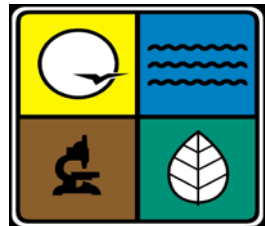


DO YOU HAVE A NEW WELL? NOW WHAT?

Kurt Boeckmann

Missouri Department of Natural
Resources

November 28, 2012



Missouri Department of
Natural Resources



Missouri Department of
Natural Resources



Missouri Department of Natural Resources

U.S. Drought Monitor

May 1, 2012
Valid 7 a.m. EST

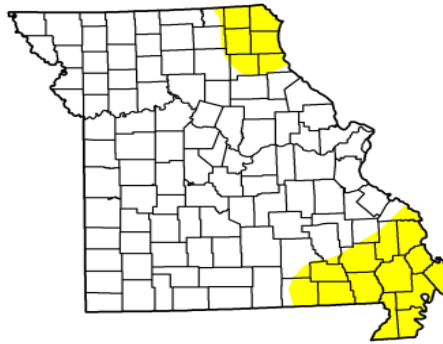
Missouri

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	83.81	16.19	0.00	0.00	0.00	0.00
Last Week (04/24/2012 map)	94.33	5.67	0.00	0.00	0.00	0.00
3 Months Ago (01/31/2012 map)	95.12	4.88	0.00	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	95.48	4.52	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.19	44.81	22.45	8.65	0.00	0.00
One Year Ago (04/26/2011 map)	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

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



U.S. Drought Monitor

June 5, 2012
Valid 7 a.m. EST

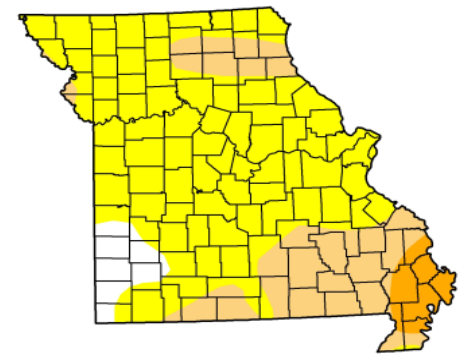
Missouri

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.06	94.94	26.04	4.44	0.00	0.00
Last Week (05/29/2012 map)	44.73	55.27	19.40	2.52	0.00	0.00
3 Months Ago (03/06/2012 map)	95.13	4.87	0.00	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	95.48	4.52	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.19	44.81	22.45	8.65	0.00	0.00
One Year Ago (05/31/2011 map)	100.00	0.00	0.00	0.00	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.



Released Thursday, May 3, 2012

Matthew Rosencrans, Climate Prediction Center/NCEP/NWS/NOAA

<http://droughtmonitor.unl.edu>

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



Released Thursday, June 7, 2012

National Drought Mitigation Center,

<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

July 24, 2012
Valid 7 a.m. EST

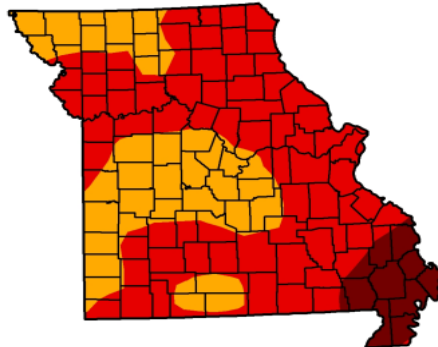
Missouri

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	68.86	8.09
Last Week (07/17/2012 map)	0.00	100.00	100.00	93.49	22.83	0.04
3 Months Ago (04/24/2012 map)	94.33	5.67	0.00	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	95.48	4.52	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.19	44.81	22.45	8.65	0.00	0.00
One Year Ago (07/19/2011 map)	86.63	13.37	0.69	0.00	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.



Released Thursday, July 26, 2012

Richard Heim, National Climatic Data Center, NOAA

<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

August 21, 2012
Valid 7 a.m. EST

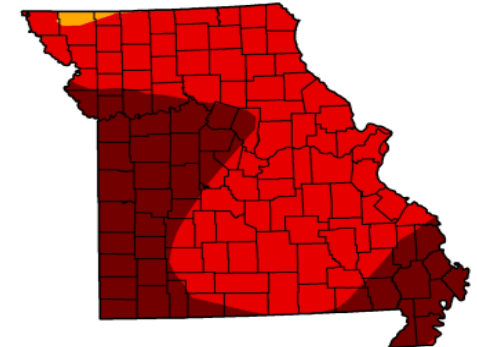
Missouri

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	99.29	35.72
Last Week (08/14/2012 map)	0.00	100.00	100.00	100.00	94.68	35.51
3 Months Ago (05/22/2012 map)	57.52	42.48	7.32	2.52	0.00	0.00
Start of Calendar Year (12/27/2011 map)	95.48	4.52	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	55.19	44.81	22.45	8.65	0.00	0.00
One Year Ago (08/16/2011 map)	25.75	74.25	22.39	3.64	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.



