

OKLAHOMA Water News

Bimonthly Newsletter of the Oklahoma Water Resources Board

In This Issue

Legislature Mulls First Interstate Groundwater Compact

GIS Day at the Capitol

OWRB Notes Receive Top Ratings

FAD's Daugherty Retires

Cloud Seeders Initiate 2001 Program

OWRB/OFMA Host Legislative Reception

FLOOD CURRENT:

NFIP Standards Scrutinized
Flood Map Ordering Made Easy
Cities, Towns Asked to Assess Flood Mapping Needs
March, May Get Flood Month Pronouncements

Water Resources Update:

Reservoir Storage
Drought Indices

Financial Assistance Program Update

From the Director



Duane A. Smith
Executive Director

On the legislative front, the OWRB is following several important measures currently under consideration at the State Capitol. I'd like to mention just a few.

A "hog-related" bill, HB 1237, could have a significant impact on the regulation of confined animal feeding operations in Oklahoma. HB 1237 attempts to define "camp and recreation sites" as they relate to the existing three-mile set-back rule which applies to swine feeding facilities and groundwater permit administration. (Due to potential odor and related problems, state law currently prohibits the Board from issuing or amending groundwater permits for those operations within three miles of recreational areas, church camps, etc.) HB 1237 would provide a 60-day minimum usage time requirement for camps and recreation sites.

HCR 1008, discussed in more detail in this issue of the Water News, is

See Director, Page 2

Legislature Mulls First Interstate Groundwater Compact



In March, the Oklahoma House of Representatives approved legislation proposing Oklahoma's first multi-state groundwater compact. House Concurrent Resolution 1008, authored by Rep. Clay Pope, directs the OWRB to contact other High Plains states water officials, as well as appropriate federal agency representatives, to initiate formal dialogue and negotiations that would result in the formation of a water compact to address common issues related to the conservation of the Ogallala Aquifer. Rep. Pope is a member of the House Committee on Environment and Natural Resources.

The enormous and extraordinarily prolific aquifer underlies about 174,000 square miles of land in the U.S. High Plains, including approximately 7,100 square miles

in Oklahoma. The groundwater basin also underlies portions of Texas, New Mexico, Kansas, Colorado, Nebraska, South Dakota and Wyoming. The State of Kansas is currently considering similar legislation that would facilitate an interstate agreement concerning the Ogallala's preservation.

Oklahoma currently participates in four separate interstate *stream* water compacts -- the Arkansas River Compact with Arkansas; Arkansas River Compact with Kansas; Red River Compact with Arkansas, Louisiana and Texas; and Canadian River Compact with New Mexico and Texas -- that serve to assure the receipt of adequate surface flows/releases from upstream states and to address common water quality concerns. While a similar agreement based on shared *groundwater* resources has never been attempted in Oklahoma, the task and potential benefits provide an exciting challenge for state water administrators, according to Duane Smith, OWRB Executive Director.

"The impetus for groundwater compacting has intensified over the past decade or so and it's appropriate

See Groundwater Compact, Page 2

Director . . . Continued

an exciting piece of legislation that lays the foundation for creation of Oklahoma's first interstate groundwater compact. Involving the Ogallala (High Plains) Aquifer and the many associated water quality and quantity issues which impact its supplies, the measure directs the OWRB to begin preliminary discussions on compact development with other U.S. states overlying this vitally important resource.

SCR 18 recommends that the State of Oklahoma seek relief through the U.S. Supreme Court regarding a potential violation of the 1950 Canadian River Compact between the States of Oklahoma, Texas and New Mexico. The violation in question is the construction of Palo Duro Reservoir on Palo Duro Creek, a tributary of the Beaver-North Canadian River, about 12 miles upstream of the state line in Texas. Reduction in river flows, resulting from the impoundment and currently under dispute, could have a significant impact on water levels at Canton Lake, an upstream water supply source for the City of Oklahoma City. To date, Texas has refused to acknowledge the alleged violation.

