



USGS Cooperative Water Program

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Coop Water Program Coordinator
January 17, 2007

USGS Cooperative Water Program

- Working with state and local governments to address water issues of national concern since 1895
- Data collection and focused hydrologic investigations that meet local and regional water information needs
- Integrate local information to provide regional and national resource assessments

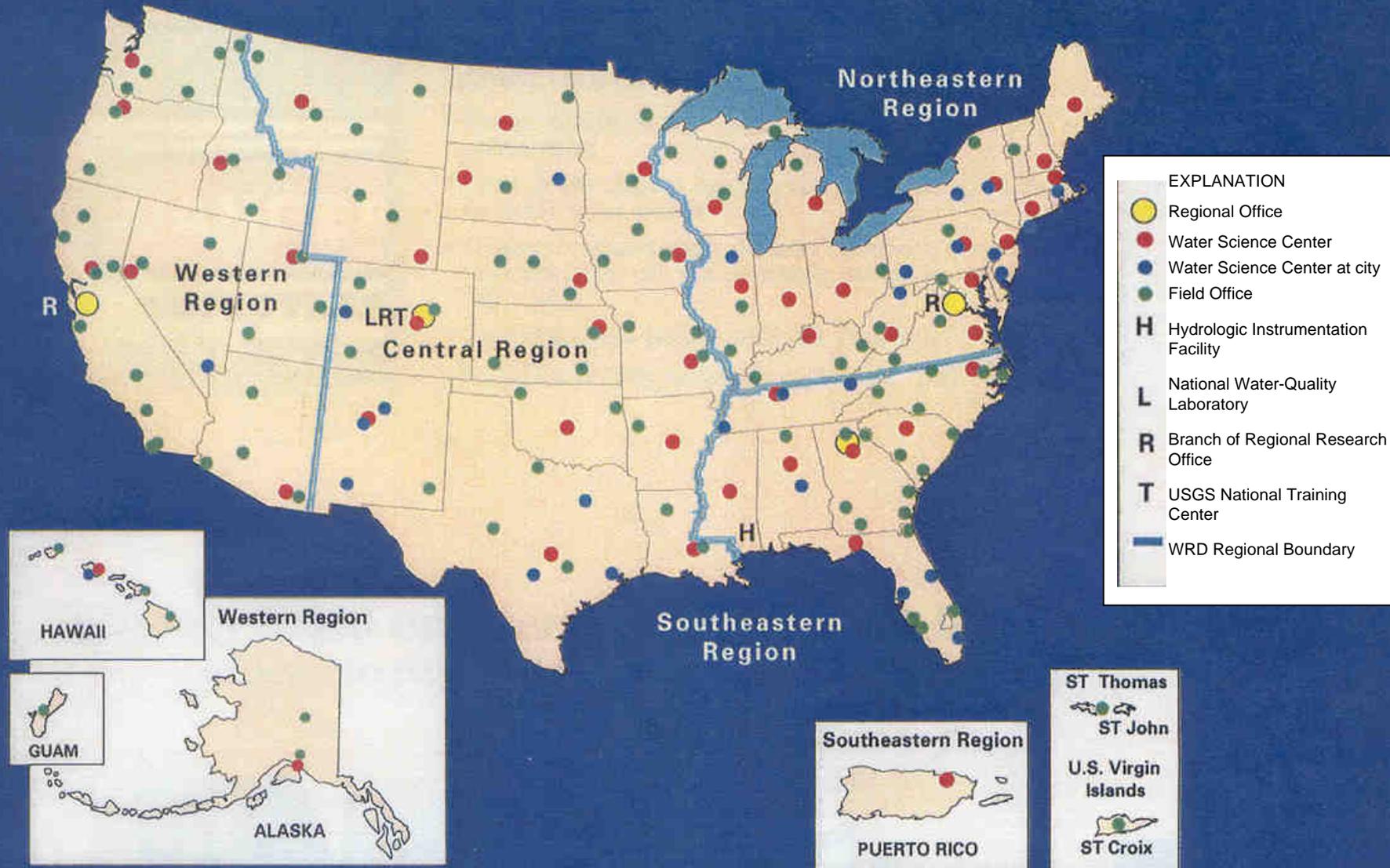
Technical Program

• Stream gages	4,700
• Water quality stations	2,500
• Ground water levels	10,700
• Ground water quality	2,600
• Hydrologic Investigations	750

Hydrologic Investigations

- **Water Availability – GW Modeling**
- **Salt Water Intrusion**
- **Aquifer Storage and Recovery**
- **Flood Frequency Analyses**
- **Land Use Effects – Watershed Modeling**
- **Contaminant Distribution and Transport**
- **Eutrophication – Lakes and Estuaries**
- **Drinking Water Quality**

