

OKLAHOMA Water News

Bimonthly Newsletter of the Oklahoma Water Resources Board

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From the Director



*Duane A. Smith
OWRB Executive Director*

The State Legislature convened at noon on February 7, and another legislative session is officially underway. While lawmaker priorities will center around improving education and health care, tort and workers compensation reform, tax cuts, and other important priorities of the state, water issues will continue to garner their fair share of attention.

I'm especially excited that in his State of the State address and FY-06 executive budget request, Governor Henry advocated \$25 million under his proposed \$145 million capitol improvement bond package to help replenish the Statewide Water Development Revolving Fund. Specifically, the funds would provide the necessary matching money

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Board Considers New Rules

At its February 8 meeting, the nine-member Water Board conducted preliminary discussion of new and revised agency rules. The preview provided Board members with an opportunity to screen potential changes to OWRB policy in advance of formal consideration and action at the March 8, 2005, Board meeting.

Of particular interest is a proposed rule change to Chapter 20, Appropriation and Use of Stream Water. In addition to ensuring that regulated stream water is put to beneficial use, Chapter 20 requirements provide for valid excuses through which users may avoid reduction or cancellation of water rights resulting from nonuse of water under the OWRB's "use or lose" requirement.

Current acceptable causes for a user's nonuse of water include flooding or related damage to a field, pump, intake structure or other equipment; drought or related events that caused the supply to be unavailable; service or active duty in the armed forces; placement of land appurtenant to the water right into a conservation reserve or related program; and wrongful acts of others that prevented the use and/or caused pollution of the supply. A proposed change this year, however, would add an additional acceptable reason for nonuse to avoid loss or reduction of a water right--specifically that the lack of actual use of the water was due to unforeseen lack of demand.



One new proposed OWRB rule change seeks to improve how Water Quality Standards data is collected and interpreted.

The rule change was proposed because especially larger water systems, which must anticipate sudden and/or rapid growth in future infrastructure development plans, may overestimate future water needs at the time of permit issuance.

Other new rules and amendments under consideration include the following:

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that qualifies the state for up to \$125 million in Environmental Protection Agency capitalization grants. In turn, Oklahoma can leverage these funds to underwrite an estimated \$650 million in community water and wastewater project financing. That's a 2600 percent return on the state's investment in water and sewer infrastructure. You simply won't find a better deal that benefits more people than the OWRB's Financial Assistance Program.

Many Oklahomans may remember that the Financial Assistance Program (FAP) was established in 1983 through an appropriation identical to that proposed this February by Governor Henry. Collectively, to date, the agency's five loan and grant programs have funded more than \$1.3 billion in community water and sewer infrastructure projects throughout Oklahoma. As the state agency authorized to assist political subdivisions and municipal corporations of the state, the Board eliminates the inherent risks involved in lending to private entities. Since inception of the FAP, we have not experienced a single default.

The Governor's budget also recommends \$2.5 million to initiate update of the Oklahoma Comprehensive Water Plan, the state's long-term strategy to manage and protect our water resources. Funds for the multi-year study will come from the Gross Production Tax Rural Economic Action Plan (REAP) Fund. The remaining \$4 million dollars required for the \$6.5 million study are targeted for expenditure in FY-2007 and FY-2008 (\$2 million for each year). The Governor's recommendation will almost certainly further intensify the recent interest

in water planning by members of the Legislature and other state leaders. Looking back, the 1980 and 1995 Water Plans were extremely foresighted policy tools that laid the groundwork for much of Oklahoma's water future to date, such as water/wastewater project financing, regionalization of water systems, instream flow protection, and joint management of surface and groundwaters.

Although OWRB staff are already working on integral regional water use projections through 2060, a specific strategy for conducting the updated Water Plan effort remains under consideration. However, I envision a plan that balances economic development and the environment and addresses the many competing interests between public water supply, agriculture, recreation, fish and wildlife, navigation, hydropower, and other sectors. And while the Governor's budget request is a good start, the new Water Plan must offer up recommendations through which Oklahomans can prepare for the \$4 billion water/wastewater infrastructure financing need anticipated over the next 20 years.

We also must resolve anticipated community water supply and treatment issues, especially in rural Oklahoma, and identify specific water system and water resource needs to supply the greatest number of people in the most efficient manner. Critical to this aspect of the Water Plan update will be facilitation of local involvement in developing solutions to water problems. Only a "bottom-up" strategy will maximize requisite local support for this critically important planning process.

New Rules . . . Continued from page 1

- Chapter 1--Organization and Procedure of the OWRB-- Add language providing that no person shall serve as chairman for more than two consecutive years.
- Chapter 20--Taking and Use of Streamwater--(1) Provide conditions to protect navigation use of water on permits. (2) Add a new rule to clarify that the filling of an impoundment at a mining site authorized by the Oklahoma Department of Mines is not a use of water requiring a permit provided that such activity does not

interfere with downstream domestic and existing appropriative uses.

- Chapter 35--Well Driller and Pump Installers Licensing--Provide for an exemption to the continuing education requirement for renewal of licenses and operator certifications. The amendment has been proposed following a request from a long-time well driller who believes there should be an exemption to continuing education requirements based on length of time an operator has been drilling.
- Chapter 46--Water Quality Standards Implementation--Improve the interpretation of data collected that directly impacts how water quality standards are implemented and use support decisions are made in Oklahoma.
- Chapter 55--Floodplain Management--reflect the change in state law that provides authority to the Board to accredit floodplain administrators for purposes of the Oklahoma Floodplain Management Act and National Flood Insurance Program. Additionally, a new subchapter containing rules detailing requirements for accreditation of floodplain administrators would be added to the chapter.

OWRB Rulemaking

Administrative rules must be adopted in accordance with rulemaking requirements of state law. The OWRB has developed its rules in compliance with statutory requirements, and likewise continues to follow the provisions of the law when amending current rules and creating new rules.

At times, the Board or an interested person may find that current rules do not adequately address a given circumstance. If a rule change is necessary, the interested person may request the Board, or the Board may decide on its own, to initiate the process of making a new or amended rule to deal with the situation.

Fite Appointed to Water Board

In late January, Governor Henry appointed Ed Fite to the Oklahoma Water Resources Board. Since 1983, Fite has served as Administrator for the Oklahoma Scenic Rivers Commission, a state agency charged with protecting and preserving the Illinois River and its tributaries.



A native Oklahoman, Fite earned his bachelor's degree from Northeastern State University in Tahlequah. Fite also serves as the State Representative to the Interagency Wild and Scenic River Coordinating Council, and he formerly served as Vice-President of the National Association of State and Local River Conservation Programs. He is a founding member of Save the Illinois River, Inc., a citizens' coalition formed in the mid-1980s to solicit public support to protect the river and its tributaries. He is a member of the Solid Waste Institute of Northeast Oklahoma and Chairman of the Cherokee Nation Environmental Protection Commission.

Ed has received recognition from many organizations over the years, including the Wildlife Federation and Sierra Club, and he was presented with a Lifetime Achievement Award from Keep Oklahoma Beautiful. He was instrumental in getting Oklahoma to pursue litigation that ultimately led to a U.S. Supreme Court decision resulting in the finding that the EPA could require an upstream state to comply with a downstream state's water quality standard.

Fite fills the vacancy left in Congressional District 2 by Glenn Sharp, who resigned from the Board last spring. Fite represents recreational water use.

In addition to Fite, the other eight current Board members include the following:

- Ervin Mitchell, Chairman, represents soil conservation interests. Mitchell, a Balko resident representing District 3, is a cattleman and farmer and has served on the Balko School Board, Oklahoma State School Boards Association, Oklahoma Association of Conservation Districts, and Beaver County Conservation District Board. His term expires in May 2005.

- Lonnie Farmer, Vice Chairman, represents agricultural water use interests. Farmer, an Oklahoma City resident representing District 5, is a retired bank presi-

dent and the former mayor of Davidson. A founder and former Board member of the Oklahoma Rural Water Association (ORWA), he drove formation of the Tillman County Water Development Authority. His term expires in May 2011.

- Bill Secrest, Secretary, represents rural residential water use interests. A resident and former City Manager of Broken Arrow, Secrest represents District 1. He was a founder of Wagoner County RWD #5 and managed the District until his retirement. He serves on Boards of the ORWA and National Rural Water Association. His term expires in May 2007.

- Harry Currie represents industrial water use interests. A resident of Oklahoma City, Currie is an At Large member. He is the owner of an Oklahoma City bag manufacturing firm and owns farming and ranching interests. He served two terms as mayor of Del City and is an active member in many civic groups and boards. His term expires in May 2006.

- Rudy Herrmann represents industrial water use interests. A Tulsa resident, Herrmann is an At Large member. He is currently an Adjunct Assistant Professor in the Master of Science in Engineering and Technology Management Program at Oklahoma State University. He is a retired President and CEO of Dover Resources Inc. His term expires in May 2007.

- Jack W. Keeley represents municipal water use interests. Keeley is a member of the Harvard Engineering Society and National Water Well Association. Currently residing in Ada, he formerly served as Director of Research for the EPA's Robert S. Kerr Environmental Research Lab (1984-1988). He represents District 4 and his term expires in May 2010.

- Jess Mark Nichols represents irrigation interests. An Altus resident, Nichols serves as an At Large member. He is a cotton farmer and a member of the Lugert-Altus Irrigation District, and currently serves on the Board of Directors for the Oklahoma Boll Weevil Eradication Org., Producers Oil Mill, and Southwest Technology Center. His term expires in May 2011.

- Richard Sevenoaks represents municipal water use interests. A Tulsa resident, Sevenoaks serves as an At Large member. He is an auction company owner and member of the Tulsa Metropolitan Utility Authority, Tulsa Utility Board, and Regional Metro Utility Board. His term expires in May 2009.

Purpose of the Board

The purpose of the Oklahoma Water Resources Board is to determine and administer rights to the use of waters of the State; develop long-range plans to encourage the conservation, development, and utilization of the water resources of the State; coordinate, review, reject, modify, or approve all local, state, and federal water activities within the State; and establish and administer standards of quality for the prevention, control, and abatement of pollution of the waters of the State. Board membership must include at least one member well versed in each of the following major types of water use: recreational, industrial, irrigational, municipal, rural residential, agricultural, and soil conservation work, but no more than two members may be selected representing any one of the major types of water use.

2004 Moisture Benefits State

In 2004, Oklahomans were afforded a temporary respite from persistent drought conditions in the state, especially in the west. Compared to 2003 and normal annual statewide rainfall, 2004 was a wet year, according to the Oklahoma Climatological Survey. In fact, last year was the 20th wettest year since record-keeping began in 1895.

Although the southeast region of Oklahoma experienced a relatively dry year (almost three inches under its normal precipitation, the ninth driest on record), rainfall in the Panhandle and west central regions resulted in the top 10 wettest years for both areas.

2003 and 2004 Statewide Precipitation Monthly Totals vs. Normal

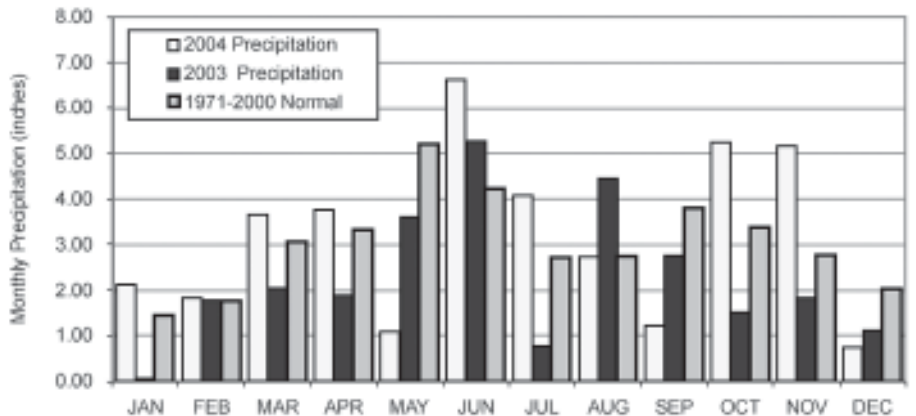


Chart courtesy Oklahoma Climatological Survey

When is a Dam Safety Permit Required?

To maintain and improve the safety of dams in Oklahoma, the OWRB reminds many dam owners and operators of requirements related to construction or modification of those structures.

Permits from the Water Board for construction or modification are required for all nonfederal dams that are 25 feet or more in height or impound 50 acre-feet or more of water. (The dam height is typically measured from the natural streambed at the downstream toe of the dam to the top of the crest.) *Exceptions are made in the height requirement for dams less than 6 feet in height and in the capacity requirement for those impounding less than 15 acre-feet.* However, the permit exception does not apply if the Board determines the dam to have a high

hazard potential. Typically, larger federal structures are the responsibility of the operating agency, usually the U.S. Army Corps of Engineers or Bureau of Reclamation. Applications, including specific plans for dam construction and modification, are reviewed by OWRB engineers then submitted to the nine-member Board for consideration.

In Oklahoma, most dams are owned and managed by public entities (such as local governments and conservation districts) and private individuals. Often, problems related to the structural integrity and safety of dams are identified during required engineering inspections. The Water Board prescribes annual inspections of dams classified as "high hazard," those whose failure could cause loss of life or substantial economic damage. "Significant"

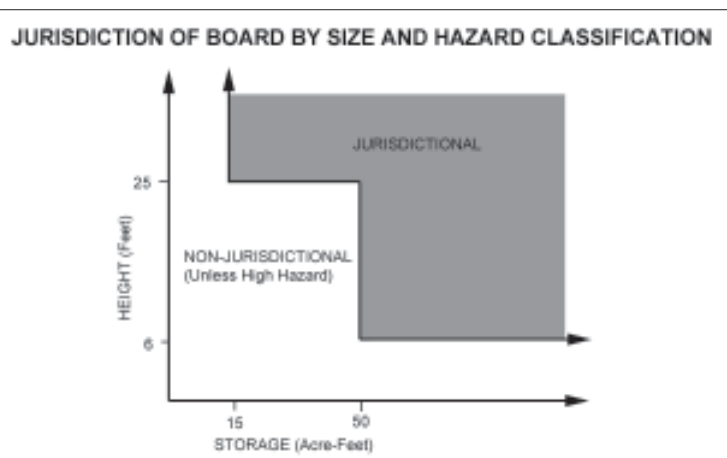
Safety of Dams Act

In December, President Bush signed the Safety of Dams Act of 2004 to shore up aging dams in the western United States. Senator Pete Domenici's bill (S.1727) amended the Reclamation Safety of Dams Act of 1978 to increase authorized appropriations levels to \$540 million annually for the Bureau of Reclamation to carry out dam safety projects. The Senate passed S.1727 in September. The Bureau's "Safety of Dams Program" is currently authorized at \$109 million per year.

and "Low" hazard classifications require less frequent examinations.

The OWRB's database contains 4,483 total dams and 97 percent are under OWRB jurisdiction. About 2,100 are small watershed upstream flood control dams that are operated and maintained by conservation districts throughout the state in cooperation with the Oklahoma Conservation Commission and Natural Resource Conservation Service.

For more information on the Oklahoma Dam Safety Program or to obtain applications for dam construction or modification, contact the OWRB at (405) 530-8800 or visit the agency's Web site at <http://www.owrb.state.ok.us>.



Reflections

Water Should be Top Priority

The following is a guest editorial from an April 2004 edition of the Shawnee News-Star. The author is Dr. Joe Taron, a 2004 Oklahoma Water Pioneer.

I am concerned about water, and our lack of appreciation for it and protection of it.

Water is our most precious commodity; we cannot live without it. Yet, I think we have taken for granted an abundant supply of safe clean water. I am concerned that the people apparently in charge are not adequately educating the citizenry as to supply and demand and protection of our water supply.

I feel we should all be aware of the water cycle (i.e. evaporation, collection or condensation in the clouds, rainfall, absorption in the soil and uptake by the plants, consumption by animal and human population, and back to evaporation.) I realize this is an over simplification, but you get the picture. The more pollution we allow to happen to the ground water and surface water the less evaporation takes place and hence the cycle is impaired.



Dr. Joe Taron

With federal and state mandates as to safe drinking water, the cost to deliver this commodity becomes greater and greater. These increased costs must be passed on to the consumer.

We, as citizens, have been spoiled with abundant, inexpensive water, yet it is the one commodity, "utility," we cannot live without. I have spoken with citizens who complain about a \$40 water bill, yet willingly pay that amount and more to have cable TV.

I feel we need to re-evaluate our priorities and take the necessary steps to preserve and protect the things most necessary. I think we need an accelerated program to educate the consuming public relative to conservation and protection of our water supply.

The people in charge need to constantly monitor supply, demand and quality, and see that the funds are available to provide safe, abundant drinking water, even if it means a rate increase.

"I have spoken with citizens who complain about a \$40 water bill, yet willingly pay that amount and more to have cable TV."

Submit Your Reflections

Reflections, a new regular segment of the bi-monthly *Oklahoma Water News*, will feature citizen viewpoints on Oklahoma's most pertinent water issues and/or the general importance of water. Submissions should generally contain no more than 500 words and the OWRB reserves the right to edit submissions to maintain consistency with newsletter and agency guidelines. Articles can be emailed to pubinfo@owrb.state.ok.us or mailed to the OWRB's Public Information Section at 3800 North Classen Blvd., Oklahoma City, Oklahoma, 73118.

Arbuckle Study Update

Recent Arbuckle study efforts have focused on fault characterization, evaluation of petroleum well information, modeling, tree ring analyses, and related tasks to improve understanding of the Arbuckle-Simpson aquifer's hydrology. In January, OWRB staff measured streamflow on more than 90 streams emanating from the aquifer. In March, workers will measure the depth to water in about 50 wells in the Hunton Anticline region to create a map of the underlying water table.

To fill the void left by three departing employees heavily involved in the Arbuckle study, the OWRB has hired three very qualified geologists. Christopher Neel is a full-time employee, while Gregory Gromadzki, a Ph.D. candidate at OSU, and Nicole Baylor, an M.S. candidate at OU, are participating in internship programs.

Due to the recent high price of oil and gas, it appears that the OWRB will obtain the state's cost match of \$500,000 from the gross production tax to fund the study for the upcoming year.



Water from Gale Spring (above) flows from its source toward 3-Mile Creek (below).

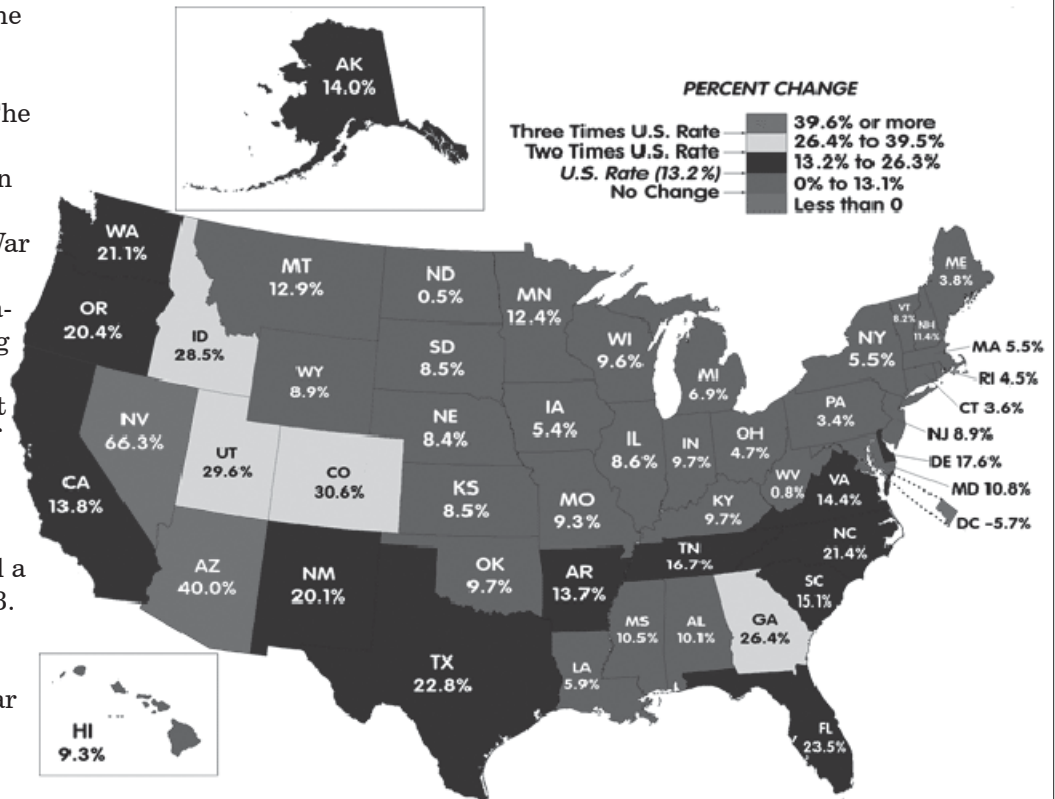


Census Reveals U.S. and Oklahoma Growth

According to the 2000 Census, the 1990 to 2000 population increase (32.7 million) was the largest in American history. The previous record increase for a decade was 28 million between 1950 and 1960, a gain fueled primarily by the post-World War II baby boom.