Released Thursday, August 23, 2012

Michael Brewer, National Climatic Data Center, NOAA

<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

November 20, 2012

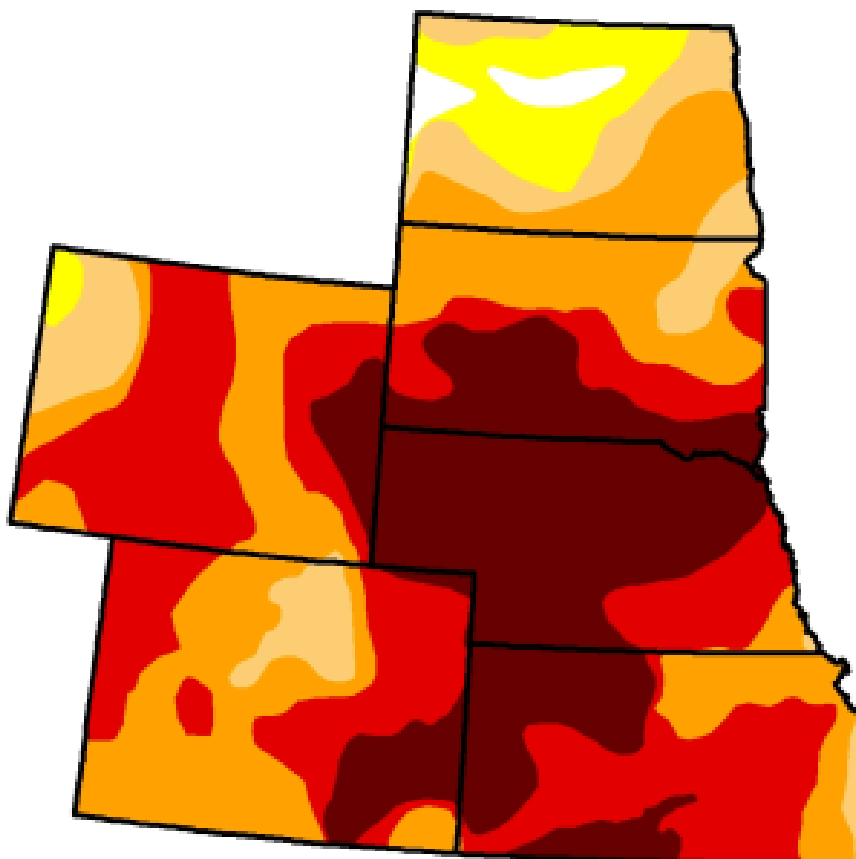
Valid 7 a.m. EST

High Plains

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	1.20	98.80	93.88	84.32	55.94	26.28
Last Week (11/13/2012 map)	1.20	98.80	93.88	84.32	55.92	25.71
3 Months Ago (08/21/2012 map)	4.31	95.69	87.49	76.96	51.72	16.20
Start of Calendar Year (12/27/2011 map)	61.66	38.34	18.12	7.22	2.07	0.04
Start of Water Year (09/25/2012 map)	0.00	100.00	98.91	83.80	61.28	24.35
One Year Ago (11/15/2011 map)	64.46	35.54	22.56	13.44	6.27	2.62

Intensity:



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, November 22, 2012
National Drought Mitigation Center,