U.S. Geological Survey Water Resources Discipline Offices



Number of Cooperators

- 1980 – 746
- 1990 – 1,036
- 2000 – 1,387
- 2005 - 1,407

Program Strengths

- Shared cost and shared benefits
- Built-in relevance – Cooperator interaction
- Information universally available – accepted as impartial by all parties
- Supports States in addressing Federal mandates

Program Strengths

- **Builds and tests new tools – technology transfer**
- **National standards – builds the USGS National data base**
- **Provides basis for national and regional synthesis**
- **Provides foundation for Federal programs**

External Reviews

- **1999 ACWI External Task Force**
 - **20 members**
 - **3 areas of focus – Mission, Conduct, and Products**
 - **32 Findings – 57 recommendations**
 - **Final Report – Circular 1192**

External Reviews

- **2004 ACWI External Task Force**
 - 8 members
 - Interim review – 1999 recommendations
 - Report and USGS Response on ACWI Web Site

2004 Task Force Membership

Barney Austin, Chair

Western States Water Council

Fred Bloetscher

American Water Works Assoc.

Bill Cauthren

Assoc. of State & Interstate Water Pollution
Control Administrators

Tom Dietrich

NOAA, National Weather Service

John Jansen

National Groundwater Association

Rick Johnson

Water Environment Federation

Sue Lowry

Interstate Council on Water Policy

Karl Muessig

American Association of State Geologists

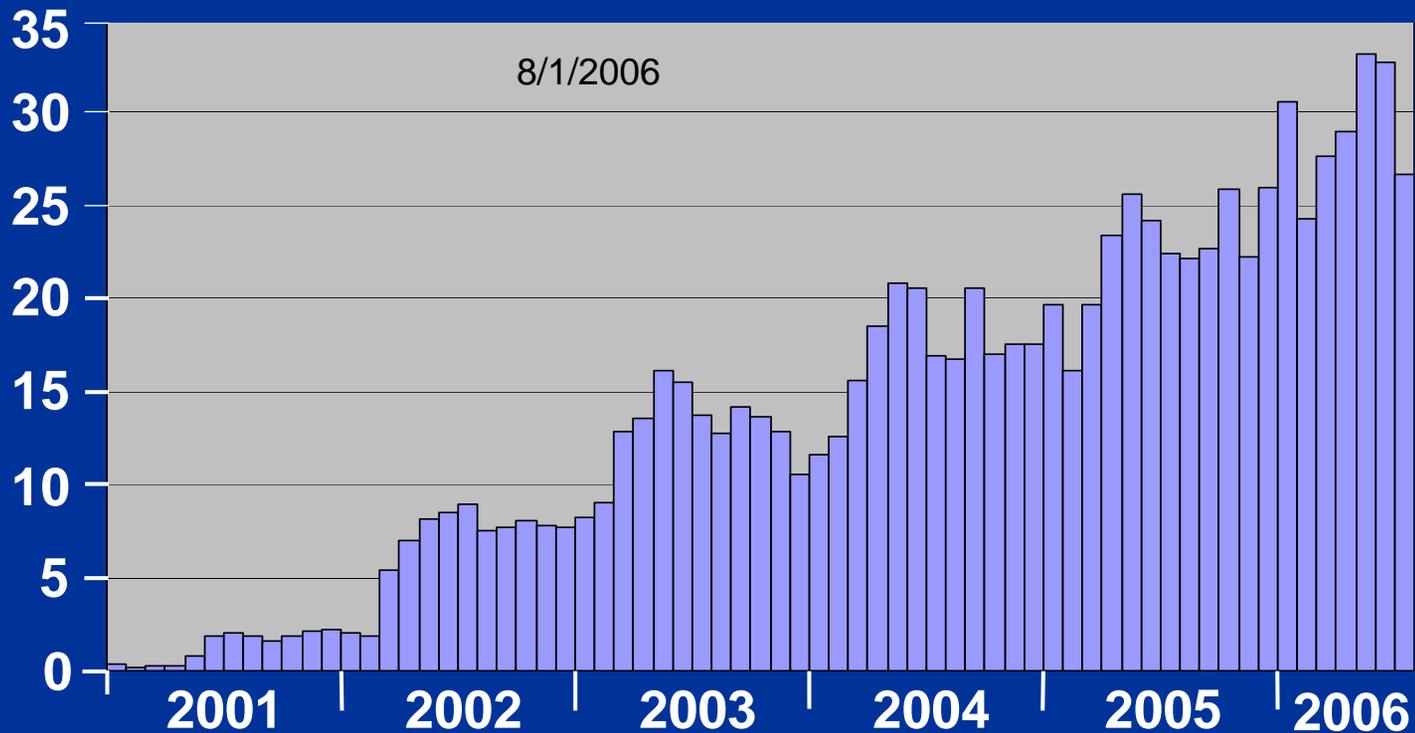


USGS accomplishments since 1999

- **Establishment of NSIP**
 - Identification and partial funding of core network
- **Improved data collection and dissemination**
- **Development of the CWP web site**
 - Better communication
 - Avoid competition with the private sector
- **Several new cooperators**
- **Reports available online**



