

Iowa's Groundwater Protection Act of 1987 Celebrating 25 Years



◎ **Chuck Gipp**

- Director of the Iowa Department of Natural Resources since May 2012
- Named Deputy Director, Iowa DNR August 5, 2011
- Served in the Iowa House of Representatives from 1990-2008 and was the majority leader from 2003-2007.
- Joined the Iowa Department of Agriculture and Land Stewardship in 2008, heading the Division of Soil Conservation
- Graduate of Luther College, Decorah

Outline for presentation

⦿ Iowa's Drought

- What do we know from the past year?
- How bad is it?
- When will it be over?

⦿ Iowa's Groundwater Protection Act of 1987

- How far we have come in 25 years
- Where are we headed?



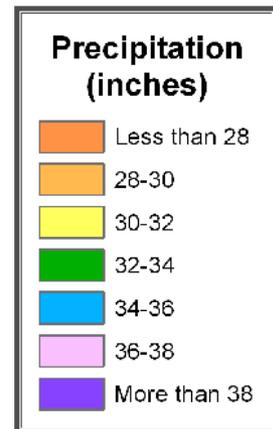
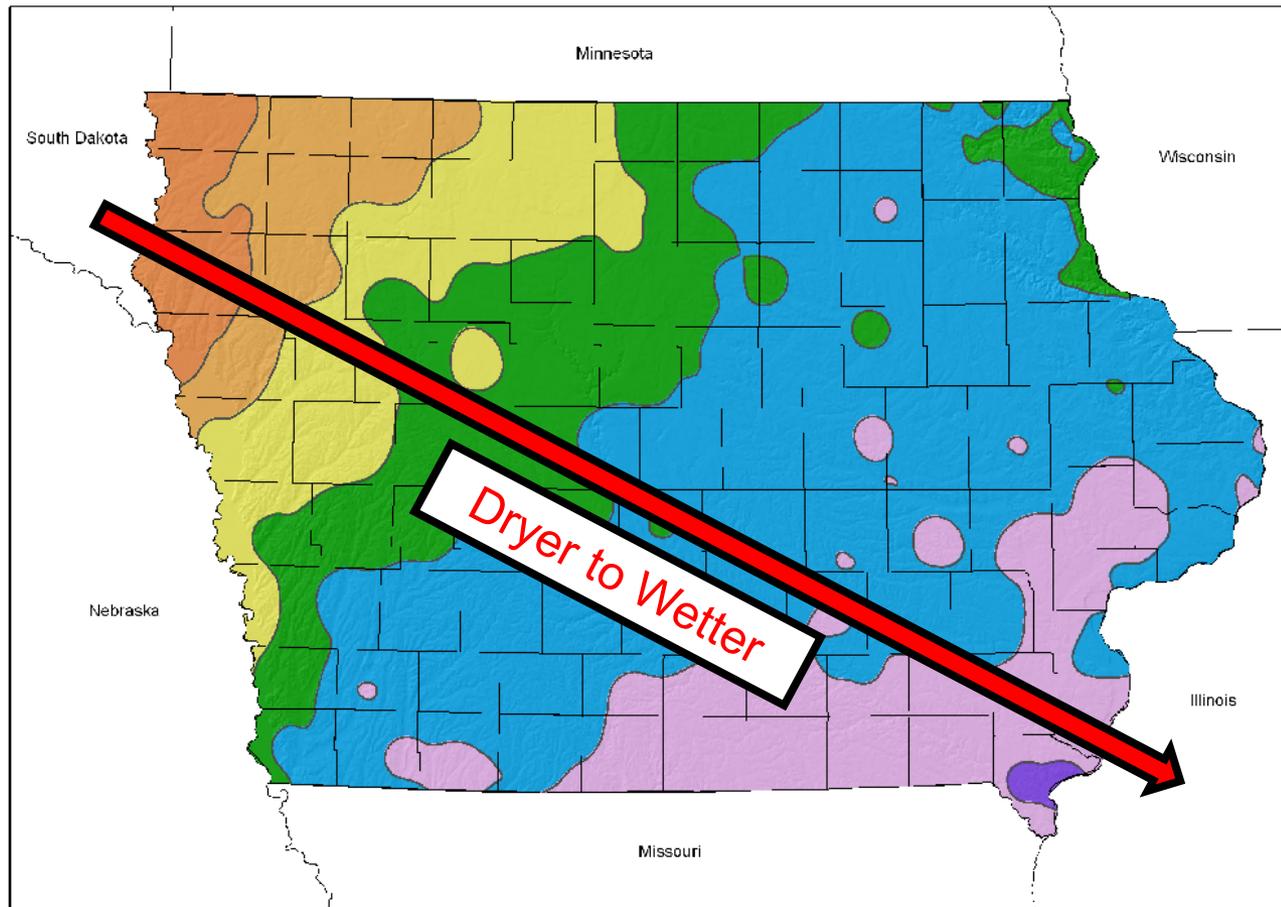
Summary of State Precipitation: What We Know

- Precipitation average: 34 inches per year
 - 26 inches in the extreme northwest
 - 38 inches in the southeast.
- Average statewide precipitation for 2012 (through September): 20.55 inches
- 1993 was the wettest (48.22 inches)
- 1910 the driest (19.93 inches)
- Nearly three-fourths of the annual precipitation is received during the April through September growing season – 85% of annual precipitation falls before October.



Average Annual Precipitation, 1971-2000

Iowa





What We Know

- ⦿ Worst drought since 1988
- ⦿ Iowa Drought Years
 - 1933-1939
 - 1952, 1953, 1955, 1956
 - 1976
 - 1988
 - 2012

