



A National Water Census

* Part of the  Initiative

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?



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

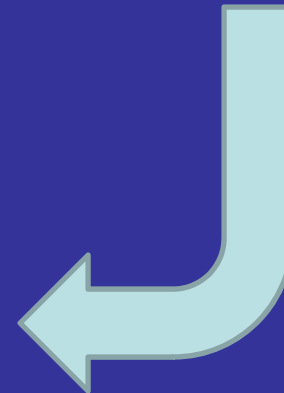
- Bureau of Reclamation
- US Geological Survey
- Office of the Ass't. Sec. for Water and Sci.

The Nation Water Census

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?

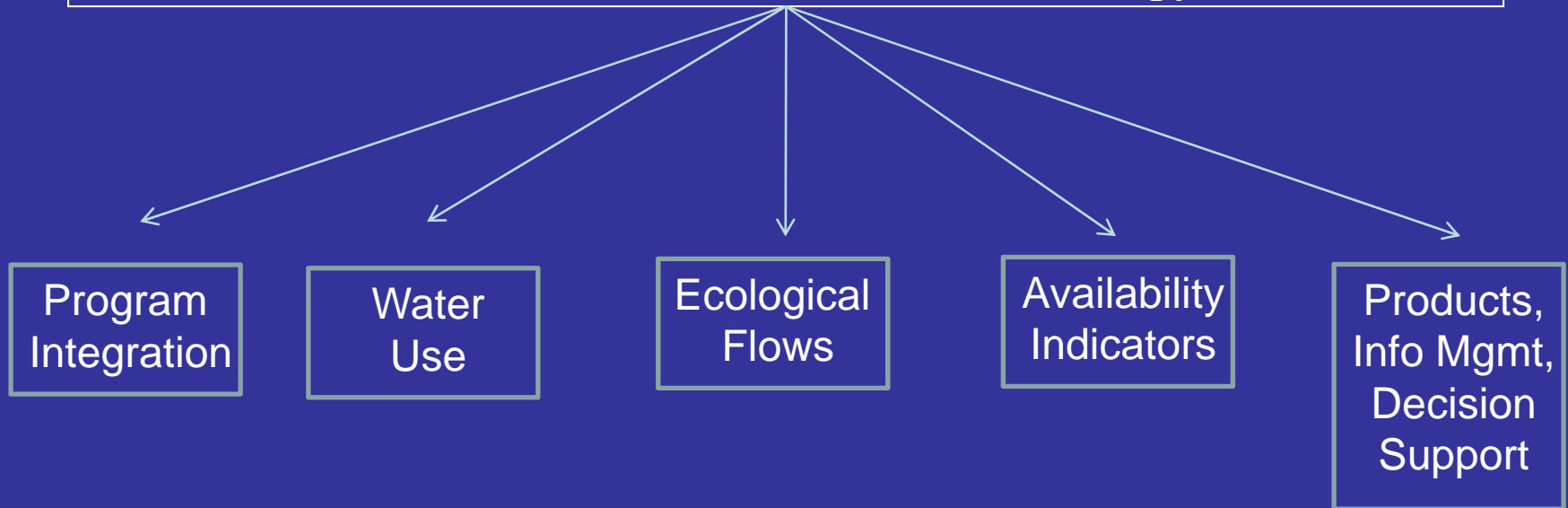
- *Subcommittee on Groundwater*
- *Streamgaging*
- *Brackish Groundwater Assessment*
- *Water Use*
 - *Thermoelectric Cooling Water*
 - *Irrigation*

Report to Congress - Every 5 years thereafter:

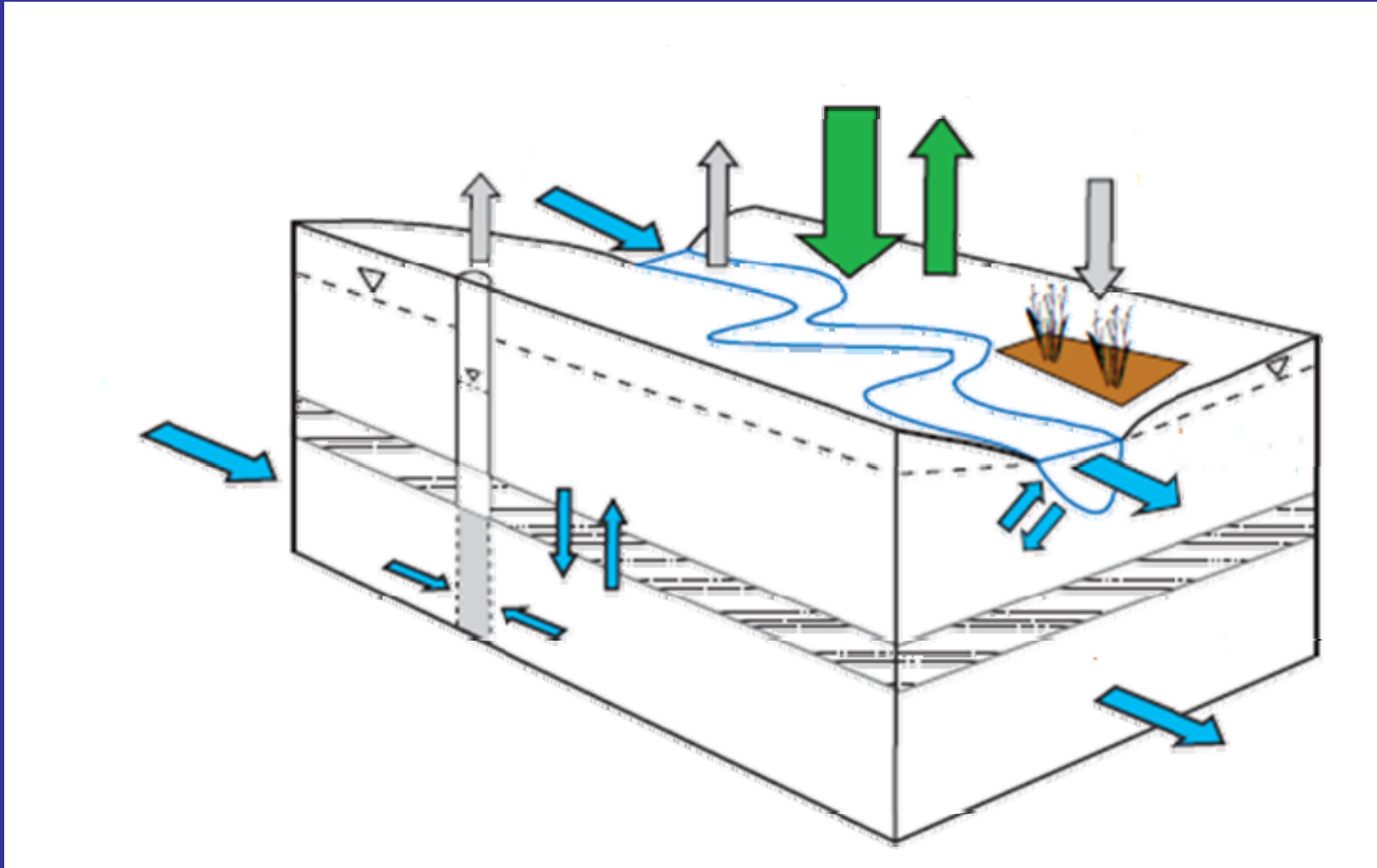
1. The **current availability** of water resources in the United States,
2. **Significant trends** affecting water **availability**, including documented or projected impacts as a result of global climate change,
3. The **withdrawal and use** of surface water and groundwater by various sectors,
4. **Significant trends** relating to each **water use** sector, including significant changes in water use due to the development of new energy supplies,
5. **Significant water use conflicts or shortages** that have occurred or are occurring,
6. Each **factor** that has **caused**, or is causing, a conflict or shortage.

