South Florida Environmental Monitoring I-Team Initiative

Developing a business model to improve Florida's knowledge, understanding and implementation of environmental monitoring activities

At the request of the Miami-Dade Department of Environmental Resources Management for Miami-Dade County, and in cooperation with the Federal Geographic Data Committee, a South Florida Environmental Monitoring Implementation Team (I-Team) was initiated in April 2001. This is an application or issue oriented I-Team that was established to address the following problem.

> *Southeast Florida comprises both an airshed and a watershed (or multiple watersheds) and is a significant part of the larger Everglades basin. Miami-Dade, Broward, and Palm Beach counties currently house a population in excess of 4 million people in a largely suburban development pattern covering the coastal ridge and significant areas of former Everglades wetlands. A number of federal, state, and local agencies collect significant quantities of environmental data annually. Some of this is done cooperatively among agencies while other data are collected separately for specific purposes (satisfying water use permitting requirements or to verifying compliance with water quality regulations). Well over one hundred units of government operate in the region. Information technology is now making possible the real time sharing of data that even a few years ago would have been highly impractical. At the same time, the legacy systems used by agencies that collect and store environmental data are not designed to communicate with one another and are very often inaccessible and incompatible. Ambient air quality data that is collected by each county pursuant to EPA and State-administered Clean Air Act requirements is collected, analyzed, processed, and stored using a national standard, but that is the exception to the rule. Surface and ground water data, and resource and habitat data typically are much less accessible and compatible. The lack of a common standard for collecting, processing, and storing environmental data most likely results in duplication of effort by multiple agencies and a failure to better understand environmental conditions and trends that might become apparent if more of the existing data could be easily accessed in a common format.*

The I-Team Initiative is a Federal effort that is designed to address the institutional and financial barriers to the development of geospatial information.

> *I-Teams aim to offer a coherent set of institutional and financial incentives to make it easier for all levels of government and the private sector to collaborate in the building of the next generation of place based data. By aligning participant needs and resources, the I-Team Initiative will help governments and the private sector to save money, migrate from existing*

legacy systems, make better use of existing resources, and develop the business case for additional public and private resources.

The South Florida Environmental Monitoring I-Team was established with representatives from the Miami-Dade, Broward and Palm Beach Counties, the Florida Marine Research Institute, the Department of Environmental Protection (DEP), the South Florida Water Management District, the Army Corps of Engineers, the Comprehensive Everglades Restoration Program (CERP), the Federal Geographic Data Committee, and the United States Geological Survey (USGS). There are an estimated 2000 monitoring projects in Florida and 200 in the three counties that are participating on the I-Team. The goal of the South Florida Environmental Monitoring I-Team is to:

Develop an implementation plan to facilitate the more comprehensive and cost-effective monitoring of environmental conditions and processes encompassing air, land, water, biota, and people.

This I-Team, although limited to three counties, is being developed with the idea that any recommended solution would have a much wider implementation. The South Florida Environmental Monitoring I-Team has four objectives: 1) the creation of an inventory of the environmental monitoring efforts in the region; 2) the design and development of an information system to maintain this inventory; 3) an assessment of opportunities for long-term improvement of environmental monitoring data in the region; and 4) recommendations for a process to accomplish the same objective on a statewide basis. A workshop was held on June 20, 2001, to develop a core inventory form for monitoring activities. This form is being used as a model by CERP to inventory the environmental monitoring efforts in the sixteen CERP counties. The representatives from Miami-Dade, Broward and Palm Beach counties are compiling a list of monitoring projects for the CERP contractors to be included in the inventory. This joint effort will fulfill the first objective of the South Florida Environmental Monitoring I-Team, which is to determine the extent and number of monitoring programs in the area.

Attached is a copy of the Draft Inventory Form. The counties began testing the inventory in July and the results are expected by mid-August. Once the inventory is satisfactorily tested, a more complete inventory will be conducted that will include all potential sources in the region. Recommendations will be made for an Internet based inventory and mechanisms for maintaining it. The inventory will be used to identify projects for a more detailed survey and opportunities for long-term improvement.