Concerning our appropriations bill, we've met with members of the Senate Natural Resources and Regulatory Services Appropriations Sub-Committee who appear very supportive of funding requests which would provide the backbone for several crucial and successful agency programs. Long-term funding for the OWRB's Beneficial Use Monitoring Program is one of our top priorities. The BUMP effort, which has become a model for the nation, is vital in our determination of Oklahoma's success in mitigating water quality problems – i.e., “are we getting the job done?” As we fold groundwater protection and other priorities into the program, base funding for BUMP will become even more important.

Another top agency priority is securing funds to provide for proper review of water use applications to ensure that waste by pollution will not occur. A memorandum of understanding currently under development between the OWRB and State Department of Agriculture would establish a system through which ODA reviews protested swine facility water use permit applications and then submits a formal recommendation to the OWRB for approval at the required public hearing. This improved, though more intensive, process will require a substantially greater investment in staff time and related resources.

As always, we'll continue to closely monitor legislation that impacts how we manage our water resources for the people of Oklahoma as well as other important environmental bills and issues. Regardless of the outcome, we should all recognize that our representatives at the State Capitol have a very difficult job and strive to do their very best for all Oklahomans.

Groundwater Compact . . . Continued

that the initial agreement of this type will center on protection of the Ogallala,” he pointed out.

Much of western Oklahoma and the Panhandle region, not to mention surrounding states, rely almost exclusively upon the Ogallala for their water needs, including irrigation and various agricultural uses, drinking water supply and municipal and industrial use. During a peak irrigation day, Texas County, which is completely underlain by the formation, uses as much water as New York City in an average day (approximately 4,300 acre-feet or more than 3.8 million gallons). The Ogallala contains an estimated 86.6 million acre-feet of water -- enough to cover the entire state two feet deep – yet its supply is not unlimited, from either a quantity or quality standpoint.

“Oklahoma and the other states who share this extensive and valuable water resource are faced with numerous issues that have substantial impacts on both the present and future use of the Ogallala, especially concerns surrounding potential depletion of the aquifer and impacts of concentrated animal feeding operations on water quality,” Smith added. “I think a compact agreement could have an enormous influence on prolonging both the life of the Ogallala and the economic welfare of Oklahoma and its neighboring states.”

Stream water compacts clearly spell out how much water a signatory state is allowed to develop or store on an interstate stream. Generally, they provide a means of working out problems between states in an orderly manner, often preventing potential litigation. The OWRB supports the state's compact commissioners in negotiating and administering the interstate agreements. The agency will assume a similar role upon development and ratification of a compact on the Ogallala Aquifer.

GIS Day at the Capitol

Mike Sughru, OWRB GIS Specialist, greets Senator Johnny Crutchfield at GIS Day held February 27 at the State Capitol. The event allowed various state and federal agencies, as well as vendors, to showcase their Geographic Information System products and capabilities.



OWRB Notes Receive Top Ratings

April 11 note sales from the OWRB's Clean Water and Drinking Water State Revolving Funds received Standard and Poor's top ratings. Fitch, Inc., a New York City rating service, gave the \$4,385,000 Clean Water State Revolving Fund (CWSRF) Series 2001 Note Issue a "F1+" rating while the \$4,590,000 Drinking Water State Revolving Fund (DWSRF) Series 2001 Note Issue was assigned the group's "AAA" ranking.

"We are very pleased and honored to obtain these high ratings," said Joe Freeman, Chief of the OWRB's Financial Assistance Division. "Then again, these evaluations just reflect the great stability and success of our loan programs." The OWRB is the chief financing agency of water and wastewater projects in Oklahoma.

The OWRB's DWSRF notes will fund two years of state match monies to provide the necessary 20 percent required to leverage capitalization grants under the federal Safe Drinking Water Act. Loans for qualified drinking water system projects are secured by revenue pledges of the local entities' water systems.

