

**Guidance for Routine
Surface Water Quality
Monitoring During Extended
Drought**



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Environmental Quality
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Drought Conditions in Texas as Reported by the National Drought Mitigation Center

U.S. Drought Monitor

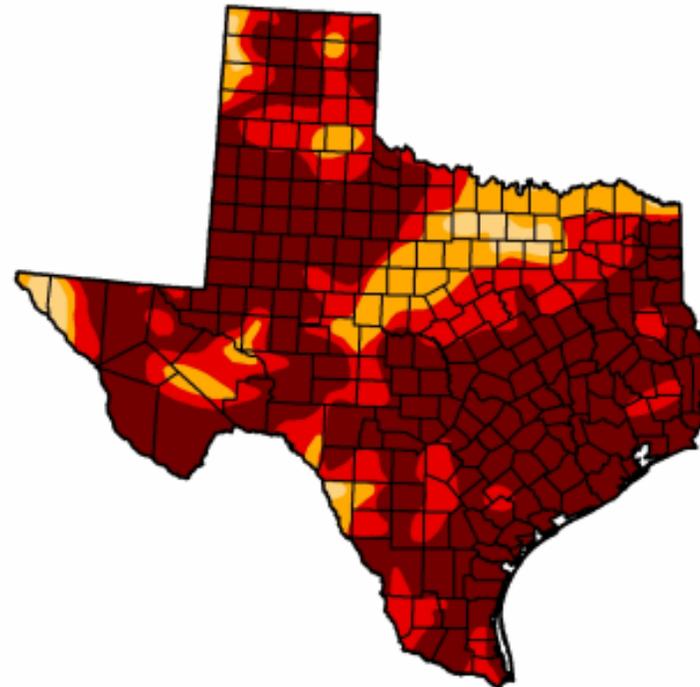
Texas

November 22, 2011

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	97.44	86.75	62.97
Last Week (11/15/2011 map)	0.00	100.00	100.00	97.57	88.76	65.11
3 Months Ago (08/23/2011 map)	0.00	100.00	99.93	99.01	94.42	77.80
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
One Year Ago (11/16/2010 map)	43.84	56.16	25.09	4.83	0.00	0.00



Intensity:

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

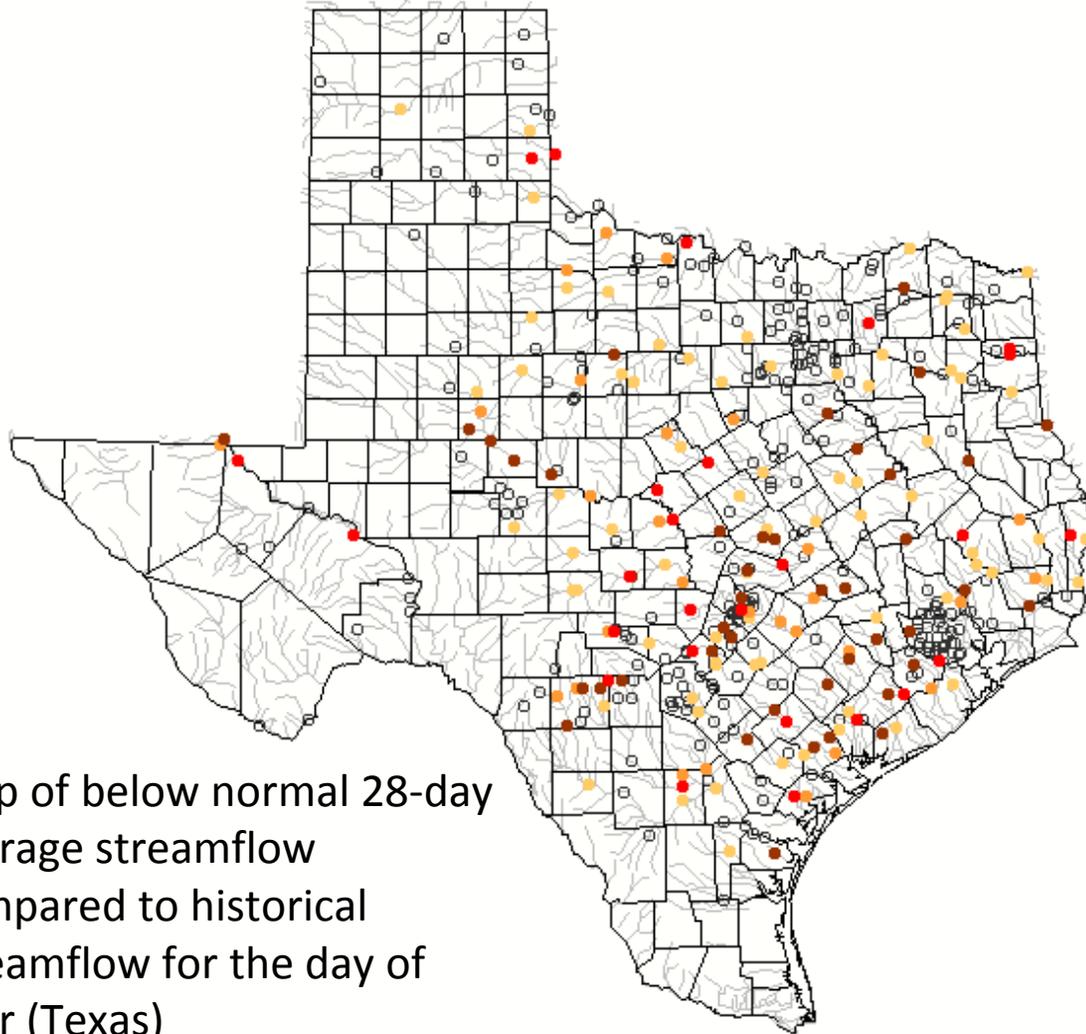
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Wednesday, November 23, 2011
Anthony Artusa, NOAA/NWS/CPC

