



*The StreamStats Web
Application
of the
U.S. Geological Survey*

Presented at the 2009 Transportation
Research Board Conference

Washington, DC
January 11, 2009

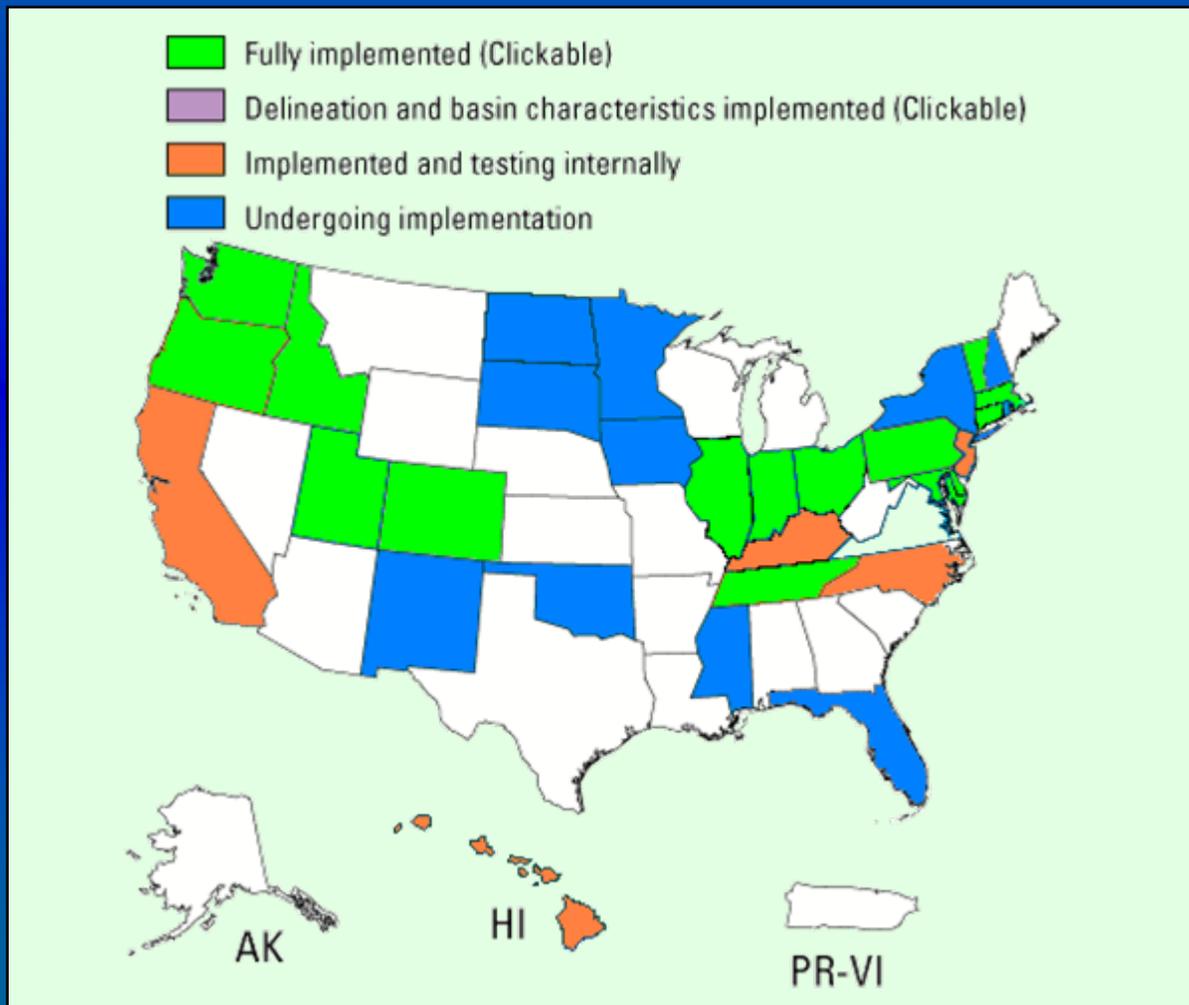
by Kernell Ries

U.S. Geological Survey
MD-DE-DC Water Science Center
Baltimore, MD 21228
443-498-5617
kries@usgs.gov

What is StreamStats?

- A map-based Web application that provides information that can be used by engineers, managers, planners, and others to make informed decisions on water-related activities
- Primary product is streamflow statistics

Implementation Status



- 15 states fully implemented
- 5 states partly implemented
- 11 states in implementation process

StreamStats Versions

- National site for data-collection stations only
- “Classic” version built using ESRI’s ArcMap and ArcIMS software, with custom connectors
- Initial state (Idaho) implemented in 2002
- Version 2 - ArcGIS Server 9.2-based version implemented in MA and UT

Use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

"Classic" Site Capabilities

- Provides published streamflow statistics and basin characteristics for USGS data-collection stations
- For user-selected ungaged sites:
 - Delineates drainage basin boundaries
 - Editing of basin boundaries, if necessary
 - Computes basin characteristics
 - Provides estimates of streamflow statistics based on regression equations
 - Download of basin boundary shapefiles
 - Printing of maps shown in user interface

New in StreamStats Version 2

- Estimates streamflow statistics for ungaged sites based on flow at nearby gages (DA-ratio method)
- Navigates upstream and/or downstream from selected sites to identify locations of water-related activities and provides information on those activities
- Computes NHD reach addresses for selected sites
- Manually change basin characteristics and re-compute flow statistics
- Primary capabilities available as Web services

