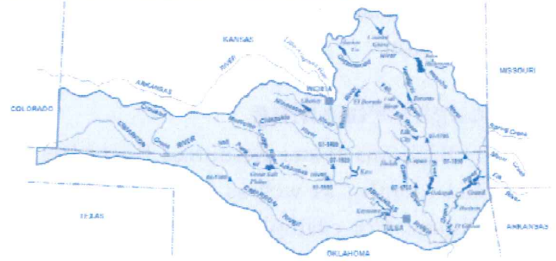


OKLAHOMA COMMISSIONERS' REPORT

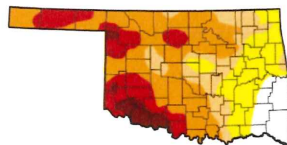
Kansas-Oklahoma
Arkansas River Compact Commission
Marion, Kansas
October 15, 2014



CLIMATE

Despite the system that moved across much of the southern Plains this week, drought has intensified once again thanks to a very dry August, September, and early October period. The Climate Prediction Center's most recent forecast calls for drought to improve somewhat across much of western Oklahoma through December. Nearly the entire state is experiencing drought conditions, with at least 20% of the state labeled as "extreme." On average, the state is 7.38 inches below normal precipitation, the 18th driest since 1921. The National Drought Mitigation Center (NDMC) has upgraded the drought designation in southern and southwestern Oklahoma from "extreme" to exceptional -- the most severe of their five drought intensity levels. NDMC characterizes the drought impact in the southern quarter of the state as "exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams and wells creating water emergencies." West Central Oklahoma's deficit of 8.38 inches ranks as it's tenth driest.

U.S. Drought Monitor
Oklahoma



October 7, 2014
(Released Thursday, Oct. 9, 2014)
Valid 8 a.m. EDT

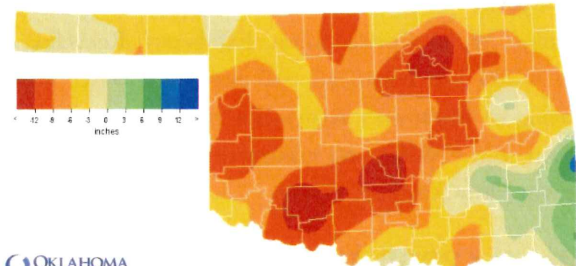
	Drought Conditions (Percent Area)					
	None	Slight	Mod	Severe	Ext	
Current	0.00	01.40	73.44	18.20	21.00	4.94
Last Week	0.00	05.40	70.30	18.10	20.90	4.64
1-Month Ago	0.00	04.00	69.10	19.60	20.30	6.70
Start of Calendar Year	50.84	45.16	30.17	10.80	4.84	2.40
Start of Water Year	0.00	01.40	70.30	18.10	20.90	4.64
One Year Ago	22.70	77.30	42.81	18.12	4.42	1.45

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

The Drought Monitor focuses on immediate conditions. Local conditions may vary. See accompanying text summary for forecast alternatives.

Author:
Marty Garbrecht
National Drought Mitigation Center

USDA
<http://droughtmonitor.unl.edu/>



OKLAHOMA CLIMATOLOGICAL SURVEY
Departure from 1981-2010 Normal Rainfall
Last 365 Days

Oct 14, 2013 through Oct 13, 2014

DROUGHT PREPAREDNESS AND MANAGEMENT

As the state of Oklahoma undergoes its fourth year of consecutive drought conditions, both the Governor and State Legislature have taken a number of steps to help communities and Oklahomans respond to current conditions and prepare for future drought-related issues. These steps have included the passage of legislation to bring grant funding to communities struggling with drought, the creation of multiple drought-related and water planning-related resources for citizens and public water systems, and the implementation of several drought-planning forums to foster better communication and understanding of sound drought preparedness and planning.