History of NWISWeb use, in millions of successful requests per month



USGS NWISWeb Daily Values

Discharge	195.4 million
Stage	26.6 million
Water Levels in Wells	11.4 million
pH	1.5 million
Temperatures	11.3 million
Specific Conductance	5.0 million
Other	21.0 million

August 1, 2006

WaterWatch

Thursday, September 28, 2006 15:20ET

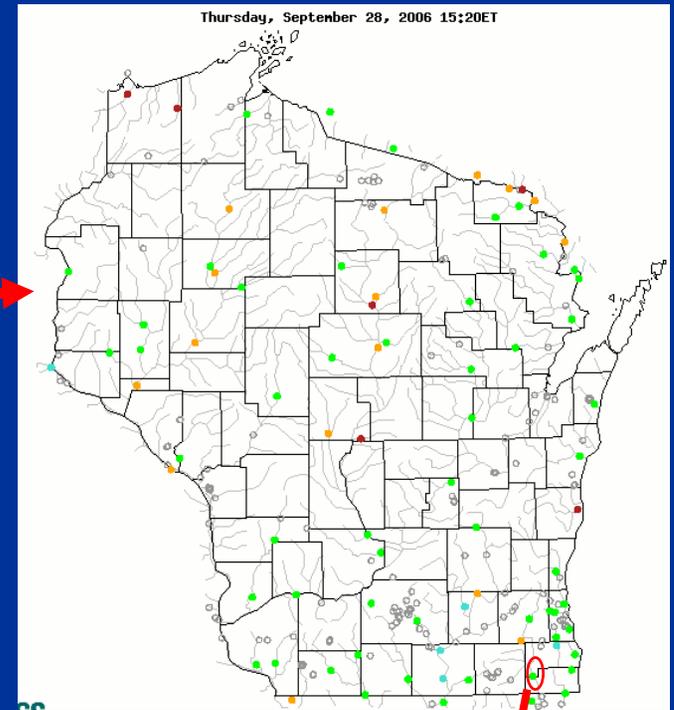
NH VT MA RI CT NJ DE MD DC PR-VI AK HI

USGS

Choose a data retrieval option and select a location on the map

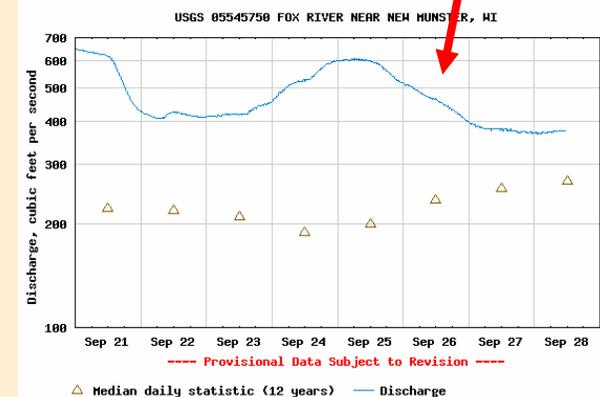
List of all stations in state, State map, or Nearest stations

Explanation - Percentile classes						
●	●	●	●	●	●	
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	



Discharge, cubic feet per second

Most recent value: 374 09-28-2006 11:15



[Create presentation-quality graph](#)

Parameter 00060; DD 02

Daily discharge statistics, in cfs, for Sep 28 based on 12 years of record

Min (2003)	20 %	Median	Current	Mean	80 %	Max (2000)
110	143	267	374	388	652	1180

Status of '99 TF recommendations

- Status of recommendations in the '99 report:
 - 6 complete
 - 50 agree, adopted, ongoing
 - 2 partially agree, partially adopted
 - Use of in-kind services (11.3)
 - Proposals on the web (17.1)
 - 2 disagree, not implemented
 - Billing based on actual cost per station (8.2)
 - Use of outside contractors for data collection
-  USGS(11.2a)
 - TF assessment: 9 “Insufficient progress

Insufficient Progress – 2004 TF

- Emphasis on long-term data collection and core competency (10.1, 15.2)
- Relationships with cooperators and the private sector (11.2a, 15.3)
- Use of in-kind services (11.3)
- Accessibility to proposal info. (17.1)
- Billing - actual vs. average costs (8.2)
- Scheduling/timing of reports (25.1, 30.1)
- Funding issues (4.1)

Additional Stakeholder Meetings

- **National Stakeholder Meetings**
 - Washington DC – 2005
 - Austin Texas - 2006

- **Austin Recommendations**
 - Enhanced communications – local /regional
 - Optimization of costs
 - Enhanced Federal funding
 - Prioritization of data vs. studies

