



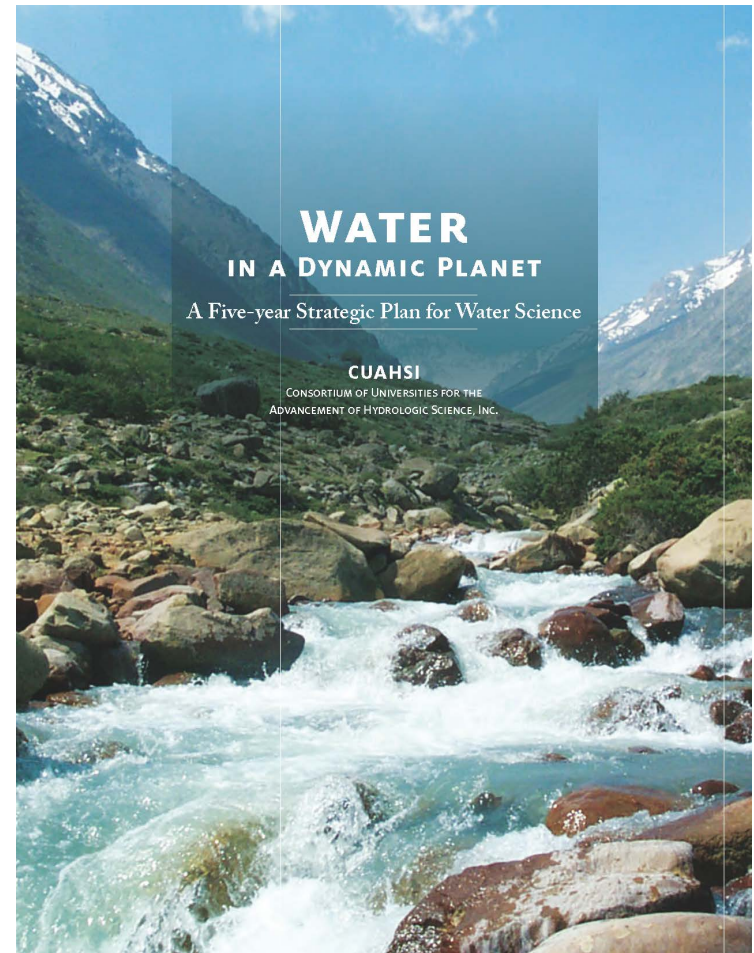
From Vision to Reality: The CUAHSI Water Data Center

Consortium of Universities for the
Advancement of Hydrologic Science, Inc.
(CUAHSI)