U.S. Drought Monitor

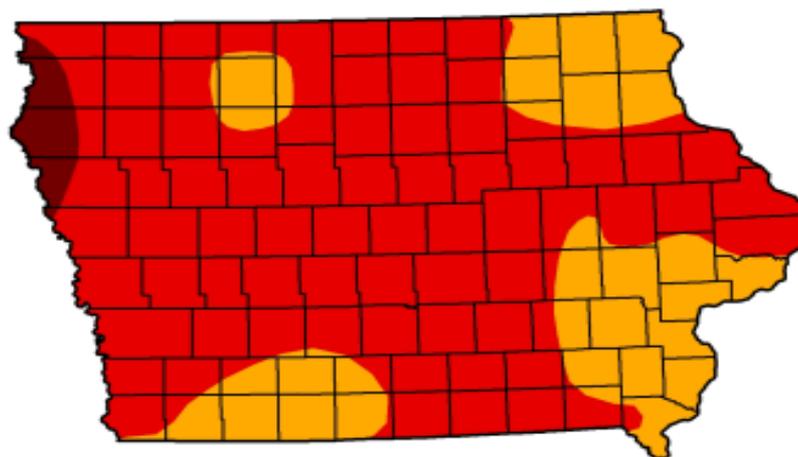
October 9, 2012

Valid 7 a.m. EST

Iowa

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	75.31	2.52
Last Week (10/02/2012 map)	0.00	100.00	100.00	100.00	75.31	2.52
3 Months Ago (07/10/2012 map)	0.00	100.00	66.40	12.70	0.00	0.00
Start of Calendar Year (12/27/2011 map)	60.99	39.01	30.33	24.15	0.00	0.00
Start of Water Year (09/25/2012 map)	0.00	100.00	100.00	100.00	65.77	2.52
One Year Ago (10/04/2011 map)	17.09	82.91	43.02	9.92	0.00	0.00



Intensity:

-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, October 11, 2012
Matthew Rosencrans, NOAA/NWS/NCEP/CPC

Water Summary Update

- Available on the DNR web site.
- All 15 editions are archived there.
- www.iowadnr.gov
 - Water Quality tab, then Water Summary Update
 - OR – search for “Water Summary Update”

Development of the Drought



Setting the Stage – Summer 2011

Missouri River Flooding

June 16, 2011
Ft. Calhoun Power Plant



Gavins Point Dam released a record 150,000 cfs on June 14, 2011.



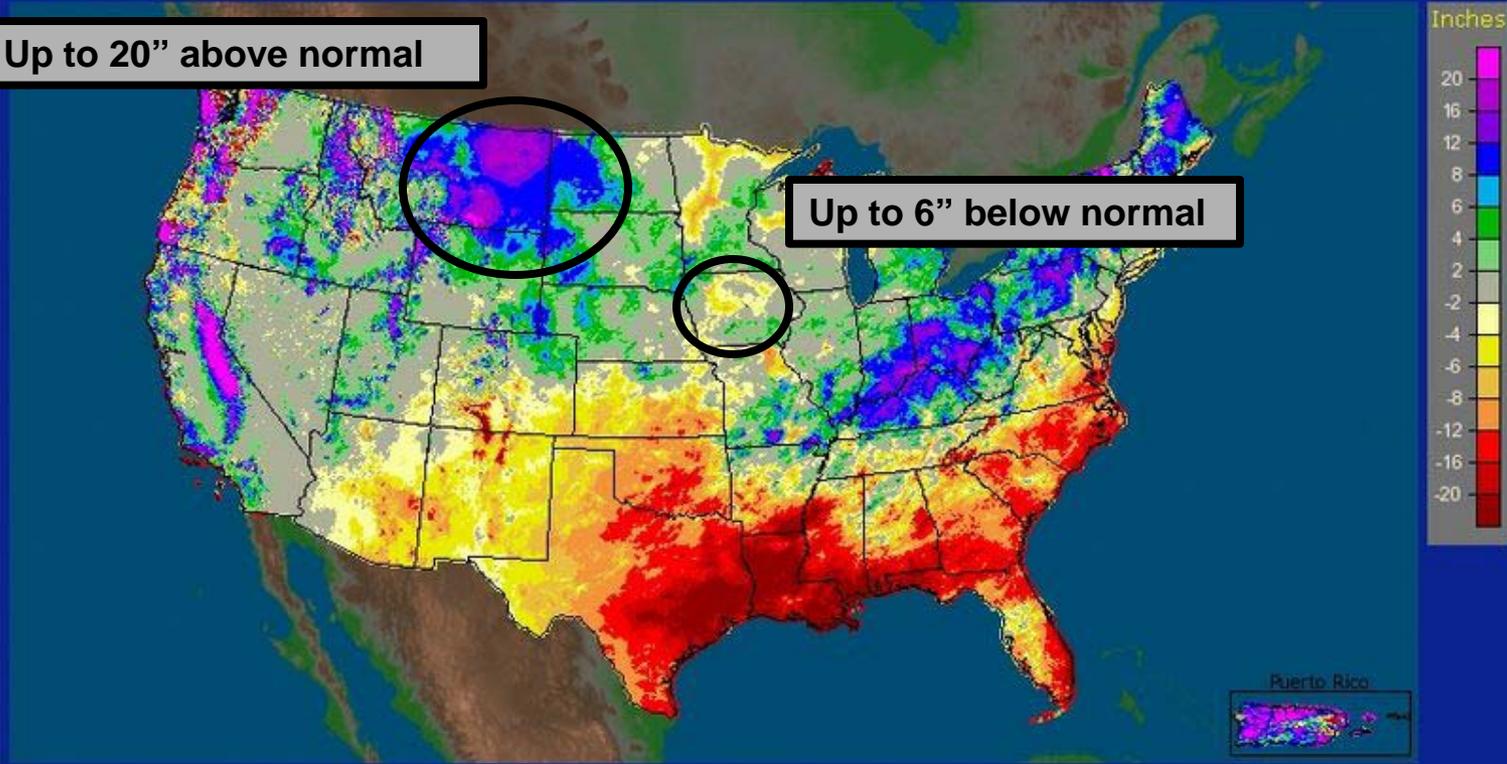
June 2011



Meanwhile . . . in Iowa

CONUS + Puerto Rico: Current Water-Year (Oct 1) Departure from Normal Precipitation
Valid at 6/18/2011 1200 UTC - Created 6/18/11 23:38 UTC