U.S. Drought Monitor

November 20, 2012

Valid 7 a.m. EST

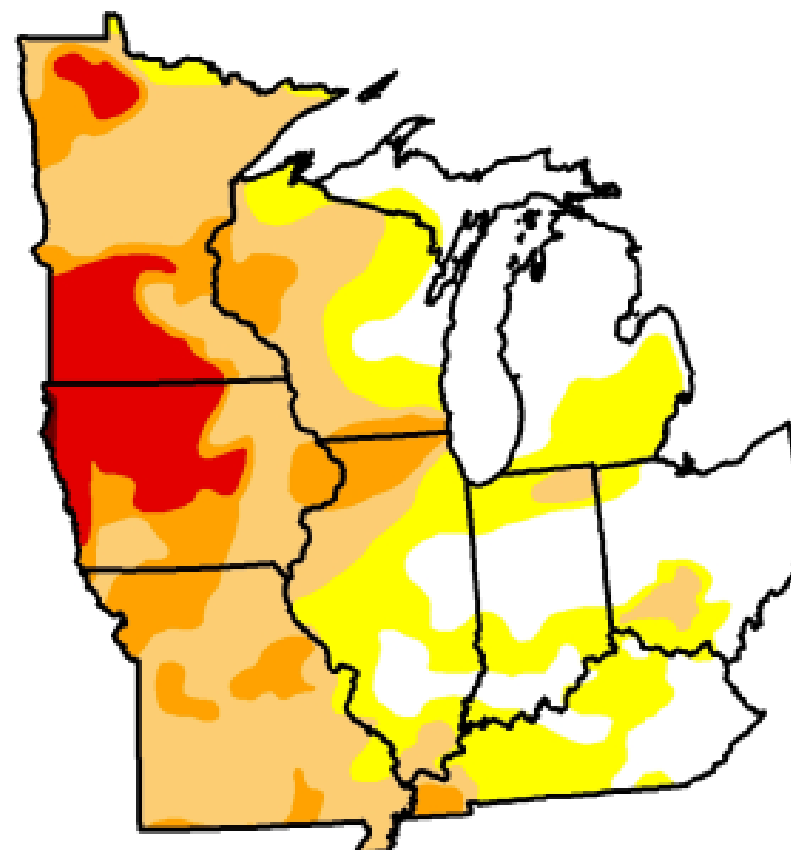
Midwest

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	25.69	74.31	52.48	21.86	8.98	0.14
Last Week (11/13/2012 map)	26.77	73.23	52.66	21.86	8.98	0.14
3 Months Ago (08/21/2012 map)	19.32	80.68	66.32	51.06	35.04	7.17
Start of Calendar Year (12/27/2011 map)	71.84	28.16	13.42	6.80	0.00	0.00
Start of Water Year (09/25/2012 map)	8.75	91.25	67.48	41.58	14.88	0.28
One Year Ago (11/15/2011 map)	57.80	42.20	18.55	6.55	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>



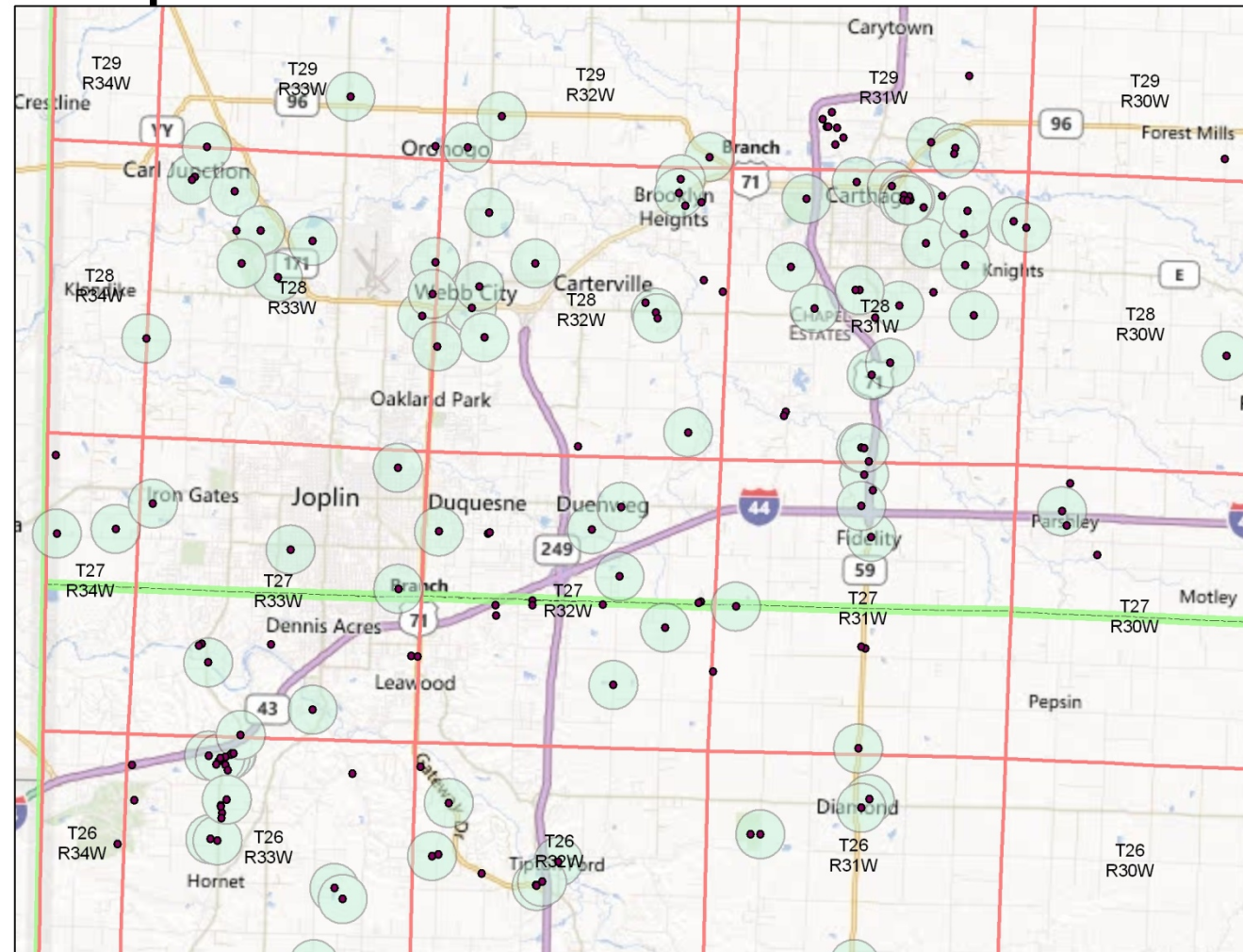
Released Thursday, November 22, 2012
National Drought Mitigation Center,