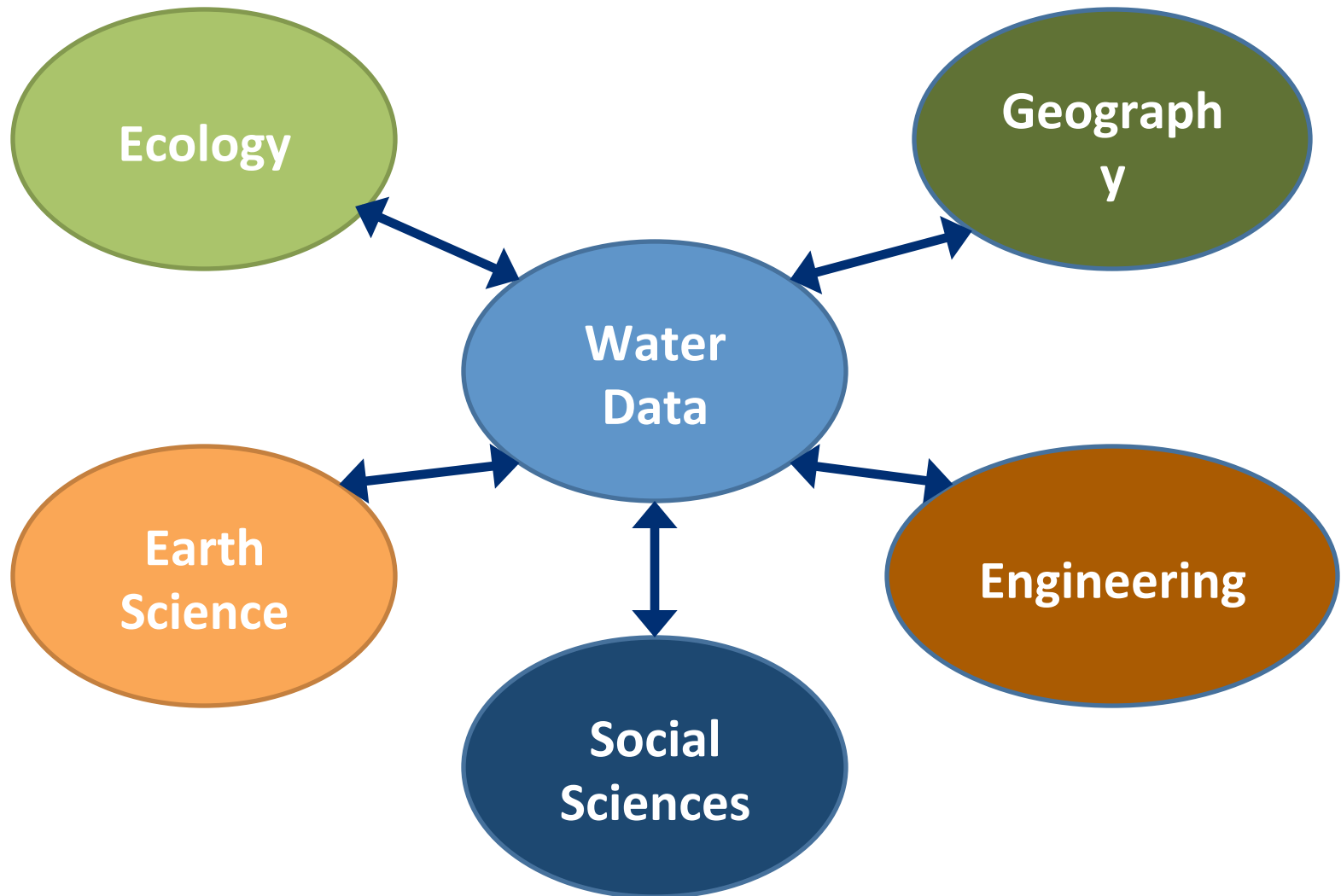
<http://wdc.cuahsi.org>

CUAHSI Mission

- *To support the interdisciplinary study of water*
- *To enable scientists through community infrastructure*