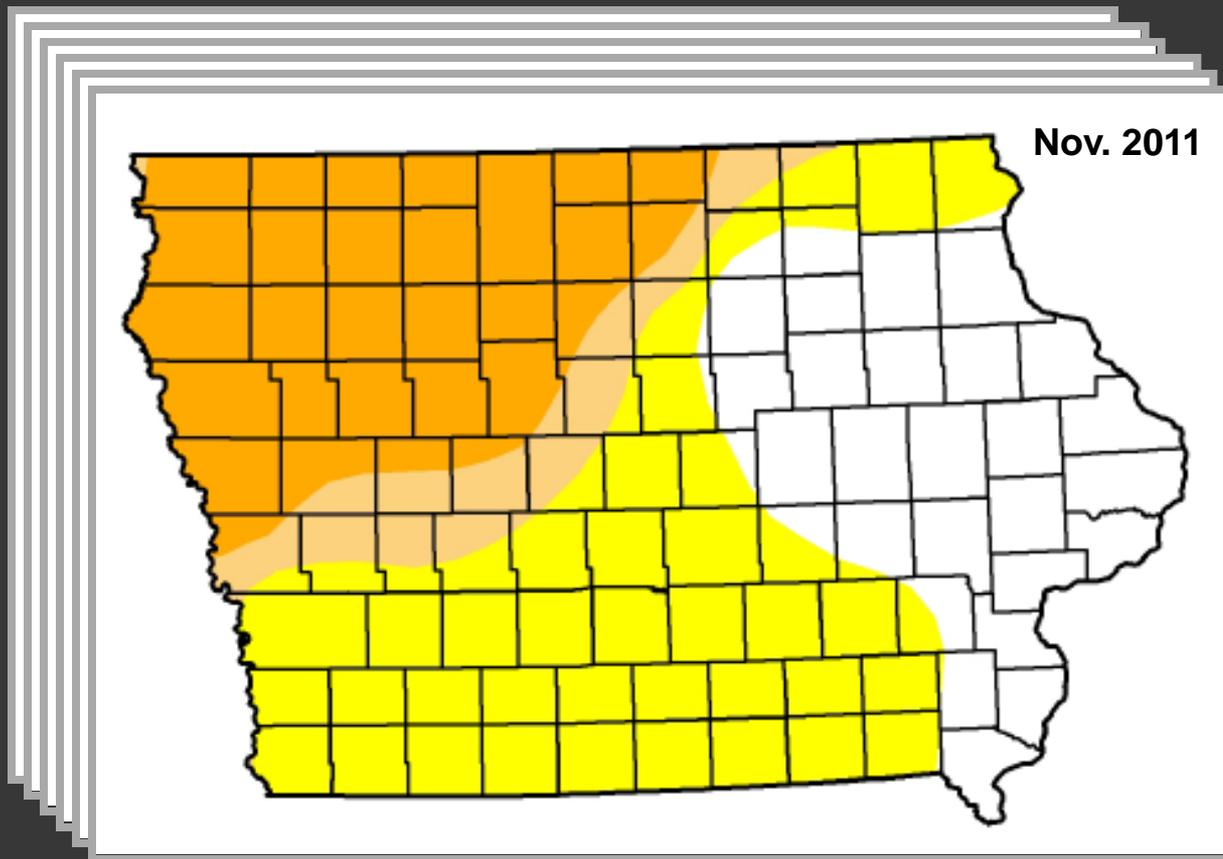
Up to 20" above normal



(October 1 thru June 18, 2011)- Departure from Normal

National Drought Monitor Summer/Fall 2011

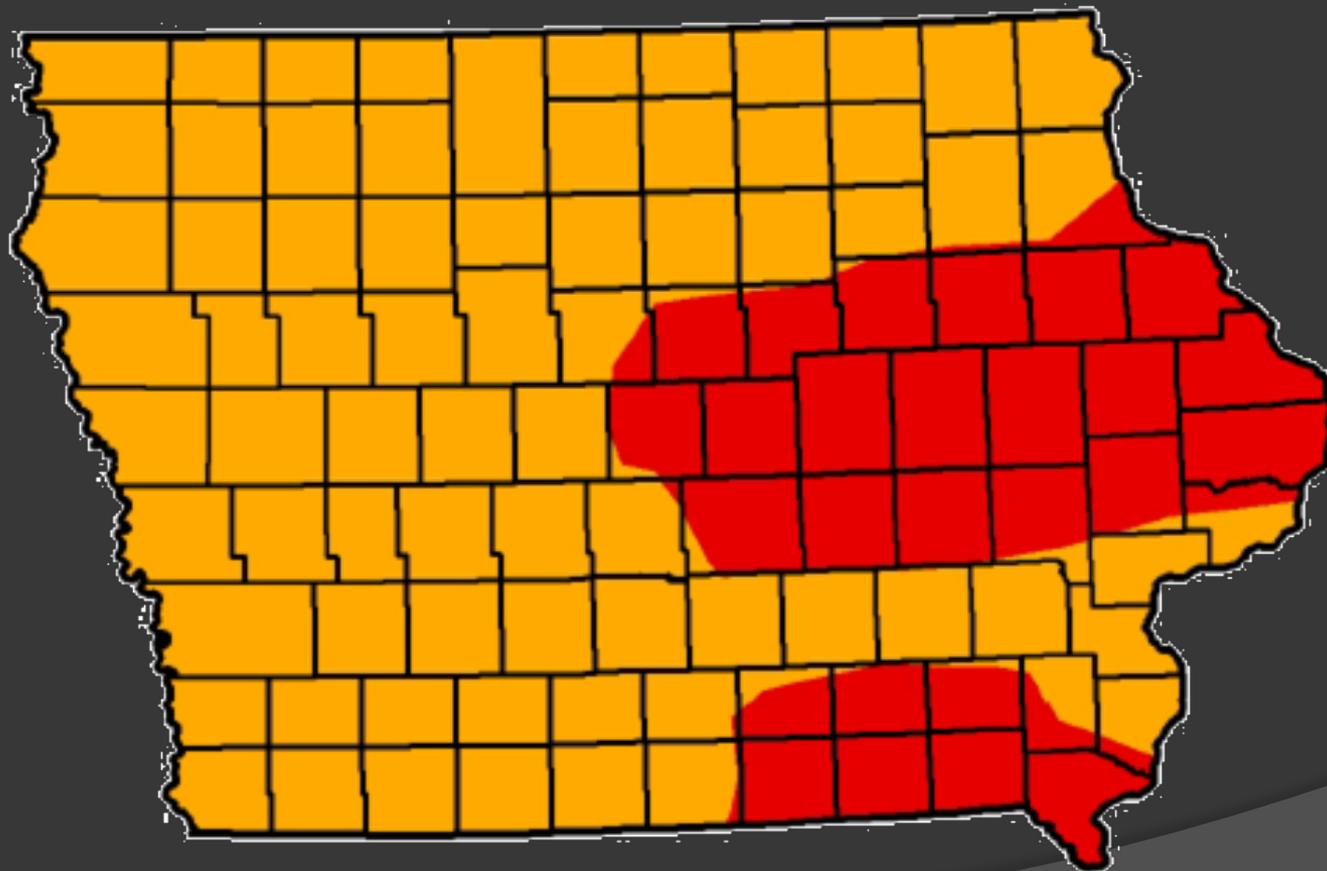
June
July
August
September
October
November





National Drought Monitor

July 26, 2012



What do we know from the past year?

