

OKLAHOMA Water News

1st Quarter 2010

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EPA Regional Administrator and State Leaders Praise Oklahoma's Stimulus Program

During Oklahoma's Water Appreciation Day at the State Capitol on February 9, Dr. Al Armendariz, the newly-appointed Regional Administrator of the Environmental Protection Agency (EPA), joined state legislative and appointed officials in recognizing the substantial work accomplished by state agencies and communities in implementing federal stimulus water and wastewater projects.



Armendariz contributed remarks during a brief ceremony in the House Chamber, which was hosted by Rudy Herrmann, Chairman of the OWRB, and J.D. Strong, Oklahoma Secretary of Environment and OWRB Interim Executive Director.

"We are proud of what Oklahoma has been able to do under the American Recovery and Reinvestment Act," said Armendariz. "When the Act provided an opportunity to preserve and create jobs, and invest in critical environmental areas like water infrastructure, Oklahoma seized that opportunity. It was one of the first states in the country to qualify for and to spend their money on needed projects—to clean polluted waters and to improve drinking water. We congratulate the State of Oklahoma for their hard work, taking full advantage of all that the Recovery Act could provide for the people and environment of Oklahoma."

Dr. Armendariz and others specifically recognized OWRB and Department of Environmental Quality (ODEQ) staff for their dedication in administering more than \$63 million in federal stimulus funding in less than a year's time.

(continued on page 3)

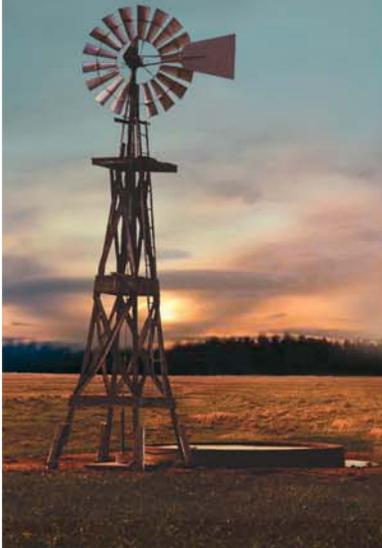
From the Director

As most Oklahomans in the water business know by now, Duane Smith has taken a temporary leave of absence from the OWRB to assist the U.S. military in establishing much-needed water supply and related infrastructure for the citizens of Afghanistan. Without question, Duane's exemplary leadership as the agency's director, as well as his persistence in promoting and implementing Oklahoma Comprehensive Water Plan initiatives, will be missed while he's away.

In Duane's absence, I can assure you that very little will change during my assignment as the OWRB's Interim Executive Director. In fact, I view this opportunity to manage the OWRB's day-to-day surface and groundwater



(continued on page 2)
J. D. Strong, Interim Executive Director
Oklahoma Water Resources Board



Leaders Praise Stimulus Program (continued)



Lt. Gov. Jari Askins

"We are the first state in the region to obligate its ARRA funds ahead of schedule and I commend the OWRB, DEQ, and our cities and towns for that significant accomplishment. While the work was difficult and time-consuming, it was well worth the effort in that it benefited not only our state's economy but our environment as well," commented Lt. Gov. Jari Askins.

More than a dozen of the 44 Oklahoma communities that received stimulus funds had representatives in attendance at Water Appreciation Day. The OWRB and its Financial Assistance Program, consisting of five loan and grant offerings, was also recognized for exceeding the \$2 billion funding level since its inception in 1982.

Earlier, the House of Representatives passed a resolution designating February 9, 2010, as "Water Appreciation Day" in Oklahoma. The event presented an opportunity for numerous state agencies and organizations to showcase their respective efforts in managing and protecting the state's water resources.

Also on hand at the Water Day ceremony were Speaker Chris Bengé and Senator David Myers, who expressed their gratification to the many water agencies and communities who work collectively to foster vital infrastructure improvements throughout the state.



House Speaker Chris Bengé

"Water is of such importance to Oklahoma and that is especially evident in the number of water issues that we address each year in the State Legislature. And I don't see that changing anytime soon," said Speaker Bengé.

"Too often, we take our water resources for granted. But there is nothing as important as reliable water supply, especially in rural areas of our state," added Senator Myers.



Sen. David Myers

ODEQ Executive Director Steve Thompson, State Auditor/Inspector Steve Burrage, OWRB Financial Assistance Division Chief Joe Freeman, and OWRB Director of Planning Kyle Arthur also contributed remarks during the event.

Commenting on the success of Oklahoma's ARRA program, Gov. Brad Henry added, "I applaud the hard work of everyone involved in this important process. With the help of these funds, we will advance important water projects

in dozens of communities around the state, improve water quality, and boost economic activity in the process." ♦



The Oklahoma Geological Survey, Bureau of Reclamation, USGS, Oklahoma Rural Water Association, and Oklahoma Municipal Utility Providers joined the OWRB, OCWP partners, and 20 other exhibiting agencies in the rotunda at the Capitol to celebrate the 5th Annual Water Appreciation Day.

OSE Launches New Website

In early April, the Oklahoma Office of the Secretary of Environment, with assistance from OWRB information technology staff, launched a redesigned website.

According to J.D. Strong, Secretary of Environment, more and more people are relying on this website for environmental news and information, so it was important for the site to become more user-friendly and contemporary.

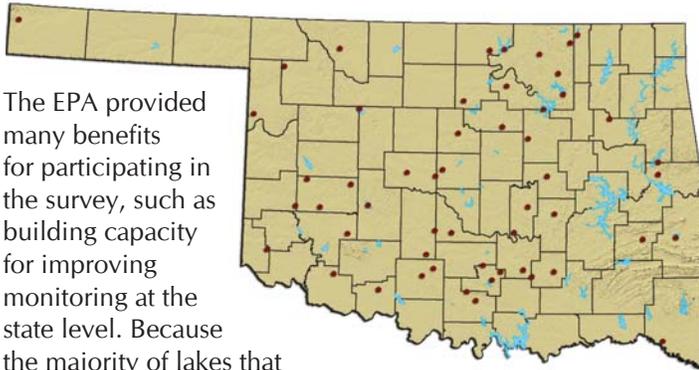
Displayed on the homepage are links to pertinent information on Oklahoma's water, land, wildlife, and air. The latest success stories from Oklahoma's environmental agencies, frequently asked questions, and a calendar with upcoming environmental events and announcements are also available on the site at www.environment.ok.gov. ♦



EPA's National Lakes Assessment

In 2007, the Oklahoma Water Resources Board participated in the National Lakes Survey by sampling thirty-five probabilistic sites. Environmental Protection Agency (EPA) Clean Water Act monies were leveraged with regional funds for 18 additional sites allowing a state level survey. The bulk of the entire probabilistic survey included Beneficial Use Monitoring Program (BUMP) lakes.

National Lakes Survey Sites



The EPA provided many benefits for participating in the survey, such as building capacity for improving monitoring at the state level. Because the majority of lakes that were sampled by the probabilistic survey were BUMP lakes, the demonstration allowed for long-term BUMP monitoring data to be compared to the data from the survey. It also provided an inventory of the lakes within the twelve ecoregions of the state and allowed biological parameters and data to be added to the assessment of the state's waters.

Oklahoma is looking to the future with the possibility of using the data for further development of nutrient and biological criteria, re-evaluating the water quality standards for these waters, and incorporating new parameters into the established monitoring program. ♦

Flood Insurance Critical for Oklahomans

Governor Brad Henry has proclaimed May 2010 Flood Awareness Month in Oklahoma.

Flooding is involved in 90 percent of all natural disasters in the U.S. In 2009, Oklahoma experienced 129 flooding events that caused approximately \$3.37 million dollars in property damage.

Flood insurance, provided at a low cost by the National Flood Insurance Program (NFIP) in exchange for intelligent land use planning, is advisable for those living both in high flood risk areas and low-to-moderate risk areas. Citizens can insure a residential building for up to \$250,000 and its contents up to \$100,000, and renters can cover belongings up to \$100,000. Non-residential property owners can insure their buildings up to \$500,000, and contents up to \$500,000. The premiums for an NFIP policy average about \$500 a year.

Since flood insurance policies do not take effect until 30 days after purchase, it is important to buy coverage now. For more information on the NFIP in Oklahoma, call Gavin Brady, OWRB State Floodplain Coordinator, at 918-581-2924. ♦

SAVE THE DATE

October 26-27, 2010

Oklahoma Governor's Water Conference & Water Research Symposium

Embassy Suites Hotel & Convention Center
Norman, Oklahoma

Enhanced BUMP Report Makes Data More Accessible

The OWRB's comprehensive annual report of statewide water quality data is now available in a new tabular, user-friendly format with links to the online data. You can find the full report at www.owrb.ok.gov/2009BUMPReport/index.htm or on compact disc by calling the OWRB at 405-530-8800.

The 2008-2009 report of the Beneficial Use Monitoring Program (BUMP) features easy to read summaries of physical, chemical, and now biological data from fish and macroinvertebrate collections. The data is taken from approximately 130 lakes and 93 stream sites. Each summary page also has web links directly to the data used and available for download in spreadsheet format.

OWRB staff sample rivers in the network annually and lakes on a three year rotation. Data provided by the program plays an essential role in the state's water quality management decision-making process by identifying waters experiencing impairments as well as the cause of declining water quality.

BUMP is also invaluable to the development and refinement of Oklahoma's Water Quality Standards, where beneficial uses are assigned to individual lakes, streams, and stream segments based upon the primary benefits derived from those waters by the public.

BUMP data gathered during 2009 indicate that the major water quality concerns of Oklahoma lakes are dissolved oxygen, pH, and turbidity. Data also indicate that sixteen (16%) percent of the lakes sampled in 2008-2009 were "hyper-eutrophic," containing an excessive amount of nutrients that could lead to taste and odor problems.

The vast majority of streams sampled within the past two years were suitable for uses related to public and private water supply. Inorganic turbidity, through sediments from runoff, was the primary detriment to fish and wildlife propagation. Bacteria (enterococci) were the major concern for recreation that involves primary body contact with the water. A small number of sampled streams had problems associated with dissolved solids (chlorides and sulfates), thereby limiting irrigation uses. A number of streams were also identified as having threatened Aesthetics uses due to high levels of phosphorus and chlorophyll-a.

For more information on the OWRB's Beneficial Use Monitoring Program please call 405-530-8800 or visit the OWRB website at www.owrb.ok.gov. ♦

Oklahoma Comprehensive Water Plan

OCWP

Recent Developments

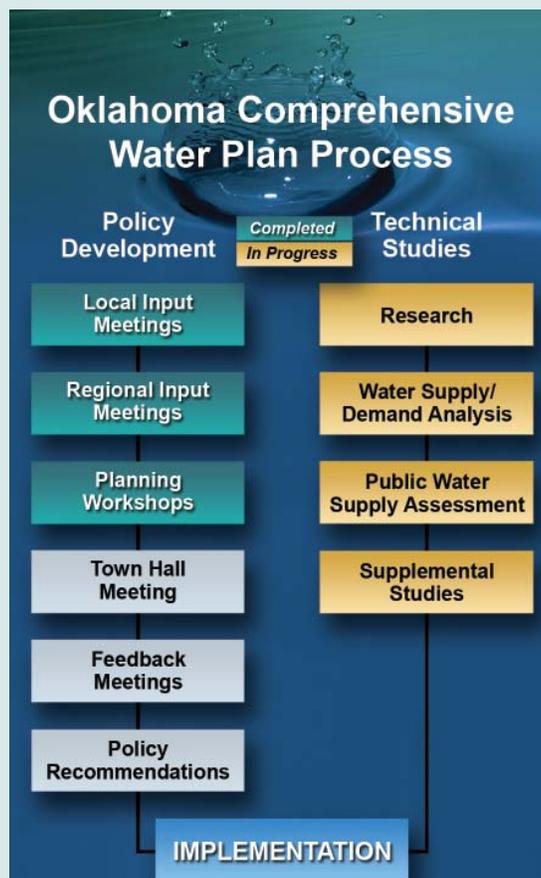
- Almost every OCWP policy development participant was in attendance at the public input strategy seminar held March 29 at the Moore-Norman Technology Center. Participants were briefed on the results of last summer's Planning Workshops, including draft water resource management strategies, in preparation for the upcoming Water Town Hall.
- The Provider Survey Summary is now available online at www.owrb.ok.gov/ocwp.php.
- Regional- and basin-level water resource planning fact sheets, a centerpiece of the Water Plan effort, are currently being developed. Among other benefits, these publications will include detailed information and data to assist public water supply providers in planning for their 50-year future.

Upcoming

- The OCWP Town Hall, led by the Oklahoma Academy of State Goals, will take place on May 23-26 in Norman. Twenty water resource management approaches, developed by 240 water policy development participants during three workshops in 2009, will serve as the basis for discussion. About 177 individuals, consisting of 144 OCWP public input participants and 33 Academy members, will split into smaller groups to review and amend strategies for discussion among the group at large. On the final day of the meeting, all recommendations will be finalized and prioritized. The OCWP Town Hall discussion topics (Public Policy Themes) include the following:
 - Water Availability
 - Water Conservation
 - Land Use Practices
 - Intergovernmental Water Resource Management
 - Interagency Water Resource Management
 - Surface and Ground Water Relationship
 - Water Sales and Transfers
 - Conflict Resolution
 - Balancing Water Supply and Demand
 - Stakeholder Involvement
 - Local and Regional Issues

Water Plan Objectives

1. Characterize demands by water use sector.
2. Identify reliable supplies to meet forecasted demands.
3. Perform technical studies in support of the evaluation of emerging water management issues.
4. Engage comprehensive stakeholder involvement to make recommendations regarding the management of Oklahoma's water resources.
5. Make "implementable" recommendations regarding the future of water management in Oklahoma based upon technical evaluations and stakeholder input.