Every state grew in population during the 1990s, ranging from a high of 66 percent in Nevada to a low of 0.5 percent in North Dakota. The state of Oklahoma experienced a net growth of 305,069 persons, a net increase of 9.7 percent.

The 2000 Census indicated a U.S. population of 248,709,873. According to Census Bureau projections, the nation will grow to 400 million by the year 2050.



OWRB Sponsors Blood Drive

In January, 23 OWRB employees donated blood to the Oklahoma Blood Institute, a state-wide not-for-profit organization that has provided blood to patients in more than 94 hospitals in more than 56 Oklahoma counties since its establishment in 1977. The blood drive was organized by Hannah Harder, Training Coordinator for the agency's Oklahoma Water Watch Program.



Christopher Neel of the OWRB's Planning and Management Division, one of 23 staff members donating blood

Bowers Receives Employee Award

Rhonda Bowers of the OWRB's Planning and Management Division received the Employee of the Quarter Award at the agency's January staff meeting.

Bowers was specifically recognized by her coworkers for her effective and independent handling of the Planning Section's board meeting materials, exceptional commitment to the Water Board's floodplain management and dam safety programs, and competency and professionalism in the performance of her duties, as well as exceptional service to the State of Oklahoma throughout her 25 years of public service.



A limited number of free copies of the OWRB's video, *Oklahoma Water: A Quality of Life*, are available on DVD while supplies last. The informative 30-minute production debuted at the Governor's Water Conference on October 20, 2004. To request a copy, call 405-530-8800. Allow two to three weeks for delivery.

OKLAHOMA WATER A QUALITY OF LIFE

Oklahoma Drought Monitor

Reservoir Storage

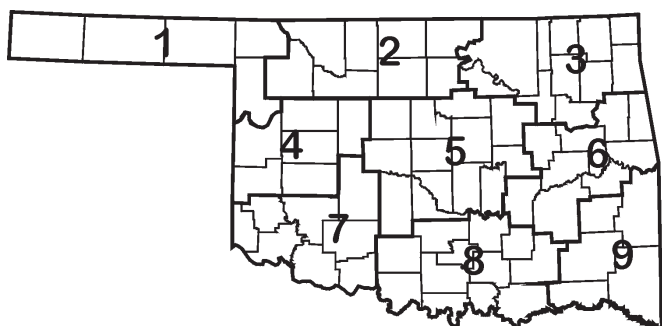
Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of February 18, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.4 percent full, a 0.7 percent decrease from that recorded on January 18, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-five reservoirs have experienced lake level decreases since that time and only four reservoirs are currently operating at less than full capacity (compared to three last month). Two reservoirs—Lugert-Altus, only 54.2 percent full; and Tom Steed, 77.5 percent—remain below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs

As of February 18, 2005

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	420,480	420,480	100.0
Northeast	3,710,194	3,635,393	98.0
West Central	276,790	266,417	96.3
Central	154,225	154,225	100.0
East Central	3,022,323	3,022,323	100.0
Southwest	301,810	73,685	24.4
South Central	2,795,156	2,795,156	100.0
Southeast	1,464,929	1,464,929	100.0
State Totals	12,145,907	11,832,608	97.4

Drought Indices



According to the latest Palmer Drought Severity Index (February 12, below), no regions in Oklahoma are currently experiencing drought conditions and all remain “moist.” Only three of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since January 15. The greatest decrease occurred in the Southeast climate division.

The latest monthly Standardized Precipitation Index (through January, below) indicates no long-term dryness in Oklahoma; wet conditions continue to dominate. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), no climate divisions indicate dryness. And considering longer periods (through six years), no regions indicate dry conditions.

Palmer Drought Severity Index

Climate Division (#)	Current Status 2/12/2005	Value		Change In Value
		2/12	1/15	
NORTHWEST (1)	EXTREME MOIST SPELL	4.09	3.72	0.37
NORTH CENTRAL (2)	EXTREME MOIST SPELL	4.26	4.15	0.11
NORTHEAST (3)	UNUSUAL MOIST SPELL	2.96	3.05	-0.09
WEST CENTRAL (4)	VERY MOIST SPELL	3.26	3.11	0.15
CENTRAL (5)	UNUSUAL MOIST SPELL	2.90	2.86	0.04
EAST CENTRAL (6)	UNUSUAL MOIST SPELL	2.07	2.41	-0.34
SOUTHWEST (7)	VERY MOIST SPELL	3.16	2.93	0.23
SOUTH CENTRAL (8)	VERY MOIST SPELL	3.13	3.11	0.02
SOUTHEAST (9)	MOIST SPELL	1.99	2.54	-0.55

Standardized Precipitation Index

Through January 2005

3-Month	6-Month	9-Month	12-Month
EXTREMELY WET	EXTREMELY WET	VERY WET	VERY WET
VERY WET	MODERATELY WET	MODERATELY WET	VERY WET
MODERATELY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
EXTREMELY WET	VERY WET	MODERATELY WET	VERY WET
VERY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
VERY WET	VERY WET	MODERATELY WET	VERY WET
VERY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

Financial Assistance Program Update

Loans/Grants Approved as of February 8, 2005

FAP Loans—308 totaling \$538,550,000

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 extremely competitive low-interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—162 totaling \$559,196,254

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—46 totaling \$189,283,938

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—412 totaling \$35,811,834

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—510 totaling \$29,941,006

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

Total Loans/Grants—1,438 totaling \$1,352,783,032

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405) 530-8800.

Ervin Mitchell, *Chairman*; Lonnie L. Farmer, *Vice Chairman*; Bill Secrest, *Secretary*
Harry Currie, Ed Fite, Rudy Herrmann, Jack Keeley, Mark Nichols, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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Floodplain Management 101 and 202 Classes

Modernizing Oklahoma's Flood Maps

Feds Urge Citizens to be "Flood Smart"

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State GIS Day Held

2004 BUMP Report Available

Oklahoma Drought Monitor

OKLAHOMA Water News

Bimonthly Newsletter of the Oklahoma Water Resources Board

From the Director



*Duane A. Smith
OWRB Executive Director*

Successful water projects depend upon good research, lots of support from key lawmakers and interest groups, and especially adequate funding. Although progress in the Oklahoma State Legislature is key to the execution of water resource studies and policy, we frequently depend upon the state's Congressional leaders to move these important objectives from the planning to implementation stage.

This year we look to Senator Inhofe's leadership, along with support from Congressman Coburn and Oklahoma's five House members, to assist in getting the projects before congress. In early March, I traveled to Washington, D.C. to meet with Oklahoma's Congressional delegation and visit with them about the OWRB's

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Mesonet Groundwater Monitoring Aim of Pilot Study

The OWRB has teamed with U.S. Department of Agriculture and state university researchers to examine the feasibility of using the Oklahoma Mesonet to monitor drought impacts on groundwater levels.

The specific aim of the pilot study, involving USDA's Agricultural Research Service (ARS) and the Oklahoma Climatological Survey (OCS), is to determine the usefulness of shallow real-time groundwater data via the internet to assess ongoing or impending drought conditions. In turn, this information could help water users and managers conserve or better utilize existing supplies to diminish the impacts of potential water shortages. The project is being funded by the U.S. Bureau of Reclamation.

Data products will be collected and disseminated through the Oklahoma Mesonet, a network of more than 110 automated environmental monitoring stations located throughout the state.

Two groundwater observation wells have been established for the study: one was drilled at the El Reno



El Reno Mesonet site, established about five miles west north-west of El Reno in 1995

Mesonet site in Canadian County and the other at the Acme Mesonet site in the Little Washita River Experimental Watershed where the ARS has conducted research since the 1960s. El Reno's well taps the water table between 15 and 20 feet below the surface, while water at

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From the Director . . . Continued from page 1

annual Congressional Briefing Document, which contained recommendations on a variety of water-related programs dependent upon or affected by federal action. Among critical issues discussed at several meetings with key members of the delegation and their staff were the proposed reduction in funding for the U.S. Geological Survey's streamgaging program, funding for a monitoring plan on Oklahoma's Scenic Rivers, studies of Wister and Grand Lakes, update of the State's comprehensive water plan, and increased funding for the Corps of Engineers to operate and maintain federal dams and reservoirs in Oklahoma.

The key vehicle for authorization and funding for many of these important water projects is the Water Resources Development Act (WRDA), last reauthorized in 2000. Current draft language in the bill, cosponsored by Sen. Inhofe, includes several important provisions, including:

- Funding for the Red River Chloride Control project, in southwest Oklahoma, at full federal expense. The provision includes a \$3 million feasibility study to investigate technical and environmental issues related to the augmentation of southwest Oklahoma water supplies, including Lugert-Altus Reservoir, through the removal of salts (chlorides) from the North Fork, Elm Fork, and Salt Fork Rivers.
- A \$20 million joint monitoring proposal, adopted by the Arkansas-Oklahoma Arkansas River Compact Commission, to monitor water quality and imple-

ment appropriate activities to reduce nonpoint source pollution in the Illinois River Basin.

- Federal funding to update the *Oklahoma Comprehensive Water Plan*, last updated in 1997. Governor Henry included \$6.5 million for the Water Plan in his budget document.
- Rolling back language in the 1986 WRDA that is interpreted to mean that the Corps of Engineers must charge "updated" costs, rather than original costs, when reallocating water storage in federal reservoirs. This would result in much cheaper costs for the future water supply needs of Oklahoma communities.

None of these provisions would be included in the current WRDA bill if they weren't critically important to the water business of Oklahoma. Whatever the outcome, I want to extend my sincere thanks to Sen. Inhofe and the entire Congressional delegation for their efforts to improve and protect our state's water resources.

On the State level, I remain optimistic that the Legislature will find an avenue through which to replenish Oklahoma's Statewide Water Development Revolving Fund that Governor Henry has supported in his budget. As I have mentioned many times before, this remains a priority for both the State and Water Board as we seek to keep pace with increasingly stringent federal water treatment requirements and Oklahoma's anticipated \$4 billion water/wastewater infrastructure needs over the next two decades.

Pilot Study . . . Continued from page 1

the Acme site is found at 45 to 50 feet. Water level measurements are collected in conjunction with 20 other meteorological variables. These real-time measurements



Water Board Geologist Greg Gromadzki checks the automated data logger at the El Reno Mesonet site's observation well.

and hydrographs can be viewed on the Mesonet Web site.

According to Noel Osborn, the Water Board geologist coordinating the study, data gathered at the two pilot study sites are expected to reveal both short-term variability and long-term trends that could be useful in distinguishing the effects of climatic variability on local groundwater resources. Individuals cooperat-

ing with Osborn are John Daniel, a geologist with the ARS Grazinglands Research Laboratory in El Reno, and Chris Fiebrich, an OCS meteorologist.

What is the Mesonet?

The Oklahoma Mesonet, a world-class network of environmental monitoring stations, was designed and implemented by scientists at the University of Oklahoma and Oklahoma State University. The Mesonet consists of over 110 automated stations across Oklahoma with at least one station in each county.

At each site, the environment is measured by a set of instruments located on or near a tower 10 meters tall. The measurements are packaged into "observations" every 5 minutes, and then transmitted to a central facility every 15 minutes, 24 hours per day, year-round. The Oklahoma Climatological Survey receives the observations, verifies the quality of the data, and provides the data to Mesonet customers.

It only takes 5 to 10 minutes from the time the measurements are acquired until they become available to the public. For more information, visit the Oklahoma Mesonet Web site at <http://okmesonet.ocs.ou.edu>.

Scientist Named New EPA Administrator

Steven Johnson, a scientist and expert on pesticides, has been named Administrator of the U.S. Environmental Protection Agency. He replaces Michael Leavitt, who left the EPA to become U.S. Secretary of Health and Human Services.

Johnson is a graduate of Taylor University in Indiana with a master's degree in pathology from George Washington University. A career government employee, he has been with the agency for 24 years, serving as acting EPA head since early this year. EPA employs 18,000 employees with an annual budget of over \$8 billion.

Arbuckle Researchers Find "Old" Water

The U.S. Geological Survey is conducting a geochemical study to gain better understanding of the flow paths of Arbuckle-Simpson waters. In part, the investigation has employed a computer simulation to project path lines and travel times of water moving through the highly-fractured groundwater system.

In addition, utilizing measurements of naturally occurring helium as a tool to age-date groundwater in the aquifer, preliminary study data estimate that water from Vendome Well, an artesian well issuing from the Arbuckle-Simpson aquifer in Sulphur, is approximately 10,000 years old.



The area around Vendome Well, drilled in 1922 near Sulphur, at one time included a restaurant, dance pavilion, and skating rink. The well provided enough water for a swimming pool in the area as well as adequate flow for the watercourse that flows from the well through Flower Park to Travertine Creek. Vendome Well is a major attraction of the Chickasaw National Recreation Area, which is visited by more than 1.5 million people per year.

Secretst Reelected to ORWA Post

OWRB Member and Secretary Bill Secretst was reelected President of the Oklahoma Rural Water Association at the organization's 35th annual meeting and technical conference in Tulsa. The ORWA is a nonprofit organization providing training and technical assistance to aid in the development, management, and operation of public water supply and wastewater facilities and services in rural areas.

Private Water Well Maintenance

In recognition of National Ground Water Awareness Week (observed March 13-19), well and safety experts from the National Ground Water Association and Underwriters Laboratories have offered the following guidelines for maintenance and water testing of private wells:

Reasons to test your well water:

- It hasn't been tested in 12 months.
- There's been a change in taste, odor or appearance.
- Your well has been flooded.
- Your well has been serviced.
- There has been a chemical spill or contamination incident nearby.

What you should do:

- Get an annual well maintenance checkup and water test by a qualified professional.
- Maintain proper separation between your well and buildings, septic systems, and hazardous substances. Check with your local environmental health office.
- Keep top of the well at least one foot above ground. Slope ground away from well for proper drainage.
- Take care in working or mowing around the well. A damaged casing could jeopardize the sanitary protection of your well.
- Keep well records in a safe place. (These include the construction report, annual water well system maintenance, water testing results, etc.)

What you should *not* do:

- Put the hose inside a tank or container when mixing pesticides, fertilizers, or other chemicals to avoid back-siphonage into the well.
- Neglect old, unused wells. They provide a contamination pathway into the aquifer and should be sealed properly by a qualified well contractor.
- Remove the well cap except when servicing the well. A locking cap is best to prevent tampering with the well.
- Pile snow, leaves or other materials around your well.
- Service your well without the help or guidance of a qualified professional. If you introduce contamination into the well, it also can get into the aquifer.

FLOOD CURRENT



Training Opportunities Abound for Flood Officials



Mike Mathis

State Floodplain Coordinator, OWRB

To assist in publicizing and promoting the benefits of flood insurance, Governor Brad Henry proclaimed March 2005 as Flood Insurance Month in Oklahoma, where only 12 percent of homes in the floodplain have a flood insurance policy.

If flooded, these homes will not be covered by a standard homeowner's policy and thus will receive no insurance benefits. Most flood disasters in Oklahoma occur 11 days on either side of Mother's Day (the second Sunday in May). Since it requires 30 days before most flood insurance policies go into effect, now is the time to seek protection through purchase of a flood policy.

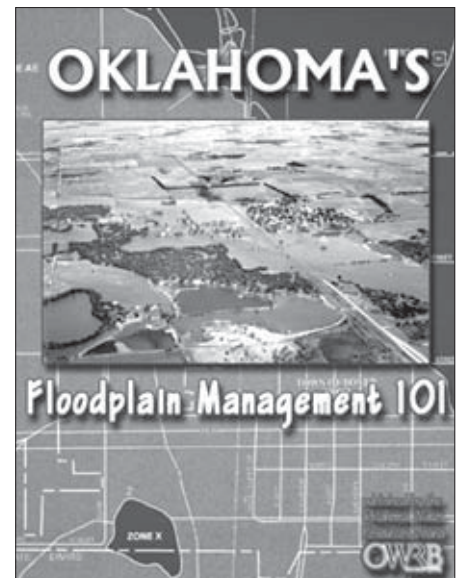
This year, Governor Henry has proclaimed May as Flood Awareness Month because it is Oklahoma's most frequent month for flooding disasters. As an integral part of the OWRB's flood awareness campaign, we are hosting 10 day-long workshops throughout the state to update city and county floodplain administrators on NFIP compliance requirements as well as provide assistance in the development, administration, and enforcement of local floodplain management regulations that guide floodplain development.

New training textbooks will be provided to workshop participants and the certified floodplain manager (CFM) exam will be offered to pre-approved candidates at the close of each training day. There is no registration fee for the workshops, which will feature speakers from the Federal Emergency Management Agency, Oklahoma Department of Emergency Management, U.S. Army Corps of Engineers, Oklahoma Department of Environmental Quality (DEQ), and R.D. Flanagan and Associates.

In addition to our standard introductory *Floodplain Management 101* classes, which focus on administration and enforcement of the basic NFIP program, we will now offer the first *Floodplain Management 202* workshops to serve the professional development and continuing education credit (CEC) needs of Oklahoma's floodplain officials. These workshops, developed as a result

of past years' class evaluations and requests for more advanced training, include training on No Adverse Impact, Map Modernization, Hazard Mitigation, Cooperating Technical Partners, Section 404 of the Clean Water Act, Stormwater Management, and Floodproofing. I want to thank Joe Remondini for agreeing to host these 202 Workshops. I also thank our guest instructors, consultant Ron Flanagan, the U.S. Army Corps of Engineers' Andy Commer, and DEQ staff.

I strongly encourage all floodplain officials in Oklahoma to attend at least one of these sessions. This is one important way in which we can work to improve floodplain management in Oklahoma.



Updated Floodplain Management 101 textbook, available to workshop participants



In conjunction with Flood Awareness Month, the OWRB has updated its Floodplain Management bulletins, now available upon request.

Floodplain Management 101 and 202 Workshops

As an integral part of Oklahoma's spring flood awareness campaign, the OWRB is sponsoring 10 one-day workshops (five 101 workshops and five 202 workshops) throughout the state in May to update city, county, and tribal floodplain administrators on NFIP compliance requirements and provide assistance in the development, administration, and enforcement of local floodplain management regulations.

The 202 workshops are provided for the first time this year to assist the professional development of floodplain managers. The Certified Floodplain Manager (CFM) exam will be offered to pre-approved candidates at the close of each training day. There is no registration fee for the workshops. The Oklahoma Insurance Department has approved 6 hours of continuing education credits (CECs) for both property/casualty agents and insurance adjusters who attend.