More information about the I-Team concept can be found at the I-Team Web site - *www.fgdc.gov/I-Team*. To acquire additional information about this project, contact David Stage at 850-921-9755 or David.Stage@dep.state.fl.us.

Coordinator Contact Sheet

Inventory Coordinator Contact: There should only be one Coordinator Contact Sheet for an organization. *(The inventory coordinator should not necessarily be the Monitoring Effort Contact)*

Name: _____

Organization/Agency and Abbreviation: _____

Phone:

Fax:

Email:

Inventory Contact Code : _____

Directions:

1. ***Complete Inventory Coordinator Contact Sheet:*** Note: The Inventory Contact Code is essential for linking the inventory documents together. (Organization/Agency Abbreviation - Initials of Contact {First, Middle and Last Name} Separate the abbreviation and initials by a dash {DEP-DTS}).
2. ***Inventory Form:*** Complete one inventory form for each Monitoring Effort The Monitoring Effort Contact is not necessarily the same person as the Inventory Coordinator.
3. ***Include Inventory Contact Code*** – A unique code to identify the inventory and tie it to the Inventory Contact (Example DEP-DTS-01)
4. ***Category and Title*** will be used to catalog the Monitoring effort in the inventory.
   a. ***Category:*** Choose one that best fits the Monitoring Effort. This is
   b. ***Title***: A brief descriptive title.
5. ***Maps***: If the coverage area for the monitoring project is other than a county or jurisdictional boundary, use the map to better delineate the coverage area. Use a pen to draw a boundary. Use only one map for a *Monitoring Effort*. Use the Inventory Contact Code from the associated Inventory Form

Please send your inventory forms to:

Inventory Form for Environmental Monitoring Effort

Inventory Contact Code: _____

Category: _____

Monitoring Effort Title: _____

Organization: _____

Duration (pick as many as are applicable)
In Progress ___ Complete ___ Continuous ____
Frequency: hourly__, daily__, weekly__, monthly__, yearly__, continuous ___.
Other: _____
Time Period: Beginning Year ___ Ending Year ___

Classes of Parameters
Climatological __, Fauna __, Flora __, Geological __, Hydrological __, Metals __,
Meteorological __, Nutrients __, Organic __, Physical __.
Other _____

Location:
Jurisdictional Coverage: *(the most inclusive)*
State: FL
Counties: (Broward___, Miami-Dade___, Palm Beach___)
South Florida Water Management District_____
Other Jurisdiction: _____
Complete Coverage of Jurisdiction: Yes ___ No ___
Describe Area or Caveats: _____

