



Development of a Global Change Monitoring Portal: Pilot Project for the Southeastern US

Cari Furiness

NC State University

DOI Southeast Climate Science Center

Jerry McMahon, USGS and Damian Shea, NCSU

Presentation Outline

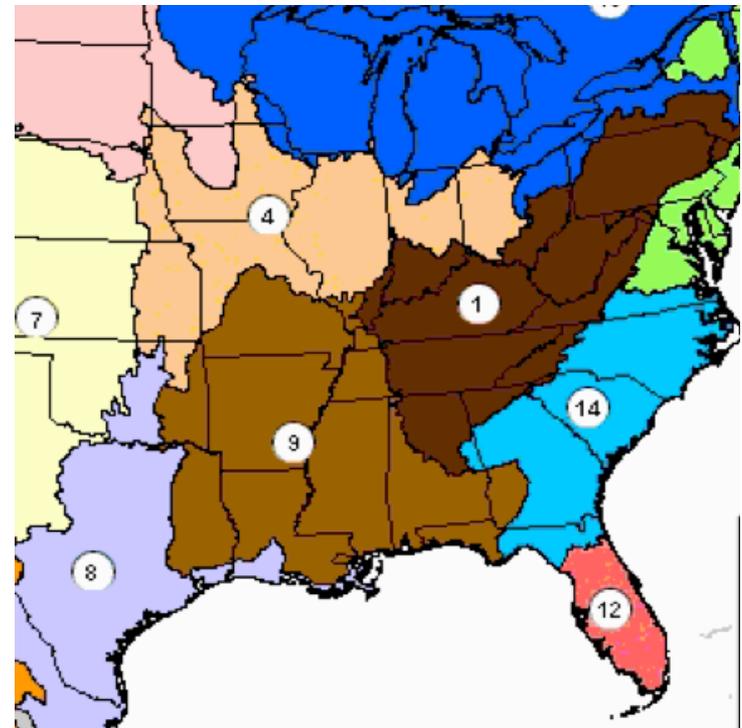
- Project Objective
- Approach / Design Elements
- Web-based Demonstration of Global Change Monitoring Portal (GCMP)
- Next Steps

Project Objective

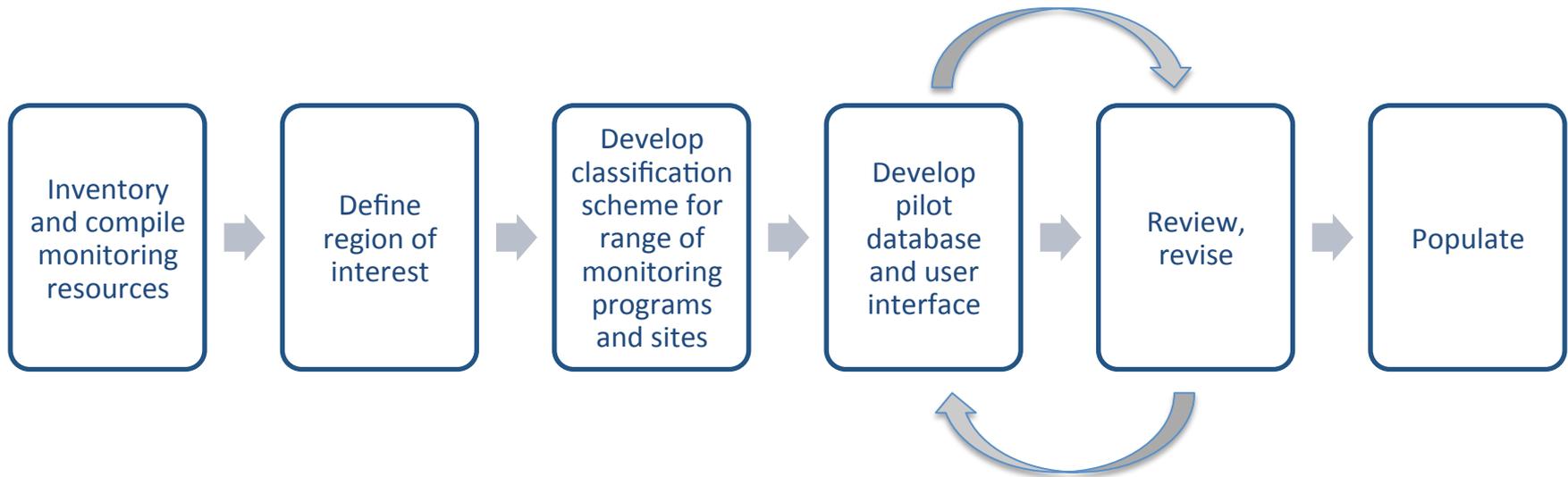
- Provide a centralized, comprehensive catalog of information about monitoring networks associated with aquatic and terrestrial ecosystems that can be used to assess the potential effects of climate change in the southeastern United States
 - Incorporate information about data collected in abiotic and biotic components of ecosystems, including coastal
 - Will not portal data, only metadata, but will provide information about data access