The one-day workshops will begin at 8:30 a.m. and adjourn at 4:30 p.m. Workshop dates and locations are as follows:

- May 3, Bartlesville
- May 5, Woodward
- May 10, Lawton
- May 12, McAlester
- May 17, Midwest City

For registration information, call the OWRB at (405) 530-8800 or register online at www.owrb.state.ok.us/hazard/fp/fp_workshops.php.

Modernizing Oklahoma's Flood Maps

Many of Oklahoma's floodplain maps, like those throughout several other states, no longer realistically depict the true flood risk to communities and rural areas. As part of the Federal Emergency Management Agency's (FEMA) Map Modernization Program, the OWRB is working closely with the federal government in preparing a plan to update the state's floodplain delineation maps. Critical to this activity will be forming and strengthening partnerships between the OWRB and the federal government, state agencies, and local communities. The Water Board has signed an agreement with FEMA to become a Cooperating Technical Partner, a designation through which the agency collaborates with FEMA to maintain up-to-date flood maps and other flood hazard information.

The Map Modernization Program consists of a multi-year effort to update flood maps and present them in a more reliable digital format that is easily accessible to local and state floodplain officials. Not only will the new maps help manage development and emergency response, but they will assist lenders and insurance agents in offering the proper protection to their clients. FEMA's five year plan, called the Multi-Year Flood Hazard Identification Plan (MHIP), provides the sequence in which communities will be studied. By the end of the five year period, an estimated 20,000 communities will have new flood hazard maps. Through a premier data collection and delivery system, a National Service Provider, hired by FEMA, will manage Map Modernization and provide continual, national updates on each community's progress.

Feds Urge Citizens to be "Flood Smart"

Department of Homeland Security Under Secretary Michael D. Brown reminds Americans to be "FloodSmart" as the spring flooding season begins.

The Department's Federal Emergency Management Agency (FEMA) recently teamed with its partners at the National Weather Service for the first-ever Flood Safety Awareness Week (March 21-25) to raise public attention to the dangers of flooding and ways to protect life and property.

According to Brown, flooding is America's number one natural hazard, and all states are at risk for flooding. In an average year, floods kill more than 100 people and are responsible for \$4.6 billion in damage in the United States. More than half of those deaths occur in vehicles overtaken by floodwaters.

Being "FloodSmart" means knowing about the risks and ways to protect yourself, your family, and your home. Since homeowner's insurance doesn't cover flood damage, flood insurance is the only cost-effective way for citizens to protect themselves from the financial loss posed by flooding. It only takes an inch of water to do costly damage to your property.

Learn more about flood precautions at www.fema.gov/hazards/floods/. For information about risk and flood insurance, visit www.floodsmart.gov or call (800) 427-4219.



Bombing Anniversary Recognized

To commemorate the 10th anniversary of lives lost as a result of the bombing of Oklahoma City's Murrah Federal Building, OWRB employees held a brief ceremony on April 19. The recognition took place at a site just north of the agency's office where two Ash trees were planted nine years ago in honor of Trudy Rigney and Bob Chipman, agency employees who tragically lost their lives as a result of the domestic terrorist act. The morning ceremony included a moment of silence and meditation and a short reading. Ribbons were tied on the trees, followed by a closing prayer.

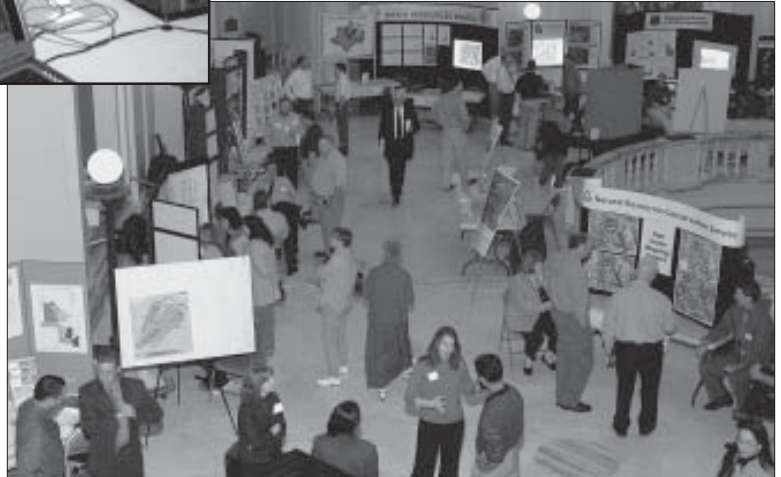


Left: Carla Jennings ties a ribbon on one of two Ash trees planted in memory of OWRB employees Bob Chipman and Trudy Rigney.

State GIS Day Held



Above, the OWRB's Mike Sughru networks with a fellow GIS specialist. At right, visitors at the capitol examine GIS displays.



On March 8, the OWRB once again participated in Oklahoma's annual Geographic Information System (GIS) Day at the State Capitol in Oklahoma City. More than 25 federal, state, county, and municipal agencies from across the state educated Oklahoma legislators and the public about current GIS activities and projects in Oklahoma. The 2005 event, the eleventh GIS Day, was sponsored by the State Geographic Information Council. The theme was GIS Compatibility: Coordination Through Cooperation.

2004 BUMP Report Available

The 2004 Oklahoma Beneficial Use Monitoring (BUMP) Report is now available online at

www.owrb.state.ok.us/studies/reports/bump/2004/bump2004.php

For more information or to obtain a copy on compact disk, please call 405-530-8800.

Water Quality Lesson Provided at Standards Academy

On March 10 and 11, staff of the OWRB's Water Quality Standards section held the first-ever "Water Quality Standards Academy" at the agency's Oklahoma City office.

The initial day of the educational informal workshop consisted of a general overview of Standards topics specifically geared to Water Board employees, including beneficial uses, anti-degradation, Standards implementation, and relationships with the agency's water quality monitoring activities. Day two covered more specific, in-depth subjects related to use attainability assessment, biocriteria, and site-specific criteria.



Katera Whitaker, OWRB water quality specialist, addresses participants at the March 10 Water Quality Standards Academy.

Oklahoma Drought Monitor

Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of April 11, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 96.2 percent full, a 0.9 percent decrease from that recorded on March 14, according to information from the U.S. Army Corps of Engineers (Tulsa District). Ten reservoirs have experienced lake level decreases since that time; only seven reservoirs are currently operating at less than full capacity (compared to five last month). Two reservoirs—Lugert-Altus, only 63.8 percent full; and Tom Steed, 75.7 percent—remain below 80 percent capacity.

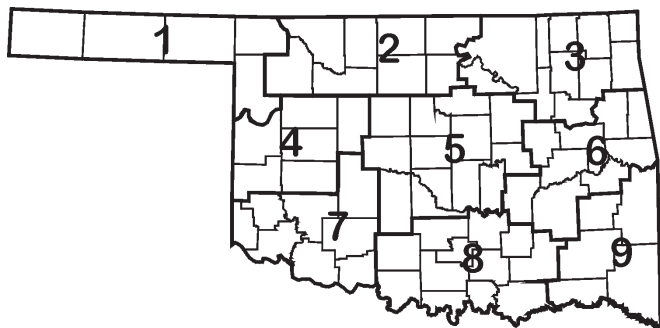
Storage in Selected Oklahoma Lakes & Reservoirs

As of April 11, 2005

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	445,584	445,584	100.0
Northeast	3,710,194	3,594,121	96.9
West Central	276,790	268,295	96.9
Central	154,225	154,225	100.0
East Central	3,022,323	3,022,323	100.0
Southwest	301,810	73,685	24.4
South Central	2,795,156	2,690,598	96.3
Southeast	1,526,192	1,523,788	99.8
State Totals	12,232,274	11,772,619	96.2

Drought Indices

According to the latest Palmer Drought Severity Index (April 9, below), no regions in Oklahoma are currently experiencing drought conditions. However, eight of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since March 12. The greatest decrease occurred in the Southwest climate division.



Although most areas are drier, the latest monthly Standardized Precipitation Index (through March, below) indicates no long-term dryness in Oklahoma; wet conditions continue to dominate. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), no climate divisions indicate dryness. And considering longer periods (through six years), no regions indicate dry conditions.

Palmer Drought Severity Index

Climate Division (#)	Current Status 4/9/2005	Value		Change In Value
		4/9	3/12	
NORTHWEST (1)	VERY MOIST SPELL	3.14	2.97	0.17
NORTH CENTRAL (2)	UNUSUAL MOIST SPELL	2.80	3.48	-0.68
NORTHEAST (3)	MOIST SPELL	1.43	1.81	-0.38
WEST CENTRAL (4)	UNUSUAL MOIST SPELL	2.21	2.51	-0.30
CENTRAL (5)	INCIPIENT MOIST SPELL	0.97	2.10	-1.13
EAST CENTRAL (6)	INCIPIENT MOIST SPELL	0.65	0.68	-0.03
SOUTHWEST (7)	MOIST SPELL	1.19	2.43	-1.24
SOUTH CENTRAL (8)	INCIPIENT MOIST SPELL	0.96	2.10	-1.14
SOUTHEAST (9)	NEAR NORMAL	0.40	0.58	-0.18

Standardized Precipitation Index

Through March 2005

	3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	MODERATELY WET	VERY WET	VERY WET	VERY WET
NORTH CENTRAL (2)	NEAR NORMAL	VERY WET	MODERATELY WET	MODERATELY WET
NORTHEAST (3)	NEAR NORMAL	VERY WET	MODERATELY WET	NEAR NORMAL
WEST CENTRAL (4)	NEAR NORMAL	VERY WET	VERY WET	MODERATELY WET
CENTRAL (5)	NEAR NORMAL	MODERATELY WET	MODERATELY WET	NEAR NORMAL
EAST CENTRAL (6)	NEAR NORMAL	MODERATELY WET	MODERATELY WET	MODERATELY WET
SOUTHWEST (7)	NEAR NORMAL	VERY WET	VERY WET	MODERATELY WET
SOUTH CENTRAL (8)	NEAR NORMAL	VERY WET	VERY WET	MODERATELY WET
SOUTHEAST (9)	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL

Financial Assistance Program Update

Loans/Grants Approved as of April 14, 2004

FAP Loans—309 totaling \$551,840,000

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 extremely competitive low-interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—162 totaling \$559,196,254

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—47 totaling \$189,283,938

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—413 totaling \$35,901,834

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—513 totaling \$30,091,005

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

Total Loans/Grants—1,444 totaling \$1,366,313,031

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405) 530-8800.

Ervin Mitchell, *Chairman*; Lonnie L. Farmer, *Vice Chairman*; Bill Secrest, *Secretary*
Harry Currie, Ed Fite, Rudy Herrmann, Jack Keeley, Mark Nichols, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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Bimonthly Newsletter of the Oklahoma Water Resources Board

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Oklahoma Drought Monitor

From the Director



*Duane A. Smith
OWRB Executive Director*

The 2005 legislative session ended on May 27. Although the session began with significant momentum, including Governor Henry's support, for recapitalization of the Statewide Water Development Revolving Fund and funding to update the Oklahoma Comprehensive Water Plan, both initiatives failed to advance. However, these programs remain integral components of the Water Board's mission as well as critical factors in securing safe and reliable water supply for the citizens of Oklahoma.

On a positive note, Governor Henry signed SB 932, which amended the Oklahoma Floodplain Management Act to require all persons designated to administer floodplain regulations be accredited by the OWRB. Our appropriation bill, funded at a level comparable to last year, included \$2.2 million for the Rural Economic Action Plan (REAP) Grant Program. It also authorized

See From the Director, Page 2

Federal Grant Awarded to Lugert-Altus Irrigation District

A \$300,000 federal grant from the U.S. Bureau of Reclamation has been awarded to southwest Oklahoma's Lugert-Altus Irrigation District to improve the efficiency of its water delivery system.

The funding was announced in May by Interior Secretary Gale Norton as part of the Bureau's Water 2025 Challenge Grant Program, which encourages voluntary water banks and other market-based measures, promotes the use of new technology for water conservation and efficiency, and removes institutional barriers to increase cooperation and collaboration among federal, state, tribal, and private organizations. Including the matching contributions of non-federal partners, the Water 2025 grant program has generated more than \$27 million in water improvements. The grant to Lugert-Altus Irrigation District is one of 43 recently approved for 13 western states for a total of \$9.9 million.

According to Secretary Norton, western states are facing some hard realities. "Explosive population growth, chronic water shortages—particularly during this time of drought—environmental needs, over-allocated water-



Lugert-Altus Reservoir provides water supply for more than one-half of the state's cotton crop. More than 300 miles of canals and lateral water lines tap Lugert-Altus Reservoir, providing more than 43 billion gallons of water each year.

sheds, and aging water facilities all combine to create opportunities for crisis and conflict. These competitive grants support realistic and cooperative local approaches to stretch existing supplies and improve aging facilities

See Federal Grant Awarded, Page 3

the use of \$600,000 from the Gross Production Tax REAP Water Fund as matching funds for the Arbuckle-Simpson Hydrology Study (\$500,000), which will soon begin its third year, and the Lugert-Altus Water Augmentation Studies (\$100,000). Finally, it allocates \$287,578 in pass-through funding to the Oklahoma Rural Water Association for water district training purposes.

On May 11, at the invitation of the Senate Energy and Natural Resources Committee, I traveled to Washington D.C. to testify on behalf of the Western States Water Council (WSWC), of which I serve as vice chair, and Western Governors Association in support of Senate Bill 895, the Rural Water Supply Act of 2005. The bipartisan legislation, introduced by Committee Chairman Pete Domenici (R-NM) and Ranking Member Jeff Bingaman (D-NM), would authorize the U.S. Department of the Interior, through the Bureau of Reclamation, to establish a program to plan, design, and construct rural water supply projects. The committee also received testimony from representatives of rural water associations, tribes, small towns, and the Administration.

State and local agencies face numerous challenges in providing adequate supplies of high quality water for household and other purposes. As Sen. Domenici pointed out in his statement supporting S. 895, according to a 1995 needs assessment conducted by the U.S. Department of Agriculture's Rural Development State Offices, over one million people in the U.S. had no water piped into their homes and more than 2.4 million had critical drinking water needs. In many cases, increasingly stringent water treatment regulations create hardships. In Oklahoma, the Department of Environmental Quality estimates that as many as 60 percent of Oklahoma's 1,700 water supply systems, most of them rural, fail to satisfy at least one federal standard.

Congress' appropriations for the Clean Water and Drinking Water State Revolving Funds remain the primary source

of financing for many rural communities. But I reminded Committee members that future funding for these programs is in danger. Provisions of S. 895 constitute an important new strategy to help rural communities, water associations, and tribes provide the rural public with reliable water infrastructure. Furthermore, I emphasized that cooperation between state and federal governments is imperative to the

identification and investigation of water supply projects.

I also took this unique opportunity in front of the committee to state the WSWC's strong support for enactment of the National Drought Preparedness Act, introduced by Senators Domenici (R-NM) and Max Baucus (D-MT). The Act would also provide additional technical and financial assistance to rural communities while affirming state responsibilities in water rights allocation and administration.

Finally, at the June Board meeting, new officers were elected. Rudy Herrmann is Chairman, Mark Nichols is Vice Chairman, and Bill Secrest remains Secretary. We also welcomed new Board member Kenneth Knowles. An experienced farmer and rancher in western Oklahoma and avowed conservationist, Mr. Knowles brings proficient knowledge of water issues to the Board as well as great respect for the inherent value of the state's water resources. Of course, we will all greatly miss Board Chairman

Ervin Mitchell. Rest assured that Ervin will remain a vocal advocate of water use and protection, as he was prior to his initial appointment by Gov. George Nigh almost 21 years ago. I personally wish to thank Ervin for his service and commitment to Oklahomans.

Senator Domenici's Statement On The Rural Water Supply Act of 2005

In support for the introduced Reclamation Rural Water Supply Act of 2005, Senate Energy & Natural Resources Chairman Pete V. Domenici issued the following statement regarding rural America's water challenges.

"I consider it tragic that millions of Americans still live without safe drinking water in this day and age. This privation is unacceptable in a country of our wealth and resources. This problem is especially prevalent in rural America where some small towns and counties can't afford to build new or upgrade deteriorated water infrastructure. The USDA has estimated that more than 1 million people in the United States have no water piped into their homes, and more than 2.4 million have critical drinking water needs that are not being met.

"In my state alone, the New Mexico Finance Authority estimates more than 100 rural communities don't have sufficient water supply and water treatment facilities. "While Congress has authorized various programs to address the problem over the past 30 years, there isn't enough federal money in these programs to meet the great need in rural America. The EPA estimates that \$75 billion needs to be spent on rural water systems around the country in the next 20 years to bring them up to current standards. Many areas of the country can't afford the needed improvements.

"The bill I have written with Senator Bingaman establishes a federal loan guarantee program within the Bureau of Reclamation that would allow rural communities access to the money they need while respecting the limits of the Reclamation's budget. It also expedites the appraisal and feasibility studies which allow these communities to assess how best to address their water supply needs and act accordingly."

May 11, 2005

Governor's Water Conference
November 1-2, 2005
Cox Convention Center, Oklahoma City

For early registration, call 405-530-8800

Federal Grant Awarded . . . Continued from page 1

and help prevent conflict over our limited water resources in the West.”

The Lugert-Altus Irrigation District will use the grant to expand its remote irrigation monitoring and automation sites, improve flow measurement, and replace and rehabilitate farm turnouts throughout the delivery area. District officials anticipate water savings of up to 10,000 acre-feet (almost 3.26 billion gallons) per year. The total project cost will be in excess of \$600,000.

Tom Buchanan, general manager of the District, reported that at a cost of about \$200,000, the initial phase of the infrastructure modernization project is nearing completion, and that the Bureau’s grant will provide the necessary funding to implement phase two of the project.

According to Duane Smith, OWRB Executive Director, the grant validates the commitment of the District’s water users to intelligent management and preservation of their resource. Smith commends the District’s board and customers for past, present, and future actions to maximize availability of often limited water supplies.

Lugert-Altus Irrigation District and other agencies and groups receiving grants will now work with the Bureau of Reclamation to secure cooperative agreements and complete regulatory processes. Ground-breaking on the projects is expected soon and all must be completed within 24 months. For more information on the Water 2025 initiative, visit www.doi.gov/water2025.

New Mesonet Station To Assist Arbuckle Study

The Oklahoma Climatological Survey (OCS) and Oklahoma Water Resources Board (OWRB) have partnered to establish a Mesonet weather monitoring station in Pontotoc County.


The new site, 6.3 miles southwest of Fittstown, houses the 117th Oklahoma Mesonet station in the program’s world-class environmental monitoring network, which includes at least one automated station in every county in the state. The Water Board’s involvement came about due to the agency’s need for data related to the ongoing Arbuckle-Simpson Hydrology Study, currently in its third year.

Fittstown is the first Mesonet station located over the Arbuckle-Simpson aquifer and in the watershed of the Blue River. Real-time climate data transmitted by the station, which was activated May 24, will also provide researchers with information essential to understanding the aquifer and how it responds to variations in precipitation and other factors. An observation well may also be drilled at the site to provide local groundwater level data.

At each Mesonet site, the environment is measured by a set of instruments located on or near a 10-meter-tall


Knowles Appointed to OWRB

Kenneth Knowles of Arnett has been appointed by Governor Henry to serve a seven-year term on the OWRB. A third generation farmer and rancher, Knowles also serves as President of the Northwestern Electric Cooperative located in Woodward, Chairman of the Oklahoma Wildlife and Prairie Heritage Alliance, and Secretary of High Plains Resource Conservation and Development. Knowles received a B.S. in Agricultural Education from Oklahoma State University in 1974. In 2001, he was named the Oklahoma Department of Wildlife Conservation’s Landowner Conservationist of the Year due to his ongoing efforts to enhance wildlife habitat on the 11,000 acres he owns and manages in Ellis County. He was also recognized for playing an integral role in prairie chicken restoration efforts by traveling to Washington, New Mexico, and Mexico to share his knowledge, experience, and support of the Lesser Prairie Chicken Interstate Working Group with policy makers and other ranchers and conservationists.