The notes are secured by the interest portion of loan repayments from outstanding DWSRF direct loans, existing and new interim construction loans, and existing and new small community loans; interest earnings on the DWSRF account; and principal repaid on outstanding loans. A debt service reserve is funded at \$3.11 million. In the event of a draw on the reserve, the reserve will be replenished from DWSRF revenues. Since the inception of the DWSRF program, the state has approved 12 loans for \$32.1 million.

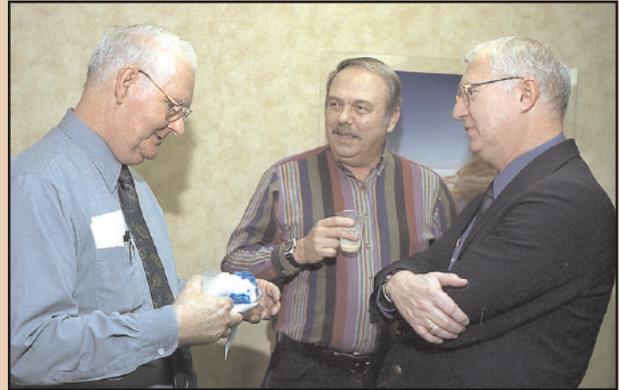
Concurrently, the OWRB's \$4.39 million issue of Clean Water State Revolving Fund notes will provide two years of state match monies to leverage federal capitalization grants under the federal Clean Water Act. The state and federal monies will be used to make loans to qualified local entities to finance local wastewater system projects. Similar to the DWSRF, Clean Water loans are secured by revenue pledges of the local systems.

The CWSRF notes are secured by the interest portion of local loan repayments from existing CWSRF interim construction direct loans; interest payments on existing and new small community loans; interest earnings on the CWSRF account, and interest on new construction loans not funded from bond proceeds. Since the inception of the CWSRF program in 1988, the board has approved 105 loans for \$352.5 million.

FAD's Daugherty Retires

Reese Daugherty, long-time "engineer extraordinaire" in the OWRB's Financial Assistance Division, retired March 1. The event was marked by a February 28 party held for Reese by his agency colleagues and friends.

A Professional Engineer and former OWRB Employee of the Quarter, Daugherty served the agency, as well as the water/wastewater financial needs of countless Oklahoma communities, for more than 15 years. Prior to joining the OWRB, he worked more than 20 years for private engineering firms, the Corps of Engineers, Tennessee Valley Authority and as the Bethany city engineer. OWRB staff and friends wish Reese a long, enjoyable and much-deserved retirement.



Reese Daugherty shares a moment at his reception with fellow employee, Gary Glover and former employee, Harold Springer.

Cloud Seeders Initiate 2001 Program

On March 1, Oklahoma cloud seeders officially began operations for the 2001 project. However, considering the relatively wet conditions throughout much of Oklahoma, hail suppression will be the primary focus of the program.

"After a four-month recess, we're pleased to get our pilots back in the air," said Senator Robert M. Kerr, President of the Oklahoma Weather Modification Advisory Board, although he added that "stand-down" operations will be employed for much of Oklahoma due to the recent abundant rainfall received throughout the state. "Only a few drier western tier counties, along with the Panhandle region, will be considered for rainfall enhancement activities until the state dries up a bit. However, hail suppression operations will be considered statewide as those opportunities arise," he pointed out.

Each of the two weather modification facilities, located at Oklahoma City's Sundance Airpark and Woodward Airport, employ a radar with aircraft tracking capabilities and a full complement of meteorological data systems. They also

serve as headquarters for equipment storage and maintenance of the program's three aircraft.

Although the Oklahoma Weather Modification Program (OWMP) was initially created in direct response to the 1996 drought as a long-term water management tool, perhaps the most important benefit of the program has been its focus on reducing potential hail damage to crops and property. Oklahoma crop losses due to hail average approximately \$2.5 million per year in loss claims alone -- not including property/casualty claims. The program currently operates on an annual budget of approximately \$1 million through legislative appropriations.

"Even within the past decade or so, we've had localized hailstorms in Oklahoma responsible for millions of dollars in damages. By reducing the size of hail stones and the subsequent damage they could inflict, the program could pay for itself through mitigating just one storm event," Kerr emphasized.