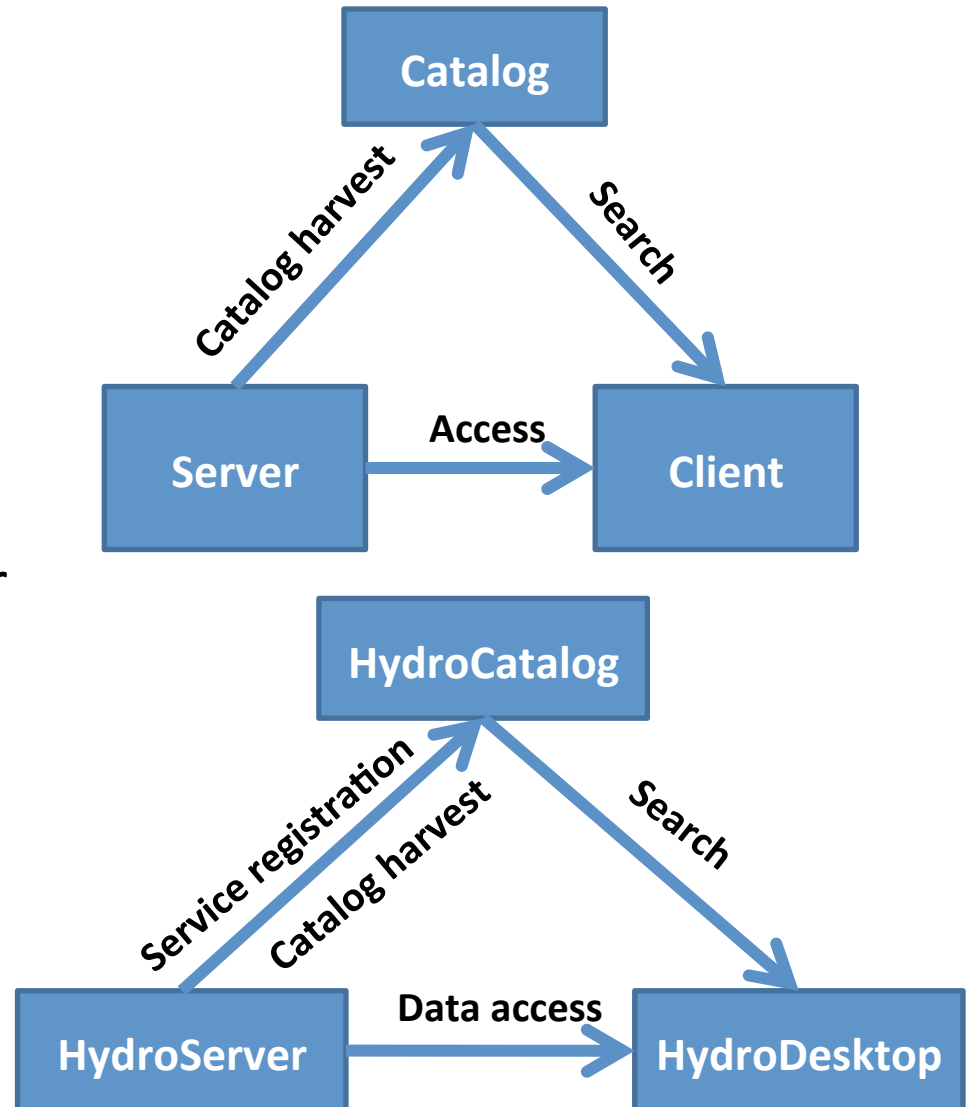


Water Data: A Common Need



A Services-Oriented Architecture

- A “Google for water data”
 - One entry point for hundreds of different data sources
 - Worldwide standard for data transmission
- Discover, download, and publish time series data



