

Developments in the USGS Streamflow-Gaging Station and Real-Time Data Systems

By

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Kansas*



Water and Future of Kansas Conference
March 5, 2002


http:water.usgs.gov/waterwatch

WaterWatch -- Maps and graphs of current water resources conditions - Microsoft Internet Explorer

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Address <http://water.usgs.gov/waterwatch/> Go Links



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Water Watch -- Maps and graphs of current water resources conditions

Real-Time Streamflow

- Map - Day of year
- Summary - Day of year
- Map animation
- Flood and high flow map

Daily Streamflow

- Map - Day of year
- Summary - Day of year
- Map - All days
- Summary - All days

7-Day Average Streamflow

- Map - Week of year
- Summary - Week of year
- Map - All weeks
- Summary - All weeks

Below Normal Streamflow

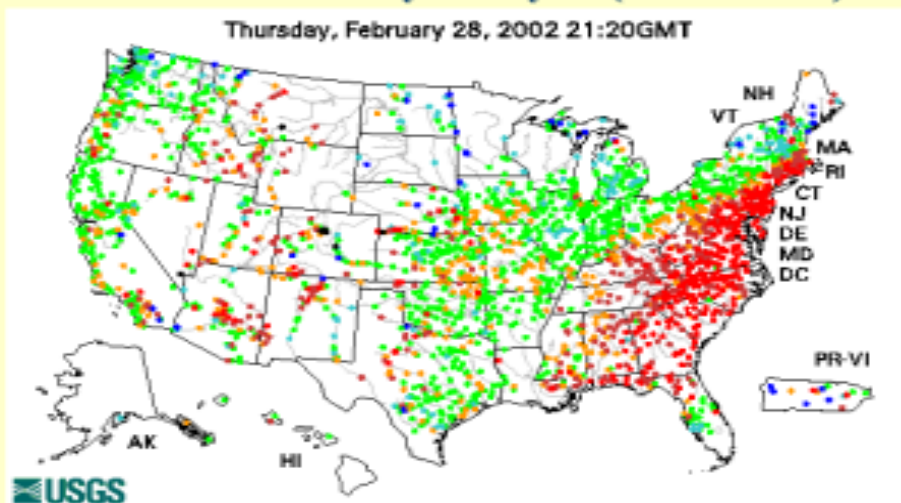
- Map - Week of year
- Summary - Week of year
- Map - All weeks
- Summary - All weeks

Additional Information

- [NWS Radar Map](#)
- [NWS River Conditions](#)
- [NWS River Conditions Map](#)

Map of real-time streamflow compared to historical streamflow for the day of the year (United States)

Thursday, February 28, 2002 21:20GMT



USGS

Dry Normal Wet

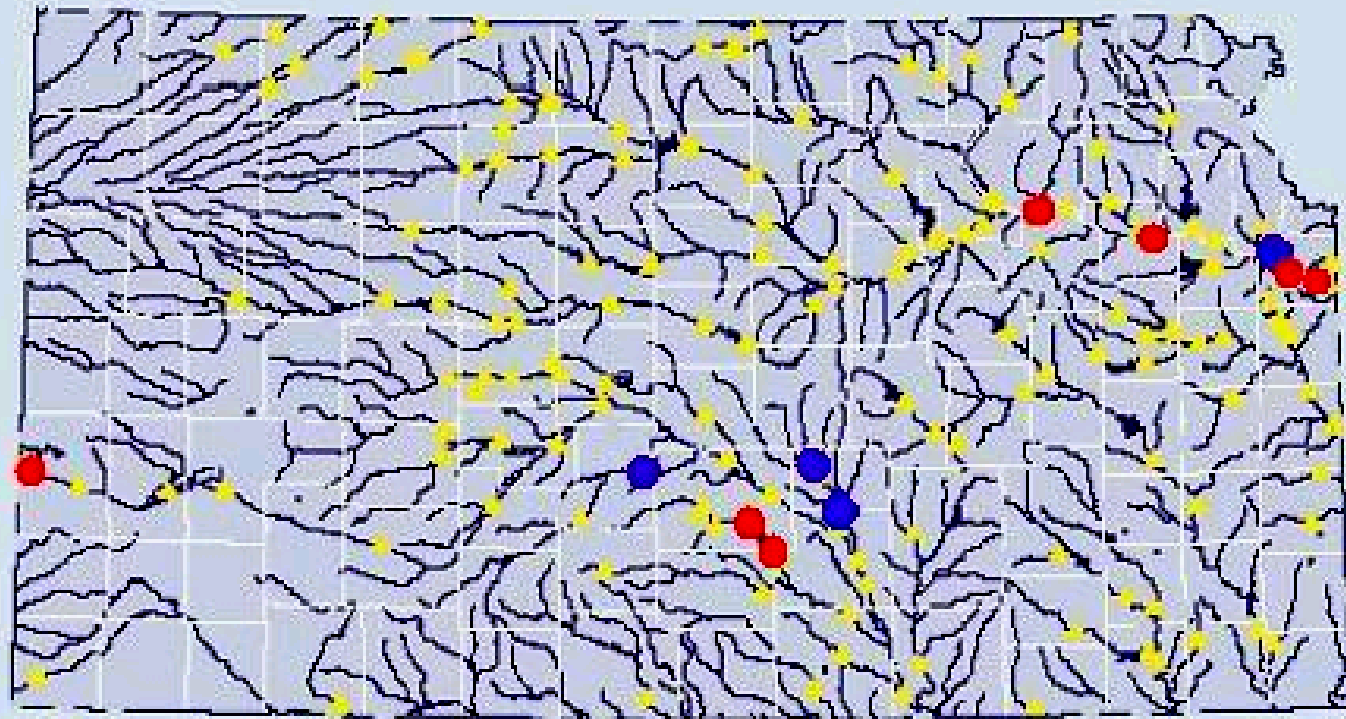
Choose a data retrieval option and select a location on the map