The Weather Modification Advisory Board was created by the State Legislature in 1999 to oversee the program and coordinate a mechanism that provides long-term program funding through voluntary assessments provided by state property/casualty insurance companies. The cooperative state/private insurance cost-share effort, emphasizing hail suppression benefits, targets as much as \$3 million per year for expansion of the program. The Advisory Board is also considering implementation of a companion research program -- potentially through the Oklahoma Climatological Survey through funding provided by the Oklahoma Center for the Advancement of Science and Technology (OCAST) -- to gather data, measure success and identify measures to improve the state's cloud seeding effort.

The 2001 OWMP is scheduled to run through October 31. For the sixth consecutive year, Weather Modification, Inc., based in Fargo, North Dakota, will perform actual cloud seeding activities throughout the state and along the state borders into Kansas and Texas, as needed.

According to Duane Smith, Executive Director of the Oklahoma Water Resources Board and Chairman of the Advisory Board, those involved with the OWMP, as well as other state efforts, are bolstered by the results of a recent study of cloud seeding programs in Mexico and South Africa. "This randomized study concluded that the two programs, operating in different parts of the world under dissimilar climatic conditions, achieved essentially identical results. This replication of two separate experiments is a first in the history of cloud seeding research," he said.

OWRB/OFMA Host Legislative Receptions

In an effort to enhance existing relations and communications with the State Legislature, the Water Board and Oklahoma Floodplain Managers Association hosted two legislative receptions at the State Capitol February 13 and 14, respectively. The two events were well-attended and the OWRB

and OFMA thank legislators and their staff for their many useful suggestions and comments.



Representative Larry Ferguson; Board Members Wendell Thomasson and Ervin Mitchell; Senator Gilmer Capps; and Senator J. Berry Harrison.



Board Member Richard Sevenoaks; OWRB Executive Director Duane Smith; and Representative Randall Erwin.



Ken Morris, OWRB NFIP Coordinator; Lonnie Ward, FEMA, Region Six; and

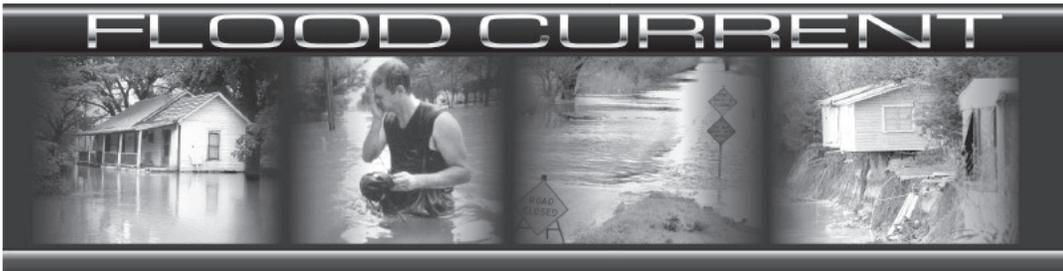


Anna Wagoner, OFMA Chair; and Representative Wayne Pettigrew. Representative Elmer Maddux.

Julie Cunningham Honored as Employee of the Quarter

Julie Cunningham, of the Board's Financial Assistance Division, received the Employee of the Quarter Award during the OWRB's March staff meeting. Cunningham, who recently transferred from the Water Quality Division, was lauded especially for her work in both the Oklahoma Water Quality Standards and Oklahoma Water Watch programs.





NFIP Standards Scrutinized

Important Legislation Under Consideration

By W. Kenneth Morris, CFM, State NFIP Coordinator, OWRB

Although the National Flood Insurance Program (NFIP) offers numerous benefits, minimum NFIP standards are just not getting the job done. Although member communities do a generally good job of enforcing their ordinances, flood losses continue to climb; today, annual flood losses in the U.S. amount to an astounding \$6 billion.

More stringent standards are needed to accomplish flood loss reduction goals and protect the natural and cultural benefits of the floodplain. The Association of State Floodplain Managers, Inc. has developed a new “No Adverse Impact Floodplain” initiative to scrutinize current floodplain management techniques employed throughout the U.S. I encourage all floodplain officials to take an objective view of their procedures and ensure that all new construction is intelligently planned. To read more about the “No Adverse Impact Floodplain” initiative, visit the ASFPM web site at www.floods.org.

Once again, the OWRB will be hosting five “Floodplain 101” workshops in May, Flood Awareness Month. Instructors will represent FEMA, Civil Emergency Management and the OWRB. Three Continuing Education Credits may be earned through completion of each one-day workshop. The CFM exam will be offered following each workshop for pre-approved candidates. Also, I strongly encourage all NFIP member communities in Oklahoma to plan their own floodplain workshop this spring to alert their residents of the dangers of flooding and educate citizens

about the importance of the natural and cultural benefits of the floodplain, including recreation, water quality improvement, storage of flood waters and habitat.

Two important measures, currently under consideration at the State Capitol, could have a significant impact on floodplain management in Oklahoma. Legislation originating in the House of Representatives (formerly HB 1949, authored by Rep. Larry Rice, Senator Kevin Easley and Rep. Ray Vaughn) would facilitate the appropriation of \$1 million for the Oklahoma Flood Hazard Mitigation Account. This legislation, which would provide the necessary funding for small communities to purchase repetitively flooded structures, is important because it provides a fund and system through which the State of Oklahoma is responsible for its own mitigation efforts, rather than through federal hand-outs.

Another noteworthy bill under deliberation is HB 1329, authored by Rep. James Covey, Rep. Purcy Walker and Senator Kevin Easley. This legislation, allowing boards of county commissioners and/or floodplain boards to charge up to \$500 for services provided under the Oklahoma Management Act, authorizes the OWRB, boards of county commissioners and municipal governing bodies to establish “reasonable fees” up to \$500 for administrative services – related to administration of floodplain development permits and related tasks -- provided to citizens, consultants, insurance agents, engineers and others under the Oklahoma Floodplain Management Act. These fees would assist communities in recouping the often substantial costs associated with local floodplain management tasks.

Finally, I encourage you to check out the web site of the Oklahoma Floodplain Managers Association at www.okflood.org. The site offers excellent information regarding ongoing floodplain management activities in the state.

Flood Map Ordering Made Easy

The Federal Emergency Management Agency has announced that their Map Service Center now offers on-line ordering and payment of community floodplain boundary maps for business customers. This much-needed “e-commerce” service completes the first phase of FEMA’s mapping modernization effort, initiated last year.

Individuals wishing to purchase flood maps and related products for personal use and fee-exempt federal, state and local government agencies will be able to place orders on-line by this summer. In the meantime, they are encouraged to call MSC Customer Service at 1-800-358-9616.

The FEMA Map Service Center Flood Map Store, available at www.fema.gov/MS, features interactive map search capabilities. Consumers may order the map of their choice through entering either the street address, map panel number or community number.

Cities, Towns Asked to Assess Flood Mapping Needs

More than 19,000 communities use flood maps produced by the Federal Emergency Management Agency (FEMA) to assess the flooding risks assumed by countless citizens residing within or near the nation's designated floodplains. To counter potential problems caused by obsolete or inaccurate flood maps, the agency is asking the nation's floodplain officials to assess and document their community mapping needs. Flood Insurance Rate Maps (FIRM's) are a vital facet of the National Flood Insurance Program (NFIP).

Local floodplain officials in Oklahoma are encouraged to review their flood hazard maps and contact James Orwat, with FEMA, 940-898-5302 to submit their mapping needs. Mr. Orwat can also provide communities with additional information and a worksheet, as well as guides that assess and document mapping requirements.