State Implementation Process

- Usually done through cooperative agreements between the USGS and local agencies
- Local Water Science Centers
 - Prepare GIS datasets
 - Populate database of statistics for USGS gages
 - Evaluate accuracy of internal test site
- National development team sets up internal test site
- Site is made available to public after QA is done

StreamStats Home Page

<http://streamstats.usgs.gov>

Welcome to StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://water.usgs.gov/osw/streamstats/

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[Home](#)
[News](#)
[StreamStats Description](#)
[Unengaged Sites](#)
[Data-Collection Stations](#)
[StreamStats Limitations](#)
[State Applications](#)
[USGS Station Statistics](#)
[User Instructions](#)
[Definitions](#)
[Basin Characteristics](#)
[Streamflow Statistics](#)
[StreamStats Fact Sheet](#)
[Frequently Asked Questions](#)
[Talks and Other Info](#)
[Internal Links](#)

StreamStats is a Web-based tool that allows users to obtain streamflow statistics, drainage-basin characteristics, and other information for user-selected sites on streams. StreamStats users can choose locations of interest from an interactive map and obtain information for these locations. If a user selects the location of a U.S. Geological Survey (USGS) data-collection station, the user will get previously published information for the station from a database. If a user selects a location where no data are available (an unengaged site), a Geographic Information System (GIS) program will estimate information for the site. The GIS program determines the boundary of the drainage basin above the site, measures the physical characteristics of the drainage basin, and solves the appropriate regression equations to estimate streamflow statistics for the site. The results are presented in a table and a map showing the basin outline. The estimates assume natural flow conditions at the site. In the past, it could take an experienced person more than a day to estimate this information for an unengaged site. StreamStats reduces the effort to only a few minutes.

Separate applications have been established for each state that has implemented StreamStats. The state applications provide access to all of the functionality that is available for the state. The State Applications link at the left provides access to the individual applications. In addition to the state applications, a separate application has been established for serving information for USGS data-collection stations throughout the Nation. The USGS Station Statistics link to the left provides access to this application.

Some StreamStats options will not work in Netscape. The application continues to be improved and expanded. Please continue to come back to this page to see future enhancements. [Contact us](#) if you have any questions.

Users should familiarize themselves with StreamStats Description, Instructions, and Limitations (using the links on the left) before utilizing the application.

The StreamStats Web application provides access to automated procedures and very large, complex data sets. These data sets are known to contain occasional errors. Users are hereby advised to carefully check all results for accuracy and to exercise their own professional judgment in evaluating the appropriateness of the results for their application. Basin delineations in particular frequently have been found to be erroneous. The Web site provides tools and base maps useful for verifying the accuracy of the basin delineations.

Done Internet 100%

National Station Statistics Site

StreamStats National Data-Collection Station Information - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstats.usgs.gov/gages/viewer.htm

File Edit View Favorites Tools Help

StreamStats National Data-Collection Station Informat...

USGS The National Map

StreamStats National Data-Collection Station Information

Overview

- Zoom In
- Zoom Out
- Previous Extent
- Full Extent
- Pan
- Identify
- StationInfo
- Measure
- Clear
- Print
- Help

Scale

Layers Legend

Stream Stats

- Visible
- Stations
- Gages
- NHD
- NHD Medium Res
- No layers at current scale
- Hydrologic Units
- Base Map
- Shaded Relief
- USGS NED
- Visible
- Elevation NED

Home Page | Layer Metadata | User Instructions

U.S. Department of the Interior, U.S. Geological Survey, Denver, CO, USA
URL: <http://streamstats.usgs.gov/gages/>
Contact: GS-W_Streamstats@usgs.gov
Last modification: 12/05/2006 SS02
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Display and Select Stations

StreamStats National Data-Collection Station Information - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstats.usgs.gov/gages/viewer.htm

Daren Carlisle

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StreamStats National Data-Collection Station Informat...

USGS The National Map

StreamStats National Data-Collection Station Information

- Overview
- Zoom In
- Zoom Out
- Previous Extent
- Full Extent
- Pan
- Identify
- StationInfo**
- Measure
- Clear
- Print
- Help

Scale

Layers Legend

Stream Stats

Visible

- Stations
- Gages

NHD

Visible

- NHD Medium Res
- NHD High Res
- NHD Local Res
- Hydrologic Units
- NHD Status
- Local
- High
- Medium
- Base Map
- Shaded Relief

TerraServer USA

Visible

- Orthoimagery
- DOQ
- DRG

Redraw Map

Home Page | Layer Metadata | User Instructions

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Gaging Station Information

StreamStats Data-Collection Station Report - Microsoft Internet Explorer provided by MD-DC-DE WSC

USGS 01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=01584500



National Water Information System: Web Interface

USGS Water Resources (District: Access)

Data Category: Site Information Geographic Area: United States GO

News: [Recent changes](#)

USGS 01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD

Available data for this site: SUMMARY OF ALL AVAILABLE DATA GO

Stream Site

DESCRIPTION:
Latitude 39°30'19.3", Longitude 76°25'54.4" NAD83
Baltimore County, Maryland, Hydrologic Unit 02060003
Drainage area: 36.1 square miles
Datum of gage: 261.43 feet above sea level NGVD29.

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Daily Data			
Discharge, cubic feet per second	1926-11-01	2007-09-30	25819
Daily Statistics			
Discharge, cubic feet per second	1926-11-02	2007-09-30	19326
Monthly Statistics			
Discharge, cubic feet per second	1926-11	2007-09	
Annual Statistics			
Discharge, cubic feet per second	1927	2007	
Peak streamflow	1926-11-16	2006-11-16	67
Field measurements	1926-12-14	2008-11-14	524
Field/Lab water-quality samples	1964-06-23	1970-07-14	27

Done Done Internet 100%

Display of Imagery

StreamStats National Data-Collection Station Information - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstats.usgs.gov/gages/viewer.htm

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StreamStats National Dat... X http://start.jjwire.com/hotel...