Drought Grants

In September 2014, Governor Mary Fallin announced the Water for 2060 Drought Grant Program, which made \$1.5 million available in drought grants for cities, counties, water districts and other public entities to help fund projects that highlight responsible use of water. In addition to the Water for 2060 Drought Grant Program, separate legislation was approved in 2012 to create the Emergency Drought Commission and Relief Fund to provide funding for drought mitigation and related projects in conjunction with a formal gubernatorial drought declaration. As a result of Governor Fallin's drought declaration in the fall of 2013, an additional \$1.125 million in emergency drought relief grants were made available to struggling western Oklahoma communities. Specific assistance projects were limited to affected counties and were approved by the Oklahoma Emergency Drought Commission, consisting of the Secretary of

Agriculture and Executive Directors of the Oklahoma Water Resources Board and Oklahoma Conservation Commission.

Drought Planning

The Oklahoma Water Resources Board has initiated several drought preparedness and planning programs over the last several months, as well as created several drought-related tools and resources for both citizens and communities in Oklahoma. For example, the OWRB recently finalized the Public Water Supply Planning Guide to assist public water supply systems in developing plans to meet their specific long-term water needs.

The OWRB, in partnership with the U.S. Bureau of Reclamation, hosted Oklahoma's inaugural Drought Challenge on September 17 at the National Weather Center in Norman. The Drought Challenge, also known as the Water Supply Reliability and Management Challenge, was an exciting new approach to promoting comprehensive drought mitigation, preparedness, and planning across Oklahoma. Using an engaging competition format, the Drought Challenge aims to encourage collaboration among water planners and other stakeholders from various backgrounds in Oklahoma by educating participants on the multidisciplinary and multi-sector implications of drought.

OKLAHOMA COMPREHENSIVE WATER PLAN

Considerable progress was made during 2013-2014 toward implementing the priority recommendations included in the 2012 Update of the Oklahoma Comprehensive Water Plan (OCWP), including Water Monitoring; Water Supply Reliability; Water Conservation, Efficiency, Recycling and Reuse; Water Infrastructure Funding; and Instream Flows. The OWRB has enhanced and expanded water monitoring activities and hydrologic studies, as well as revitalized financing of water and wastewater projects to meet the anticipated \$82 billion dollar need over the next 50 years. In addition, the OWRB and contractors have facilitated initial meetings of the Water for 2060 Advisory Council and Instream Flow Advisory Group.

Water for 2060 Advisory Council

With passage of House Bill 3055 (the Water For 2060 Act) in 2012, Oklahoma became the first state in the nation to establish a bold, statewide goal of consuming no more fresh water in 2060 than was consumed in 2010. The OWRB has partnered with the U.S. Army Corps of Engineers to begin preliminary work required to support the new Water for 2060 Advisory Council, chaired by OWRB Executive Director, J.D. Strong. The Water for 2060 Advisory Council, a 15-member group appointed to develop recommendations aimed at stabilizing Oklahoma's water use through improved conservation and efficiency, held its first four meetings in 2013-2014. Each successive meeting focused on the major water use sectors and stakeholders in Oklahoma including: public water supply systems, crop irrigation, and the power generation and energy production sectors. The Council's final report of findings and recommendations will be submitted to the Governor, Speaker of the House, and President Pro Tempore by late 2015.

“Hot Spot” Public Meetings and Basin Studies

The OWRB recently held a series of four “Hot Spot” public meetings to share information and obtain feedback on water conservation strategies that could mitigate projected water shortages in Oklahoma's most compromised areas. The goal of the meetings was to offer agriculture producers, water providers, and interested citizens residing in or around twelve “Hot Spot” planning basins—those determined to have the most significant water supply challenges within the next 50 years—an opportunity to provide input on satisfying future water demands and avoiding substantial water shortages projected in those areas. Subsequent to the public meetings, officials and planning specialists from the OWRB have announced three in-depth studies focused on reviewing specific strategies to prevent future water supply shortages in three of the state's twelve “Hot Spot” basins located in western Oklahoma. The three water basins include the following: Basin 26, part of the Beaver-Cache Watershed Planning Region located near Duncan; Basin 38, part of

the Southwest Watershed Planning Region located near Altus; and Basin 51, part of the Central Watershed Planning Region located between Yukon and Watonga (see Figure 1). The three studies will focus on how water conservation, marginal quality water supplies, and public water supply system regionalization strategies might address the needs of hot spot basins on a local implementation level as examples for water users statewide.

