

WaterAtlas.org Summary

URL: <http://www.wateratlas.org/>



Purpose of application

[WaterAtlas.org](http://www.wateratlas.org/) is the gateway to a family of Florida local and regional online water atlases that provide spatially-mapped water resource data, with tools and information to help display and understand that data. Developed by the [Florida Center for Community Design and Research](#) in partnership with local, state and federal government agencies, the Water Atlas program has as its goal a comprehensive, statewide data resource that helps citizens, scientists and other stakeholders make informed decisions concerning our vital water resources.

The Florida Center is a grant-funded research center affiliated with the [School of Architecture and Community Design, College of The Arts](#), at the [University of South Florida](#) in Tampa. The Florida Center was founded in 1986 as a statewide research center to address urban and regional problems related to both the natural and built environments and to provide design expertise, technical assistance, and applied research to assist Florida's growing communities. It employs full-time research faculty, full-time professional and support staff, undergraduate and graduate students from multiple departments, and affiliated faculty from throughout USF.

Geographic extent

There are currently eight county-level and two regional editions of the Water Atlas, concentrated in central Florida. The two regional atlases are coastal, representing the study areas of the [Tampa Bay Estuary Program](#) and the [Charlotte Harbor National Estuary Program](#). Coastal county-level atlases include [Pinellas](#), [Hillsborough/City of Tampa](#), [Sarasota](#), and [Manatee](#) Counties. Inland county-level atlases include [Lake](#), [Orange](#), [Polk](#), and [Seminole](#) Counties. A statewide project is the [Florida Atlas of Lakes](#), developed in cooperation with the [Florida Lake Management Society](#) and [Florida LAKEWATCH](#).

Target audience

Environmental resource managers employed by state agencies, city and county governments, and federal agencies, as well as researchers, environmental consultants, students and the general public.

Data included (general categories)

Each atlas has a subset of the following information, per the direction of the sponsoring Water Atlas partner(s).

Information on:

- Water resources as listed in National Hydrography Dataset – lakes, rivers, streams, canals, bays
- Other water resources (non-NHD): ponds, springs
- Watersheds and drainage basins (major, sub-basins, water management district, county NPDES district)
- Total of 7,707 water resources
- Impaired waters by WBID per EPA 303(d) listing
- Political boundaries (counties, municipalities)
- National Estuary Program boundary
- Infrastructure: Interstates, major roads, stormwater infrastructure, local capital improvement projects
- Bathymetry: Lake, bay and Gulf bathymetry, NOAA navigational charts

- Habitat: Artificial reefs, bird rookeries, restoration sites, conservation lands, wetlands, areas sensitive to oil spills, environmentally sensitive lands, seagrass beds & seagrass change, vegetation sampling, macroinvertebrate data
- Recreation: Marinas, boat ramps, blueways & blueway markers, parks & facilities, bird viewing locations
- Land use/land cover & future land use
- Sampling locations: Water quality locations & strata, water quality indices & averages, hydrology and groundwater data collection sites, ecological/macroinvertebrate sampling sites, rainfall and meteorological sites
- Population density
- Aerial photography (multiple years)
- Flood zones: FEMA, county floodplain
- Physical geography: Sinkhole locations, shoreline morphology, bottom types, Florida Lake Regions (Griffith, G.E., D.E. Canfield, Jr., C.A. Horsburgh, J.M. Omernik. 1997. Lake Regions of Florida. EPA/R-97/127. U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory: Corvallis, OR.)

Distinguishing features

- Data is collected from a total of 326 data sources, including federal, state, county, and volunteer water quality monitoring organizations
- Data selection, graphing and mapping tools allow users to create customized, visual depictions of data.
- Atlases are linked, are alike structurally and share databases, but each is geographically distinct.
- Searchable Digital Library has over 6,000 water-related documents and web pages that are linked spatially to water resource pages. These include watershed management plans, lake and stream assessments, maps, regulatory information, recreational information, conservation advice, research studies, newsletters, and many other types of documents.
- Online forms allow users to submit reports of illicit discharges, wildlife violations, fish kills, etc. and submit content (photos, historical documents, website links), offer suggestions and ask questions
- Special pages/page groups:
 - Volunteer monitoring – Adopt-a-Pond, Lake Management, Seagrass monitoring, Biomonitoring, Stream Water Watch, Coastal Water Quality Monitoring, Neighborhood Environmental Stewardship, Frog monitoring – allow volunteers to submit data and coordinators to share information.
 - Stormwater education
 - Water resource curricula and educational links
 - Watershed excursion
 - EPA National Estuary Program CCMP database tool
 - “Water Heritage” Oral History slideshows
 - Restoration Projects
 - NPDES Report Generation Tool
 - Calendar for volunteer events, symposia, outdoor recreational opportunities, public meetings, educational programs
 - News page with water-related news items

Technology used (web GIS, server, database, content management system?)

- **WebGIS:** ArcIMS 9.3.1, ArcGIS Server 10
- **Database:** ArcSDE 9.3 and Microsoft SQL Server 2008
- **Server:** Microsoft IIS Server
- **Other:** Classic ASP, ASP.NET 2.0, ASP.NET 4.0, custom website + CMS

Atlas support (financial/institutional)

WaterAtlas.org has been produced and is maintained by the Florida Center for Community Design and Research (FCCDR), a research center at the University of South Florida. Each Water Atlas edition is sponsored by one or more partners. These include city and county governments, water management districts, and other state and federal agencies. FCCDR enters into development and support contracts with each individual partner to create and maintain an online atlas that is consistent in form and function with the other atlases in the family, while incorporating data sets, tools and other features that are of interest to the particular partner. As they are developed, new features and capabilities that are created for one atlas are offered at no or very low cost to the other atlas partners.

Challenges encountered

- Attracting the attention of non-scientific users
- Making water resource management data understandable to the general public
- Adapting technology to new platforms
- Budgetary pressure on sponsors
- Identifying collaborators for cooperative interdisciplinary research

Lessons learned

- If you build it, they won't necessarily come—unless you continually promote it.
- Prompt response to questions/problems/suggestions builds trust and support in sponsors
- Continued funding depends on being able to measure/demonstrate value of Atlas to sponsors

Ongoing & future improvements

Planned improvements to the Atlas include:

- ArcIMS to ArcGIS Server upgrade/migration
- Expanding into new geographic areas
- Adding new groundwater data sources
- Adding a simpler interface for lay users
- Creating mobile apps for accessing Atlas
- Tagging most digital library entries with spatial information (lat/long)
- Improving search capabilities for photo database
- Identifying biological datasets and finding ways to incorporate them
- Adding “How to” videos that explain the use of Atlas online tools
- Improving “Learn More” pages to include better explanations and more graphics

Other:

Although the Water Atlas geographic extent currently does not reach beyond Florida's boundaries, we are eager to expand its geographic area and/or to collaborate with researchers in all disciplines on projects undertaken by any institution.