USGS The National Map

StreamStats National Data-Collection Station Information

Overview
Zoom In
Zoom Out
Previous Extent
Full Extent
Pan
Identify
StationInfo
Measure
Clear
Print
Help

Washoe Nevada 16950102

Scale +

Layers Legend

Stream Stats

Visible

- Stations
 - Gages
- NHD**
- Visible
 - NHD Point (Medium)
 - NHD Line (Medium)
 - NHD Flowline (Medium)
 - NHD Area (Medium)
 - NHD Water Body (Medium)
- Hydrologic Units
- Base Map
 - Cities
 - Interstate Highways
 - Interstate Shields
 - US Routes
 - US Route Shields
 - State Routes
 - State Route Shields
 - County Routes
 - County Route Shields

RedrawMap

Home Page | Layer Metadata | User Instructions

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- [Home](#)
- [News](#)
- [StreamStats Description](#)
- [Unengaged Sites](#)
- [Data-Collection Stations](#)
- [StreamStats Limitations](#)
- [State Applications](#)
- [USGS Station Statistics](#)
- [User Instructions](#)
- [Definitions](#)
- [Basin Characteristics](#)
- [Streamflow Statistics](#)
- [StreamStats Fact Sheet](#)
- [Frequently Asked Questions](#)
- [Talks and Other Info](#)
- [Internal Links](#)

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State Applications

State Info - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://water.usgs.gov/osw/streamstats/ssonline.html

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Streamstats Site Status State Info 2008 National Hydraulic Engi...

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State Applications

Choose a State

- Choose a State
- USGS Station Statistics
- Connecticut
- Colorado
- Delaware
- Idaho
- Illinois
- Indiana
- Maryland
- Massachusetts
- Ohio
- Oregon
- Pennsylvania
- Tennessee
- Vermont
- Washington

USGS Station Statistics make StreamStats operational for many states, with a long-term goal of needed to implement StreamStats is generally done by the USGS in state and local agencies. The map below indicates states where implemented, and where work on implementation is currently underway. Implemented StreamStats applications, orange states have been testing internally, and blue states are undergoing implementation. Users may state applications by selecting the state of interest on the map below, or the state from the list above.

Fully implemented (Clickable)

Delineation and basin characteristics implemented (Clickable)

Implemented and testing internally

Undergoing implementation

Internet 100%

Massachusetts Introductory Page

StreamStats in Massachusetts - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://water.usgs.gov/osw/streamstats/massachusetts.html

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Contact USGS
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StreamStats

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Home
[News](#)
[StreamStats Description](#)
[Un-gaged Sites](#)
[Data-Collection Stations](#)
[StreamStats Limitations](#)
[State Applications](#)
[USGS Station Statistics](#)
[User Instructions](#)
[Definitions](#)
[Basin Characteristics](#)
[Streamflow Statistics](#)
[StreamStats Fact Sheet](#)
[Frequently Asked Questions](#)
[Talks and Other Info](#)
[Internal Links](#)
[Contact StreamStats Team](#)
[Current Streamflow Conditions](#)

Massachusetts

StreamStats for Massachusetts can be used to estimate the long-term 99-, 98-, 95-, 90-, 85-, 80-, 75-, 70-, 65-, 60-, 55-, and 50-percent duration flows, the 7-day, 2-year and the 7-day, 10-year low flows, and the August median flow for un-gaged sites. The report below presents the equations used to estimate the flow statistics, describes the errors associated with the estimates, and describes the methods used to develop the equations and to measure the basin characteristics used in the equations. Users should familiarize themselves with the report before using StreamStats to obtain estimates of streamflow statistics for un-gaged sites.

- [Ries, K.G., III, and Friesz, P.J., 2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p.](#)

The equations are applicable for most areas of Massachusetts except eastern Buzzards Bay, Cape Cod, and the Island regions, and the main branches of the Connecticut and Merrimack Rivers. Estimates obtained from the equations assume natural flow conditions at the site.

StreamStats reports the uncertainty of the estimates for basins with drainage areas between 1.61 and 149 mi²; errors for basins with drainage areas beyond these bounds are unknown. Although the application provides flow statistics at most any site, better estimates of streamflow statistics can generally be obtained by the drainage-area ratio method if the site of interest is between 0.3 and 1.5 times the drainage area of a gaged site on the same stream. The report describes how to implement this method.

[Interactive Map](#)

NOTE: Currently, prediction intervals presented in the outputs for un-gaged sites for the 60-, 70-, and 75-percent duration streamflows are incorrect, and should be disregarded. These intervals will be corrected as soon as possible. Users should bookmark this page rather than the application itself so that they will know when the problem has been resolved.