USGS Implementation Team

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



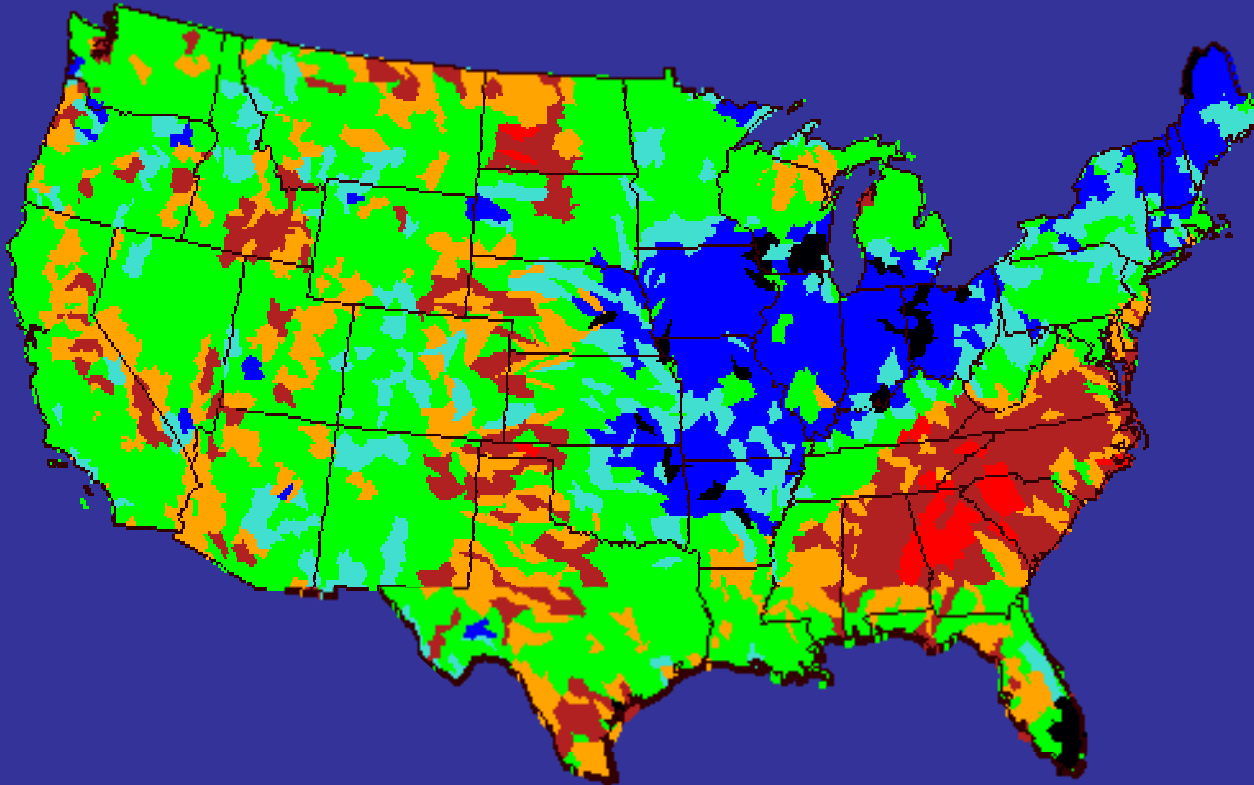
Account for water with a “budget”