Kenneth Knowles, OWRB

tower. Measurements of precipitation, temperature, soil moisture, and other climatic variables are packaged into periodic observations, which are transmitted to a central facility and over the Internet every 15 minutes, 24 hours per day year-round. The Fittstown location satisfies OCS Mesonet siting requirements related to accessibility, geography, and vegetation. In addition, the area contains few obstructions and the site maintains consistency with spatial distribution of other Mesonet stations.



The new Mesonet environmental monitoring station near Fittstown

Geochemistry Unlocking Mysteries of Aquifer's Flow System

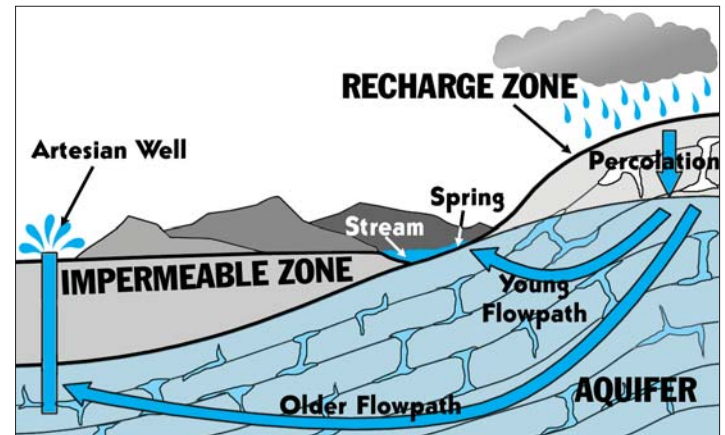
Data collected during last fall's Arbuckle-Simpson Hydrology Study geochemical sampling effort is providing researchers with a better understanding of the flow paths of local groundwaters.

Estimates of the rate of groundwater movement through the Arbuckle-Simpson aquifer's highly-fractured system have been made by calculating the age of groundwater in different locations based on the concentration of environmental tracers. Investigators have employed a computer simulation to project path lines and travel times of water moving through the aquifer. As a tool to age-date groundwater in the aquifer, water samples have been analyzed for levels of naturally occurring helium.

Preliminary results of the study data estimate that water from Vendome Well, an artesian well issuing from the Arbuckle-Simpson aquifer in Sulphur, is very old, possibly more than 10,000 years. In addition, USGS researchers calculate that the sampled water entering the aquifer at that time had a temperature approximately eight degrees cooler than that of the present day. The difference corresponds to mean annual air temperatures

that existed in the area about 10,000 to 14,000 years ago.

Laboratory analysis of the water samples, collected last October and November, will also be used to determine the general water quality of the aquifer and identify possible water quality problems. More detailed geochemical analyses will also be conducted.



Groundwater age can be defined as the travel time of water from its point of recharge to its point of use or discharge. This illustration shows water from a recharge zone travelling along two flowpaths: a short distance to a spring, where it is discharged into a stream, and a much longer distance to an artesian well located in an impermeable zone.

Mitchell Honored

Ervin Mitchell, OWRB Chairman and 21-year member of the OWRB, concluded his career at the agency in May. Mitchell served the Board under five governors as both Chairman and Secretary. He and his wife Emma were honored by other Board members and staff at the May 10 Board meeting, where Executive Director Duane Smith presented him with an award outlining his contributions, including his intense interest in and passion for the vital surface and groundwater resources of Oklahoma, both as a member of the Board and as a model farmer and rancher.

Mitchell was also commended for promoting the utilization of Oklahoma's water resources to provide maximum benefit to the economic, social, and environmental welfare of Oklahomans, and for his efforts to ensure the proper use and protection of Oklahoma's water resources in a manner consistent with the intent of state and federal laws. As both a member of the Board and its Finance Committee, Mitchell has been an important contributor to the Board's continuing efforts to provide financing to hundreds of Oklahoma communities, both rural and urban, to fund vital water and sewer infrastructure through the agency's Financial Assistance Program.

During his career of distinguished service to the state, Mitchell also served on the Board and as President of the Oklahoma Association of Conservation Districts and on the Beaver County Conservation District. He currently serves on the Oklahoma Farm Bureau's Board of Directors working to achieve educational improvement, economic opportunity, and social advancement for the state's farming and ranching communities. He also served on the State School Board Association and Balko School Board.



OWRB Executive Director Duane Smith presents Ervin Mitchell with a resolution of appreciation from the Board and staff.

Experts Examine Weather Modification

On May 18-19, national, state, and university weather experts gathered at the University of Oklahoma's Max Westheimer Airport to conduct operations in the second phase of a two-year regional cloud seeding study that began in Norman last fall, referred to as the Southern Plains Experiment in Cloud-seeding of Thunderstorms for Rain Augmentation (SPECTRA).

The study--involving the states of Oklahoma, Texas, and New Mexico--utilizes research scientists and agencies of the Oklahoma Weather Center in Norman. The Center is a world-renowned alliance of federal, state, and University of Oklahoma organizations, including the Oklahoma Climatological Survey and National Severe Storms Laboratory (NSSL). The Bureau of Reclamation is funding the study through the Texas Department of Licensing and Regulation.

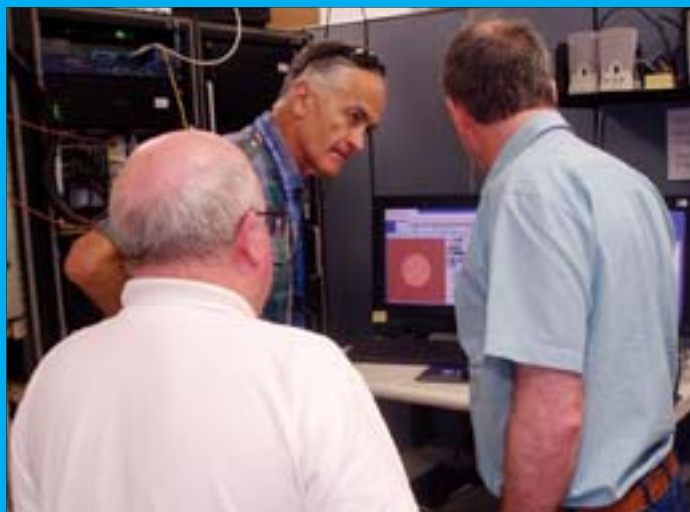
What is Dual Polarized Radar?

Non-polarimetric radars, such as NEXRAD, transmit and receive only horizontal pulses of radio waves. Therefore, they measure only the horizontal dimension of cloud and precipitation particles.

Dual-polarimetric radars transmit and receive both horizontal *and* vertical pulses of radio waves. As a result, they measure both the horizontal *and* vertical dimensions of cloud and precipitation particles. This additional information leads to improved predictions of precipitation type and rate.



NSSL's dual-polarization radar facility in Norman



Doppler radar expert Dusan Zurnic with the National Severe Storms Laboratory in Norman demonstrates dual polarized radar capabilities to cloud seeding research scientists.

The fundamental goal of the study is to determine the effectiveness and applicability of cloud seeding in mitigating severe weather events in western Oklahoma and the Texas Panhandle. Field exercises will help determine the impact of timely seeding on the behavior of growing convective clouds and their capacity to produce rainfall and hail. Throughout operations in Oklahoma, researchers will utilize the National Severe Storms Laboratory's state-of-the-art dual polarized radar.

Mike Mathis, chief of the OWRB's Planning and Management Division and coordinator of weather modification operations in Oklahoma, says that seven cloud seeding missions were flown in May, and in several instances, investigators using a tracer were able to document that when mill salt seeding material was dispersed into cloud towers, there was significant growth and subsequent rainfall. Unfortunately, the statewide dry period experienced throughout much of May hurt prospects for further data collection, but researchers hope to return and conduct additional operations during the late summer or fall.

OCS Climatologist Honored

The Oklahoma Climatological Survey (OCS) has received a national award for its publication *The Oklahoma Drought of 2001-2002* by Derek S. Arndt, Oklahoma's Acting State Climatologist. *The Journal of Government Information* has honored Arndt for winning the Outstanding Publication category of their national competition. OCS and Mr. Arndt also received a Governor's Commendation from Gov. Brad Henry.

Nominated by the Oklahoma Department of Libraries, the publication was selected from 2,610 state documents. Susan McVey, Director of the Oklahoma Department of Libraries, said the publication was, "an outstanding presentation of technical information in an easy-to-understand format. It can easily be used by the general public and students as well as the research community."

USGS Director Resigns

U.S. Interior Secretary Gale Norton has named Dr. P. Patrick Leahy as acting director of the U.S. Geological Survey. Leahy will replace Dr. Charles G. Groat, who resigned on June 17 to accept an appointment at the University of Texas. A permanent replacement for USGS director must be nominated by President Bush and confirmed by the U.S. Senate.

Leahy has been with the USGS since 1974 and is currently the associate director for Geology of the USGS. He has responsibility for federal Earth-science programs, which include worldwide earthquake hazards monitoring and research, geologic mapping of land and seafloor resources, volcano and landslide hazards, and assessments of energy and mineral resources. He also is responsible for all USGS international activities.

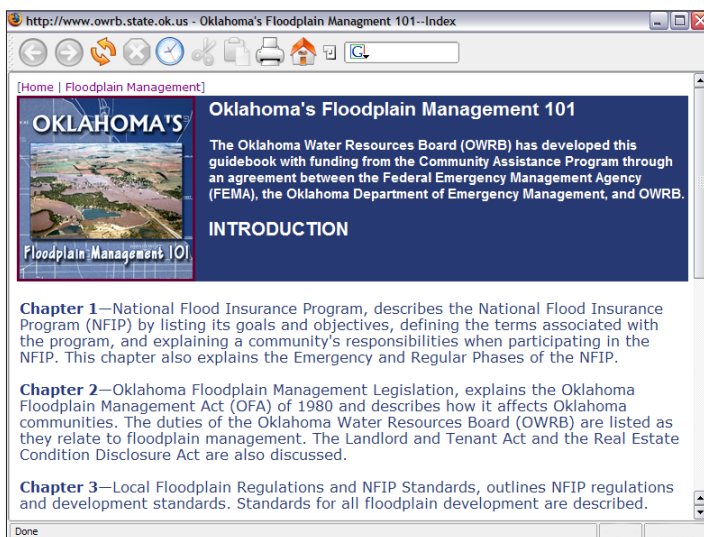
Source: National Water Resources Association

Workshops Benefit Floodplain Officials



During Flood Awareness Month in May, the OWRB sponsored 10 one-day workshops throughout Oklahoma. Hundreds of city, county, and tribal floodplain administrators received valuable advice and training on floodplain management, development, and regulations governing compliance with the National Flood Insurance Program (NFIP). In addition, the Certified Floodplain Manager (CFM) exam was offered to local floodplain officials.

Rhonda Bowers (above) coordinated workshop registration and distribution of training materials, including the updated and improved Oklahoma's Floodplain Management 101 guidebook, also available on the OWRB's Web site (below).



Floodplain management training workshops, such as this one in McAlester, featured speakers from the Federal Emergency Management Agency, Army Corps of Engineers, Department of Emergency Management, Department of Environmental Quality, and other experts.

Public Service Recognition Week Celebrates Staff



OWRB employees line up for chow

OWRB staff were treated to a breakfast buffet at the annual Employee Recognition Breakfast on May 2 as part of National Public Service Recognition Week, celebrated since 1985. During the week, men and women who serve America as federal, state, and local government employees were recognized for their dedication and contributions.

Employee Saves the Day

On May 12, Byju Sudhakaran, of the OWRB's Financial Assistance Program, found an engagement ring in the OWRB parking lot. Not knowing who the owner was, Sudhakaran tracked the ring to the jewelry store where it was purchased, and the store then contacted the owner, Billy Willis Jr. of Oklahoma City. Sudhakaran returned the \$6400 engagement ring to Willis, who brought donuts for the entire agency to show his appreciation.



Willis and Sudhakaran

Oklahoma Drought Monitor

Reservoir Storage

Lake storage in Oklahoma remains generally good although levels are beginning to show signs of stress. As of June 6, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 91.7 percent full, a 3.4 percent decrease from that recorded on May 9, according to information from the U.S. Army Corps of Engineers (Tulsa District). Thirteen reservoirs have experienced lake level decreases since that time; 10 reservoirs are currently operating at less than full capacity (compared to 13 last month). Two reservoirs—Lugert-Altus, only 70.9 percent full; and Tom Steed, 72.8 percent—remain below 80 percent capacity.

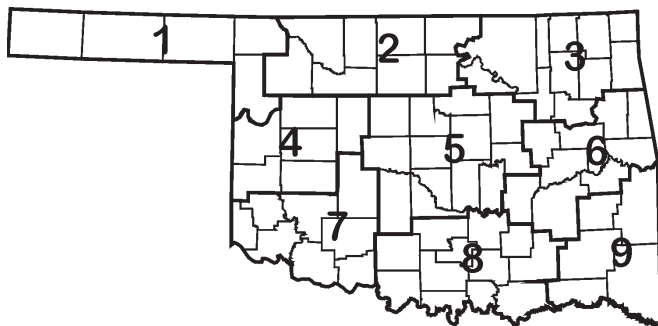
Storage in Selected Oklahoma Lakes & Reservoirs

As of June 6, 2005

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	460,745	460,745	100.0
Northeast	3,710,194	3,659,677	98.6
West Central	276,790	272,247	98.4
Central	154,225	151,345	98.1
East Central	3,183,243	2,867,469	90.1
Southwest	301,810	73,685	24.4
South Central	3,118,676	2,656,585	85.2
Southeast	1,561,859	1,561,457	100.0
State Totals	12,767,542	11,703,210	91.7

Drought Indices

According to the latest Palmer Drought Severity Index (June 4, below), five regions in Oklahoma are currently experiencing drought conditions, compared to three regions last month. The Central climate division is in “moderate drought” while the Southeast, South Central, East Central, and Northeast climate divisions are in “mild drought.” All nine of Oklahoma’s climate divisions have undergone PDSI moisture decreases since May 7. The greatest decrease occurred in the North Central climate division.



The latest monthly Standardized Precipitation Index (through May, below) reflects increasingly dry conditions in Oklahoma over the past several months. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), “extremely dry” conditions exist in Central and South Central Oklahoma over the past 90 days; “very” or “moderately dry” conditions are reported in all other regions, except the Northwest, during that period. The 6-month SPI indicates similarly dry conditions in five climate divisions, although none are suffering extreme dryness. Considering longer periods (through six years), the Southeast climate division reports “moderately dry” conditions over the past 30 and 36 months.

Palmer Drought Severity Index

Climate Division (#)	Current Status 6/4/2005	Value		Change In Value
		6/4	5/7	
NORTHWEST (1)	MOIST SPELL	1.72	3.03	-1.31
NORTH CENTRAL (2)	INCIPIENT DROUGHT	-0.69	0.94	-1.63
NORTHEAST (3)	MILD DROUGHT	-1.44	-0.65	-0.79
WEST CENTRAL (4)	NEAR NORMAL	0.11	1.39	-1.28
CENTRAL (5)	MODERATE DROUGHT	-2.09	-1.12	-0.97
EAST CENTRAL (6)	MILD DROUGHT	-1.80	-1.16	-0.64
SOUTHWEST (7)	INCIPIENT DROUGHT	-0.74	0.20	-0.94
SOUTH CENTRAL (8)	MILD DROUGHT	-1.88	-0.86	-1.02
SOUTHEAST (9)	MILD DROUGHT	-1.97	-1.48	-0.49

Standardized Precipitation Index

Through May 2005

	3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	VERY WET
NORTH CENTRAL (2)	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
NORTHEAST (3)	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
WEST CENTRAL (4)	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
CENTRAL (5)	EXTREMELY DRY	VERY DRY	NEAR NORMAL	NEAR NORMAL
EAST CENTRAL (6)	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
SOUTHWEST (7)	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	VERY WET
SOUTH CENTRAL (8)	EXTREMELY DRY	VERY DRY	NEAR NORMAL	MODERATELY WET
SOUTHEAST (9)	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL

Financial Assistance Program Update

Loans/Grants Approved as of June 14, 2005

FAP Loans—309 totaling \$552,560,000

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 extremely competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—164 totaling \$572,818,715

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—49 totaling \$189,433,938

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405) 530-8800.

REAP Grants—422 totaling \$36,890,241

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—514 totaling \$30,203,180

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

Total Loans/Grants—1,458 totaling \$1,381,906,074

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.

Rudy Herrmann, *Chairman*; Mark Nichols, *Vice Chairman*; Bill Secrest, *Secretary*

Harry Currie, Lonnie L. Farmer, Ed Fite, Jack Keeley, Kenneth K. Knowles, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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Reflections: Mixing Boots & Birkenstocks
by Miles Tolbert, Sec. of Environment

Oklahoma Drought Monitor

From the Director



Duane A. Smith
OWRB Executive Director

In June, the OWRB's Management Team met at the Oklahoma City Zoo to update the agency's Strategic Plan for FY 2006. During the day-long planning session, the team identified three High Priority Opportunities (HPOs) on which to focus during the next fiscal year based upon the program or activity's importance to the agency's mission, ability to advance the OWRB in its position as "The Water Agency," relevance to Legislative directives, and potential contributions to the citizens of Oklahoma.

All three of our HPOs (all described later in my column)—Statewide Water Development Revolving Fund Recapitalization, State Water Plan, and Special Water Resource Studies—are essentially carryovers from last year's Strategic Plan, although action plans for each

See From the Director, Page 2

Groundwater Focus of 2005 Conference

Registration for the 26th Annual Governor's Water Conference, November 1-2, begins at 1:00 p.m. Tuesday and 8:00 a.m. Wednesday at the Cox Convention Center in downtown Oklahoma City.

Duane Smith, OWRB Executive Director, will welcome guests and speakers to a symposium on groundwater on Tuesday afternoon, featuring keynote speaker Robert Glennon, author of *Water Follies: Ground Water Pumping and the Fate of America's Fresh Waters*. Other state and national experts will also discuss pertinent groundwater issues, including an update on the Arbuckle-Simpson Hydrology Study.

On November 2, a full complement of state, federal, and local experts has been invited to address the current status of water quality, planning, development, infrastructure financing, and other current water issues of importance to the state and nation. The morning session will culminate with an update by Oklahoma Attorney General Drew Edmonson on Oklahoma's efforts to reduce phosphorus levels in the state's scenic rivers.

The Conference luncheon will feature presentation of Oklahoma Water Pioneer Awards for 2005. A state and



26th Annual Oklahoma Governor's Water Conference
Investing in Water
November 1-2, 2005
Cox Convention Center
Oklahoma City, OK
It's time for action!

federal legislative update will follow, and the Conference will adjourn around 3:00.

Reservations for overnight accommodations at the Renaissance Hotel (10 North Broadway, Oklahoma City) can be made by calling 1-405-228-8000 or 1-800-468-3571. A block of rooms and special room rate of \$66, single or double, has been reserved for conferees until October 1. After that date, the Conference rate will be offered as available.

To register for the Water Conference, call 405-530-8800 and ask for Mary Nell Brueggen, Registration Coordinator, or fill out and mail the registration form on page two. Registration costs \$60 and includes the half-day Groundwater Symposium and evening reception on November 1, and the traditional Water Conference program and luncheon on November 2.