StreamStats for Massachusetts was developed in cooperation with the former Massachusetts Department of Environmental Management, now part of the Massachusetts Department of

Lists statistics estimated for un-gaged sites

Gives report citations

Describes limits of applicability

Link to application

Other issues, cooperative statement

ArcGIS Server 9.2 Interface

Toolbar

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA&dt=1218024817296

USGS
Massachusetts StreamStats

Results
Map Contents
Navigation
Overview

Panel Banners

Console

Map Frame

Toolbar

60 30 0 60 Miles

U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 08/06/2008 08:14:09

Streamstats Status

USA.gov
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Done Internet 100%

Working With Panels

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA

USGS
Massachusetts StreamStats

Results >>>
Map Contents >>>
Navigation >>>
Overview >>>

Streamstats

Click on triangle to expand panel

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URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 05/09/2008 08:24:23
Streamstats Status
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Displaying Layers

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA

USGS
Massachusetts StreamStats

Map Contents

- Streamstats
 - nhdgages
 - nhddams
 - Stream Gages
 - NHDFlowline
 - State Boundaries
- Dendritic Stream Network

Navigation

Overview

70 35 0 70 Miles

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U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
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Select Ungaged Site

Note: Scale must be at least 1:24,000

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA&dt=1219164064015

USGS
Massachusetts StreamStats

Results >>>
Map Contents >>>
ma_ss
+ nhdgages
+ nhddams
+ Stream Gages
+ NHDFlowline
+ State Boundaries
+ Dendritic Stream Network

Navigation >>>
Overview >>>

Click on Point Delineation button

Zoom To: 1:18,975

0.4 0.2 0 0.4 Miles

USGS
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U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 08/19/2008 12:42:06
Streamstats Status

Internet 100%

Delineated Basin

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA&dt=1219164064015

USGS
Massachusetts StreamStats

Map Contents

- ma_ss
 - nhdgages
 - nhddams
 - Stream Gages
 - NHDFlowline
 - State Boundaries
 - Dendritic Stream Network

Navigation

Overview

Accessibility | FOIA | Privacy | Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 08/19/2008 12:42:06

Streamstats Status

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Editing a Basin Boundary

USGS StreamStats - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx?stabbr=MA

USGS
Massachusetts StreamStats

Map Contents

- Streamstats
 - nhdgages
 - nhddams
 - Stream Gages
 - NHDFlowline

Navigation

Overview

Click on Edit a delineated basin, then select to Add or Remove Shape from pull-down menu

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U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 05/09/2008 08:24:23

Streamstats Status

USA.gov
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Done Internet 100%

Generate Flow Statistics

USGS
Massachusetts StreamStats
Streamstats Ungaged Site Report

Date: Fri May 9 2008 08:31:39
Site Location: Massachusetts
NAD83 Latitude: 42.5361 (42 32 09)
NAD83 Longitude: -72.6795 (-72 40 46)
NAD27 Latitude: 42.5360 (42 32 09)
NAD27 Longitude: -72.6800 (-72 40 47)
Drainage Area: 25.4 mi²

Low Flow Basin Characteristics
100% Statewide Low Flow (25.4 mi²)

Parameter	Value	Min	Max
Drainage Area (square miles)	25.4	1.61	149
Mean Basin Slope from 250K DEM (percent)	9.62	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.00755	0	1.29
Massachusetts Region (dimensionless)	1	0	1

Streamflow Statistics

Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	25.9	18		15.6	42.7
D60	17.3	20		0.39	757
D70	11.5	24		0.4	327
D75	9.2	26		0.4	209
D80	7.18	28		2.12	23.9
D85	5.85	32		1.7	19.8
D90	4.26	37		1.18	15
D95	3.01	46		0.76	<

Coming soon: Basin characteristic and flow statistic names will be hyperlinks to definitions

