Flood of 2011

- April 19-29—Several days of widespread rain events hit OK, AR, MO, IL, KY, and IN push tributary streams higher. MO had over 12 inches in the week.
- April 28—additional heavy rains in IL and IN
- April 29—USGS begins effort to install 38 water level sensors in the New Madrid floodway for potential activation
- May 1-2—several more inches of rain in AR, MO, IL, IN, KY
- May 2—Activation of Birds Point-New Madrid Floodway

- April – June—Major flooding on the lower Ohio and lower Mississippi Rivers

Flood Terms

- The floodplain is the relatively flat lowland that borders a river, usually dry but subject to flooding.
- The *average* number of years between floods of a certain size is called the recurrence interval or return period. The *actual* number of years between floods depends on "Mother Nature".
- A hydrograph is a graph that shows changes in discharge or river stage over time. The time scale may be in minutes, hours, days, months, years, or decades.
- A flood is any relatively high streamflow that overtops the natural or artificial banks of a river.
- The river stage is the height of the water in the river, measured relative to an arbitrary fixed point.
- Discharge is another term for streamflow; it is the measured volume of water that moves past a point in the river in a given amount of time. Discharge is usually expressed in cubic feet per second.
- One cubic foot per second (cfs) is about 450 gallons per minute. Example – flow of 120,000 cfs would fill the Seattle Kingdome in less than 10 minutes.

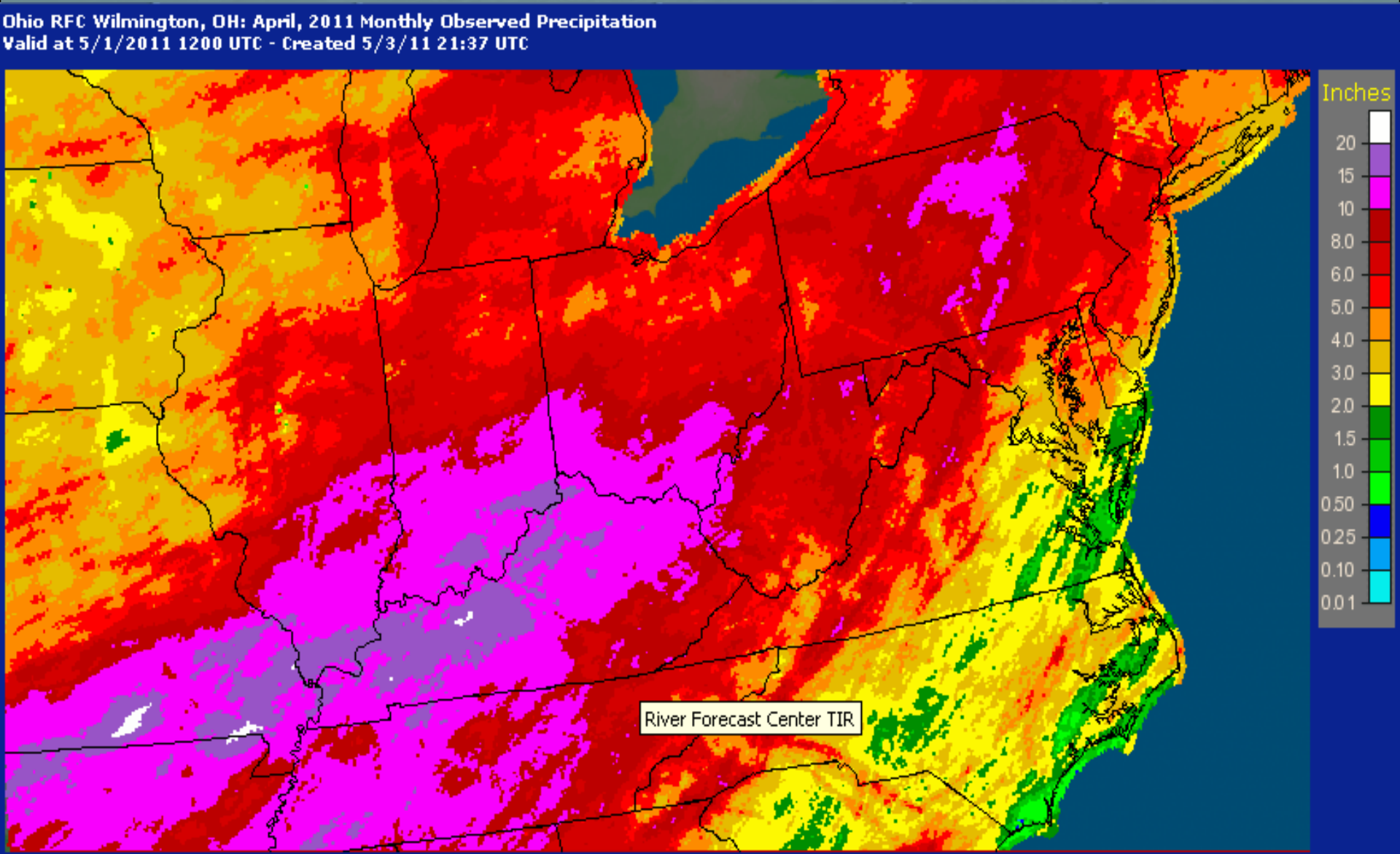
USGS

Why Don't These Floods Happen Every 100 Years?