From the Director . . . Continued from page 1

have been retooled and expanded. The level of our success with these opportunities will be determined in large part by the strength of our alliances with the many local, state, and federal partners who assist us in finding feasible solutions to Oklahoma's water issues and problems.

Statewide Water Development Revolving Fund Re-Capitalization—The ever-increasing demand for water and wastewater infrastructure financing, and corresponding stress upon the Statewide Water Development Revolving Fund, has made it a priority of the OWRB to secure additional funding to support its financing activities. From initial investments of \$40 million in the Water Board's financial assistance programs, we have provided almost \$1.4 billion in water and wastewater loans and grants while collectively saving Oklahoma communities more than \$435 million in project costs.

Without a considerable and immediate infusion of new funds, Oklahoma's ability to offer extraordinarily low interest rate and grant financing to our communities will be crippled by an estimated \$5.4 billion financial assistance demand through 2025. According to our calculations, a \$25 million investment could provide up to \$350 million in the next four years for water and wastewater infrastructure financing that would save Oklahoma communities \$117 million. This investment could come from a number of sources, including a one-time state appropriation of funds, a multi-year appropriation of funds, or state general obligation bond issue. However, recapitalization success will require ample support from public finance and engineering professionals, public interest groups, communities, state agencies, and members of the State Legislature.

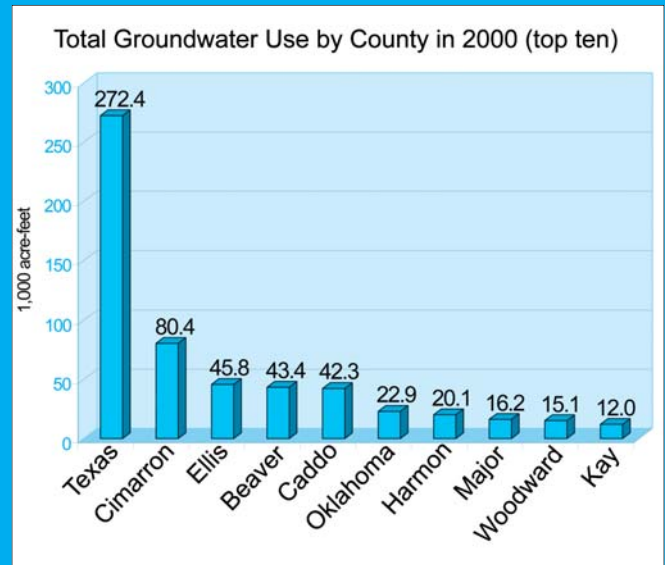
State Water Plan Update—The state's official water planning document, the *Oklahoma Comprehensive Water Plan*, was last updated in 1995. In response to the Water Board's standing legislative mandate to prepare decennial (10-year) updates of the OCWP, we are not only working

(continued on page 3)

Utilization of Oklahoma's Groundwater

According to the USGS, the total quantity of freshwater withdrawals for all purposes in 2000 was estimated to be 1,772 million gallons per day (mgd). Irrigation withdrawals accounted for 40 percent of the total withdrawals and water supply accounted for 38 percent.

Total groundwater withdrawal in Oklahoma was about 773.7 mgd, 44 percent of all freshwater withdrawals. Irrigation withdrawals accounted for 73 percent of groundwater withdrawals. The top 3 counties withdrawing groundwater for irrigation were Texas (253.6 mgd), Cimarron (77.2 mgd), and Ellis (42.5 mgd). Public water supply withdrawals accounted for 15 percent of groundwater withdrawals. The top 3 counties withdrawing groundwater for public supply were Oklahoma (17.6 mgd), Cleveland (8.9 mgd), and Kay (8.3 mgd). Total groundwater use by the top ten counties is shown below.



Information courtesy USGS

26th Annual Governor's Water Conference Registration Form

Please mail form to

Governor's Water Conference
3800 N. Classen Boulevard
Oklahoma City, OK 73118

Please enclose \$60 check, money order, or purchase order payable to the Oklahoma Water Resources Board. No refunds after October 10.

For more information, call (405) 530-8800 or visit the OWRB Web site at www.owrb.state.ok.us

Check all that apply*:

- I will attend the symposium on Nov. 1, 2005.
- I will attend the reception on Nov. 1, 2005.
- I will attend the conference and luncheon on Nov. 2, 2005.

* One price (\$60) includes any or all of the above.

Name _____

Organization _____

Address _____

City/State _____

Zip _____ Phone (_____) _____

From the Director . . . *Continued from page 2*

now on a new plan, but we have resolved to take water planning to a higher level, one that fully contemplates the state's inherent water distribution problem. The limiting factor in meeting Oklahoma's future water demands is not availability. Instead it is the increasingly exorbitant costs associated with water distribution and treatment.

Plans are good, of course, but action is better. Consistent with the theme of the upcoming Governor's Water Conference—*Investing in Water: It's Time for Action*—the state's Water Plan must address the immediate need for the local infrastructure that is required to get water to those who need it most. And we need to take a hard look at how we manage and administer our water supplies, then offer up feasible solutions to obstacles that stand in the way of intelligent water use and protection. While we currently lack the funding and authority to commence a truly comprehensive water supply strategy, such as the \$22 million effort recently undertaken by the State of Texas through Senate Bill 1, there remains growing support for such a venture in the Governor's Office and Legislature and among our many state and local partners. The OWRB's financial assistance programs stand ready to back the implementation of identified infrastructure projects, but only if the Revolving Fund receives much-needed replenishment.

Special Water Resource Studies—The Arbuckle-Simpson Hydrology Study, Oklahoma's first basin study addressing surface/groundwater interaction, is probably the most comprehensive and visible water resource investigation ever undertaken by the OWRB. While the controversy surrounding water rights in the Arbuckle-Simpson aquifer was a critical factor in securing federal and state funds to initiate the study, it became apparent that a standard, systematic process is required to plan for, promote and obtain funding for special water resource studies. This is especially true considering that these projects are of extreme importance to the day-to-day operations of the OWRB.

Traditional OWRB activities, such as hydrologic studies, an unfunded component of water rights appropriation, lack a stable source of revenue and often rely upon funds received through special, temporary projects. As a result, the agency must be proactive in securing this essential funding often within a relatively short time frame. We must be prepared to address water resource issues before they become contentious as well as actively seek potential local partnerships for required studies and projects.

Opportunities for baseline funding must be pursued to ensure the viability of permitting and other more traditional Board programs. Costs for processing water rights requests have escalated due to the increased number of protested water use permit applications and associated hearings as well as the need for additional technical information requiring field investigations, studies, and analyses. We have streamlined our permitting operations and are reviewing our fee and appropriations structure to ensure that it supports our water rights administration program.

At the same time, we are actively seeking appropri-

tions to assist users in meeting local water needs, such as water augmentation studies involving the City of Norman and Lugert-Altus Irrigation District/North Fork of the Red River area; investigating potential construction of Mangum Reservoir as a recreation and water supply source for southwest Oklahoma; regional water system studies involving Robert S. Kerr and Tenkiller Reservoirs; and recent erosion control and related water quality projects at Lakes Thunderbird, Carl Blackwell, and Wister.

In addition to the three High Priority Opportunities identified for the coming year, two programs/activities will receive significant attention for development during FY-2006: the Holistic Water Monitoring Program and Public Promotion/Education. The updated Strategic Plan is available for viewing and/or download on the OWRB's Web site at www.owrb.state.ok.us. I encourage all citizens of Oklahoma to read the Plan and learn about the priorities that encompass our agency direction for FY 2006 through 2010.

In conclusion, I want to invite anyone with an interest in the use and protection of Oklahoma's water resources to attend the Governor's Water Conference in Oklahoma City on November 1-2. An agenda and registration form are available in this issue of the *Oklahoma Water News*. Of special interest will be the Groundwater Symposium on day one of the Conference where many notable speakers will explore the various issues surrounding groundwater use, both in Oklahoma and regionally. See you there!

Coop Illinois River Study Concludes

In June, the OWRB and U.S. Geological Survey completed a \$126,600 project to monitor water quality in the Illinois River watershed. The study was requested by the Oklahoma Attorney General's Office, which financed \$96,600 of the data collection effort. The USGS contributed \$30,000 in federal matching funds.

Of primary concern are elevated levels of phosphorus, which stimulates algae growth and also affects the odor and taste of water. Storm water runoff saturated with dissolved phosphorus from litter generated on chicken and turkey farms in Oklahoma and Arkansas is suspected to be a major contributor of the nutrient.

Beginning in April, the Water Board coordinated USGS sampling of four "high flow" events and two "base flow" events at six locations in the watershed in Oklahoma. Water quality samples collected by personnel were analyzed for water temperature, pH (alkalinity/acidity), dissolved solids, suspended solids, total organic carbon, electrical conductivity, turbidity, phosphorus content, total nitrogen, ammonia, metals, sulfate, chloride content, estrogen metabolites, and bacteria such as fecal coliform, e-coli, staphylococcus and salmonella.

The OWRB's final report on the Illinois watershed data should be released this fall.

Information courtesy Oklahoma Publishing Today, 2005

26TH ANNUAL GOVERNOR'S WATER CONFERENCE
Investing in Water: It's Time for Action

TUESDAY, NOVEMBER 1**Oklahoma Groundwater Symposium****1:00 Registration****1:30 Welcome and Overview**

*Duane A. Smith, Executive Director, OWRB

1:40 Keynote Address***Water Follies: Ground Water Pumping and the Fate of America's Fresh Waters***

*Robert Glennon, Professor

University of Arizona College of Law

2:25 Oklahoma Groundwater Law

*Dean Couch, General Counsel, OWRB

2:40 Oklahoma's Dependence on Groundwater

*Kim Winton, Director, OK Water Sciences Center, USGS

2:55 Pitfalls in Groundwater Planning

*Todd Halihan, Professor of Geology, OSU

3:10 Break**3:25 Unconstitutional Takings of Water Interests**

*James H. Davenport, Esq., Chief

Water Division, Colorado River Commission of Nevada

3:45 Groundwater Quality Standards & Implementation

*Derek Smithee, Water Quality Division Chief, OWRB

4:00 Groundwater Panel***The Water Well Drilling Industry: Protecting Our Groundwater***

*Cheryl Cohenour, Cherokee America Drilling (CRC&Associates) Tulsa

Developments in USGS Groundwater Research

*Scott Christenson, USGS

Arsenic in Our Groundwater: A Municipal Approach

*Brad Gambill, City Manager, Norman, Oklahoma

Arbuckle-Simpson Hydrology Study Update

*Noel Osborn, OWRB

5:00 Adjournment to Reception**Professional Continuing Education Credits:**

- Approved for 4 hours training credit for Water and Wastewater Operators by the Oklahoma Department of Environmental Quality.
- May qualify for 8 Professional Development Hours by the Oklahoma State Board of Registration for Professional Engineers and Land Surveyors.

WEDNESDAY, NOVEMBER 2**8:00 Registration****8:30 Welcome and Introductions***Rudy Herrmann, OWRB Chairman
Mick Cornett, Mayor, OKC**8:45 Keynote Address**

Governor Brad Henry

or Stephen Johnson, EPA Administrator
or Governor Bill Richardson**9:05 Oklahoma Cabinet Secretary Panel*****Water for the Environment***

*Miles Tolbert, Secretary of Environment

Water for Agriculture

*Terry Peach, Secretary of Agriculture

Water for Industry and Tourism

Kathryn Taylor, Sec. of Commerce and Tourism

10:00 State of the State's Water

*Duane A. Smith, OWRB

10:20 Break/Exhibits**10:35 Federal Water Resources Development and Planning Panel*****U.S. Army Corps of Engineers Activities***

*Colonel Miroslav Kurka, Tulsa District Engineer

Bureau of Reclamation Activities

*Mike Ryan, Great Plains Regional Director

Natural Resources Conservation Service Activities

*Larry Caldwell, National Policy Coordinator, Watershed Rehabilitation

11:25 Protecting the Nation's Waters

Richard Greene, EPA Region 6 Administrator

11:45 Illinois River Update

*Drew Edmondson, OK Attorney General

12:15 Luncheon Program***Oklahoma Water Pioneer Awards******Water Outlook from Washington D.C.***

*Blu Hulsey, Majority Counsel, U.S. Senate Committee on Environment and Public Works

Oklahoma's Congressional Delegation

Oklahoma State Legislative Update

*Rep. Susan Winchester

*Rep. Don Armes

Speaker Todd Heitt

*Rep. Curt Roggow

Sen. Ted Fisher

Sen. Kenneth Corn

Sen. Mike Morgan

*Sen. Richard Lerblance

3:00 Adjournment

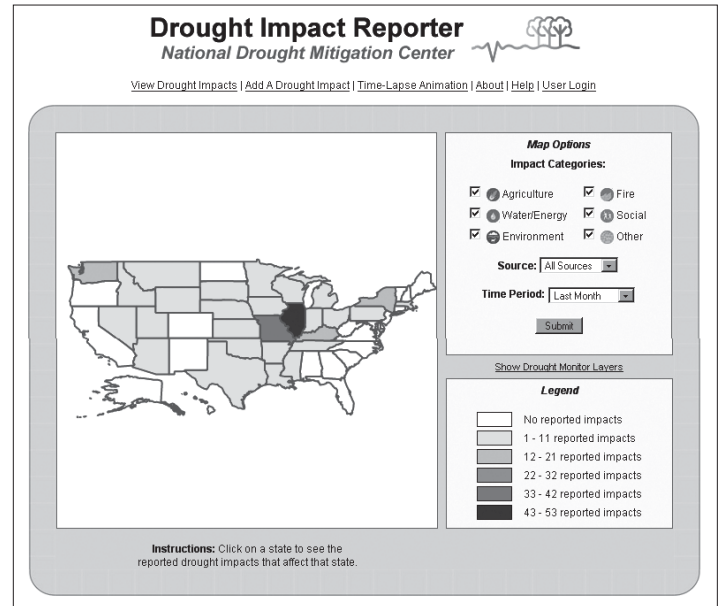
*confirmed

New Tool Maps U.S. Drought Impacts

Following months of development, the National Drought Mitigation Center, headquartered in Lincoln, Nebraska, has released an effective new Web-based tool to track and quantify drought-related impacts in the U.S.

The Drought Impact Reporter, available at <http://droughtreporter.unl.edu>, serves to collect, quantify and map reported drought impacts from individuals, state and federal agencies, university and private sector reports/assessments, municipalities, and news media reports. The Reporter has been discussed as a component of the National Integrated Drought Information System, currently in development, which will serve as a national early warning system to monitor and forecast impending drought episodes.

The Drought Reporter also includes an extensive drought impact database and archive that can be accessed through an interactive search tool. Reported impacts, as well as documents, reports, assessments, and research from outside parties, may be submitted to NDMC staff through the Web site.



Aging Dams Need Repair

According to the Natural Resources Conservation Service (NRCS), 132 small watershed dams in Oklahoma—many of which protect agricultural lands from damaging floodwaters and serve as important sources of water for livestock, irrigation, recreation, and wildlife habitat—have reached or exceeded their 50-year design life. And that number will continue to increase. Within 10 years, 1,090 dams, or more than half the dams constructed in the state, will surpass their projected lifespan and require renovation and repair.

In 2000, U.S. Representative Frank Lucas authored the Small Watershed Rehabilitation Amendments Act, a law that evaluates which upstream flood control structures are most in need of immediate attention. The law establishes up to a 65/35 percent cost-share agreement between the federal government and local sponsors, such as conservation districts, municipalities, or county commissioners. A major goal of the rehabilitation program is to extend the life of the dam for another century by increasing the structure's ability to effectively catch and store sediment.

“Unfortunately, when legislation

was originally passed to begin construction on these small earthen dams in the late 1940s, no language was put in place to address rehabilitation needs that this national infrastructure system would one day face,” says Rep. Lucas. “Although some aging dams remain in good shape, others’ rusting, cracking drain pipes, sediment-filled lakes, and crumbling concrete or earthen structures are deteriorating in a rapid fashion.”

Oklahoma’s 2,105 small upstream flood-control dams represent a \$2 billion infrastructure, according to officials with the Oklahoma Conservation Commission. While the original cost of construction 50 years ago averaged around \$50,000, the current cost of rehabilitation is about \$500,000. Current funding needs, based on dam age alone, exceed \$65 million. By 2015, state funding needs are expected to exceed \$545 million, according to the NRCS.

Since 1998, when rehabilitation planning started on Sergeant Major Creek Watershed in Roger Mills County, rehabilitation plans have been completed on 25 dams. Construction has been

completed on six dams with several others in the design and construction phases. NRCS requests funds for up to five rehabilitation planning projects each year, focusing on high hazard dams due to their potential for loss of life should the structures fail.

Nationally, there are over 10,000 small upstream flood control dams in 47 states. The first flood control dam in the nation was Cloud Creek Dam Number 1 built near Cordell in 1948.

Information courtesy Oklahoma Publishing Today, 2005



Reconstruction in April 2000 of a small flood control dam in Roger Mills county, one of 6 dams built in the Sergeant Major Creek Watershed from 1948 to 1963. This site was selected for reconstruction as a result of a hazard classification change due to downstream development, structural problems with the principal spillway, and excessive foundation seepage.

Most Endangered Rivers of 2005

American Rivers, a national non-profit conservation organization, "dedicated to protecting and restoring healthy natural rivers and the variety of life they sustain for people, fish, and wildlife," released its annual list of America's Most Endangered Rivers. Topping the charts for 2005 is the Susquehanna River, which flows through New York, Pennsylvania, and Maryland. The river suffers from impacts of aging sewage systems and inadequate sewage treatment, which is a primary threat to all the nation's waters. America's top ten most endangered Rivers of 2005 are the Susquehanna, McCrystal Creek (NM), Fraser River (CO), Skykomish River (WA), Roan Creek (TN), Santee River (SC), Little Miami River (OH), Tuolumne River (CA), Price River (UT), and Santa Clara River (CA).

According to American Rivers, 860 billion gallons of untreated sewage makes its way into America's rivers

each year due to aging and/or insufficient treatment systems, posing a significant public health risk. Researchers believe that as many as 3.5 million Americans get sick each year after swimming, boating, fishing, or otherwise touching water they thought was safe. Between 1985 and 2000, the Centers for Disease Control documented nearly half a million cases of waterborne illness in the United States.

Among other remedies, the organization calls for increased investments of federal funds to upgrade community wastewater infrastructure throughout the U.S., claiming that more than 30% of the 600,000 miles of sewage lines across the nation will be in poor or very poor condition by the year 2020.

The complete list of American Rivers' most imperiled rivers, and their individual problems can be found at www.americanrivers.org.

Reflections

By Miles Tolbert
Oklahoma Secretary of Environment

Mixing Boots and Birkenstocks

If, like Will Rogers, all you know is what you read in the papers, you could be forgiven for thinking that agriculture and the environment are at war. "The sometimes bitter struggle over the right way to address the impact of poultry production on Oklahoma's scenic rivers has dominated the headlines and much of the Legislature's attention this past year. In future sessions, the Legislature will have the opportunity to move this debate in a far more productive direction."

The key to bringing agricultural production and environmental protection together is to understand a few basic facts. Nearly 95 percent of Oklahoma's land is privately owned. More than three-quarters of private land is devoted to agriculture. This means that the health of Oklahoma's environment will rise or fall on the individual decisions of the state's 119,000 farmers and ranchers.

What Oklahoman, given adequate resources and information, would not act to conserve the land from which he earns his livelihood? The challenge then is to provide these producers with the right tools and incentives to change the environment for the better.

The most ecologically important acreage of any piece of property is the

portion along a stream or river. A good stand of natural vegetation along a waterway can filter out contaminated runoff, improve stream conditions and add to wildlife habitat. Unfortunately, all too often we have cleared stream banks of trees and other native plants in order to gain a few acres of additional cropland or pasture.