OCWP Instream Flow Workgroup

The OCWP Instream Flow Workgroup met several times during 2013-2014. Discussion primarily centered on developing a pilot study to incorporate a process for evaluating economic and environmental impacts that could result from establishment of instream flow requirements in Oklahoma. The Workgroup—commissioned during the OCWP update process to conduct an independent technical, legal, and policy analysis of a potential instream flow program in Oklahoma—continues to craft recommendations for the most efficient, feasible method for balancing the water needs of consumptive users with those that rely upon water flowing in streams and lakes for economic development, recreation, and quality of life.

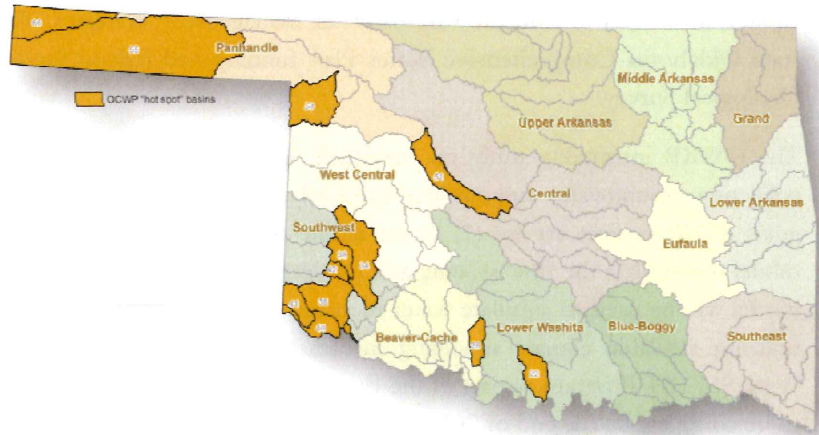


FIGURE 1. HOT SPOT BASINS, 2012 UPDATE OF THE OKLAHOMA COMPREHENSIVE WATER PLAN

WATER RESOURCES TECHNICAL STUDIES

Hydrologic studies, another primary initiative of the OCWP, are ongoing throughout the state. The Rush Springs Aquifer Study was initiated in 2011-12 in conjunction with a hydrologic investigation and stream water allocation model of the Upper Washita River Basin. The OWRB has launched 20-year updates of hydrologic studies for the Enid Isolated Terrace and Elk City Sandstone aquifers and anticipates their completion in late 2014 and mid-year 2015, respectively. Under contract with the USGS, the OWRB will conduct a 20-year update of the groundwater study for the North Canadian River Alluvium and Terrace Groundwater Basin from the Beaver-Harper County line to Lake Overholser at the Canadian-Oklahoma County line. The USGS has also been contracted to conduct a 20-year update on the North Fork of the Red River Alluvium and Terrace aquifer and an investigation on the Canadian River Alluvium and Terrace aquifer.

Surface Water Studies

The OWRB continues developing stream water allocation models as a supporting tool for the appropriation, allocation, distribution, and management of stream water in Oklahoma. The agency recently contracted with AMEC for the development of models for the Verdigris River, Red River, and North Canadian River watersheds. Three models are currently being developed in-house, including the Washita River watershed, which is part of a cooperative study with the Bureau of Reclamation, and two additional models for Walnut Bayou and Mud Creek basins. Updates of three previously built models in Southeast Oklahoma are also underway.

Groundwater Studies

The Garber-Wellington Water Management Study was initiated in June 2008 to address growing concerns about the future of water availability in central Oklahoma. The study was completed and a USGS Scientific Investigations Report has been published entitled “Hydrology and simulation of groundwater flow in the Central Oklahoma (Garber-

Wellington) Aquifer, Oklahoma, 1987 to 2009, and simulation of available water in storage, 2010-2059.” While the OWRB will use information obtained from the investigation to determine the Maximum Annual Yield of the aquifer, the groundwater-flow model will also be used to anticipate the impacts of long-term groundwater withdrawals on the aquifer, as well as to simulate various water management strategies. The study was funded through a combination of state Oklahoma Comprehensive Water Plan funding and federal funds through the Bureau of Reclamation and U.S. Geological Survey.

