



An Update on SECURE Water Activities and the National Water Census*

* Part of the  Initiative

The logo for the 'water:SMART' initiative is centered within the text. It consists of a blue water drop icon with white wavy lines inside, followed by the word 'water:' in a light blue, lowercase, sans-serif font, and the word 'SMART' in a bold, green, uppercase, sans-serif font.

Our objective for the Water Census:

To place technical information and tools in the hands of stakeholders, allowing them to answer two primary questions about water availability:

Does the Nation have an enough freshwater to meet both human and ecological needs?

Will this water be present to meet future needs?

How do the National Water Census and WaterSMART Interrelate?



The Nation Water Census

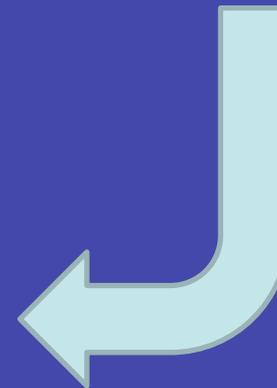
Is a Department of Interior Initiative on water conservation. It includes activities in:

- Bureau of Reclamation
- US Geological Survey
- Office of the Ass't. Sec. for Water and Sci.

is and integral part of the US Geological Survey's Science Strategy to conduct an ongoing assessment of the Nation's water resources



The Water Availability and Use Assessment proposed in the 2011 budget is part of WaterSMART and the National Water Census



**P.L. 111-11 Subtitle F
(SECURE Water Act as signed by the President March 30, 2009)**

Section 9501: Findings

Section 9502: Definitions

Section 9503: Reclamation Climate Change and Water Program

Section 9504: Water Management Improvement

Section 9505: Hydroelectric Power Assessment

Section 9506: Climate Change and Water Intergovernmental Panel

**Section 9507: Water Data Enhancement by United States
Geological Survey**

Full National Streamflow Information Program.

Creates a National Groundwater Resources Monitoring Program and a Brackish Groundwater Assessment.

Section 9508: Water Availability Assessments

Creates a national program to study water quality and quantity.

Requires first report in 2012 and every 5 years thereafter.

Grants are available to assist state agencies in developing and integrating state water use data.

Section 9509: Research Agreement Authority

Section 9510: Effect

What is USGS doing on SECURE Water today?

- *Subcommittee on Groundwater*
- *Streamgaging*
- *Brackish Groundwater Assessment*
- *Water Use*

What is USGS doing on SECURE Water today?

- *Subcommittee on Groundwater*
 - *A part of the Advisory Committee on Water Information (ACWI)*
 - *Working with a broad group of stakeholders to design a National Groundwater Monitoring Network*

What is USGS doing on SECURE Water today?

- *Streamgaging*
 - *\$4.75 M invested in streamgages*
 - *ARRA funds applied to update telemetry*

What is USGS doing on SECURE Water today?

- *Brackish Groundwater Assessment*
 - *Three pilot studies began in 2010*
 - *Southern Midcontinent*
 - *Southeastern US*
 - *Geochemical, Geophysical, and Geostatistical Methods*
 - *Under the Water Census, this effort will be doubled in 2011.*

What is USGS doing on SECURE Water today?

- *Water Use*

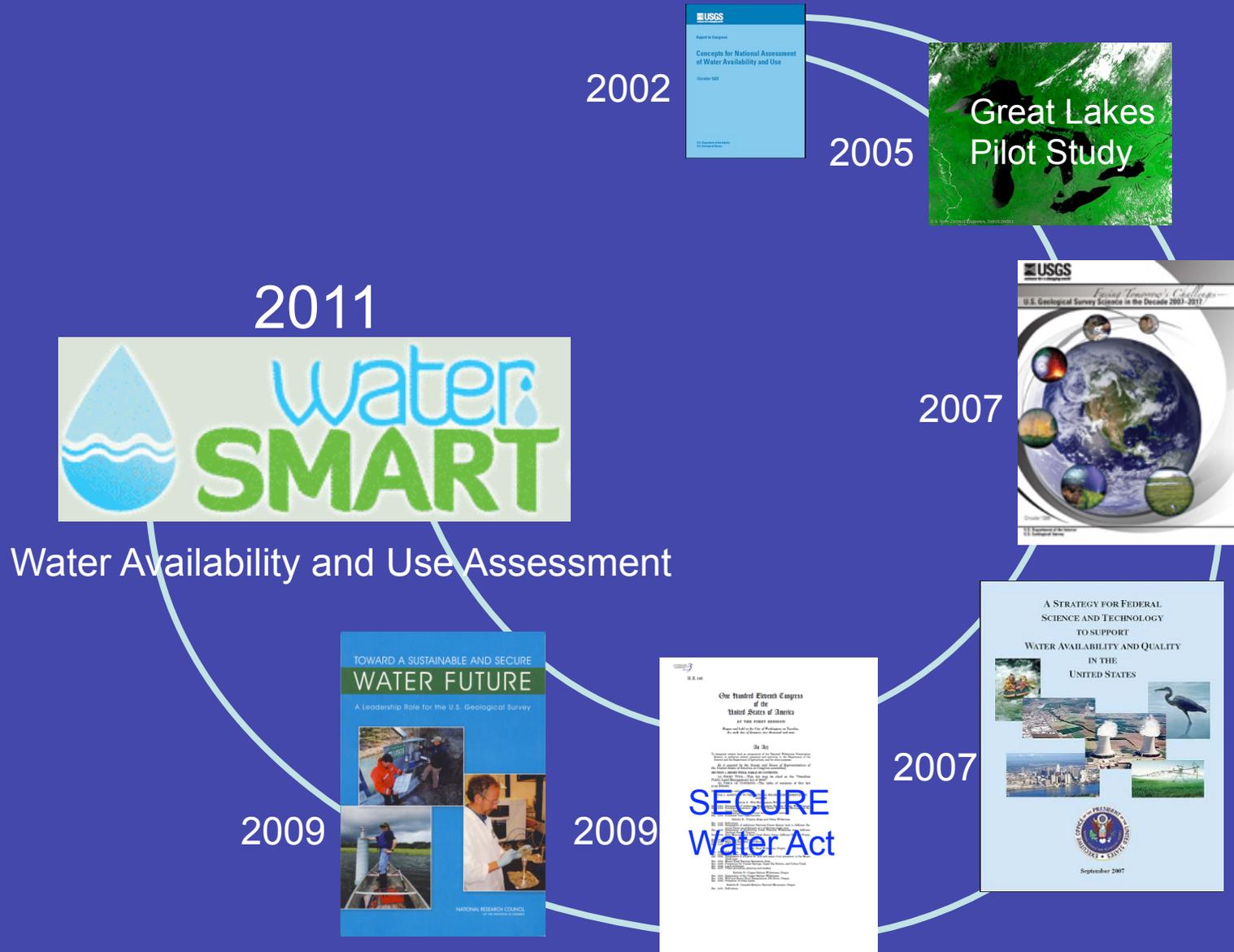
- *Thermoelectric Cooling Water*

- *GAO Report 10-23 recommendations*
 - *Account for alternative sources of cooling water*
 - *Consumptive use estimates*