Gov. Brad Henry has proposed that the state institute a program to assist interested landowners with reestablishing these buffer strips. Under the enhanced Conservation Reserve Program, every \$1 spent by the state for this purpose will be matched with up to \$4 in federal money.

Of course, the best way to ensure that landowners make decisions that will benefit the environment is to help them to make money at it. Income from hunting leases has already shown many landowners the economic value of protecting habitat. Prime habitat today brings landowners up to \$3,500 per hunter in annual income.

We can build on this success by expanding the market beyond hunters and fishermen to include bird watchers, hikers and others. A joint effort by the state departments of Tourism, Agriculture, and Wildlife seeks to do just that by promoting agritourism as a means of

providing additional income to farmers and ranchers and additional tax revenue to rural communities.

When we see oil derricks at work across Oklahoma's countryside, what we are really seeing is extraction of a fuel formed from plants that grew in Oklahoma millions of years ago. Unfortunately, proven oil reserves are limited and new fields increasingly difficult to find.

To supplement our energy production we need look no further than what is growing around those derricks. Fuels derived from crops like corn, soybeans, and, someday, native grasses can provide a sustainable, domestically produced alternative to gasoline without the negative effects on air quality or the need to wait millions of years. In fact, Love's Country Stores is in negotiations to begin offering diesel fuel from soybeans at some of its locations. Additionally, three important pieces of legislation were passed during the 2005 legislative session that would promote the development of crop-based fuels.

Environmentalists and farm groups have more in common than they think. Oklahoma has the opportunity to lead the way toward a more cooperative approach. Let's take it.

Oklahoma Drought Monitor

Reservoir Storage

Lake storage in Oklahoma remains generally adequate. As of August 16, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 88.9 percent full, a 2.1 percent decrease from that recorded on July 25, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-two reservoirs have experienced lake level decreases since that time; 22 reservoirs are currently operating at less than full capacity (compared to 20 three weeks ago). Two reservoirs—Lugert-Altus, only 41 percent full; and Tom Steed, 67.3 percent—remain below 80 percent capacity.

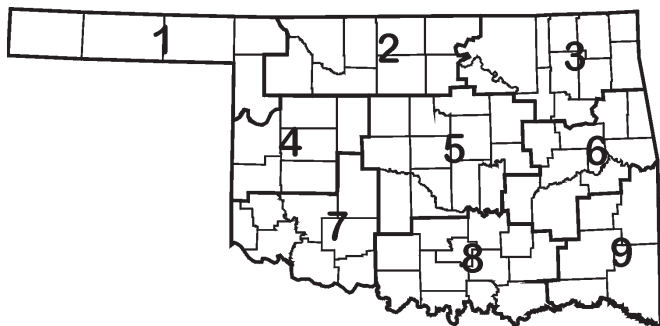
Storage in Selected Oklahoma Lakes & Reservoirs

As of August 16, 2005

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	420,480	419,469	99.8
Northeast	3,710,194	3,514,940	94.7
West Central	276,790	273,183	98.7
Central	154,225	146,779	95.2
East Central	2,915,043	2,509,932	86.1
Southwest	301,810	73,685	24.4
South Central	2,973,092	2,625,629	88.3
Southeast	1,512,859	1,335,024	88.2
State Totals	12,264,493	10,898,641	88.9

Drought Indices

According to the latest Palmer Drought Severity Index (August 13, below), five regions in Oklahoma are currently experiencing drought conditions, including the Southeast and East Central climate divisions, which are in “severe drought.” The South Central and Northeast climate divisions are in “moderate drought” while the Central region is in “mild drought.” Five of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since July 23. The greatest decrease occurred in the North Central climate division.



The latest monthly Standardized Precipitation Index (through July, below) continues to reflect relatively dry conditions in Oklahoma over the past several months. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), “very dry” conditions persist in Southeast Oklahoma over the past 3- and 6-month periods. The South Central and Southeast climate divisions also indicate “very dry” conditions over the past 6 months. Considering longer periods (through six years), the Southeast and East Central climate division report “moderately dry” conditions over the past 30 and 36 months

Palmer Drought Severity Index

Climate Division (#)	Current Status 8/13/2005	Value		Change In Value
		8/13	7/23	
NORTHWEST (1)	MOIST SPELL	1.77	2.22	-0.45
NORTH CENTRAL (2)	NEAR NORMAL	-0.17	0.41	-0.58
NORTHEAST (3)	MODERATE DROUGHT	-2.09	-1.75	-0.34
WEST CENTRAL (4)	INCIPIENT MOIST SPELL	0.56	-0.13	0.69
CENTRAL (5)	MILD DROUGHT	-1.57	-2.07	0.50
EAST CENTRAL (6)	SEVERE DROUGHT	-3.08	-2.76	-0.32
SOUTHWEST (7)	INCIPIENT DROUGHT	-0.89	-1.92	1.03
SOUTH CENTRAL (8)	MODERATE DROUGHT	-2.50	-2.84	0.34
SOUTHEAST (9)	SEVERE DROUGHT	-3.48	-3.13	-0.35

Standardized Precipitation Index

Through July 2005

	3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
NORTH CENTRAL (2)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
NORTHEAST (3)	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
WEST CENTRAL (4)	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	MODERATELY WET
CENTRAL (5)	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
EAST CENTRAL (6)	MODERATELY DRY	VERY DRY	NEAR NORMAL	NEAR NORMAL
SOUTHWEST (7)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTH CENTRAL (8)	NEAR NORMAL	VERY DRY	NEAR NORMAL	NEAR NORMAL
SOUTHEAST (9)	VERY DRY	VERY DRY	NEAR NORMAL	NEAR NORMAL

Financial Assistance Program Update

Loans/Grants Approved as of August 9, 2005

FAP Loans—310 totaling \$552,740,000

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 extremely competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—166 totaling \$575,018,715

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—51 totaling \$201,188,938

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—434 totaling \$37,952,038

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—514 totaling \$30,203,180

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.

Total Loans/Grants—1,475 totaling \$1,397,102,871

Estimated Savings—\$441,591,636

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405) 530-8800.

Rudy Herrmann, *Chairman*; Mark Nichols, *Vice Chairman*; Bill Secrest, *Secretary*
Harry Currie, Lonnie L. Farmer, Ed Fite, Jack Keeley, Kenneth K. Knowles, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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Judge Sentences Unlawful Well Driller

Oklahoma Drought Monitor

From the Director



Duane A. Smith
OWRB Executive Director

The 2005 Water Conference focused, quite appropriately, on water and wastewater financing in Oklahoma and other issues related to the state's imminent \$5.4 billion need in funding critically important water and sewer projects. As I observed in my remarks during the November 2 morning program, "just add water" (borrowing the slogan of the Oklahoma Rural Water Association) and tremendous things can happen. Tremendous things *have* happened in Oklahoma thanks to our abundant surface and groundwaters and those men and

women throughout the state's history who demonstrated exemplary leadership and determination in protecting those resources.

Water represents the cornerstone of our economy, especially in agriculture, and provides countless benefits to our vibrant tourism industry as well as the

See From the Director, Page 2

Symposium Spotlights Groundwater Vulnerability

Day one of the 26th Annual Governor's Water Conference featured a symposium that explored issues related to groundwater use, development, and protection. Representative Jari Askins, who welcomed the audience, commented upon the extreme importance of water to Oklahoma.

Robert Glennon, author of *Water Follies: Ground Water Pumping and the Fate of America's Fresh Waters*, served as keynote speaker. Focusing on the alarming increase in the nation's groundwater use over the last 50 years, Glennon pointed out that groundwater constitutes more than 25 percent of the U.S. water supply, with more than one-half of the population relying on underground sources for drinking water. According to Glennon, groundwater laws built around the concepts

of capture and reasonable use allow overdrafting or "mining" of the resource, consequently leading to the inevitable exhaustion of our groundwater supplies, and drying up our rivers and streams. Glennon recommended breaking the cycle of unlimited access, requiring conservation measures, facilitating water transfers from low to higher value uses, and recognizing the economic value of water supply by increasing water rates.

Dean Couch, General Counsel for the OWRB, followed Glennon's presentation with a review of Oklahoma's groundwater law, and Kim Winton, USGS Director of the Oklahoma Water Sciences Center,



Robert Glennon, author of *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters*, signs copies of his book for OWRB staff member Bill Cauthron and Board members Mark Nichols and Rudy Herrmann.

provided a summary of groundwater use in Oklahoma. Other symposium speakers included Dr. Todd Halihan from Oklahoma State University;

See Symposium, Page 2

From the Director . . . Continued from page 1

environment. But without the infrastructure to put water to work for us, to supply the fundamental water supply needs of Oklahomans, the mission of state and federal water agencies is incomplete. The OWRB's Financial Assistance Program and Statewide Revolving Fund have funded more than \$1.4 billion in water/wastewater system improvements, but the Fund is rapidly dwindling and requires new money to prepare Oklahomans for future needs related to aging facilities and increasingly stringent treatment standards. Those present at the Water Conference luncheon heard several legislative leaders advocate an infusion of state money into the Revolving Fund as well as additional resources to implement innovative water projects required to meet both rural and urban water demands for years to come. Obtaining the necessary funds won't be easy, but would provide tremendous dividends. To date, the Revolving Fund has been responsible for estimated savings of about \$446 million compared to other market financing available to Oklahoma communities and rural systems.

Also during the Conference luncheon, we had the distinct pleasure to honor two deserving Oklahoma Water Pioneers. The Water Pioneer Award was initiated in 1985 to honor the men and women who

have made significant contributions in the planning, development, management, and conservation of Oklahoma's water resources.

Jay Galt, who passed away last January, was such a man. Jay was the corporate attorney for the Oklahoma Farmers Union. He spent a great deal of his professional career serving rural areas of the state, including representing the state rural electric association as well as working with individual electric cooperatives. When it came to water, Jay certainly understood both rural and urban perspectives. He provided legal services to the Oklahoma Rural Water Association, served on the Oklahoma City Water Utilities Trust for many years, and often brought his well-articulated positions to the OWRB's Water Law Advisory Committee.

Julian Fite, who passed away last June, was also named an Oklahoma Water Pioneer. For 10 years, Julian was general counsel to the Cherokee Nation, which held him in highest regard as he fought to preserve and promote tribal sovereignty. During the last several years, he served the Cherokee Nation in many capacities, perhaps most notably in the establishment of the tribe's Environmental Protection Commission. But Julian is more widely known for his many hours of devoted service to the



Duane Smith presents Oklahoma Water Pioneer Awards to Jennifer Fite (above) and Margie Galt (below) on behalf of their late husbands, Julian Fite and Jay Galt.



protection and preservation of Oklahoma's scenic rivers. Most notably, he served as president of Save the Illinois River (STIR) and on the Governor's Illinois River Task Force. Julian was a recipient of the Governor's Environmental Achievement Award and was named Oklahoma Wildlife Federation water conservationist of the year.

Both Jay and Julian will be greatly missed.

Symposium Spotlights Groundwater Vulnerability . . . Continued from page 1

James Davenport, Chief of the Water Division of the Colorado River Commission of Nevada; Derek Smithee, OWRB Water Quality Division Chief; Cheryl Cohenour, Cherokee America

Drilling; Scott Christenson, USGS; Brad Gambill, Norman City Manager; and Noel Osborn, OWRB Coordinator of the Arbuckle-Simpson Hydrology Study.



Duane Smith introduces Dr. Todd Halihan. Seated are James Davenport and Derek Smithee.

Day two of the Conference was emceed by OWRB Chairman Rudy Herrmann. The morning program and afternoon luncheon included updates by various state and federal water officials and discussion of emerging water policy issues. Highlights of the second day's proceedings included Attorney General Drew Edmondson's update on water quality issues surrounding the Illinois River and the



Representative Jari Askins on short notice graciously offered to welcome guests at the Groundwater Symposium.

presentation of Oklahoma Water Pioneer Awards honoring Jay Galt and Julian Fite.



Right: Susan Branning, Assistance Branch Chief, EPA Region 6; Mike Ryan, Great Plains Regional Director, Bureau of Reclamation; Col. Miroslav Kurka, Tulsa District Engineer, US Army Corps of Engineers



Lt. Governor Mary Fallin, OWRB Chairman Rudy Herrmann, OWRB Executive Director Duane Smith, Rep. Susan Winchester, Sen. Kenneth Corn



Left: Duane Smith (middle left) reports on the "State of the State's Water," followed by updates from Miles Tolbert, Sec. of Environment (left); Terry Peach, Sec. of Agriculture (not pictured); and Steve Thompson (right), Executive Director of the ODEQ. Rudy Herrmann (middle right), OWRB Chairman and Master of Ceremonies for the Conference



Below: Mike Melton, Conference Coordinator, with special guest speaker Attorney General Drew Edmondson



Bob Drake, cattleman and member of the Arbuckle Master Conservancy district, with Mike Ryan, Bureau of Reclamation, and Kim Winton, USGS



OWRB Member Ed Fite with Doctor Chet Bynum (environmentalist/conservationist) and Bud Ground with AEP/Public Service Company of Oklahoma



Below: Conference coordinators Mary Schooley and Mary Nell Brueggen, OWRB, at the registration desk with Bob Sandbo, OWRB

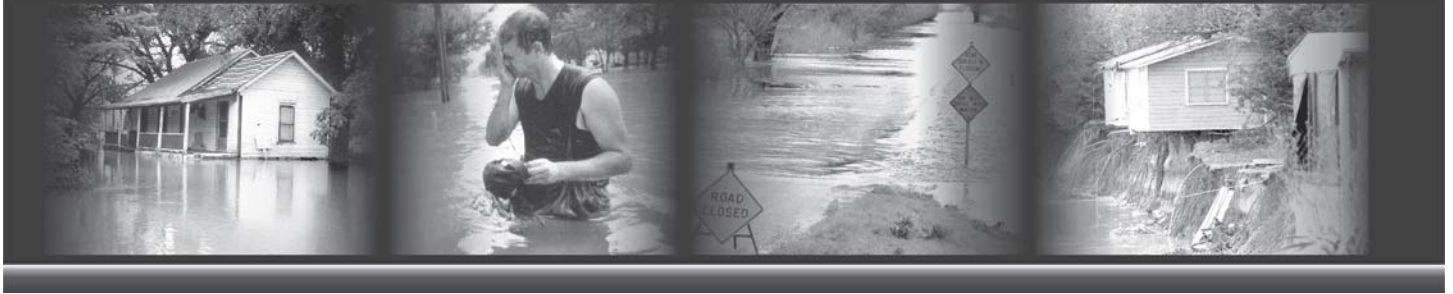


Sierra Club display, one of fifteen exhibits including the Environmental Federation of OK, OK Clean Lakes & Watersheds Association, OK Floodplain Managers Association, OK Municipal League, OK Water Environment Association, OK Groundwater Association, Save the Illinois River, Rose State College Wastewater Training Program, OK City Stormwater Management, Rural Development, and OK Rural Water Association



Above: Karina Rivas-Careaga of the OWRB's Oklahoma Water Watch Volunteer Monitoring Program with volunteers Harry and Faye Henson from the Fort Cobb Water Watch Chapter

FLOOD CURRENT



A More Serious Look at Floodplain Management Compliance



Mike Mathis
State Floodplain Coordinator, OWRB

What a tremendous conference we had in September at Quartz Mountain Resort and Arts Center. According to Carolyn Schultz, more than 120 folks attended our 15th annual meeting, where floodplain administrators from all

around the state took advantage of this opportunity to advance their knowledge of floodplain management techniques. As a result of the new state law requiring accreditation, we are taking a much more serious look at floodplain management compliance. This program is very simple: if new development is proposed in a special flood hazard area, it needs to comply with local floodplain ordinances and regulations. So, if you don't have a permit, get one. Pretty simple.

The Oklahoma Water Resources Board is offering a one-day workshop in Oklahoma City each month to help Oklahoma's floodplain administrators understand both basic and advanced floodplain management guidelines, especially in regard to administering and enforcing local regulations. Each workshop will also allow you to earn six Continuing Education Credits and become accredited in accordance with state law. Details of the workshops and online registration forms can be found on the OWRB Web site at www.owrb.state.ok.us. New agency rules concerning accreditation can also be found on the site.

As part of a concerted new effort, we are currently working with FEMA and the Oklahoma Independent Petroleum Association to get all state communities on the same page regarding oil field development in the floodplain. This activity, like many others, is considered development under FEMA regulations and requires a floodplain development permit from the local jurisdiction. If you need assistance on how to regulate this type of development, please contact the OWRB and we will be happy to assist you. Following the devastation left behind by Hurricane Katrina, it is more important than ever to ensure that our energy industry is not jeopardized by flood disasters.

I want to thank and recognize Jim Coffey for his

outstanding leadership during his tenure as OFMA Chairman and I extend congratulations to Rex Hennen on his assumption of that important and challenging position. Rex, we pledge to work with you and OFMA to achieve our mutual goals and objectives.

To all our floodplain management professionals, keep up the good work. I know it is a challenge, but remember, you are Oklahoma's Leaders in Floodplain Management.

What Everyone Should Know about Flood Insurance

Flood insurance is the only way to cover losses from America's number one natural disaster. In the life of the average thirty-year mortgage, there is a nine percent chance of a fire-related loss. In contrast, there is a 26 percent chance for a flood-related loss. Flooding can occur anywhere, not just in a floodplain. Everyone should know the following facts about flood insurance:

1. Homeowner policies do not cover flooding. Only flood insurance protects against flood damage.
2. There is a 30-day waiting period to get flood insurance. The average cost of a flood insurance policy is \$400 a year. For those living in low- to moderate-risk areas, there is a Preferred Risk Policy available for little more than \$100.
3. There are separate flood insurance policies for structure coverage and for contents coverage.
4. Floods and flash floods happen in both low- and high-risk flood zones. One in four flood loss claims is filed in low-risk areas.
5. Federal flood insurance can be purchased through most major insurance agents.
6. Even though flood insurance may not replace property and possessions to pre-disaster conditions, it is a first step to recovering from a flood.

Information courtesy FEMA

FEMA Awards \$3.1 Million For Bixby Flood Protection

FEMA announced in late August that it has obligated \$3,167,250 to the state of Oklahoma to purchase flood-prone homes in Bixby and construct a flood detention facility to control flooding in the downtown district.

Through the Hazard Mitigation Grant Program, FEMA will provide 75 percent of eligible project costs; the remaining 25 percent will come from local resources. The project will result in the purchase and removal of 31 homes subject to storm runoff and flooding damages along Bixby Creek. Homeowners volunteered to participate in the project. The detention and channelization measures will also aid other areas of Bixby.

"This project is exemplary of the benefits that come from a community approach to mitigation," said Albert Ashwood, director of the state's Department of Emergency Management. "The coordinated efforts of planners, floodplain administrators, emergency managers, and property owners have made this downtown flood protection project possible and the community of Bixby a safer place to live and raise a family."

Rebuilding a Safer Gulf Coast

The devastation in the Gulf Coast/New Orleans from Hurricane Katrina is unprecedented in recent U.S. History. Once the monumental job of attending to the pressing human needs through rescue and relief, immediate response, and short term recovery is well underway, the nation will turn its attention to the rebuilding of heavily damaged communities and properties. In the future, we must rebuild in a way that will reduce the risk of flooding and hurricanes and the human suffering that follows.