A Nationwide System to deliver water accounting information addressing

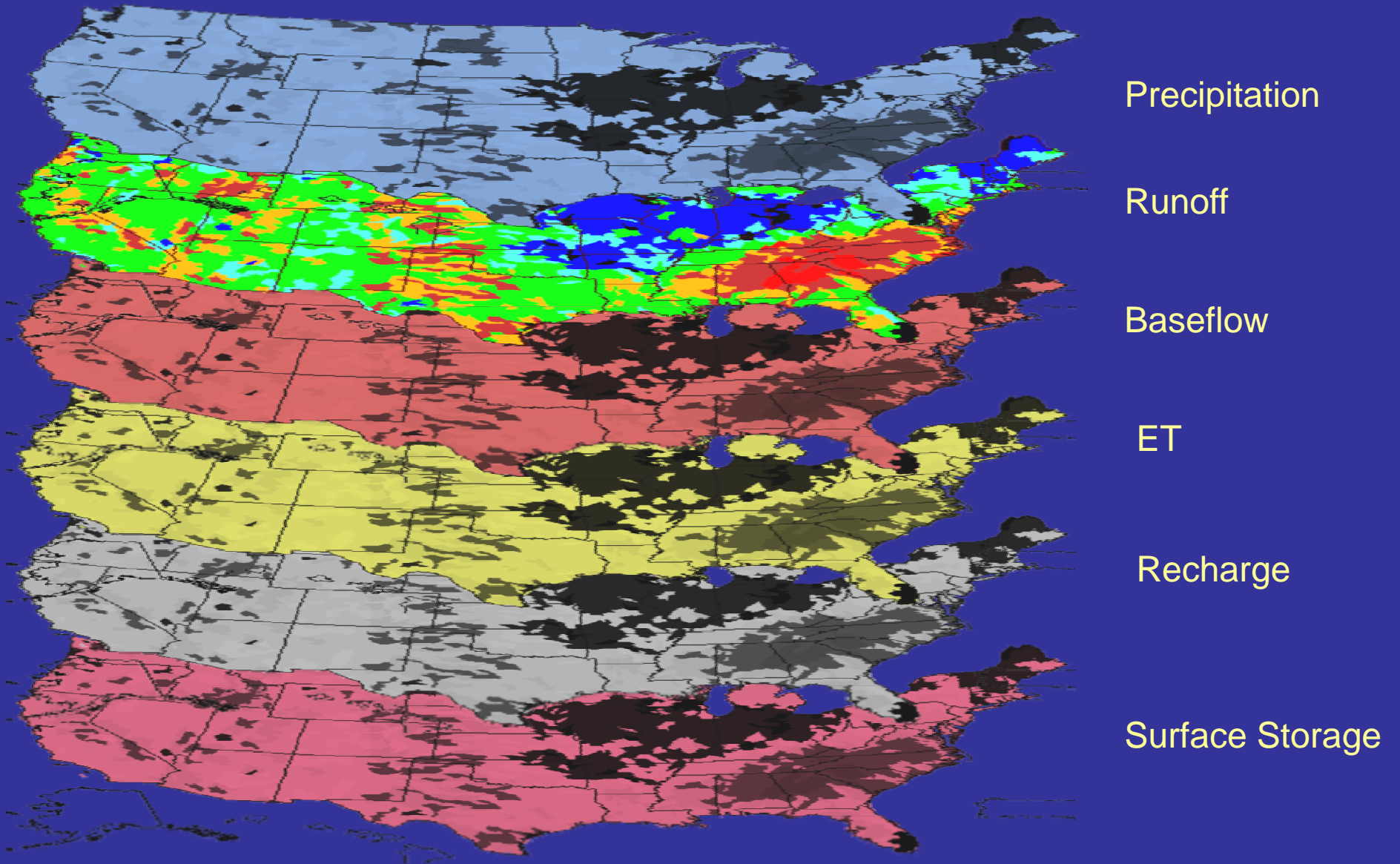
- Precipitation
- Evapotranspiration
- Storage in Reservoirs, Lakes, Snow and Ice
- Surface Water
- Groundwater
 - Recharge rates
 - Water level in aquifers
- Ecological Needs
- Water Withdrawals
- Return Flows
- Consumptive Uses
- Run-of-the-River Uses

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



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 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
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

How will we apply the 2011 funds?

Indicators – Development and Delivery:

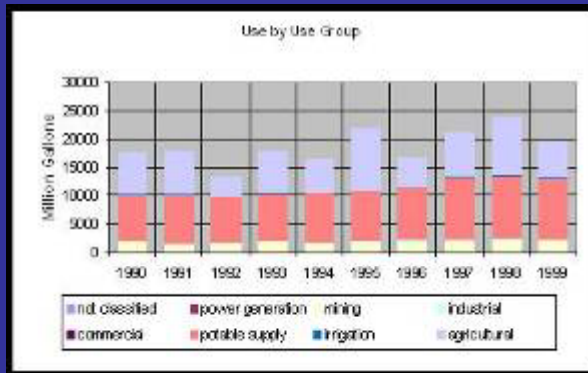
Hydrologic Networks and Analysis	\$1.45 M
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Total	\$1.45 M
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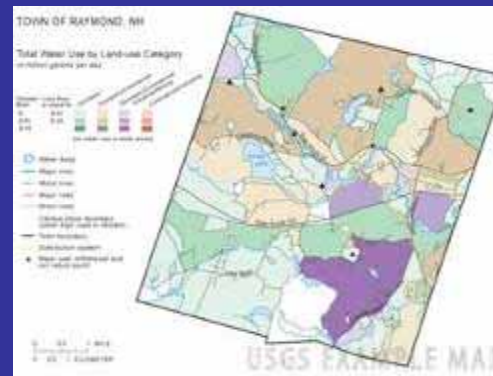
Enhancing the Nation's Water Use Information

Use New Methods to Estimate Water Use

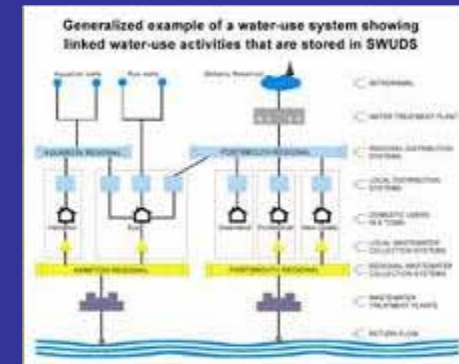
- Stratified Random Sampling
- Regression Models