HIS Supports Time Series Data

Water quantity



Rainfall



Soil water



Water quality



Meteorology



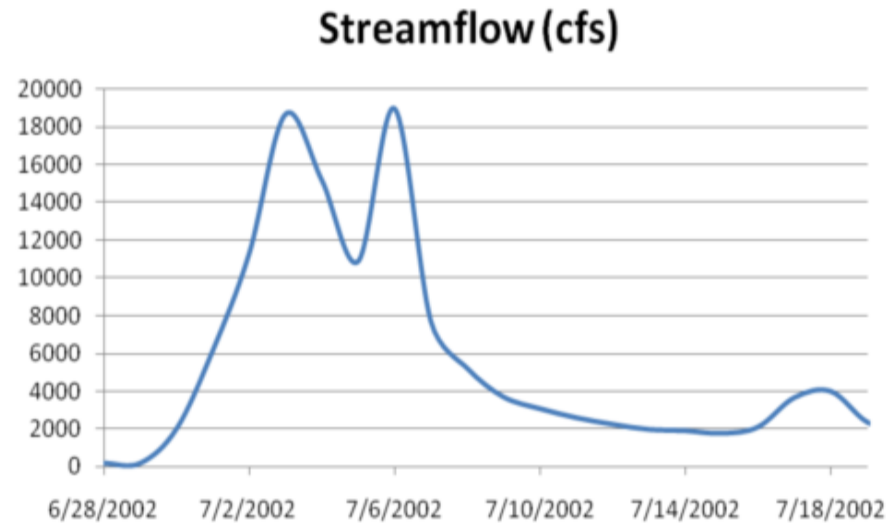
Groundwater



The Data Have a Similar Structure



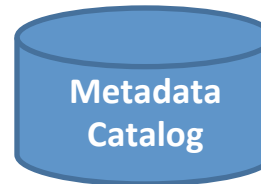
A **point** location in **space**



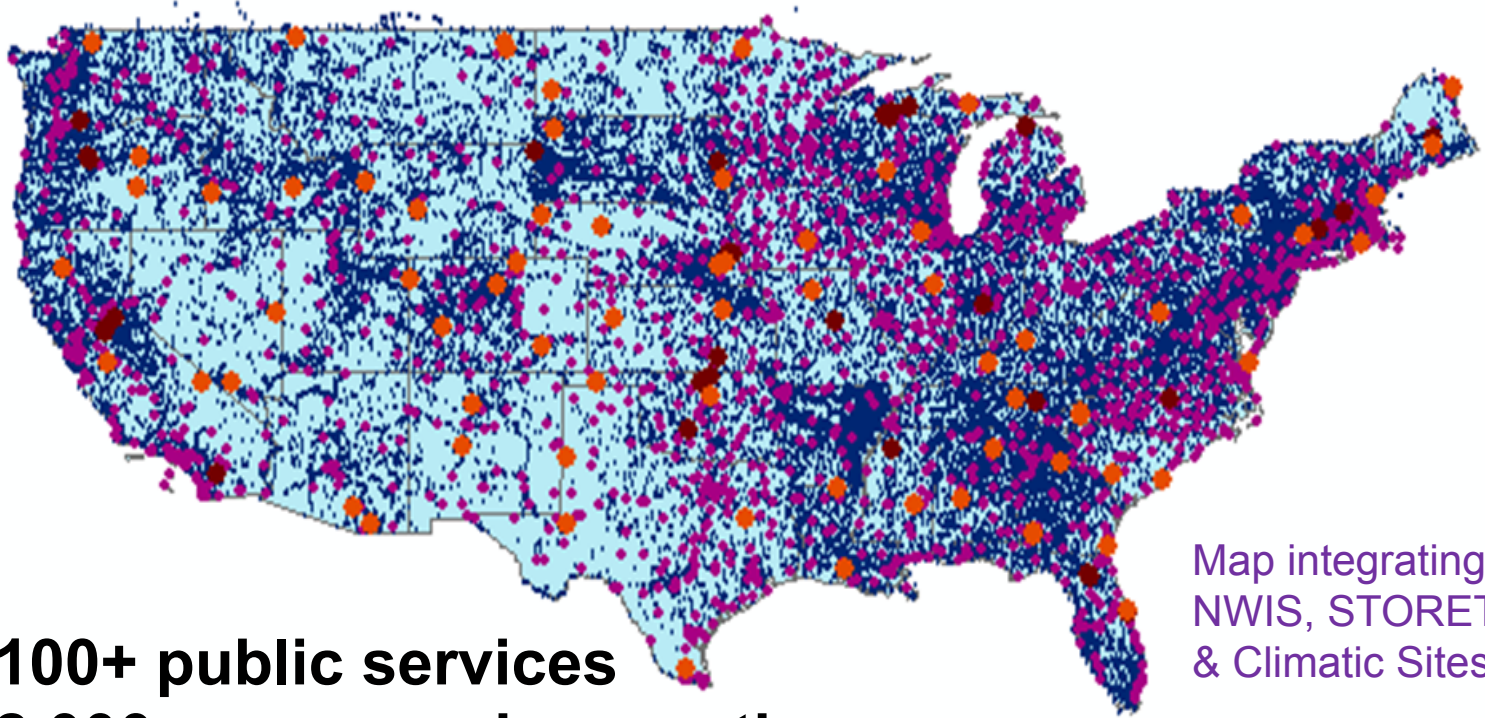
A **series** of values in **time**

The Result

- WaterML language for describing water data
- Global catalog of water data sources
- Free software for data access (*and publication*)



