

Table of Contents

- [HydroDesktop on the Gulf Coast](#)
- [CUAHSI-USGS Optical Sensor Workshop](#)
- [CUAHSI Hydrologic Data and Information Systems Conference](#)
- [Spring Cyberseminars](#)

For Your Information

Travel Grants Available: CUAHSI HydroGeoPhysics Facility. For additional information see the [CUAHSI HydroGeoPhysics Facility](#) web page.

Browse our postings page for interesting [Career Opportunities](#).

Check out the [CUAHSI Services page](#) for ways in which we can support your research!

Upcoming Events

April 3-8, 2011

- [European Geosciences Union General Assembly 2011](#) - Vienna, Austria

April 18-20, 2011

- [AWRA 2011 Spring Specialty Conference](#) — Managing Climate Change Impacts on Water Resources: Adaptation Issues, Options, and Strategies - Sheraton Inner Harbor Hotel - Baltimore, MD

May 22-26, 2011

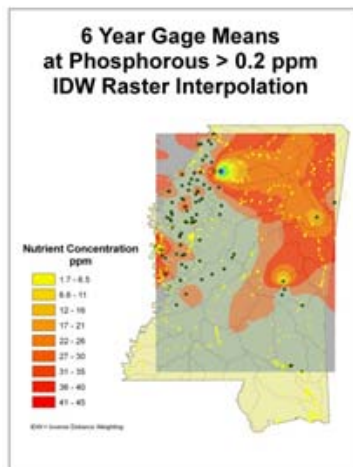
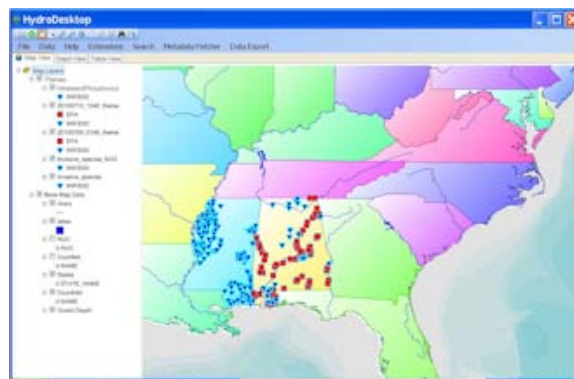
- [2011 World Environmental & Water Resources Congress](#) — Bearing Knowledge for Sustainability - Palm Springs Convention Center - Palm Springs, CA

May 22-26, 2011

- [NABS 2011 Annual Meeting](#) — Responding to the Global Water Crisis - Rhode Island Convention Center -

Mississippi State Researchers Use HydroDesktop in Spatial Modeling of Stream Nutrients to Determine Suitable Habitat for Aquatic Invasive Species

This USGS / NBII ([National Biological Information Infrastructure](#)) funded project is studying the spatial distribution of aquatic invasive species based on suitable habitat that can maintain the plant's nutrient needs. We start by locating and mapping stream gages that report water quality parameters, specifically for the nutrients nitrates, phosphorous and phosphate. One of the greatest challenges is acquiring data for spatial models. Data is usually from different organizations, in different projections and different file formats. This initial study focused on a six year range of data from 2005 to 2011. Searching through all the stream gages for specific information was daunting. Fortunately, CUAHSI-HIS developed an open source tool for searching hydrologic information. **HydroDesktop**, provides an interface to search a region-of-interest based on input parameters. In our case, the parameters are stream gages that measure water quality with information on nutrient concentrations. The power of **HydroDesktop** is it takes all data found from different organizations and automatically organizes the data into a common format. The figure above ([click for larger view](#)) displays results for a search using parameters mentioned above.



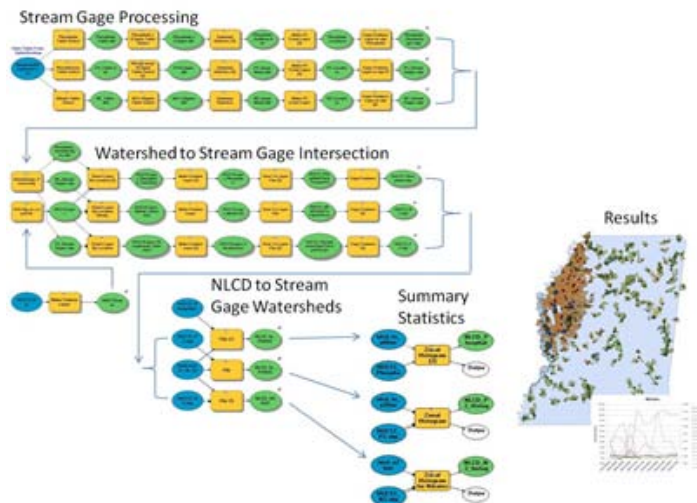
This map illustrates initial work based strictly on stream gage water quality data from **HydroDesktop** that's been queried to phosphorous concentrations greater than 0.2 ppm. The concentration has been determined by mesocosm experiments. The yellow dots correspond to ground truthing of aquatic invasive species from 2006 to 2009 surveys. Using Spatial Analyst's Interpolate to Raster function in **ESRI's ArcMap**, a raster surface is produced indicating areas of suitable nutrient habitat for the aquatic invasive species, Parrot Feather.

suitable nutrient habitat for aquatic invasive species. HydroDesktop provides the primary data input for the model.