Project Objective

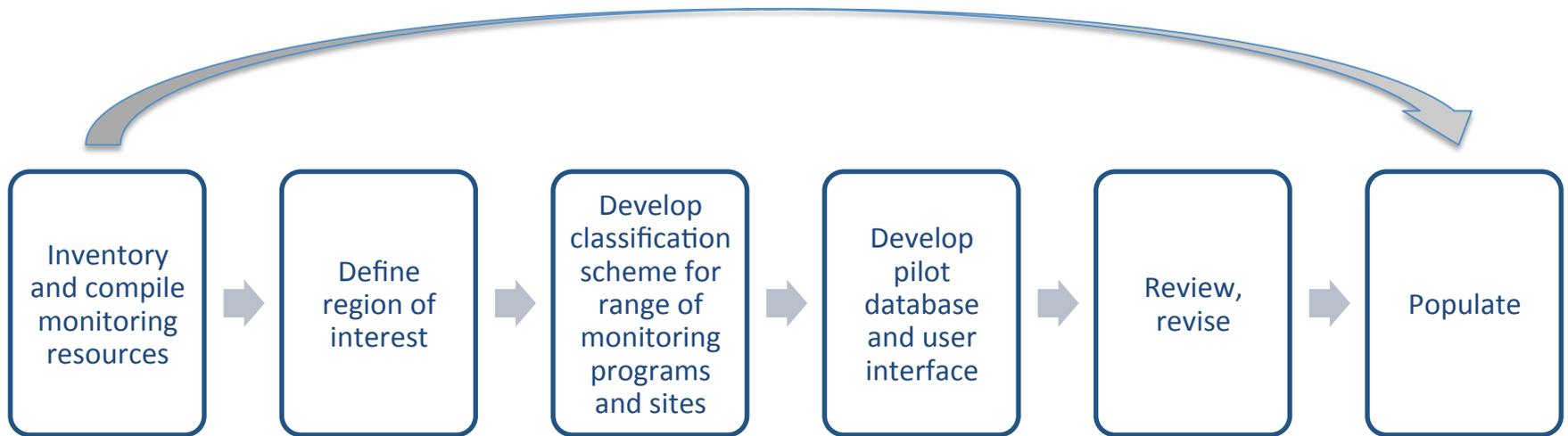
- Shaped by Southeast Climate Science Center mission
 - Characterize and understand the effects of climate change on land, water, wildlife, and cultural resources
 - Provide research-based information to support landscape-scale management decisions
- Primary partners are Landscape Conservation Cooperatives