Metadata Catalog, May, 2014

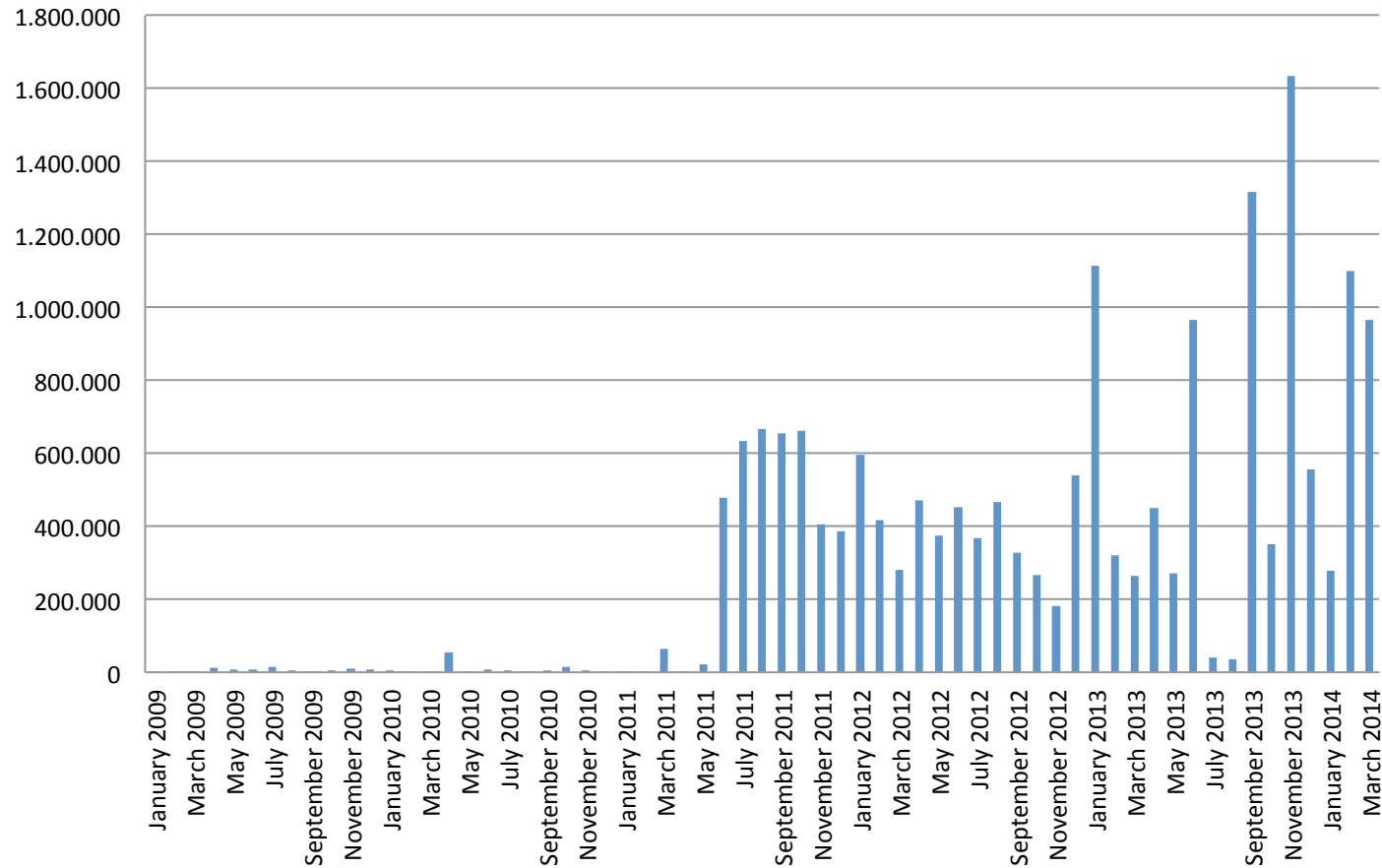


Map integrating
NWIS, STORET,
& Climatic Sites

100+ public services
2,000+ measured properties
1.6 million sites
33.9 million series
Referencing 400+ billion data values