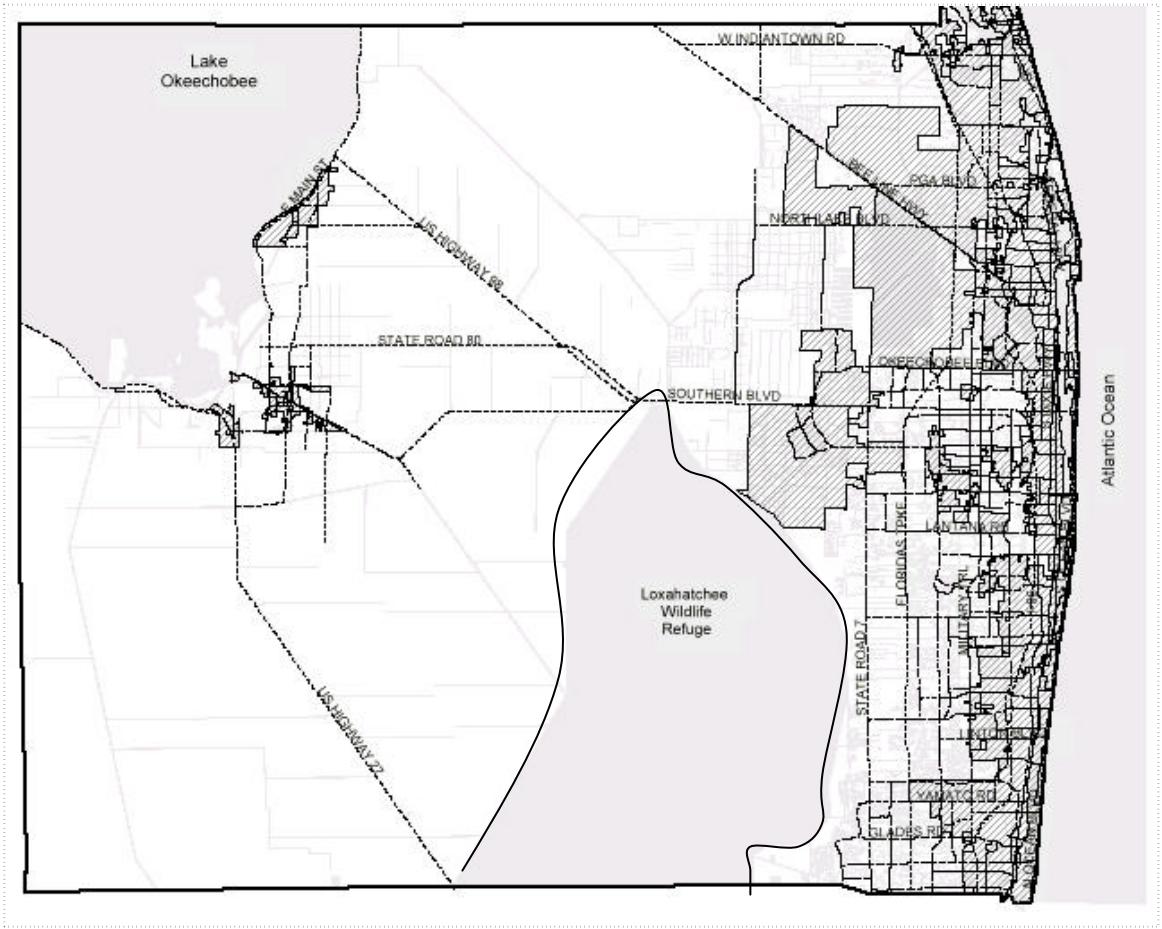
Number of Sites: _____

Map Coverage (See attachments) The map coverage provides a mechanism to describe an area that is other than county/jurisdictional boundary. If the coverage can best be described by county boundaries, the maps are not needed.

Other
Format: Hardcopy __, Digital __, Digital Map (point __, line__, polygon__, raster__)
Documentation: Yes __ No __ Standard Used for Documentation _____
Available for Distribution: Yes __ No __

Monitoring Effort Contact *(individual to contact for questions about the program. If it is the same person as the Inventory contact, just fill in the name)*
Name:
Organization:
Phone:
Email:
Additional Information: *(If there is any additional information that you feel is important, you can include it here)*