- *Irrigation*

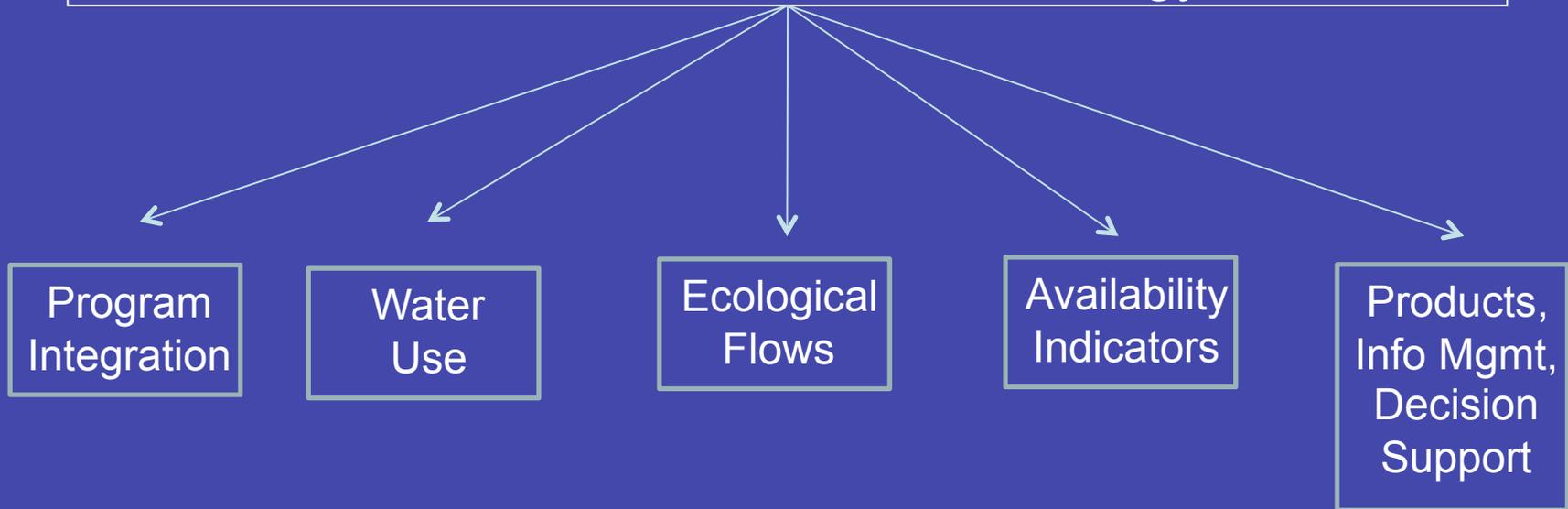
- *Improving methods for estimating irrigation use*

How did we get to where we are today?



USGS Implementation Team

Water Use	Ecological Flow	Groundwater
Water Quality	Biology	Geography
Geology	Climate Change	Pilot Studies
Surface Water	Information Technology	



Stakeholders on ad hoc committee

Organization

Acronym

Association of Fish and Wildlife Agencies

AFWA

Association of Metropolitan Water Agencies

AMWA

Association of State Drinking Water Administrators

ASDWA

American Water Resources Association

AWRA

American Water Works Association

AWWA

Interstate Council on Water Policy

ICWP

National Ground Water Association

NGWA

The Nature Conservancy

TNC

Western States Water Council

WSWC

Bureau of Reclamation

BOR

US Fish and Wildlife Service

USFWS

US Dept. of Energy - Energy Information Administration

DOE - EIA

NOAA National Weather Service

NOAA-NWS

US Army Corps of Engineers

USACE

US Dept. of Agriculture - Economic Research Service

USDA - ERS

US Dept. of Agriculture - NASS

USDA - NASS

US Dept. of Agriculture - NRCS

USDA - NRCS

US Dept. of Agriculture - Forest Service

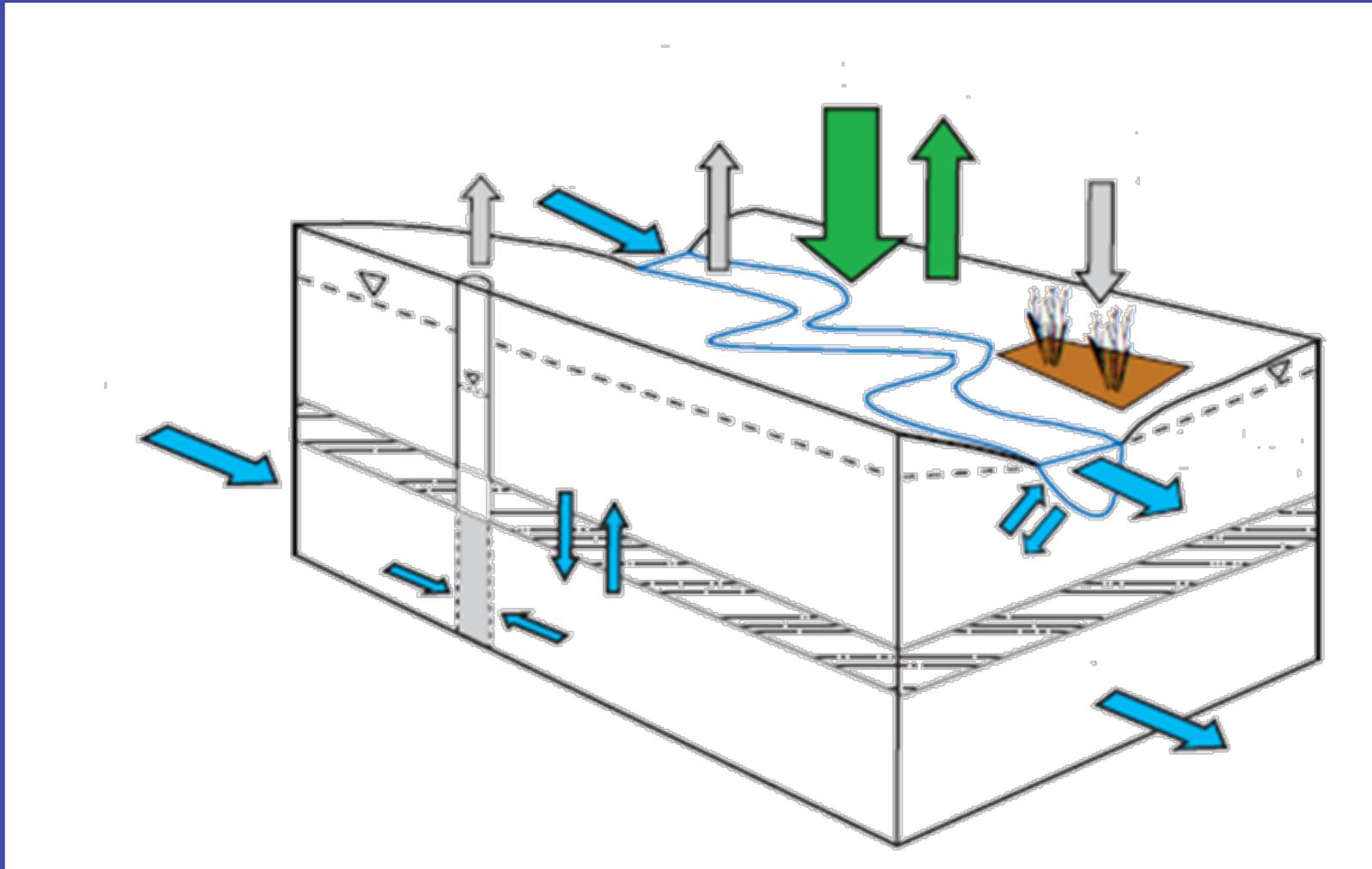
USDA - USFS

US Environmental Protection Agency

USEPA

- USGS Implementation Team produces short “concept papers”
- Work through Advisory Committee on Water Information/ Sustainable Water Resources Roundtable (ACWI / SWRR) to refine the concepts and products to meet stakeholders goals
- Develop a draft implementation plan

