

# ENVIRONMENTAL GEOGRAPHY

Issue: Hazards and disasters

Lesson inquiry: How do people recover from natural disasters?

Career connection: Tracy Whelen, Geospatial consultant and 2nd Year Participant in the Business Insights & Analytics Leadership Development Program at Travelers Insurance

## GEOGRAPHIC QUESTIONS:

- How common are natural disasters?
- Where are common natural disasters located?
- How do hazards lead to disasters?
- How can hazard mapping help mitigate disasters?
- Why is post-event imagery analyzed in a catastrophe response process?

## RELATED GEOGRAPHY CAREERS:

- [Emergency Management Director](#)
- [Conservation Scientist](#)
- [Range Managers](#)
- [Urban and Regional Planners](#)



Photo: A fire charges up a hillside

## INTERVIEW DIGEST: TRACY WHELEN

"All the data I work with has a spatial component to it, and we often work with thousands or millions of records at a time, necessitating strong geography and computer science skills to efficiently store, process, and analyze data, and to deliver actionable outputs."

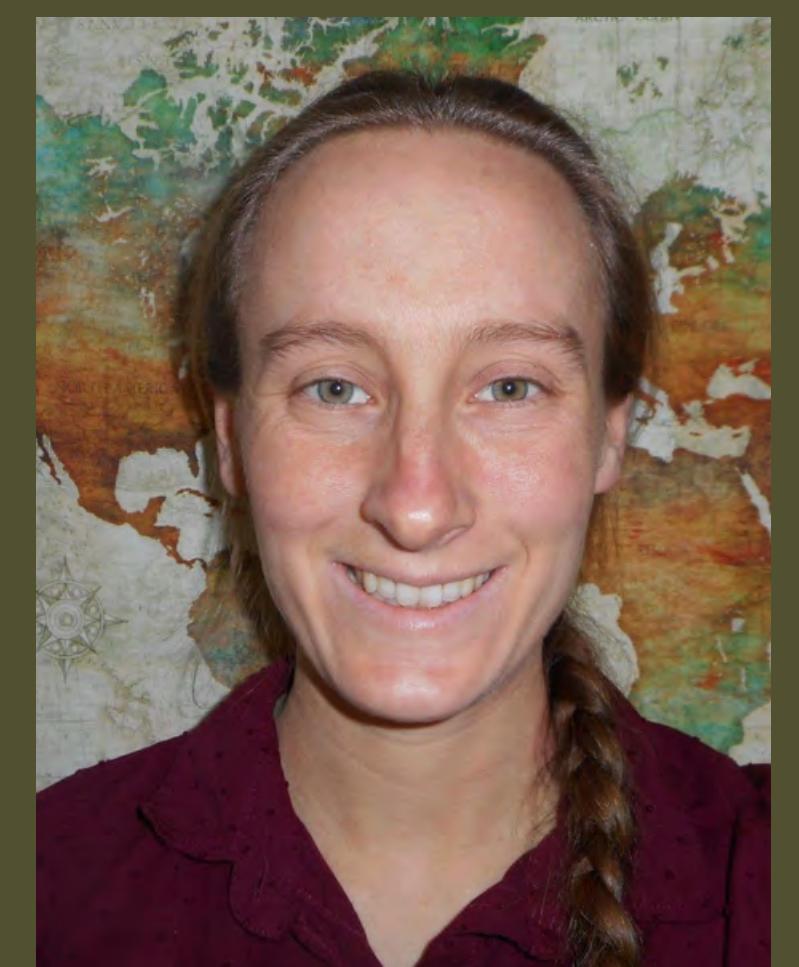


Photo: Tracy Whelen in front of a map

## APPLICATIONS:

- Identify and define natural hazards and disasters.
- Examine data from disaster case studies to explore recovery responses.
- Explain how citizen empowered mapping can improve emergency responses.

## LESSON ACTIVITY EXAMPLE:

- Use the NOAA Disaster and Risks Maps [here](#) to identify the costliest natural disasters in U.S. history.
- If ArcGIS is available, download the ArcGIS Collector app to demonstrate how accessible field reporting of post-event imagery is. Additionally, discuss the potential benefits of smartphones to improve emergency responses.

## GLOSSARY:



NATURAL DISASTER



HAZARDS



MITIGATE



SUSTAINABILITY



CLIMATE CHANGE

## SKILLS:

- Structured Query Language (SQL)
- Python
- Data formatting and collection
- GIS

## BACKGROUND RESOURCES:

- [Travelers Insurance Natural Disaster Response & Preparation video](#)
- [Hazard and disaster emergency preparedness sheets](#)
- [NOAA Disaster and Risks Maps](#)
- [Homeland Security Natural Disaster Page](#)
- [2018 Hazard Mitigation Plan for San Diego County](#)

## DATA:

- Business data (e.g. claims, policies)
- Event data – wildfire boundaries, hurricane wind footprints, precipitation measurements, tornado damage reports, etc.
- Aerial imagery and derived model output
- Property geometry data (e.g. building footprints, parcel boundaries)



Photo: A tsunami evacuation site sign



{ RppforCs : ENCODING GEOGRAPHY }



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