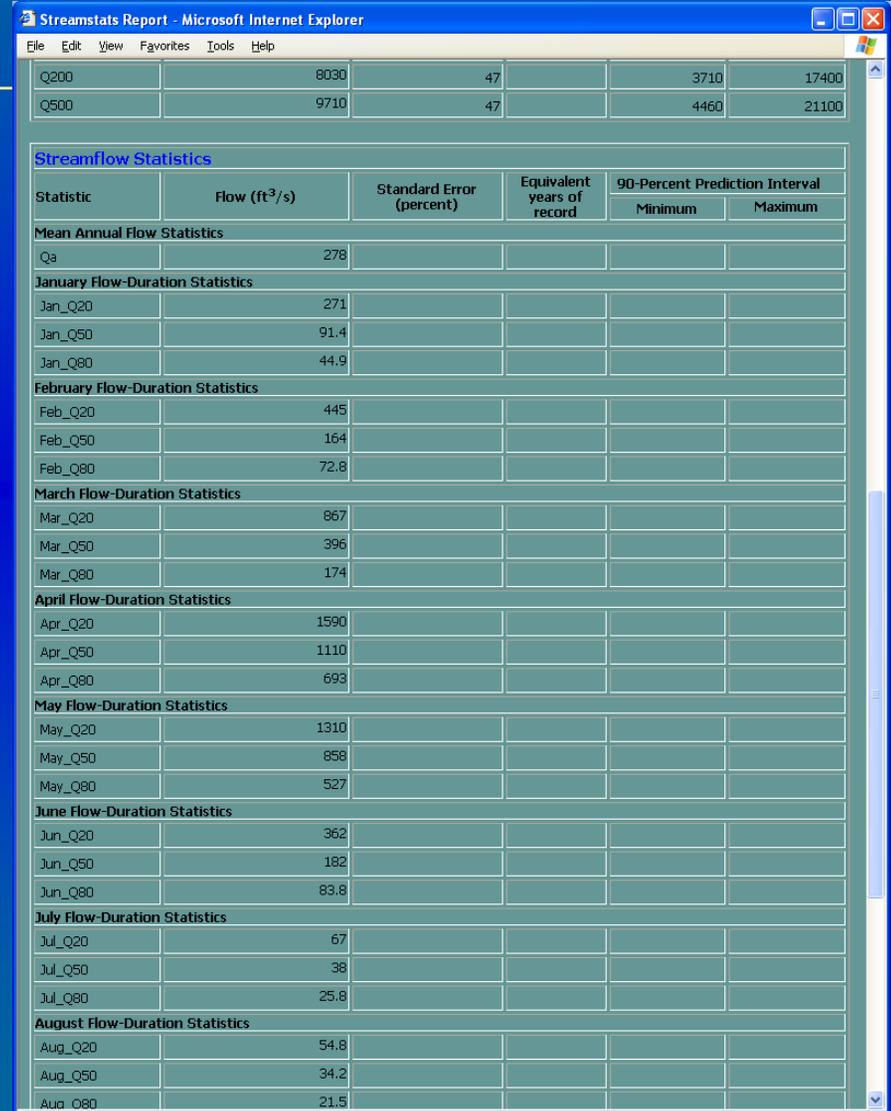
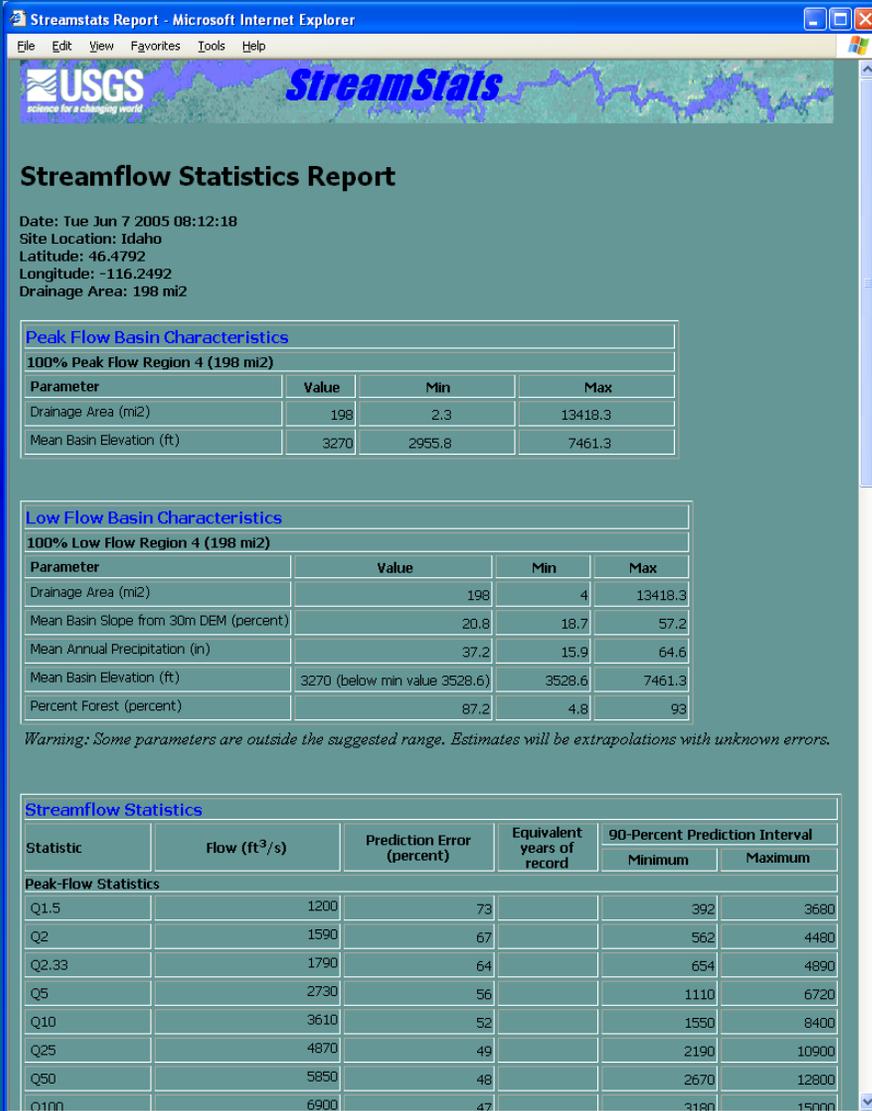
Click on Generate Flow Statistics

Page Contact Information: StreamStats Help
Page Last Modified: 05/09/2008 08:24:23
Streamstats Status

USA.gov
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Example Extrapolation



Get Basin Characteristics

USGS
Massachusetts StreamStats
Basin Characteristics Report

Date: Fri May 9 2008 08:38:15
NAD83 Latitude: 42.5361 (42 32 09)
NAD83 Longitude: -72.6795 (-72 40 46)
NAD27 Latitude: 42.5360 (42 32 09)
NAD27 Longitude: -72.6800 (-72 40 47)

Parameter	Value
Average area slope in percent	9.62
Total stream length in miles	50.4
low flow region indicator for Massachusetts	1
stratified drift per unit stream length	0.00755
square mile area covered by stratified drift	0.38
Area in square miles	25.4

Click on Basin Characteristics

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U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
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Streamstats Status

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Flow Estimation Based on a Nearby Gage

Flows Report based on gages - Microsoft Internet Explorer provided by MD-DC-DE WSC

http://streamstatsags.cr.usgs.gov/gisimg/Reports/GageFlowsReport3366_200812178341.htm