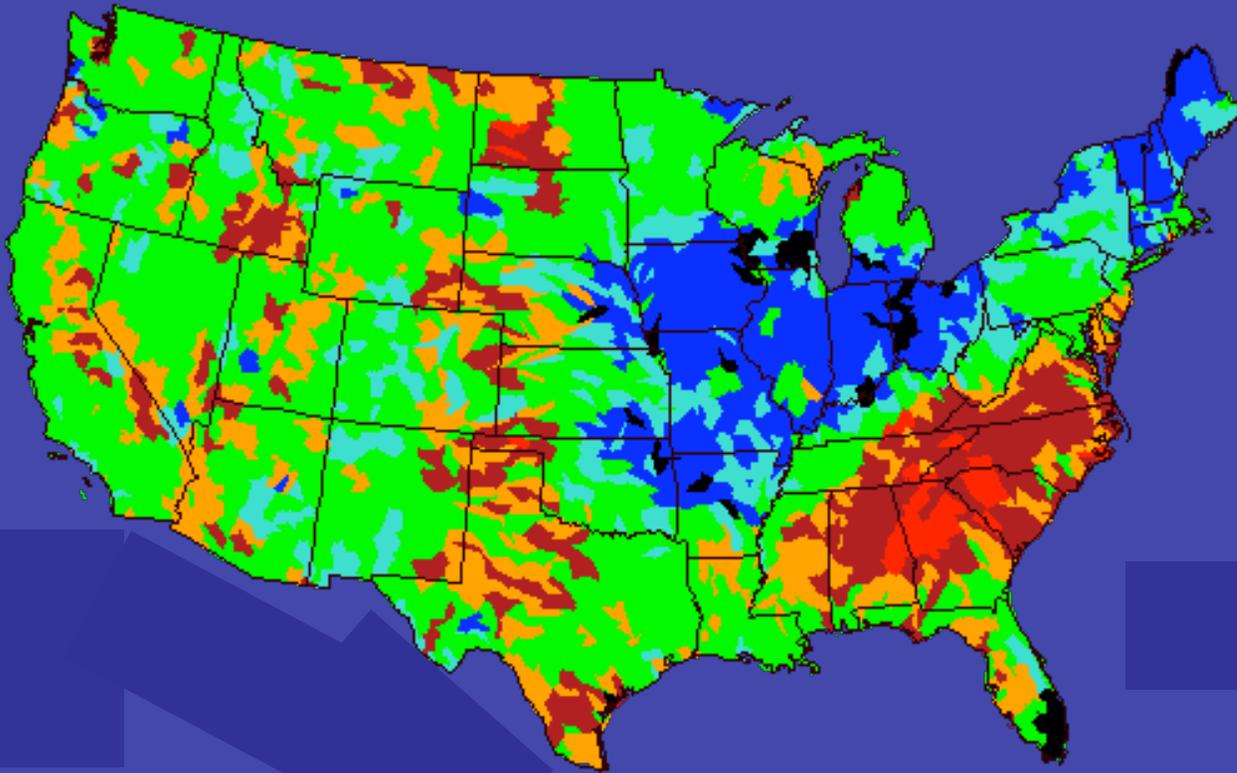
Account for water with a “budget”



A Nationwide System to deliver water accounting information addressing

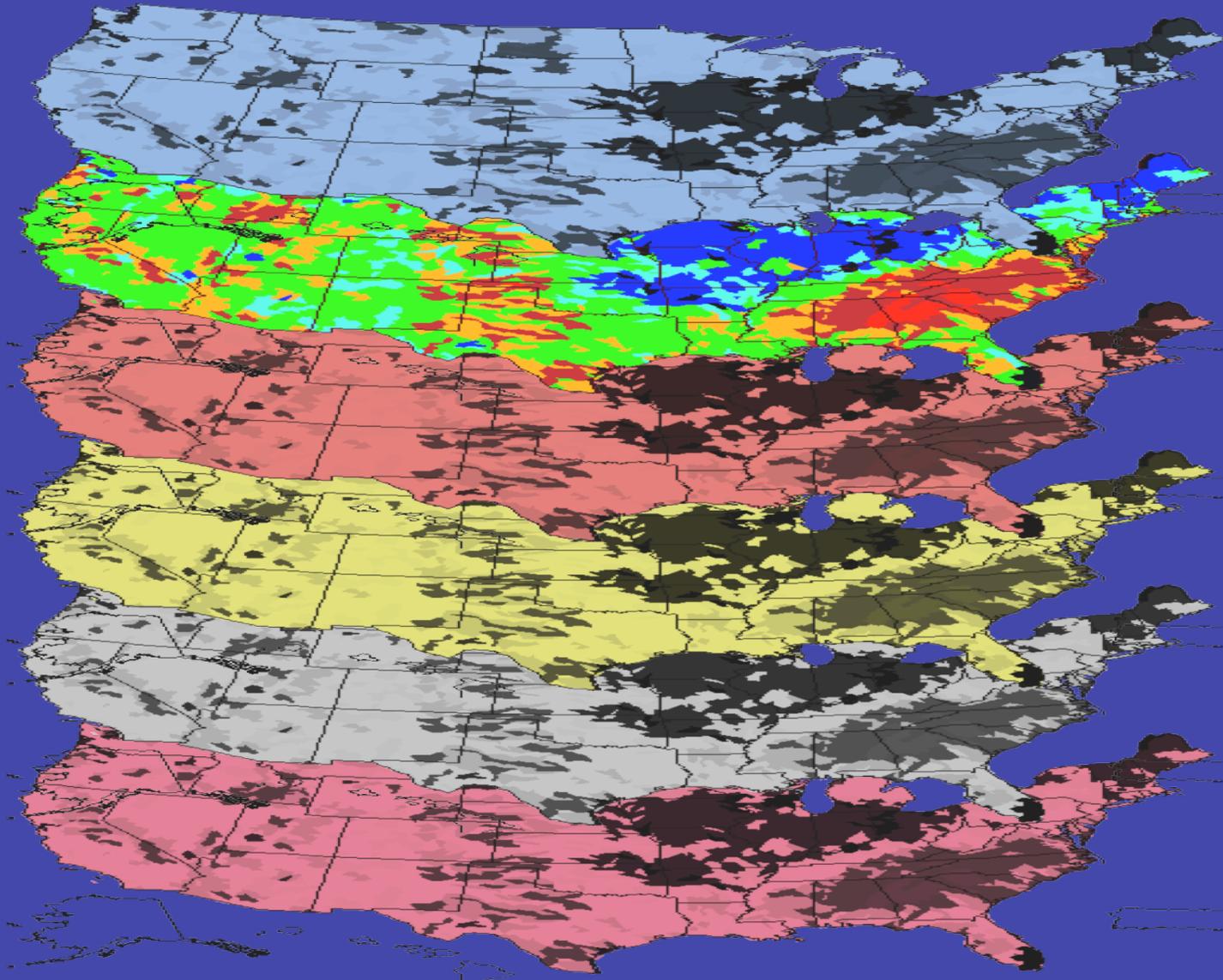
- Precipitation
- Evapotranspiration
- Storage in Reservoirs, Lakes, Snow and Ice
- Surface Water
- Groundwater
 - Recharge rates
 - Water level in aquifers
- Ecological Needs
- Water Withdrawals
- Return Flows
- Consumptive Uses
- Run-of-the-River Uses

Generating and delivering information for water accounting



Envision a seamless coverage of information for
a water accounting component

And if you could get that info for all accounting components



Precipitation

Runoff

Baseflow

ET

Recharge

Surface Storage

Information Delivery

A web application for delivering water availability information at scales that are relevant to the user

USGS
Idaho StreamStats

ZoomIn ZoomOut Pan GetInfo FullExtent LastExtent Basin Delineation EditBasin FlowStats BasinChar ClearBasin Download GageInfo Print Help

Scale
Zoom To: water GO
Enter Water Resource

Map Layers Locator Map
BASE LAYERS
WATER
POLITICAL

USGS Scale 1:7627084

Refresh Map Reset Layers

Accessibility FOIA Privacy Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: <http://streamstats.usgs.gov/idstreamstats/>
Page Contact Information: StreamStats Help
Page Last Modified: September 17, 2007

Streamstats Status News

FIRST GOV .GOV
The U.S. Government's Official Web Portal

TAKE PRIDE IN AMERICA

Select the area of interest.