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

Done Internet

Start WaterWatch - Maps delated maintenance - Lot Microsoft PowerPoint - Jul

Streamflow-Gaging and RTQW Stations in Kansas

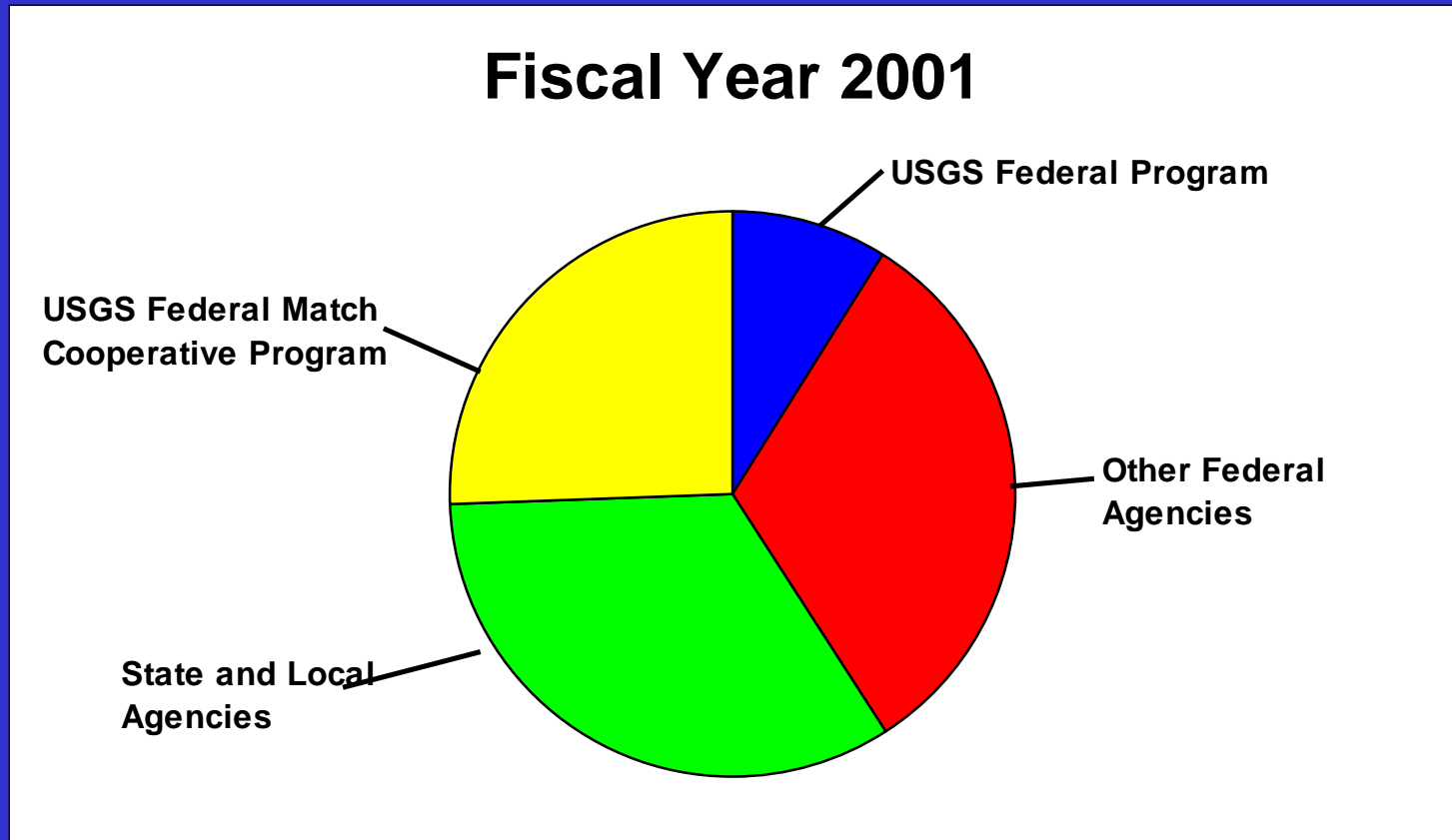


- ▲ Streamflow-gaging stations—2000 water year
- ● Streamflow-gaging stations with real-time water-quality monitors

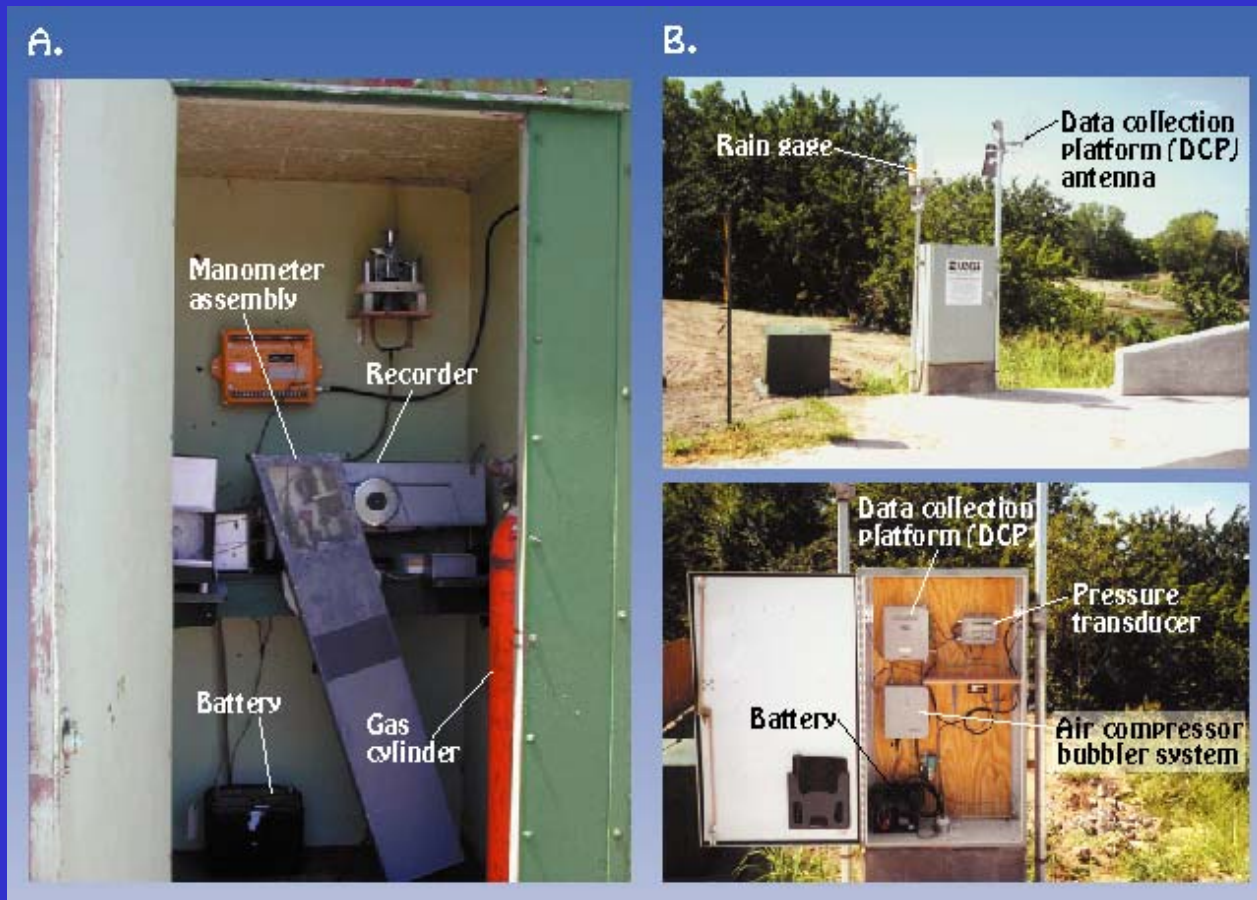
Uses for Streamflow Information in Kansas