Goals of the OCWP Update

- To provide safe and dependable water supply for all Oklahomans while improving the economy and protecting the environment.
- To provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma's water resources.

For more information on the OCWP, visit the OWRB's website at www.owrb.ok.gov. For questions and comments concerning policy development and public meetings, contact the OWRRI at 405-744-9994, by e-mail at waterplan@okstate.edu, or go to <http://okwaterplan.info>.

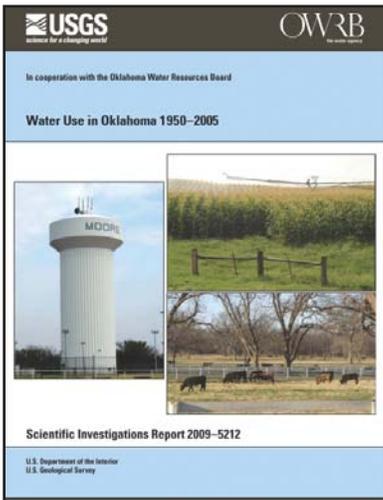
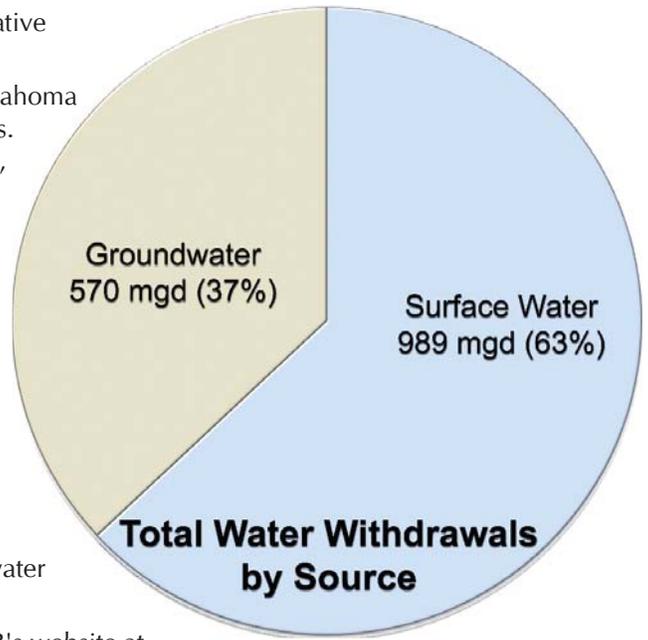
Historical Water Use Report Now Available

The U.S. Geological Survey (USGS) and OWRB have issued a cooperative report on historical water use in the state from 1950–2005.

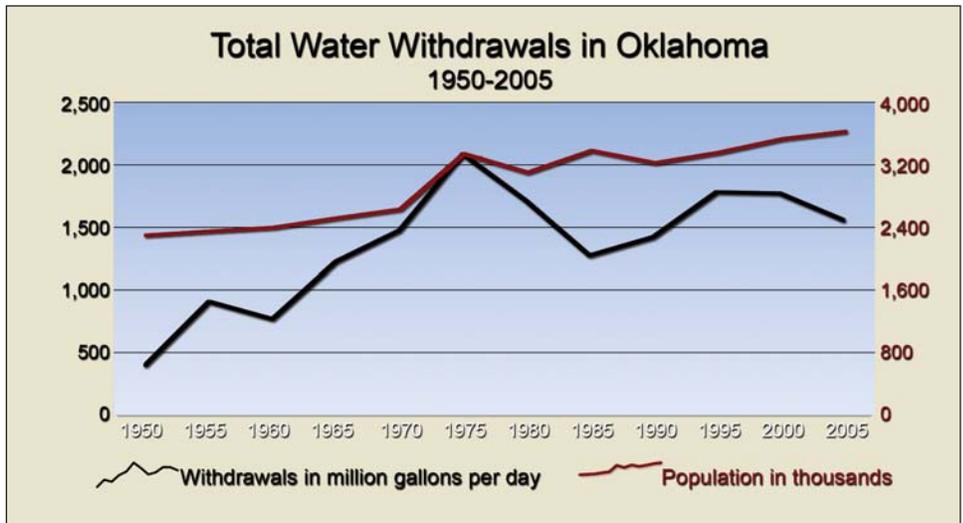
The detailed report presents estimates of freshwater withdrawal in Oklahoma by source (surface or groundwater) and use category in 5-year intervals. Categories include public supply, irrigation, livestock and aquaculture, thermoelectric-power generation (cooling water), domestic and commercial, and industrial and mining. Withdrawal data are aggregated and tabulated by county, major river basin, and principal aquifer.

In 2005, 1,746,080 acre-feet (1,559 million gallons per day) of water was withdrawn for all uses: 63% from surface water sources and 37% from groundwater sources. Public water supply (41% of total use) is the number one use of water in Oklahoma; irrigation (32%) is a close second, followed distantly by livestock and aquaculture (12%).

Irrigation is the primary use for groundwater (63%) and accounts for 13% of surface water withdrawals in Oklahoma. Public supply is the primary use for surface water (54%) and accounts for 20% of groundwater withdrawals.

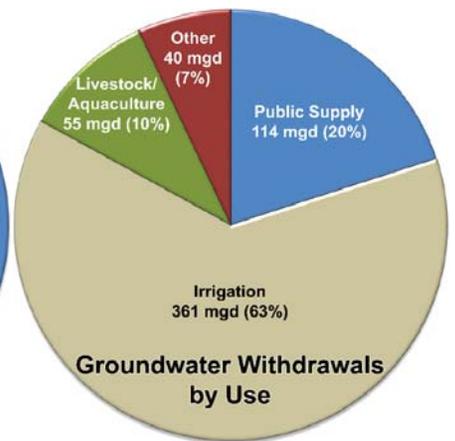
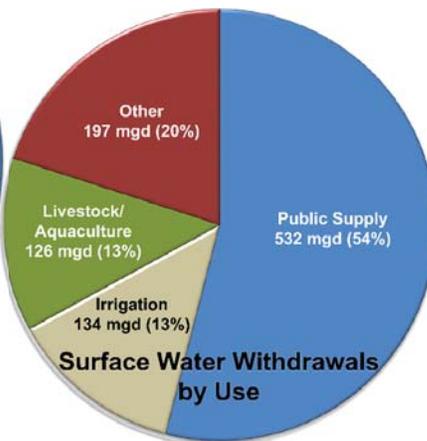
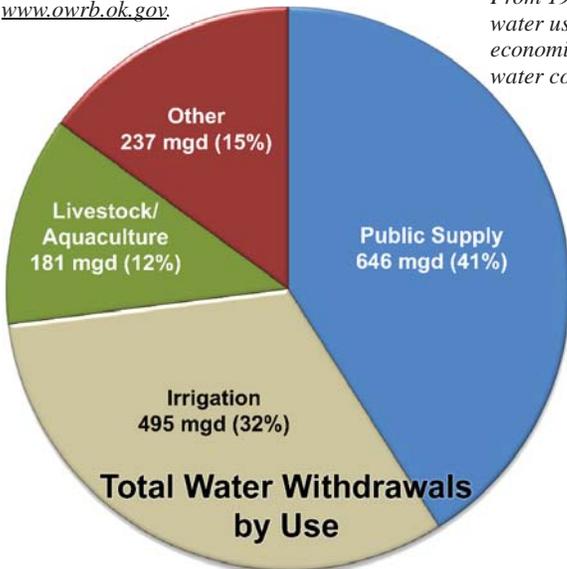


To view the report, visit the OWRB's website at www.owrb.ok.gov.



“Water Use in Oklahoma 1950-2005,” published by the USGS and funded through the Oklahoma Comprehensive Water Plan, is now available for download on the OWRB website at www.owrb.ok.gov.

From 1950 to 2005, water use in Oklahoma increased from 402 mgd to 1,559 mgd. In that interval, water use has been impacted considerably by a number of factors, including population growth, economic trends, legal decisions, periodic droughts, infrastructure growth, and the institution of water conservation measures by municipalities, industries, and agriculture.



Drought Update

Reservoir Storage

As of March 23, five reservoirs (of thirty-one selected major federal reservoirs across Oklahoma listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); seventeen reservoirs have experienced lake level decreases since February 16.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), no climate divisions in Oklahoma are currently experiencing drought conditions.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates no near long-term dryness in any of Oklahoma's nine climate divisions.



LAKE	Change in Elevation (feet) 2/16-3/23/10	Current Flood Control Storage (acre-feet)
North Central (2)		
Fort Supply	-0.58	0
Great Salt Plains	-0.14	3,189
Kaw	0.44	4,763
Northeast (3)		
Birch	0.99	1,116
Copan	0.96	7,320
Fort Gibson	-1.63	20,100
Grand	0.35	17,601
Hudson	0.51	13,669
Hulah	1.35	13,212
Keystone	-0.55	18,713
Oologah	-0.74	109,408
Skiatook	0.07	8,315
West Central (4)		
Canton	0.13	-4,933
Foss	0.72	-601
Central (5)		
Arcadia	0.20	818
Heyburn	1.42	1,747
Thunderbird	0.12	2,074
East Central (6)		
Eufaula	-1.26	116,704
Tenkiller	-3.54	19,388
Southwest (7)		
Fort Cobb	-0.31	1,635
Lugert-Altus	2.49	-73,158
Tom Steed	-0.04	-20,494
South Central (8)		
Arbuckle	-0.18	1,952
McGee Creek	-0.01	3,040
Texoma	-1.83	94,013
Waurika	-0.36	3,447
Southeast (9)		
Broken Bow	-5.40	-15,380
Hugo	-4.42	7,974
Pine Creek	-6.62	2,640
Sardis	0.35	9,017
Wister	-1.86	15,322

CLIMATE DIVISION	Standardized Precipitation Index (through March 2010)				Palmer Drought Severity Index
	3-month	6-month	9-month	12-month	March 20, 2010
Northwest (1)	Moderately Wet	Moderately Wet	Near Normal	Near Normal	Moist Spell
North Central (2)	Near Normal	Near Normal	Near Normal	Near Normal	Unusual Moist Spell
Northeast (3)	Near Normal	Near Normal	Moderately Wet	Moderately Wet	Unusual Moist Spell
West Central (4)	Near Normal	Near Normal	Moderately Wet	Near Normal	Unusual Moist Spell
Central (5)	Near Normal	Near Normal	Moderately Wet	Near Normal	Very Moist Spell
East Central (6)	Near Normal	Near Normal	Near Normal	Near Normal	Unusual Moist Spell
Southwest (7)	Near Normal	Near Normal	Near Normal	Near Normal	Unusual Moist Spell
South Central (8)	Near Normal	Near Normal	Moderately Wet	Very Wet	Very Moist Spell
Southeast (9)	Near Normal	Moderately Wet	Very Wet	Very Wet	Very Moist Spell

For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to www.owrb.ok.gov/supply/drought/drought_index.php.

www.owrb.ok.gov

*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Ed Fite • Jack W. Keeley • Kenneth K. Knowles • Richard Sevenoaks • Joe Taron*

The mission of the Oklahoma Water Resources Board is to manage and protect the water resources of the state and plan for Oklahoma's long-range water needs in a responsive, innovative, and professional manner to ensure that all Oklahomans have adequate quantities of good water.



1st Quarter 2010

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The Oklahoma Water News is published by the Oklahoma Water Resources Board as authorized by Duane A. Smith, Executive Director. Eighty-eight hundred copies have been printed by University Printing Services at an approximate cost of 38 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of March 9, 2010

FAP Loans—323 for \$632,575,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—223 for \$825,945,075

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to draw upon for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—117 for \$628,624,249

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—533 for \$47,095,065

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—554 for \$32,882,503

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—2 totaling \$200,000

Through the OWRB's Drought Response Program, funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

American Recovery & Reinvestment Act Funding—\$53,280,907

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,752 for \$2,167,321,893
Estimated Savings: \$776,125,342

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

**For more information, call 405-530-8800
or go to www.owrb.ok.gov/financing.**

OKLAHOMA Water News

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OU Showcases OWRB Green Roof Project

On Earth Day, April 22, the University of Oklahoma's National Weather Center (NWC) showcased the state's first university experimental vegetative roof system. The innovative project is funded by the OWRB through federal American Recovery and Reinvestment Act (ARRA) funds.

Green roofs, also known as vegetative roof systems, are roofs partially or completely covered with vegetation. According to Reid Coffman, NWC Experimental Green Roof project principal investigator who is leading the effort to examine the technology for Oklahoma, green roofs reduce storm water runoff and improve its quality. The systems intercept solar radiation, cooling structures during the summer months and reducing air conditioning costs. Coffman points out that studies indicate green roofs can lower heat island temperatures by up to 3 degrees Fahrenheit.

Coffman anticipates that the plants will remain in the current location for about three



The "green roof" on top of the National Weather Center in Norman. Eventually, the young sedums and other hardy plants will cover the planting area. (Photos courtesy OU.)