The term "100-year flood" is misleading because it leads people to believe that it happens only once every 100 years. The truth is that an uncommonly big flood can happen any year. The term "100-year flood" is really a statistical designation, and there is a 1-in-100 chance that a flood this size will happen during any year (1 percent annual exceedance probability – AEP) or Perhaps a better term would be the "1-in-100 chance flood in any ONE year."

USGS

Flood of 2011

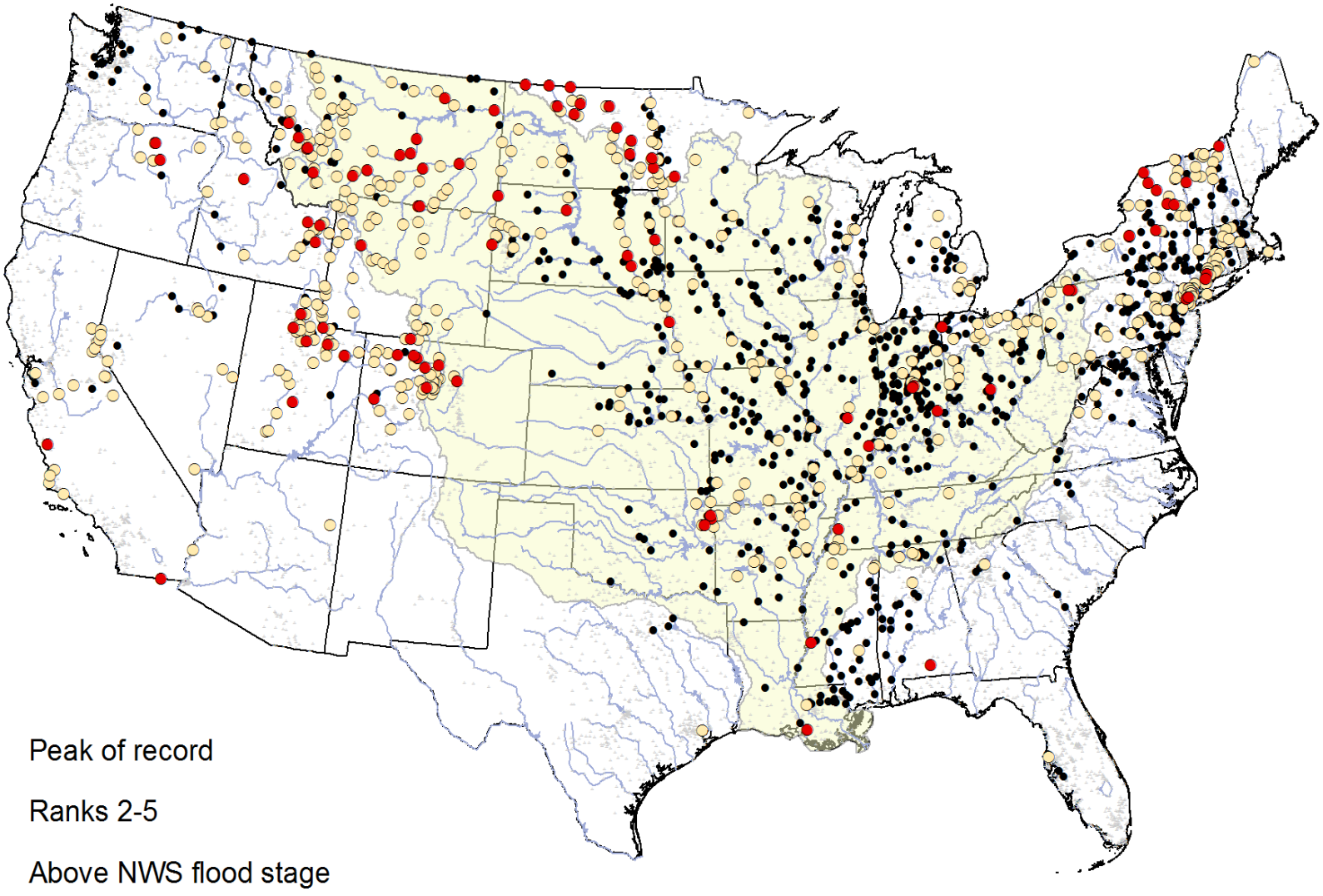


Flood of 2011

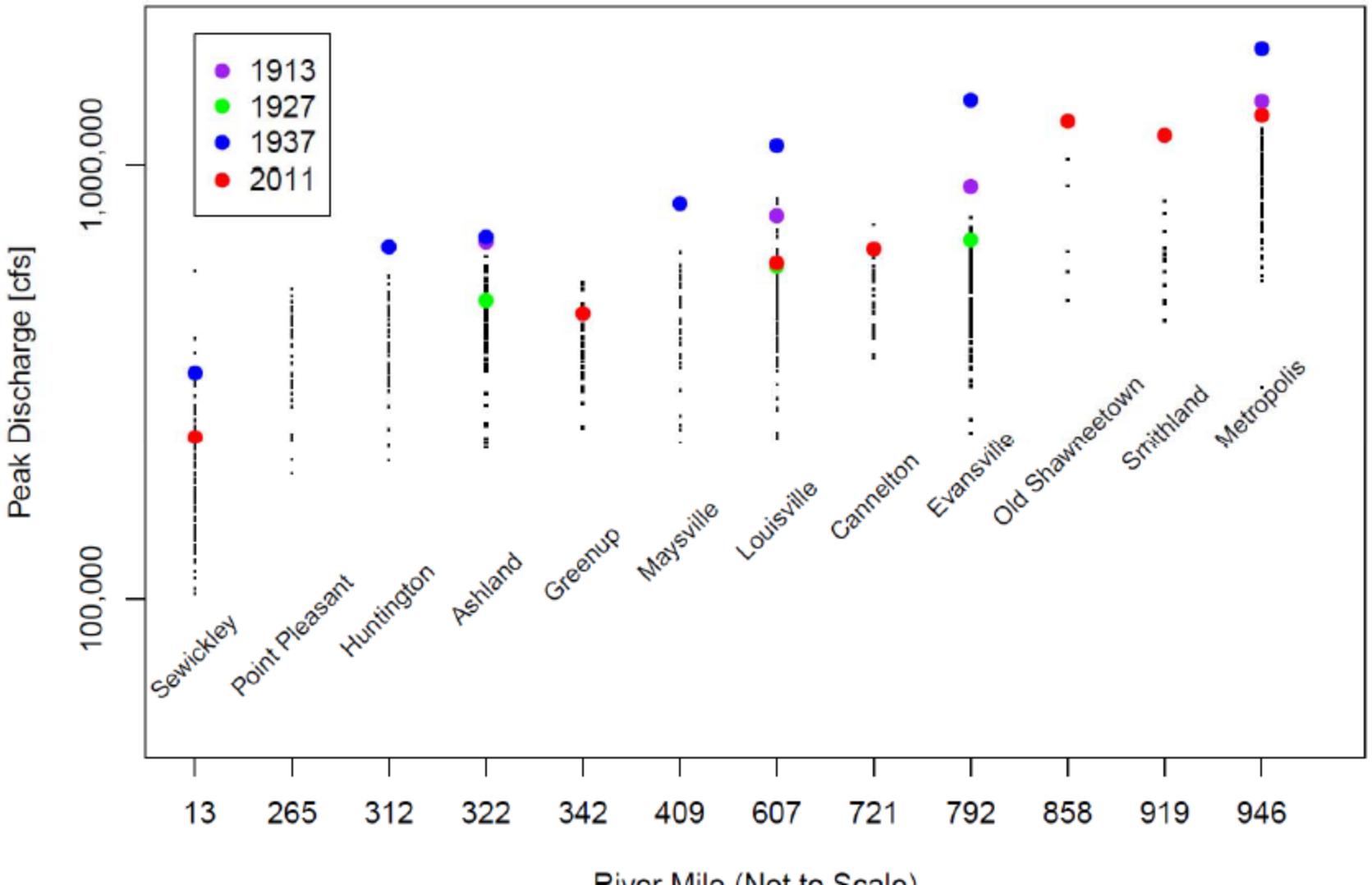
- The Ohio Valley region had its wettest April on record and it was the second wettest for the Northeast.
- Illinois, Indiana, Kentucky, Ohio, West Virginia and Pennsylvania each had their wettest April since 1895.
- An average of 11.88 inches of precipitation fell across Kentucky, nearly three times its long-term average, breaking the previous record (7.61 inches in 1972) by more than four inches