- Resource Appraisal and allocation
- Design of State's water infrastructure
- Flood Hazard Planning and forecasting
- Reservoir Operations
- Water Quality Management
- Instream flows for habitat assessment
- Understanding changes in streamflow
- Recreational safety

Funding Sources for USGS Streamgaging Stations

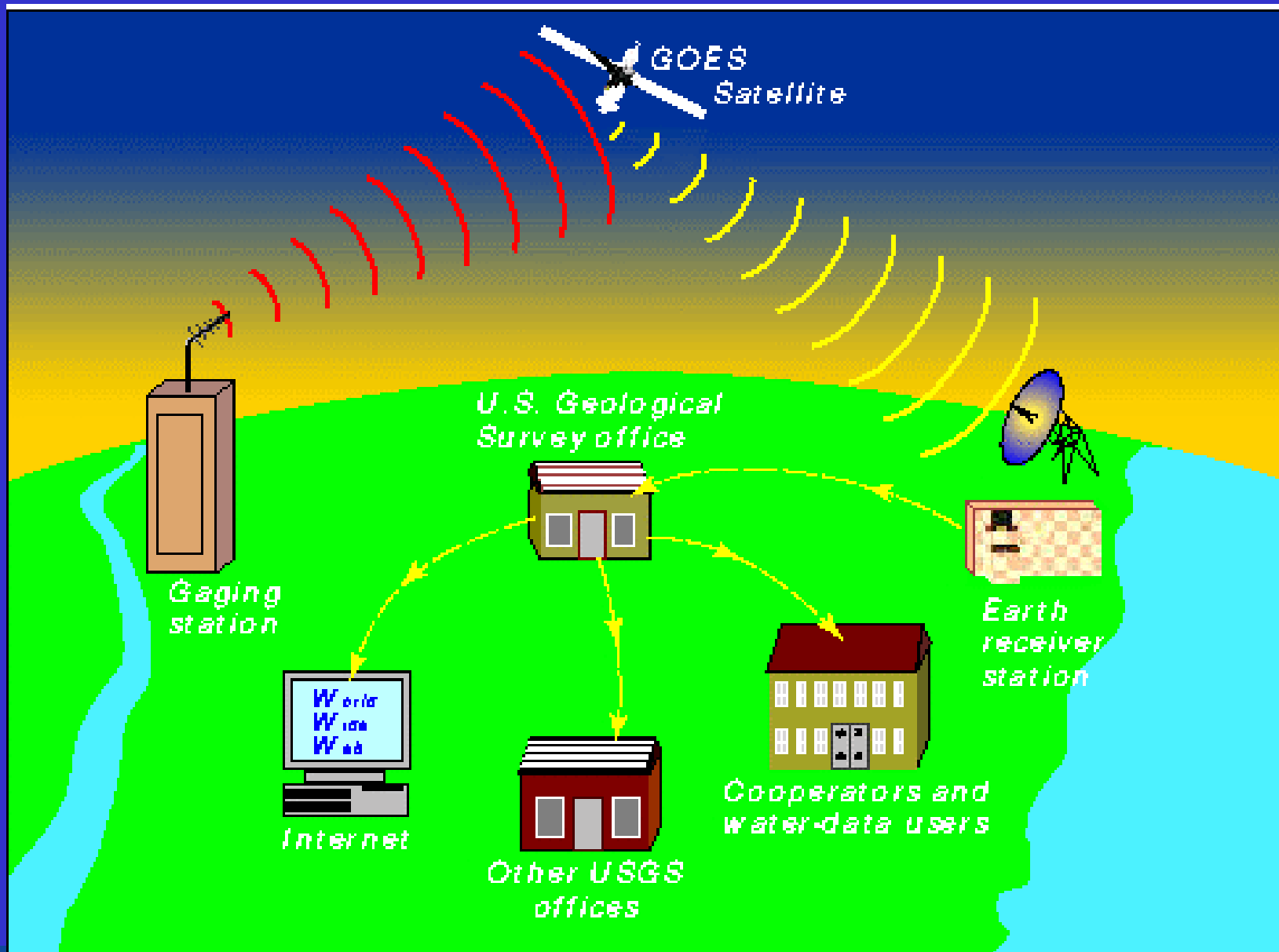


1980 Gaging Station and Modern Gaging Station

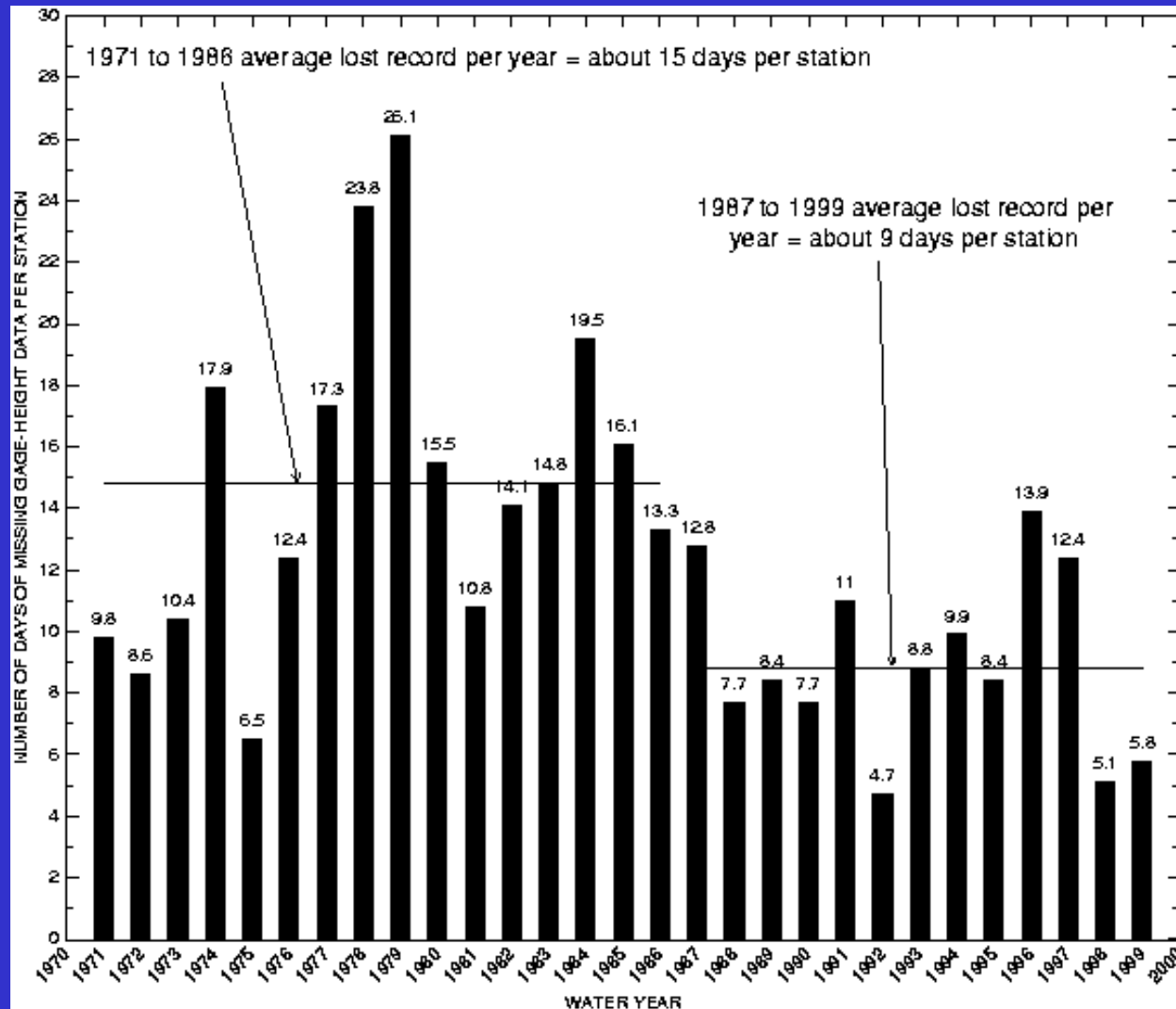


New Equipment: Improved Reliability and Data Quality





Comparison of Lost Record 1971-86 and 1987-99



New Instrumentation for Stage and Streamflow Measurement



In the last 5 years, new tools have become available--- In-stream continuous monitors with turbidity...


Turbidity sensor



- pH
- Water Temperature
- Dissolved Oxygen
- Specific Conductance
- **Turbidity**
- ORP
- Fluorescence

Approach:

- Upgrade stream gages with RTQW monitors
- Collect manual samples over range of hydrologic conditions
- Develop regression equations using collected samples and sensor values
- Estimate concentrations and loads based on regression relations
- Put RTQW regression estimates and uncertainty on the web.



**Kansas River at
DeSoto, Kansas**

http://ks.water.usgs.gov/nwis

NWISWeb Data for Kansas - Microsoft Internet Explorer

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Address <http://ks.water.usgs.gov/nwis> Go Links

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District Access Water Resources [skip navigation](#) Data Category: Geographic Area: Home Kansas GO

NWISWeb Data for Kansas

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

Data Category

Real-time Current-conditions data transmitted from selected surface-water, ground-water, and water-quality sites

Site information Descriptive site information for all sites with links to all available water data for individual sites.

Surface water Water flow and levels in streams, lakes, and springs.

Ground water Water levels in wells.

Water quality Chemical and physical data for streams, lakes, springs, and wells.