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From the Director

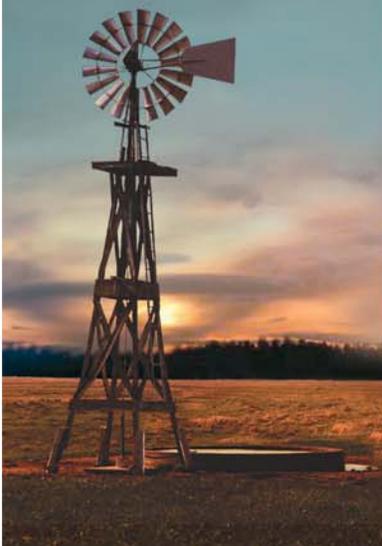
At the Board's June meeting, we welcomed Marilyn Feaver, of Chickasha, as the latest member of the OWRB. Marilyn brings with her a varied background mostly involving economic development in rural Oklahoma, which she will draw from as she makes some undoubtedly tough water decisions over the next seven years. Jack Keeley will be missed as a very active and valued member of the Board.

Board members were faced with a very difficult decision at our special meeting on June 11. The Board voted 5-2 in favor of an agreement to transfer Sardis Lake water storage to the Oklahoma City Water Utilities

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J. D. Strong, Interim Executive Director
Oklahoma Water Resources Board



From the Director (continued)

Trust, which is seeking to secure a long-term water supply for central Oklahoma in order to meet projected shortages by 2030. Though controversial, the agreement not only resolves the state's long-standing obligation concerning construction of the lake but also preserves a significant amount of lake storage for present and future needs in the region.

Duane Smith, who has been on assignment with the Corps of Engineers in Afghanistan, also announced his retirement in June. Duane's accomplishments are almost too numerous to mention, but most in the Oklahoma water community are well aware of the significant impact he has made on our state's water management and planning programs. On behalf of the Board and agency staff, I wish Duane the best of luck as he progresses on to other endeavors.

The State Legislature adjourned on May 28. The OWRB received a 7.5 percent cut in appropriations, as expected. Fortunately, our appropriation included funds to cover some of our ongoing litigation expenses. We'll continue to streamline services to accommodate the reduction in expenditures.

With legislators consumed by budget issues, there was little formal water legislation considered, and nothing of note was passed, including the water center and pit water regulation bills.

Probably the most consequential result of this year's session for the OWRB was ratification of all rulemaking,

including several new fees, which should provide much-needed revenue to support critical water use permitting activities and hydrologic studies. Agency consolidation was proposed by the Legislature late in the session and failed to gain the necessary momentum for passage.

“I honestly don't know that I've ever seen such a diverse, informed, and engaged group of individuals gathered together in one place to discuss water issues.”

The special Water Town Hall, hosted by the Oklahoma Academy, was both extremely productive and enlightening for all involved, including myself. I honestly don't know that I've ever seen such a diverse, informed, and engaged group of individuals gathered together in one place to discuss water issues. The result was an impressive product containing the opinions of about 172 people fashioned over three days of meetings. Now we are tasked with integrating the Academy's final report, including recommendations, into the considerable input and technical information compiled over the past three years (and counting) of OCWP public input sessions and technical studies. The resulting, unprecedented comprehensive plan will chart a new and well-vetted course for Oklahoma's water future. ♦

Duane Smith Retires

OWRB Executive Director Duane Smith has announced his retirement after 32 years of service with the State of Oklahoma and the OWRB. Smith, who began a six-month leave of absence from the Board in February, has been working for the U.S. Army Corps of Engineers overseeing water and infrastructure development in Afghanistan. He informed the OWRB of his decision while home on leave in early June.

J.D. Strong, who has served as interim executive director in Smith's absence, will continue in that capacity until the nine-member Board can consider a permanent replacement.

Smith joined the agency as a hydrologist in 1978 and became executive director in 1997. Under his leadership, the agency's Financial Assistance Program has experienced enormous success, providing more than two billion dollars in water and wastewater system improvements to more than two-thirds of Oklahoma communities and rural water districts. Smith also helped establish the state's first statewide water quality monitoring program and well drillers' certification program. More recently he played an instrumental role in the OWRB's initiation of the ongoing update of the Oklahoma Comprehensive Water Plan. He has been recognized as a national leader in the development of water policy, serving as Chairman of the Western States Water Council from 2006 to 2008. At the time of his deployment to Afghanistan, his goal was to help establish water and wastewater services for the Afghan people to help ease tensions in the war-torn region.

Strong commented that Duane has capably served the OWRB for over 30 years, and his leadership on numerous water initiatives of significant importance to the state has earned him well-deserved respect both in Oklahoma and nationally. ♦

Green Roof Project (continued)

years while students monitor various factors that could affect the vegetative sustainability, such as wind, temperature, and moisture. The 1,280 square-foot area primarily contains sedums, a succulent plant that holds water and tolerates extreme conditions; native grasses and wildflowers will soon be added. The study will also evaluate the technology for food production, species habitat, and other benefits.

The green roof is a collaborative project between the OU colleges of Atmospheric and Geographic Sciences and Architecture and co-sponsored by the OWRB and Oklahoma Conservation Commission. Representatives from numerous organizations were present at the event.

The project is funded by \$86,500 in ARRA stimulus funds approved last year by the OWRB. The vegetative roof system is one of ten OWRB ARRA "Green Projects" that advocate water and energy efficiency, green infrastructure, and other innovations beneficial to the environment. Total OWRB Green Project funding in Oklahoma amounts to almost \$8 million. ♦

Thunderbird Green Project Improves Water Quality

Through a partnership with the Central Oklahoma Master Conservancy District, the OWRB is utilizing more than \$1.5 million in ARRA funds to improve the drinking water for the nearly 200,000 residents of Norman, Del City and Midwest City as well as recreation in a popular central Oklahoma lake.

For many years, Lake Thunderbird has been listed as impaired (through EPA's 303d list) for turbidity, algae, color and low dissolved oxygen levels due to excessive nutrients accumulated mostly from nonpoint pollution sources throughout the watershed. In addition, local residents have complained about taste and odor in drinking water supplied by the lake. As a result, the cost of treatment has increased substantially.

ARRA funds have fostered a partnership between the OWRB and COMCD to address the problem. Using technology patented by BlueInGreen, an Arkansas-based engineering solutions company, an oxygenation pump, "SDOX", will draw water from the oxygen deprived part of the lake (hypolimnion), supersaturate it to near 300 percent, and then return it to the hypolimnion. The addition of dissolved oxygen enhances the breakdown of chemicals causing the taste and odor issues and reduces dissolved metals and nutrients in the water column. As a result, overall drinking water treatment costs will be reduced. The technology has been shown to lower energy and operating costs by up to 80 percent compared to conventional oxygenation methods. By increasing the total volume of well oxygenated water in the lake, fish and other aquatic life, and ultimately lake visitors, will reap the benefits. OWRB officials are cautiously optimistic that this project will result in delisting Lake Thunderbird from EPA's impaired waters list. The OWRB will monitor the first two seasons of operation. Treatment costs will be tracked to compare with previous in-lake treatment methodologies. ♦

OWRB Green Projects

Fund Recipient	Project Description	Total Assistance	ARRA Green Amount
Central Oklahoma Master Conservancy District	Design, engineering, and construction of Hypolimnion Aeration device at Lake Thunderbird	\$1,501,285	\$1,501,285
Duncan Public Utilities Authority	Wastewater treatment plant improvements	\$340,000	\$304,136
Oklahoma Conservation Commission	Streambank stabilization in the Illinois River and Eucha/Spavinaw watersheds	\$2,000,000	\$2,000,000
Oklahoma Conservation Commission/ University of Oklahoma	Green Roof at the National Weather Center	\$86,500	\$86,500
Oklahoma Conservation Commission/ Oklahoma State University	Stabilization of Cow Creek in Stillwater	\$2,000,000	\$2,000,000
Owasso Public Works Authority	Regional stormwater detention basin	\$1,785,000	\$75,925
Perkins Public Works Authority	New wastewater treatment plant	\$7,225,000	\$1,250,000
Stillwater Utilities Authority	Wastewater treatment system upgrades	\$1,875,000	\$249,975
Sulphur Municipal Authority	New wastewater treatment plant	\$10,200,000	\$233,973
Tulsa City-County Library System	Green Roof at Tulsa's Central Library and rain garden at the Sperry Library	\$202,800	\$202,800
		\$27,215,585	\$7,904,594

OWRB Approves Transfer of Sardis Storage to Oklahoma City

On June 11, the OWRB approved a transfer agreement that will resolve Oklahoma’s 36-year-old water storage contract obligation to the federal government for construction of Sardis Lake in southeastern Oklahoma and provide options to help satisfy central Oklahoma’s long-term water supply needs. In addition to satisfying the State’s immediate need to make its next court-ordered payment to the federal government by July 1, significant water will be reserved to meet local needs well into the foreseeable future.

The Sardis Lake storage contract transfer agreement, which was considered and approved by the Oklahoma City Water Utilities Trust (OCWUT) on June 7, was similarly approved, with minor modifications, by the OWRB on June 11. The agreement effectively transfers the State of Oklahoma’s water storage rights at Sardis to Oklahoma City, along with the State’s existing obligation to the federal government. OCWUT would also reimburse the State for past Sardis water storage payments and costs. A recent federal district court order requires Oklahoma to pay off, within five years, its \$27 million obligation for the construction of additional water supply storage in Sardis Lake, with the next payment due by July 1.

“This agreement was constructed with three critically important objectives in mind—to satisfy the state’s long-standing Sardis Lake obligation, secure water supply options for central Oklahoma’s water needs, and preserve the lake’s considerable value to the citizens of southeast Oklahoma,” said J. D. Strong, OWRB Interim Executive Director.

Through the transfer agreement, coupled with an existing application for water rights in the basin, which will be considered next, OCWUT seeks to acquire 136,000 acre-feet of drinking water per year to share with central Oklahoma communities, which collectively face near-term water deficits. In a critical facet of the agreement, 20,000 acre-feet of water is reserved for both current and future water needs in the Sardis Lake region. This significant set-aside, coupled with a requirement for a lake level management plan, will help ensure that Sardis Lake continues to provide important flood control, recreation, water supply, and related benefits to the local area.

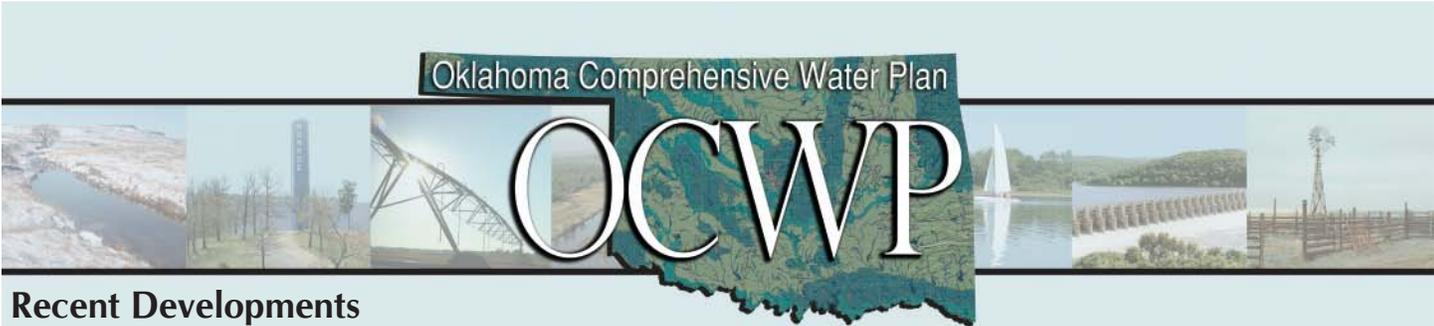
Through a separate public hearing process, the OWRB will address Oklahoma City’s permit application for the right to use water

from the basin. “As with all applications for surface water, the OWRB will hold formal public proceedings to ensure that sufficient water is available and existing rights are not impaired,” added Strong.

Preliminary information compiled as part of the ongoing Comprehensive Water Plan (OCWP) process suggests that Oklahoma City’s request can be met without impacting other uses or projected future needs in the area, but all data and information will be thoroughly examined before a final decision is made by the OWRB. The Regional Raw Water Supply Study for Central Oklahoma, an engineering study commissioned by the Oklahoma Regional Water Utilities Trust (ORWUT) in 2009, determined that central Oklahoma possesses insufficient water supply to meet projected needs in the region beyond 2030, and a new water resource will be required. The study identified Sardis Lake as the most feasible option for meeting this water deficit. ♦



More than 100 citizens and other interested parties attended the Board’s special meeting on June 11 in Oklahoma City. Jim Couch, Oklahoma City Manager (top) and Choctaw Nation Chief Greg Pyle (middle) address the Board.



Recent Developments

- The special Water Town Hall was a rousing success as participants met over three days in Norman to generate a wide array of state water policy recommendations that address 11 specific categories varying from conservation and water sales to land use and the scientific nature and legal consequences of stream and groundwater interaction. The 172 citizens invited to attend the Town Hall were selected by the OCWP Planning Advisory Board from existing participants in the Water Plan public input process as well as Academy members. To help prepare them in advance for the meetings, participants were sent a 200-page resource document as well as materials outlining strategies and analysis resulting from the previous OCWP Planning Workshops. Results of the Town Hall will be available on the Academy's website at www.okacademy.org.
- The Marginal Quality Water and Recharge Workgroup final reports will soon be available on the OWRB website.