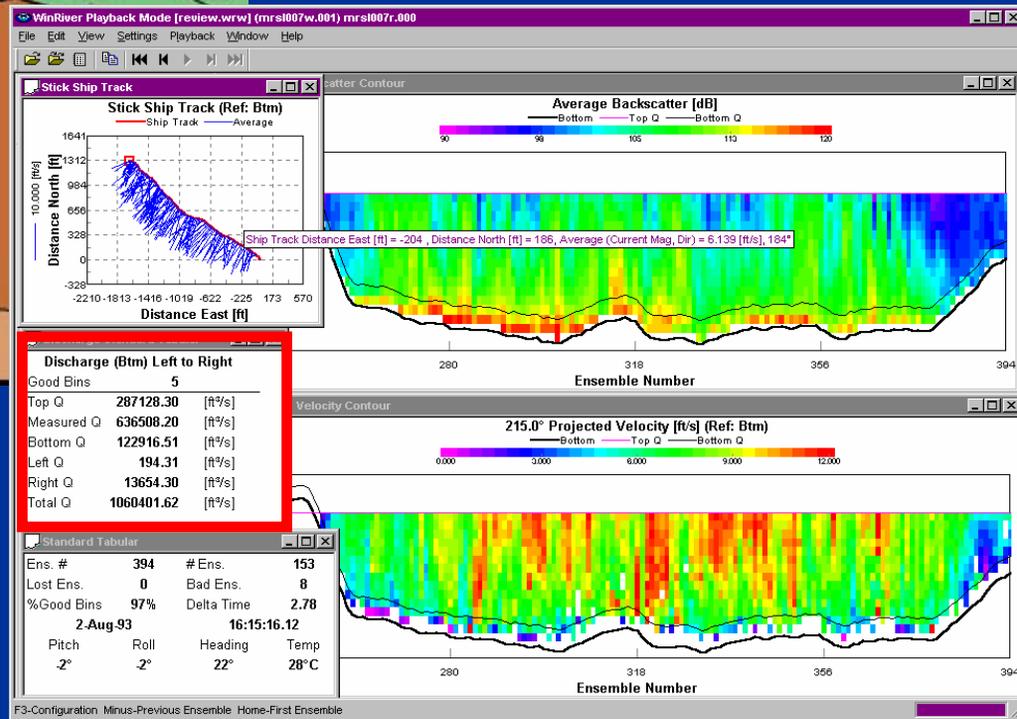
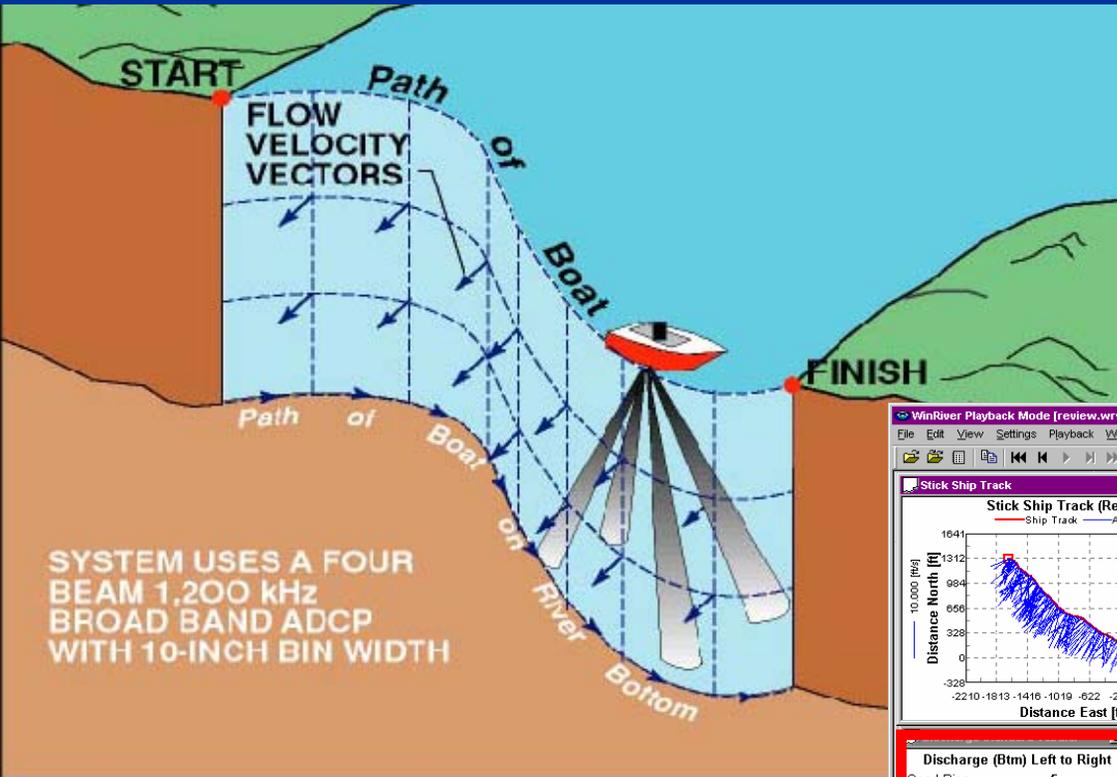
Additional Stakeholder Meetings

