



www.epa.gov/ecology

# science in ACTION

BUILDING A SCIENTIFIC FOUNDATION FOR SOUND ENVIRONMENTAL DECISIONS



## Sustainable and Healthy Communities Research Program

### GULF OF MEXICO AND CARIBBEAN COMMUNITY SUSTAINABILITY STUDY FOCUSES ON TYING THE SCIENCE OF ECOSYSTEM SERVICES AND HUMAN HEALTH DIRECTLY TO COMMUNITY DECISION MAKING

#### Issue:

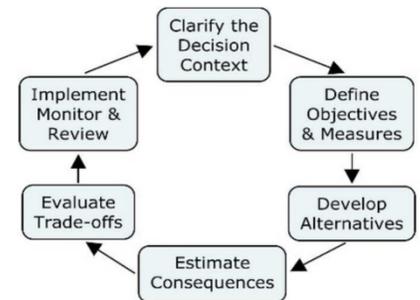
The Sustainable and Healthy Communities Research Program in EPA’s Office of Research and Development is studying how the availability of ecosystem goods and services (EGS) is impacted by community decision making and how this relationship alters human wellbeing. We also seek ‘common ground’ across communities that may aid EPA’s Office of Research and Development in providing decision support to the most communities possible. This research is a part of a larger national effort to provide practical, scientifically sound, and consistent advice to community decision makers as a primary driver of future sustainability.

The goal of EPA/ORD’s community-based research is to develop and demonstrate approaches, datasets, and tools that inform communities about the sustainability of the outcomes of their decisions.

During a series of community workshops held around the United States, we asked a diverse group of community representatives what EPA could do to assist them in their sustainable community efforts. One of the common needs was having better tools to assess community sustainability based on local values and goals.

Ultimately, the goal of this research is to develop a process to measure community sustainability. Sustainability is a complex concept that has some easily identified parts, but also can be hard to fully understand or measure. All decisions ultimately impact sustainability but in different ways. For instance, how does revitalization in an urban core alter community sustainability? The answer lies in the specific decisions made to accomplish this objective. We are helping communities answer these types of questions by linking decisions to scientifically sound and

approachable measures of sustainability.



Community decision cycle

#### Science Objective:

Scientists are partnering with community stakeholders to explore how local decisions affect human and environmental health and are using this information to develop useful measures of sustainability. Scientists are focused on developing predictions of change in community sustainability before the decisions are made and meaningful measures of decision outcomes. This research is an extension of the study of

*continued on back*

## Sustainable and Healthy Communities Research Program

*continued from front*

ecosystems recognizing the central role of humans and human communities as ecosystem components.

The research objectives of the Community Sustainability study are:

- Work with community stakeholders to derive measures of community sustainability and link them to the production of ecosystem goods and services (EGS) that benefit the community.
- Apply Structured Decision Making (SDM) approaches to assist communities in identifying their fundamental objectives.
- Evaluate quantitative tools that link delivery of EGS and community decisions and are applicable across communities.
- Develop decision support based on these quantitative tools to evaluate specific actions associated with a communities fundamental objectives.
- Examine similarities and differences across communities in available EGS, community objectives, and the sustainability of community decisions.

Scientists are working with communities to identify fundamental objectives, translate these objectives into potential future actions, evaluate those actions with respect to community sustainability, and work with community stakeholders to develop measures of sustainability that are informative, easily calculated, and understandable.

At the heart of this work is sound ecosystem science. We will build on past success in this discipline, within the EPA and beyond, to ask how research conducted in specific communities translates to other communities with similar issues and resources.

Tools applied as a part of the Community Sustainability project will include quantitative visualization models developed by EPA researchers to evaluate specific scenarios of community change.

### Application and Impact:

Researchers will provide resource managers, planners, government decision makers and others with the tools and information they need to evaluate alternative actions and measure the impact of these actions on community sustainability

Ultimately, the project will inform and empower communities to evaluate decisions from a sustainability endpoint and assist communities with application of tools through evaluation of specific scenarios.

### CONTACT:

Rich Fulford, Ph.D.  
Environmental Protection Agency  
Office of Research and Development  
850-934-9372  
[fulford.richard@epa.gov](mailto:fulford.richard@epa.gov)

JUNE 2014