from the National Weather Service

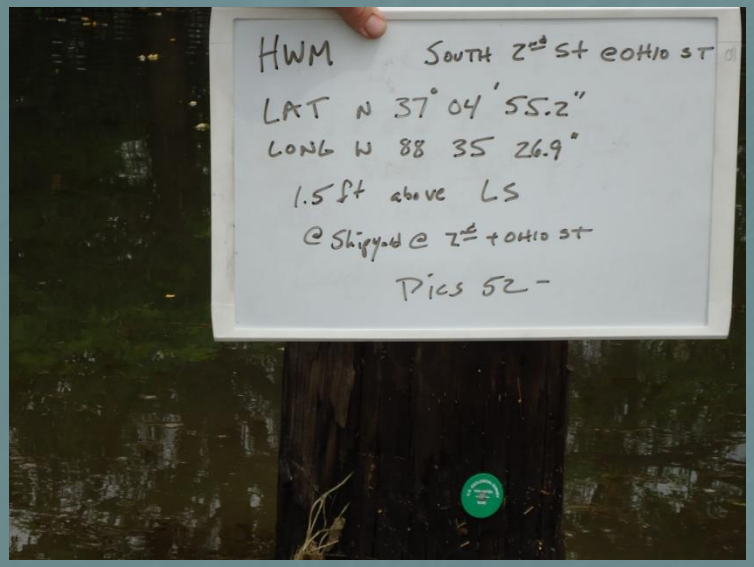
2011 Major Flood Peaks



2011 Peaks on the Ohio River



FEMA Collection/Documentation – HWM's



69 total river miles

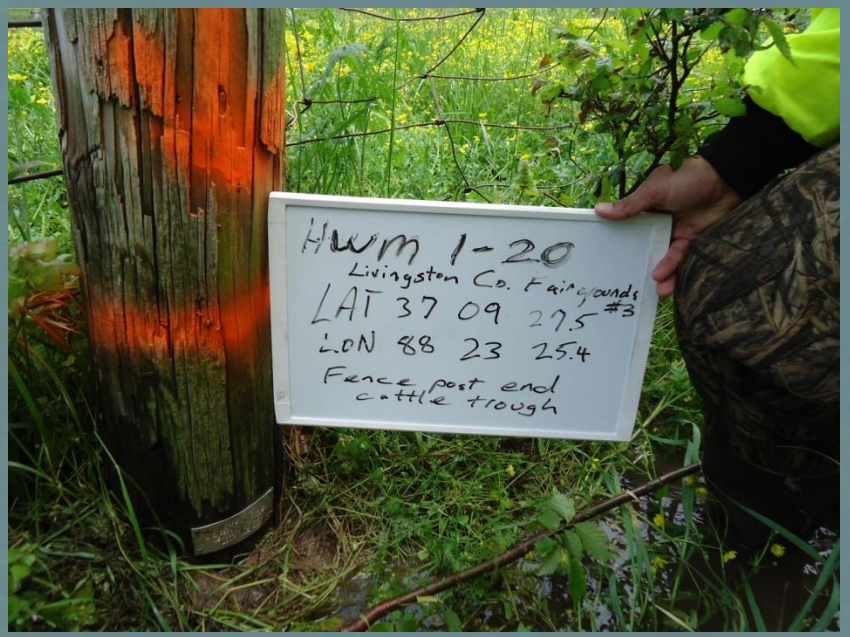
6 different streams

9 counties

1 Field lead

5 Teams of 2

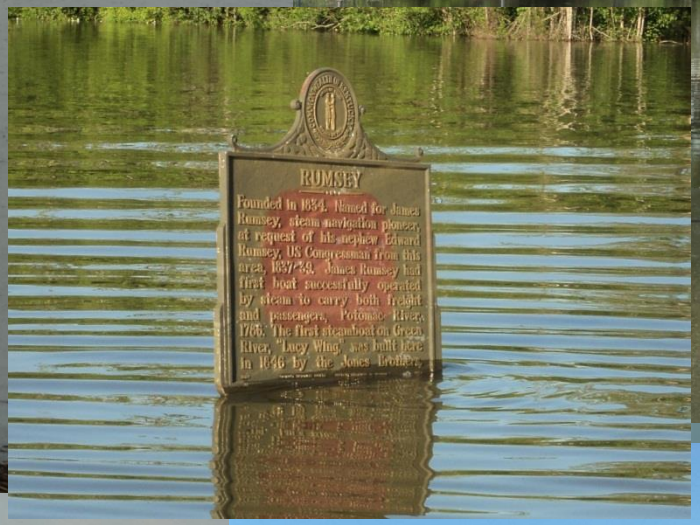
Office support



USGS


CATALPA ST


RUMSEY


RUMSEY
Founded in 1834. Named for James Rumsey, steam navigation pioneer, at request of his nephew Edward Rumsey, US Congressman from this area, 1837-43. James Rumsey had first boat successfully operated by steam to carry both freight and passengers, Potomac River, 1786. The first steamboat on Green River, "Lucy Wing" was built here in 1846 by the Jones Brothers.