Approach / Design Elements



Approach / Design Elements

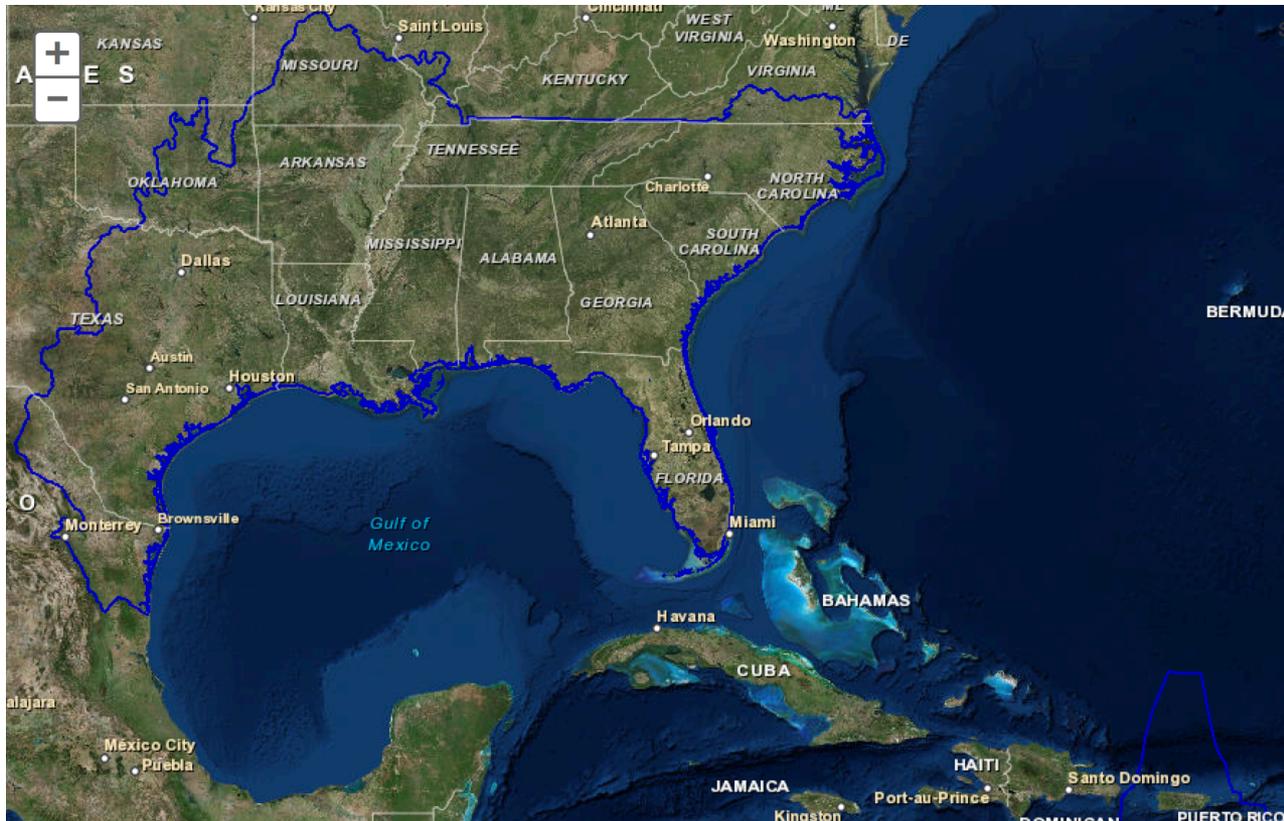


Approach / Design Elements

- Inventory and compile monitoring resources
 - Capitalize on other SE CSC efforts, those of partners
 - e.g., National Monitoring Network Federal Monitoring Inventory, Ecosystems Interagency Workgroup, APNEP, NAWQA
 - e.g., SE Coastal Water Quality Monitoring Metadata Portal, NC Climate Retrieval and Observations Network of the Southeast Database, Water-CAT Florida Water Resource Monitoring Catalog

Approach / Design Elements

- Define region of interest



Approach / Design Elements

- Develop classification scheme for range of monitoring programs and sites
 - Measurement

Measurement Category				
Media Type	Measurement Type	Biological Parameter Type	Chemical Parameter Type	Physical Parameter Type
Air	Biological	Ecosystem	Metals	Habitat
Land	Chemical	Fauna	Nutrients	Hydrologic
Water	Physical	Flora	Organic	Land cover
		Other Biological	Other Chemical	Meteorological
				Soil/Sediment
				Surface elevation

Approach / Design Elements

- Develop classification scheme for range of monitoring programs and sites
 - Geographic

- State



- LCC



Approach / Design Elements

- Develop classification scheme for range of monitoring programs and sites
 - Geographic
 - Level III Ecoregion
 - 8-digit HUC