- **Regional Stakeholder Meetings**
 - **Athens, Georgia – March 2007**
 - **Sacramento, California – May 2007**
 - **Ohio Basin/ Upper Miss. – Summer 2007**

2006/2007 Initiatives

- **Streamgaging Cost Comparison Study**
- **Internal review of Streamgaging Costs**
- **Furnished Records Guidance**
- **Agreements with Private Parties**
- **Technical Advances**
 - **Graphical Rating Curves**
 - **Doppler Profiling**
 - **Data Delivery**

Acoustic Doppler Current Profiler Discharge Measurement



HYDROACOUSTICS



Current Profilers



04 30 2003 09:20



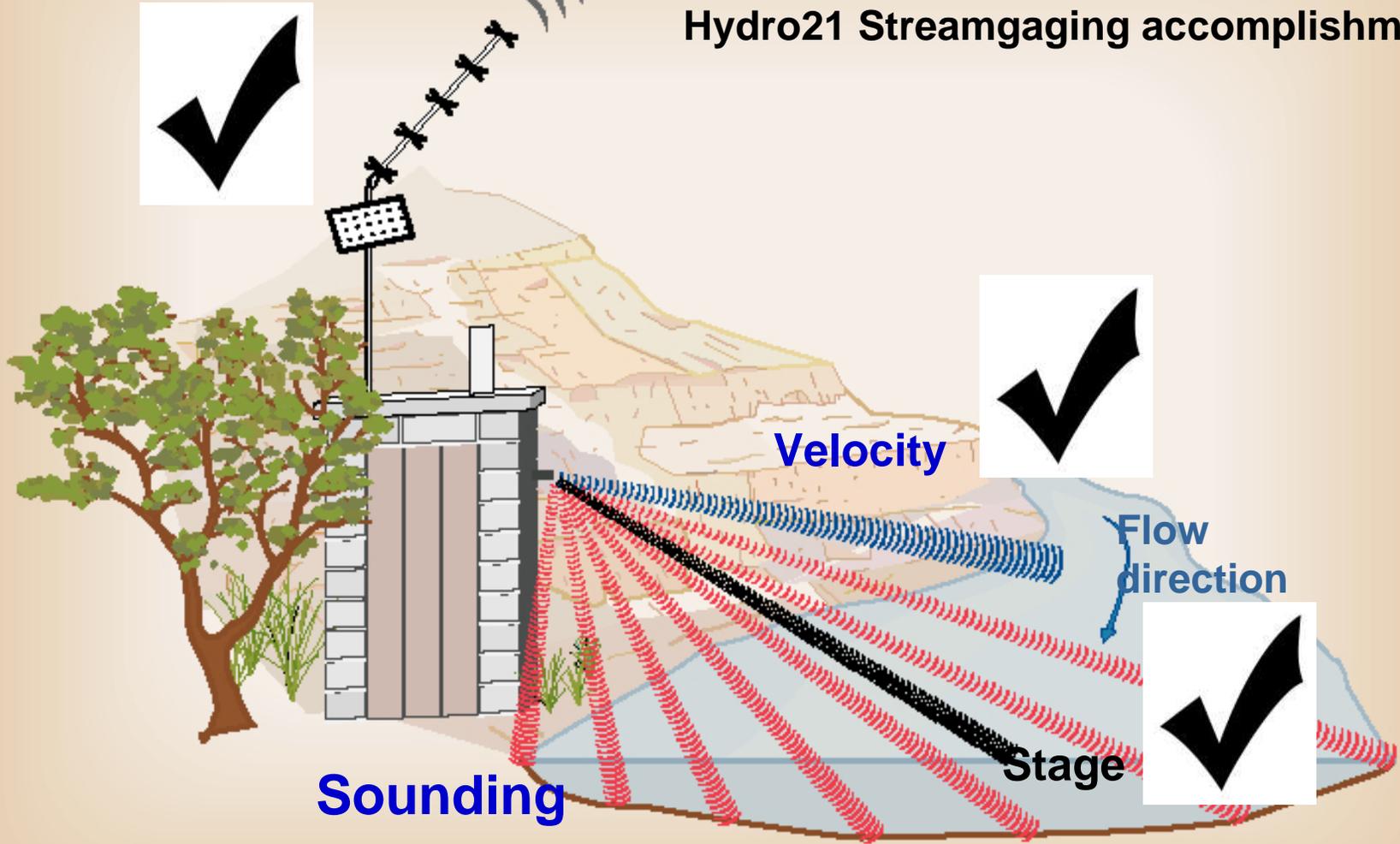
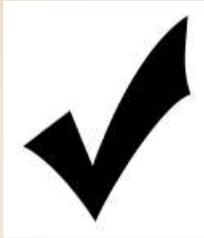
Wading
USGS