Sunday, November 27, 2011



Map of below normal 28-day average streamflow compared to historical streamflow for the day of year (Texas)

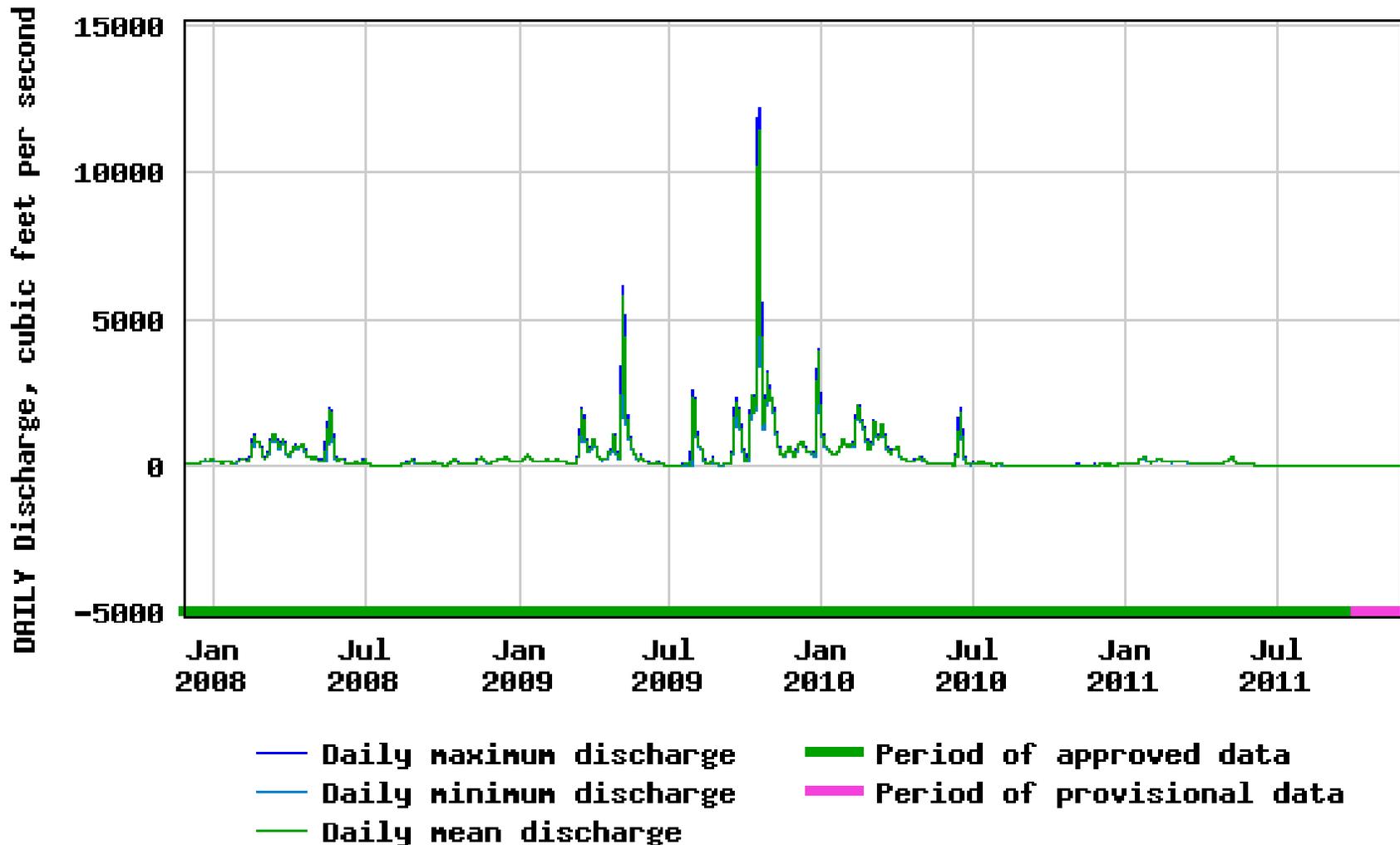


Geographic extent of drought significantly altering flow regimes on a statewide scale.

Explanation - Percentile classes				
New low	≤ 5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	



USGS 07346045 Black Cypress Bayou at Jefferson, TX



Marked local effects of the extended drought on the flow regimes of individual streams

TCEQ Routine Water Quality Monitoring During Extended Drought: Meeting Administrative Requirements

- Texas Water Code
Sec. 26.0135. WATERSHED MONITORING AND ASSESSMENT OF WATER QUALITY. (a) To ensure clean water, the commission (TCEQ) shall establish the strategic and comprehensive monitoring of water quality and the periodic assessment of water quality in each watershed and river basin of the state.
 - The monitoring program shall provide data to identify significant long-term water quality trends, characterize water quality conditions, support the permitting process, and classify unclassified waters.



TCEQ Guidance for Routine Surface Water Quality Monitoring During Extended Drought: Meeting Monitoring Commitments

- Coordinated monitoring makes collecting and analyzing data on surface water more efficient for the Surface Water Quality Monitoring Program and its participants—the Clean Rivers Program, other state and federal agencies, municipalities, and others.
- Coordinated Monitoring Schedule (CMS) is usually planned and developed from January through May of the fiscal year preceding the year for which monitoring activities are planned.
- CMS lays out the plan and describes commitments for surface water quality monitoring activities in Texas. The CMS can be found at the following link:

– <http://cms.lcra.org/>

TCEQ Guidance for Routine Surface Water Quality Monitoring During Extended Drought: Rationale

- To meet regulatory and cooperatively agreed upon commitments for TCEQ surface water quality monitoring activities during the drought to fulfill the mission of monitoring and assessing surface waters in Texas.
- To gather water quality, biological and physical habitat data to document the effects of the extreme low flows, and low reservoir levels, and to make this data available to programs at the TCEQ.
- To reconcile the needs of TCEQ programs for data on water quality relative to extreme drought, and the need to avoid placing water bodies on the 303d list inappropriately due to sampling during extreme low flow/reservoir level.
- Collect data to characterize conditions during the drought that can be used in determining the appropriate use of the data. (e.g. status of reservoir capacity, total depth, pool size, antecedent rainfall, etc.)
- To effectively characterize the drought and when it started to have a significant impact on water quality?
- To collect data to contribute to determining how can a water body be "labeled" as no longer meeting its uses, as specified in TSWQS because of natural conditions?

Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought

Three Primary Sections of the Drought Monitoring Guidance:

- A. General Surface Water Quality Monitoring Guidance during extended drought conditions;
- B. Guidance for Surface Water Quality Monitoring in Lakes and Reservoirs during extended drought conditions;
- C. Guidance for Surface Water Quality Monitoring in rivers and streams during extended drought conditions;



Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought: Section A, General Guidance

Continue to conduct **routine** surface water quality monitoring (SWQM) activities according to commitments specified in the statewide Coordinated Monitoring Schedule (CMS) <<http://cms.lcra.org/>>.

Collect and report surface water quality data according to the following guidelines:

1. Schedule, and travel to SWQM monitoring sites, as you would normally do to meet routine commitments on the CMS;
2. If you know, or can determine, reliably that the scheduled river/stream monitoring site is dry, it is not necessary to travel to the site. Report parameters according to guidance for rivers and streams with dry channel at monitoring station in section C. Similarly, if you know that the lake or reservoir monitoring site cannot be accessed it is not necessary to tow a boat to the lake, report parameters according to the guidance for lakes and reservoirs in section B.
3. Upon arrival at the monitoring site, photo document flow/reservoir level conditions, photo document even if the monitoring site is dry.

• Can you safely launch and navigate to within 400 meters of established routine monitoring site?

YES



- 1) Navigate as close as safely possible to routine monitoring site and collect routine monitoring samples as specified in CMS;

NO



- 1) Do not collect routine monitoring samples as in CMS;
- 2) Report a value of 1 for parameter code 00051, reservoir/site access not possible, water level too low;

For any lake or reservoir site:

- 1) Report reservoir stage (PC 00052);
- 2) Report reservoir percent full (PC 00053);
<http://wiid.twdb.state.tx.us/ims/resinfo/BushButton/lakeStatus.asp?selcat=3&slbasin=2>
- 3) Report days since last significant precipitation (PC 72053)

Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought: Section B, Lakes and Reservoir Monitoring



Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought: Section C, Rivers and Streams

Scenario 1: Water present in the channel within 400 meters of routine monitoring site. If pooled, the pool is at least 10 meters in length and 0.4 meters deep.

- Collect routine water quality monitoring samples as close as possible to established routine monitoring site;
- Report Total Depth (PC 82903) at the point where the sample is collected;
- If pooled, report a value of 1 for Flow Severity (PC 01351), and 0 cfs for flow (PC 00061);
- Report Days Since Last Significant Precipitation (PC 72053).
- Report Pool Characteristics.



Neches R. near Tyler August 2011

Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought: Section C, Rivers and Streams

Scenario 1: Water present in the channel within 400 meters of routine monitoring site. If pooled, the pool is at least 10 meters in length and 0.4 meters deep.

- Report pool characteristics:
 - Percent pool coverage in 500 – 800 meter reach (PC 89870);
 - Maximum pool width (PC 89864);
 - Maximum pool depth (PC 89865);
 - Maximum pool length (PC 89869);
 - Description of location of main pool relative to bridge crossing, as well as presence of fish, mussels, or other wildlife;
 - Photo document conditions.



Neches River near Tyler August 2011

Guidance for TCEQ Routine Surface Water Quality Monitoring During Extended Drought: Section C, Rivers and Streams

Scenario 2: Channel dry in 500 – 800 meter reach around routine monitoring station, or pools present but smaller than minimum specified size.

- Report a value of 6, stream channel dry, for Flow Severity (PC 01351);
- Do not report a value for flow (PC 00061);
- Report the actual number of days since last significant precipitation (PC 72053);
- Report comments and photo document conditions.



Neches R. near Tyler, September 2011

Summary

- TCEQ required by law to monitor and assess water quality;
- Monitoring commitments to meet regulatory requirements are cooperatively planned and specified in the Coordinated Monitoring Strategy (CMS);
- Drought monitoring guidance developed to ensure continuity of monitoring activities during extended drought and to meet legal requirements and commitments;
- Drought monitoring guidance attempts to address monitoring during extended drought in most freshwater habitats in Texas including lakes, reservoirs, small streams, and rivers;
- Data collected are available to other TCEQ programs, as well as the public and outside agencies as parameterized values via SWQMIS.