Drought Assistance Program

In order to be eligible under this emergency cost-share program, the following criteria of EO 12-08 must be satisfied:

1. The landowner applicant must be **engaged in livestock or crop production** and **experiencing a water shortage** caused directly by the current drought conditions;
2. The water shortage being experienced by the landowner applicant is **severely impacting the well-being** of livestock or crop production;
3. The proposed water source development or water distribution practice will **produce an immediate material benefit** to the well-being of the livestock or crop production; and
4. The proposed water source development or water distribution practice will **not adversely affect a public water supply**.

Proposed well locations



All proposed wells were evaluated in relation to public water supply wells

A ½ mile radius buffer zone was applied around all public wells

Depth restrictions were required if necessary

Drought Assistance Program as of November 19, 2012

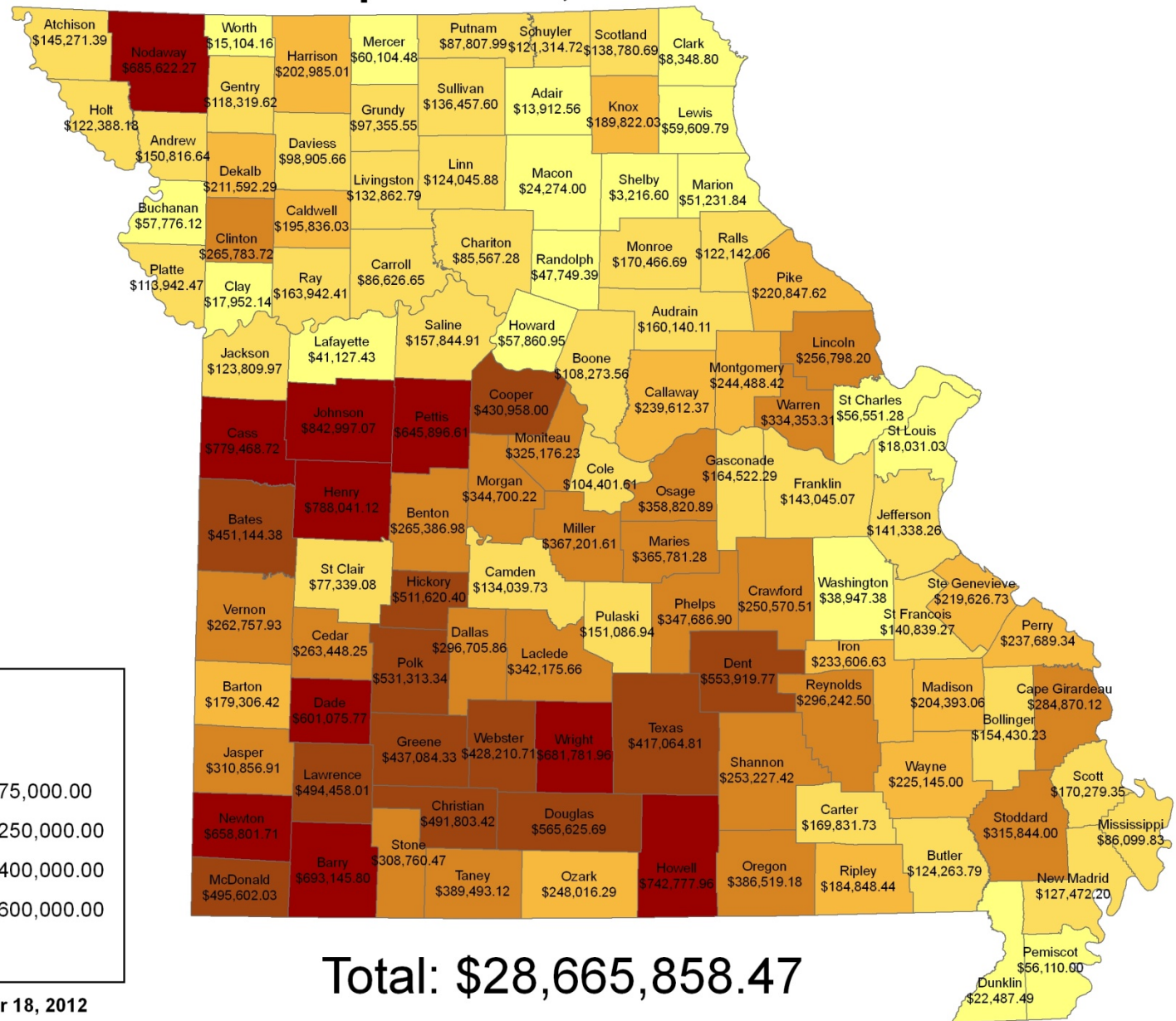
	Approximate Average Cost	# of Projects Approved
LIVESTOCK	\$4,801	5,702
CROP	\$12,696	89
Total		# of Projects Approved
		5,791

Drought Assistance Program as of November 19, 2012

	Approximate Cost	# of Projects Paid
LIVESTOCK	\$19.5 million	4,952
CROP	\$900,000	79
Total		# of Projects
		5,031

FY13 Total Drought Assistance Cost-Share Obligated

September 7, 2012



Created on: September 18, 2012

Missouri Department of
Natural Resources



Missouri Department of
Natural Resources



Grazing Management Practices



Grazing Management

- All participants must have attended a University of Missouri Extension grazing school
- Provides 75% cost-share on practices for implementing or intensifying rotational grazing systems - fencing for paddock divisions, development of watering systems, as well as lime and seed application