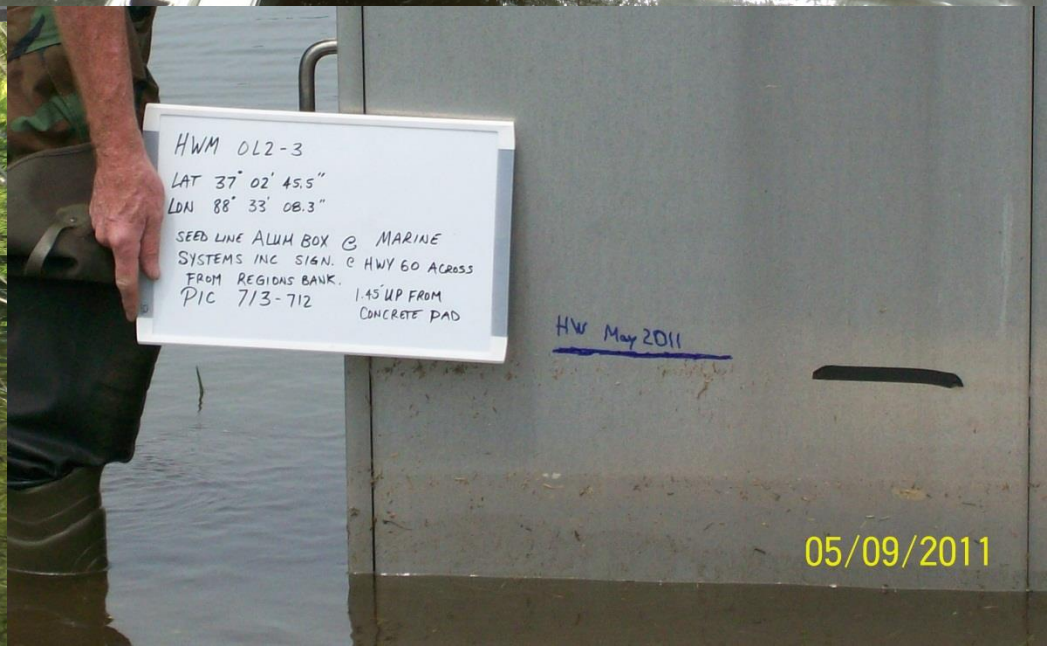

ROAD CLOSED
HIGH WATER


397
407

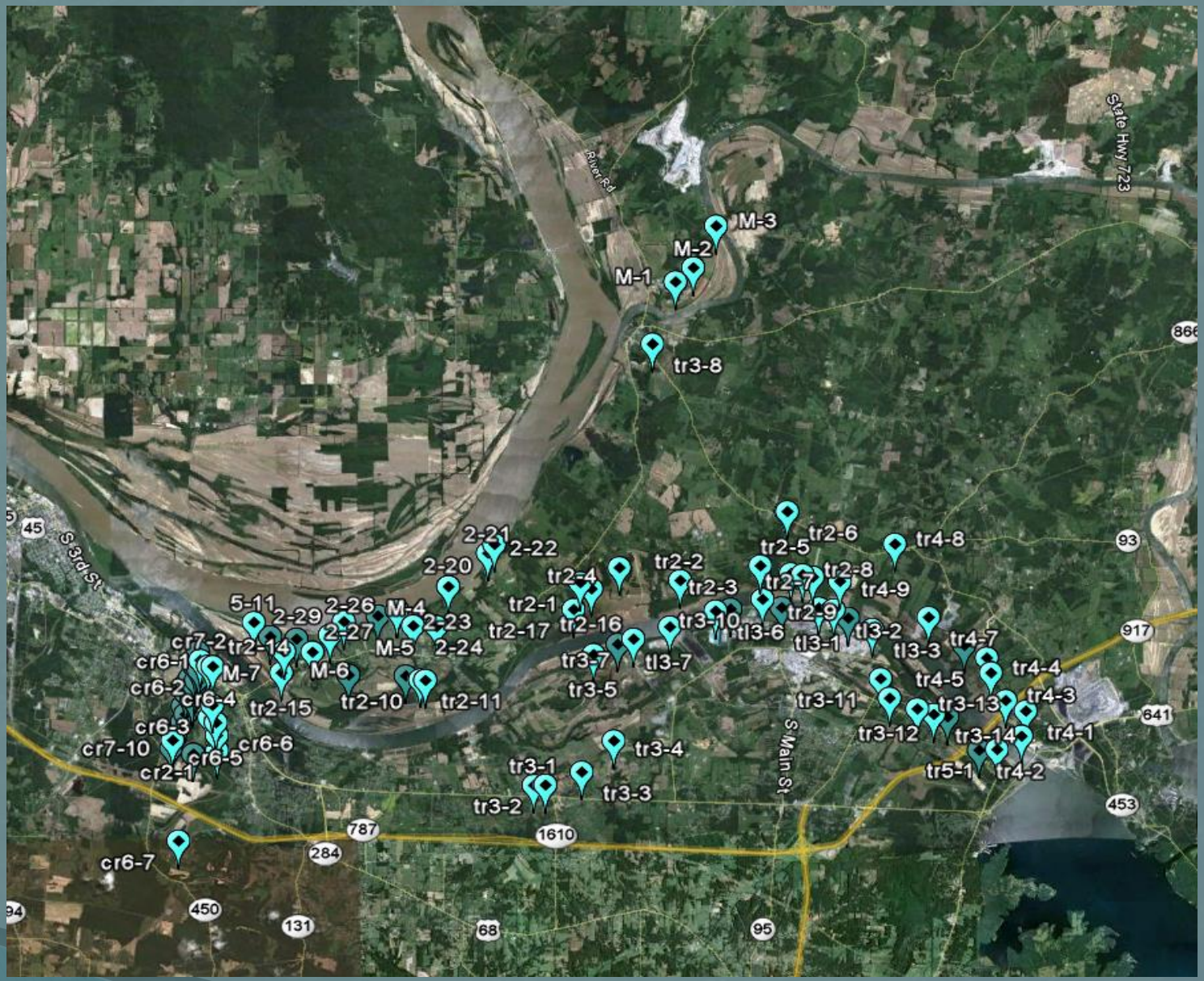

USGS
05/


USGS


HWM 4-08 Plate on Utility Pole
LAT N 37° 31' 51.4"
LON W 087° 15' 32.8"
Intersection Hwy 81/Chestnut St.
Utility Pole #41 SW Centerline Chestnut St.
Bottom of Plate 23' Above LS
Pic # 033, 034