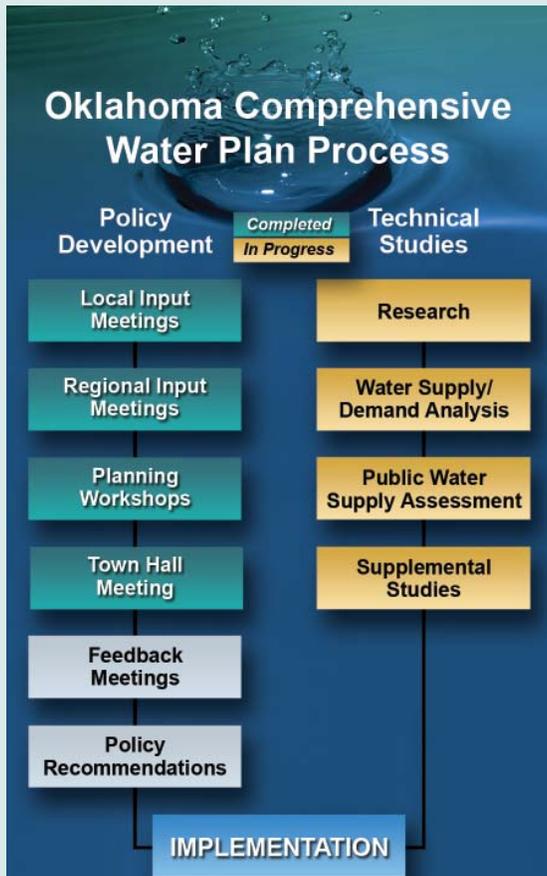


Upcoming

- The Governor's Water Conference and Research Symposium will be held October 26-27 at the Embassy Suites Conference Center in Norman. The program will feature six sessions highlighting various policy and technical aspects of the OCWP.
- Regional feedback meetings will be held in early 2011 (dates and locations to be determined).

Water Plan Objectives

1. Characterize demands by water use sector.
2. Identify reliable supplies to meet forecasted demands.
3. Perform technical studies in support of the evaluation of emerging water management issues.
4. Engage comprehensive stakeholder involvement to make recommendations regarding the management of Oklahoma's water resources.
5. Make "implementable" recommendations regarding the future of water management in Oklahoma based upon technical evaluations and stakeholder input.



Goals of the OCWP Update

- To provide safe and dependable water supply for all Oklahomans while improving the economy and protecting the environment.
- To provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma's water resources.

For more information on the OCWP, visit the OWRB's website at www.owrb.ok.gov. For questions and comments concerning policy development and public meetings, contact the OWRRI at 405-744-9994, by e-mail at waterplan@okstate.edu, or go to <http://okwaterplan.info>.

Feaver Appointed to Board

Governor Henry has appointed Marilyn Feaver to succeed Jack Keeley on the nine-member Oklahoma Water Resources Board.

Ms. Feaver resides in Chickasha and is the Executive Director of the Southern Oklahoma Impact Coalition. Like Keeley, who attended his final Board meeting in May after seven years of service, Feaver represents municipal water use. Her term ends in May 2017. ♦

Tulsa District Gets New Commander

Col. Michael Teague has assumed command of the U.S. Army Corps of Engineers, Tulsa District from Col. Anthony Funkhouser, commander for the past three years.

Col. Teague began his career with the Corps in 1985 and most recently was the Third Army/U.S. Army Central Engineer responsible for all Army construction throughout the Middle East and Central Asian States.

Col. Funkhouser has taken command of a Corps of Engineers District in Afghanistan. ♦

Dam Safety Program Committed to Education

The OWRB is committed to offering educational opportunities for Oklahoma dam owners. In June, the agency sponsored the second annual dam safety workshop by the Association of State Dam Safety Officials. The workshop, "Engineering for Non-Engineers," was attended by dam owners and engineers. Participants discussed various engineering design aspects, conditions that contribute to the possible failure of a dam, dam maintenance techniques, repair considerations, and emergency notification systems to respond to dam failures.

A session on the legal liability of dam owners in Oklahoma is planned for this year's Governor's Water Conference. OWRB staff are also in the process of developing guidance documents on inspections, maintenance, and emergency action plans for dam owners in Oklahoma. These documents will soon be available on the OWRB's website.

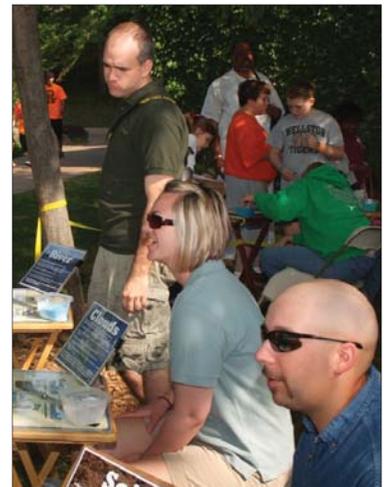
During the past year, with funding from the Dam Safety Program, OWRB staff completed hydrographic mapping studies of eight lakes in Oklahoma, including Guthrie, Liberty, Pawnee City, Ponca, Claremore City, Healdton City, Carl Albert, and Lone Chimney Lakes. These studies are important to dam owners for the determination of sediment infilling of the lake, for use in conducting dam breach analysis, and for lake yield determination. OWRB staff will be scheduling meetings with dam owners over the next few months to present the results of these studies and discuss how owners can benefit from the information. ♦



OWRB Assists With ScienceFest

On April 22, more than 6,000 4th and 5th grade students statewide participated in ScienceFest 2010. Held annually at the Oklahoma City Zoo, the event featured twenty-five activity stations where students could experience exciting exhibits, presentations, and hands-on demonstrations. These activities were developed to show the importance of scientific applications in the environment and teach children how science, including basic geology, biology, and physical sciences, impact their everyday lives.

Several OWRB staff members demonstrated the complexity of the water cycle at a hands-on activity station called "The Incredible Journey," while other staff members filled in at various activity stations as needed. ♦



OWRB staff members Chris Neel, Lori Johnson, and Darrin Martin at an activity station demonstrating the water cycle.

North American Lake Management Society (NALMS)
30th ANNUAL INTERNATIONAL SYMPOSIUM

The Water Cycle: Managing the Challenges in Water Resources

November 3-5, 2010

Cox Convention Center
Oklahoma City, Oklahoma

For more information go to
www.nalms.org

Drought Update

Reservoir Storage

As of June 16, ten reservoirs (of thirty-one selected major federal reservoirs across Oklahoma listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); nine reservoirs have experienced lake level decreases since May 17.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), two climate divisions in Oklahoma are currently experiencing drought conditions.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in three of Oklahoma's nine climate divisions. The Southeast is "very dry."



Storage in Selected Oklahoma Lakes & Reservoirs (June 16, 2010)

LAKE	Change in Elevation (feet) 5/17-6/16/10	Current Flood Control Storage (acre-feet)
North Central (2)		
Fort Supply	-0.07	995
Great Salt Plains	1.43	17,041
Kaw	13.60	273,155
Northeast (3)		
Birch	4.81	6,497
Copan	3.06	26,643
Fort Gibson	0.13	-25,000
Grand	-1.92	44,619
Hudson	-0.06	19,137
Hulah	7.50	56,014
Keystone	8.88	268,812
Oologah	4.36	254,121
Skiatook	3.66	41,353
West Central (4)		
Canton	0.02	2,699
Foss	0.01	-668
Central (5)		
Arcadia	14.97	39,521
Heyburn	7.45	10,340
Thunderbird	0.41	4,819
East Central (6)		
Eufaula	0.45	194,214
Tenkiller	0.06	10,611
Southwest (7)		
Fort Cobb	-0.34	-74
Lugert-Altus	3.07	-32,346
Tom Steed	-0.48	-24,654
South Central (8)		
Arbuckle	0.37	4,227
McGee Creek	0.03	1,213
Texoma	0.13	-54,597
Waurika	0.21	5,373
Southeast (9)		
Broken Bow	0.58	-6,871
Hugo	-1.30	-13,019
Pine Creek	-4.28	-16,397
Sardis	-0.11	-803
Wister	-1.46	1,013

CLIMATE DIVISION	Standardized Precipitation Index (through May 2010)				Palmer Drought Severity Index
	3-month	6-month	9-month	12-month	June 12, 2010
Northwest (1)	Near Normal	Near Normal	Moderately Wet	Near Normal	Moist Spell
North Central (2)	Near Normal	Near Normal	Near Normal	Near Normal	Unusual Moist Spell
Northeast (3)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
West Central (4)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
Central (5)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
East Central (6)	Near Normal	Near Normal	Near Normal	Near Normal	Mild Drought
Southwest (7)	Moderately Dry	Moderately Dry	Near Normal	Near Normal	Mild Drought
South Central (8)	Moderately Dry	Near Normal	Near Normal	Near Normal	Incipient Drought
Southeast (9)	Very Dry	Near Normal	Moderately Wet	Moderately Wet	Incipient Drought

For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to www.owrb.ok.gov/supply/drought/drought_index.php.

www.owrb.ok.gov

*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Ed Fite • Marilyn Feaver • Kenneth K. Knowles • Richard Sevenoaks • Joe Taron*

The mission of the Oklahoma Water Resources Board is to manage and protect the water resources of the state and plan for Oklahoma's long-range water needs in a responsive, innovative, and professional manner to ensure that all Oklahomans have adequate quantities of good water.



2nd Quarter 2010

Darla Whitley, Editor

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The Oklahoma Water News is published by the Oklahoma Water Resources Board as authorized by Duane A. Smith, Executive Director. Eighty-eight hundred copies have been printed by University Printing Services at an approximate cost of 38 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of June 8, 2010

FAP Loans—325 for \$662,610,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—227 for \$914,753,057

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to draw upon for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—117 for \$622,479,642

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—537 for \$47,455,607

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—556 for \$33,036,440

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—2 totaling \$200,000

Through the OWRB's Drought Response Program, funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,764 for \$2,280,534,747

Estimated Savings: \$808,435,641

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

**For more information, call 405-530-8800
or go to www.owrb.ok.gov/financing.**

OKLAHOMA Water News

3rd Quarter 2010

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Valuable Information

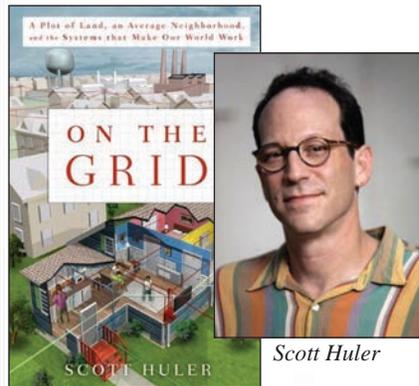
Drought Update

NOAA Administrator and Noted Author Highlight Water Conference and Symposium

Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere & NOAA Administrator, will join Congressman Tom Cole for a federal update during the luncheon on October 26 at the 2010 Oklahoma Governor's Water Conference and Research Symposium.

This year's event will be held October 26-27 at the Embassy Suites Conference Center in Norman. The theme is "A Shared Resource, A Shared Responsibility." Lt. Governor Jari Askins, along with Norman Mayor Cindy Rosenthal and OWRB Chairman Rudy Herrmann, will welcome attendees on Tuesday morning during a general session.

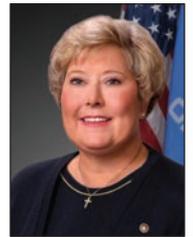
Scott Huler, award-winning radio personality and author of *On the Grid: A Plot of Land, an Average Neighborhood, and the Systems that Make our World Work*, will then deliver the keynote address. Huler's book explores the average person's viewpoint of infrastructure, focusing on how infrastructure systems are often taken for granted, shrouded in mystery, and woefully out of date.



Scott Huler



Dr. Jane Lubchenco, NOAA
Administrator



Lt. Gov. Jari Askins



Congresswoman
Mary Fallin

Following the general session will be concurrent sessions on a variety of water-related topics, including Oklahoma Comprehensive Water Plan (OCWP) panels on public water supply, agriculture, and tribal issues. All panels will be moderated by state and tribal officials.

Wednesday's opening session will include a welcome from Congresswoman Mary Fallin and a federal update from Col. Michael

(continued on page 2)

From the Director

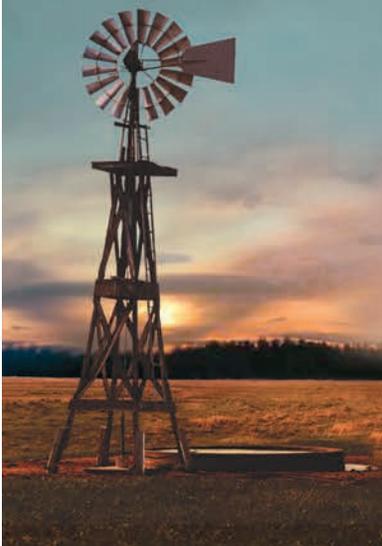
Even before it was officially launched in late 2006, the OWRB committed to facilitating an open and, above all, inclusive Oklahoma Comprehensive Water Plan (OCWP) process—one that is above reproach. It is my opinion that we have been extremely successful in that mission. This will become quite evident when the Plan is submitted to the State Legislature and Governor in early 2012, and as policies and projects resulting from the plan are implemented in the following years.

This OCWP is truly by the people and for the people. Through development of a close working relationship with more than 300 citizen

(continued on page 2)



J. D. Strong, Interim Executive Director
Oklahoma Water Resources Board



Conference (continued)

Teague, USACE Tulsa District Engineer. OCWP panels on Wednesday will include the topics of environment, commerce and industry, and energy.

Wednesday's luncheon will feature a discussion of Inca water engineering by Kenneth and Ruth Wright. OWRRI poster contest winners will be announced, and presentations will be made by 4H speech contest winners.