Approach / Design Elements

- Develop pilot database and user interface
 - Development team based at USGS Fort Collins Science Center, Fort Collins, CO
 - GCMP is hosted at USGS Core Science Application Hosting Center
- Review, revise
- Populate

Web-based GCMP Demonstration



USGS science for a changing world

DEPARTMENT of the INTERIOR SE CLIMATE SCIENCE CENTER

Global Change Monitoring Portal

Home Browse Programs Search Main Map Dictionaries SE CSC Contact login

Southeast Global Change Monitoring Portal

Overview

A significant challenge faced by climate scientists and land managers in the public and private sectors is the need for reliable and complete information about the status of ecosystem components that may be influenced by climate change. While many organizations monitor one or more aspect of aquatic and terrestrial ecosystems, these monitoring programs are seldom coordinated and the associated data are not readily discoverable.

The Global Change Monitoring Portal (GCMP) is a project of the DOI Southeast Climate Science Center and aims to support the efforts of multiple federal, state, and other organizations by providing a centralized, comprehensive catalog of observational networks associated with aquatic and terrestrial ecosystems in the southeastern United States. The Southeast GCMP region of interest encompasses all or part of several Landscape Conservation Cooperatives (LCCs) in the southeastern US and Caribbean.

The GCMP is in the first phase of development and is being actively populated with new program and site information. We want to know about other observational networks or monitoring sites that should be included in the GCMP. Please send information to [Cari Furiness](mailto:Cari.Furiness@ncsu.edu) at the SE Climate Science Center.

Database

Information about existing and historical observational networks and monitoring sites was compiled into a relational database. Programs and sites are classified according to:

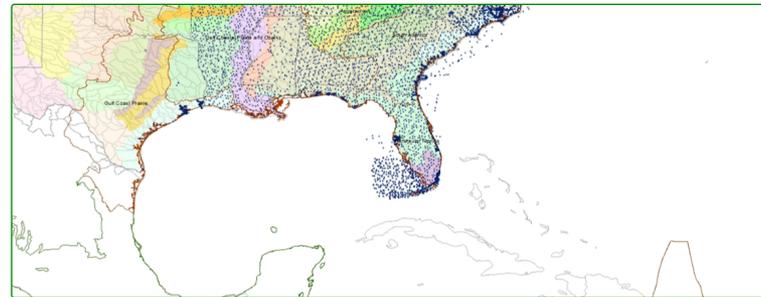
- the type of media being monitored – Air, Land, Water
- the general type of measurements that are made – Biological, Chemical, Physical
- and the general type of parameters that are measured (e.g., Fauna) within a particular measurement type (e.g., Biology).

Monitoring locations are detailed when made available by a monitoring network. Sites are classified according to several geographic criteria: State, Landscape Conservation Cooperative, Level III Ecoregion, and 8-digit Hydrologic Unit

In the GCMP, monitoring network and site information can be displayed and searched using geographic and/or measurement categories.

Observational data are not stored in the database, but links for accessing data from a monitoring program are provided when available.

We acknowledge the NPS-sponsored [SE Coastal Water Quality Monitoring Metadata Portal](#), from which some database design elements were utilized in development of the GCMP. Photo credits: Alan Cressler, USGS.



Updates / Adding Programs

Details about monitoring programs and sites are not dynamically updated, but can be modified if updated information is supplied by a monitoring network; date of the most recent update to information about a particular network or site is indicated on each page.

Want to contribute? If you are a monitoring program representative, please contact [Cari Furiness](mailto:Cari.Furiness@ncsu.edu) for a simple spreadsheet upload template. If you are aware of corrections to information currently in the GCMP, please also contact us.

Next Steps

- Continue to expand and refine list of monitoring programs/observational networks for potential inclusion in GCMP
- Populate database with information about additional relevant programs and sites where observations are made
- Based on user feedback, determine revisions and consider additional development of capabilities
- Contribute to assessment of monitoring resources in Southeast
- Consider expansion to other regions

Next Steps

Help us connect others to your monitoring efforts!

Contact: Cari Furiness, cari_furiness@ncsu.edu

<http://my.usgs.gov/gcmp>