Palm Beach County



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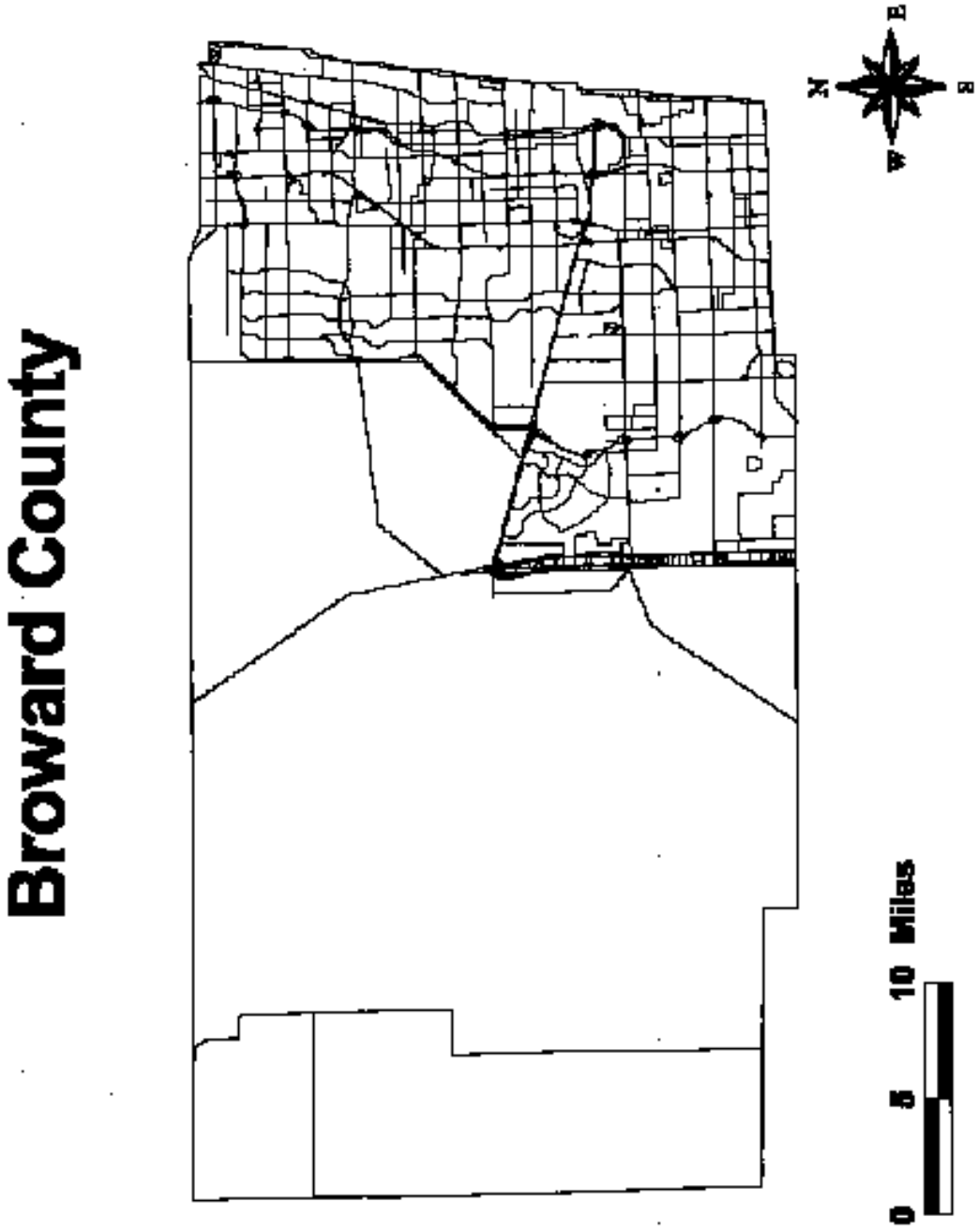