Massachusetts StreamStats Print

Flow Estimates Based on Flows at Nearby Streamgaging Stations

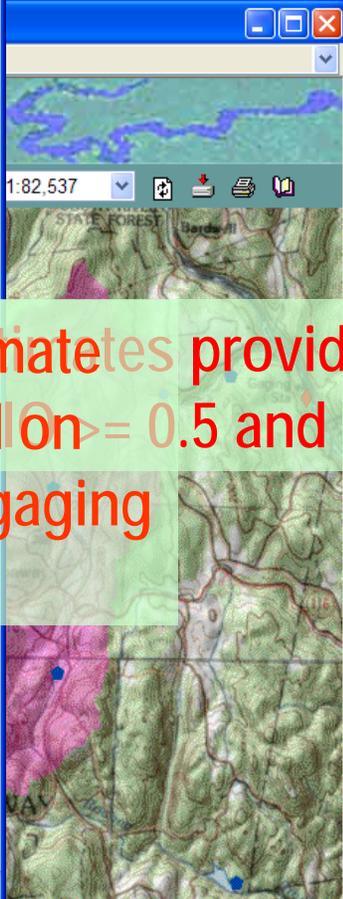
Date: Wed Dec 17 2008 08:34:01
Latitude: 42.536
Longitude: -72.6794
ReachCode: 01080203000130
Measure: 41.16457
User-Selected Site Watershed Area, in square miles: 25.4
Use Regulated Station: Yes

Upstream Gage(s)

STATID	NAME	AREA (mi ²)	RATIO	IS REGULATED
01169900	SOUTH RIVER NEAR CONWAY, MA	24.06	0.9472	

Downstream Gage(s)

STATID	NAME	AREA (mi ²)	RATIO	REGULATED
01170000	DEERFIELD RIVER NEAR WEST DEERFIELD, MA	557	21.9291	
01170500	CONNECTICUT RIVER AT MONTAGUE CITY, MA	7860	309.4488	Yes
01172003	CONNECTICUT RIVER BELOW POWER DAM AT HOLYOKE, MA	8309	327.1260	No
01172003	CONNECTICUT RIVER BELOW POWER DAM AT HOLYOKE, MA	8309	327.1260	No
01184000	CONNECTICUT RIVER AT THOMPSONVILLE, CT.	9660.00	380.3150	undefined
01193000	CONNECTICUT RIVER AT MIDDLETOWN, CT.	10888.0	428.6614	undefined



Done

Click on Estimates provided if
Flows Based on $= 0.5$ and ≤ 1.5
Similar Streamgaging
Stations

Estimates Based on Upstream Station

If a downstream gage has a DA-ratio ≤ 1.5 , then estimates will be computed based on the downstream gage as well as the upstream gage

Weighted DA-ratio estimates will be computed based on relative proximity of the gages to the ungaged site

Flows Report based on gages - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/gisimg/Reports/GageFlowsReport3366_200812178341.htm

The following flows were estimated based on the closest upstream streamgage for the selected ungaged site.

Upstream drainage-area ratio estimates based on station 01169900					
Low-Flow Statistics					
Flow types	Flow description	Flow factor	Streamgage flows	Streamgage years of record	Estimated ungaged flows
M7D10Y	7_Day_10_Year_Low_Flow	1.0557	3.32		3.5
M7D2Y	7_Day_2_Year_Low_Flow	1.0557	5.37		5.67
Flow-Duration Statistics					
Flow types	Flow description	Flow factor	Streamgage flows	Streamgage years of record	Estimated ungaged flows
D99	99_Percent_Duration	1.0557	3.6		3.8
D98	98_Percent_Duration	1.0557	4.32		4.56
D97	97_Percent_Duration	1.0557	4.90		5.17
D95	95_Percent_Duration	1.0557	5.6		5.91
D93	93_Percent_Duration	1.0557	6.40		6.76
D90	90_Percent_Duration	1.0557	7.2		7.6
D85	85_Percent_Duration	1.0557	9.10		9.61
D80	80_Percent_Duration	1.0557	11		11.6
D75	75_Percent_Duration	1.0557	13		13.7
D70	70_Percent_Duration	1.0557	16		16.9
D65	65_Percent_Duration	1.0557	18.0		19
D60	60_Percent_Duration	1.0557	22		23.2
D55	55_Percent_Duration	1.0557	25.0		26.4
D50	50_Percent_Duration	1.0557	30		31.7
D40	40_Percent_Duration	1.0557	40		42.2
D30	30_Percent_Duration	1.0557	52		54.9
D25	25_Percent_Duration	1.0557	60		63.3
D20	20_Percent_Duration	1.0557	70		73.9