FEMA's ongoing Flood Hazard Mapping Modernization Plan strives to identify flood hazard mapping needs, maintain a national inventory of needs, and prioritize those needs so that maps can be updated as funding becomes available. FEMA has categorized mapping needs into two types: 1) maintenance needs are non-technical in nature and consist of the addition of streets and street names, elevation reference marks, alignment of map panels, addition of Letters of Map Change, conversion to a countywide map format and integration of corporate limit changes; and, 2) flood data update needs are technical in nature and consist of modifications in the hydrologic and hydraulic conditions affecting a community. If more than one flood source in a community is in need of update, an additional data collection worksheet will be needed for each flood source.

The stated goals of FEMA's mapping program are to ensure that all flood-prone communities have accurate NFIP maps that provide the necessary level of detail for community planning, floodplain management and mitigation activities; increase community involvement and responsibility in maintaining flood maps; increase public accessibility to the maps and related flood hazard data; enable easier and more timely map revision; increase public awareness of floodplains and the need for flood insurance; and encourage the creation of data-sharing partnerships between federal, state and local governments.

March, May Get Flood Month Pronouncements

To promote the availability of state and federal assistance through the Federal Emergency Management Agency's National Flood Insurance Program (NFIP), as well as the awareness of flood dangers, Governor Frank Keating recently declared March 2001 as Flood Insurance Month and May as Flood Awareness Month.

"The Governor's proclamation provides the OWRB, insurance companies and emergency management

organizations with a valuable opportunity to spread the word on the availability of relatively inexpensive flood insurance," said Duane Smith, OWRB Executive Director. "Because we experience so many damaging flooding events in April and May, now is the time for those citizens who reside in designated floodplains but do not currently possess a flood insurance policy to discuss the need for protection with their insurance agent."

The NFIP assists Oklahomans by making flood insurance available at affordable rates and helping communities make wise decisions concerning floodplain use. To be eligible for flood insurance, participants must establish a floodplain board, recognize floodplain boundaries and restrict development in those areas. Such strategies typically result in reduced federal outlays to mitigate flood damages. The OWRB is the state agency designated to coordinate the NFIP in Oklahoma in a cooperative partnership with the Oklahoma Insurance Commission, Oklahoma Department of Civil Emergency Management and the Oklahoma Floodplain Managers Association.

Less than 13 percent of all homes or structures in the state that lie in the 100-year floodplain are covered by flood insurance, according to Ken Morris, OWRB state floodplain management coordinator. "It is disheartening that relatively few people have taken advantage of the benefits afforded through the purchase of flood insurance, especially since it is so inexpensive and offers such comprehensive protection against one of our most common natural disasters," Morris said, adding that in the last decade, severe flooding episodes have occurred in Oklahoma about every two years.

Similarly, Flood Awareness Month, in May, will provide an opportunity for the OWRB to remind Oklahomans of the numerous dangers posed by flooding -- especially the hazards of driving into flooded roadways -- and of the various flood safety procedures required to protect their lives and livelihoods. Historically, the greatest number of flood disasters in Oklahoma have occurred during the month of May.

"More people drown in their cars than anywhere else," Morris pointed out. "Currents can be deceptive; just several inches of moving water can pick up or even overturn a vehicle. We really want to stress the potential dangers of not heeding road barriers or driving into flooded roadways."

For more information on the NFIP and flood protection and mitigation procedures, contact Ken Morris, of the OWRB's Planning and Management Division, at 405/530-8840.



Flood Awareness Month, May 2001, provides an opportunity for the OWRB and other state organizations to educate Oklahomans about numerous flooding dangers, including driving into flooded roadways.

Water Resources Update

Reservoir Storage

Reservoir storage levels in Oklahoma remain good throughout most of the state. As of March 26, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 99.4 percent full, the same as this time last month (February 26), according to information from the [U.S. Army Corps of Engineers \(Tulsa District\)](#). However, 27 reservoirs - including all in the Central, East Central, South Central and Southeast region -- have experienced lake level decreases since that time. Still, only six reservoirs are operating at less than full capacity (compared to five last month). Two reservoirs (Lugert-Altus and Tom Steed) remain below 80 percent capacity.

