

La Grange Reach



Data Collection User Guide

University of Missouri - St. Louis

SP17- CMPSCI4500-001

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Gathering Your River Gauge Data

Before you can visualize your river data, you must collect it. This program has been designed to run with historical data obtained from the National Weather Service. These step by step instructions will show you how and where to get the data for your chosen river gauge.

1. Navigate to the water.weather.gov website.

The screenshot displays the NOAA National Weather Service website at water.weather.gov. The page features a blue header with the NOAA logo and the text "National Oceanic and Atmospheric Administration's National Weather Service". Below the header is a navigation bar with links for "Site Map", "News", "Organization", "Search", and "NWS All NOAA Go".

The main content area is titled "National Observations" and includes a sidebar on the left with various links such as "Local forecast by 'City, St'", "RSS Feeds", "Warnings", "Current", "By State/County...", "UV Alerts", "Observations", "Radar", "Satellite", "Snow Cover", "Surface", "Weather...", "Observed Precip", "Forecasts", "Local", "Graphical", "Aviation", "Marine", "Hurricanes", "Severe Weather", "Fire Weather", "Text Messages", "By State", "By Message Type", "National", "Forecast Models", "Numerical", "Statistical", "Models...", "MOS Prod", "GFS-LAMP Prod", "Climate", "Past Weather", "Predictions", "Weather Safety", "Weather Radio", "Hazard Assmt...", "StormReady / TsunamiReady", "Skywarn™", "Education/Outreach", "Information Center", "Tsunamis", "Publications...", "Contact Us", "FAQ", and "Comments...".

The main content area includes a "National Observations" section with tabs for "Warnings & Forecasts", "Graphical Forecasts", "National Maps", "Radar", "Water", "Air Quality", "Satellite", and "Climate". The "Water" tab is selected, showing "River Observations", "River Forecasts", "Experimental Long-Range River Flood Risk", "Precipitation", "River Download", and "Other Information".

The "River Observations" section features a map of the United States with numerous green dots representing river gauge locations. The map includes a "Switch Basemap" button and a "Reset View" button. To the right of the map, there is a legend titled "Click on the map or select one of the data views below:" with a list of categories and their corresponding colors: "United States" (blue), "NWS Weather Forecast Offices" (green), "NWS River Forecast Centers" (yellow), "Water Resources Regions" (orange), "Probability and forecasts available" (green), "Observations only available" (yellow), "Forecasts available" (orange), "8374 total gauges", "Show all locations in flood (59)", "7 Gauges: Major Flooding" (red), "7 Gauges: Moderate Flooding" (orange), "45 Gauges: Minor Flooding" (yellow), "154 Gauges: Near Flood Stage" (green), "5306 Gauges: No Flooding" (blue), "2467 Flood Category Not Defined" (grey), "2 At or Below Low Water Threshold" (brown), "271 Gauges: Observations Are Not Current" (grey), and "115 Gauges: Out of Service" (black).

At the bottom of the page, there are sections for "Hydrologic Resources" (River Forecast Centers, About AHPS) and "Additional Resources" (National Significant River Flood Outlook, U.S. Geological Survey Streamflow Information).

2. Zoom in on the map in the area of your desired river gauge, then click on a dot/square in that area.

NOAA - National Weather Service

water.weather.gov/ahps/

National Oceanic and Atmospheric Administration's
National Weather Service

Site Map News Organization Search NWS All NOAA Go

Local forecast by "City, St" City, St Go

RSS RSS Feeds

Warnings Current By State/County... UV Alerts

Observations Radar Satellite Snow Cover Surface Weather... Observed Precip Forecasts Local Graphical Aviation Marine Hurricanes Severe Weather Fire Weather Text Messages By State By Message Type National Forecast Models Numerical Models Statistical Models... MOS Prod GFS-LAMP Prod Climate Past Weather Predictions Weather Safety Weather Radio Hazard Assmt... StormReady / TsunamiReady Skywarn™ Education/Outreach Information Center Tsunamis Publications... Contact Us FAQ Comments...

USA.gov

National Observations

Warnings & Forecasts Graphical Forecasts National Maps Radar Water Air Quality Satellite Climate

River Observations River Forecasts Experimental Long-Range River Flood Risk Precipitation River Download Other Information

Auto Refresh: OFF

All Locations

Click on the map or select one of the data views below:

United States
NWS Weather Forecast Offices
NWS River Forecast Centers
Water Resources Regions

☐ Probability and forecasts available
☐ Observations only available
☐ Forecasts available

8374 total gauges
Show all locations in flood (59)

7 Gauges: Major Flooding
7 Gauges: Moderate Flooding
45 Gauges: Minor Flooding
154 Gauges: Near Flood Stage
5306 Gauges: No Flooding
2467 Flood Category Not Defined
2 At or Below Low Water Threshold
271 Gauges: Observations Are Not Current
115 Gauges: Out of Service

Show all locations

Last map update:
04/26/2017 at 08:46:48 pm EDT
04/27/2017 at 00:46:48 UTC

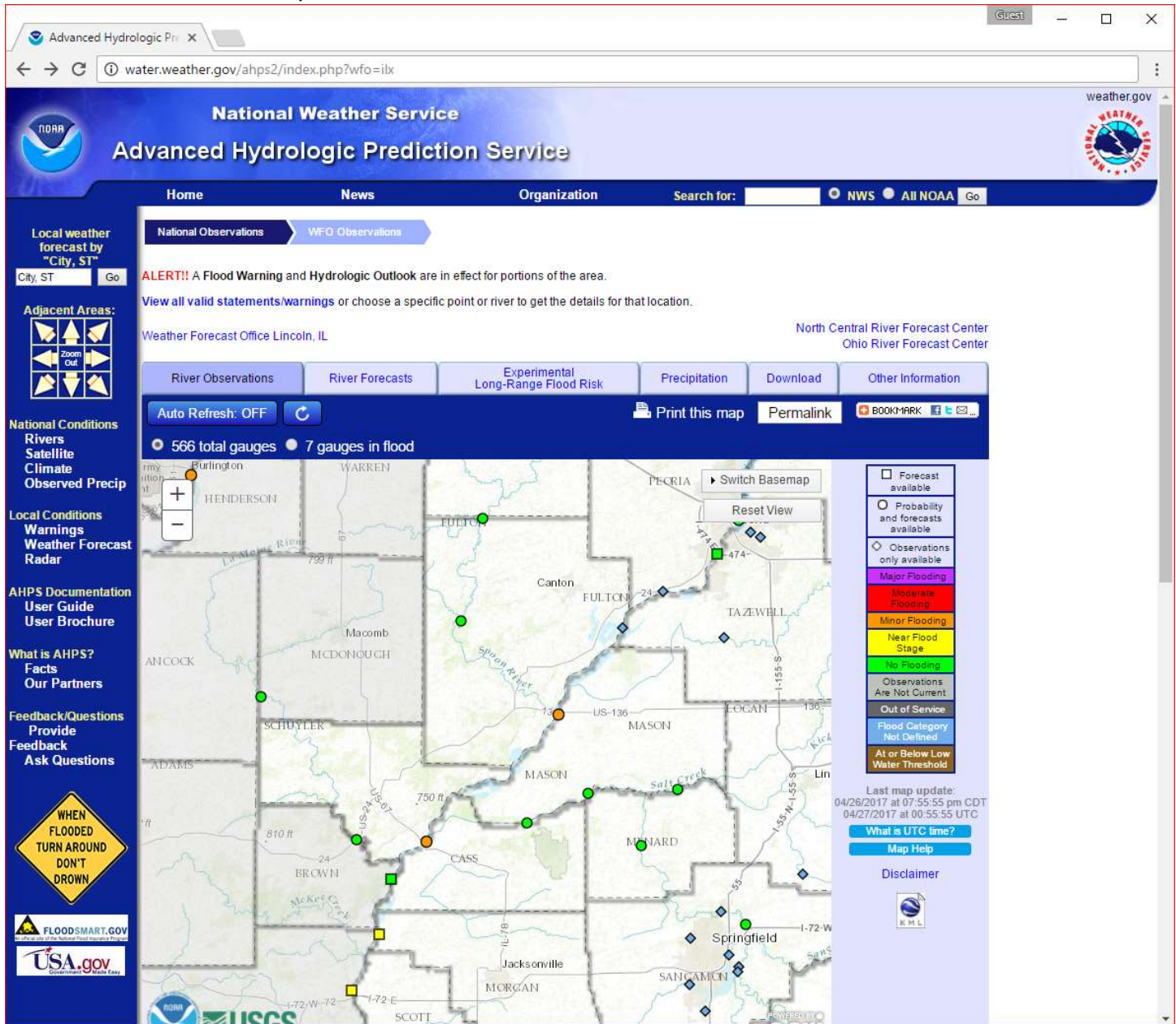
What is UTC time?
Map Help

Disclaimer

Hydrologic Resources
River Forecast Centers
About AHPS

Additional Resources
National Significant River Flood Outlook
U.S. Geological Survey Streamflow Information

3. Feel free to zoom in on the newly loaded map. Click on the dot/square of the desired gauge. (If you start at one end of your data area, you will be able to click an upstream/downstream gauge button to easily switch stations).



4. Scroll down to Current/Historical Observations.



5. Click on the link to the Corps of Engineers (COE) Info.

National Weather Service x

water.weather.gov/ahps2/hydrograph.php?wfo=ilx&gage=beai2

River Stage Reference Frame	Gauge Height	Flood Stage	Uses
NWS stage	0 ft	14 ft	Interpreting hydrographs and NWS watch, warnings, and forecasts, and inundation maps
Vertical Datum	Elevation (gauge height = 0)	Elevation (gauge height = flood stage)	Elevation information source
NAVD88	Not Available	Not Available	Survey grade GPS equipment, FEMA flood plain maps, newer USGS topographic maps
NGVD 29	419.89 ft	433.89 ft	Older USGS topographic maps, NGVD29 benchmarks
MSL	Not Available	Not Available	Older USGS topographic maps, MSL benchmarks
Other	Not Available	Not Available	

Current/Historical Observations:

- [Corps of Engineers \(COE\) Info for Beardstown](#)

Additional Information Collapse

How low could the river get?

Resources Collapse

Hydrologic Resources

- ▶ [Text Products](#)
- ▶ [Past Precipitation](#)
- ▶ [Forecast Precipitation](#)
- ▶ [River Forecast Centers](#)
- ▶ [River Stage Summary](#)
- ▶ [Precipitation Frequency Information](#)
- ▶ [Inundation Mapping Locations](#)
- ▶ [NCRFC Ensemble River Forecasts](#)
- ▶ [OHRFC Ensemble River Forecasts](#)
- ▶ [USACE Ice Jam Database](#)

Additional Resources

- ▶ [Area Hydrographs](#)
- ▶ [NWS Precipitation and River Forecasting](#)
- ▶ [AHPS Iframes for Developers](#)
- ▶ [Mobile iNWS for emergency management](#)
- ▶ [Flood Damage Costs/Fatalities in the US, 1903 - 2014](#)
- ▶ [AHPS Web Brochure](#)
- ▶ [Snow Information](#)
- ▶ [Palmer Drought Index](#)
- ▶ [U.S. Drought Monitor](#)
- ▶ [Seasonal Drought Outlook](#)
- ▶ [Water Resources Outlook](#)
- ▶ [USGS WaterAlert](#)

Collaborative Agencies Collapse

The National Weather Service prepares its forecasts and other services in collaboration with agencies like the US Geological Survey, US Bureau of Reclamation, US Army Corps of Engineers, Natural Resource Conservation Service, National Park Service, ALERT Users Group, Bureau of Indian Affairs, and many state and local emergency managers across the country. For details, [please click here](#).

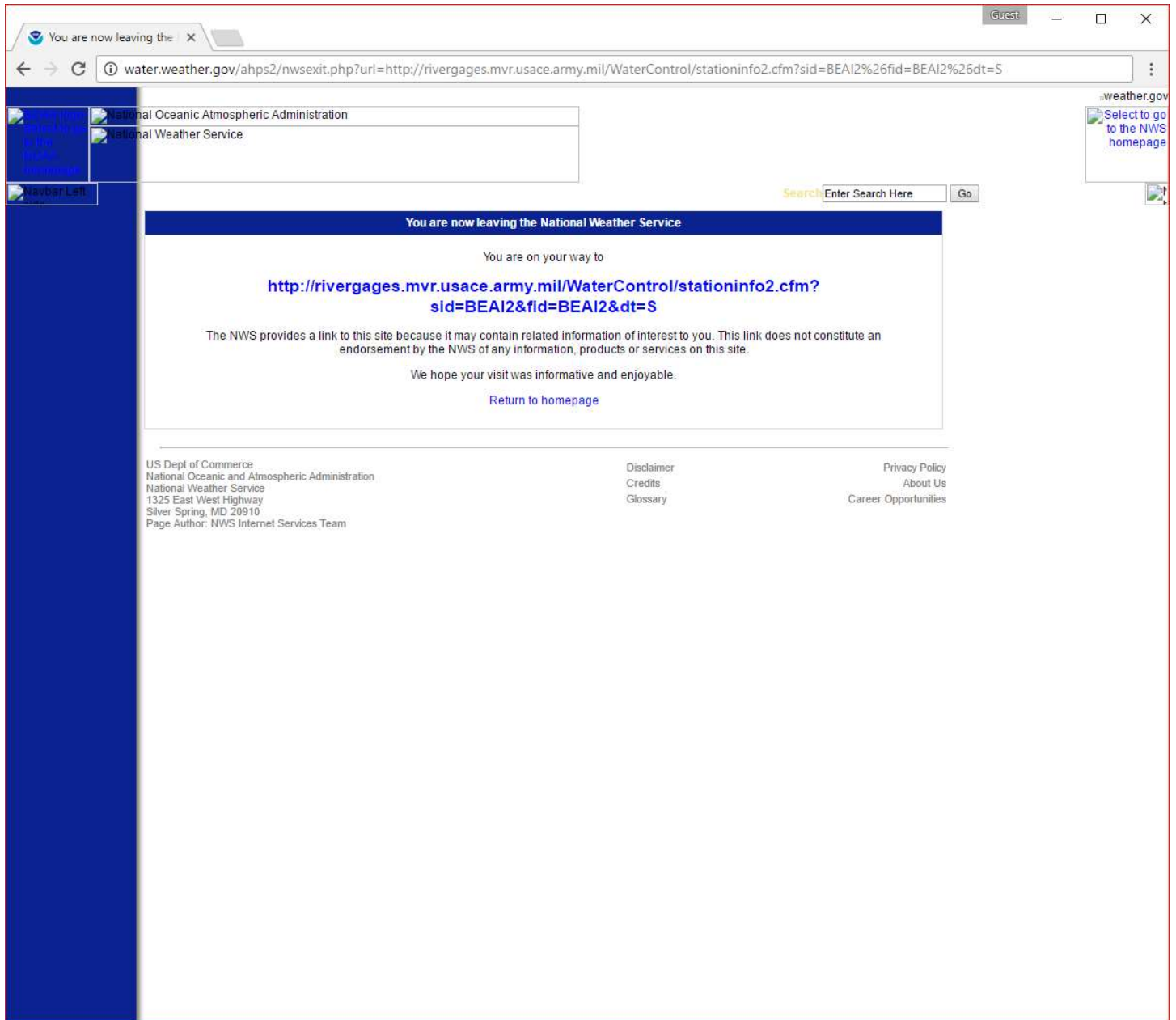
NWS Information Collapse

National Weather Service
Lincoln Weather Forecast Office
1362 State Route 10
Lincoln, IL 62656
(217) 732-3089
Ask Questions/Webmaster
Page last modified: 21-Dec-2016 10:37 PM

Disclaimer
Credits
Glossary

Privacy Policy
About Us
Career Opportunities

6. Click on redirect link.



7. In the blue box on bottom right, select HG - Stage (Ft) from the Choose a Parameter dropdown.

Rivergages.com - Station x

rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=BEAI2&fid=BEAI2&dt=S

RIVERGAGES.COM

Water Levels of Rivers and Lakes

US Army Corps of Engineers

Home Search This Site Related Websites Data Mining Glossary Reports Who We Are Contact Us

Water Levels By:
Choose An Option

National Weather Service Products

Bookmark

Google Earth What's This? Google Map

Illinois River at Beardstown, IL

Stream Name: Illinois River
Gage Zero: 419.90 Ft. NGVD29
Flood Stage: 14 Ft.
Record High Stage: 29.81 Ft.

Longitude: -90.43667000
Latitude: 40.02028000
Flat Pool: 9.10
River Mile: 88.6 miles above the mouth of the Illinois River
Record High Stage Date: 04/27/2013

Drainage Area: 24227.00 Mi²
Location of Gage:

Located in Cass County, IL, .9 miles upstream from the State Highway 100 bridge and .3 miles downstream of the Burlington Northern Railroad bridge.

The National Weather Service information is also linked in the Additional Links for this station.

This gage is operated by the US Army Corps of Engineers (Rock Island District).

Flat Pool Elevation = 429.0

Latest Data
04/26/2017 19:00 Central

Latest Stage	16.32 Ft.
24 Hr. Change	-0.39 Ft.
Tomorrow's Forecast (Issued 04/26/2017 10:44)	15.90 Ft. Plot Forecast
Last Year's Stage	9.77 Ft.
Today's Historic Normal Stage	14.38 Ft.
Today's Historic Max Stage	25.60 Ft.
Today's Historic Min Stage	8.20 Ft.
24 Hr. Precip Total	0.35 In. View Precip

7 Days Stage

Plot Tabulate

Daily Historic Data
(06:00 Central Reading)

Choose A Parameter

From JA Choose A Parameter 2017

To DEC Choose A Parameter 2017

Stage

Plot Tabulate Tabulate (Yearly Formatted)

[View All Images](#)

Additional Links:
[View Record Stage High / Low](#)
[DECODES XML](#)
[Historic Flood Profiles \(New LaGrange Pool\)](#)
[Official National Weather Service information for this station](#)

US Army Corps of Engineers - [Rock Island District](#) - [Water Control Center](#) - [Contact Us](#)

8. Select your desired date range. NOTE: If you forgot to do the previous step, it will reset the date range when you select Stage (Ft).

The screenshot shows the RiverGages.com website interface. The browser address bar displays the URL: rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=BEA12&fid=BEA12&dt=S&pcode=HG. The website header includes the "RiverGages.com" logo, navigation links (Home, Search This Site, Related Websites, Data Mining, Glossary, Reports, Who We Are, Contact Us), and a "Water Levels By:" dropdown menu. The main content area is titled "Illinois River at Beardstown, IL" and provides detailed station information, including coordinates, flood stage, record high stage, drainage area, and location. It also features a "Latest Data" section with the current stage (16.32 Ft.) and a "Daily Historic Data" section with date range selectors (From: JAN 1, To: DEC 31, 2016) and a "Stage" dropdown menu. The "Stage" dropdown is currently set to "Stage (Ft)". Below the date range selectors, there are buttons for "Plot", "Tabulate", and "Tabulate (Yearly Formatted)". A "View All Images" link is also present. The footer includes additional links and contact information for the US Army Corps of Engineers - Rock Island District - Water Control Center.

9. Make sure the last dropdown says Stage, NOT ELEVATION.

10. Click Tabulate. The next page may not load instantly, but you do not need to click the link again. DO NOT CLICK THE YEARLY FORMATTED VERSION.

11.Data will be displayed spreadsheet style on a webpage.

Rivergages.com - History X

← → ↻ rivergages.mvr.usace.army.mil/WaterControl/shefgraph-historic.cfm?sid=BEAI2

Historic Data For Illinois River at Beardstown,IL

Stream Name: Illinois River Longitude: -90.43857000
 Gage Zero: 419.90 Ft. NGVD29 Latitude: 40.02028000
 Flood Stage: 14 Ft. Flat Pool: 9.10
 Record High Stage: 29.81 Ft. River Mile: 88.0 miles above the mouth of the Illinois River
 Drainage Area: 24227.00 Mi²
 Record High Stage Date: 04/27/2013
 Location of Gage:
 Located in Cass County, IL...9 miles upstream from the State Highway 100 bridge and .3 miles downstream of the Burlington Northern Railroad bridge.

The National Weather Service information is also linked in the Additional Links for this station.
 This gage is operated by the US Army Corps of Engineers (Rock Island District).

Flat Pool Elevation = 429.0

[Download Data](#)

06:00 Central

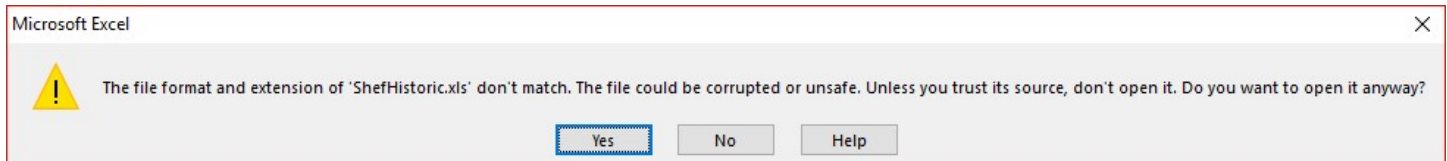
Date / Time	Stage (Ft)
01/01/2016 06:00	26.20
01/02/2016 06:00	27.27
01/03/2016 06:00	28.54
01/04/2016 06:00	29.16
01/05/2016 06:00	29.20
01/06/2016 06:00	28.94
01/07/2016 06:00	28.55
01/08/2016 06:00	28.04
01/09/2016 06:00	27.40
01/10/2016 06:00	26.69
01/11/2016 06:00	25.97
01/12/2016 06:00	25.27
01/13/2016 06:00	24.57
01/14/2016 06:00	23.93
01/15/2016 06:00	23.28
01/16/2016 06:00	22.65
01/17/2016 06:00	22.06
01/18/2016 06:00	21.39
01/19/2016 06:00	20.58
01/20/2016 06:00	19.86
01/21/2016 06:00	19.15
01/22/2016 06:00	18.63
01/23/2016 06:00	18.16
01/24/2016 06:00	17.65
01/25/2016 06:00	17.14
01/26/2016 06:00	16.64
01/27/2016 06:00	16.19
01/28/2016 06:00	15.78
01/29/2016 06:00	15.41
01/30/2016 06:00	15.04
01/31/2016 06:00	14.65
02/01/2016 06:00	14.29

12.Find and click the Download Data link (below the cream colored box).

13.Start a new document in Notepad.

14.Open the downloaded spreadsheet. It will likely be named
ShefHistoric.xls

15.You may get the error "The file format and extension of 'ShefHistoric.xls'
don't match. etc.". Click Yes.



16. You may need to click Enable Editing.

ShefHistoric.xls [Protected View] - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. [Enable Editing](#)

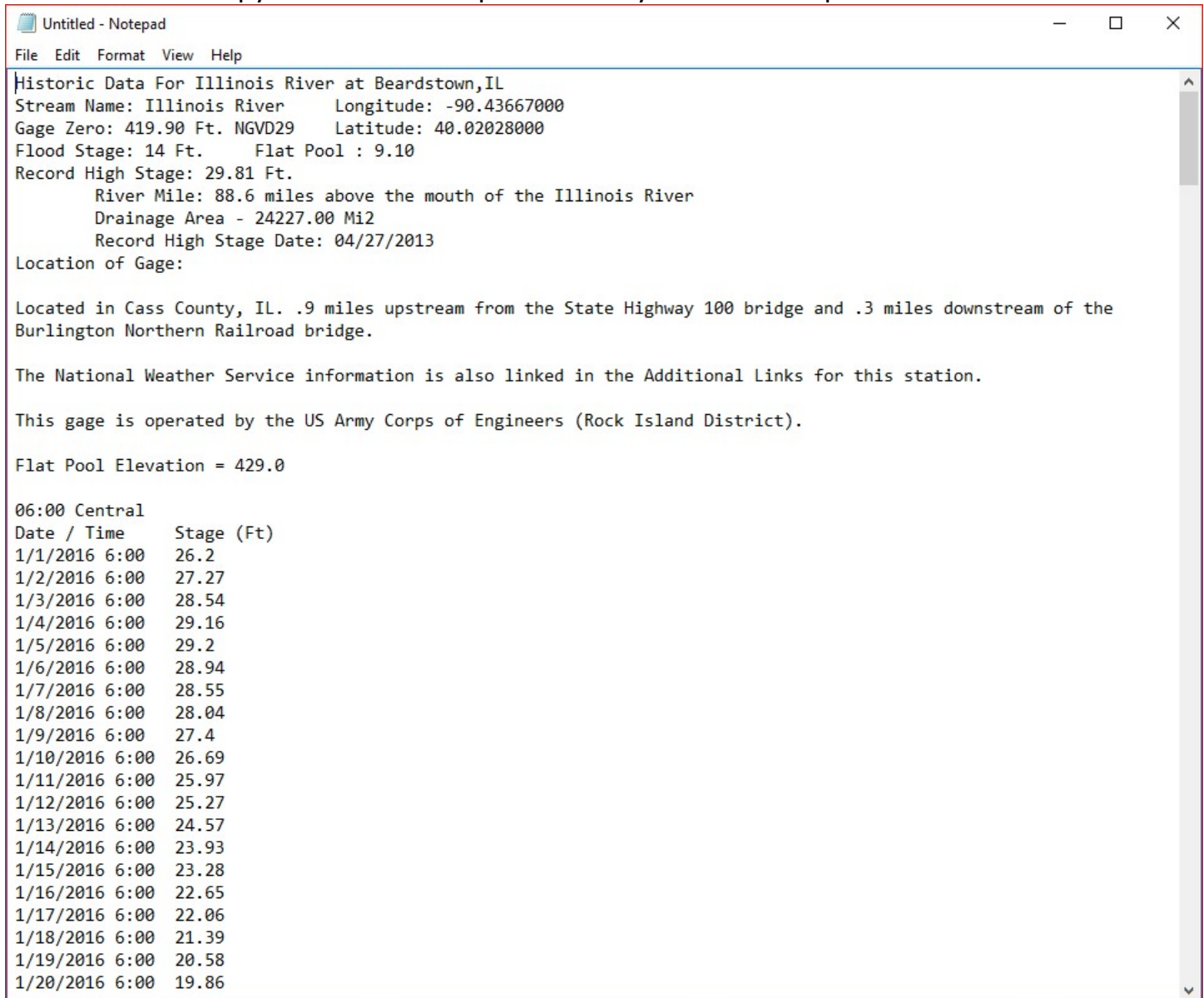
A1 Historic Data For Illinois River at Beardstown,IL

	A	B	C	D	E	F
1	Historic Data For Illinois River at Beardstown,IL					
2	Stream Name: Illinois River		Longitude: -90.43667000			
3	Gage Zero: 419.90 Ft. NGVD29		Latitude: 40.02028000			
4	Flood Stage: 14 Ft.		Flat Pool : 9.10			
5	Record High Stage: 29.81 Ft.		River Mile: 88.6 miles above the mouth of the Illinois River			
6			Drainage Area - 24227.00 Mi ²			
7			Record High Stage Date: 04/27/2013			
8			Location of Gage:			
9			Located in Cass County, IL. .9 miles upstream from the State Highway 100 bridge and .3 miles			
10			downstream of the Burlington Northern Railroad bridge.			
11			The National Weather Service information is also linked in the Additional Links for this station.			
12			This gage is operated by the US Army Corps of Engineers (Rock Island District).			
13			Flat Pool Elevation = 429.0			
14						
15						
16						
17						
18						
19	06:00 Central					
20	Date / Time		Stage (Ft)			
21	1/1/2016 6:00		26.2			
22	1/2/2016 6:00		27.27			
23	1/3/2016 6:00		28.54			
24	1/4/2016 6:00		29.16			
25	1/5/2016 6:00		29.2			
26	1/6/2016 6:00		28.94			
27	1/7/2016 6:00		28.55			
28	1/8/2016 6:00		28.04			
29	1/9/2016 6:00		27.4			
30	1/10/2016 6:00		26.69			
31	1/11/2016 6:00		25.97			
32	1/12/2016 6:00		25.27			
33	1/13/2016 6:00		24.57			
34	1/14/2016 6:00		23.93			
35	1/15/2016 6:00		23.28			
36	1/16/2016 6:00		22.65			
37	1/17/2016 6:00		22.06			
38	1/18/2016 6:00		21.20			

ShefHistoric

READY 100%

17. Copy all the data and paste it into your new Notepad document.



```
Untitled - Notepad
File Edit Format View Help

Historic Data For Illinois River at Beardstown,IL
Stream Name: Illinois River      Longitude: -90.43667000
Gage Zero: 419.90 Ft. NGVD29     Latitude: 40.02028000
Flood Stage: 14 Ft.             Flat Pool : 9.10
Record High Stage: 29.81 Ft.
    River Mile: 88.6 miles above the mouth of the Illinois River
    Drainage Area - 24227.00 Mi2
    Record High Stage Date: 04/27/2013
Location of Gage:

Located in Cass County, IL. .9 miles upstream from the State Highway 100 bridge and .3 miles downstream of the
Burlington Northern Railroad bridge.

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Flat Pool Elevation = 429.0

06:00 Central
Date / Time      Stage (Ft)
1/1/2016 6:00    26.2
1/2/2016 6:00    27.27
1/3/2016 6:00    28.54
1/4/2016 6:00    29.16
1/5/2016 6:00    29.2
1/6/2016 6:00    28.94
1/7/2016 6:00    28.55
1/8/2016 6:00    28.04
1/9/2016 6:00    27.4
1/10/2016 6:00   26.69
1/11/2016 6:00   25.97
1/12/2016 6:00   25.27
1/13/2016 6:00   24.57
1/14/2016 6:00   23.93
1/15/2016 6:00   23.28
1/16/2016 6:00   22.65
1/17/2016 6:00   22.06
1/18/2016 6:00   21.39
1/19/2016 6:00   20.58
1/20/2016 6:00   19.86
```

18. Save the Notepad file as a .txt file. Once you have collected all your data, you will upload the .txt files through the visualization tool.

To download data for another river gauge, you may need to return to the beginning of this guide. If you started at one end of your data area, you can click the back button on your browser until you get to the page from Step 4. There you can click on the arrow next to Downstream Gauge or Upstream Gauge.