HIS Usage

Number of Download Requests by Month



A Standards-based SOA

- WaterML 2
 - OGC Standard
 - Under consideration by WMO as TimeSeriesML
- Web Services
 - Custom Water One-Flow Services (WOFS)
 - Developing OGC Profiles
 - WFS
 - CSW
- Active International Projects
 - OGC Hydro Domain Working Group
 - GEOSS
 - AIP-6 and AIP-7



Vision to Reality

Scientists

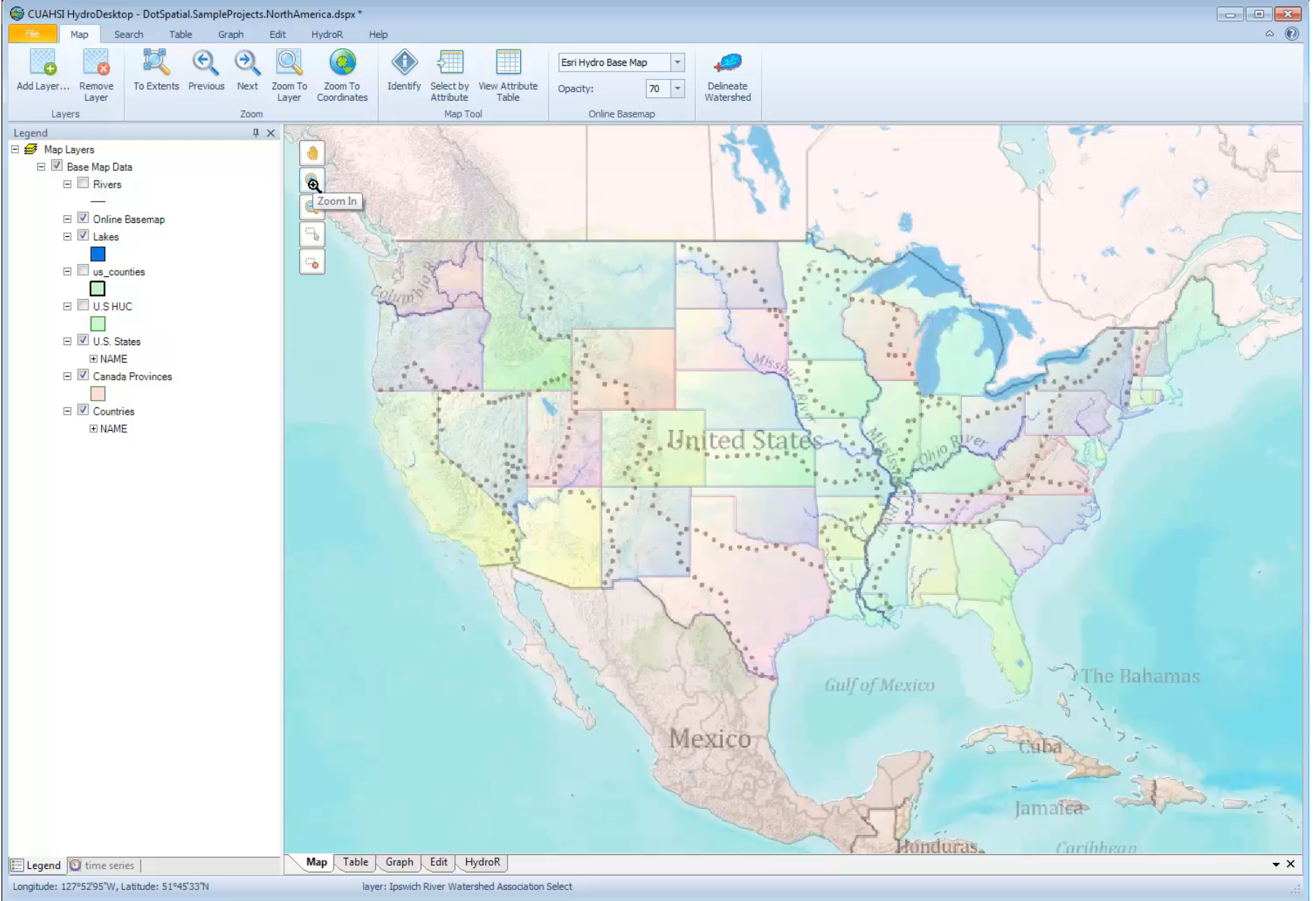
- Research
 - Discover Data
 - Publish Data
 - Perform Synthesis
- Teaching
 - Data-based problem sets
 - Student inquiry
- Guide Evolution
 - Community-moderated CV
 - Users Committee
 - Standing Committee
 - Run for Board