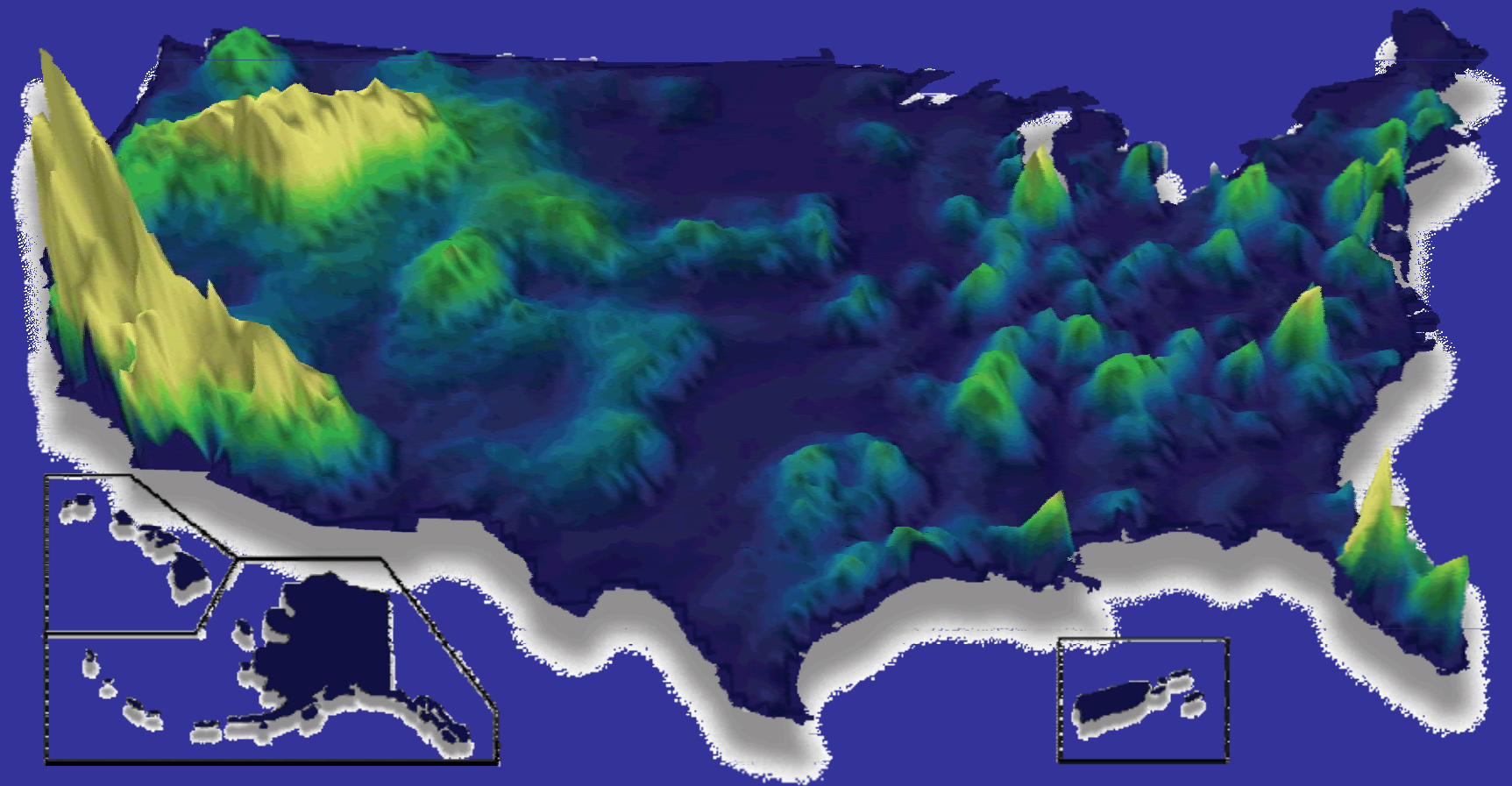
Develop models of water use based on land use



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



New Authority: Water Use Grants to States



How will we apply the 2011 funds?

Water Use Indicators:

Hydrologic Networks and Analysis	\$1.3 M
Geographical Analysis and Monitoring	\$0.5 M

Water Use Grants to States:

Hydrologic Networks and Analysis	\$1.0 M
Total	\$2.8 M

Water Use Science Vision

We will significantly enhance our water use program by providing the capability to:

- We want to track human usage of water – source, transport, treatment, demand, consumption, collection, return flow.
- “Cradle to grave” water tracking for high-priority use categories.
- Analyze disparate databases to improve water use estimation.
- Develop regression models over a variety of landscapes
- Expand use of statistical sampling to verify, validate and improve water use models.
- Significantly expand our use of remote-sensing in water use science.