Introduction

These pages provide access to water-resources data collected at approximately 1.5 million sites in all 50 States, the District of Columbia, and Puerto Rico. Online access to this data is organized around the categories listed to the left.

The USGS investigates the occurrence, quantity, quality, distribution, and movement of surface and underground waters and disseminates the data to the public, State and local governments, public and private utilities, and other Federal agencies involved with managing our water resources.

[About Us](#) [Help](#)

Internal Access Only See this section.

[\[Home\]](#) [\[NWISWeb News\]](#) [\[NWIS-side processing\]](#) [\[nw_edit\]](#) [\[Web-side processing\]](#) [\[Frequently Asked Questions\]](#)

Start NWISWeb Data for K... James E Pulvers - Inbox - ... Microsoft PowerPoint - [Jul...]

http://ks.water.usgs.gov/nwis/rt

Real-Time Data for Kansas - Microsoft Internet Explorer

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Address <http://ks.water.usgs.gov/nwis/rt>

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District Access [Water Resources](#) [skip navigation](#)

Data Category: Geographic Area:


Real-Time Data for Kansas

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

--- Predefined displays --- Group table by Select sites by number or name

Daily Streamflow Conditions

Select a site to retrieve data and station information.



The colored dots on this map depict streamflow

Statewide Streamflow Table

Real-time data typically are recorded at 15-60 minute intervals, stored onsite, and then transmitted to USGS offices every 1 to 4 hours, depending on the data relay technique used. Recording and transmission times may be more frequent during critical events. Data from real-time sites are relayed to USGS offices via satellite, telephone, and/or radio and are available for viewing within minutes of arrival.

All real-time data are [provisional and subject to revision](#).