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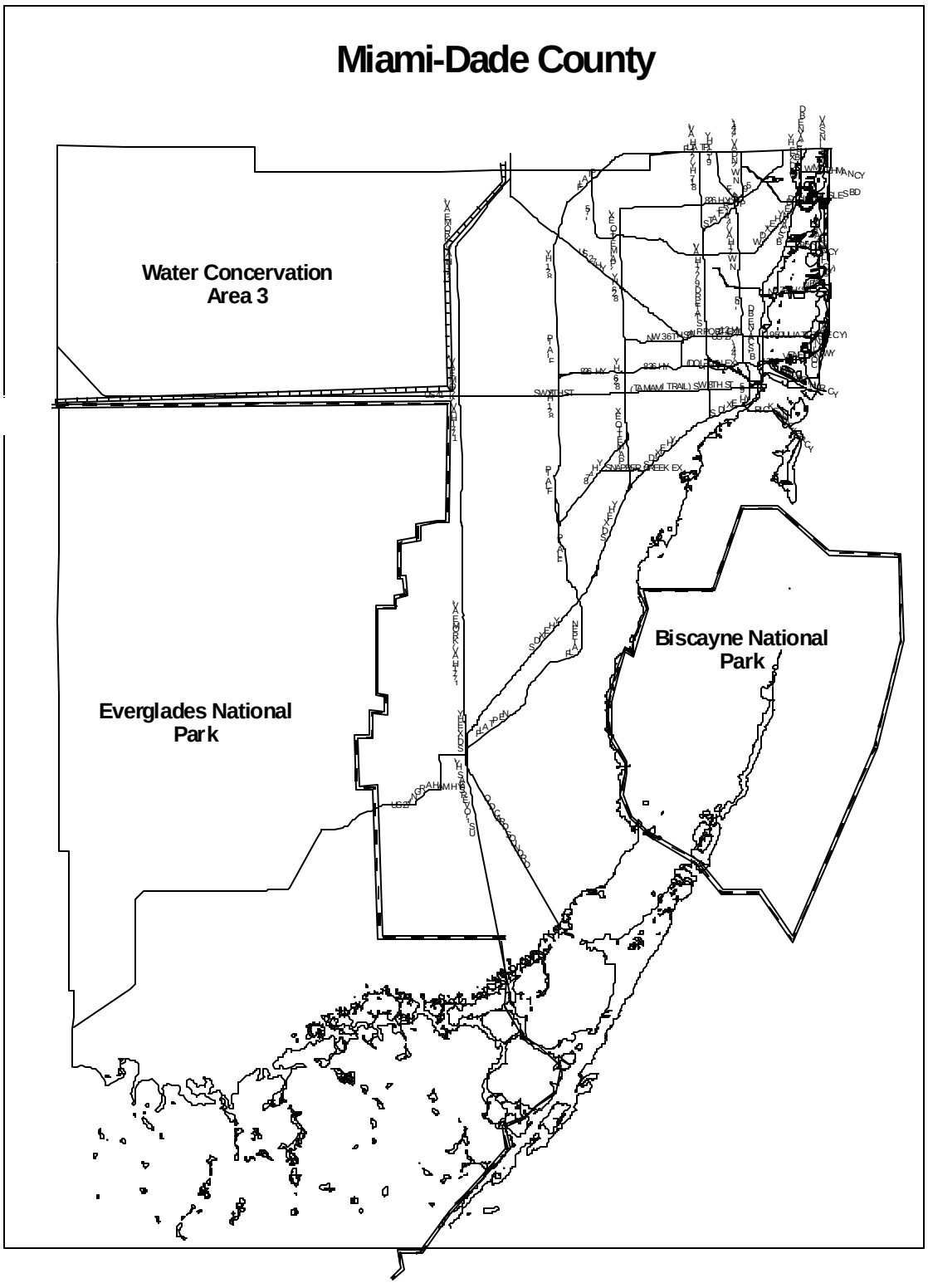

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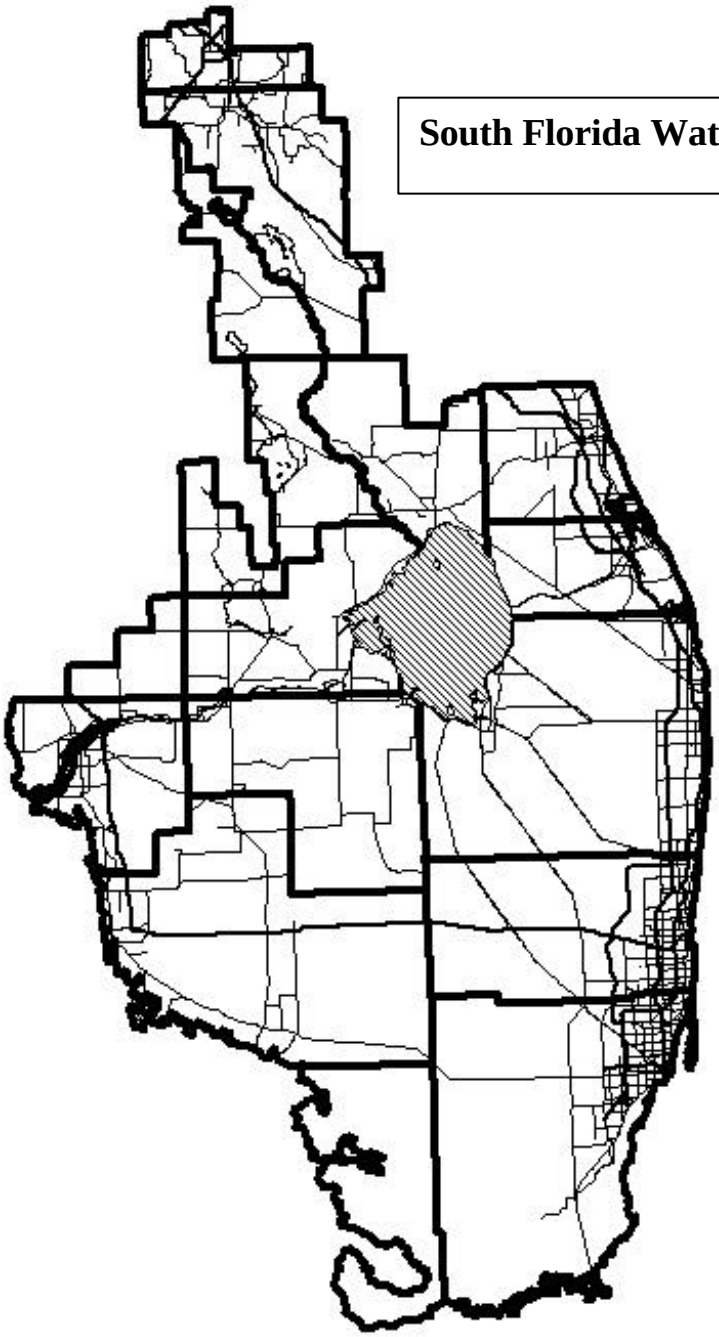