- Often ties in with Sensitive Area exclusion practices – timber and riparian areas.



DSP-3 Grazing System

- 1) Individual Components of the practices must be eligible for cost-share and required as minimum and necessary
- 2) After a grazing plan is developed, the DSP-3 practices may be installed independently of others
- 3) The entire grazing system must meet Standard and Specifications for the Prescribed Grazing, Code 528 within three years of first contract payment.
- 4) Additional enhancements can be made

Grazing Management Practices



- DSP-02 Permanent Vegetative Cover Enhancement

- ➔ ■ DSP 3.1 Grazing System Water Development

- ➔ ■ DSP 3.2 Grazing System Water Distribution

- DSP 3.3 Grazing System Fence

- DSP 3.4 Grazing System Lime

- DSP 3.5 Grazing System Seed

DSP 3.1 Water Development

- Least cost alternative of pond, well or spring development

Cost is determined by the acres which are served by the water source.

- Pond – new or reconstructed
- Well – new or reconstructed
- Limited Access

Cost-share rate = **Max \$95 / Acre**

Well Eligible Items for Cost-Share

State Average Cost

- Drilling, casing, grout, liner
- Well house
- Submersible pump
- Pressure tank
- Miscellaneous well components

NRCS Standard for Water Well, Code 642

DSP 3.2 Water Distribution

- Distribution of water to paddocks
 - Cost is determined by the acres in paddocks receiving water*
- Number of paddocks or acres in system must be increased to be eligible for additional water distribution
- Eligible to any paddock containing no water
- Cost-share rate = **Max \$ 85/ Acre**

Permanent Tanks



Permanent Tanks



Portable Tanks



N574 Spring Development



Grazing Policies

The acres served for each category are based on the portion of the system in which the grazing efficiency is improved.