Done Internet 100%

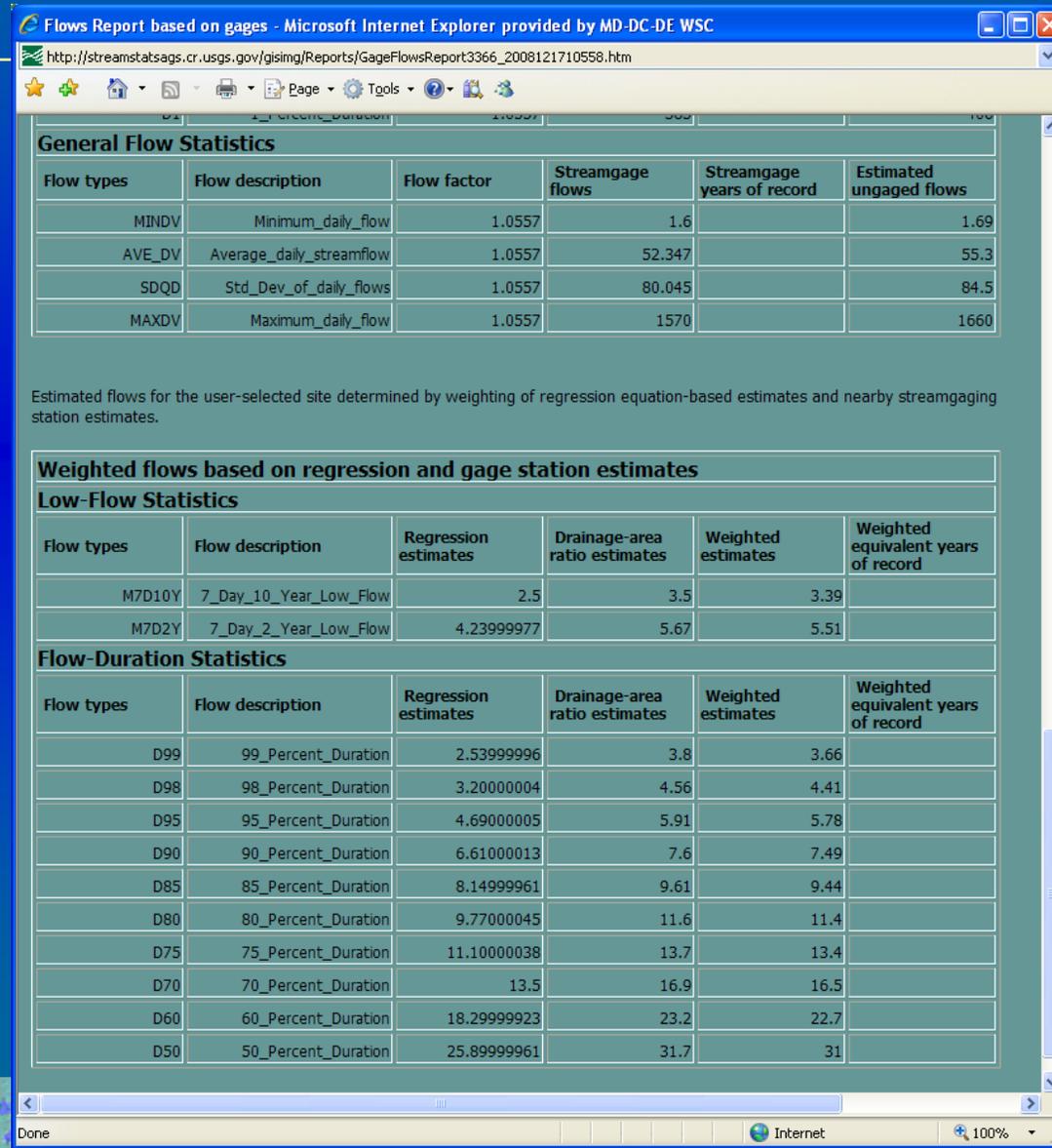
Weighted Estimates

Combines regression-
and DA-ratio-based
estimates

Weighting process is
described in SIR 2006-
5146, online at

[http://pubs.usgs.gov/sir/
2006/5146/](http://pubs.usgs.gov/sir/2006/5146/)

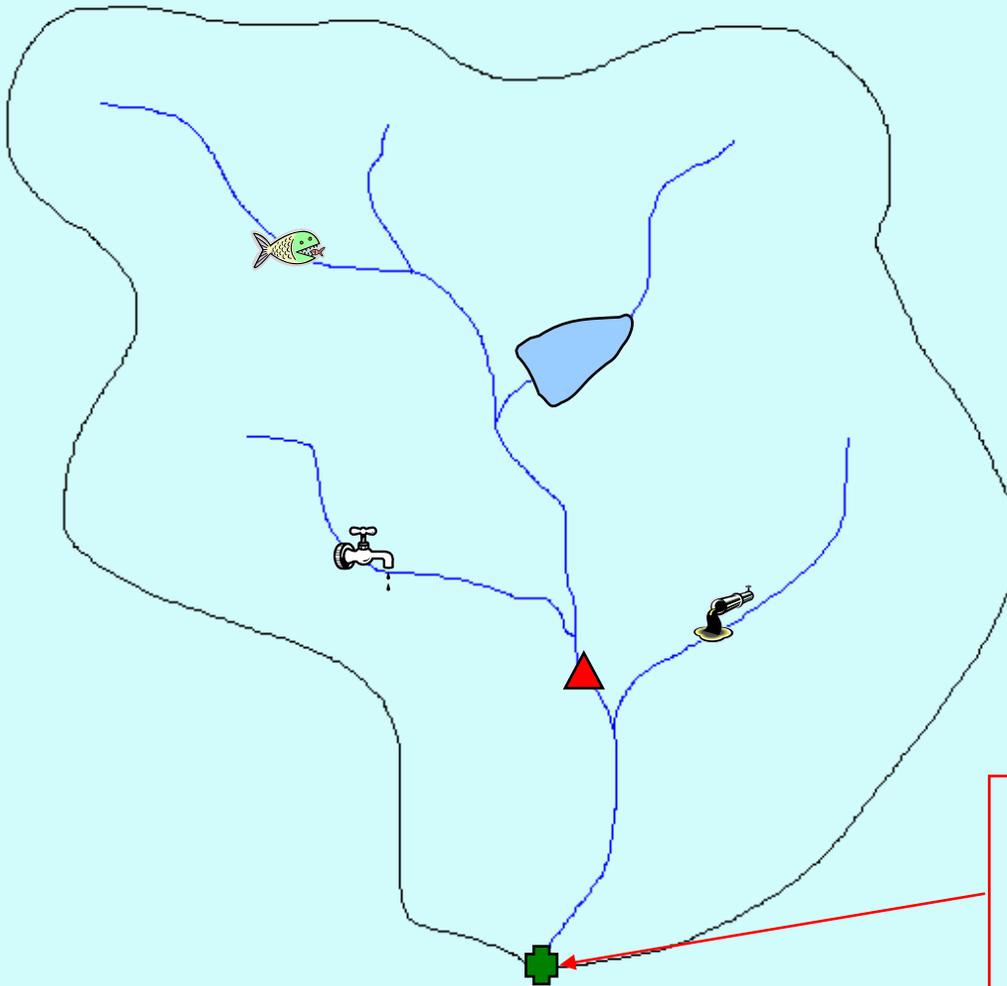
Gives more weight to
DA-ratio estimates as
DA for ungaged site
approaches that for
gaged site