This year, the traditional OWRRI Water Research Symposium will be held simultaneously with the Water Conference during the concurrent sessions.

To access online registration for the event, go to <http://environ.okstate.edu/OKWATER/>. An early registration discount rate will be available through October 5. ♦

From the Director (continued)

participants, who have graciously volunteered both their time and unique perspectives on Oklahoma's future water issues, we have established trust and fostered a beneficial spirit of cooperation.

To ensure a fair and nonpartisan OCWP, the OWRB empowered the Oklahoma Water Resources Research Institute (OWRRI), an independent organization with unique policy development expertise, to develop and execute the OCWP's public participation process. Every individual who has been directly involved in this singular opportunity to contribute to Oklahoma's water future was chosen and vetted by the OWRRI and approved by the OCWP Planning Advisory Board, a separate body consisting of select OWRB members and cabinet officials. No person willing to volunteer significant time to the effort was excluded.

To date, the OWRRI has hosted 86 local, regional, and statewide water planning meetings and engaged thousands of Oklahomans in the public input process. Participants have invested almost 30,000 hours collectively. Discussion has been heated at times, which not only exemplifies the passion that Oklahomans have about their water resources, but also verifies to us that they are engaged in our process. On the technical side, ten separate workgroups, including about 100 experts, have provided invaluable input into technical methodologies and decisions.

Providing an additional opportunity for independent vetting of draft water policy recommendations, the Water Town Hall, hosted by The Oklahoma Academy, was successfully completed last May. During the spring of 2011, the OWRRI will host thirteen additional regional public meetings to obtain feedback on draft water policy recommendations, all of which will receive final consideration by the nine-member Water Board late in 2011 prior to formal submittal to the Legislature and Governor in early 2012.



Along with Secretary of Environment J.D. Strong, three additional cabinet members will assist with this year's conference. Sec. of Agriculture Terry Peach (left) will moderate the OCWP Agriculture panel, Sec. of Commerce and Tourism Natalie Shirley (middle) will moderate the Commerce & Industry panel, and Sec. of Energy Robert Wegener (right) will moderate the Energy panel. Other moderators and panels include ODEQ Executive Director Steve Thompson (Public Water Supply), Chickasaw Nation Governor Bill Anoatubby (Tribal), and Dept. of Wildlife Conservation Director Richard Hatcher (Environment).

Implementable policy must be backed by broad public support, and that is what we seek through this unprecedented level of openness, collaboration, and public involvement in development of water policy for Oklahoma's next century. Arbitrary decisions concerning the management and protection of Oklahoma's water resources are destined to fail. The OCWP is not the OWRB's plan, it belongs to *all* Oklahomans. Just as we all share in the bounty of our plentiful water supplies, we all share the blame if we neglect our water resources or fail to plan for future water problems.

Implementable policy must be backed by broad public support, and that is what we seek through this unprecedented level of openness, collaboration, and public involvement.

On a related note, the OWRB's management team convened our annual strategic planning retreat at Lake Arcadia near Edmond last month. It was my first such experience with that group, and I enjoyed participating in a very productive and quite lively discussion concerning the future direction of the agency in serving the water-related needs of Oklahoma citizens.

A major outcome was our new, refashioned OWRB Mission Statement, which I think captures well the agency's renewed objective for FY-2012 and beyond:

To enhance the quality of life for Oklahomans by managing, protecting and improving the state's water resources to ensure clean, safe, and reliable water supplies, a strong economy, and a healthy environment. ♦

2010 Oklahoma Governor's Water Conference & Water Research Symposium

A Shared Resource, A Shared Responsibility

Tuesday, October 26

8:00 Welcome

Rudy Herrmann, OWRB Chairman
Cindy Rosenthal, Mayor of Norman
Lt. Governor Jari Askins

Keynote

Scott Huler, Author, *On the Grid*

State of the State's Water

J.D. Strong, OK Secretary of Environment

9:30 Break**10:00 Concurrent Sessions****OCWP Public Supply Panel**

Moderator: Steve Thompson, Director, ODEQ

Water Research Symposium (OWRRI)**Dam Safety Workshop: Legal Liability (OWRB)****Oklahoma Municipal League****11:30 Luncheon****Oklahoma Water Pioneer Awards****Water Outlook from Washington DC**

Congressman Tom Cole
Dr. Jane Lubchenco, Under Sec. of Commerce for
Oceans and Atmosphere & NOAA Administrator

1:30 Concurrent Sessions**OCWP Agriculture Panel**

Moderator: Terry Peach, OK Secretary of Agriculture

Water Research Symposium (OWRRI)**Dam Safety Workshop: Engineering (OWRB)****Water Rights Workshop (OWRB)****Waterways Advisory Board****3:00 Break****3:30 Concurrent Sessions****OCWP Tribal Panel**

Moderator: Bill Anoatubby, Gov., Chickasaw Nation

Water Research Symposium (OWRRI)**Floodplain Management Workshop (OFMA)****OK Association of Reclamation Projects****Water Well Drillers Demonstration (OGWA)****5:00 Reception**

Wednesday, October 27

8:00 Welcome

Rudy Herrmann
Congresswoman Mary Fallin

Federal Update

Col. Michael Teague, Tulsa District Engineer, USACE

Water Plan Update

Kyle Arthur, OWRB
John Rehring, CDM
Ken Senour, Guernsey
Will Focht, OWRRI

10:00 Concurrent Sessions**OCWP Environment Panel**

Moderator: Richard Hatcher, Director, ODWC

Water Research Symposium (OWRRI)**FACT Session (OWRB/DEQ)****Energy/Natural Resources Law Session (OBA)****11:30 Luncheon**

Inca Water Engineering—Machu Picchu, Tipon, & Moray
Kenneth R. Wright & Ruth Wright

Poster Contest Winners**4H Speech Contest Winners****1:30 Concurrent Sessions****OCWP Commerce & Industry Panel**

Moderator: Natalie Shirley, OK Secretary of
Commerce & Tourism

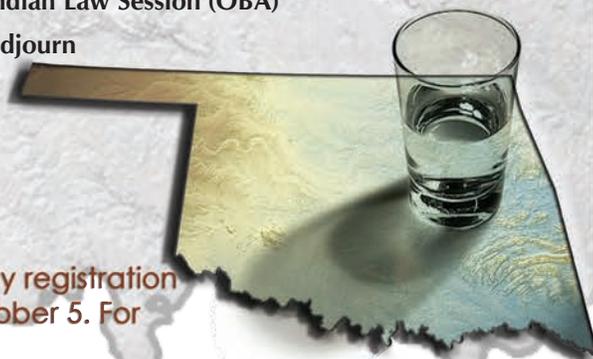
Water Research Symposium (OWRRI)**FACT Session (OWRB/DEQ)****Environmental Law Session (OBA)****3:00 Break****3:30 Concurrent Sessions****OCWP Energy Panel**

Moderator: Robert Wegener, OK Secretary of Energy

Water Research Symposium (OWRRI)**FACT Session (OWRB/ODEQ)****Indian Law Session (OBA)****5:00 Adjourn**

Embassy Suites Conference Center
Norman, Oklahoma

Register online at <http://environ.okstate.edu/OKWATER/>. Early registration discount rate and special room rates available through October 5. For more information, call 405-530-8800.



Garber-Wellington Water Management Study Update

The Garber-Wellington Water Management Study is on track to be completed by September 30, 2011. Over the last year, U.S. Geological Survey staff have made considerable progress in developing a three-dimensional representation of the lithologic properties of the aquifer.

The focus for the final year of the study will be constructing a digital groundwater-flow model that will be used to evaluate the maximum annual yield and to predict the impacts of long-term groundwater withdrawals on the aquifer.

To update OWRB members on the progress of the study, the regular October 12 Board meeting will be held at the new Arcadia Conservation Education Center on the south side of Lake Arcadia, followed by a field trip to nearby areas of interest associated with the aquifer.

Tentative plans are to have a short presentation on the Garber-Wellington study near the end of the morning Board meeting, followed by an excursion to nearby sites where the Garber Sandstone is exposed. There, Dr. Stan Paxton (USGS) will discuss the geology of the aquifer and how information from outcrops is applied to the groundwater flow model.

Additional stops are planned at Edmond's state-of-the-art water treatment plant and at one of the City's water supply wells, where Edmond Water Superintendent Fred Rice will discuss how Edmond meets its water demands and water quality standards.

On Wednesday, October 27, during the joint Governor's Water Conference and OWRRI Water Research Symposium, OWRB hydrogeologist Noel Osborn will moderate a special session exploring various aspects of the Garber-Wellington study and associated research. For more information, go to <http://environ.okstate.edu/okwater/index.asp>.



Dr. Stan Paxton examining the Garber Sandstone

Trends Analysis an Important Component of OCWP

The OWRB's water quality monitoring staff are providing support for the OCWP through an evaluation of water quality data that has been collected on Oklahoma's surface waters.

Analysis of 17,000 data sets on 65 lakes and 60 streams will be used for a report detailing trends in water quality. Ultimately, the report will help planners determine if waters are getting "better" or "worse" over time at each site. The Water Quality section in each of 13 OCWP Regional Reports will contain tables indicating trends for waterbodies in that region. (Trend tables for the Beaver-Cache Region are displayed below.)

Most of the data being analyzed was collected routinely through the Beneficial Use Monitoring Program (BUMP) during the last twelve years, but any additional data collected prior to the existence of the BUMP is also being considered, some dating back to the early 1970s.

The final report on "Trends in Lake and Stream Water Quality in Oklahoma" is expected to be released in the fall of 2010.

Stream Water Quality Trends

Beaver-Cache Region

Parameter	Red River near Terral, OK		East Cache Creek near Walters, OK	
	All Data Trend	Recent Trend (1998-2009)	All Data Trend	Recent Trend (1998-2009)
Conductivity (us/cm)	↑ (1965-93, 1998-2009)	NT	↑↑↑ (1975-93, 1998-2009)	↑↑↑
Turbidity (NTU)	↑↑↑ (1975-93, 1998-2009)	↓↓	↑↑↑ (1979-93, 1998-2009)	↓↓↓
Total Phosphorus (mg/L)	↓↓↓ (1975-93, 1998-2009)	NT	↓↓↓ (1976-93, 1998-2009)	↑↑↑

↑↑↑ or ↓↓↓ = Highly significant upward or downward trend (alpha <= 0.05)
 ↑↑ or ↓↓ = Moderately significant upward or downward trend (alpha <= 0.10)
 ↑ or ↓ = Slightly significant upward or downward trend (alpha <= 0.20)
 NT = No significant trend detected
 N/A = Data not available

Red River near Terral has shown an historic, highly significant, upward trend in turbidity, although it has shown a moderately significant, downward recent trend. East Cache Creek near Walters has shown both a recent and historic, significantly upward trend in conductivity, while turbidity has an historic significantly upward trend with a recent significantly downward trend. This waterbody has also exhibited a significantly downward historic trend in turbidity, although the recent trend has been significantly upward.

Reservoir Water Quality Trends

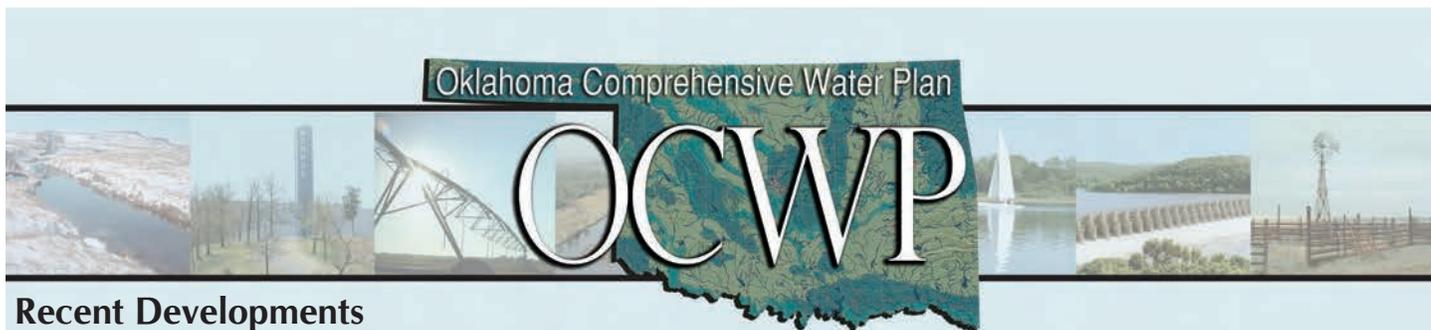
Beaver-Cache Region

Parameter	Site	Lake Ellsworth	Lake Lawtonka	Walters Lake	Waurika Lake
		(1994-2009)	(1998-2009)	(1995-2008)	(1996-2008)
Chlorophyll-a (mg/m3)		NT ¹	↑↑↑	↑	NT
Conductivity (us/cm)		NT	↑↑↑	↑↑	NT
Total Phosphorus (mg/L)		NT	NT	↓	NT
Turbidity (NTU)		NT ²	NT ³	NT	↑↑

- (1) Site 1 demonstrates a highly significant upward trend for chlorophyll-a.
- (2) Site 1 demonstrates a moderately significant upward trend for turbidity.
- (3) Sites 1 and 3 demonstrate a slightly significant downward trend for turbidity.