Generate information on water accounting components

Work with the online tool to construct your water budget

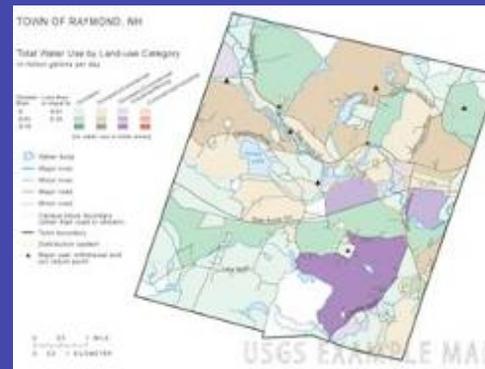
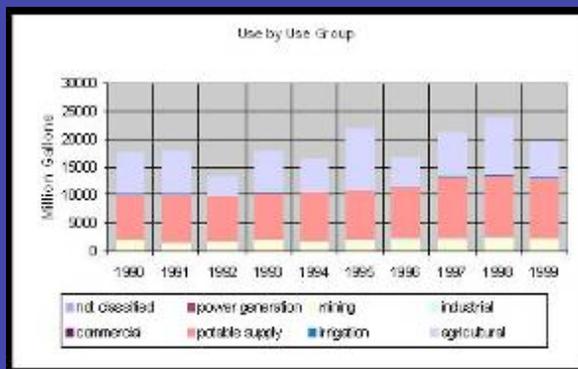
Access trend information

Enhancing the Nation's Water Use Information

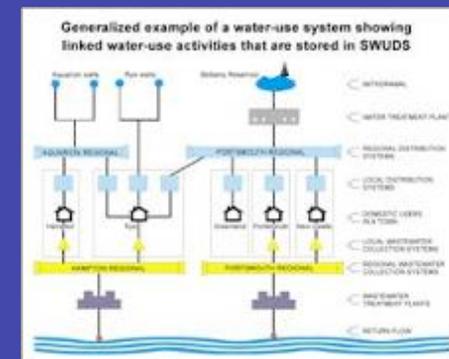
Use New Methods to Estimate Water Use

- Stratified Random Sampling
- Regression Models

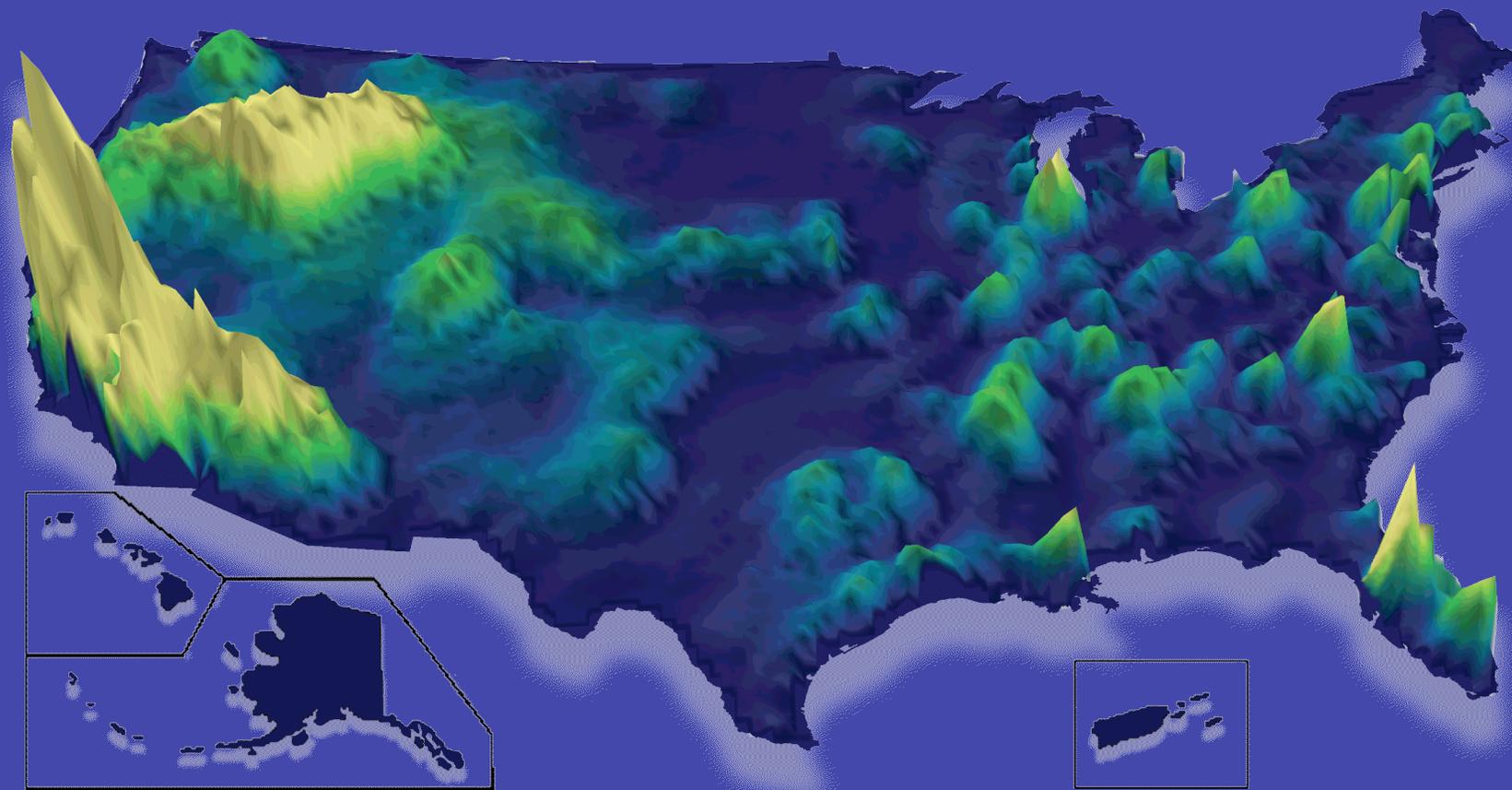
Develop models of water use based on land use



Ability to track water from point of withdrawal thru to return of flow.



New Authority: Water Use Grants to States



Water Use Science Vision

Account for human usage of water – source, transport, treatment, demand, consumption, collection, return

“Cradle to grave” water tracking for high-priority use categories.

Model the relationship of water use to land use

Expand our use of remote-sensing in water use science.

Re-Map interbasin transfers at a watershed scale

Integrate water use with streamflow and groundwater information.