National Hydrography Dataset

- Digital representation of streams, water bodies, and wetlands shown on USGS topographic maps
 - Medium resolution from 1:100,000-scale maps
 - High resolution from 1:24,000-scale maps
- Connections through water bodies, wetlands, road crossings made to provide continuous network
- Navigation to upstream and downstream events
- Numerous national datasets linked as events to NHD (<http://nhd.usgs.gov/>) by reach addressing

Network Navigation/NHD Reach Indexing



Explanation

-  User-selected site
-  Streamgaging station
-  Dam site
-  Point discharge
-  Water withdrawal
-  Biological sampling site

StreamStats provides reach addresses for user-selected sites, consisting of reach number and percentage distance from downstream end of reach

Network Trace Configuration

Configure NHD Trace - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/ma_ss/NHDTraceConfig.aspx?stabbr=MA

NHD Tracing Configuration

Network: HYDRO_NET

Trace: Upstream

Select layers participating in the trace

- NHDFlowline
- nhddams
- nhdgages

Click on Configure NHD Trace

Done, but with errors on page. Internet 100%

Accessibility FOIA Privacy Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 05/09/2008 08:24:23
Streamstats Status

USA.gov
TAKE PRIDE IN AMERICA

Done Internet 100%

Upstream Network Trace from Outlet

The screenshot displays the USGS StreamStats web application in a Microsoft Internet Explorer browser window. The browser's address bar shows the URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx. The page title is "Massachusetts StreamStats".

The main content area features a topographic map of a watershed in Massachusetts, outlined in cyan. A red arrow points to a button labeled "Trace from Outlet" in the map's toolbar. The map shows the watershed boundary and the underlying terrain with contour lines. Labels on the map include "ASHFIELD", "FRANKLIN CO", "HAMPSHIRE CO", and "CONWAY".

On the left side of the application, there is a navigation menu with the following items:

- Results
- Map Contents
- Navigation
- Overview

At the bottom of the page, there is a footer with the following information:

Accessibility FOIA Privacy Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 05/09/2008 16:06:02

The footer also includes the "Streamstats Status" link and logos for "USA.gov" and "TAKE PRIDE IN AMERICA".

Edit Basin Characteristics

Compute Parameters - Microsoft Internet Explorer provided by MD-DC-DE WSC
http://streamstatsags.cr.usgs.gov/ma_ss/EditParams.aspx?stabbr=MA

Parameters	Values
Drainage_Area	25.4
Mean_Basin_Slope_from_250K_DEM	9.62
Stratified_Drift_per_Stream_Length	0.0679
Massachusetts_Region	1

Close Recompute Flows

1:82,537

Click on Edit Parameters and Compute Flows

Accessibility FOIA Privacy Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/ma_ss/default.aspx
Page Contact Information: StreamStats Help
Page Last Modified: 12/17/2008 10:23:18

Streamstats Status News

USA.gov TAKE PRIDE IN AMERICA

StreamStats Web Services

Available for:

- Basin delineation
- Gaging station statistics
- Ungaged site statistics
- Compute NHD reach and measure
- More coming

Contact John Guthrie
(jdguthrie@usgs.gov) for
help with web services

USGS Streamstats

Web Service Query Builder

Request: Returns the geometry for the basin boundary starting at the user-requested point.

State:

Output Format:

Input CRS: NAD83 State Plane Kentucky FIPS 1600 US Feet

X:

Y:

The request to Server:
http://streamstats09.cr.usgs.gov/ss_ws_client.aspx?request=DoDelineation&stabbr=KY&outputformat=application/gml+xml&x=5871440&y=3689777&CRS=EPSG:6.6:3089

The response from Server:

```
<?xml version="1.0" encoding="UTF-8"?>
<gml:Polygon srsName="urn:ogc:def:crs:EPSG:6.6:3089" xmlns:gml="http://www.opengis.net/gml">
<gml:exterior>
<gml:LinearRing>
<gml:posList>
5871007 96517518 3688215 75261655 5870977 96517517 3688215 75261655 5870977 96517517 3688245 75261656 5870767 96517507 3688245 75261656
5870767 96517507 3688275 75261658 5870737 96517505 3688275 75261658 5870737 96517505 3688365 75261662 5870707 96517504 3688365 75261662
5870707 96517504 3688635 75261675 5870737 96517505 3688635 75261675 5870737 96517505 3688665 75261676 5870767 96517507 3688665 75261676
5870767 96517507 3688695 75261677 5870797 96517508 3688695 75261677 5870797 96517508 3688755 7526168 5870827 9651751 3688755 7526168
5870827 9651751 3688785 75261682 5870857 96517511 3688785 75261682 5870857 96517511 3688815 75261683 5870887 96517512 3688815 75261683
```

Planned Enhancements

- By Sept. 2009
 - Convert all sites over the StreamStats Version 2
 - Add 7 new states (MS, NM, MN, RI, NH, OK, SD, WI)
 - Incorporate network navigation in all sites
 - Add navigation to and query of EPA and other datasets
 - Default computation of percentages of urban land use and impervious surfaces
- Numerous additional enhancements planned within the next 18 months

Want StreamStats in Your State?

- Contact your local USGS Water Science Center Director
- Find names and contact information at http://water.usgs.gov/district_chief.html