Side Looking

**Satellite
telemetry**

Hydro21 Streamgaging accomplishments



Sounding

Velocity

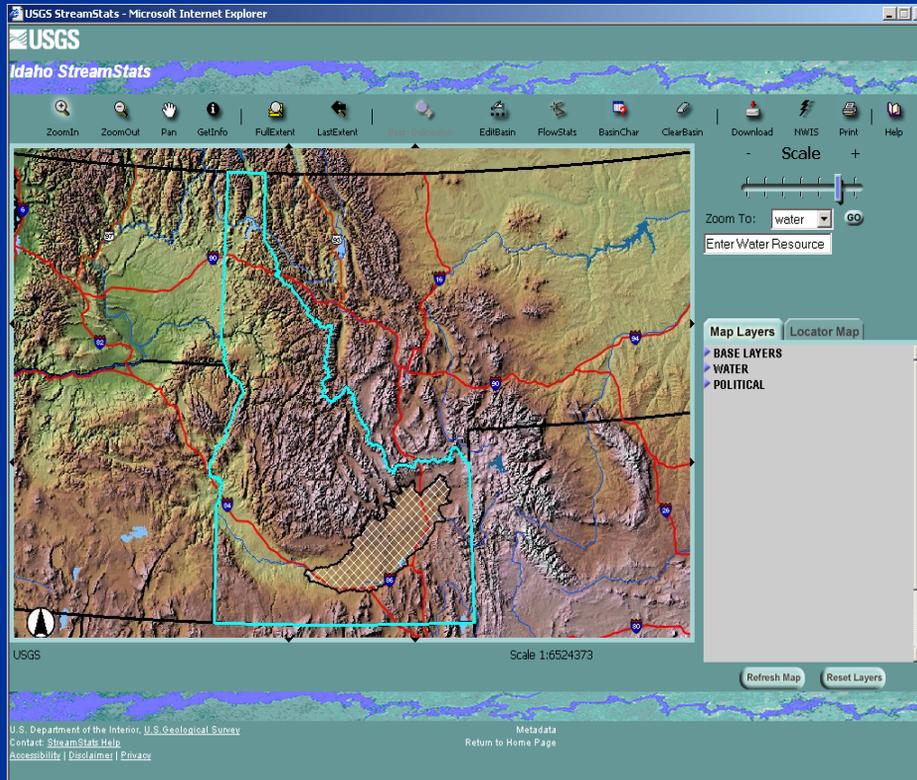
**Flow
direction**

Stage

**NON-CONTACT
STREAMFLOW
MEASUREMENTS**

<http://or.water.usgs.gov/hydro21/index.shtml>

StreamStats Primary Capabilities



- <http://streamstats.usgs.gov>
- Provides estimates of streamflow statistics, basin and climatic characteristics, and other information for user-selected points on ungaged streams
- Automatically measures basin and climatic characteristics for ungaged sites using GIS
- Provides published streamflow statistics, basin and climatic characteristics, and other information for data-collection stations

Regression equations take the form:

$$Q_{100} = 0.471 A^{0.715} * E^{0.827}$$

where:



A is drainage area, in square miles

E is mean basin elevation, in feet

StreamStats Implementation Status



Fully implemented (Clickable)