Goals of the project are to better understand the geographic relationships that lead to a nutrient habitat that is suitable for aquatic invasive species and provide this information to decision makers for better water quality management.

PIs: Dr. [John Madsen](#), Dr. [Ryan Wersal](#)
Co-PI: [Louis Wasson](#) (primary)

To better understand the environment surrounding each stream gage the National Landuse Landcover Dataset (NLCD), National Hydrography Dataset (NHD) and 10 digit Hydrologic Unit (HUC) are combined to better understand the relationships of flowing water over the land and the stream gage nutrient quality concentrations. A geospatial model is being developed to locate



- Providence, RI
June 5-8, 2011
- [International Ground-Water Modeling Center \(IGWMC\) — MODFLOW and More 2011](#) - Colorado School of Mines, Golden, CO
- June 8-10, 2011
- [Joint USGS-CUAHSI Workshop — In Situ Optical Water Quality Sensor Networks](#) - Shepherdstown, WV
- June 13-17, 2011
- [Water Diplomacy Workshop \(WDW\) — Managing the Science, Policy, and Politics of Water Networks Through Negotiation](#) - Tufts University, Boston, MA
- June 21-22, 2011
- [Symposium on Data-Driven Approaches to Droughts](#) — Purdue University, West Lafayette, IN
- June 22-24, 2011
- [CUAHSI Conference on Hydrologic Data and Information Systems 2011](#) — Showcasing scientific progress enabled through the use of advanced information systems - Utah State University, Logan, UT
- July 9-15, 2011
- [Gordon Research Conferences 2011 Catchment Sciences — Sentinels of Global Change](#) - Bates College, Lewiston, ME
- August 14-19, 2011
- [Goldschmidt 2011](#) - Prague, Czech Republic

content contributor to this article)

Mississippi State University's [Geosystems Research Institute](#) / [Northern Gulf Institute](#)

USGS-CUAHSI Workshop: *In Situ* Optical Water Quality Sensor Networks

June 8 -10, 2011 . National Conservation Training Center . Shepherdstown, WV — Advanced *in situ* optical water quality sensors-together with new techniques for data analysis-hold enormous promise for advancing scientific understanding through high frequency measuring and monitoring of important biogeochemical parameters. Real-time sensors also provide tools for early trend detection, identifying monitoring gaps and science-based decision support.



Developing networks of optical sensors in freshwater systems that report reliable and comparable data across and between sites remains an important challenge. To address this, the USGS Office of Water Quality and CUAHSI are co-sponsoring a workshop to identify opportunities and begin developing community standards for making nationally-consistent, high-quality environmental measurements.

high-quality environmental

The workshop will focus on the complete life cycle of optical sensor deployment:

Sensor Deployment → Network Design → Data Transmission → Data Management → Data Visualization and Analysis

Workshop discussions/breakouts will include:

- Identifying the near- and long-term uses and capabilities for *in situ* optical data
- Identifying the critical needs (infrastructure, data analysis, etc.) required to implement *in situ* optical sensors in existing and planned networks
- Identifying the steps to optimize the application of *in situ* optical sensor deployments in rivers and streams
- Developing guidelines for instrument performance, calibration and validation
- Developing a vision for the next generation of optical sensors needed to support water-quality monitoring in rivers and streams

Pre-registration is open and accepted until **April 15, 2011**. For more detailed information on pre-registering for the workshop, visit the [Joint USGS-CUAHSI Workshop](#) page.

Contact CUAHSI

2000 Florida Avenue, N.W.
Washington, D.C. 20009
Phone: (202) 777-7306
FAX: (202) 777-7308
Website: www.cuahsi.org
Email: commgr@cuahsi.org

CUAHSI Conference on Hydrologic Data and Information Systems 2011

June 22-24, 2011 . Utah State University . Logan, UT — CUAHSI is hosting a conference on Hydrologic Data and Information Systems. This will showcase the scientific progress enabled through the use of advanced information and data management systems. We welcome contributed presentations of your work on or related to data management in hydrology. The conference will also showcase the CUAHSI Hydrologic Information System (HIS), a Web-based system for sharing hydrologic data. Sessions will include presentations on all aspects of hydroinformatics and hands-on training, workshops and expert advice on HIS. Sessions are planned to benefit a broad cross section of users and developers, including:

- **Researchers:** science enabled by hydrologic data and information systems
- **Educators:** uses of water data and HIS software tools for teaching
- **Modelers:** coupling models and data from multiple sources using HIS and related systems
- **Data Publishers:** organizing, storing, and making data available to others

Abstracts due **May 15, 2011** — Registration due **May 30, 2011**

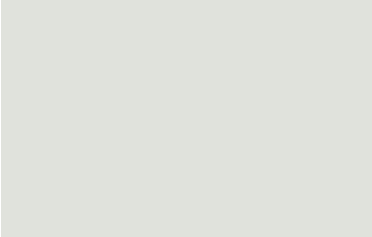
See the HIS website for [more information](#).

CUAHSI Spring 2011 Line-up of Cyberseminars

April 1, 2011; 3:00pm ET

- **Sankar Arumugam, North Carolina State University**

Title: Climate Forecasts and Water Management: Opportunities and Challenges



April 15, 2011; 3:00pm ET

- **Laurence Smith, University of California, Los Angeles**
Title: The New North: Four Forces Shaping our Northern Future

For additional information about CUAHSI cyberseminars and to view recordings of previous seminars, please go to the [Cyberseminars](#) page.
