well-being

MEASURING WELL-BEING

When it comes to taking a community-level view, no one knows that better than Dr. Lovelace, an environmental social scientist for NOAA, who works at the interface of socio-economic and biophysical data. When most people think about the implications of the *Deepwater Horizon (DWH)* oil spill, environmental damage comes to mind, but it's not the only impact. Lovelace, along with Maria Dillard at NCCOS' HML and Theresa Goedeke from NCCOS's Center for Coastal Monitoring and Assessment, created a set of indicators that identify human well-being.

"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. We wanted to start trying to measure the connections between environmental quality and well-being. The ecosystem services we get from nature support well-being," Lovelace said.

HML's Human Dimensions DWH research focuses on the connections between the environment, human health and the communities of the Gulf Coast.

Most of the research on the *DWH* disaster focused on either the environmental damage caused by the disaster or the human health impacts. However, little research has been focused on the connections between the environment, human health and the communities of the Gulf Coast. "Throughout the event, these connections became increasingly clear. The oil harmed fish and shellfish, clean water, recreational activities and beautiful views – many of the important ecosystem services that people regularly enjoy."

In an effort to understand how changes in the environment are connected to community well-being, researchers working for NCCOS's Hollings Marine Laboratory and the Center for Coastal Monitoring and Assessment developed a method to monitor the relationship between the health and welfare of coastal residents and the health of the adjacent coastal environment over time. Multiple indicator measurements from human well-being to the environment were used to develop a "Community Well-Being Index." The indicators, which include basic needs, governance, economic security, safety, access to social services, social connectedness, education and health, were initially identified through a workshop that brought together individuals from federal, state and academic institutions.

Dr. David Abramson, Deputy Director of the National Center for Disaster Preparedness, praised this tool as an enduring contribution to the field of sociometrics in providing a way to measure the human ecosystem. Lovelace, who has been doing this type of work for more than 20 years, said it's a small group of researchers who are in the field. "It's critical work, though, because it's in creating this method of measuring human and environmental welfare that researchers will be able to define benchmarks to better assess the social impacts of environmental disasters like the *DWH* event."

Lovelace said assessment of well-being occurred at the county level and their research covered coastal counties directly affected by the oil spill, as well as a selection of unaffected counties for comparison. Data from three time points were collected to provide a longitudinal perspective for the years 2000-2009.

"What we learn from this research can inform public health and resource managers in their decision-making. When we make decisions about the environment it is often thought that we are just using economic value, however, we make a lot of decisions based on things other than dollars. The research is trying to measure some of the things we care about and how those things are connected to the well-being of people. It's about the well-being of communities, not an individual. Being able to measure changes in communities will allow us to use data to support community decisions," Lovelace said.