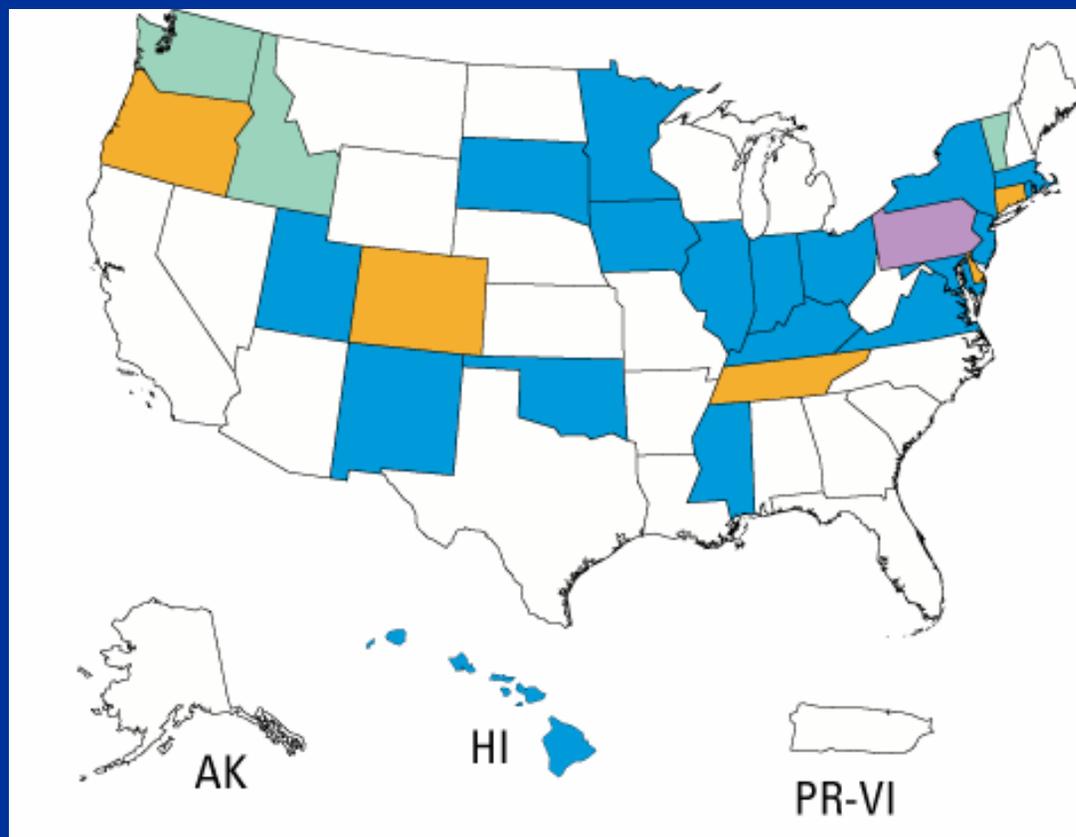
Delineation and basin characteristic implemented