Flows Needs for Wildlife and Habitat

- Classify the streams across the nation for their hydro-ecological type
- Systematically examine the ecological affects of hydrologic alteration
- Develop flow alteration – ecological response relationships by “h-e” type



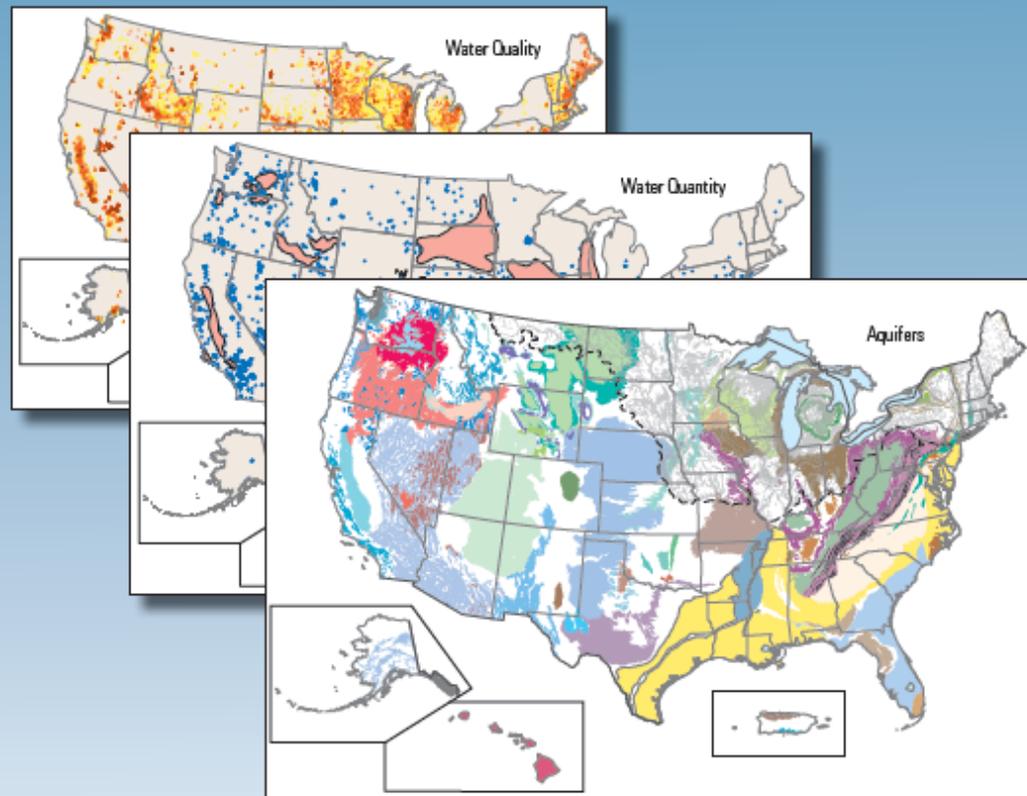
Assess Groundwater's role in Water Availability

Use the strength of and enhance the resources within this program to provide the information on:

- Recharge
- GW withdrawals
- Changes in storage.
- Saltwater Intrusion
- Trends in GW Indices
- Artificial Recharge
- GW/SW Interactions

Ground-Water Resources Program

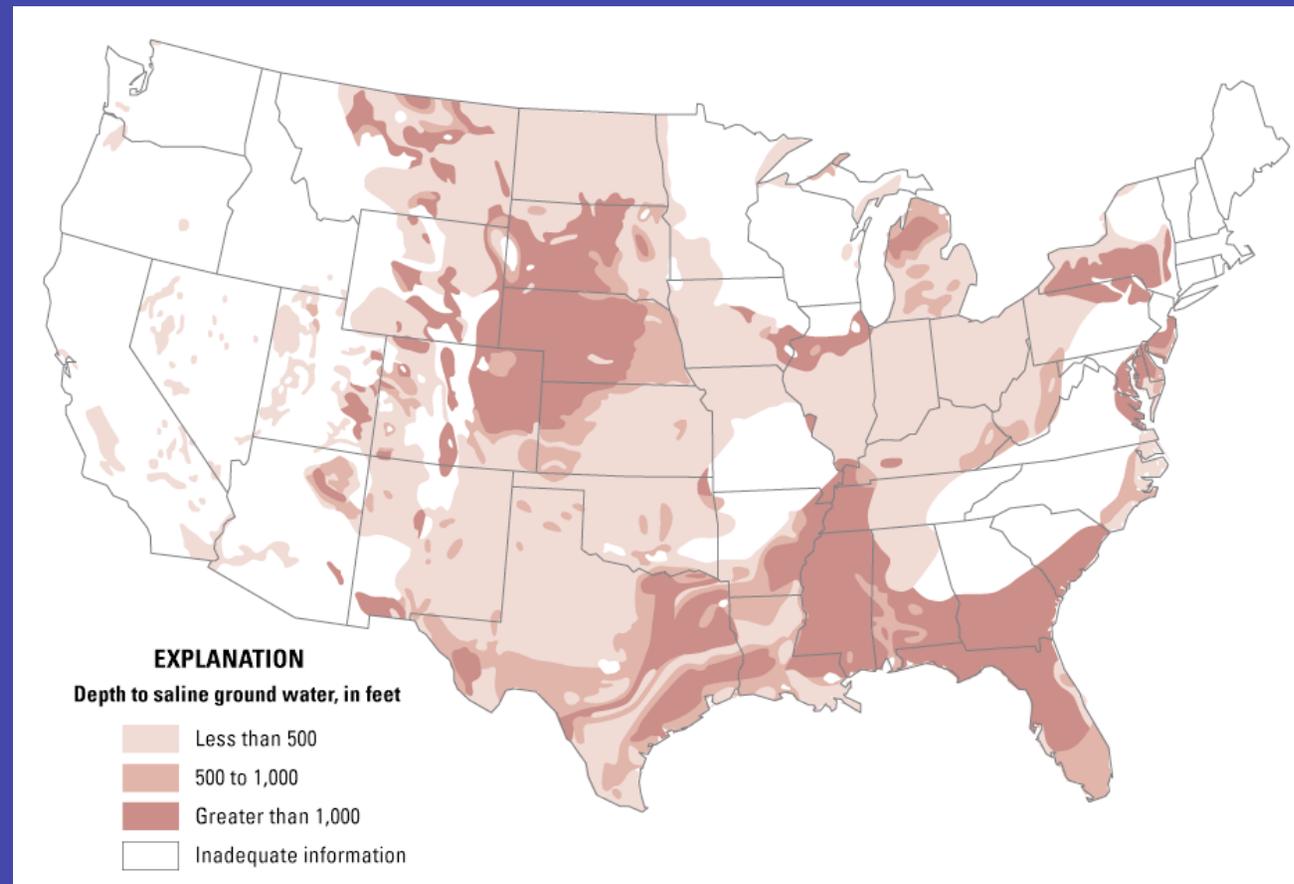
Ground-Water Availability in the United States



Assess the Nation's Brackish Resources

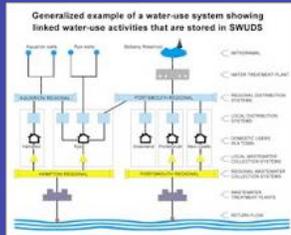
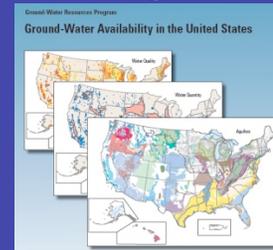
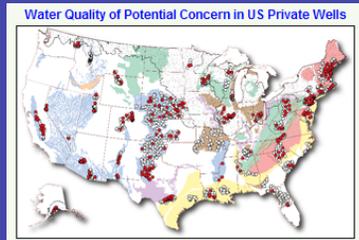
Continue and strengthen the effort begun under the Challenge Projects RFP for 2010

- Locations of the res.
- Hydrologic properties
- Water quality properties
- Current uses



Finally, three studies focused on selected watersheds: the Colorado River, the Delaware River, and the ACF Rivers - where there is significant competition over water resources. Here, the USGS will work collaboratively with stakeholders to comprehensively assess the technical aspects of water availability.

Focused Water Availability Assessments



Water Quality

Groundwater Resources

Water Use

SW Trends, Precipitation, etc



Eco Flows

Global Change

State, Local, Regional Stakeholder Involvement



Defined Technical Questions to be Answered

The objective is to place the information and tools into stakeholders hands to answer the questions they are facing.