Water Use Science Vision

continued:

- Accurately estimate consumptive use on an annual and sub-annual basis for the full range of water use categories.
- Consumptive use profiles for all major industrial and commercial subsectors and for all 55,000 public community water supply systems.
- Map interbasin transfers of water down to the HUC 8 level.
- Re-institute sectors for hydroelectric and self-supplied commercial
- Quantify run-of-the-river flows for navigation and recreation
- Integrate water use information with streamflow and groundwater information.
- Use this enhanced capability to put out a more accurate and expanded Estimated Use of Water in the U.S. every two years.

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



How will we apply the 2011 funds?

Ecological Flows:

Hydrologic Networks and Analysis	\$0.85 M
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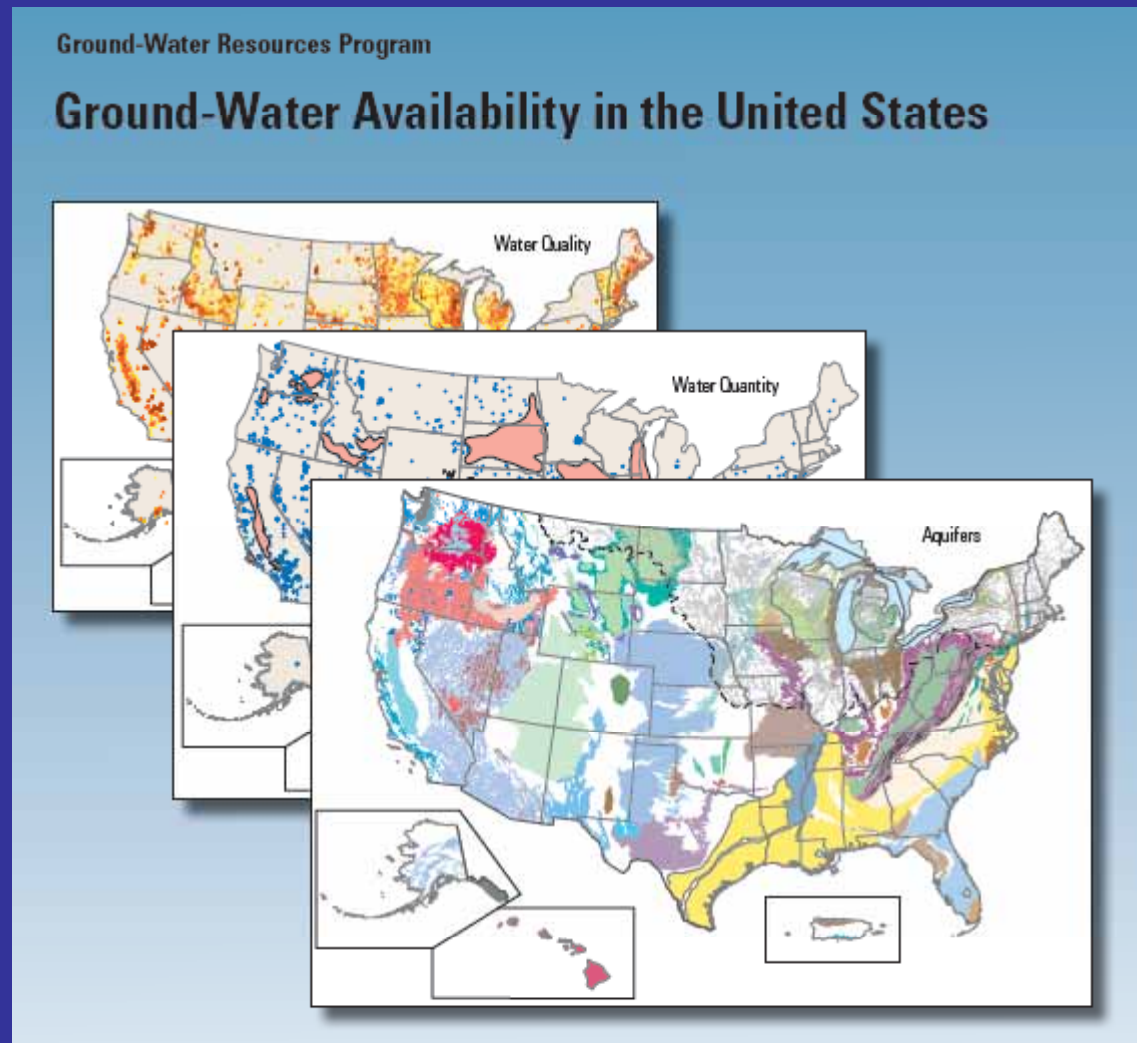
Biological Research and Monitoring	\$0.5 M
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Total	\$1.35 M
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Assess Groundwater's role in Water Availability