- How bad is it?
- When will it be “over”?
- What can be done?

How bad is it?

Obvious comparisons to the “Dust Bowl” years of the 1930’s.





Northwest Iowa August 23, 2012



Central Iowa – August 20, 2012



08.20.2012

Agricultural Impacts



Storm Lake now at lowest level since '70s

Friday, October 19, 2012

By Dana Larsen, Special to the Daily Reporter

Will the dredge be able to make port?

When veteran lake watcher Mike Brecher took his last depth reading on the lake for the season Oct. 8, the day the dock that he uses for his measurements came out, there wasn't much left to read.

Only 8 inches of water remained at the end of the dock near Sleepy Hollow.



Brecher figures the lake to be more than 35 inches below normal.

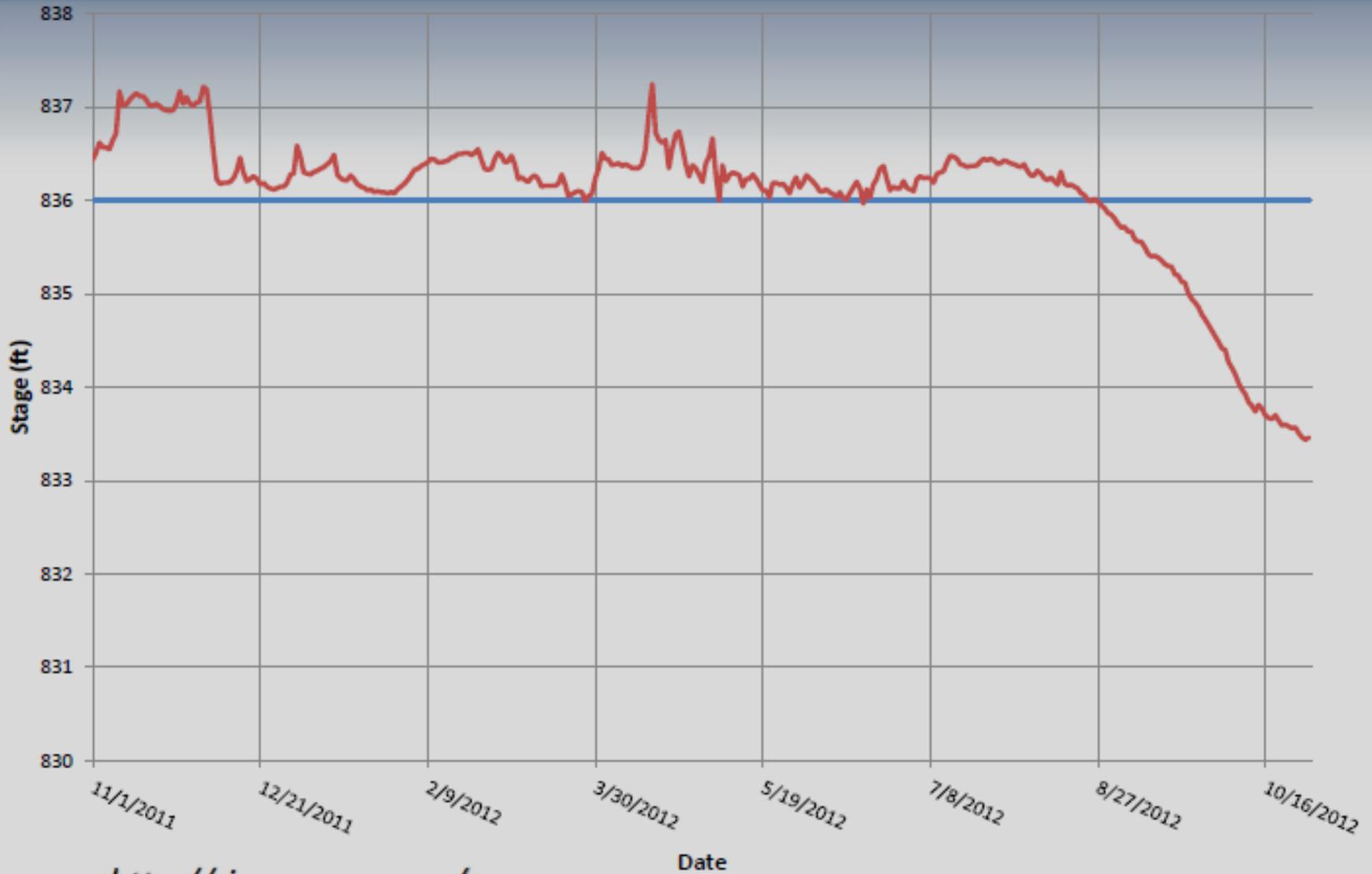




As of 10/29/2012—1 Year



Saylorville Reservoir Pool--Elevation



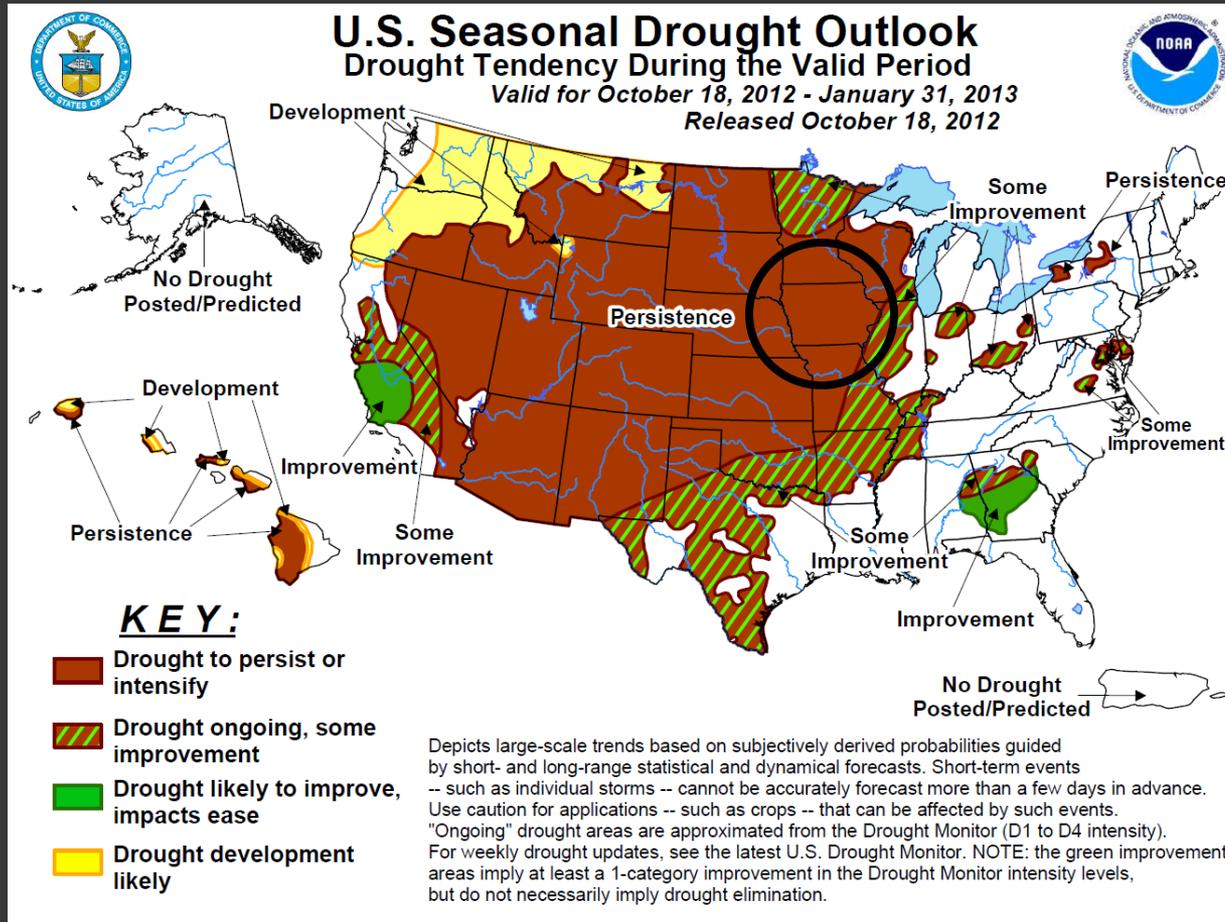
Source: <http://rivergages.com/>

— Target Pool — Pool Elev

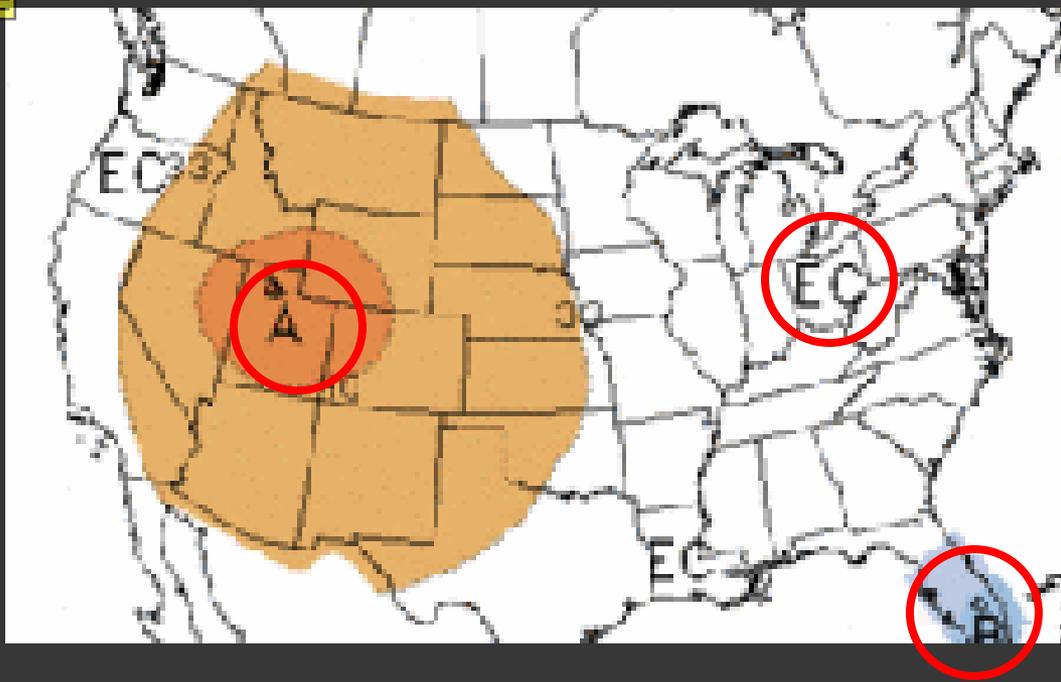
Current Groundwater Levels – Newton Well #20