Enormous amounts of funding will go to reconstruction in the coastal high hazard areas of Mississippi, Louisiana, Alabama, and the Florida panhandle. We must ensure that reconstruction will be done to create safer, more disaster-resistant homes, businesses, and infrastructure. These actions are not only needed in the affected Gulf Coast area, but in all coastal areas of the nation, where the population at risk is increasing daily as people move to the coast. Following are a few of the many necessary steps in this process:

1. Assess the damage to each structure to determine if it should be reconstructed.
2. Evaluate the current maps and construction standards for needed adjustments to protect lives and property. FEMA should perform an analysis of the flood maps and damages in the Gulf coast to determine if the current standards for mapping

and managing those areas are adequate. Some important questions include:

- Did the maps correctly reflect the expected storm surge and flood hazard?
 - Did the existing flood maps show properties not at risk that were destroyed or badly damaged?
 - Did those maps accurately reflect the 1% chance (100-year) flood?
 - Did those structures on the coast built to existing standards survive?
 - Is the 1% chance flood an adequate standard?
3. Mitigate wherever possible. All options for mitigation must be considered, including elevating or floodproofing structures, acquiring and relocating structures from areas too hazardous for habitation, or demolishing damaged structures and replacing them according to higher standards.
 4. Adopt higher standards for reconstruction to reflect hazards specific to the state or community. The standards of the National Flood Insurance Program are minimum nationwide standards.
 5. Provide funding for federal mitigation cost-sharing programs.

Post-disaster mitigation funding must be restored. The Hazard Mitigation Grant Program (HMGP) provides mitigation funds after a disaster as part of the Disaster Relief Act. Funding for that program was started in 1988, but was inadequate until after the Midwest floods of 1993 when Congress increased funding to 15% of the disaster costs. In FY 2003, the funding level was reduced to 7.5%, and has again proved inadequate.

The 2004 NFIP Reform Act provides authority for additional funding to help property owners mitigate repetitive loss structures through a variety of generally non-structural means, including voluntary buyouts and relocations, elevation of buildings, and floodproofing. That funding should be included in the FY 06 budget to ensure the NFIP's effectiveness in helping to reduce this drain. This matter should be of concern to everyone in a flood zone. Repetitive claims and large numbers of claims will drive up the cost of flood insurance for everyone.

Further information about flooding and flood mitigation issues can be found on the Association of State Floodplain Managers (ASFPM) Web site (www.floods.org) or by calling Larry Larson, ASFPM Executive Director, at (608) 274-0123.

Excerpted from the ASFPM White Paper "Hurricanes Katrina & Rita: Using Mitigation to Rebuild a Safer Gulf Coast" (published 9/9/05)

Water Board Receives Prestigious EPA Award

The Oklahoma Water Resources Board's Financial Assistance Program, which has funded infrastructure needs of the state's water and wastewater systems since 1983, has been recognized by the United States Environmental Protection Agency (EPA) for its innovation and stability in financing measures aimed at protecting the nation's waters.

EPA's first ever *Pisces Award* was conferred to Joe Freeman, chief of the OWRB's Financial Assistance Division, at the annual Council of Infrastructure Financing Authorities State Revolving Fund (SRF) Conference luncheon, held October 31 in Chicago. The new award recognizes states that have exhibited the most innovative and effective financial performance in advancing EPA's goals through the Clean Water State Revolving Fund (CWSRF) Loan Program. Widely successful since its creation in 1987, the CWSRF provides funding to states to facilitate the construction of municipal wastewater facilities and implementation of nonpoint source pollution control and related water quality protection projects.

According to EPA, the Oklahoma Water Resources Board is considered a CWSRF leader due to its watershed approach to lending. In 2001, the OWRB adopted the Integrated Priority Ranking System, which ranks projects for funding based on the goals of the Clean Water Act and the State's Unified Watershed assessment to eliminate human health threats, restore impaired surface waters,

and protect high quality waters and their uses. It has adopted a targeted effort to identify high priority projects and contacts communities within targeted watersheds or that are in violation of National Pollutant Discharge Elimination System (NPDES) discharge permits.

Nominations for the award were made by each of the 10 EPA regional offices located throughout the U.S. Each nominee had to have a pace level greater than 80% and audits that had revealed no serious programmatic or financial problems. In addition, nominees had to demonstrate outstanding performance related to the following criteria: better management practices, watershed approach, promotion of creative use of technologies, leveraging practices, innovative partnerships, innovative lending practices, and whether the noted performance could be replicated by other states.

The OWRB serves as the state's primary financing vehicle for local government water and wastewater projects, assisting municipalities, rural water and sewer districts, and other political subdivisions of the state.

The OWRB's five financial assistance programs—consisting of the Drinking Water and Clean Water State Revolving Fund Loan Programs, State Loan Program, Emergency Grant Program, and Rural Economic Action Plan Grant Program—are collectively responsible for more than \$1.4 billion in financing for community water and sewer infrastructure projects in Oklahoma. The effort was launched through a \$25 million dollar appropriation by the State Legislature in 1983.

Judge Sentences Unlawful Well Driller

In mid-September, a Johnston County district court judge sentenced a local water well driller on criminal contempt charges for disregarding previous court orders to suspend his business, which was responsible for numerous unlawful and poorly constructed wells in southern Oklahoma.

In July, Max Jones, owner of Jones Water Well Drilling, pled guilty to violating the Honorable Robert M. Highsmith's order, issued in February 2002, enjoining Jones from drilling water wells as a commercial business. The previous order included a permanent injunction against Jones Water Well Drilling from drilling or plugging groundwater wells and test holes.

According to Kent Wilkins, Coordinator of the Oklahoma Water Resources Board's Well Drillers Program, Jones was responsible for numerous violations of minimum well construction standards. Water Board field inspectors identified the infractions during 2001 at multiple well sites in Johnston, Marshall, and Bryan Counties. The most common violation was that wells drilled by Jones lacked the required cement surface seal, the primary mechanism to prevent contamination of groundwater.

In separate court orders issued September 13 and 19, the Judge formally sentenced Jones to 14 days in the Johnston County jail. Judge Highsmith's initial order states, "In this case, the defendant was ordered and enjoined from water well drilling and had appeared in this court multiple times, but still determined to drill wells for a fee. The act of the defendant was certainly a criminal contempt and is subject to restitution."

An associated 5-year sentence was deferred upon the condition that Jones ceases any future water well construction. In addition, Judge Highsmith granted more than \$6,000 in restitution for the victims to recover drilling charges as well as costs associated with remedial work required to plug the wells and/or bring them into compliance with state well construction standards.

According to state law, all water wells in Oklahoma must be constructed by a licensed driller. Wilkins urges citizens interested in having a water well drilled to ask potential drillers for a copy of their license prior to construction. Citizens who have questions about the validity of a particular water well driller, concerns about construction of a water well, or related questions can contact Wilkins at (405) 530-8800.

Oklahoma Drought Monitor

Reservoir Storage

Lake storage is becoming a concern in some areas of Oklahoma, especially in the east. As of November 7, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 86.2 percent full, a 1.9 percent decrease from that recorded on October 11, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-seven reservoirs have experienced lake level decreases since that time; 28 reservoirs are currently operating at less than full capacity (compared to 22 four weeks ago). Eight reservoirs—including Lugert-Altus, only 37.4 percent full—are now below 80 percent capacity.

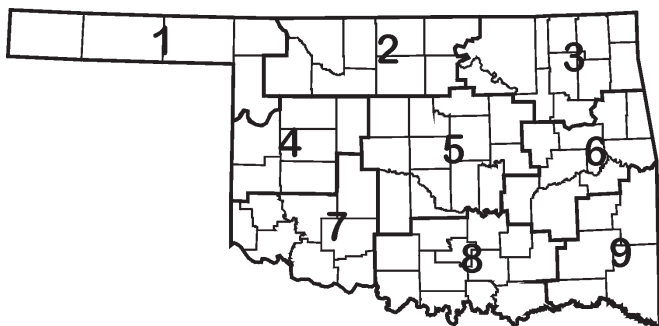
Storage in Selected Oklahoma Lakes & Reservoirs

As of November 7, 2005

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	433,032	431,958	99.8
Northeast	3,710,194	3,417,574	92.1
West Central	276,790	259,595	93.8
Central	154,225	140,116	90.9
East Central	2,968,683	2,307,731	77.7
Southwest	301,810	73,685	24.4
South Central	3,078,236	2,858,481	92.9
Southeast	1,476,764	1,199,960	81.3
State Totals	12,399,734	10,689,100	86.2

Drought Indices

According to the latest Palmer Drought Severity Index (November 5, below), state drought conditions have worsened somewhat within the past month. The Southeast and East Central climate divisions remain in “moderate drought” while the Northeast region is now in the “mild drought” category. Eight of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since October 8.



The latest monthly Standardized Precipitation Index (through October, below) reflects increasingly dry conditions in southern and eastern areas of Oklahoma. In particular, among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), **“extremely dry” conditions are present in Southeast Oklahoma over the past 9 months.** Also, “very dry” conditions persist in Southeast and East Central Oklahoma over various time periods within the past 9 months. Considering longer periods (through six years), the Southeast climate division reports “very dry” conditions over the past 36 months as well as “moderately dry” conditions over the 15-, 24- and 30-month periods.

Palmer Drought Severity Index

Climate Division (#)	Current Status 11/5/2005	Value		Change In Value
		11/5	10/8	
NORTHWEST (1)	MOIST SPELL	1.01	0.70	0.31
NORTH CENTRAL (2)	MOIST SPELL	1.72	2.37	-0.65
NORTHEAST (3)	MILD DROUGHT	-1.48	-0.56	-0.92
WEST CENTRAL (4)	UNUSUAL MOIST SPELL	2.03	3.11	-1.08
CENTRAL (5)	NEAR NORMAL	-0.10	1.29	-1.39
EAST CENTRAL (6)	MODERATE DROUGHT	-2.55	-2.40	-0.15
SOUTHWEST (7)	MOIST SPELL	1.05	2.16	-1.11
SOUTH CENTRAL (8)	NEAR NORMAL	-0.35	0.22	-0.57
SOUTHEAST (9)	MODERATE DROUGHT	-2.91	-2.87	-0.04

Standardized Precipitation Index

Through October 2005

	3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
NORTH CENTRAL (2)	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	MODERATELY WET
NORTHEAST (3)	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL
WEST CENTRAL (4)	MODERATELY WET	MODERATELY WET	NEAR NORMAL	MODERATELY WET
CENTRAL (5)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
EAST CENTRAL (6)	MODERATELY DRY	VERY DRY	VERY DRY	NEAR NORMAL
SOUTHWEST (7)	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTH CENTRAL (8)	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL
SOUTHEAST (9)	VERY DRY	VERY DRY	EXTREMELY DRY	MODERATELY DRY

Financial Assistance Program Update

Loans/Grants Approved as of November 1, 2005

FAP Loans—313 totaling \$562,765,000

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 extremely competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—169 totaling \$578,527,415

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—53 totaling \$204,715,539

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—434 totaling \$37,952,038

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—519 totaling \$30,464,145

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.

Total Loans/Grants—1,488 totaling \$1,414,424,137

Estimated Savings—\$446,240,479

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405)530-8800.

Rudy Herrmann, *Chairman*; Mark Nichols, *Vice Chairman*; Bill Secrest, *Secretary*
Harry Currie, Lonnie L. Farmer, Ed Fite, Jack Keeley, Kenneth K. Knowles, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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Oklahoma Drought Monitor



Duane A. Smith
OWRB Executive Director

From the Director

While the OWRB's water quality issues—including statewide monitoring and standards, such as the new phosphorus limit in Oklahoma's Scenic Rivers—have received much attention lately, water use permitting remains the backbone of this agency's many responsibilities. In 1905, the Eighth Legislative Assembly of Oklahoma Territory enacted the first rudimentary water laws outlining procedures for acquiring water rights and regulating use. Since then, the state has worked diligently to administer water rights fairly through the office of the Territorial Engineer, State Engineer, and various successor commissions, offices, and boards.

House Joint Resolution 520, passed by the State Legislature in 1955, directed creation of a water study committee to review Oklahoma's water

See *From the Director, Page 2*

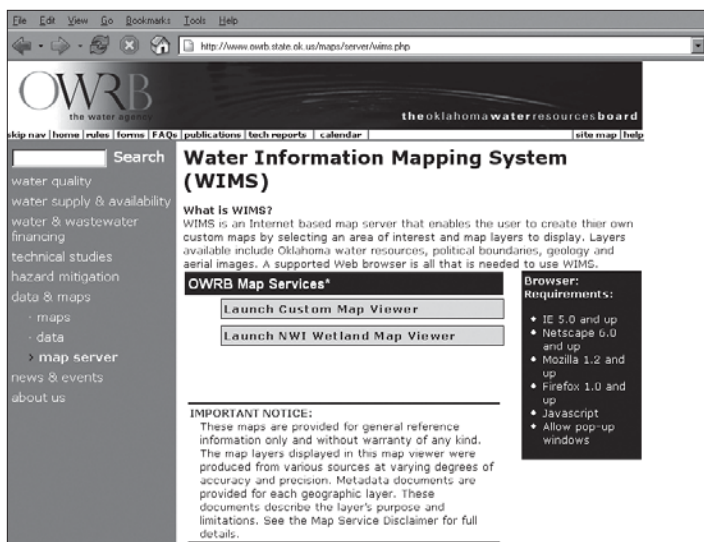
Online Mapping Program Empowers Citizens

A new online mapping application, launched in January, will allow OWRB Web site visitors to build and view custom-made maps containing water resource and related information on Oklahoma.

The OWRB Water Information Mapping System (WIMS), customized by the agency's development and Geographic Information System (GIS) staff from Internet Mapping Server (IMS) software, is the product of more than two years of development and received an important assist from a project to map Oklahoma's wetlands.

"I am extremely proud to say that the Water Resources Board has independently deployed this very useful Web site application," says OWRB Executive Director Duane Smith. "The unique technical expertise possessed by our staff has enabled us to develop a high-quality product that provides a variety of benefits to Oklahoma citizens. And it's relatively easy to use."

Visitors to WIMS can create their own maps by simply selecting an area of interest and one or more of the associated map layers to display. Approximately 40 layers are currently available, including surface and groundwater resources, permit locations (including areas of use



WIMS launch page, www.owrb.state.ok.us/maps/server/wims.php

and dedicated lands), political boundaries, rural water system lines, roads and highways, and geology. Topographic, shaded relief, and aerial images of the state (from 2003) are also available. The OWRB will continuously add additional water resource and related layers and features to WIMS.

See *Online Mapping Program, Page 3*

From the Director . . . *Continued from page 1*

problems. That initial study eventually pointed out the need for a separate agency, the Oklahoma Water Resources Board, to administer water rights, negotiate federal contracts, and develop plans to ensure the efficient use of our state's water resources. While laws governing water use in Oklahoma have undergone mostly insignificant changes since that time, ensuring the proper administration and protection of water has become more and more difficult, especially in light of a shrinking state budget and the federal government's decreased role in funding state water projects.

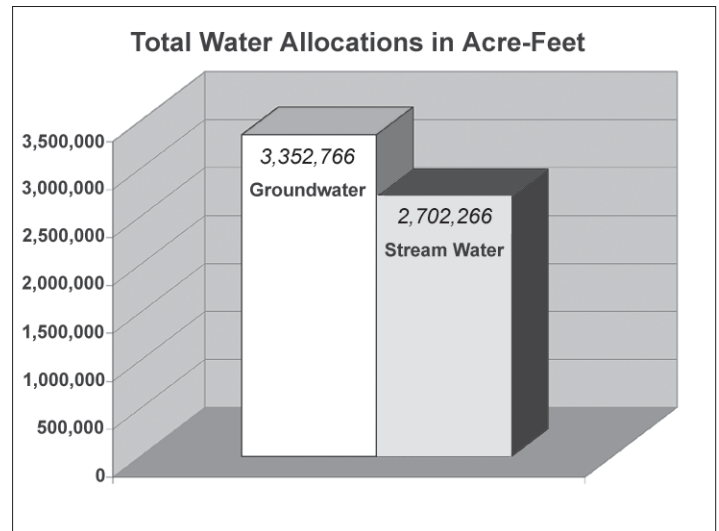
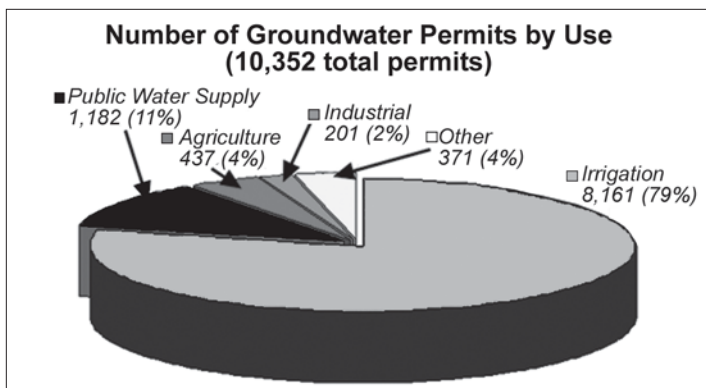
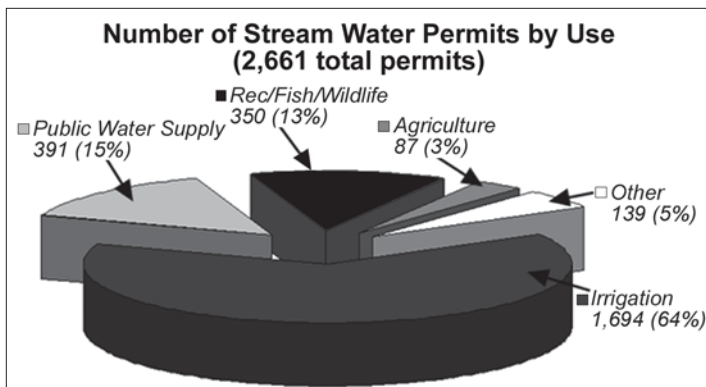
Increased competition for limited water resources, greater scrutiny of proposed water uses, including more protests, and a better informed public with access to a wealth of available water information requires OWRB staff and Board members to be ever-vigilant in their work and decision-making. Today, citizens are more educated than ever about frequently complicated water issues. Their advanced knowledge base allows them to better analyze and understand the multifaceted impacts associated with both small- and large-scale water use. In turn, this informed and empowered public demands that we provide them with even more comprehensive and timely water resource data.

These factors make it necessary for the Water Board to seek out additional resources through which to manage water rights. One option is to establish an annual water rights administration fee, the first such increase since 1995. A \$100 annual fee—in place of the current \$10 to \$25 file maintenance fee currently assessed to holders of stream water permits—would generate a dependable source of funds for the OWRB's water rights program.

This would allow us to hire additional staff to process applications, maintain files, migrate paper documents to digital media, investigate permit complaints, and conduct water use reporting and cancellation/reduction procedures. Currently, only 10 employees are funded to manage the critically important tasks associated with permitting and technical studies work.

We also require additional funds to collect and store more accurate and dependable water use information and to maintain and improve databases that put this information at our fingertips. Hydrologic studies are often expensive and time-intensive and current funding restraints prevent staff from conducting legislatively required updates of aquifer yield determinations, not to mention specialized hydrologic studies and continuance of our partnership with the U.S. Geological Survey in Oklahoma's streamgaging program. And we must allow for further investment in technological advancements that improve staff efficiency and stimulate other innovations, such as web-based applications to provide citizens with online access to Water Board data. In January, the Water Board will release our Water Information Mapping System (WIMS) to provide customized, online mapping services to our Web site customers.

In the "big picture" viewpoint, a fee increase would provide an avenue through which the OWRB can continue to fulfill its statutory water management mandate and avoid passing this responsibility on to the court system, which would then have to resolve questions and controversies related to state water rights and use. Oklahoma citizens, industries, municipalities, irrigators and other users shouldn't have to go to court every time they need a water right acknowledged and validated. Because state law recognizes an inherent connection between water rights and private property rights, preservation of Oklahoma's existing administration process not only makes sense, it is necessary to provide water users with the security, certainty, and stability that is their right as Oklahomans.



The OWRB maintains 13,013 total permits on file, including 10,352 allocating groundwater and 2,661 allocating surface water. Total water allocated in Oklahoma, again mostly groundwater, is 6,055,032 acre-feet per year.