↑↑↑ or ↓↓↓ = Highly significant upward or downward trend (alpha <= 0.05)
 ↑↑ or ↓↓ = Moderately significant upward or downward trend (alpha <= 0.10)
 ↑ or ↓ = Slightly significant upward or downward trend (alpha <= 0.20)
 NT = No significant trend detected

Lake Lawtonka has shown a highly significant upward trend in both chlorophyll-a and conductivity. Walters Lake has shown a slightly significant upward trend in chlorophyll-a, a moderately significant upward trend in conductivity, and a slightly significant downward trend in total phosphorus. Waurika Lake has shown a moderately significant upward trend in turbidity.



Recent Developments

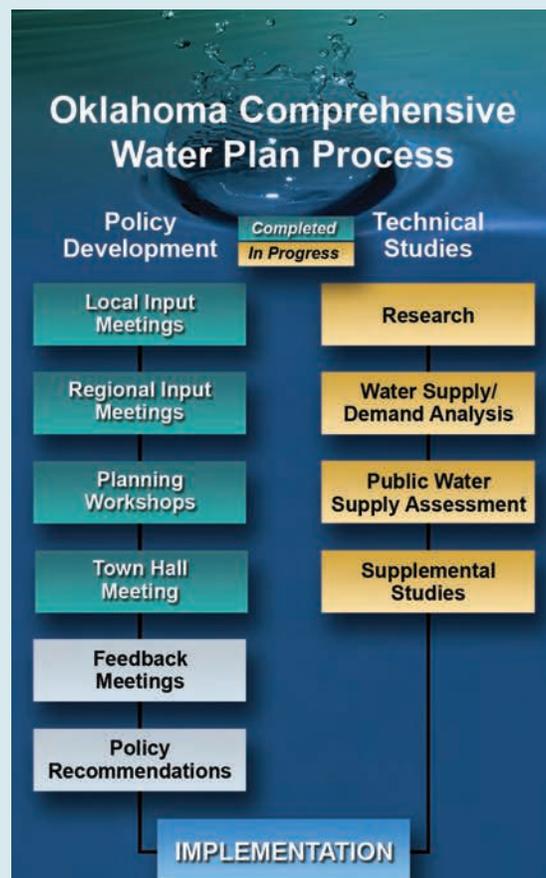
- To ensure that all water policy issues are sufficiently addressed, the OWRRI is currently working to synthesize OCWP public input recommendations with those developed during May's Water Town Hall, hosted by the Oklahoma Academy. The Institute is also preparing to host 13 regional meetings to seek input on implementation ideas for final recommendations. The Water Town Hall Final Report is now available on the Academy's website at www.okacademy.org.
- The Recharge Workgroup final report is now available on the OWRB website, and the Marginal Quality Water Workgroup final report will be available soon.
- The OWRB continues to meet with state water management agencies to solicit their invaluable input and contributions concerning Oklahoma's future water priorities and challenges.
- The OWRB and CDM have begun development of 13 OCWP Water Planning Region Reports, which will contain detailed information on Oklahoma's water supply and demand as well as current and future water use scenarios. Planners are focusing on development of practical solutions that water managers and other stakeholders can use to address anticipated shortages and other issues.
- CDM is developing a water planning "primer" that water systems can use to address future local water needs and growth. The document should be especially valuable to small communities and rural water districts with limited available resources.
- The OWRB has received a grant from the Bureau of Reclamation to incorporate climate change into the recently developed OCWP Reservoir Yield model. The project seeks to enhance water management to reduce the risk of potential climate change impacts upon water systems.

Upcoming

- The Governor's Water Conference and Research Symposium will be held October 26-27 at the Embassy Suites Conference Center in Norman. The program will feature six sessions highlighting various policy and technical aspects of the OCWP.
- Thirteen regional feedback meetings will be held in early 2011 to obtain final input on proposed water policy recommendations; dates and locations have yet to be determined.

Water Plan Objectives

1. Characterize demands by water use sector.
2. Identify reliable supplies to meet forecasted demands.
3. Perform technical studies in support of the evaluation of emerging water management issues.
4. Engage comprehensive stakeholder involvement to make recommendations regarding the management of Oklahoma's water resources.
5. Make "implementable" recommendations regarding the future of water management in Oklahoma based upon technical evaluations and stakeholder input.



Goals of the OCWP Update

- To provide safe and dependable water supply for all Oklahomans while improving the economy and protecting the environment.
- To provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma's water resources.

For more information on the OCWP, visit the OWRB's website at www.owrb.ok.gov. For questions and comments concerning policy development and public meetings, contact the OWRRI at 405-744-9994, by e-mail at waterplan@okstate.edu, or go to <http://okwaterplan.info>.

Water Use Reports Provide Valuable Information

In Oklahoma, water use permits from the OWRB are required for purposes other than household and related minor uses. Once a permit has been obtained, the permit holder (or "water right" holder) is responsible for submitting an annual water use report to the OWRB. This information is essential to the OWRB for determining the amount of water being used across the state and planning for current and future uses. Data from more than 14,000 stream and groundwater permits is relied upon by agency hydrologists for conducting studies of state surface and groundwaters and providing general protection of landowner water right interests. Too often, however, water users fail to submit complete and accurate water use reports.

Groundwater wells that are temporarily out of service must be capped and abandoned wells plugged in accordance with Oklahoma law.

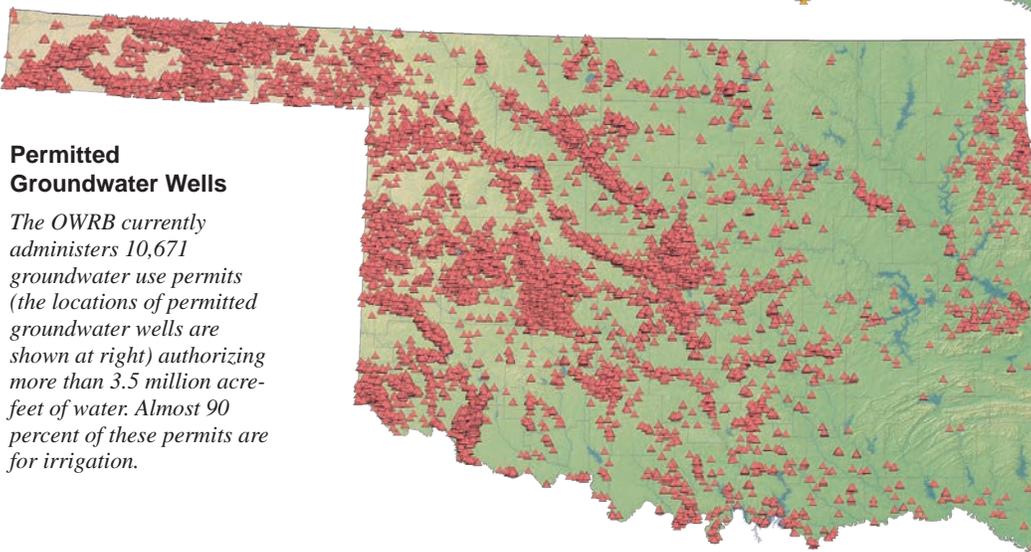
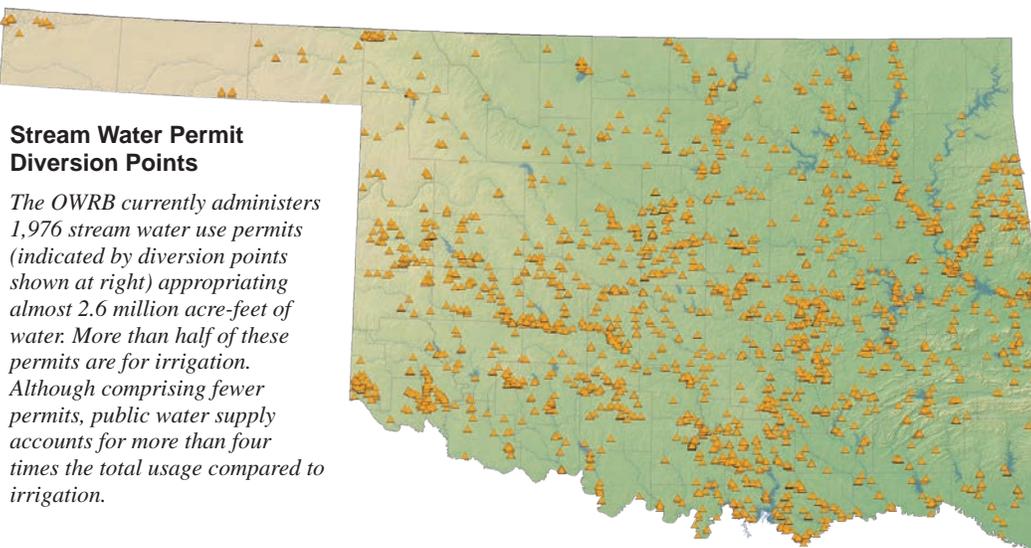
In addition to reporting the amount of water used, it is also the responsibility of all water right holders to review the legal locations of wells (for groundwater) or diversion points (for surface water) and verify that they are correct on the report. If wells or diversion points are not indicated in the authorized location, the permit holder is required to file an amended or new water right application with the OWRB. Use of unauthorized wells or diversion points before amending a water right or obtaining a new permit is a violation of Oklahoma State law.

If water usage is not metered, the best way to keep track is to determine the well or diversion pumping rate and the amount of time the pump runs. The OWRB recommends that users maintain a daily journal of pumping dates, times and rates in gallons per minute.

Enclosed with all water use reports, both for groundwater and stream water, is an invoice for a fee of \$50 per water right, up to \$500 per entity. This annual fee protects the

interests of all water right holders by offsetting a portion of the agency's cost to maintain its water rights database, permit imaging system, online datasets, enforcement activities for unauthorized water use, and other actions critical to the overall protection of water rights. In addition, the groundwater fee helps fund hydrologic studies to accurately determine amounts of water available for allocation to landowners and other users.

Annual water use report forms are mailed to all water right holders during the last week of December and are due back no later than March 15 with the appropriate fees. Please contact the Permitting Section of the Oklahoma Water Resources Board to amend water rights, obtain new permits, or get information on tracking annual water usage. 💧



Drought Update

Reservoir Storage

As of September 8, twenty-six reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); twenty-nine reservoirs have experienced lake level decreases since August 9.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), three climate divisions in Oklahoma are currently experiencing drought conditions.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in two of Oklahoma's nine climate divisions. The South Central region is "very dry" over the past six months.



Storage in Selected Oklahoma Lakes & Reservoirs (September 8, 2010)

LAKE	Change in Elevation (feet) 8/9-9/8/10	Current Flood Control Storage (acre-feet)
North Central (2)		
Fort Supply	-0.63	-307
Great Salt Plains	0.10	2,685
Kaw	-0.40	-2,510
Northeast (3)		
Birch	-1.13	-1,560
Copan	-0.24	-1,014
Fort Gibson	-3.10	-5,237
Grand	-1.98	18,059
Hudson	-1.48	2,210
Hulah	0.73	3,010
Keystone	-2.27	15,955
Oologah	-4.43	-7,551
Skiatook	-1.25	-15,572
West Central (4)		
Canton	-0.64	-3,710
Foss	-0.61	-4,809
Central (5)		
Arcadia	-0.76	-1,691
Heyburn	-0.92	-803
Thunderbird	-0.85	-7,276
East Central (6)		
Eufaula	-2.01	-157,432
Tenkiller	-3.17	-17,897
Southwest (7)		
Fort Cobb	-0.82	-2,604
Lugert-Altus	-9.19	-87,257
Tom Steed	-0.48	-8,928
South Central (8)		
Arbuckle	-0.57	-510
McGee Creek	-0.39	-2,910
Texoma	-0.68	-12,348
Waurika	-0.46	-4,734
Southeast (9)		
Broken Bow	-2.65	-125,241
Hugo	-1.38	-65,846
Pine Creek	-1.05	-3,524
Sardis	-0.49	-15,073
Wister	-0.82	-6,458

Standardized Precipitation Index (through August 2010)

CLIMATE DIVISION	Standardized Precipitation Index (through August 2010)				Palmer Drought Severity Index
	3-month	6-month	9-month	12-month	September 4, 2010
Northwest (1)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
North Central (2)	Near Normal	Near Normal	Near Normal	Near Normal	Unusual Moist Spell
Northeast (3)	Moderately Wet	Near Normal	Near Normal	Moderately Wet	Near Normal
West Central (4)	Near Normal	Near Normal	Near Normal	Near Normal	Incipient Drought
Central (5)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
East Central (6)	Near Normal	Near Normal	Near Normal	Near Normal	Mild Drought
Southwest (7)	Moderately Wet	Near Normal	Near Normal	Near Normal	Near Normal
South Central (8)	Moderately Dry	Very Dry	Moderately Dry	Near Normal	Mild Drought
Southeast (9)	Near Normal	Moderately Dry	Moderately Dry	Near Normal	Moderate Drought

For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to www.owrb.ok.gov/supply/drought/drought_index.php.

*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Ed Fite • Marilyn Feaver • Kenneth K. Knowles • Richard Sevenoaks • Joe Taron*

Enhancing the quality of life for Oklahomans by managing, protecting and improving the state's water resources to ensure clean, safe, and reliable water supplies, a strong economy, and a healthy environment.



