks posed by natural hazards, technological hazards, pollution, climate change, and other environmental threats to human communities and ecosystems. Professionals in this field use scientific data, spatial analysis, modeling, risk communication, and policy tools to understand vulnerabilities and develop strategies that reduce environmental risks and improve resilience. As climate change, urbanization, and environmental degradation increase exposure to hazards, demand for professionals with expertise in risk assessment and resilience planning continues to grow. Some of the critical questions that might be addressed with a career in these fields include:

- Which communities are most vulnerable to environmental hazards, and why?
- How will climate change alter risks associated with flooding, drought, heat waves, storms, and sea-level rise?
- What are the human health risks associated with exposure to environmental contaminants?
- How can hazard mitigation and resilience planning reduce future losses from natural disasters?
- How should environmental risks be communicated to policymakers, businesses, and the public?
- What infrastructure investments provide the greatest reduction in environmental risk?



Careers

Careers in **Environmental Hazard & Risk Assessment** involve working with government agencies, consulting firms, insurance companies, public health organizations, emergency management agencies, and research institutions to evaluate environmental threats and develop risk reduction strategies.

Career	Potential Employers
Hazard Assessment and Analysis	
Environmental Risk Assessor	EPA, Environmental Consulting Firms, Industry
Hazard Mitigation Specialist	FEMA, State Emergency Management Agencies
Climate Risk Analyst	Consulting Firms, Financial Institutions, Corporations
Natural Hazards Researcher	Universities, NOAA, USGS
Environmental Modeler	Consulting Firms, Research Institutes, Government Agencies
Emergency Management and Resilience	
Emergency Management Specialist	FEMA, State and Local Governments
Resilience Planner	Municipal Governments, NGOs, Consulting Firms
Disaster Recovery Coordinator	Federal, State, and Local Governments
Climate Adaptation Specialist	NGOs, Government Agencies, International Organizations
Environmental Health and Safety	
Environmental Health Specialist	Public Health Departments, CDC, NGOs
Occupational Health and Safety Specialist	OSHA, Industry, Consulting Firms
Environmental Compliance Specialist	Industry, Consulting Firms, Regulatory Agencies
Insurance and Finance	
Catastrophe Risk Analyst	Insurance Companies, Reinsurance Firms
Risk Management Consultant	Consulting Firms, Corporations
ESG and Climate Risk Specialist	Banks, Asset Managers, Consulting Firms

Coursework & Degree Options

The **Environmental Hazard & Risk Assessment** pathway is appropriate for Geography, Environmental Science, and Environmental Studies majors. Students interested in careers involving hazard assessment, emergency management, climate resilience, environmental health, environmental consulting, or risk analysis may wish to consider the following courses:



4-cr. Science & Technology laboratory courses:

- GEV 4323 – Watershed Biogeochemistry
- GEV 4324 – Wetland Science and Management
- GEV 4329 – Global Change Research
- GEV 4362 – Coastal Geohazards
- GEV 4363 – GIS for Conservation Management
- GEV 4320 – Air Pollution

3-cr. Science & Technology elective courses:

- GEV 3308 – Environmental Health
- GEV 3760 – Geospatial Applications in Env Sci
- GEV 4511 – Climate Variability
- GEV 4514 – Geomorphology
- GEV 4358 – Environmental Project Management
- GEV 4301 – QGIS, Story Maps, Dashboarding, Drones, Google Earth Engine (1 credits)



3-credit elective Environmental Policy & Management courses:

- GEV 3570 – Land Use Planning and Management
- GEV 4331 – Environmental Policy and Management
- GEV 4334 – Environmental Law
- GEV 4336 – Environmental Economics
- PA 2000 – Public Policy



3-credit elective Environmental Social Science and Humanities courses:

- GEV 3004 – Geographies of Environmental Justice
- PHI 2121 – Environmental Ethics

Degree Options

- Students may wish to consider double majoring in **Geography** and an **Environmental major**.
- Students should consider applying for the **Undergraduate Geospatial Information Sciences Certificate**.

Notes:

- GIS and spatial analysis skills are among the most valuable technical skills in hazard assessment careers.
- Students should seek internships with emergency management agencies, environmental consulting firms, planning departments, public health agencies, utilities, or environmental regulatory organizations.
- Many careers in risk assessment involve quantitative analysis, modeling, statistics, and geospatial technologies.
- Study abroad programs focused on climate change, sustainability, disaster management, or environmental policy can complement this pathway.
- There are additional thematic courses offered every semester that may support this pathway.

Alumni Spotlight

Elizabeth O'Brien

B.S. Environmental Science, Class of 2019

Senior Associate, Climate Risk Modeling Services, PwC

Libby earned her M.S. in Ecology and Evolutionary Biology at the University of Michigan before moving into the climate risk modeling field in 2022. She worked at ERM for about a year before moving to PwC where she is a senior associate in the climate risk modeling group.

<https://www.linkedin.com/in/elizabeth-o-brien-06a997230/>



To learn more about this and other career pathways, use the QR code, contact your academic advisor, or contact the Chair of the Department of Geography and the Environment for guidance.

The GEV Career Pathways Page:

