



Data-Driven Documents and Data Visualization in Kentucky

Kentucky Farm Bureau

November 18, 2015

Data-Driven Documents or “D3” is a simple way to interactively visualize data (all kinds) and reach people in a modern manner. It is open source and allows us great flexibility.

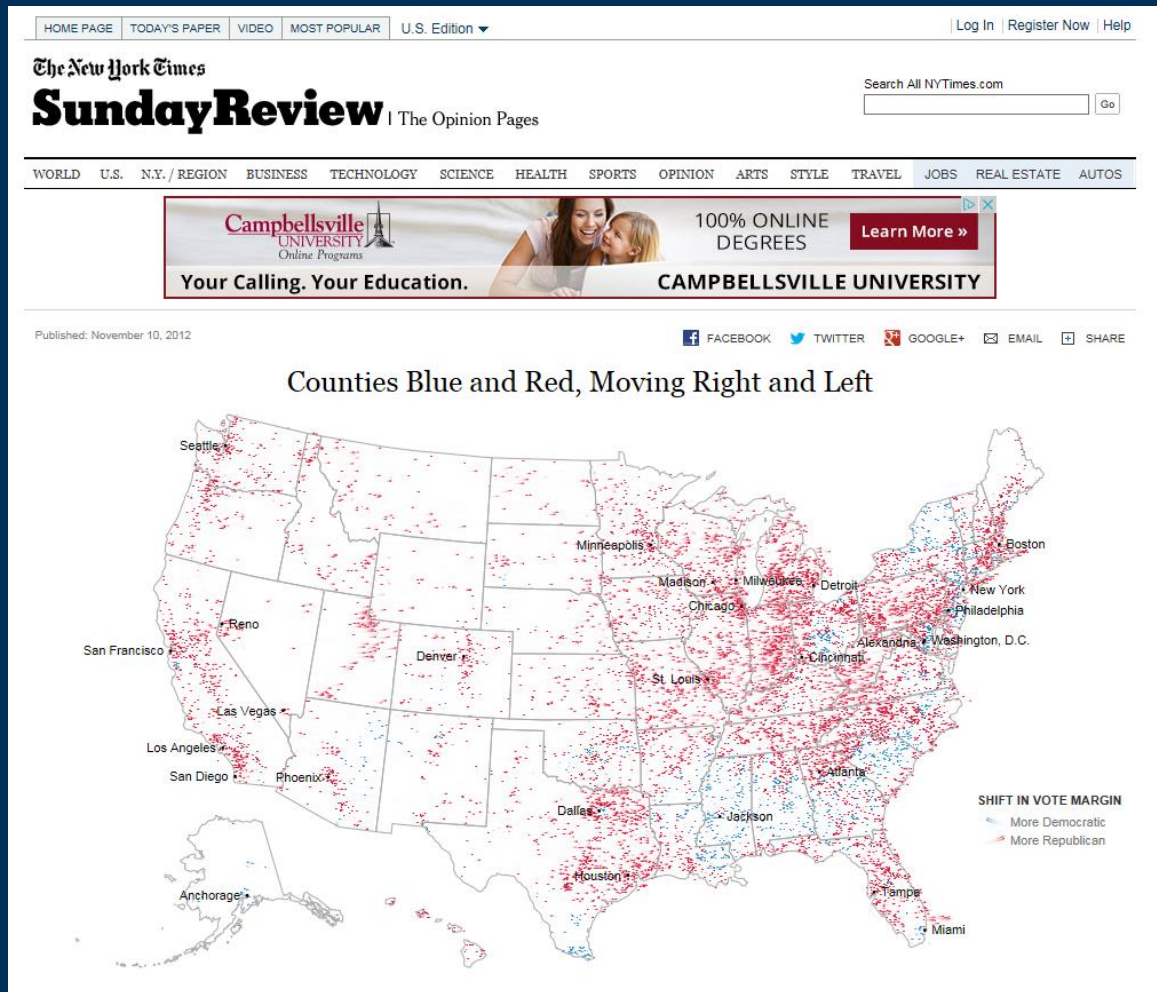
“**D3.js** is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG, and CSS. D3’s emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to document object model (DOM) manipulation.”

Most main-line pubs – newspapers, journals, etc. - now use this platform in some manner.



It's easier to simply show this!

The New York Times uses D3 applications:



The New York Times uses D3 applications:

The New York Times

FASHION & STYLE



Front Row to Fashion Week

By MIKE BOSTOCK, SHAN CARTER, ERIK HINTON, CATHY HORYN and ERIC WILSON | September 12, 2013

Of the more than 300 collections shown during New York Fashion Week, here were the ones that created the most buzz and left the biggest impressions on fashion editors as they headed off to the next round of shows in London, Milan and Paris.

[View Full Screen](#)

Calvin Klein

A beautiful, innovative collection in which Francisco Costa layered references to urban tribes, '80s art, handcraft and even, seemingly, radical chicks of the 1920s. It added up to a modern expression of fashion.

Read more: [Calvin Klein in Full Color](#)



Sand-colored, orange-scented canvas wrapped into a dress and suit.

A large emerald tweed coat with frayed, pronounced seams.

A boxy black jacket fringed with multicolored confetti strings.

Proenza Schouler

A challenging collection, inspired by the notion of home and interiors, it nonetheless showed the designers in a simpler vein.

Read more: [Pleats and Prints](#)



Dresses vined with a floppy fiber print.

Loose pants outlined in cream hand-embroidered.

Long skirts accented into fine metallic.



<http://www.nytimes.com/newsgraphics/2013/09/13/fashion-week-editors-picks/>

The Washington Post uses D3 applications:



USGS also uses D3 in
our newer
applications



Groundwater Resources Program

Hydrologic Budget and Conditions of Permian, Pennsylvanian, and Mississippian Aquifers in the Appalachian Plateaus Physiographic Province



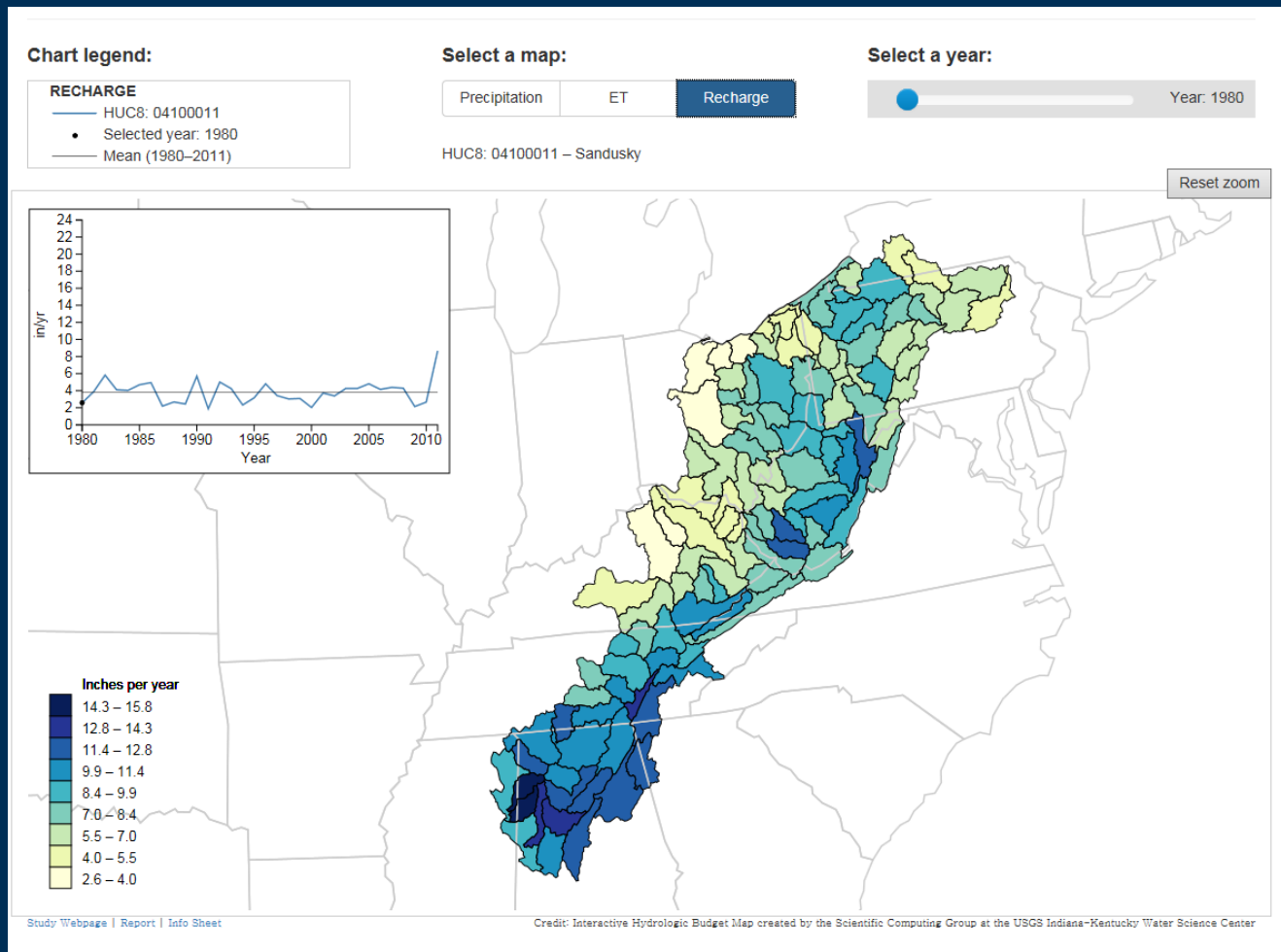
Scientific Investigations Report 2015–5106
Version 1.1, October 2015

U.S. Department of the Interior
U.S. Geological Survey




<http://pubs.usgs.gov/sir/2015/5106/sir20155106.pdf>

D3 Data viewer for USGS SIR 2015-5106:



Sources of data inputs / page designs - there are many great sources out there with key pieces!



National Weather Service
Climate Prediction Center

Site Map News

CPC Search
CPC search Go

Map Explanations
Official Fcsts
Fcst Tools

About Us
Our Mission
Who We Are

Contact Us
CPC Information
CPC Web Team

Official 90-day Outlooks are issued once each month near mid-month at 8:30am Eastern Time. Please consult the schedule of 30 & 90-day outlooks for exact release dates.

HOME > Outlook Maps > Monthly to Seasonal Outlooks > Seasonal Outlooks

One-Month Outlook

Revised OFFICIAL Forecasts

November 2015

[UPDATED MONTHLY FORECASTS SERVICE CHANGE N](#)
[EXPERIMENTAL TWO-CLASS SEASONAL FORECASTS](#)

Text-Format Discussions

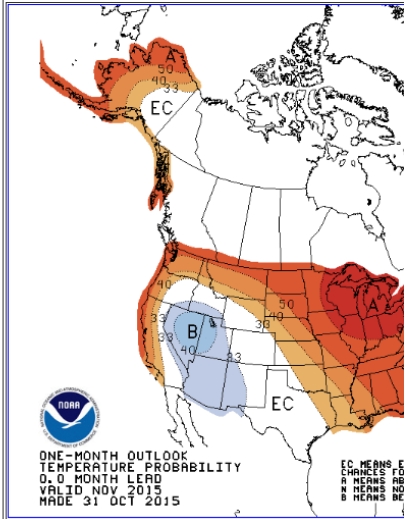
[Monthly Long Lead 30- & 90-Day Hawaiian](#)

More Outlooks

0.5mn NDJ 2015 - 16
1.5mn DJF 2015 - 16
2.5mn JFM 2016
3.5mn FMA 2016
4.5mn MAM 2016
5.5mn AMJ 2016
6.5mn MJJ 2016
7.5mn JJA 2016
8.5mn JAS 2016
9.5mn ASO 2016
10.5mn SON 2016
11.5mn OND 2016
12.5mn NDJ 2016 - 17
0.5mn Nov 2015