3rd Quarter 2010

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or article submissions to
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The Oklahoma Water News is published by the Oklahoma Water Resources Board as authorized by J.D. Strong, Interim Executive Director. Eighty-eight hundred copies have been printed by University Printing Services at an approximate cost of 38 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of August 16, 2010

FAP Loans—326 for \$692,610,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—229 for \$891,792,441

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to draw upon for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—120 for \$598,704,882

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—546 for \$48,207,601

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—557 for \$33,047,065

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—2 totaling \$200,000

Through the OWRB's Drought Response Program, funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

**Total Loans/Grants: 1,780 for \$2,325,179,366
Estimated Savings: \$820,187,421**

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

**For more information, call 405-530-8800
or go to www.owrb.ok.gov/financing.**

OKLAHOMA Water News

4th Quarter 2010

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Oklahoma Comprehensive Water Plan

The OWRB and Oklahoma Water Resources Research Institute (OWRRI) began culmination of the Oklahoma Comprehensive Water Plan (OCWP) public input phase in 2010. Citizen participants attended a strategy seminar in March, and the OCWP Town Hall, led by the Oklahoma Academy for State Goals, was held over three days last May in Norman. During the Town Hall, 172 participants generated a wide array of state water policy recommendations that address 11 specific categories varying from conservation and water sales to land use and the scientific nature and legal consequences of stream and groundwater interaction. In October, the Governor's Water Conference and Research Symposium featured six sessions focusing on policy topics relating to public water supply, agriculture, tribal, environment, commerce, and energy issues.

The OWRB, OWRRI, CDM, and other partners also began synthesizing OCWP public input recommendations with those developed during the Town Hall in preparation for thirteen regional feedback meetings beginning in April 2011 (see page 6). Initial drafts of the thirteen OCWP Watershed Planning Region reports, including eighty-two basin analyses, were developed during 2010 and will be presented during those meetings. These reports contain detailed information on Oklahoma's water supply and demand as well as current and future water use scenarios. The primary focus has been development of practical solutions that water managers and other stakeholders can use to address anticipated shortages and related issues.

OWRB employees spent the year focusing on streamlining and refining information to be included in the OCWP update. The OWRB continues to meet with other state water management agencies and various partners to solicit their invaluable input and suggestions.

Financial Assistance

In January, a \$94 million Bond Issue to address water infrastructure needs in Oklahoma was closed. In 2010, the OWRB's Financial Assistance Program approved 53 grants and loans totaling \$269 million for Oklahoma communities and rural water/sewer districts to address water and wastewater infrastructure needs. Financing via the OWRB saved communities and rural water/sewer districts approximately \$83 million over traditional financing avenues.

(continued on page 2)

From the Director

As the Water Resources Board contemplates news of an anticipated budget cut of ten percent or more, as well as continued talk of agency consolidation, we naturally reflect upon the efficiency and utility of our programs and expenditures.

An extremely diverse agency, especially for its moderate size, the OWRB is charged by the Legislature with considerable responsibilities. Through our water rights program, staff administer almost 13,000 permits making possible the fair and orderly use of more than 6 million acre-feet of stream and groundwater each year. Among many associated tasks, we help water users mitigate the devastating impacts associated with our state's frequent drought episodes, address frequent conflicts between diverse user groups

(continued on page 2)

Oklahoma Comprehensive Water Plan

OCWP



J. D. Strong, Executive Director
Oklahoma Water Resources Board



Annual Report (continued)

Under the direction of the OWRB, Oklahoma became the first state in EPA Region 6 and third state in the nation to have all American Recovery and Reinvestment Act funds under contract. Approximately \$56.5 of the \$62 million in American Recovery and Reinvestment Act Funds were invested in the state's water and wastewater infrastructure.

2010 FAP Loans and Grants

In 2010, the OWRB's Financial Assistance Program approved 54 loans and grants totalling \$269,040,326, with an estimated savings to Oklahoma Communities of \$83,568,995. FAP options include REAP and Emergency grants and CWSRF, DWSRF, and FAP bond loans.

Water Rights

In 2010, the OWRB's water rights/permitting staff issued 61 long-term groundwater permits and 24 long-term stream water permits for 22,730 and 10,071 acre-feet, respectively,

and amended 112 groundwater permits for an additional 4,556 acre-feet. Staff filed 314 groundwater and 1,006 stream water provisional temporary permits (allowing use for up to 90 days) for 3,331 and 10,450 acre-feet, respectively, most of which were sought by oil companies requiring water for the drilling of oil and gas wells. There were 198 groundwater and 24 stream water permit "change of ownerships" filed. Currently, the OWRB manages 12,647 total long-term permits for approximately 3.5 million acre-feet of groundwater and 2.6 million acre-feet of stream water.

Technical Studies

OWRB hydrologists, in cooperation with the USGS and other partners, completed the second year of the three-year Garber-Wellington Water Management Study in 2010. The intense investigation of this major aquifer, which supplies water for hundreds of thousands of central Oklahoma citizens, has included the detailed analysis of water use, development of the hydrogeologic framework of the aquifer, and continued outreach to the region's major water users.

Stream water hydrologic investigation studies and allocation models were completed for the Upper Canadian River, Cache Creek, and Beaver Creek stream systems.

continued on page 3

From the Director (continued)

and among individuals, and ensure compliance with federal compacts apportioning water between Oklahoma and our neighboring states.

We seek to avoid potential loss of life and property as staff ensure the integrity of some 4,500 dams across the state and guide land use in concert with floodplain requirements. To protect public health and optimize recreational opportunities, the OWRB monitors the quality of water in more than 600 streams and lakes, and we work with other agencies and communities to prevent and remediate pollution problems when they occur.

The OWRB's five loan and grant programs have generated more than \$2.4 billion and leveraged many billions more in the construction of water and wastewater infrastructure projects. Many of the communities and rural water districts receiving these funds would otherwise be forced into the private market to obtain financing at much higher rates or would not qualify at all. Our technical experts study Oklahoma's surface and groundwaters to determine amounts of water available for use. Their findings, backed by critically important data, provide information essential to sustainably manage water usage both for this generation and for those that follow.

This work is accomplished through a dedicated group of professionals – engineers, geologists, environmental specialists, attorneys, financial analysts, accountants, and information technology experts – who are uniquely qualified, many possessing advanced degrees. They are well-trained, experienced, and always working to improve their knowledge and skills.

The current update of the Oklahoma Comprehensive Water Plan has provided a unique opportunity to discuss the state's water management programs with hundreds of Oklahomans. The message received is clear. Citizens want more, not less, protection for the state's water resources, including funding for critically important infrastructure, research and planning. Sound planning and management of our water resources requires accurate data of both the quantity and quality of our water, thus reinforcing the need for critical efforts such as stream gaging and water quality monitoring. As stress on supplies escalates and managing our water becomes more complex, funding such essential programs that enable us to find reasonable solutions becomes increasingly important.

This is a daunting challenge, especially in light of several consecutive years of OWRB budget reductions. Though difficult to balance increasing demands from the public with declining revenue, we continually strive to streamline our programs and accomplish our statutory mandates more efficiently. The OWRB is focused on improving the quality of life for all Oklahomans, which we understand means providing the highest level of public service at the lowest possible cost to taxpayers.

In closing, I want to welcome Gary Sherrer back to service as Oklahoma's Secretary of Environment, a position in which he served admirably during the Keating Administration. It has been my honor to serve in that role since 2008, yet I am excited now to devote all of my attention to the dedicated OWRB staff and Board members as we passionately serve Oklahoma's citizens by developing, managing and protecting our most valuable natural resource – water. ♦

Sherrer Assumes Secretary of Environment Post

Governor Fallin has appointed Gary Sherrer to serve as Oklahoma Secretary of Environment. "Gary Sherrer brings with him to the job a wealth of experience and I know he's a tireless advocate for all of Oklahoma," commented Fallin. "I look forward to having Gary serve in my administration."

This is Sherrer's second appointment to the OSE post. He first served during the Keating administration while concurrently functioning as OWRB executive director, guiding the agency in the aftermath of the bombing of the Murrah Federal Building in 1995. A former state representative from southeast Oklahoma, Sherrer was also the state's first secretary of agriculture under former Governor David Walters.

Sherrer currently holds the position of assistant vice president for external relations in Oklahoma State University's Division of Agricultural Sciences and Natural Resources, where he will remain employed. He also serves on the board of directors at Rural Enterprises, Inc. ♦



Gary Sherrer

Annual Report (continued)

Water Quality

The Federal Clean Water Act required triennial revision of the Oklahoma Water Quality Standards (OWQS) was approved by the Board in March. This included revised criteria for Phenol, new criteria for Acrolein, and site-specific minerals criteria for Nine Mile Creek that will enable continued reuse and subsequent discharge of treated water from the City of Lawton for use as power plant cooling water. A new revision of the OWQS and implementation rules was initiated with a focus on assessment of water quality and the designation of Saline and Little Saline Creeks as High Quality Waters.

Installation of a dissolved oxygen injection system was completed at Lake Thunderbird through cooperation with COMCD. This ARRA-funded project will help reduce algae growth and improve the taste and smell of drinking water for area residents.

As part of the OWRB's Beneficial Use Monitoring Program (BUMP), 36 lakes were sampled by water quality staff during the 2009-2010 period, and



Dissolved oxygen injection system at Lake Thunderbird

work continues on the EPA-funded Oklahoma Water Quality Monitoring Strategy Document. Lake sampling through the BUMP underwent a thorough evaluation and was modified to incorporate a probabilistic sampling approach to maximize benefits and efficiencies in the program while seeking to reduce expenses. Staff also completed work on a two-year probabilistic streams sampling program in the Illinois River basin.

Through an ongoing successful partnership with the Grand River Dam Authority, the OWRB continued dissolved oxygen monitoring on both Grand Lake and Lake Hudson to support Federal Energy Regulatory Commission (FERC) re-licensing.



OWRB staff collecting samples for probabilistic monitoring

In addition to collecting water level measurements in the statewide Mass Measurement Program's statewide network of 505 wells, the OWRB's groundwater monitoring team assessed Swine Licensed Managed Feeding Operations compliance in an additional 550 wells. They also acquired a wealth of historical groundwater quality data in wells tapping the Garber-Wellington aquifer to support that study.

Lakes of Oklahoma

Lakes of Oklahoma, a comprehensive atlas containing maps and related data for 146 reservoirs, including 58 state and federal lakes and an additional 88 public lakes, was compiled by OWRB staff and published in December. The popular publication was funded through a grant from the U.S. Fish and Wildlife Service with assistance from the Oklahoma Department of Wildlife Conservation.

Bathymetric surveys were conducted on nine municipal water supply lakes in 2010, including Healdton, Ponca, Carl Albert, Liberty, Guthrie, Pawnee, Lone Chimney, Claremore, and New Spiro lakes, bringing the total number of lakes mapped by the OWRB to 37.

continued on page 4

Annual Report (continued)

Floodplain Management

OWRB Floodplain Management staff assisted a record number of 175 communities with ordinance and regulation updates during the 2010 Risk Map Program. There are currently 380 Oklahoma communities participating in the National Flood Insurance Program.

Dam Safety

Five new publications were developed and published for the OWRB Dam Safety Program. Dam safety staff also reviewed 1,240 low hazard dams in 2010 and identified 202 dams that may need to be reclassified to significant or high hazard potential.

In a new community outreach effort, OWRB staff completed visits with leaders in five Oklahoma communities, including Guthrie, Ponca City, Pawnee, Healdton, and Talihina. While the visits afforded an opportunity to discuss ownership and specific operation and maintenance of municipal dams classified as high hazard, staff used the opportunity to review water rights, discuss water quality concerns of local lakes, and review funding opportunities available for water and/or sewer infrastructure improvements.

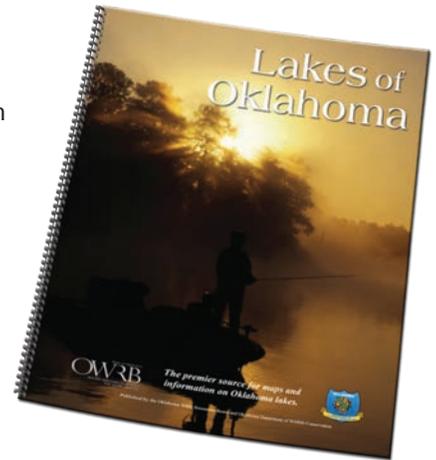


Sardis Agreement

In June, the OWRB approved an agreement with Oklahoma City Water Utilities Trust (OCWUT) to transfer the State of Oklahoma's water storage rights at Sardis and the state's existing 36-year-old \$27 million water storage obligation to the federal government for construction of the lake. OCWUT also agreed to reimburse the state for past Sardis water storage payments and related costs. Local use of the storage, local water rights, and lake level management are protected. ♦

State Lakes Featured in New Publication

The OWRB and Oklahoma Department of Wildlife Conservation have teamed up to publish *Lakes of Oklahoma*, a new comprehensive atlas of maps and data for 146 state reservoirs. Free copies are available for pickup at the OWRB's Oklahoma City office (3800 North Classen Boulevard), ODWC headquarters in Oklahoma City (1801 North Lincoln Boulevard), or the ODWC's Jenks office (300 South Aquarium Drive). The OWRB will mail individual copies for \$10 to cover postage and handling.



Sportsmen helped fund the production of the new publication through the federal Sport Fish Restoration Program and an excise tax on the sale of fishing gear as well as a gasoline fuel tax from motorboats and small engines.

