

# The State of Climate-Informed Water Resources Action in the Southeast U.S. and U.S. Caribbean

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## State of Adaptation

EcoAdapt's State of Adaptation Program is a research initiative designed to facilitate adaptation action by **surveying** practitioners, **assessing** adaptation activities, **writing** in-depth case studies to catalyze creative thinking, and **synthesizing** information collected to further develop the field of study and action. The results of this program, including synthesis reports and case studies, are used to populate the Climate Adaptation Knowledge Exchange (CAKE), a free online resource where users can access data, tools, and best practices for adaptation.

Past State of Adaptation studies have revealed a significant gap in adaptation capacity and reported activity in the Southeast U.S., especially around water resources management.

**This project** focuses explicitly on surveying, cataloging, and assessing adaptation activity occurring in water resources sectors in the Southeast U.S. and U.S. Caribbean.

### Jean Lafitte National Historic Park Wetland Restoration

Mississippi River Delta, Louisiana

Freshwater wetlands in Jean Lafitte National Historic are vulnerable to sea level rise, storm surge, and extreme precipitation events. As a part of broader restoration efforts, park staff are backfilling a series of canals to limit the inland penetration of salt water due to sea level rise and increasing storm surge. Canal backfilling is being paired with regional water and sediment management planning to promote natural wetland accretion, further enhancing sea level rise resilience. The park hopes this combination of activities will enhance freshwater wetland function, increase wetland area, and enhance overall wetland resilience to climate impacts.



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**Adaptation Relevance:** Protect resources from sea level rise; Reduce non-climate stressors likely to interact with climate change

## Climate Adaptation in Southeast U.S. and U.S. Caribbean Water Resources Management

### Orange Water and Sewer Authority Plans for a Resilient Water Supply

Carrboro-Chapel Hill Region, North Carolina

In light of increasing precipitation variability, including extreme precipitation and drought events, Orange Water and Sewer Authority (OWASA) has taken several steps to create a resilient water supply. They've expanded their water supply sources through purchase of a local quarry, eventually to be used as a reservoir. To reduce overall water use, OWASA has begun recycling water at its processing plant, adjusting consumer pricing to encourage conservation, and constructed a water reclamation plant, which now meets 10% of water demand. This plant is also resilient to increased flooding, as it was elevated to accommodate greater than a 100-year flood event. OWASA is also collaborating with UNC Chapel Hill to analyze the resilience of its water supply strategy under different climate change scenarios, and will use the results to identify additional management strategies that will allow them to maintain water supply under a variety of future conditions.

**Adaptation Relevance:** Increase water supplies/storage capacity; Improve flood protection measures; Increase water reuse and recycling; Conduct modeling to understand future water supply

### Louisville Manages Stormwater with Green Infrastructure

Louisville, Kentucky

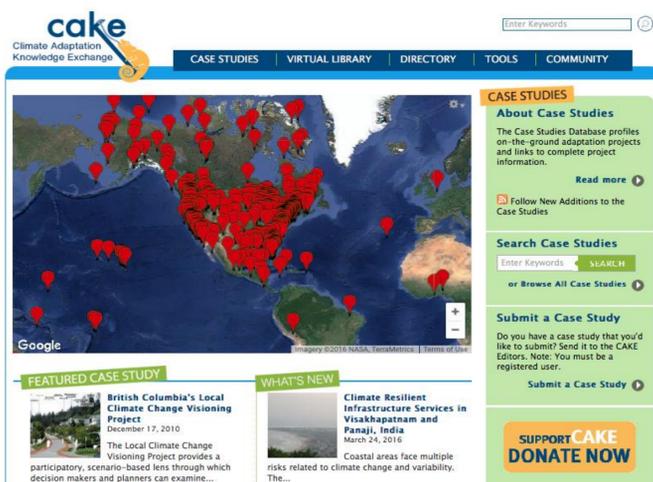
The Louisville and Jefferson County Metropolitan Sewer District (MSD) is turning to green infrastructure (GI) to better manage stormwater and enhance flood resilience of its combined sewer system. The MSD has conducted 19 demonstration projects to test GI effectiveness at reducing stormwater delivery to the sewer, and are utilizing GI in lieu of gray infrastructure. The MSD also runs an incentive program to encourage GI use on private property. Through this program, the MSD funded several GI projects on the University of Louisville's campus, including installation of underground filtration systems, green roofs, permeable pavers, rain barrels, and stormwater cisterns. Collectively, the university's stormwater system diverts 75 million gallons of stormwater per year, and recently mitigated city-wide flooding during an extreme precipitation event.



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**Adaptation Relevance:** Implement green infrastructure; Improve flood protection measures; Make infrastructure resistant or resilient to climate change

## Climate Adaptation Knowledge Exchange (CAKE)



### What is CAKE?

The Climate Adaptation Knowledge Exchange (CAKE), a program of EcoAdapt, is an online community resource that supports managers, planners, and practitioners as they work to prepare for and respond to climate change. Regardless of your profession, sector, or impact of concern, CAKE is for you!

### Why should I join CAKE?

- **Publish** and **promote** your work on climate adaptation
- **Find** case studies, people, and projects on our georeferenced map
- Get **advice** from adaptation experts
- **Browse** over **5,000** on-the-ground adaptation **Case Studies**, **Library** resources, adaptation and climate change **Tools**, a **Directory** of practitioners and organizations, and a **Community** section with the latest events and opportunities from around the field

## Practitioner Needs Assessment

### Purpose:

- Assess understanding and concerns about regional water resources
- Document activities being used to prepare for and respond to challenges
- Compile needs, opportunities, and barriers for planning for climate change and other threats

### Results

**Water sectors engaged in and key water resources of interest** (% participants indicating interest):

- |                                  |                          |
|----------------------------------|--------------------------|
| • Water quality (83%)            | • Rivers & streams (71%) |
| • Water delivery (59%)           | • Watersheds (67%)       |
| • Water demand and use (44%)     | • Wetlands (59%)         |
| • Water supply and storage (42%) | • Groundwater (48%)      |
|                                  | • Stormwater (47%)       |

### Top climate changes of concern:

- |                     |                        |
|---------------------|------------------------|
| • Water quality     | • Hydrological changes |
| • Stormwater runoff | • Groundwater recharge |
| • Habitat loss      | • Flooding             |
| • Water supply      | • Floodplain changes   |

**84% of respondents believe climate has had, is having, or will have a significant impact on water resources in the Southeast U.S.**