*"When the oil spill happened, many people were looking at the environment, but not as many were studying how it affected the communities. Quality of life is an important area of research...the ecosystem services we get from nature support well-being."*

*Dr. Susan Lovelace*

Lovelace and her team, who have done assessments based on data before the spill, will continue the research to see which indicators the spill affected once more funding is available. The group works with large data models, not determining causal changes but rather establishing relationship patterns. For example, they can see that counties that have had comprehensive plans in place for longer periods have better environmental conditions. "That says something good about planning. If we plan, we may be able to maintain a coastal environment that supports our needs. "

More of these data are needed to set baseline levels in a community to make comparisons. "You'd think we have this kind of information, but we don't," she said, and it affects the ability of political leaders and the public to be able to decide what kind of communities they want to create. "We need to understand coastal communities so when we do development plans and want to change things – whether it's putting in a new shipping channel or gas or oil rig or whether we dredge new inlets or whether we put in a lot of new driveways in a coastal area – those are all things that could turn around and affect the community as a whole."

She will continue to tweak the model so it's responsive to a comprehensive scale of indicators.

"What we're trying to do is model the socioeconomic data with the biophysical data.

Instead of just making a model of how the environment is, we're actually trying to include communities in that too, so when you push on one part of the model, you can not only see how it affects contaminants in the sediment and how shrimp are doing, but you also can see how communities are doing."

Through using this model and measuring the changes in the health and well-being of residents in counties impacted by the *DWH* industrial-environmental disaster, researchers can set a baseline measurement of well-being to which indicators collected after the disaster can be compared. "Modeling changes of indicators over time will allow researchers to predict changes in well-being in relation to changes in the environment so that appropriate interventions to protect community well-being can be designed."



*Using the Gulf of Mexico as a regional case study, the research team developed a set of composite indicators to monitor well-being at the county-level.*