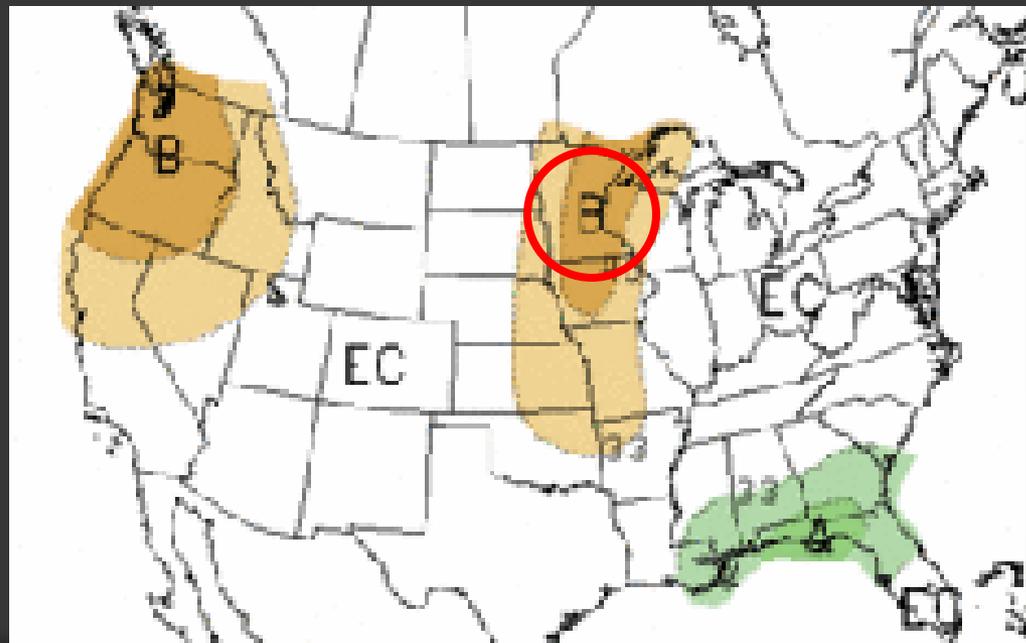
NOAA Prediction – thru Jan. 31, 2013



Temp: Nov-Jan

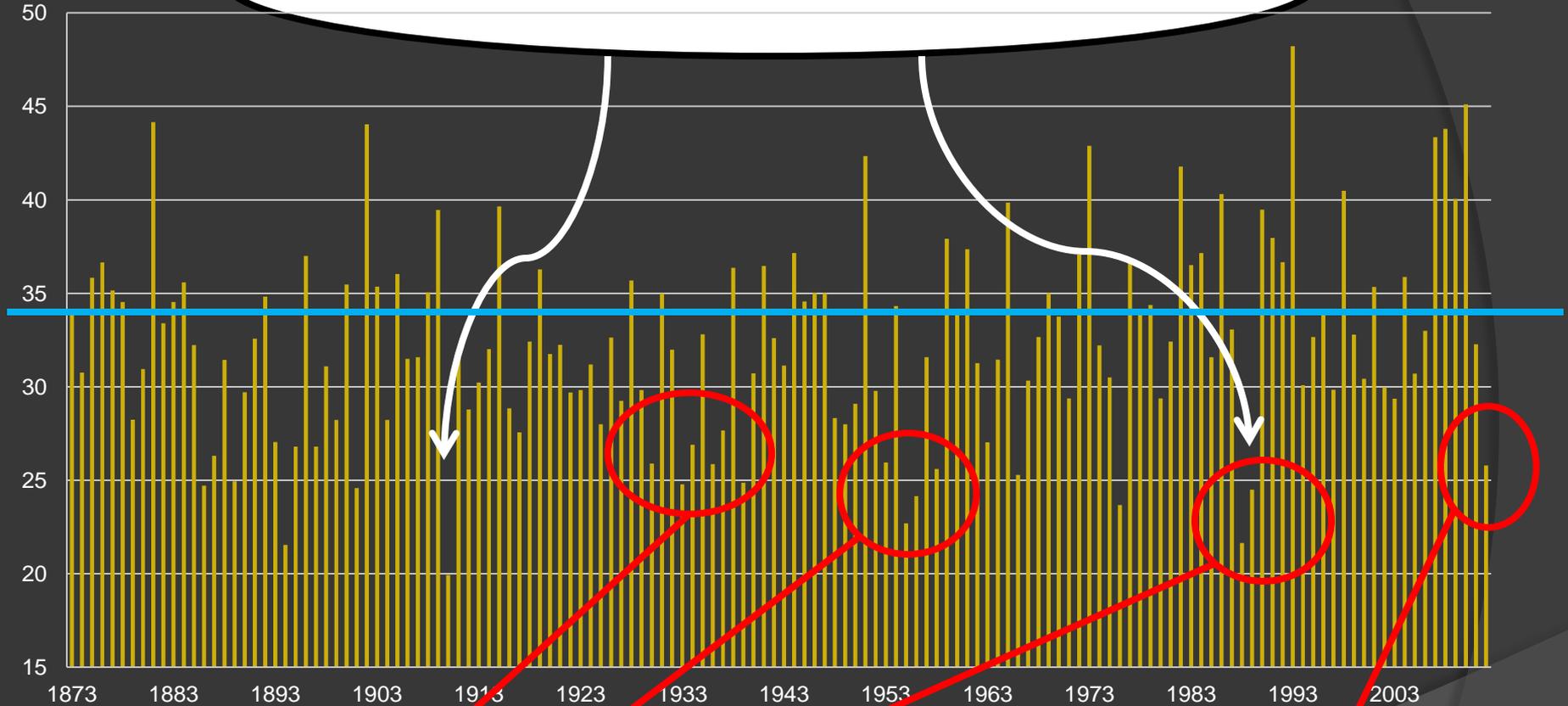


Precip: Nov-Jan



The BIG QUESTION

Are we here? Or here?



1930's: 6 of 10 years

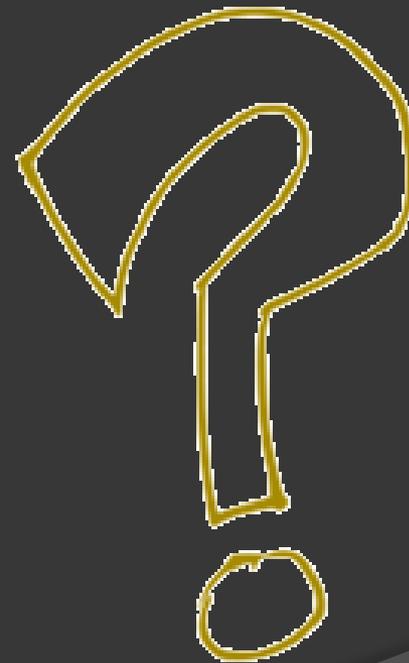
1950's: 4 of 6 years

1988-89: 2 years in a row

2012: projected at ~ 25 inches

The BIG ANSWER . . .

Nobody knows.





What Next ?? . . .

DNR and other agencies will continue to collect data and provide updates (WSU and other pieces).