Start Real-Time Data for K... James E Pulman - Inbox... Microsoft PowerPoint - [J... Internet

<http://ks.water.usgs.gov/nwis/current/type=flow>

Real-Time Data for Kansas: Streamflow - Microsoft Internet Explorer

Address: <http://ks.water.usgs.gov/nwis/current/type=flow>

USGS
District Access [Water Resources](#) [skip navigation](#) Data Category: Geographic Area: Real-time Kansas GO

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

Real-Time Data for Kansas: Streamflow -- 161 site(s) found

PROVISIONAL DATA SUBJECT TO REVISION
Updated 2002-02-28 08:10:09 US/Central

--- Predefined displays --- Group table by Select sites by number or name

Kansas Lake and Reservoir Table
Kansas Lake and Reservoir Table
Kansas Precipitation Table
Kansas Ground-Water Table
Kansas SW and GW Elevations
Kansas Water Quality
Water Levels near Junction City, KS
Ground-water Levels at Ft. Leavenworth, KS
Kansas Equus Beds SW and GW Elevations
Kansas Equus Beds Water Quality
Kansas Minimum Desirable Streamflow Sites
Ground-water graphs for Ft. Leavenworth, KS

Site number	Site name	Long-term median flow 2/28	Gage height (feet)	Stream-flow (ft ³ /s)	Date/time
068	KS	50.0	7.19	742	02/28 07:45
06818300	MISSOURI R AT ATCHISON, KS	---	7.74	--	02/28 04:00
06844900	SF SAPPAC NR ACHILLES, KS	.000	4.95	.08	02/28 05:00
06845000	SAPPAC NR OBERLIN, KS	1.38	15.45	951	02/28 06:00
06845110	SAPPAC NR LYLE, KS	14.0	4.77	6.2	02/28 06:00
06846000	BEAVER C AT LUDELL, KS	3.95	2.92	.00	02/28 06:00
06846500	BEAVER C AT CEDAR BLUFFS, KS	.065	2.54	.00	02/28 06:00
06847900	PRAIRIE DOG C AR KEITH SEBELIUS LAKE, KS	4.35	3.68	4.7	02/28 07:00

Start Real-Time Data for K... James E. Putsen - Inbox... Microsoft PowerPoint - [M... Internet

Data Available in Graphs and Daily Statistics are Displayed

Real-time data for USGS 06992350 KANSAS R AT DESOTO, KS - Microsoft Internet Explorer

Address: http://ks.water.usgs.gov/news/uv?dd_cd=011dd_cd=021dd_cd=2711romat-gflperiod=311site_no=06992350

DISCHARGE, CUBIC FEET PER SECOND

Most recent value: 1,660 02-28-2002 06:00

USGS 06992350 KANSAS R AT DESOTO, KS

DISCHARGE, CUBIC FEET PER SECOND

DATES: 01/26/2002 to 02/26/2002 06:00

EXPLANATION
— DISCHARGE
▲ MEDIAN DAILY STREAMFLOW BASED ON 83 YEARS OF RECORD

Download a [presentation-quality graph](#) Parameter Code 00060; DD 01

Daily mean flow statistics for 2/28 based on 83 years of record in ft³/sec

Current Flow	Minimum	Mean	Maximum	80 percent exceedence	50 percent exceedence	20 percent exceedence
1,660	557	5,705	29,300	1,576	3,070	8,348

Percent exceedence means that 80, 50, or 20 percent of all daily mean flows for 2/28 have been greater than the value shown.

USGS

for US... James E Patten - Inbo... Microsoft PowerPoint - [M... Internet

Data Available in Table Format

Real-time data for USGS 06892350 KANSAS R AT DESOTO, KS - Microsoft Internet Explorer

Address: [d_cd=10&dd_cd=11&dd_cd=12&dd_cd=13&dd_cd=14&dd_cd=15&dd_cd=17&dd_cd=18&dd_cd=19&dd_cd=20&dd_cd=21&dd_cd=22&dd_cd=23&dd_cd=25&dd_cd=27&const=prelperiod=31&site_no=06892350](#)

Water-quality monitor operated in cooperation with Kansas Department of Health and Environment.

This station managed by the Lawrence field office, 785-749-9606.

Available Parameters	Output format	Days	
All 18 parameters available at this site	Fixed-width table	31	get data
00060 DISCHARGE (DD 01)			
00065 GAGE HEIGHT (DD 02)			
00045 PRECIPITATION (DD 03)			

Date / Time	GAGE HEIGHT (FEET) (02_00065)	GAGE HEIGHT (FEET) (27_00065)	Stream-flow (CFS) (01_00060)	TEMPERATURE WATER (DEG C) (18_00010)	PRECIPITATION TOTAL INCHES (03_00045)	SPECIFIC CONDUCTANCE (US/CM) (20_00095)	OXYGEN, DIS-SOLVED (MG/L) (21_00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (19_00400)
01/28/2002 00:15				6.3		816	12.1	8.2
01/28/2002 00:30				6.3		817	12.2	8.2
01/28/2002 00:45				6.3		817	12.3	8.2
01/28/2002 01:00	5.30	5.21	2,340	6.3	.00	817	12.2	8.2
01/28/2002 01:15				6.2		817	12.2	8.2
01/28/2002 01:30				6.2		817	12.2	8.2
01/28/2002 01:45				6.2		817	12.1	8.2
01/28/2002 01:54								
01/28/2002 02:00	5.30	5.21	2,340	6.2	.00	818	12.1	8.2
01/28/2002 02:15				6.2		818	12.1	8.2
01/28/2002 02:30				6.2		818	12.1	8.2
01/28/2002 02:45				6.2		818	12.1	8.2

USGS

Example of Station Description

06892350 KANSAS R AT DESOTO, KS - Microsoft Internet Explorer

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Address http://water.usgs.gov/ks/nwis/inventory/?site_no=06892350 Go Links

USGS
District: Access
Water Resources [skip navigation](#)

Data Category: Geographic Area:
Site Information Kansas GO

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

USGS 06892350 KANSAS R AT DESOTO, KS

Available data for this site Station home page GO

Station Description

LOCATION
Latitude 38°59'00", Longitude 94°57'52" NAD27,
Leavenworth County, Kansas , Hydrologic Unit 10270104

DRAINAGE AREA
59,756.00 square miles; Contributing drainage area 59,756.00 square miles,

GAGE
Datum of gage is 753.87 feet above sea level NGVD29.

STATION TYPE:
Surface Water

STATION DATA:

Data Type	Begin Date	End Date	Count
Real-time	This is a real-time site		
Peak streamflow	1973-10-13	2000-06-21	27
Daily streamflow	1917-07-08	2000-09-30	30401
Water Quality Samples	1960-10-01	2000-09-20	2434

Done Internet

Start 06892350 KANSAS R... Jones E Pulvian - Inbox... Microsoft PowerPoint - Jul...

http:ks.water.usgs.gov/nwis/sw

Surface-Water Data for Kansas - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address http://ks.water.usgs.gov/nwis/sw

District Access Water Resources [skip navigation](#) Data Category: Geographic Area: Surface Water Kansas GO

Surface-Water Data for Kansas

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

Real-time
Data for selected sites recorded at 5-60 min interval-- may include surface-water, ground-water, water-quality, and meteorological parameters.

Recent
Provisional daily data for the previous 18 months--includes published streamflow.

Streamflow
Daily streamflow data for the period of record at each site.

Statistics
Daily **Monthly** **Annual**
Computed from published daily data.

Peaks
Annual maximum instantaneous peak streamflow and gage height

Measurements
Field measurements of streamflow and gage height

Introduction
Nationally, USGS surface-water data includes more than 850,000 station years of time-series data that describe stream levels, streamflow (discharge), reservoir and lake levels, surface-water quality, and rainfall. The data are collected by automatic recorders and manual [measurements](#) at field installations across the Nation.

Data are collected by field personnel or relayed through telephones or satellites to offices where it is stored and processed. The data relayed through the Geostationary Operational Environmental Satellite (GOES) system are processed automatically in near real time, and in many cases, [real-time data](#) are available online within minutes.

Once a complete day of readings are received from a site, daily summary data are generated and stored in the data base. [Recent provisional daily data](#) are updated on the web once a day when the computation is completed.

Annually, the USGS finalizes and publishes the daily data in a series of water-data reports. [Daily streamflow data](#) and [peak data](#) are updated annually following publication of the reports.

Done Internet

Start InWeb Data for Kansa Surface-Water Data I... Microsoft Excel - fundingD... Microsoft PowerPoint - Jul

Site Selection, Parameters, and Output Format

Daily Data for Kansas - Microsoft Internet Explorer

Address: http://ks.water.usgs.gov/wrwis/dv/?search_criteria=search_site_notsubmitted_form-introduction

Select Sites

Select sites which meet all of the following criteria: [----](#) or select [new criteria](#)

Site Number -- enter a full or partial site ID (*optional*)
 exact match match from the start match any part

Available parameters -- select sites that have data for the following parameters:
Enter numbers to choose parameters and order columns in the output *or* Select all.

<input checked="" type="checkbox"/> Gage height, ft (166 sites)	<input type="checkbox"/> Oxidation Reduction Potential (millivolts) (1 sites)	<input type="checkbox"/> Lake/River
<input checked="" type="checkbox"/> Streamflow, ft ³ /s (144 sites)	<input type="checkbox"/> Specific Conductance, μ S/cm (14 sites)	<input type="checkbox"/> DCP site
<input type="checkbox"/> Water Temperature, $^{\circ}$ C (60 sites)	<input type="checkbox"/> Dissolved oxygen, mg/l (12 sites)	<input type="checkbox"/> DCP site
<input type="checkbox"/> Water Temperature, $^{\circ}$ F (1 sites)	<input type="checkbox"/> pH, standard units (12 sites)	<input type="checkbox"/> DCP es
<input type="checkbox"/> Air Temperature, $^{\circ}$ F (2 sites)	<input type="checkbox"/> Turbidity Field, Unfiltered (ntu) (11 sites)	<input type="checkbox"/> DCP fr
<input type="checkbox"/> Barometric pressure, mm of Hg (1 sites)	<input type="checkbox"/> Chlorophyll, Total, Water, Fluorometric, 650-700 Nanometers, In-Situ Sensor (Mg/L) (6 sites)	<input type="checkbox"/> DCP m
<input type="checkbox"/> Precipitation, in (160 sites)	<input type="checkbox"/> Battery Voltage (216 sites)	<input type="checkbox"/> DCP tr
<input type="checkbox"/> Depth of stream, mean, ft (2 sites)	<input type="checkbox"/> Depth below land surface, ft (2 sites)	


Choose Output Format

Display Summary of Selected Sites

Choose one of the following options for displaying descriptions of the sites meeting the criteria above:

- Table of sites sorted by grouped by
- Scroll list of sites -- allows selection of data for multiple sites
- Brief descriptions -- allows selection of data for multiple sites
- Site-description information displayed in

Select fields to include in site-description output

 Kansas... Daily Data for Kansas... Microsoft Excel - landing... Microsoft PowerPoint - [u]... Internet

Retrieve Daily Values for Current Year

Microsoft Internet Explorer window titled "Daily Data for Kansas". The address bar shows the URL: http://ks.water.usgs.gov/nwis/dv/search_criteria/search_site_notsubmitted_forms/introduction.

Display Summary of Selected Sites

Choose one of the following options for displaying descriptions of the sites meeting the criteria above:

- Table of sites sorted by [Site number] grouped by []
- Scroll list of sites -- allows selection of data for multiple sites
- Brief descriptions -- allows selection of data for multiple sites
- Site-description information displayed in [table format]

Select fields to include in site-description output

- Agency
- Site identification number
- Site name
- DMS latitude
- DMS longitude
- Decimal latitude

- Save file of selected sites to local disk for future upload
- Raw NWISWeb sitefile review (internal)

Retrieve Daily Data for Selected Sites

Choose one of the following options for displaying data for the sites meeting the criteria above:

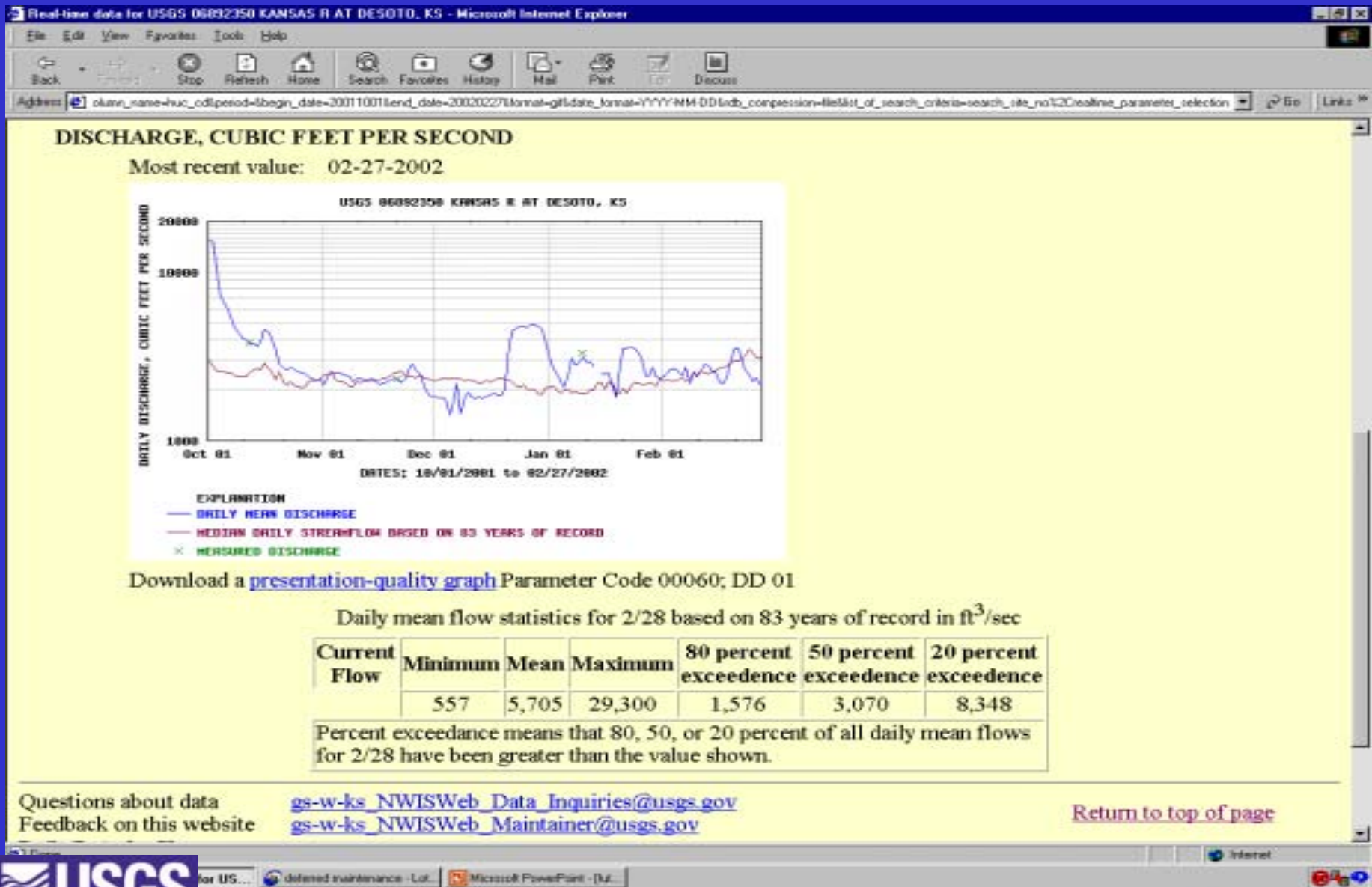
- Retrieve data for the previous [30] days (1 - 548) **** OR **** for the date range:
First date: [] Last date: [] (2000-08-29 through 2002-02-27)
- Graphs of data
- Table of data fixed-width text format
- Tab-separated data [YYYY-MM-DD] [Save to file]
- Raw NWISWeb rdb format (internal)

Buttons: Submit, Reset, Help

Questions about data: gs-w-ks_NWISWeb_Data_Inquiries@usgs.gov
Feedback on this website: gs-w-ks_NWISWeb_Maintainer@usgs.gov
Daily Data for Kansas: [Return to top of page](#)

USGS logo and taskbar information are visible at the bottom.

Daily Values--Current Water Year



Selection Menu

Surface Water for Kansas: Peak Streamflow - Microsoft Internet Explorer

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Address: <http://water.usgs.gov/ks/nwis/peak> Go Links

USGS

District Access [skip navigation](#) Data Category: Geographic Area: Surface Water Kansas GO

Peak Streamflow for Kansas

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

Site Selection Criteria

Choose one or more criteria to use for selecting sites:

Site	Site	Site	Data
-- Location --	-- Identifier --	-- Attribute --	-- Attribute --
<input type="checkbox"/> County	<input type="checkbox"/> Site Name	<input type="checkbox"/> Altitude	<input type="checkbox"/> Number of observations
<input type="checkbox"/> Hydrologic Unit	<input type="checkbox"/> Site Number	<input type="checkbox"/> Drainage area	<input type="checkbox"/> Period of record
<input type="checkbox"/> Lat-Long box	<input type="checkbox"/> Multiple Site Numbers		
	<input type="checkbox"/> Agency Code		
	<input type="checkbox"/> File of Site Numbers		

Submit Reset

Questions about data gs-w-ks_NWISWeb_Data_Inquiries@usgs.gov
Feedback on this website gs-w-ks_NWISWeb_Maintainer@usgs.gov [Return to top of page](#)

Surface Water for Kansas: Peak Streamflow
<http://water.usgs.gov/ks/nwis/peak/>

USGS


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Water-Quality Data for Kansas - Microsoft Internet Explorer

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Address <http://kz.water.usgs.gov/nwisweb/> Go Links

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District Access [skip navigation](#) Data Category: Geographic Area: GO

Water-Quality Data for Kansas

NOTE: During cold periods, gage height and streamflow information may be adversely affected by backwater from ice (or temporary freeze-up of orifice lines).

Real-time

Real-time water-quality data are returned directly from field instruments. Instantaneous data are recorded at 5-minute to 1-hour intervals and uploaded to the data base every 4 hours.

Samples

Retrieve water-quality data from field and/or laboratory analysis of water, biological tissue, stream sediments, and other environmental samples.

Introduction

The USGS collects and analyzes chemical, physical, and biological properties of water, sediment and tissue samples from across the Nation. The NWISWeb [discrete sample](#) data base is a compilation of over 3.5 million historical water quality analyses in the USGS district data bases through September 1999. The discrete sample data is a large and complex set of data that has been collected by a variety of projects ranging from national programs to studies in small watersheds. Users should review the [help](#) notes and particularly the [Data retrieval precautions](#) before beginning any retrieval or analysis of data from this data set. Additions of more current data, modifications to ancillary information, and enhanced retrieval options to help users find and appropriately use the data they need are planned for a future release of NWISWeb.