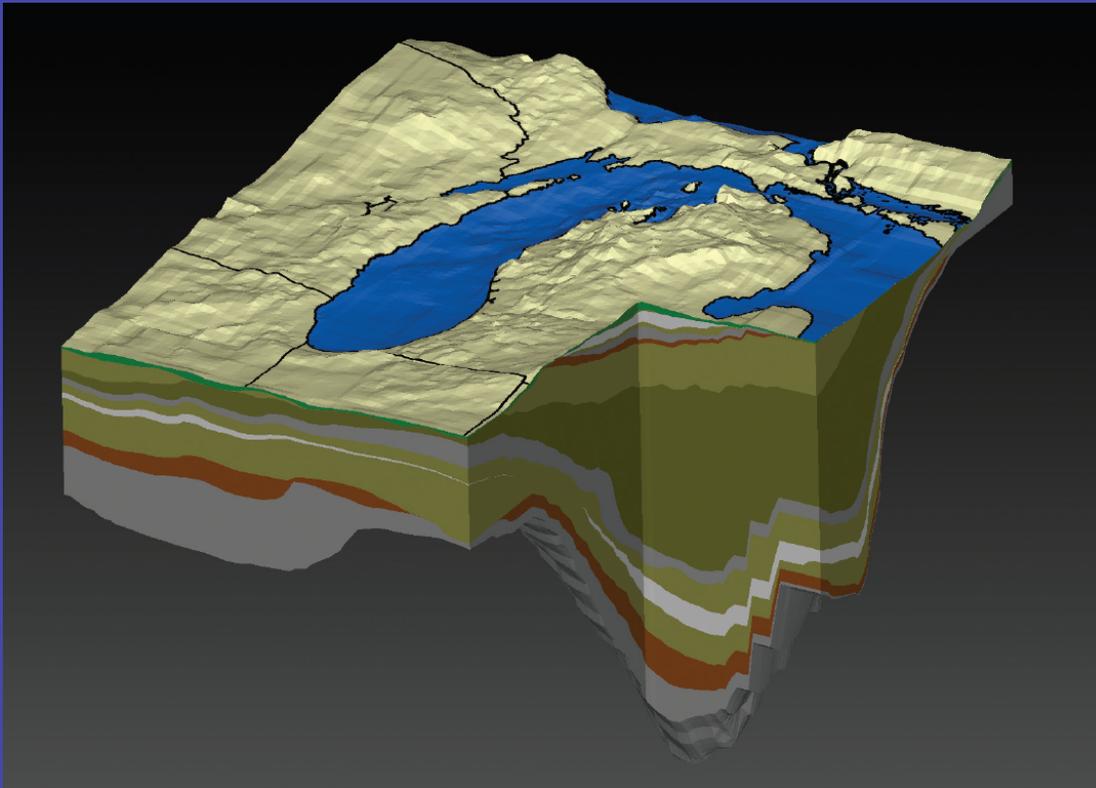
GREAT LAKES BASIN PILOT PROJECT



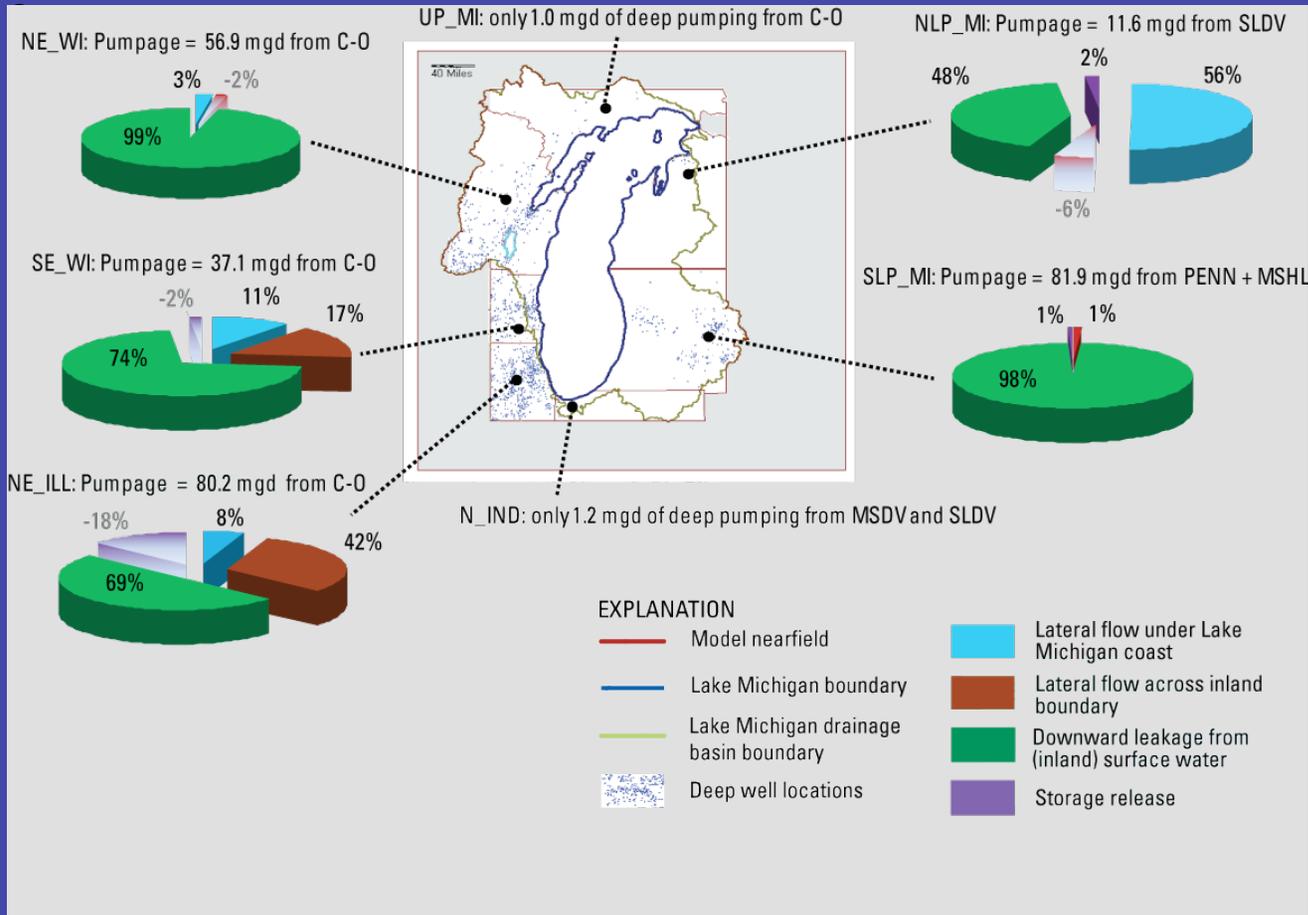
<http://water.usgs.gov/wateravailability/greatlakes>

National Emphasis—Regional Focus

- Develop methods applicable to national program
- Respond to Great Lakes issues—Compact