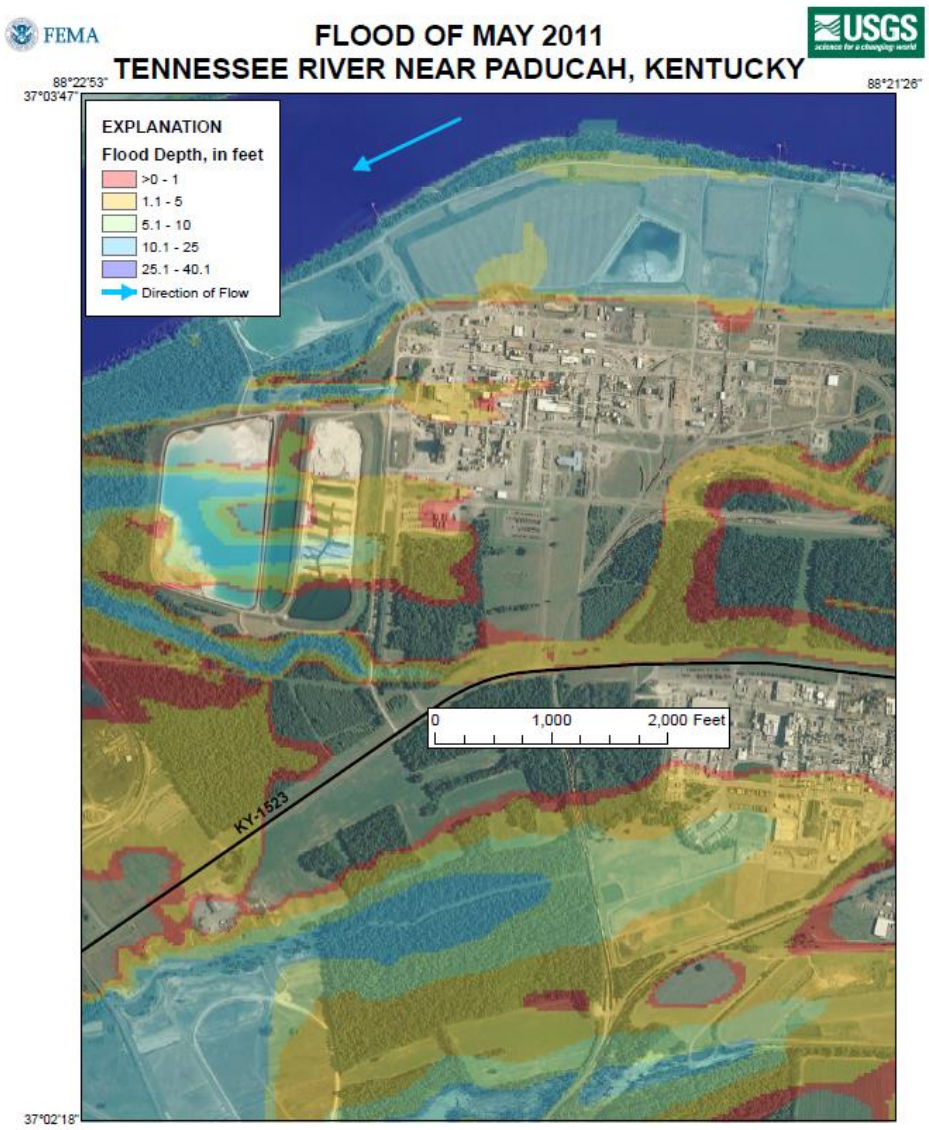

HWM OL2-3
LAT 37° 02' 45.5"
LON 88° 33' 08.3"
SEED LINE ALUM BOX @ MARINE SYSTEMS INC SIGN. @ HWY 60 ACROSS FROM REGIONS BANK.
PIC 713-712
1.45' UP FROM CONCRETE PAD
HW May 2011
05/09/2011