At selected surface-water and ground-water sites, the USGS maintains instruments that continuously record physical and chemical characteristics of the water including all available

Done

Start | Water-Quality Data for... | deleted maintenance - Lot... | Microsoft PowerPoint - [N... | Internet

Water Quality Samples -- 1 sites found - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Copy Discuss

Address [_valcolumn_name=huc_cd&begin_date=&end_date=&inventory_output=0&rd_inventory_output=file&date_format=YYYY-MM-DD&rd_compression=file&qw_sample_wide=0&list_of_search_criteria=search_site_no](#) Go Links

Leavenworth County, Kansas **Period of record**
 Latitude 38°59'00", Longitude 94°57'52" NAD27
 Gage datum 753.87 feet above sea level NGVD29
 This site is a station.

From	To	Count
1960-10-01	2000-09-20	2434

Choose Output Format

Retrieve Water quality samples for Selected Sites

Choose one of the following options for displaying data for the sites meeting the criteria above:

- Parameter Group Period of Record table
- Retrieve data from: to: (YYYY-MM-DD -- Blank = all data)
- Table of data fixed-width text format
- Inventory of water-quality data
- Tab-separated inventory of water-quality data
- Tab-separated data

Questions about data gs-w-ks_NWISWeb_Data_Inquiries@usgs.gov
 Feedback on this website gs-w-ks_NWISWeb_Maintainer@usgs.gov

[Return to top of page](#)

Water Quality Samples -- 1 sites found
<http://water.usgs.gov/ks/nwis/qwdata?>

Retrieved on 2002-02-28 14:18:04 EST
[Department of the Interior, U.S. Geological Survey](#)
[USGS Water Resources of Kansas](#)
[Privacy Statement](#) | [Disclaimer](#) | [Accessibility](#)
 2.6 0.9

USGS 06892350 KANSAS R AT DESOTO, KS

Available data for this site

Water-Quality: Discrete samples

GO

Leavenworth County, Kansas
 Hydrologic Unit Code 10270104
 Latitude 38°59'00", Longitude 94°57'52" NAD27
 Drainage area 59,756.00 square miles
 Contributing drainage area 59,756.00 square miles
 Gage datum 753.87 feet above sea level NGVD29

Output formats

- [Parameter Group data summary](#)
- [Inventory of available water-quality data](#)
- [Inventory of water-quality data with retrieval](#)
- [Tab-separated ASCII file, serial order](#)
- [Tab-separated ASCII file, wide order](#)
- [Reselect output format](#)

Parameter group summary of available data

Parameter Group	First Date	Last Date	Number of Samples	Number of Values
Total (all data)	1960-10-01	2000-09-20	2434	35797
Information	1974-10-18	2000-09-20	2264	5010
Biological	1974-10-07	2000-09-20	211	841
Nutrients	1973-08-21	2000-09-20	221	1667
Organics	1975-01-28	2000-09-20	177	2088
Major Inorganics	1973-08-21	2000-09-20	221	2459
Minor and Trace Inorganics	1973-08-21	2000-09-20	144	3024
Physical Property	1960-10-01	2000-09-20	2424	10852
Radiochemicals	1981-01-26	1989-04-18	22	81
Sediment	1975-10-10	2000-09-20	2047	9622

http://water.usgs.gov/waterwatch

7-day average streamflow compared to historical streamflow for week

WaterWatch -- Maps and graphs of current water resources conditions - Microsoft Internet Explorer

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Home Biology Geology Mapping Water Products Glossary Site Map Search

Water Watch -- Maps and graphs of current water resources conditions

Real-Time Streamflow

- Map - Day of year
- Summary - Day of year
- Map animation
- Flood and high flow map

Daily Streamflow

- Map - Day of year
- Summary - Day of year
- Map - All days
- Summary - All days

7-Day Average Streamflow

- Map - Week of year
- Summary - Week of year
- Map - All weeks
- Summary - All weeks

Below Normal Streamflow

- Map - Week of year
- Summary - Week of year
- Map - All weeks
- Summary - All weeks


Additional information

- [Drought Monitor](#)
- [USGS Drought Statements](#)

The "Below normal streamflow" map shows the average streamflow

Map of below normal 7-day average streamflow compared to historical streamflow for the week of the year (United States)

Wednesday, February 27, 2002



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

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

http://water.usgs.gov/waterwatch/W_d7d_insp.html Internet

Start WaterWatch -- Maps deferred maintenance - Lot Microsoft PowerPoint - [N]

WaterWatch -- Maps and graphs of current water resources conditions - Microsoft Internet Explorer

Address: <http://water.usgs.gov/waterwatch/>

map

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

Additional Information

- [NWS Radar Map](#)
- [NWS River Conditions](#)
- [NWS River Conditions Map](#)
- [NWS Flood Info](#)
- [NWS Flood Outlook](#)

The "Real-time streamflow" map tracks short-term changes (over several hours) in rivers and streams. Although the general appearance of the map changes very little from one hour to the next, individual sites may change rapidly in response to major rain events or to reservoir releases.

The map depicts streamflow conditions as measured at USGS gaging stations. The colors represent real-time streamflow compared to [percentiles](#) of historical daily streamflow for the day of the year. This map represents conditions adjusted for this time of the year. Only stations having at least 30 years of record are used.

States containing no dots indicate locations where flow data for the current day are temporarily unavailable. During winter months, some states (or parts of states) may have fewer dots than at other times of the year due to [ice effects](#).

The data used to produce this map are [provisional](#) and have not been reviewed or edited. They may be subject to significant change.

Explanation	
●	New record high
●	≥ 90th percentile
●	75th - 89th percentile
●	25th - 74th percentile
●	10th - 24th percentile
●	< 10th percentile
●	New record low

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 U.S. Department of the Interior | U.S. Geological Survey
 URL: <http://water.usgs.gov/waterwatch/index.html>
 Maintainer: [Office of Surface Water](#)
 Last modified: 16:17:44 Wed 10 October 2001

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Links to USGS Data on the Internet

Streamflow:

<http://ks.water.usgs.gov/nwis/rt>

Water Quality:

<http://ks.water.usgs.gov/Kansas/rtqw>

Waterwatch

<http://water.usgs.gov/waterwatch>