The OWRB initiated a study on the Rush Springs aquifer in west-central Oklahoma in October 2011 and will be collecting groundwater and surface water information to better understand the groundwater-flow system. The major goals of the project are to: (1) better define the aquifer properties and boundaries; (2) develop a groundwater-flow model to simulate the flow system; and (3) determine the Maximum Annual Yield of the aquifer. The groundwater-flow model will be used to simulate water management scenarios, project current use impacts, and assess climate variability utilizing available climate modeling information. The OWRB will be working with the Bureau of Reclamation’s WaterSMART Program as part of the Bureau’s Washita Basin River Basin Water Supply Study. The project is scheduled to be complete by the end of 2015.

The OWRB entered into a cooperative agreement with the USGS to fund a 20-year Maximum Annual Yield update on the North Canadian River Alluvium and Terrace Groundwater Basin Reach I and II. The objective of this project is to update the 1981 (Reach I) and 1983 (Reach II) hydrologic survey from the Oklahoma Panhandle to Lake Overholser and to develop new groundwater-flow models that will be used to simulate the effects of groundwater withdrawals. The simulations will be used to evaluate the allocation of water rights within the groundwater basin. Initially a two-year project, work was extended one year due to the amount of additional data required to complete the project. Completion is anticipated by the end of 2014. Similar agreements have been made with the USGS to complete work on the 20-year update of the North Fork of the Red River alluvium and terrace, to be finished by the end of 2015, as well as the Canadian River alluvium and terrace, to be completed by the end of 2016.

Arbuckle-Simpson Maximum Annual Yield

The nine-member OWRB Board approved the Final Order for the Arbuckle-Simpson Maximum Annual Yield (MAY) in October 2013. The long-awaited decision was prompted by a 2003 law change and informed by more than a decade of study, numerous public meetings involving citizens and stakeholders, and a meticulous hearing process. The new MAY sets a 0.2 acre-feet per acre per year (AFY) equal proportionate share (EPS) withdrawal rate for the Arbuckle-Simpson aquifer. The Final Order is currently under appeal by numerous protesting parties in the Oklahoma County District Court. There are no noteworthy developments in the appeal to report at this time.

In addition to the Final Order for the Arbuckle-Simpson Maximum Annual Yield, the OWRB also finalized and approved new well spacing regulations applicable to sole source groundwater basins such as the Arbuckle-Simpson aquifer. The updates were submitted by the OWRB to the Governor and State Legislature in the spring of 2014, and were subsequently approved.

WATER QUALITY PROJECTS & MONITORING

OWRB staff continue to work cooperatively with the Central Oklahoma Master Conservancy District (COMCD) to monitor and improve water quality in Lake Thunderbird where a new oxygenation system—SDOX—was implemented to improve raw water quality for drinking water customers. Operation of the in-lake BMP has reversed the long term eutrophication trend during the three years it has been in operation. In addition, work continues to determine the impact of in-lake BMP implementation on addressing eutrophication in two Oklahoma City water supply lakes, both designated as impaired by the OWQS.

Ongoing lake vegetation projects include the establishment of floating wetland plants at Hobart City Lake in cooperation with the ODWC and City of Hobart, as well as a collaborative effort to establish native aquatic plants along the shoreline of Ft. Cobb Lake. Spread and growth of native plants serve as an inexpensive, yet innovative, method to combat erosion and suspended sediment, reduce nutrients, and provide valuable habitat for birds, fish, and aquatic insects. The OWRB also works to educate lake managers on the many benefits of establishing aquatic plants. OWRB staff also mapped the extent that Hydrilla, an exotic aquatic plant known to impair recreational activities throughout the southeast United States, has invaded the waters of Lake Murray.