Software Developers

- Large metadata catalog to program against
- Existing APIs
 - Documented at <http://hiscentral.cuahsi.org>
- Additional APIs being developed
 - REST end points
 - SOS2 profiles

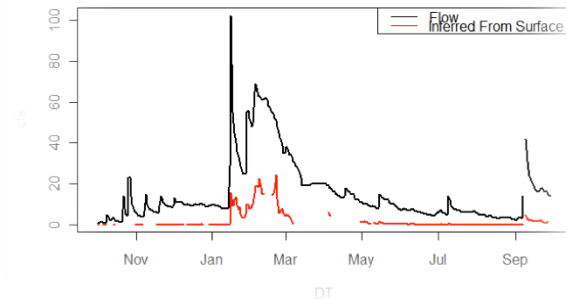
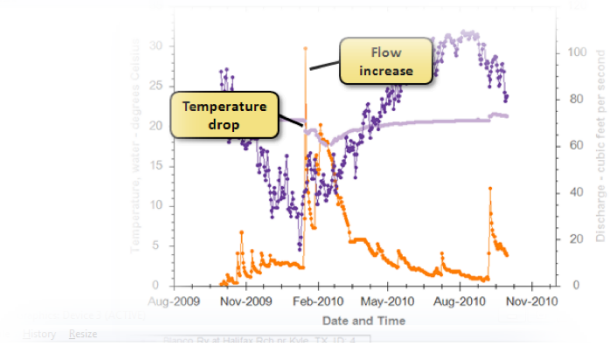
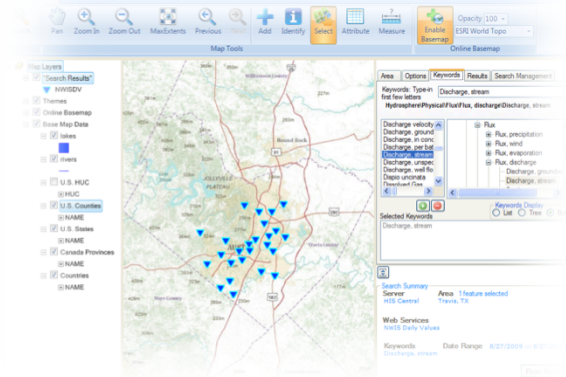
Open-Source Development

- HydroDesktop (Dan Ames, BYU)
 - www.hydrodesktop.org
 - Codeplex
- [HydroServer]
 - Physical (Codeplex) [www. hydroserver.org](http://www.hydroserver.org)
 - Cloud-based (git hub) to be released
- [HydroCatalog]
 - To be released as part of GEOSS
- New clients!!



Community Governance

- CUAHSI Informatics Standing Committee
 - Sets policy
 - Sets strategic goals
- CUAHSI User Committee
 - Sets features
 - Sets tactical goals
- Beta testing



Upcoming Activities

- Wireless Sensor Boot Camp, UC Berkeley, August 11-13, 2014 (CUAHSI/CZO)
- CUAHSI Biennial Meeting, “Water Across the Critical Zone”, near Washington, DC, July 28-30
- Fall Virtual Conference, “Solutions for Field Data Management”, September-October, 2014 (CUAHSI/CZO/LTER)
- More info at <http://www.cuahsi.org>