Lakes of Oklahoma, which differs from the *Oklahoma Water Atlas* in that it focuses solely on Oklahoma lakes and reservoirs, provides extensive lake data and special sections on water quality and aquatic nuisance species. Lake bottom contours for an additional 18 lakes have also been added. ♦

OWRB FY 2010 Expenditures & FY 2011 Budget

Activity Name	FY-10 Expended	FY-11 Budgeted
Administration	2,317,689	3,089,776
Water Quality	2,151,773	3,125,580
Financial Assistance	2,285,781	3,943,692
Planning & Management	3,185,501	3,494,703
Secretary of Environment	7,867,648	16,598,619
Totals	\$17,808,392	\$30,252,370
Fund Name		
General Appropriations	2,935,831	3,947,962
Drillers & Installers Indemnity Fund	0	50,000
Rural Economic Action Plan Fund	9,920	73,000
Water Resources Revolving Fund	338,913	683,229
Drillers & Installers Reg. Fund	35,592	20,000
Water Infrastructure Dev. Fund	1,926,647	1,313,850
Federal Funds - OWRB	1,273,408	1,919,537
Federal Funds - OSE	7,405,201	12,677,446
Environmental Remediation Fund	0	3,501,976
USGS Cooperative Agreement	455,450	486,550
Interagency Reimbursement Fund	1,140,071	1,811,047
ARRA Fund	832,663	1,026,077
DW Loan Administration Fund	415,975	1,164,233
CW Loan Administration Fund	1,014,415	766,850
CW Loan Fund	24,306	810,613
Totals	\$17,808,392	\$30,252,370

Mussel Beach

In November, OWRB water quality monitoring specialists visiting Lake Holway, in northeastern Oklahoma, witnessed a disturbing site. Reduced lake levels resulting from dry conditions exposed the infestation of hundreds of thousands, perhaps millions, of Zebra mussels on the shore. This species typically attaches to structures forming dense and prolific colonies, reducing the availability of plankton and causing major economic losses by clogging pipelines, locks, dams, and boat motors. A single female mussel can release up to a million eggs per season. ♦



Zebra mussels at Lake Holway, November 2010

31st Annual Oklahoma Governor's Water Conference

A Shared Resource, A Shared Responsibility



The OWRB and OWRRI hosted a record number of attendees and dozens of exhibitors at the 2010 Governor's Water Conference and OWRRI Water Research Symposium on October 26-27 in Norman.

Six Oklahoma Comprehensive Water Plan discussion panels served as the centerpiece of the Conference, focusing on issues relating to public water supply, agriculture, tribal,



Above: Chairman Rudy Herrmann, Lt. Gov. Jari Askins, J. D. Strong, and Scott Huler.

environment, commerce, and energy. Moderators included Steve Thompson, ODEQ Executive Director; Terry Peach, OK Secretary of Agriculture; Bill Anoatubby, Chickasaw Nation Governor; Richard Hatcher, Executive Director of the Dept. of Wildlife Conservation; Natalie Shirley, OK Secretary of Commerce and Tourism; and Robert Wegener, OK Secretary of Energy.

The Conference was highlighted by addresses from author Scott Huler, Lt. Gov. Jari Askins, Congressman Tom Cole, Congresswoman Mary Fallin, Tulsa USACE District Engineer Col. Michael Teague, and other special guests, with OWRB Chairman Rudy Herrmann serving as emcee.

The OWRRI Water Research Symposium and several other concurrent sessions provided alternatives and opportunities for continuing education for attendees with particular areas of interest.



Above: General session and the OCWP Municipal/ Public Water Supply and Agriculture panels.



Tom Cole



Mary Fallin

2010 Oklahoma Water Pioneers

Drew Edmondson was elected Attorney General in 1994, and was re-elected in 1998, 2002, and 2006. He has fought vigorously to protect Oklahoma's water resources, both from a quality and quantity perspective.

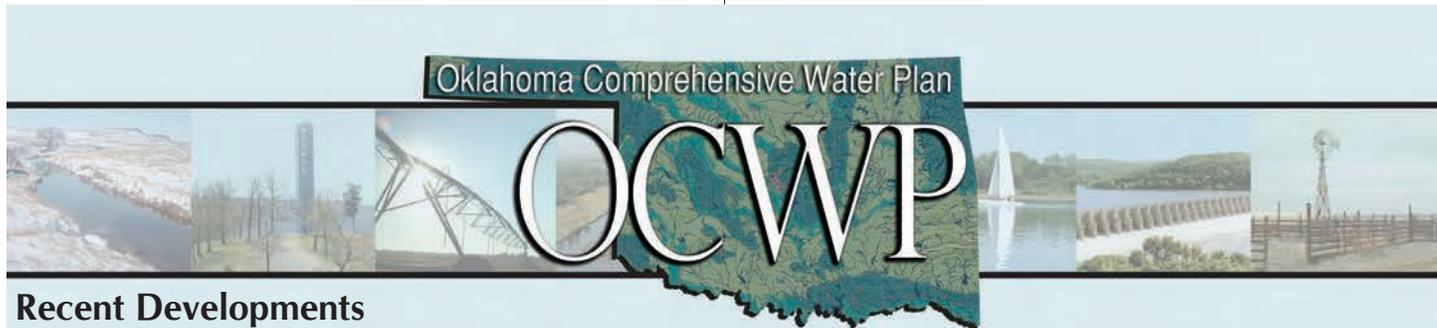


Mike Melton served the OWRB for 38 years as a field engineer, division chief, Legislative Liaison, and Assistant Director. He served as Chairman of the Planning Committee for the original Oklahoma Comprehensive Water Plan.



Diane Pedicord is General Counsel and Chief Officer for Corporate Affairs for the Oklahoma Municipal League. She is a long-time authority on the state's water law, also serving as a member of the OWRB's Water Law Advisory Committee.





Oklahoma Comprehensive Water Plan

OCWP

Recent Developments

- Two additional OCWP documents are now available on the OWRB website: “Physical Water Supply Availability Report” and “Conjunctive Water Management in Oklahoma and Other States.”
- Areas of the state expected to experience future water shortages, or “hot spots,” are being identified using the Oklahoma H2O tool. Scenarios of water challenges are being developed individually for the three primary OCWP water supply sources: surface water, alluvial groundwater, and bedrock groundwater in each of the 82 OCWP basins. Oklahoma H2O is a flexible GIS-based analysis tool created to compare projected water demands with physical supplies.

Upcoming

- The OWRB and OWRRI will co-host 13 regional feedback and implementation meetings (dates/locations below), the final stage of the OCWP public input process, beginning April 19 in Beaver, Oklahoma. The purpose of the meetings is to give the public the opportunity to comment on the draft plan and provide implementation suggestions.

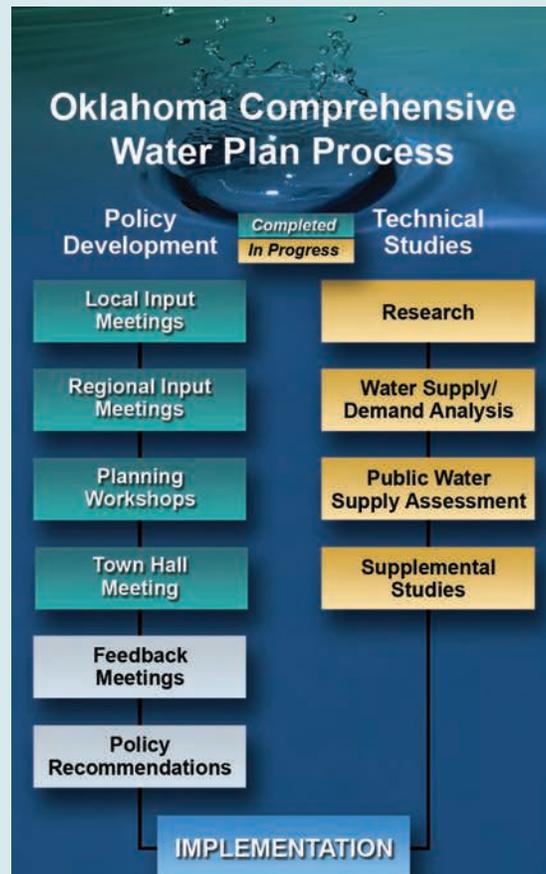


Each meeting, featuring an informal come-and-go format, will include an afternoon technical session followed by a public input (policy development) session in the evening. They will provide an important opportunity for public input participants and the general public to ask specific questions of OWRRI and OWRB staff as well as engineers responsible for much of the OCWP technical work. Relevant reports will be available for review on the OWRB’s website in advance of each meeting.

- | | |
|-----------------------------|-------------------------|
| • April 19, Beaver | • May 17, McAlester |
| • April 26, Quartz Mountain | • May 18, Antlers |
| • April 27, Clinton | • May 19, Coalgate |
| • April 28, Enid | • May 24, Sulphur |
| • May 3, Tulsa | • May 25, Lawton |
| • May 4, Grove | • May 26, Oklahoma City |
| • May 5, Stigler | |

Water Plan Objectives

1. Characterize demands by water use sector.
2. Identify reliable supplies to meet forecasted demands.
3. Perform technical studies in support of the evaluation of emerging water management issues.
4. Engage comprehensive stakeholder involvement to make recommendations regarding the management of Oklahoma’s water resources.
5. Make “implementable” recommendations regarding the future of water management in Oklahoma based upon technical evaluations and stakeholder input.



Goals of the OCWP Update

- To provide safe and dependable water supply for all Oklahomans while improving the economy and protecting the environment.
- To provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma’s water resources.

For more information on the OCWP, visit the OWRB’s website at www.owrb.ok.gov. For questions and comments concerning policy development and public meetings, contact the OWRRI at 405-744-9994, by e-mail at waterplan@okstate.edu, or go to <http://okwaterplan.info>.

Drought Update

Reservoir Storage

As of December 20, twenty-six reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); twenty-four reservoirs have experienced lake level decreases since November 30.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), only one climate division in Oklahoma is currently experiencing drought conditions. However, four additional regions are classified in “incipient drought.”

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in four of Oklahoma’s nine climate divisions. The Southeast region is going through a particularly extended dry period.



Storage in Selected Oklahoma Lakes & Reservoirs (December 20, 2010)		
LAKE	Change in Elevation (feet) 11/30-12/20/10	Current Flood Control Storage (acre-feet)
North Central (2)		
Fort Supply	0.36	544
Great Salt Plains	-0.16	2,098
Kaw	0.95	152
Northeast (3)		
Birch	-0.30	-2,249
Copan	-0.27	-4,561
Fort Gibson	0.08	-6,359
Grand	0.00	1,759
Hudson	-0.44	12,759
Hulah	-0.07	-2,846
Keystone	-0.64	-43,548
Oologah	-0.29	-39,878
Skiatook	-0.44	-42,705
West Central (4)		
Canton	0.07	-16,264
Foss	-0.06	-10,244
Central (5)		
Arcadia	-0.10	-801
Heyburn	-0.07	-769
Thunderbird	-0.23	-14,275
East Central (6)		
Eufaula	-0.76	-244,320
Tenkiller	-1.66	-65,958
Southwest (7)		
Fort Cobb	0.09	-2,753
Lugert-Altus	0.54	-81,648
Tom Steed	-0.25	-10,819
South Central (8)		
Arbuckle	-0.29	-2,250
McGee Creek	-0.11	-7,275
Texoma	-0.81	-96,603
Waurika	-0.28	-8,322
Southeast (9)		
Broken Bow	-0.28	-106,717
Hugo	-0.15	-68,864
Pine Creek	-0.32	-7,363
Sardis	-0.20	-25,300
Wister	-0.21	-9,281

CLIMATE DIVISION	Standardized Precipitation Index (through December 2010)				Palmer Drought Severity Index
	3-month	6-month	9-month	12-month	December 18, 2010
Northwest (1)	Near Normal	Near Normal	Near Normal	Near Normal	Incipient Moist Spell
North Central (2)	Near Normal	Near Normal	Near Normal	Near Normal	Moist Spell
Northeast (3)	Moderately Dry	Near Normal	Near Normal	Near Normal	Incipient Drought
West Central (4)	Near Normal	Near Normal	Near Normal	Near Normal	Incipient Moist Spell
Central (5)	Moderately Dry	Near Normal	Near Normal	Near Normal	Incipient Drought
East Central (6)	Near Normal	Near Normal	Near Normal	Near Normal	Incipient Drought
Southwest (7)	Near Normal	Near Normal	Near Normal	Near Normal	Near Normal
South Central (8)	Moderately Dry	Near Normal	Near Normal	Near Normal	Incipient Drought
Southeast (9)	Moderately Dry	Near Normal	Moderately Dry	Moderately Dry	Moderate Drought

For more drought information, and to obtain updated information on Oklahoma’s drought and moisture conditions, go to www.owrb.ok.gov/supply/drought/drought_index.php.

www.owrb.ok.gov

*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Ed Fite • Marilyn Feaver • Kenneth K. Knowles • Richard Sevenoaks • Joe Taron*

Enhancing the quality of life for Oklahomans by managing, protecting and improving the state's water resources to ensure clean, safe, and reliable water supplies, a strong economy, and a healthy environment.



4th Quarter 2010

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The Oklahoma Water News is published by the Oklahoma Water Resources Board as authorized by J.D. Strong, Executive Director. Eighty-eight hundred copies have been printed by University Printing Services at an approximate cost of 32 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of January 13, 2011

FAP Loans—326 for \$690,565,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—238 for \$975,081,004

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to draw upon for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—126 for \$689,414,642

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—550 for \$48,561,499

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—562 for \$33,482,977

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—2 totaling \$200,000

Through the OWRB's Drought Response Program, funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,804 for \$2,437,305,123

Estimated Savings: \$854,888,566

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

**For more information, call 405-530-8800
or go to www.owrb.ok.gov/financing.**