

Study focuses on communities near polluted waterways

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There's no such thing as a good place to have a natural disaster, nor has there ever been an appropriate site to release toxic pollutants. But scientists have long recognized that some areas can handle such catastrophes better than others. As early as the 1970s, they used socioeconomic data from the U.S. Census to develop a tool called the [Social Vulnerability Index](#), known as SoVI, to gauge the likely resilience of different communities.

Now a team of professors and graduate students at the University of Illinois is testing and tweaking the SoVI model by studying at a more granular level the communities around two polluted Midwest waterways. Bethany Cutts, a professor of natural resources and environmental sciences, and Andrew Greenlee, a professor of urban and regional planning, received a two-year Illinois-Indiana Sea Grant to study communities around the Lincoln Park-Milwaukee Estuary and portions of the Grand Calumet River south of Chicago, both designated "areas of concern" by the U.S. Environmental Protection Agency.

"We want to take the vulnerability concepts and test them through the lived experiences of the local people," Greenlee said.

"They might identify different trends that we wouldn't necessarily have picked up on based on indicators that have been developed for the whole U.S.," Cutts said.

Their research focuses on communities around waterways that

previously served as dumping grounds for industries but are now being cleaned up by the EPA. By homing in on populations that have experienced both pollution and remediation, Cutts and Greenlee hope to add several new dimensions to SoVI analysis: the long lens of time, and the personal perspectives of people directly affected.

"We're applying the Vulnerability Index differently," Greenlee said. "Instead of looking at disasters, we're approaching it from the perspective of other types of disruptions – in this case the sediment removal itself, because that can have a huge effect on the surrounding people as well."

"And it can be negative or positive," Cutts said, "depending on how empowered and included in the process the community is."

The two areas they're studying are in different phases of remediation. The Milwaukee Estuary was polluted by upstream steel industry facilities that were shut down in the 1980s, and after years of cleanup, the riverfront is being redeveloped and rediscovered by Milwaukee residents. In the Grand Calumet research area, industries continue to operate, having opted to retrofit their operations to minimize pollution in addition to paying for the cleanup. Cutts and Greenlee predict that local residents may have complicated feelings about the pollution as well as the dredging.

"A lot of times, these industries are or were an active source of employment and other opportunities," Cutts said. "The promise of jobs convinces people to accept risks that they otherwise wouldn't, and then they get caught in a system where the only other employers you can attract to your area are similarly polluting ones, because a nice little garden café does not want to be next to an oil refinery."

"You want industries to move there because you want a job," Greenlee

said, "but they're also degrading your environment and lowering your property values, so these businesses are both stabilizing and destabilizing at the same time. And that's part of why we want to look at the cleanup efforts as the same thing – they're a stabilizing factor, in that they're creating benefit and capital investment, but they also have the potential to be a huge destabilizing factor economically, socially and politically, in terms of what could happen in these sites now that they're cleaned up and amenities come in."

To carry out this research, Cutts and Greenlee established a course titled "Workshop in Urban Environmental Equity" that began during the Spring 2014 semester and continued through the summer. The five graduate students selected for the workshop are doing mapping, data analysis and video interviews with local residents – another added dimension for their research.

"Both of us have used qualitative research before," Greenlee said, "but using video and audio as a dissemination tool – taking a more journalistic approach to research and to sharing results – opens up new audiences for us. These are people who might not be willing to get up in a public meeting, or might never go to a public meeting, and I think the great thing is that by using these methods, we can also allow these community stakeholders to speak for themselves, rather than us coming in as 'experts' and saying, 'People say this.'

"We want to critique the Social Vulnerability Index at a high level, in terms of what this actually means for these communities."

Provided by University of Illinois at Urbana-Champaign

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