Existing systems will be eligible for per acre maximums only to increase number of paddocks or to add additional acres to the system

Grazing Policies

- System manager is required to attend grazing school prior to contract approval
- No commission cap on total dollars per landowner for the practice
- No time limit for enhancement of systems

Grazing Systems \$ / Acre Maximums

- Water Development \$95 / Acre
- Water Distribution \$85 / Acre
- Fence \$60 / Acre
- Lime \$50 / Acre
- Seed \$40 / Acre

Sensitive Area Practices



Exclusion Practices

Sensitive Area Protection

- Provides the landowner 75% cost share on practices for exclusion fencing, water development and distribution, critical area seedings, and well decommissionings
- Provides the landowner out of production incentives for not being able to utilize grazing or crop ground contained in sensitive areas, such as timber and streams



- Exclude livestock from both sides of a stream.
- Provide a new water source.
- Landowner receives financial incentive.



myecoproject.org



N391 Riparian Forest Buffer



1984 cattle removed in 1988

**1998 same location
10 years protected from
livestock**



Woodland Erosion Practices



N472 Use Exclusion

- N472 Use Exclusion
 - Protect soil and plant resources from grazing by livestock.
 - Incentive for excluded area.



- Exclusion fence.
- Exclusion of an existing pond.

Problems with direct watering (sensitive areas)

- damage to banks of streams and dugouts
- loss of riparian habitat and vegetation
- nutrient buildup in both the source and downstream water bodies
- rapid growth of weeds and algae
- loss of water storage in dugouts and streams
- deterioration in water quality.



Problems with direct watering

- increased exposure to water-transmitted diseases, bacteria, viruses and cyst infections
- foot rot, leg injuries
- stress
- death by drowning from falling through the ice or being stuck in mud
- reduced rates of gain.
- overgrazing near the water source
- poor nutrient transfer caused by an accumulation of manure in the area near the water source



Missouri Department of
Natural Resources



Planning A Grazing System



Date: _____ Date: _____

89 - PUTTAMACD
140 WEST 2580 STREET
MARIETTA, MO 64454
(660) 426-2141 (X.1)

Contract Number
DA 098-13-0006

Landowner TIN:
XXX-XX-5746

MISSOURI DEPARTMENT OF NATURAL RESOURCES
SOIL AND WATER DISTRICT'S COMMISSION
COST-SHARE ASSISTANCE CONTRACT PAYMENT
INSR OFFICE USE ONLY

INSR VOUCHER#
ALLEN, BRIAN K. AND KRISTY R.
21465 AARLOWY, MO 65332
GREEN RIDGE, MO

Legal Owner: ALLEN, BRIAN K. AND KRISTY R.
MAXIMUMS: Practor 20000.00
COST-SHARE ASSISTANCE 2013

Contract Payment Approved:
Amount Installed: 5,000 AC

CLASSIFICATION:
2-1
POSTINSTALL (G)

COOPERATORS SIGNATURE - If the contractor is not a Missouri resident, the contractor must be a Missouri resident and the contractor must be a Missouri resident.
Brian K. and Kristy R. Allen
BRIAN K. AND KRISTY R. ALLEN
TECHNICIAN CERTIFICATE
I hereby certify that the above information is true and correct.
TECHNICIAN SIGNATURE: *Brian K. and Kristy R. Allen*
SOIL AND WATER CONSERVATION DISTRICT CERTIFIED
No. the supervisor of this work shall be the person in charge of the work.
AUTHORIZED BY: *[Signature]*
FOR COMMISSION OFFICE USE ONLY
AUTHORIZED BY:

10/14/2012 - Monday - October 1, 2012

Benefits of a well planned system

- improved herd health
- increased livestock production, in some situations
- better pasture utilization
- riparian protection and, thus, a more environmentally friendly livestock industry
- an alternative winter water supply and system for livestock away from the farmyard, which reduces manure hauling costs, manure buildup in the calving area and associated animal health problems.