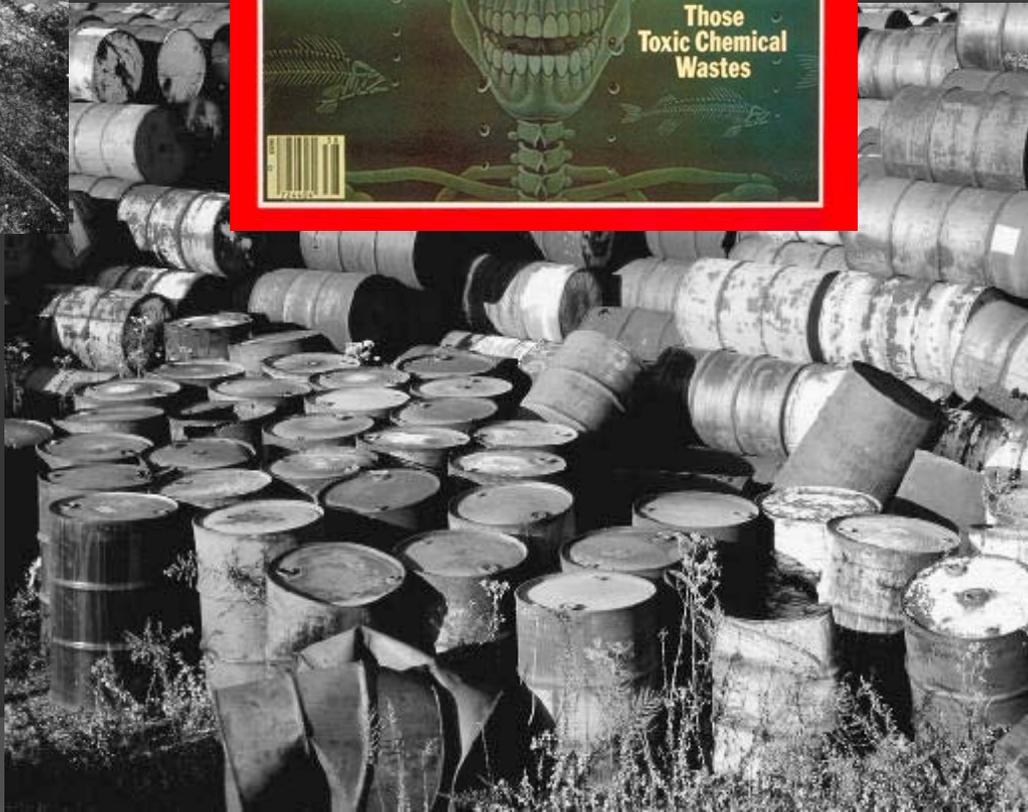
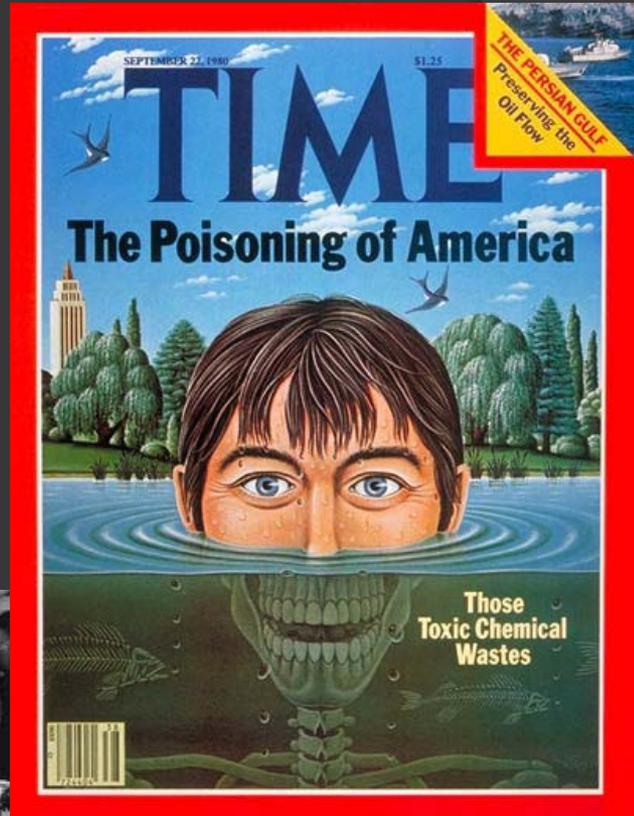
Homeland Security and Emergency Management Division (HSEMD) is looking at coordinating the preparation of a statewide Drought Preparedness Plan in case . . . each Department will be likely continue to do their own planning . . .

If things do not improve over the winter . . . next year could prove very challenging.



Iowa's Groundwater Protection Act of 1987

- A Vision, a Comprehensive, Long-Term Solution to Groundwater Contamination
- How it Started
- What was it designed to do?
- Was it successful? What can we celebrate?
- What needs work?



Des Moines

Sunday Register

THE NEWSPAPER IOWA DEPENDS UPON ■ Des Moines, Iowa ■ May 4, 1986 ■ Price \$1.00

A

SECTION ★ ★ ★

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(USPS 154-780)

Water in Iowa tainted by farming chemicals

REGISTER CHART BY LOREN DOPPENBERG

The ugly side of a bountiful state harvest

Health and environmental
officials expressing alarm

By LARRY FRUHLING

Register Staff Writer

Slowly but surely, the waters be-
neath Iowa's rich earth are becoming



Public Awareness and Good Science

Des Moines Sunday Register
November 16, 1986
Page 1; section A

REGISTER CHART BY LOREN DOPPENBERG



Limits on
farm
chemicals

Favor
78%

Oppose
16%

Don't
know
6%

Biggest threat to water quality

Farm
chemicals
52%

Industrial
waste
38%

Home
waste
1%

Other
2%

Don't
know
7%

Poll: Iowans want limits on ag chemicals

By KENNETH PINS

Register Staff Writer
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As combines lumbered through Iowa's cornfields, harvesting yet another chemically boosted bumper crop, the latest Iowa Poll found that three out of four Iowa adults favor limits on the use of farm chemicals.

About half of the adult population (52 percent) identifies farm chemicals as the biggest threat to the water they drink, followed by 38 percent — mostly urban dwellers — who say industrial waste is the leading culprit.

Last year, a proposal to tax farm pesticides to discourage their use and raise money for research was rejected by what is now the Iowa Department of Natural Resources.

But now it seems Iowans are prepared — in fact, eager — to put a stop to unrestricted use of farm fertilizers, herbicides and insecticides, even if that reduces yields.

Already this year, legislators have drafted a bill that, if passed,

IOWA POLL

Please turn to Page 8A

What Was the Act Designed to Do?

- ◎ Prevent contamination of groundwater from point and nonpoint source pollution
 - Point pollution: originating from a single, identifiable source, e.g., a discharge pipe into a river, an underground tank system, a feedlot, wastewater treatment bypass
 - Nonpoint pollution: soil erosion (sediment), chemical runoff (pesticides, nitrates, manure), storm water runoff

What was in the Act:

- A Vision: The intent of the state is to prevent contamination of groundwater from point and nonpoint sources to the maximum extent practical, and if necessary to restore the groundwater to a potable state, regardless of present condition, use, or characteristics.

The Act was Comprehensive

Establishing programs relating to "...the management of agricultural activities, solid waste disposal, household hazardous wastes, storage tanks, fertilizers, pesticides, landfills, and watersheds...."