South Florida Water Management District

Inventory Contact Code : _____

Categories for Inventory

See directions for definitions

High Level Category	Category Name	High Level Category	Category Name
ABio	***Super Category:*** *Abiotic*	*Bio*	Land cover
Bio	***Super Category:*** *Biotic*	*HumAct*	Land Use
HumAct	***Super Category:*** *Human Activities*	*Bio*	Invertebrates
WaterRes	***Super Category:*** *Water Resources*	*ABio*	Mineral Resources
HumAct	Agriculture	*HumAct*	Oil/Hazardous Materials Spills/Vessel Groundings
ABio	Air Quality	*Bio*	Phytoplankton/Zooplankton
ABio	Beaches/Shores	*HumAct*	Political/Jurisdictional Boundaries
Bio	Birds	*HumAct*	Population/Housing
ABio	Climatologic/Meteorology	*HumAct*	Protected Areas
HumAct	Contaminated Sites	*HumAct*	Recreation
HumAct	Cultural Sites	*WaterRes*	Runoff (nonpoint sources)
Bio	Endangered/Threatened Species	*ABio*	Seafloor Characteristics
Bio	Exotic Species	*ABio*	Soils/Substrate
Bio	Fauna	*Bio*	Submerged Habitat
ABio	Fire	*WaterRes*	Surface Water
Bio	Fish	*ABio*	Topography/Bathymetry
Bio	Flora	*HumAct*	Transportation
ABio	Geologic	*Bio*	Upland Habitat
WaterRes	Ground Water	*WaterRes*	Wastewater Discharge
HumAct	Hazardous Materials	*WaterRes*	Water Control Structures
HumAct	Health	*WaterRes*	Water Quality
ABio	Hydrography	*WaterRes*	Water Use
WaterRes	Hydrological Information	*Bio*	Wetland Habitat
HumAct	Industry	*Bio*	Wildlife
HumAct	Infrastructure/Utilities		

Choose the most (only one) descriptive category to catalog the Monitoring Effort. Note that there are four *Super Categories* (Abiotic, Biotic, Human Activities and Water Resources). Use the *Super Category* only when the monitoring effort uniformly covers multiple categories

Definitions of Data Categories

Category: Abiotic	*Nonliving*
Air Quality (AQY)	The data category includes those programs that collect or synthesize information about the status of, or trends in, air quality in the study area
Beaches/Shores (B/S)	Programs that collect, organize, or synthesize information related to beaches or shores (e.g., shoreline erosion, historic shorelines, beach replenishment)
Climatologic/Meteorology (C/M)	Projects that collect or synthesize climatological or meteorological data. Projects include air temperatures, precipitation, wind speed, and wind direction. Air quality data are excluded from this category.
Fire	Wild fires, controlled burns, etc.
Geologic (GEO)	Geologic information about the area.
Hydrography (HYG)	Information about the physical characteristics of oceanic and estuarine waters. (tides, currents, circulation and water temperature)
Mineral Resources	Information about, quantification, location of minerals
Seafloor Characteristics (SEC)	Information on specific seafloor features.
Soils/Substrates (S/S)	Collections or synthesis of information related to soils and/or marine and estuarine substrates. For example, information in a Soil Conservation Service database, USGS seafloor substrates.
Topography/Bathymetry (T/B)	Configuration of the land surface and ocean bottom.