Considerations When Planning Watering Systems

- site locations and conditions (remote location, topography, riparian features)
- number of livestock
- access to power source (mainline power, solar, wind, animals, etc.)
- pumping system (amount of lift, automated versus manual)



Considerations When Planning Watering Systems

- flexibility and portability
- reliability and maintenance
- temporary or seasonal water storage
- cost/benefit and cost/animal
- personal preference



Conservation Plan Map

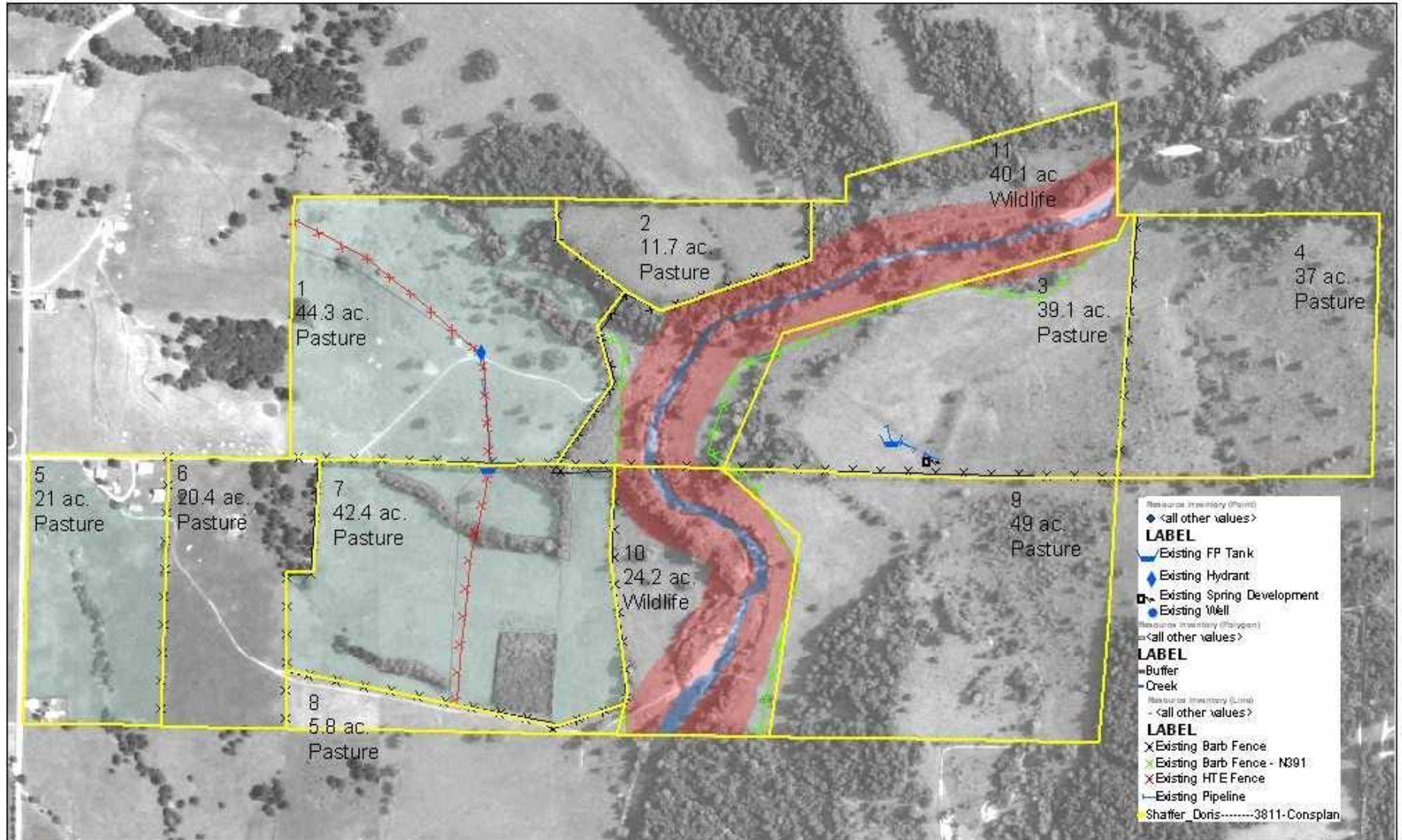


Image: 2005 Aerial Photo



Getting The Word Out

- Field Days
- Pasture Walks
- Newsletters
- Post Cards
- Coffee Shop
- County Fair
- Fence Demos



Thank you for listening.
Questions?