"WIMS was created to satisfy the increasing public thirst for water information, but the true benefit of the application is that it empowers the public in making intelligent decisions related to water use and protection. An educated public helps us to do a better and more efficient job in managing Oklahoma's water resources," adds Smith.

Staff have also developed a separate, though similar, web-based mapping application specifically designed for internal use that will allow the Water Board to save money that would otherwise be required to purchase expensive GIS software licenses.

Much of the project was funded through a U.S. Environmental Protection Agency grant awarded to the

Oklahoma Office of the Secretary of Environment. The current goal of the ongoing project, which was initiated during the fall of 2004 in cooperation with the Oklahoma Conservation Commission, is to digitize the paper versions of all 1,256 National Wetlands Inventory (NWI) maps for Oklahoma. As these maps are completed and the data transferred to digital format, appropriate wetlands GIS layers are created, integrated into WIMS, and made available to the public on the OWRB's Web site.

The U.S. Fish & Wildlife Service is responsible for cataloging information on the characteristics, extent, and status of the nation's wetlands and deepwater habitats. The NWI is a coordinated effort by the Service to map wetlands and digitize, archive, and distribute the maps.

OWRB Receives EPA Award

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Drillers Encouraged to Use Well Log Application

Prior to the OWRB's launch of its web-based application for online submission of well logs, OWRB staff were required to verify, image, and index all incoming logs from Oklahoma water well drillers. To date, 63 licensed firms have taken advantage of the opportunity to file well logs electronically, remotely logging in over 8,000 wells during the past two years.

Kent Wilkins, Oklahoma Well Drillers Program Coordinator, says the willingness of these firms to utilize the new system has greatly benefited both the OWRB and Oklahoma Well Drillers Program by cutting costs and staff hours. And since the electronic filing system ensures that logs are accurate and complete, the mistakes commonly seen on hand written logs have been virtually eliminated.

Wilkins urges any licensed driller who hasn't yet taken advantage of the electronic filing system to set up a user account by contacting the OWRB to request a form at 405-530-8800 or go to www.owrb.state.ok.us/supply/wd/drillers.php.

Well construction data screen, one of 10 easily navigable data entry screens in the OWRB's online well log data entry system

First Water Day Set for April 19

The OWRB will host the inaugural Capitol Water Day on April 19, 2006, at the State Capitol in Oklahoma City. The event is scheduled from 9 a.m. to 3 p.m. in the Capitol's 4th floor rotunda.

Water Day will present a unique opportunity for groups to demonstrate the importance of Oklahoma's water resources and provide information on their water management, conservation, and educational programs for state legislators and other government officials.

"Organizations have hosted Ag Day, GIS Day, Consumer Protection Day and various other observations at the State Capitol, so the Water Board believes it's past time for a 'Water Day,'" says Duane Smith, OWRB Executive Director.

"It's our hope that this diverse assembly of water interests will attract the attention of our Governor and Legislative leadership and establish the annual Capitol Water Day as an important venue for providing unique, firsthand perspectives of our most pressing water issues."

Numerous agencies and organizations with water interests—including public water supply, agriculture, tourism and recreation, environmental protection, wildlife conservation, soil conservation, energy, and industry, as well as occupations such as well drillers, floodplain managers, environmental engineers and others—have been invited to showcase how they individually and collectively protect the state's surface and groundwaters.

Fire Tips Offered

The Red Cross offers the following suggestions for a fire disaster plan:

When wildfire threatens:

- Listen to a battery-operated radio for reports and evacuation information. Follow the instructions of local officials.
- Back vehicles into the garage or park it in an open space facing the direction of escape. Shut doors and roll up windows. Leave the key in the ignition. Close garage windows and doors, but leave them unlocked. Disconnect automatic garage door openers.
- Confine pets to one room. Make plans to care for pets in case of evacuation.
- Arrange temporary housing outside the threatened area.
- If advised to evacuate, do so immediately.
- Wear protective clothing--sturdy shoes, cotton or wool clothing, long pants, a long-sleeved shirt, gloves, and a handkerchief to protect face.
- Take disaster supplies kit.
- Lock the house.
- Tell someone when you leave and where you are going.
- Choose a route away from fire hazards. Watch for changes in the speed and direction of fire and smoke.

Courtesy Claremore Progress, Jan. 4.

New Committee Studies Surface Water

The Surface Water Subcommittee of the Arbuckle-Simpson Technical Peer Review Team has been created to evaluate surface water needs and impacts to flows in the study area. Among various tasks assigned to the group is investigation of potential instream flow regimes that could be implemented to minimize impacts to existing water users, landowners, recreation interests, and fish and wildlife. The Subcommittee will seek to balance legal and public policy considerations with technical findings of the ongoing Arbuckle-Simpson Hydrology Study.

Chaired by Derek Smithee, chief of the OWRB's Water Quality Division, the Subcommittee also includes representatives of the U.S. Geological Survey (USGS), Oklahoma Department of Environmental Quality, Department of Wildlife Conservation, U.S. Fish and Wildlife Service, Oklahoma State University, and area landowners.

South Central Region Suffers Driest Spring on Record

With a 2005 rainfall total of 26.54 inches, the South Central climate division (encompassing all of the Arbuckle-Simpson study area) was 14.42 inches below normal, which makes it the region's 6th driest year on record. Contrary to most years, when most rain occurs in the spring and fall, most of 2005's rain occurred in the winter and summer.

Following an exceptionally dry September in 2004, the South Central region experienced a very wet October and November. January 2005 was the 8th wettest on record, but dry conditions emerged again in February and continued throughout 2005.

At more than 8 inches below normal, the South Central region experienced the driest spring on record in 2005. The previous record was set in 1898, with 5 inches below normal for the season.

Heavy rains in July and August brought some relief to the dry conditions. August was the 10th wettest on record--2.8 inches above normal precipitation--but the high August rainfall total occurred within just a few days, resulting in high runoff and flooding with less infiltration into the ground.

More than 5 inches of rain in two days resulted in flash floods on Honey Creek that closed Turner Falls Park for a few days. The region then experienced the 4th driest November and 5th driest December on record.

For climatic summaries, visit the Oklahoma Climatological Survey website at <http://climate.ocs.ou.edu/>.

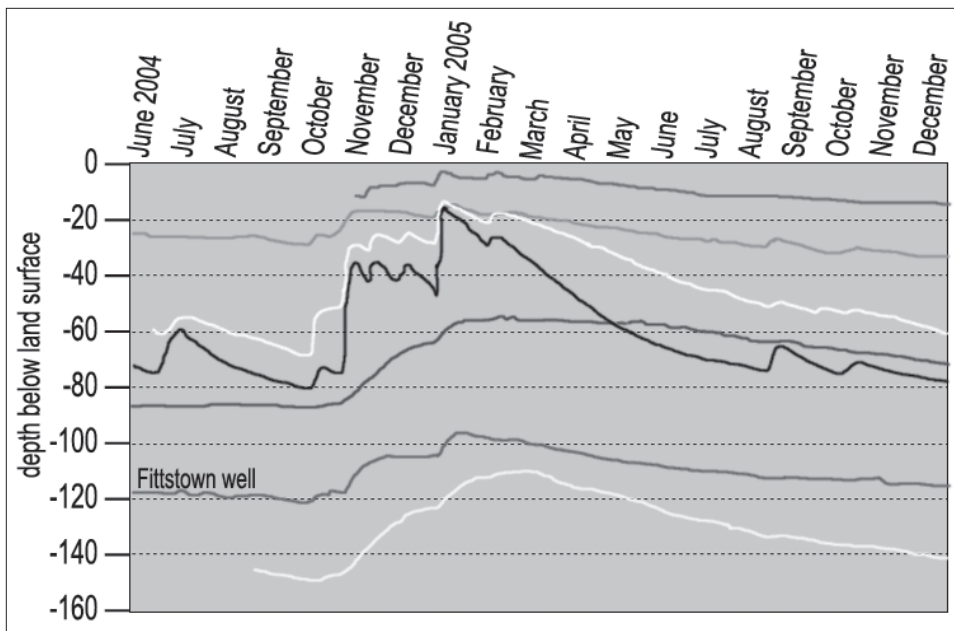
Arbuckle Water Levels Reflect Unusual Weather

In June 2004, the OWRB began installing water-level recorders in wells in the Arbuckle-Simpson aquifer as part of the Arbuckle-Simpson Hydrology Study. These water-level recorders, which measure the depth to groundwater, can be used to determine the aquifer's seasonal fluctuation and response to recharge from precipitation and discharge from pumping. A longer period of record is available from the Fittstown Well, which has been monitored by the U.S. Geological Survey (USGS) since 1958.

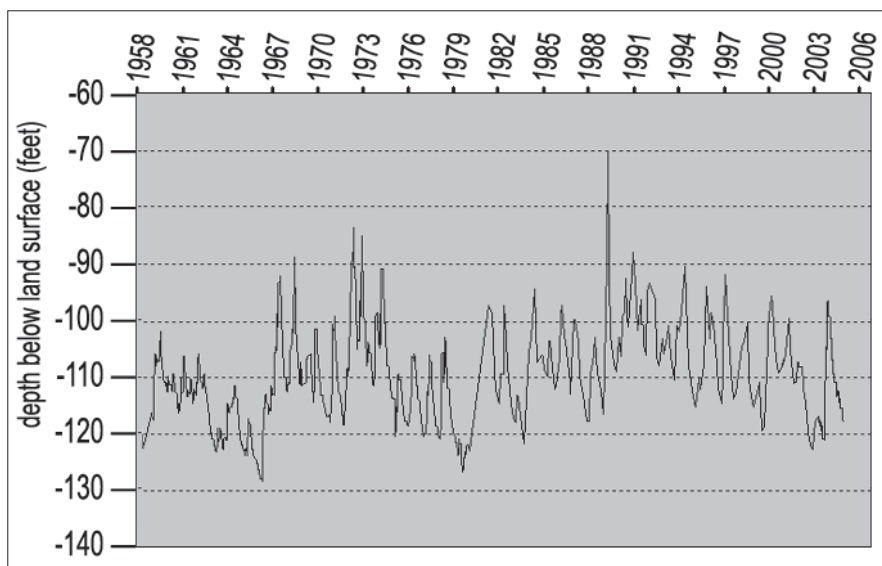
The amount of recharge to the aquifer depends on several factors, including rate and intensity of rainfall, soil moisture, evaporation, and depth to the water table. The magnitude and response time to a precipitation event in a particular well is partially dependent on aquifer characteristics such as the amount of fractures, karst features, porosity, and permeability. Although water level responses have varied from well to well, the data show a correlation between water levels and the timing and amount of precipitation.

During 2005, rainfall totals in the region were low (14.42 inches below normal) and most of the year's rain occurred atypically in the winter and summer. The heavy late summer rains in 2005 had little effect on groundwater levels, because recharge is significantly lower in the summer when there is higher loss of moisture to evaporation and transpiration through plants (see hydrograph at top right). Following one of the driest years on record, water levels are again on the decline.

Although water levels are low, historically they have been lower, as illustrated at the Fittstown Well (see hydrograph at middle right), which reached its lowest recorded depth in 1967 at 128 feet below surface. Currently, the water level is 118 feet, which is 26 feet lower than the same time last year. It is not yet as low as January 2004, when it was 122 feet below surface. Real-time water-level measurements from the Fittstown well can be viewed on the USGS website at <http://waterdata.usgs.gov/ok/nwis/current/?type=gw>.



Water levels recorded in observation wells from June 2004 to December 2005. The water level in one well rose 34 feet in 5 days in response to 3.78 inches of rain that fell in the area January 2-5, 2005. However, after 6.66 inches of rain August 14-16, 2005, water levels in the same well rose only 9 feet in 5 days.



Water levels at the Fittstown well from 1958 to present. The lowest recorded water level was 128 feet in April 1967, and the highest recorded level was 70 feet in May of 1990. Currently, the water level is at 118 feet.

Fittstown Weather Station Provides Water Level Data

The Fittstown Mesonet weather station, located on the Arbuckle-Simpson aquifer, was commissioned in May 2005. The station will provide information essential to understanding how the aquifer responds to variations in precipitation and other climatic factors.

A 255-ft observation well drilled in October will provide daily water level measurements at the station. Real-time climatological data are available on the Oklahoma Mesonet website (www.mesonet.org).

Laura Oak Named Employee of the Quarter

Laura Oak was selected by the Board's Employee Recognition Committee as OWRB/OSE Employee of the Quarter in October. A Financial Loan Analyst in the Board's Financial Assistance Division, Laura performs a variety of tasks with gusto and perseverance.

Laura's character and good nature have been valuable in alleviating tension, building teams, and motivating coworkers.

One of the most notable contributions Laura has made is serving as chair or cochair for the OWRB State Charitable Contribution Campaign for the past 11 years, and successfully rallying the agency to new records nearly every year.



Executive Director Duane Smith with Oak

Lorena Males Passes Away

Lorena G. Males, a member of the Oklahoma Women's Hall of fame and widow of former Board member and conservationist L. L. Red Males, passed away January 3 in her home in Cheyenne, Oklahoma. She was 96 years old.

Mrs. Males was born in Forgan, Oklahoma in 1909, and she married Red Males in 1928. Red Males was a member of the nine-member Oklahoma Water Resources Board, serving the agency under five governors. He directed establishment of the Sandstone Creek Project, the nation's first upstream flood control project, which included 24 dams constructed between 1950-1952. Mr. Males was one of the first Oklahoma Water Pioneers honored in 1985 by Governor George Nigh.

Hook, McGaugh, and Schuelein Retire

In November and December, three employees representing more than 80 years of combined agency experience retired from the Water Resources Board.

Jann Hook, head of the OWRB's Information Services Section, retired in November following 26 years of service to the agency. Among her many impressive accomplishments, she was largely responsible for leading the Board's many technological advancements in recent years, including establishment of the agency's Geographic Information System (GIS). Hook also chaired the state's GIS Council.

Mike McGaugh, who retired in December, spent much of his 27 years in the agency's drafting section, lending

his considerable talents to countless high-profile agency reports and publications, including the *Appraisals of Water and Related Land Resources of Oklahoma*, precursors to the 1980 *Oklahoma Comprehensive Water Plan* and subsequent update in 1995; the enormously popular *Oklahoma Water Atlas*, including its two revisions; and *Rural Water Systems in Oklahoma*. More recently, he patiently served the Water Board as purchasing officer.

Jim Schuelein, who also retired in December, was the chief of the OWRB's Administrative Services Division. Hired in 1978, Jim also served the agency through an assortment of roles, including Human Resources Director, agency Certified Procurement Officer, and Employee Benefits Coordinator. Following the bombing of the Alfred P. Murrah Federal Building and related damage to the agency's Oklahoma City office, he earned a Governor's Commendation in appreciation of his work on the State Employees Bombing Recovery Committee. He was also recognized for outstanding service by the International Personnel Management Association and received the Human Resources Hero Award from the Office of Personnel Management.

Friends and staff gathered to express appreciation and best wishes to the three retirees.



Mike McGaugh, left, surveys a wide array of snack foods furnished by his friends and colleagues on his last day of work at the OWRB.



Jim Schuelein with Mike Melton at Jim's retirement party

Oklahoma Drought Monitor

Reservoir Storage

Lake storage continues to be of concern in many areas of Oklahoma, especially in the east. As of January 3, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 84.6 percent full, a 0.1 percent increase from that recorded on December 19, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-one reservoirs have experienced lake level decreases since that time; 27 reservoirs are currently operating at less than full capacity (compared to 28 two weeks ago). Thirteen reservoirs—including Lugert-Altus, only 38.5 percent full—are now below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs

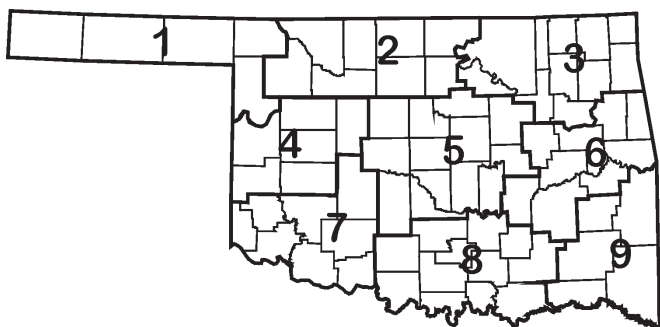
As of January 3, 2006

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central	493,851	493,425	99.9
Northeast	3,787,053	3,291,822	86.9
West Central	276,790	252,891	91.4
Central	154,225	134,381	87.1
East Central	2,968,683	2,232,375	75.2
Southwest	301,810	193,442	64.1
South Central	2,887,753	2,700,881	93.5
Southeast	1,491,229	1,152,599	77.3
State Totals	12,361,394	10,451,816	84.6

Drought Indices

According to the latest Palmer Drought Severity Index (December 31, below), state drought conditions continue to worsen. Both the Southeast and East Central climate divisions remain in “severe drought” while the Northeast and South Central regions are in “moderate drought.” In addition, Central and Southwest Oklahoma are in the “mild drought” category. All of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since December 17.

The latest monthly Standardized Precipitation Index (through November, below) reflects increasingly dry conditions throughout much of Oklahoma, especially in the east. In particular, among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), “**extremely dry**” conditions are present in **East Central (3- and 6-month periods) and Southeast (6, 9 and 12 months) Oklahoma**. “Very dry” conditions also persist in those regions as well as in the Northeast, Central, and South Central climate divisions within the past 12 months. Considering longer periods (through six years), the Southeast and East Central climate divisions report long-term “very dry” and “moderately dry” conditions over multiple time periods during the past 48 months.



Palmer Drought Severity Index

Climate Division (#)	Current Status 12/31/2005	Value 12/31	Value 12/17	Change In Value
NORTHWEST (1)	NEAR NORMAL	0.06	0.60	-0.54
NORTH CENTRAL (2)	NEAR NORMAL	-0.17	0.45	-0.62
NORTHEAST (3)	MODERATE DROUGHT	-2.39	-2.19	-0.20
WEST CENTRAL (4)	NEAR NORMAL	-0.30	0.21	-0.51
CENTRAL (5)	MILD DROUGHT	-1.45	-1.19	-0.26
EAST CENTRAL (6)	SEVERE DROUGHT	-3.35	-3.13	-0.22
SOUTHWEST (7)	MILD DROUGHT	-1.18	-0.66	-0.52
SOUTH CENTRAL (8)	MODERATE DROUGHT	-2.21	-1.93	-0.28
SOUTHEAST (9)	SEVERE DROUGHT	-3.90	-3.58	-0.32

Standardized Precipitation Index

Through November 2005

3-Month	6-Month	9-Month	12-Month
MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
VERY DRY	NEAR NORMAL	VERY DRY	MODERATELY DRY
NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
VERY DRY	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL
EXTREMELY DRY	VERY DRY	EXTREMELY DRY	VERY DRY
NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
VERY DRY	NEAR NORMAL	VERY DRY	MODERATELY DRY
VERY DRY	EXTREMELY DRY	EXTREMELY DRY	EXTREMELY DRY

Financial Assistance Program Update

Loans/Grants Approved as of December 13, 2005

FAP Loans—316 totaling \$566,120,000

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 extremely competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—171 totaling \$580,244,915

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—54 totaling \$206,350,539

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—438 totaling \$38,258,018

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—520 totaling \$30,538,145

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.

Total Loans/Grants—1,499 totaling \$1,421,511,617

Estimated Savings—\$448,632,975

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405)530-8800.

Rudy Herrmann, *Chairman*; Mark Nichols, *Vice Chairman*; Bill Secrest, *Secretary*
Harry Currie, Lonnie L. Farmer, Ed Fite, Jack Keeley, Kenneth K. Knowles, Richard C. Sevenoaks

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography*

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