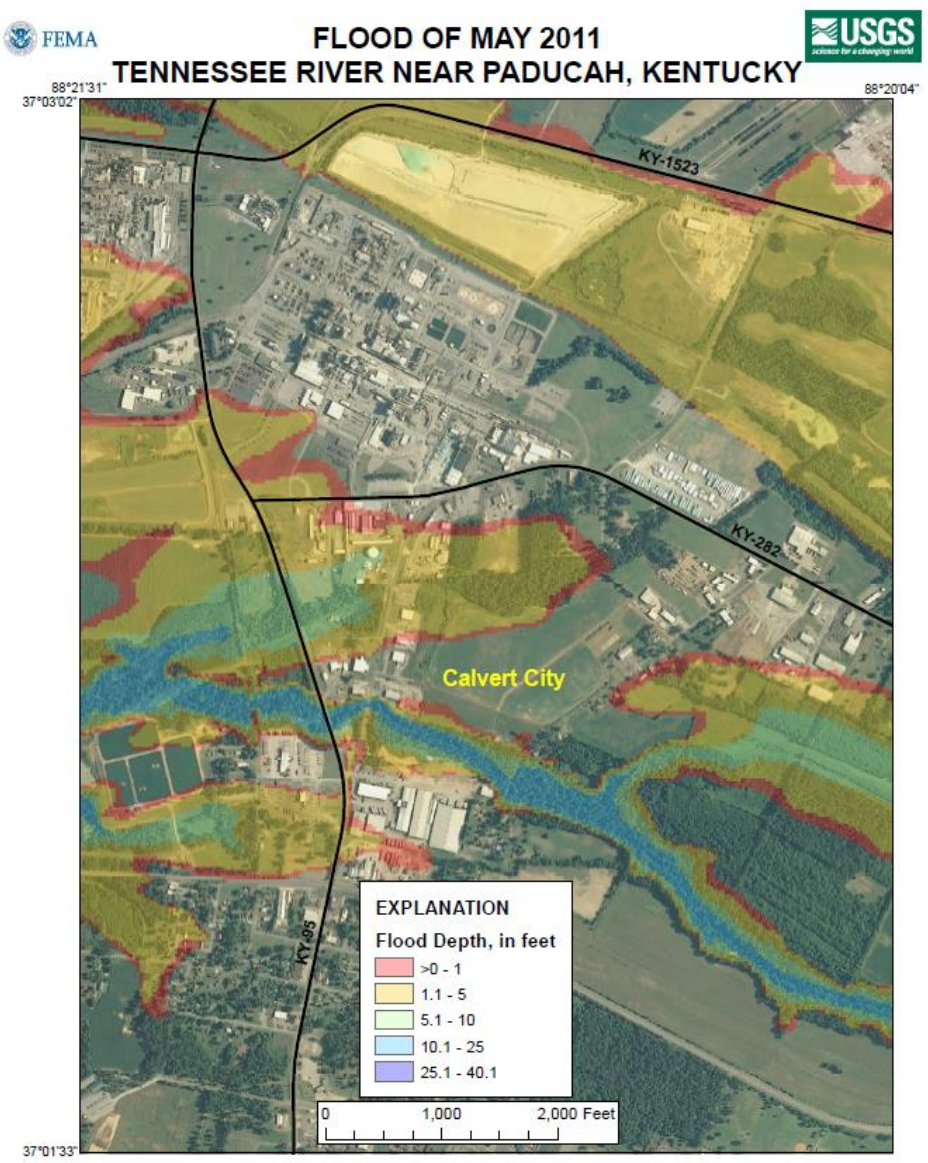
Collection and Documentation – "on the fly"



USGS

Final Products





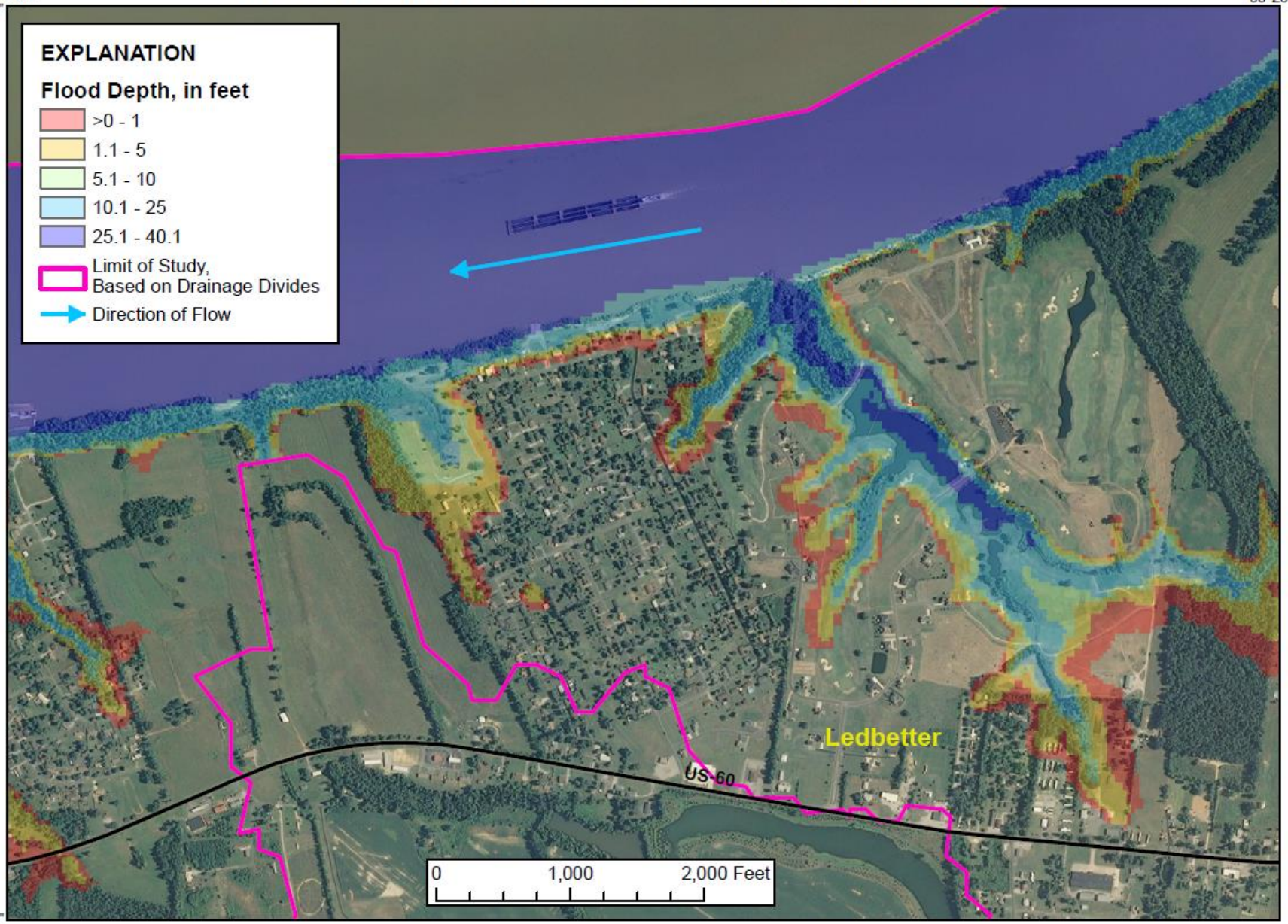
FLOOD OF MAY 2011
OHIO RIVER NEAR LEDBETTER, KENTUCKY