The OWRB continues its participation within the Oklahoma Wetland Program to develop beneficial uses for wetlands, as well as better define the number and quality of oxbow lakes. The OWRB began work on the National Rivers and Streams Assessment Study and just completed the first year of sampling with year two sampling beginning in the summer of 2014. Sampling on numerous rivers and streams across Oklahoma provides data to assess environmental integrity of waters.

Through an ongoing successful partnership with the Grand River Dam Authority, the OWRB continued dissolved oxygen monitoring on Grand, W.R. Holway and Hudson Lakes to support Federal Energy Regulatory Commission (FERC) relicensing.

The OWRB's groundwater monitoring team assessed Swine Licensed Managed Feeding Operations' compliance in an additional 550 wells through a continuing partnership with the Oklahoma Department of Agriculture, Food and Forestry (ODAFF). Staff also acquired a wealth of historical groundwater quality data—now available to the public—to support the Garber-Wellington aquifer study.

Additional OWRB water quality projects include:

- Probabilistic biological monitoring to assess stream ecosystem integrity throughout Oklahoma;
- Confirmatory stream and reservoir monitoring to assess Water Quality Standards beneficial use attainment status;
- Monitoring for the Grand River Dam Authority to assist GRDA in management of their reservoirs for ecosystem support;
- Completing cooperative work for ODAFF to investigate pesticides in certain Oklahoma streams.

Groundwater Monitoring and Assessment Program (GMAP)

Initial water well sampling through the new Groundwater Mapping and Assessment Program (GMAP)—Oklahoma's first holistic groundwater monitoring program, which resulted from a priority recommendation of the OCWP—began in August 2013 and the first round of sampling has been completed. A report detailing the results from the first year of sampling was made available in May 2014.

Long-term collection of data will provide invaluable information on the ambient quality and quantity of Oklahoma's groundwater resources, vastly improving the detection of impairments, as well as the understanding of seasonal, climatic, and usage patterns. As many as 2,000 wells will eventually comprise the monitoring network with coverage of every major aquifer in the state.

Beneficial Use Monitoring Program

The Beneficial Use Monitoring Program (BUMP), which provides surface water quality data crucial to the establishment of fair and defensible Water Quality Standards, was expanded in 2013 and 2014 to include 130 lakes and 103 stream sites, including selected United States Geological Survey (USGS) sites and other gages located strategically to characterize each of the 82 OCWP planning basins. The first iteration of the "new and improved" Beneficial Use Monitoring Program (BUMP) report was recently released on the OWRB website. This report now also includes the

Groundwater Monitoring and Assessment Program, or GMAP, as well as the results of our updated and enhanced stream, river and lakes monitoring work.

OKLAHOMA WATER QUALITY STANDARDS

OWRB Water Quality staff continue to refine and improve Oklahoma’s Water Quality Standards, and is working to prepare several projects for rulemaking scheduled to begin in the Fall of 2014. One major project underway is the development of wetland water quality standards (WQS). Currently, Oklahoma’s wetlands are protected by default WQS that were developed for lakes and streams and are often not suitable for wetlands. As a result, there have been both scientific and regulatory challenges with applying the default standards to wetlands. Developing WQS specifically for wetlands will provide a scientifically sound foundation for the state’s wetland programs and regulatory relief by providing clarity for all regulated stakeholders going forward.

The second major project for Fall 2014 rulemaking is a revision to clarify existing dissolved oxygen criteria. The objective of this revision is not to make the criteria more stringent, but to clarify the application of the dissolved oxygen criteria for use in 303(d) assessments and TMDL analyses. Other projects in progress and/or anticipated include updating Human Health Criteria to reflect new science on body weight and water consumption rates, as well as potential updates to ammonia and selenium criteria.

WATER RESOURCES FINANCING

The OWRB administers the State Financial Assistance Program (FAP), backed by the Statewide Water Development Revolving Fund, which awards loans and grants for the construction and improvement of water and sewer facilities. In all, through the OWRB’s five loan and grant programs, more than \$3 billion in financing has been provided for water and sewer projects in Oklahoma with a total estimated savings of more than \$1 billion to Oklahoma communities.