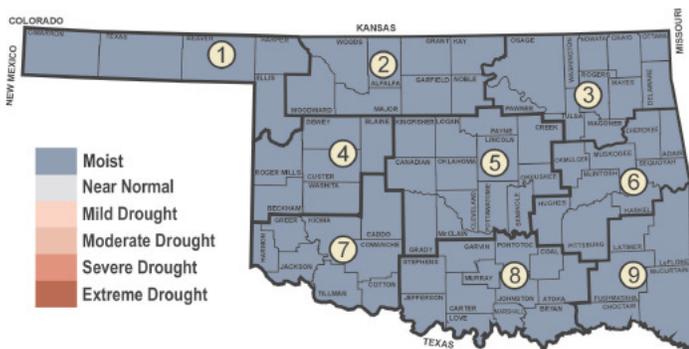
Storage in Selected Oklahoma Lakes & Reservoirs

As of March 26, 2001

| Climate Division | Conservation Storage (acre-feet) | Present Storage (acre-feet) | Percent of Storage | |
|------------------|----------------------------------|-----------------------------|--------------------|-------|
| | | | Conservation | Flood |
| NORTH CENTRAL | 433,032 | 433,032 | 100.0 | 3.67 |
| NORTHEAST | 3,484,317 | 3,467,550 | 99.5 | 0.84 |
| WEST CENTRAL | 276,790 | 276,323 | 99.8 | 0.21 |
| CENTRAL | 154,225 | 154,225 | 100.0 | 0.73 |
| EAST CENTRAL | 3,022,323 | 3,022,323 | 100.0 | 0.71 |
| SOUTHWEST | 301,810 | 250,338 | 82.9 | 0.00 |
| SOUTH CENTRAL | 2,795,156 | 2,795,156 | 100.0 | 4.29 |
| SOUTHEAST | 1,496,206 | 1,496,206 | 100.0 | 6.44 |
| STATE TOTALS | 11,963,859 | 11,895,153 | 99.4 | 2.32 |

Drought Indices

According to the latest [Palmer Drought Severity Index](#) (March 24, below), moisture/drought conditions remain good, although the PDSI is beginning to indicate a drying trend throughout much of Oklahoma. Eight of the state's nine climate divisions have undergone PDSI moisture decreases since February 24; the East Central climate division ("unusually moist") experienced the greatest decrease during the period. The "driest" region is currently the Northeast ("moist").



The latest monthly [Standardized Precipitation Index](#) (through February, below) indicates that no climate divisions in Oklahoma are experiencing long-term dryness (among the selected time periods: 3-, 6-, 9- and 12-month). In addition, no regions are experiencing dryness over various time spans within the past six years.

Palmer Drought Severity Index

| Climate Division (#) | Current Status 3/24/2001 | Value | | Change In Value |
|----------------------|--------------------------|-------|------|-----------------|
| | | 3/24 | 2/24 | |
| NORTHWEST (1) | VERY MOIST SPELL | 3.70 | 3.11 | 0.59 |
| NORTH CENTRAL (2) | VERY MOIST SPELL | 3.68 | 4.19 | -0.51 |
| NORTHEAST (3) | MOIST SPELL | 1.83 | 2.54 | -0.71 |
| WEST CENTRAL (4) | UNUSUAL MOIST SPELL | 2.93 | 3.14 | -0.21 |
| CENTRAL (5) | VERY MOIST SPELL | 3.14 | 4.00 | -0.86 |
| EAST CENTRAL (6) | UNUSUAL MOIST SPELL | 2.45 | 3.64 | -1.19 |
| SOUTHWEST (7) | VERY MOIST SPELL | 3.40 | 3.87 | -0.47 |
| SOUTH CENTRAL (8) | VERY MOIST SPELL | 3.74 | 4.35 | -0.61 |
| SOUTHEAST (9) | UNUSUAL MOIST SPELL | 2.99 | 3.47 | -0.48 |

Standardized Precipitation Index

Through February, 2001

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

