DOE Water-Energy Nexus Overview

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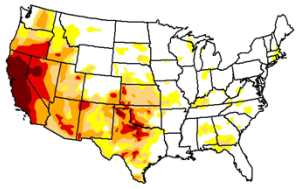
U.S. DEPARTMENT OF ENERGY | Fossil Energy

U.S. Drought Monitor
CONUS

August 12, 2014
(Released Thursday, Aug. 14, 2014)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	52.81	47.19	33.61	22.03	10.24	3.79
Last Week 8/5/2014	52.44	47.56	33.94	22.19	10.19	3.84
3 Months Ago 5/13/2014	51.21	48.79	38.08	28.04	14.00	4.46
Start of Calendar Year 12/31/2013	48.24	51.76	30.95	16.67	3.96	0.37
Start of Water Year 10/1/2013	39.57	60.43	41.21	20.70	3.06	0.29
One Year Ago 8/13/2013	42.70	57.30	45.26	31.57	11.77	2.03

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

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

Author(s):
Richard Tinker
CPC/NOAA/NWS/NCEP

USDA

http://droughtmonitor.unl.edu/

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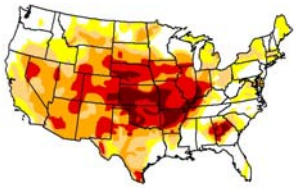
U.S. Drought Monitor
CONUS

August 14, 2012
(Released Thursday, Aug. 16, 2012)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	22.32	77.68	61.77	45.54	23.68	6.26
Last Week 8/7/2012	21.89	78.14	62.46	46.01	24.14	4.21
3 Months Ago 5/8/2012	46.21	54.79	33.64	16.39	5.71	1.92
Start of Calendar Year 1/3/2012	50.41	49.59	31.90	16.83	10.10	3.32
Start of Water Year 9/27/2011	56.45	43.55	29.13	23.44	17.80	11.37
One Year Ago 8/16/2011	55.14	44.86	31.00	23.43	17.37	10.83

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

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

Author(s):
Michael Brewer
NCDC/NOAA

USDA

http://droughtmonitor.unl.edu/

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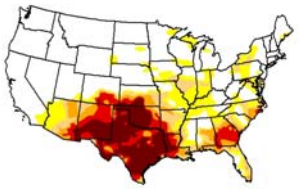
U.S. Drought Monitor
CONUS

August 16, 2011
(Released Thursday, Aug. 18, 2011)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	55.14	44.86	31.00	23.43	17.37	10.83
Last Week 8/9/2011	55.01	44.99	32.85	24.74	18.48	11.48
3 Months Ago 5/17/2011	67.69	32.31	26.35	20.68	13.18	6.04
Start of Calendar Year 1/4/2011	60.50	39.50	21.74	8.50	2.60	0.00
Start of Water Year 9/28/2010	69.05	30.95	13.16	3.08	0.30	0.00
One Year Ago 8/17/2010	72.40	27.60	9.46	1.66	0.14	0.00

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

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

Author(s):
Laura Edwards
Western Regional Climate Center

USDA

http://droughtmonitor.unl.edu/

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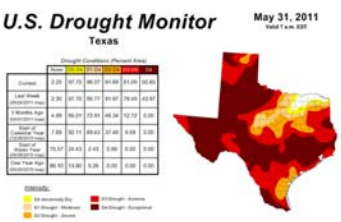
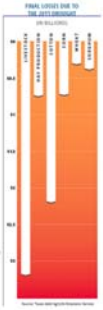
Could Water Conservation in the Thermoelectric Power Sector Have Helped to Mitigate Agricultural Impacts of Drought?

U.S. Drought Monitor
Texas

May 31, 2011
Valid 7 a.m. EST





Agricultural loss of nearly $7.6 billion due to 2011 drought resulted in pressure applied against all industries

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Courtesy: NETL

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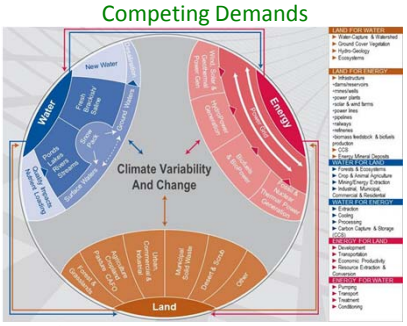
Drivers – Water/Energy/Land

Competing Demands



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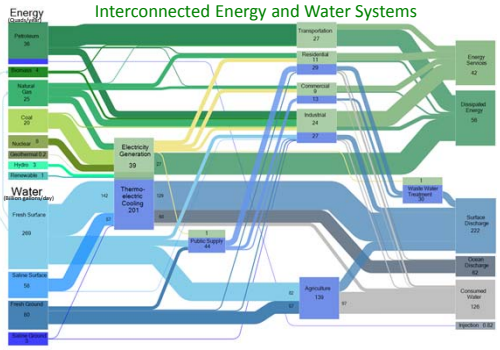
Sankey Diagram: Contiguous U.S.

Interconnected Energy and Water Systems



Collaboration Opportunities

Many current and potential partners in the water-energy arena.

- Federal agencies have important activities at the water-energy nexus, as do regional, state, tribal, and local authorities
- Non-Federal Government
  - private companies
  - national non-governmental organizations (NGOs)
  - international governments
  - universities
  - and municipal facilities
- Working with NETL to develop strategic R&D initiatives that improve the efficiency of water use by the power industry

Water-Energy Nexus Initiative

Strategic Pillars / Challenges

1. Optimize the freshwater efficiency of energy production, electricity generation, and end use systems
2. Optimize the energy efficiency of water management, treatment, distribution, and end use systems
3. Enhance the reliability and resilience of energy and water systems
4. Increase safe and productive use of nontraditional water sources
5. Promote responsible energy operations with respect to water quality, ecosystem, and seismic impacts
6. Exploit productive synergies among water and energy systems

http://www.energy.gov/sites/prod/files/2014/07/f17/Water%20Energy%20Nexus%20Full%20Report%20July%202014.pdf

Questions?

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