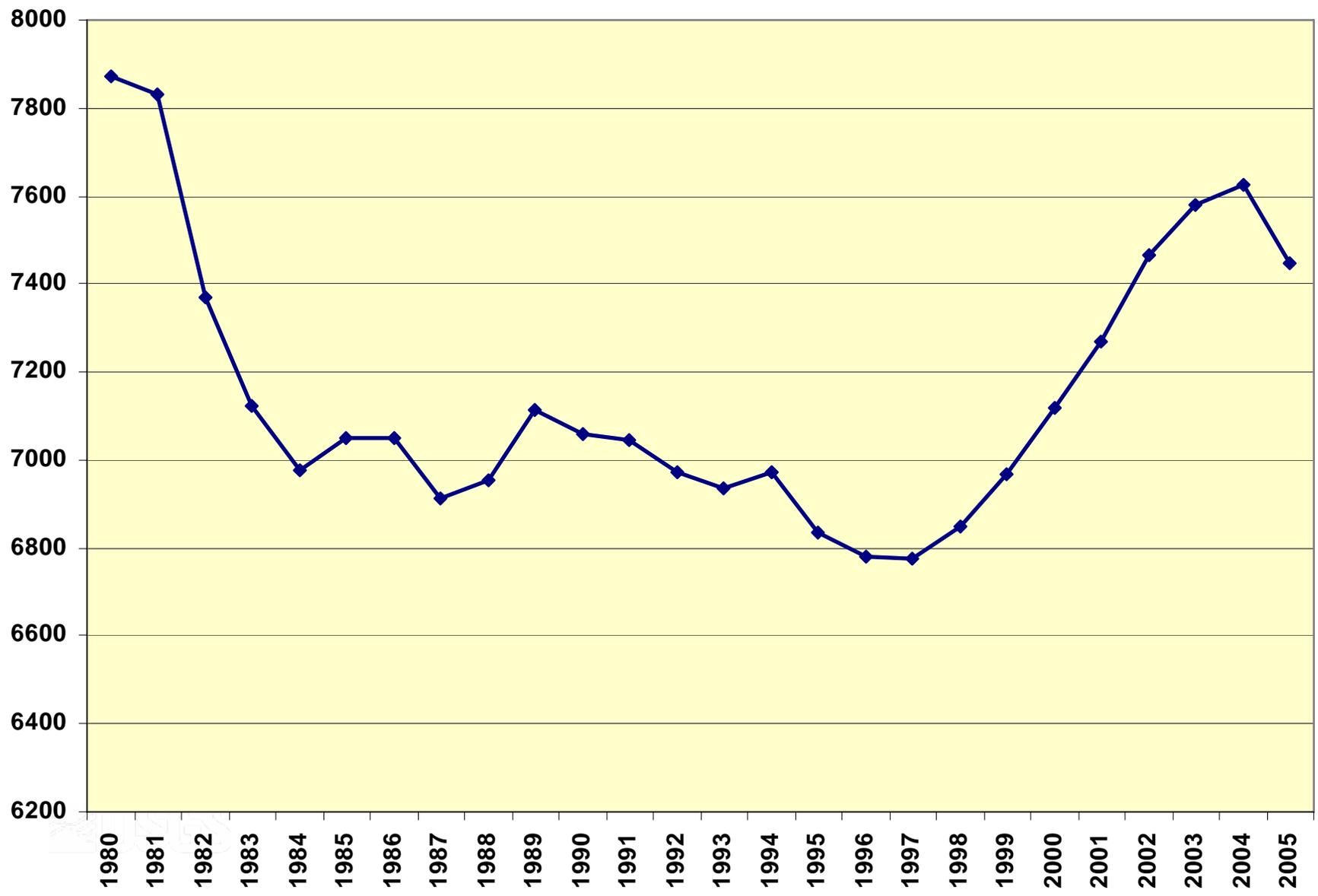
Implemented and testing internally



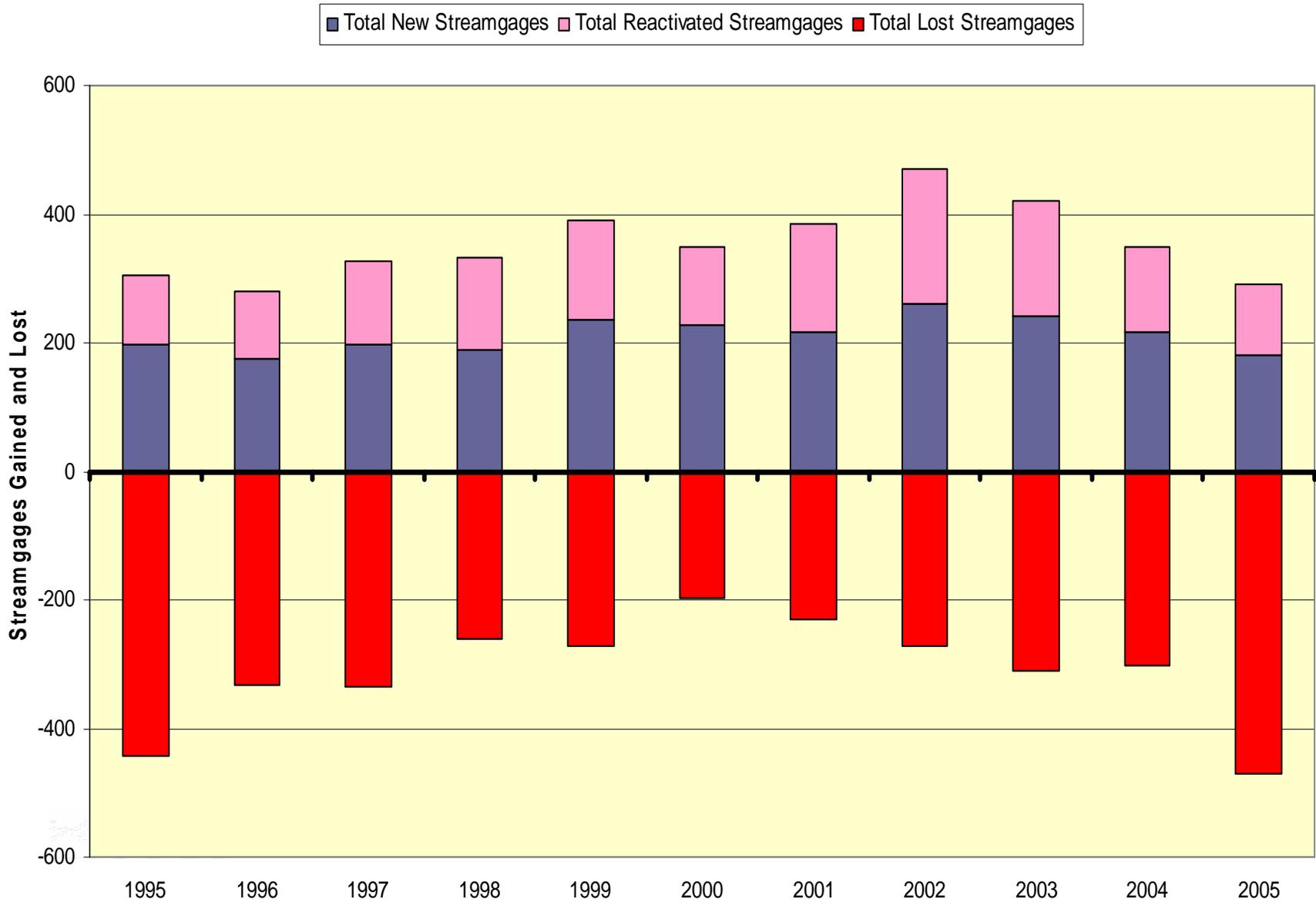
Undergoing implementation



Active USGS Streamgages 1980 - 2005



Change in Streamgages 1995-2005



Number of Long-term Streamgages Discontinued 1980-2005