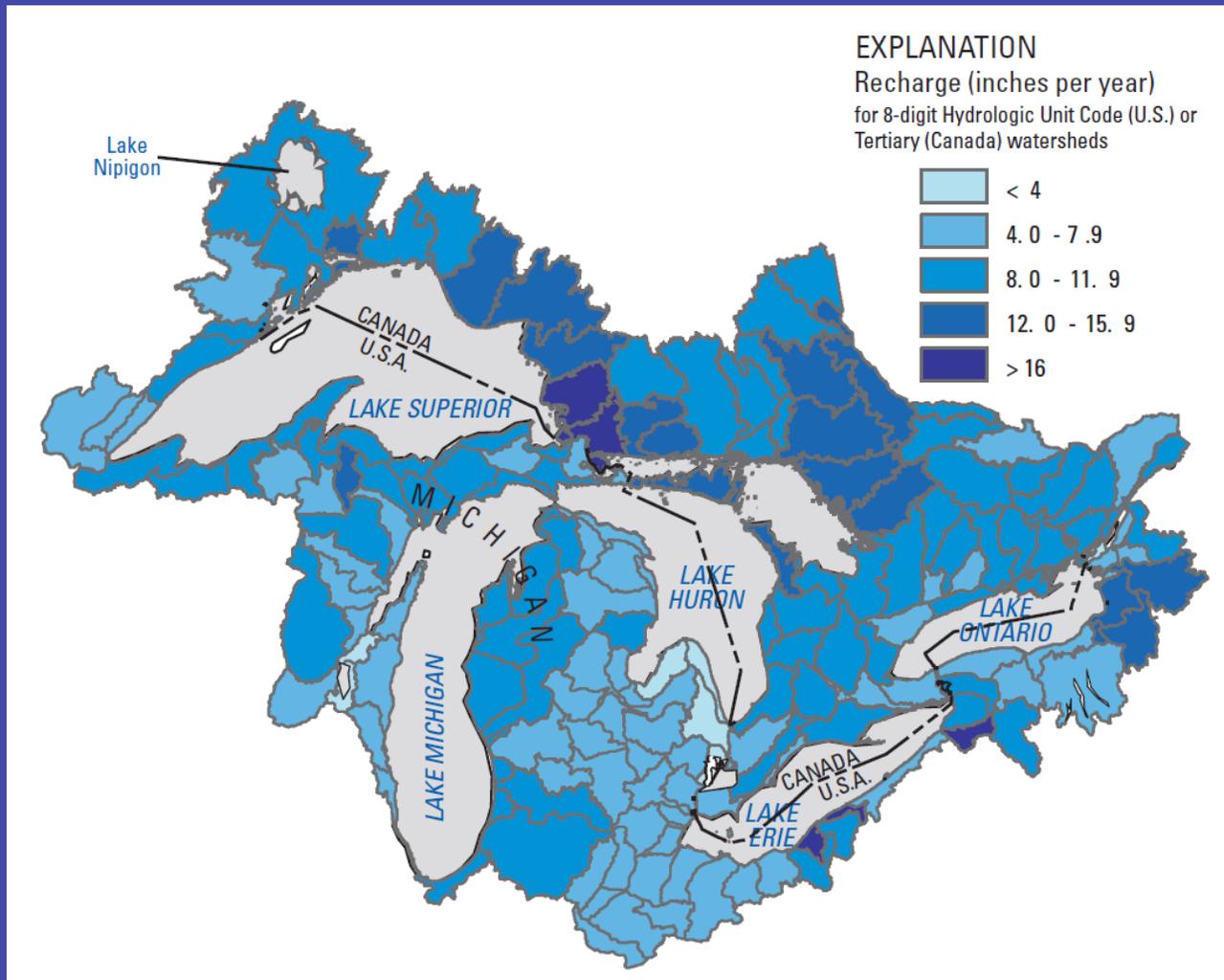


Water Availability

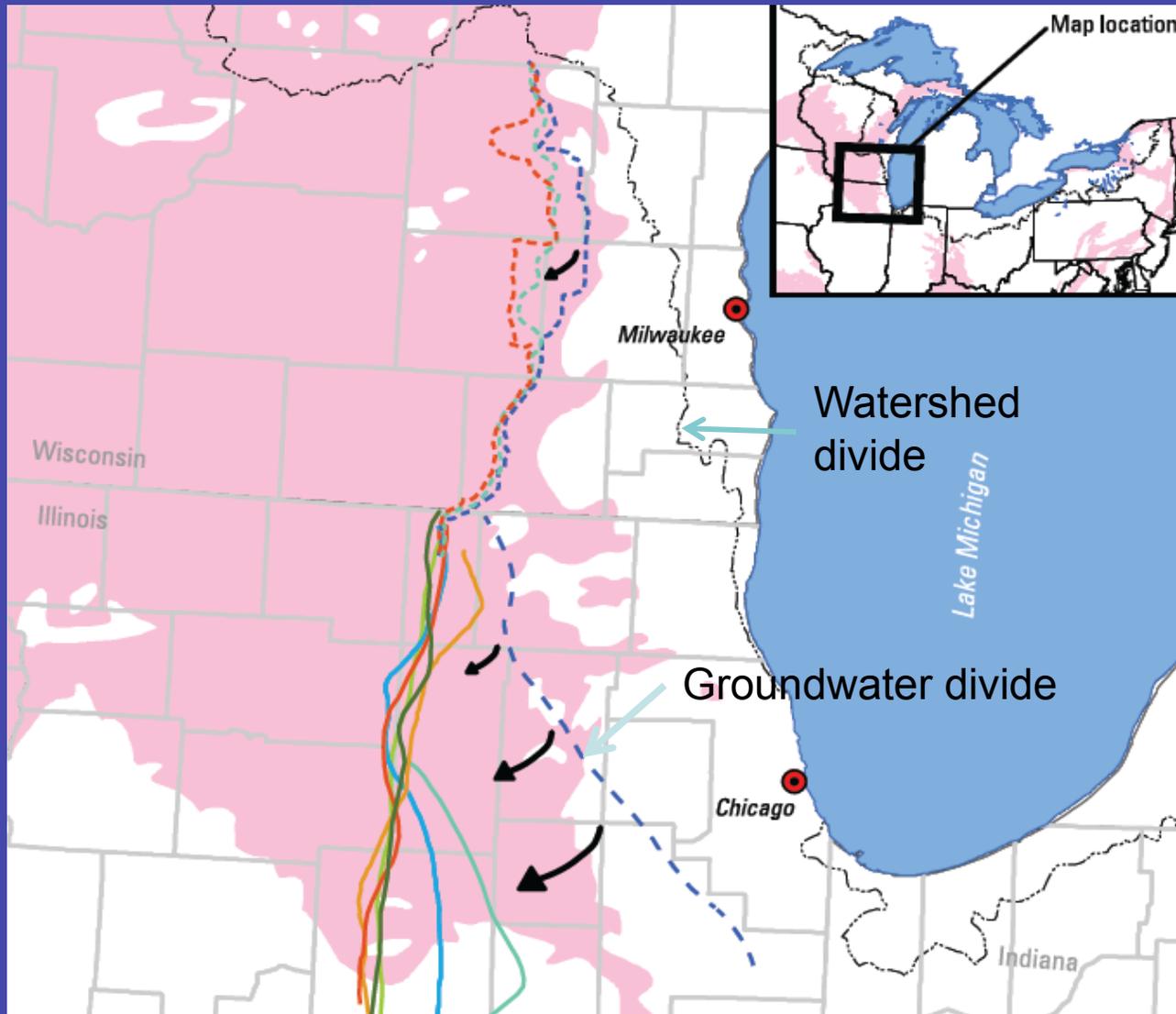


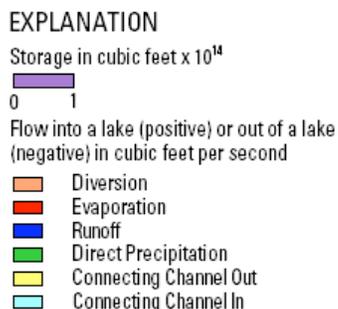
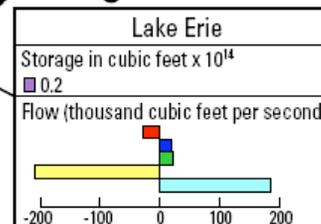
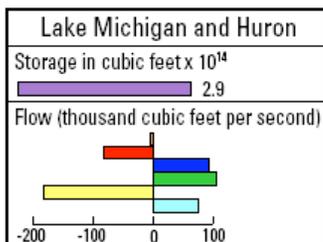
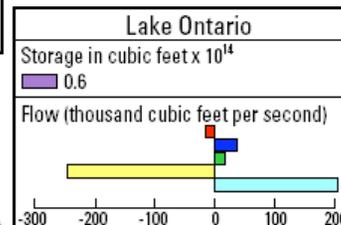
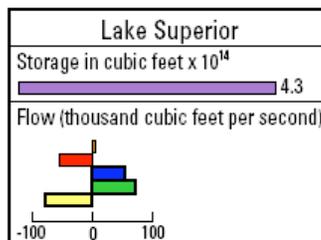
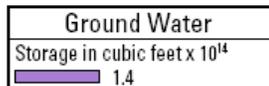
**Storage
Flows
Use**