PROGRAM	NUMBER AND AMOUNT
FAP Loans	363 for \$911,425,000
CWSRF Loans	283 for \$1,234,754,409
DWSRF Loans	169 for \$874,585,300
REAP Grants	618 for \$54,805,938
Emergency Grants	568 for \$33,882,821
Drought Response Grants	10 for \$1,543,848
TOTAL	2,011 for \$3,160,937,316

The new Water Infrastructure Credit Enhancement Reserve Fund—a \$300 million pledge of credit from the state enabled through an OCWP priority recommendation and subsequent passage of State Question 764—was instrumental in Standard and Poor’s rating upgrade to AAA of the State Revenue Bond Loan Program. The upgrade allows municipalities and rural water/sewer districts to receive loans from the program at lower interest rates than what they could receive through conventional financing.

DAM SAFETY PROGRAM

In 2013, and again in 2014, the OWRB introduced a free inspection program for low hazard-potential dams in Oklahoma. In addition, inspection and maintenance training was conducted for private and municipal dam owners, and breach inundation maps were developed for 15 high hazard-potential dams (provided to dam owners at no cost) and integrated into site-specific Emergency Action Plans to assist emergency managers in the event of dam failure. Staff has also been generating hydrologic and hydraulic reports for these dams, if not in existence, to ensure that the design flood requirements are met. OWRB’s Dam Safety Program has also conducted free Emergency Action Plan (EAP) in 2014 to emphasize the importance of the EAP and its regular maintenance, defining emergency processes and related actions, roles of NRSC and NWS in improving or simplifying the emergency action plan, and reviewing OWRB rules and regulations.

FLOODPLAIN MANAGEMENT

The OWRB continues to participate in FEMA's RiskMAP program, an innovative approach to fostering working partnerships between FEMA and participating National Flood Insurance Program (NFIP) communities, regional agencies, state agencies, tribes, and universities in identifying and communicating risk throughout local watersheds. To date, the OWRB has initiated seven FEMA RiskMAP Discovery projects throughout Oklahoma. The OWRB continues to train and accredit floodplain administrators in Oklahoma's 396 participating NFIP member communities.

LEGAL MATTERS

Chickasaw and Choctaw Nations v. Gov. Fallin, OWRB, and Oklahoma City

On August 18, 2011, the Chickasaw Nation and Choctaw Nation of Oklahoma filed a lawsuit in the U.S. District Court for the Western District of Oklahoma. The lawsuit names as defendants Gov. Mary Fallin, the members and Executive Director of the OWRB, the City of Oklahoma City and the Oklahoma City Water Utility Trust (OCWUT). The lawsuit alleges the Indian Nations have federally-protected rights to the water within a 22-county territory in southeastern Oklahoma. Among other things, the lawsuit seeks: (1) declaratory judgments against any action by the OWRB on a pending application by Oklahoma City and OCWUT for a permit to use stream water from Sardis Reservoir in southeastern Oklahoma, or any other withdrawal or export of water from the area at issue, unless and until there is initiated a general stream adjudication that satisfies the requirements of the federal law known as the McCarran Amendment; and (2) permanent injunctions against any such action unless and until a general stream adjudication that satisfies the McCarran Amendment is completed. On February 10, 2012, the Oklahoma Attorney General filed on behalf of the OWRB to initiate such McCarran Amendment adjudication proceedings to protect and accurately determine all rights to the use of water in the Kiamichi, Clear Boggy, and Muddy Boggy stream systems and moved to dismiss the Tribes' federal court action as a premature effort to have federal courts usurp Oklahoma's management of waters of the State. However, on March 12, 2012, the United States filed a Notice of Removal with the federal district court in Oklahoma City. Since that time, a joint motion to stay proceedings has been granted for both cases (Chickasaw Nation and Choctaw Nation v. Fallin and OWRB v. United States) and has been renewed on a continual basis to allow further efforts in mediation. The stay currently has been extended until January 12, 2015.