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

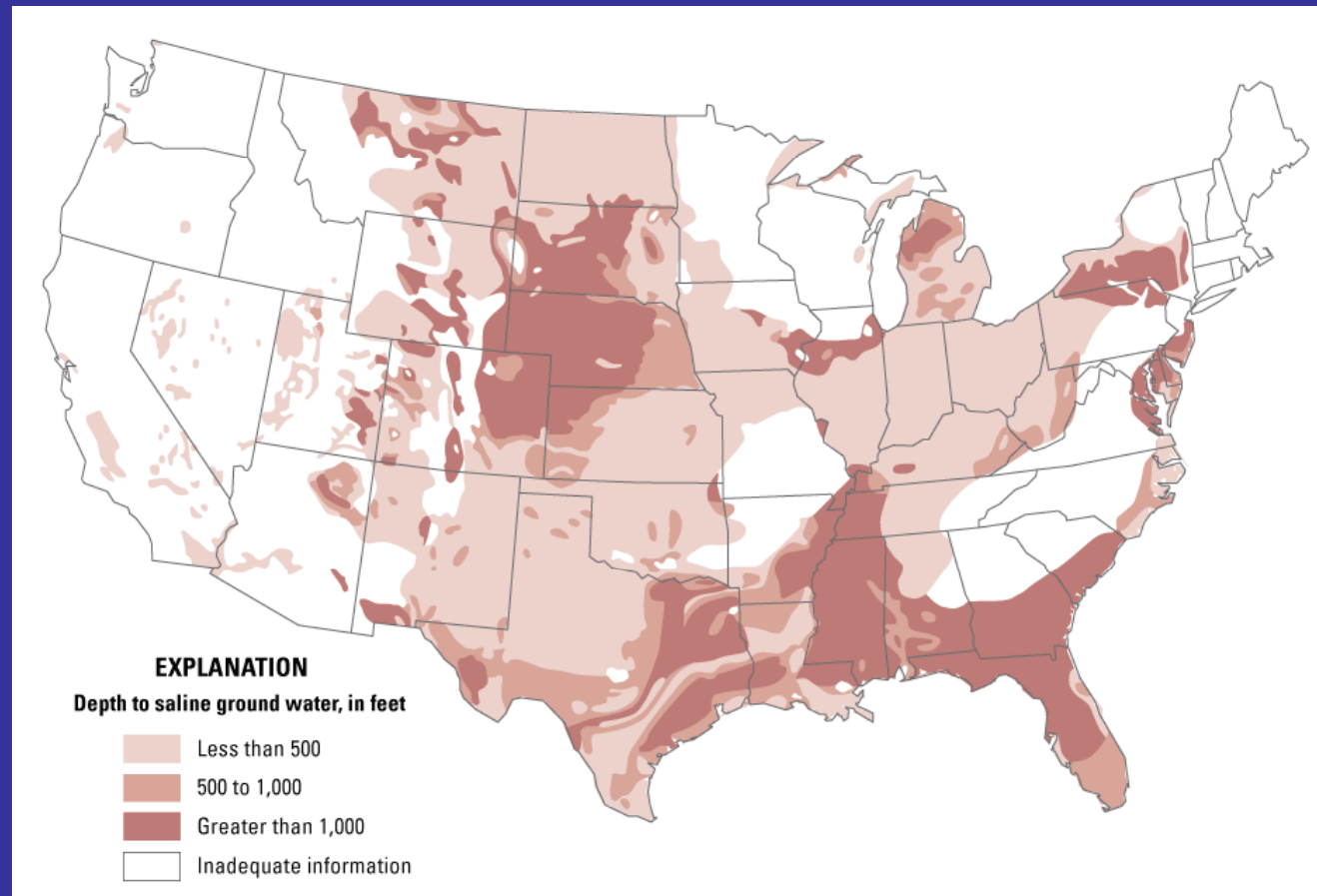
- Recharge
- GW yields
- Changes in storage.
- Saltwater Intrusion
- Trends in GW Indices
- Artificial Recharge
- GW/SW Interactions



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



How will we apply the 2011 funds?