FEMA

USGS science for a changing world

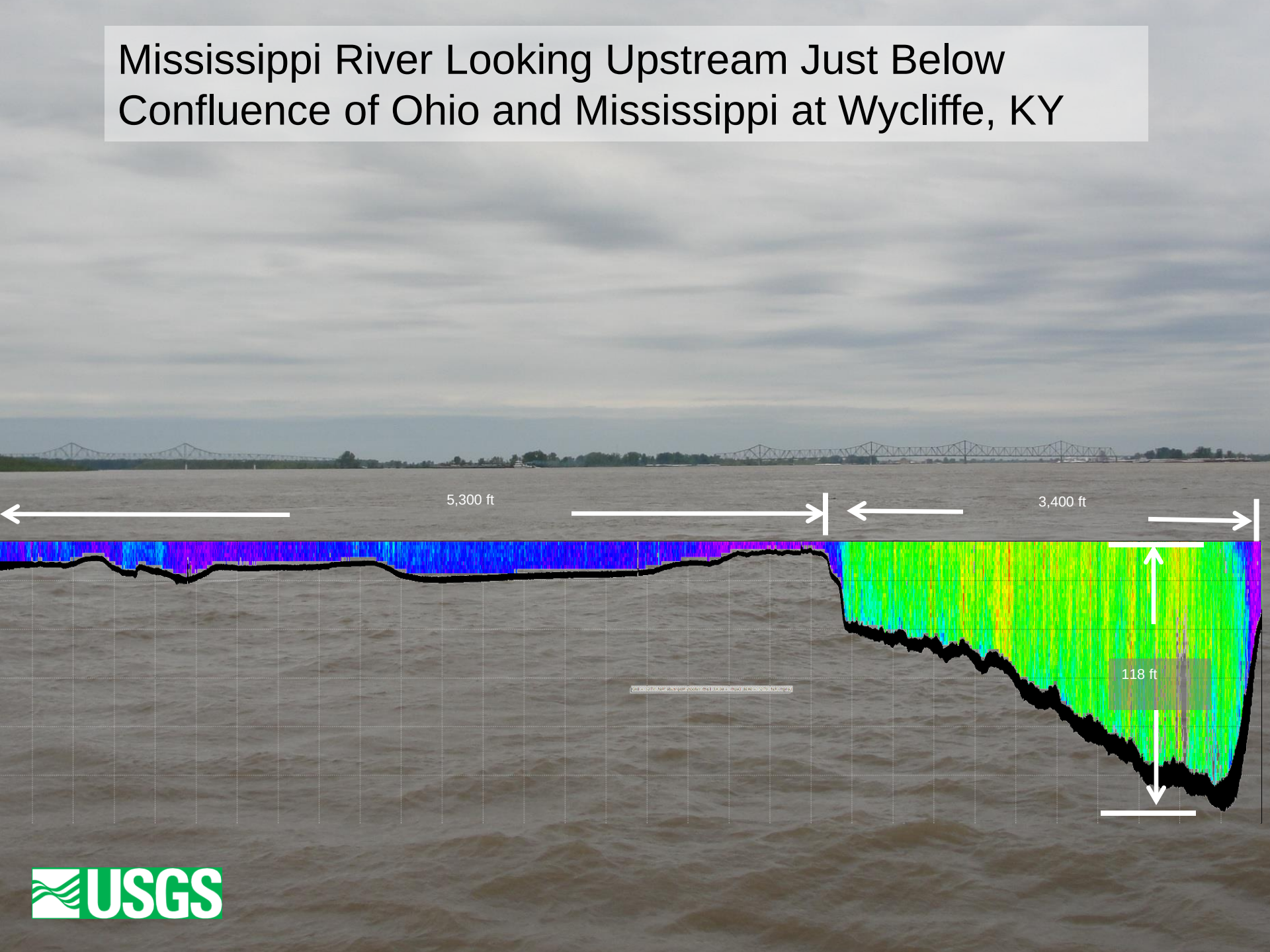
88°30'04"
37°03'50"

88°28'07"



37°02'42"

Mississippi River Looking Upstream Just Below Confluence of Ohio and Mississippi at Wycliffe, KY



OSW – Hydroacoustics