The Act created a Groundwater Protection Fund - resourced with fees placed on a range of products and activities

Solid Waste Account: *From* landfill tipping fees, and *For*:

- Creating a Waste Management Authority (DNR)
- Creating the Small Business Assistance Center (UNI)
- Demonstration Projects for recycling and alternatives
- Local Planning and Monitoring
- Closure/Post-Closure Leachate Control
- Created a GIS program (DNR)



Groundwater Protection Fund

Ag-Management Account: *From pesticide dealer and product registration fees and Nitrogen-fertilizer tax:*

- Leopold Center (ISU)
- County well testing and closure (DNR-DPH)
- CHEEC (UI)
- Ag-Drainage Wells (IDALS)

Groundwater Protection Fund

Household Hazardous Waste Account: *From*
retailer permit fees, *For:*

- ⦿ Toxic Cleanup Days (DNR and Local)
- ⦿ Local Recycling and Reclamation Projects

Storage Tank Management Account: *From*
tank registration and annual fees, *For*

- ⦿ Tanks Regulatory Programs (DNR)
- ⦿ Remedial Cleanups (DNR)

Groundwater Protection Fund

Oil Overcharge Account: *From the states legal settlement from oil overpricing, For:*

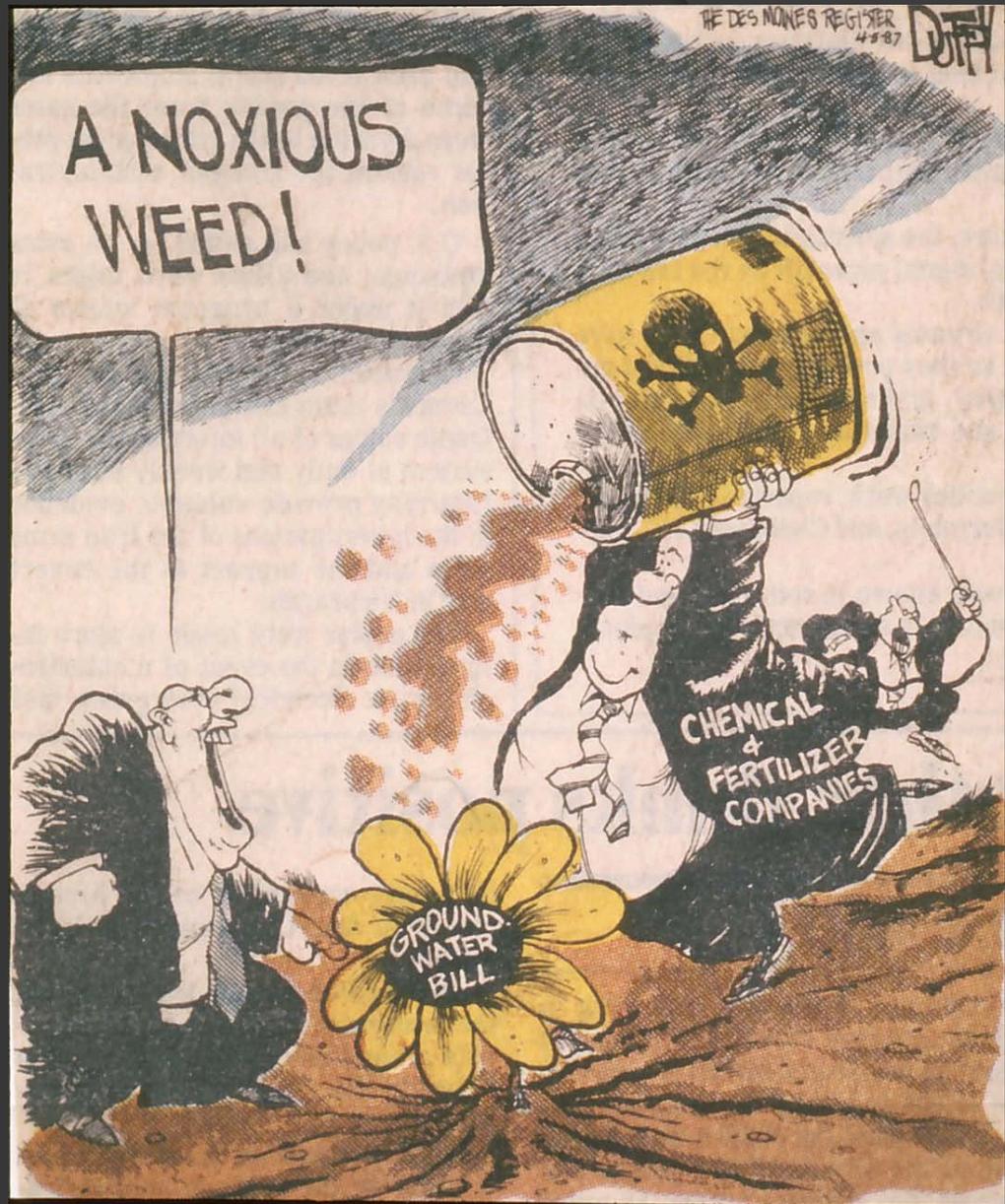
- ⦿ Agricultural Energy Management (DNR, IDALS)
- ⦿ Waste-to-Energy and Solid Waste Management (DNR)
- ⦿ Energy Resource Development

These funded: Big Spring & Integrated Farm Management Demonstration Projects, "Aquitard Hydrology" Studies.

Science + Public
Attention generated
Political action...

...and Pushback...

"Why are we blaming
farming for nitrogen in
groundwater when there
are 30,000 tons of
nitrogen in the
atmosphere over every
acre of Iowa farmland?"



Groundwater Protection Act - Successes

- ⦿ Raised the bar for protective programs - less contamination resulted
- ⦿ Increased technical knowledge of groundwater and contaminant movement in IA
- ⦿ Raised awareness and made studies possible in other states to protect GW resources

Groundwater Protection Act - Legacy

- Offers a model for what we now call "Sustainable Resource Management"
- Wove together Water, Energy, Food - the basics
- Shows the power of combining Science, Policy, and Communication



What Needs Improvement

- Continue to explore ways to encourage conservation of land and water in Iowa
- Work with farmers, landowners, federal, state, and local governments, nonprofits, agribusinesses, community leaders, and Iowa citizens to reduce erosion, minimize chemical inputs



What Can the UST Section Do?

- ⦿ UST and AST systems installed a safe distance from public water systems
- ⦿ Reduce the number of releases
- ⦿ Close out more LUST sites
 - Open LUST sites 1,069
 - High risk: 557
 - Low risk: 270
 - No Action with Free Product: 62
 - Not yet classified: 180



What Can UST Professionals Do?

◎ Education

- Do your clients know why they are so heavily regulated?
- Prevention

◎ You are an environmental professional