Groundwater Indicators and Brackish Aquifer Studies:

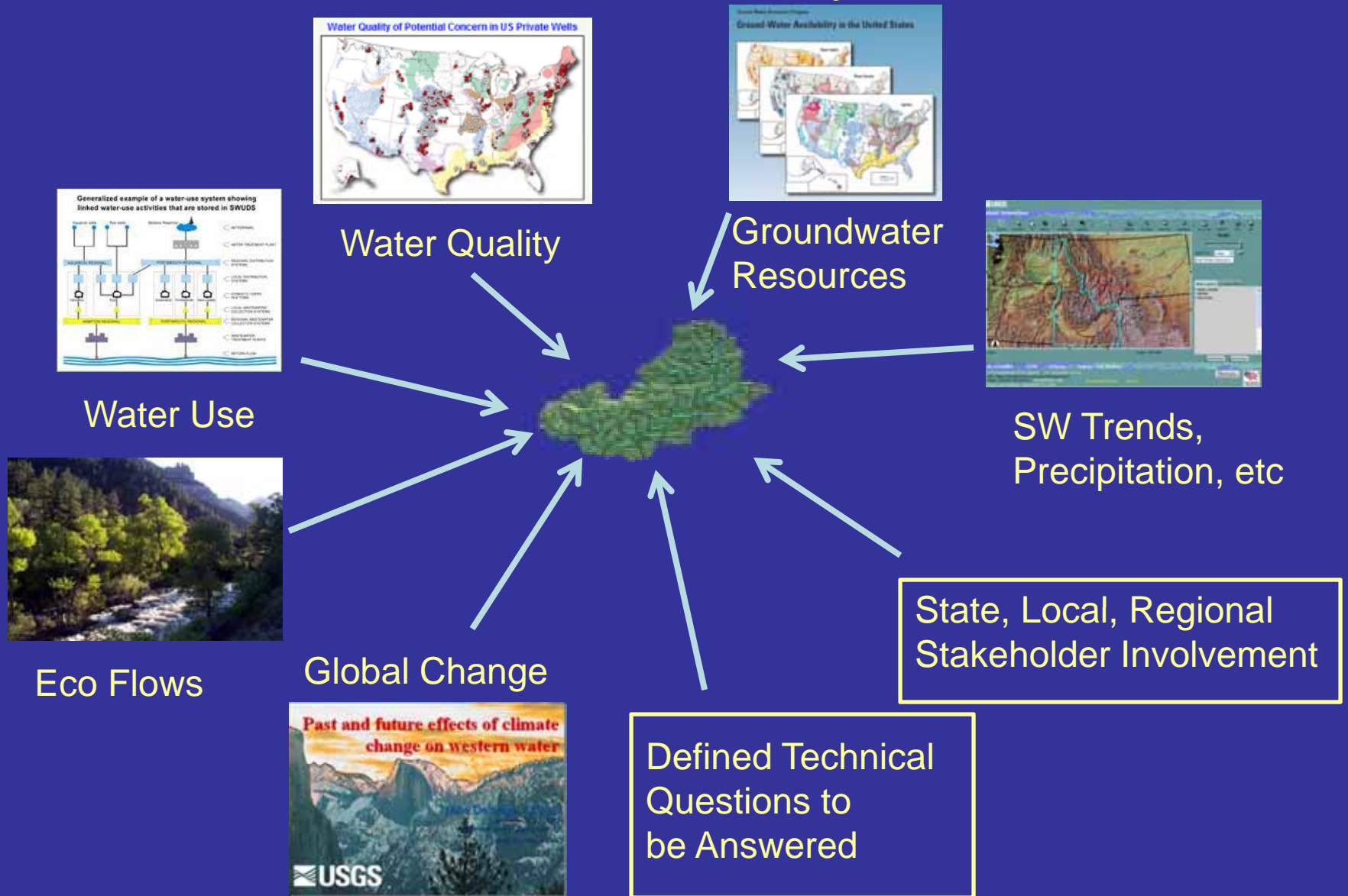
Groundwater Resources Program \$1.1 M

National Cooperative Geologic Mapping \$0.5 M

Total \$1.6 M

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



How will we apply the 2011 funds?

Focus Area Studies:

Hydrologic Networks and Analysis	\$1.5 M
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Total	\$1.5 M
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The objective is to place the information and tools into stakeholders hands to answer the questions they are facing.