Categories: Biotic	*Living*
Endangered/Threatened Species (E/T)	Collections and/or information about endangered or threatened species.
Exotic Species (EX)	Nonnative flora and fauna.
Fauna	Animal life – broad category
Fish (FIS)	Freshwater or saltwater fish.
Flora	Plant life – broad category
Invertebrates (INV)	Freshwater and saltwater invertebrates.
Land cover (LC)	Databases with detailed information about vegetative land-cover types.
Phytoplankton/Zooplankton (PHY)	Plant and animal phytoplankton.
Submerged Habitat (SUB)	Submerged aquatic habitat for fish, invertebrates, and mammals. (sea grasses, coral reefs, hard bottom, soft

	bottom, etc.)
Upland Habitat (UPH)	Type, location and extent of upland habitat types. This category differs from land cover because the focus is on habitat use. (pinelands, scrublands/shrub lands, oak forests, etc.)
Wetland Habitat (WET)	Type, location and extent of wetland habitat types. This differs from land cover because its focus is on habitat uses (wetlands classified as salt marsh, fresh marsh, forested and scrub/shrub, tidal flat or open water)
Wildlife (WIL)	All wildlife with the exclusion of birds.
Birds (BIR)	Various types of birds. This category is separate from wildlife because of the diversity of birds (coastal, raptors, seabirds, shorebirds, wading, waterfowl, etc.)

Category: Human Activities and Uses/Jurisdictions	*Associated with human activities*
Agriculture (AGR)	Agriculture information such as research data, agricultural productions and the level of pesticide or fertilizer use.
Contaminated Sites (CON)	Hazardous waste sites (land fills, incinerators, and other municipal or industrial waste facilities)
Cultural Sites (CS)	Sites that are protected or receive some form of management status due to their unique cultural characteristics. (historic buildings, monuments, shipwrecks archaeological sites, etc.)
Health	Human health factors.
Hazardous Materials (HAZS)	Storage of hazardous materials
Oil/Hazardous Materials Spills/Vessel Groundings (HAZE)	Information related to oil and/or hazardous materials spills (location and time of spill, the type of material, etc,). Also vessel grounds (e.g. ship size, type of damage, extant of damage).
Infrastructure/Utilities	Water/sewage/ Power line/ Communication/ Power Plants/ Septic Tanks
Industry (IND)	Industrial activity (e.g., waste disposal or discharge at site, type and extent of industrial activity, location of industrial facilities, etc.).
Land Use (LU)	Land-use data.
Population/Housing (P/H)	Population and housing (e.g., historic population data, population estimates or projections).
Recreation (REC)	Recreational programs.
Transportation (TRN)	The spatial location of roads, highways, rail lines, airports and other transportation facilities or conveyances.
Political/Jurisdictional Boundaries (P/JB)	Political or jurisdictional boundaries.
Protected Areas (P/P/R)	Protected areas such as parks, preserves and refuges.

Category: Water Resources	*Water*
Ground Water	Quality and quantity of subsurface water – water tables, aquifer, etc
Hydrological Information (HYL)	Hydrologic information (e.g., stream flow, water quantity, watershed boundaries, locations of water bodies). This category overlaps with many of the data within this group.
Runoff (nonpoint sources) (NPS)	Stormwater generated by rainfall falling upon or running over the land surface, carrying any contaminants picked up in the process. It either discharges to surface water, the ground, or ground water.
Surface Water	Lake, river, stream, or pond that exists independently of a particular rainfall event
Wastewater Discharge (WWD)	Spatial information about direct discharges from industrial or municipal facilities.
Water Control Structures (WCS)	Water control structures (e.g., canals, levees, stormwater control facilities).
Water Quality (WQL)	Status of trends in water quality.
Water Use (WUS)	Municipal, agricultural, industrial, and other water uses