Regional Recharge

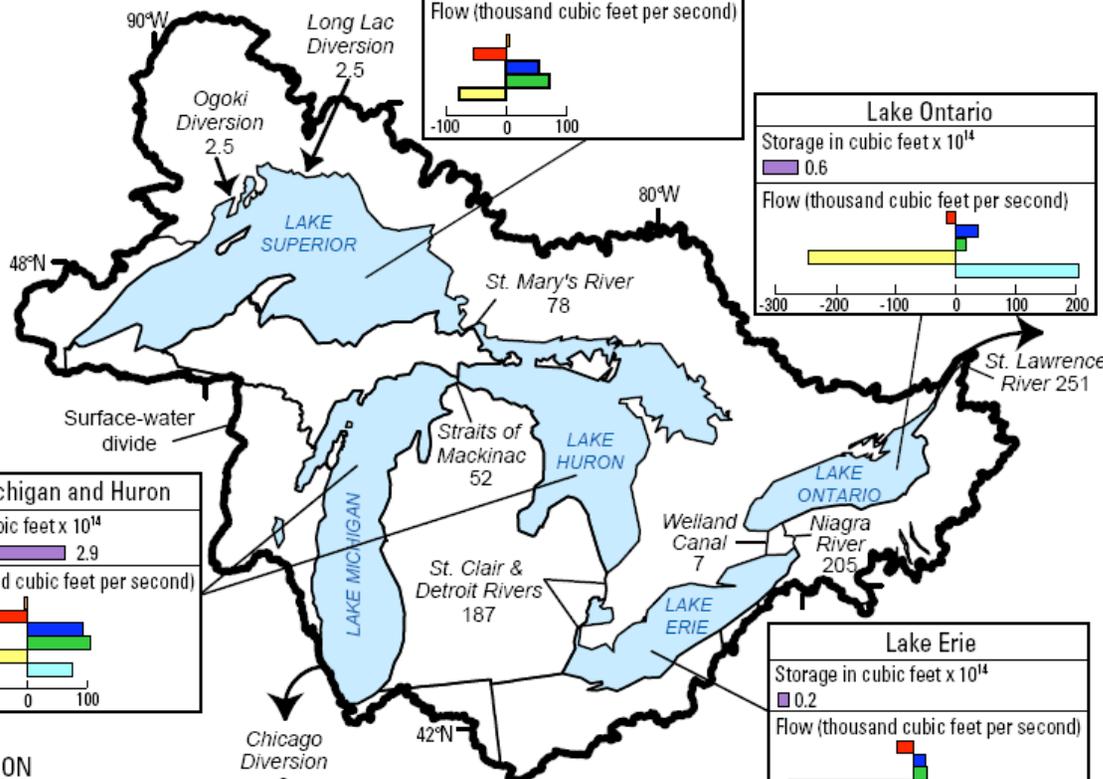


Groundwater Divides



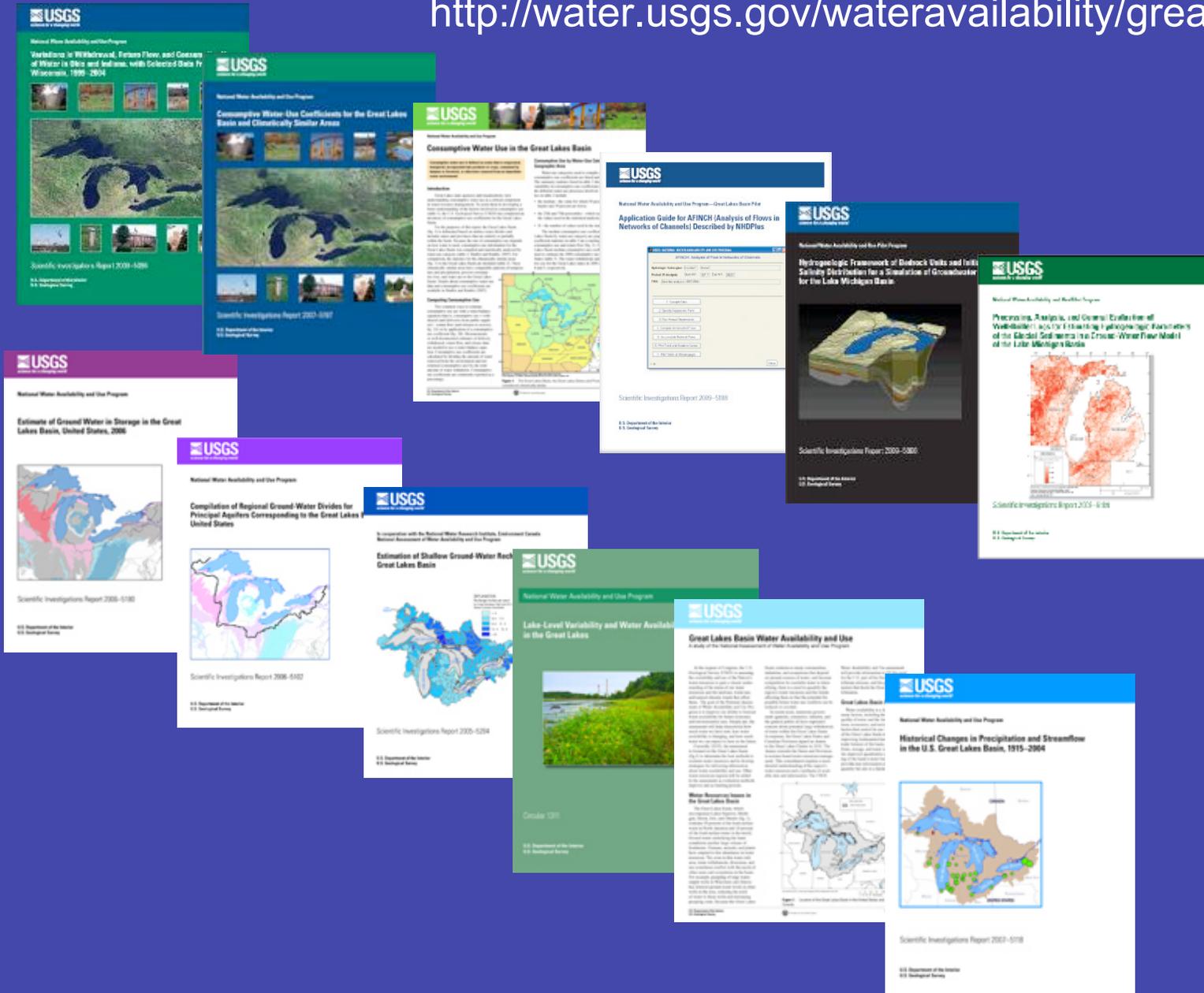


NOTE:
Numbers beside Rivers and Diversions represent flow in thousands of cubic feet per second



- Groundwater equals another Great Lake: 14,000 billion cubic feet
- Annual flow out of GL is 1 percent of water in storage
- Water use is 65,000 cfs
- Consumptive use is 3000 cfs

<http://water.usgs.gov/wateravailability/greatlakes>





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