[Climatological Values \[1981-2010\] for Nov](#)

Tools Used (see Discussion for explanation)
[Tools Discussion](#) (updated as new tools are implemented)
[Canonical Correlation Analysis](#)
[ECCA - Ensemble Canonical Correlation Analysis](#)
[Optimal Climate Normals](#)
[Coupled Ocean](#)
[Atmosphere Model](#)
[Soil-Moisture Tools](#)
[Probability of Exceedence](#)



ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.0 MONTH LEAD
VALID NOV 2015
MADE 31 OCT 2015

EC MEANS F
CHANGES FO
R MEANS WE
N MEANS NO
B MEANS DE



Midwest Climate Watch















MRCC
Midwestern Regional Climate Center

[Maps & Images](#) [Highlights & Reports](#) [Special Topics](#)

The Midwest Climate Watch is the entry point to a wealth of current information on the Midwest. The Midwest Climate Watch includes daily, 7-day, 30-day, and month-to-date maps of temperature, precipitation, snowfall, snow depth, and growing degree days, as well as maps for prior months and seasons. Information and resources for the region about drought, agriculture and horticulture, and the Great Lakes can be found under the Special Topics tab.

The Highlights & Reports page contains climate narratives from the MRCC of the previous week's and month's temperature, precipitation, and weather events. The narrative describes the impacts of these events and includes links to other sources of information and additional charts, maps, and graphics. The narratives are archived and are searchable by event type and state.

Daily Maps

| | Coop Maximum Temp | Coop Minimum Temp | Freeze Maps | Coop Precipitation | Coop Snowfall | Coop Snow Depth | Multi-Sensor Precipitation |
|---------|---|---|---|---|---|---|---|
| MIDWEST |  |  |  |  |  |  |  |
| CENTRAL |  |  |  |  |  |  |  |

[Extremes & Perspectives Tools](#)

[Weekly & Monthly Maps](#)

[Seasonal Maps](#)

[State Climate Watch](#)

[Midwestern Regional Climate Center Home](#)

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Links on hand out are from 11/3/15 National Integrated Drought Information System (NIDIS) meeting

Summary:

D3 offers a very modern and cost-effective way to visualize data. It should work well for drought and other agricultural data / issues.

Data can be static or dynamic (live from web services) and includes most all types (spatial, numeric, etc.) – most agencies now offer web services with their data. For example, USGS has “Water Services” and offers free code as well.

NOAA / NWS and others also offer similar services that can be accessed easily. We just need to assemble the pieces.

An entry-level D3 application will run about \$40K (with live data) and about \$3K annually to maintain.



Water Service Shortcuts

- > [Instantaneous Values Service](#) for **real-time** data and historical data since October 1, 2007
- > [Site Service](#)
- > [Daily Values Service](#)
- > [Groundwater Levels Service](#)
- > [Water Quality Service](#)
- > [Statistics Service](#) **NEW**
- > [Frequently Asked Questions](#)
- > [Writing Fault-Resistant Code](#)

Service Example

This example uses a USGS water web service, as well as [AJAX](#) and [jQuery](#) Web 2.0 technologies.

USGS Site No.

[Find sites](#)

USGS Parameter

Tips

Join the USGS Water Data Notification Service

While all USGS water web services strive to be highly available and accurate, there may be occasional system issues that may impact one or more services. In addition, older versions of the service may be replaced with newer versions, possibly impacting your usage. To stay informed, please join the [USGS Water Data for the Nation Notification List](#). We won't spam you and you should receive relatively few but important emails of significant system events, upgrades or new web services.

Writing Fault Resistant Applications with USGS Water Data

Developers can usually quickly create a program to retrieve and process data using these web services. Writing programs that are unlikely to break if the service changes may require adopting some of USGS suggested best practices. If you are a software developer, please read our [writing fault-resistant code page](#) before creating a program. And thanks.

Product Showcase

[Find products and applications](#) using services on this site. Submit your own!

<http://waterservices.usgs.gov/>

Questions?

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