

OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board

More Claims on State's Waters Complicate Water Rights Issues

When an individual, municipality or other entity seeks a permit from the OWRB to use groundwater or stream water, what determines whether the permit is granted? That question faced the Water Resources Board 131 times last year. Answering those applications in calendar year 1992, OWRB Water Management staff processed 102 applications allocating 29,500 acre-feet of groundwater and 29 permits allocating 8,049 acre-feet of stream water.

As of March, 1993, nearly 12,000 water-use permits have been issued, 2,925 of them allocating 2.7 million acre-feet of stream water; 8,872 permits allocating 3 million acre-feet of groundwater.

The complexity of administering water rights has grown immeasurably since the first stream water right was filed in 1899. The right (still valid) issued to a farm family near Boise City allows them a prior right to 52 acre-feet of water a year from Marcelus Canyon Creek, a tributary of the Cimarron River, for the irrigation of 26 acres. The water right is numbered 99-1, signifying the year 1899 and permit number one.

The oldest right to the use of groundwater is that of the City of Norman, claiming a prior right to 12 acre-feet of water a year from the Garber-Wellington Formation, based on municipal use dating back to 1894.

The sheer numbers, the intricacy of studies necessary to fairly apportion these waters, water marketing plans and Indian claims to ownership make water rights a very complex issue.

To simplify the task of equitably allocating surface waters, the OWRB has identified 49 stream systems. Divided into two basins that catch and carry precipitation, Oklahoma's rivers and streams lie in the Arkansas River Basin in the north or the Red River Basin in the south. There are 26 stream systems in the Arkansas Basin; 23 in the Red River Basin. "Stream

systems" are designated by the Water Board according to drainage area, where the amount of water available can be estimated with reasonable accuracy.

To determine if water can be appropriated in any given stream system, staff must address three issues. First is the issue of availability. By reviewing continuous records of streamflow registered at gages maintained statewide by the U.S. Geological Survey, estimates can be made of the quantity and variability of stream flow. Where gages are not present to provide such information, staff undertake studies of the relationship between precipitation and runoff in the area.

Continued on page 2

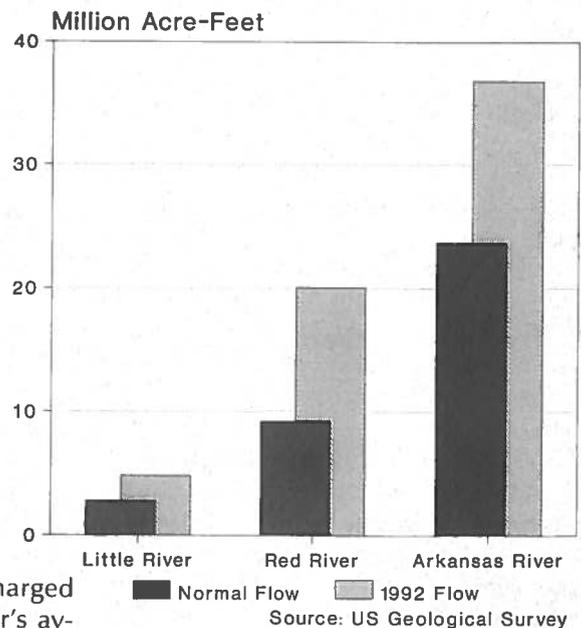
Flows Leaving State Greatly Exceed Normal

The U.S. Geological Survey reported the three rivers leaving Oklahoma registered a combined flow last year 25.9 million acre feet above the recorded average.

The gage on the Little River near Horatio (Arkansas) recorded a discharge of 4,862,384 acre feet, compared to a norm of 2,825,772 acre feet.

The Red River at Index (Arkansas) discharged 20,083,760 acre feet, while the average is 9,259,960 acre-feet.

The Arkansas River near Van Buren (Arkansas) discharged 36,837,120 acre-feet. The river's av-



Water rights, continued from page 1

Hydrologic studies completed in 47 of the state's 49 stream systems identify 23.3 million acre-feet of water available for use, with only 2.7 million acre-feet of it appropriated. However, even with this abundance, surface water supplies are short in some areas. Three stream systems are fully appropriated, two of them in the west; the other in the stream system that supplies Oklahoma City. Where there is insufficient water available, the OWRB can issue no permits in those systems on a regular, year-around basis.

Secondly, the applicant for a streamwater permit must assure the OWRB that there is a present and future need for the water and it will be put to beneficial use.

Finally, the OWRB assures that the permitted water use will neither interfere with domestic or previous appropriators nor affect the yield of lakes and reservoirs in the same system.

J.A. Wood, chief of the Water Management Division, points out that stream water is public water, not a property right of the landowner, as is groundwater.

Oklahoma is underlain by 23 major groundwater basins containing an estimated 320 million acre-feet of water in storage, perhaps half of which is recoverable. Thirteen of these are bedrock basins; 10 are alluvium and terrace deposits along major streams.

Although there are similarities to stream water permitting, allocation of groundwater depends on the applicant owning or leasing the land overlying the groundwater basin.

As a first step, the Water Resources Board makes hydrologic surveys, then determines the maximum annual yield that can be produced from each groundwater basin. Investigators map the total land overlying the basin and estimate the amount of water in storage, rate of recharge and total discharge, transmissibility (the rate at which water moves through the formation) and the potential for pollution from natural sources. Then the Board prorates the available water to owners whose lands overlie the groundwater basin.

Statutes normally allow two acre-feet of groundwater per acre of land owned, unless maximum annual yield studies show less water is available in the basin. Exceptions are permits in the Enid Isolated Terrace, where .5 acre-foot per acre is allowed; the Gerty Sandstone, with .65 acre-foot; the North Fork of the Red and along some reaches of the Washita and North Canadian Rivers, with one to 1.5 acre-feet, and in the Antlers Sandstone with 1.6 acre-feet permitted.

In granting a permit to use groundwater, the Water Board requires that the water be put to beneficial use and without waste. And, as in streamwater use, no permit is required for domestic use, defined in both cases as water for household use, watering livestock on the land or irrigating lawns, small gardens and orchards.

What's water worth? Is it a mineral? Who owns it?

Oklahoma Statutes provide straightforward guidance in allocating water. Recently, however, questions concerning Native American claims to waters of the state have raised the issue of ownership. Claims by the Osage in the northeast and the Chickasaw and Choctaw Nations in southeast Oklahoma challenge the right of the state to issue water rights.

Principal Chief Charles Tillman claims the Osage Nation owns all the water, along with all the minerals, in Osage County. Within the boundaries of the 1.5-million-acre county lie parts of the Arkansas River and Keystone and Kaw Reservoirs, all of Hulah and Skiatook Lakes and a scattering of municipal lakes. This is not to mention groundwater stored in Alluvium and Terrace deposits of the Arkansas River and the Vamoosa Formation.

The tribe believes it is entitled to royalties on all water bought and sold in the county. The Osages trace their claim back to 1872, when they purchased the land, including all mineral rights, from the Cherokee Nation. The 1906 Allotment Act required the Indians to apportion tribal lands among

its members, some of whom later sold to non-Indians. The Osage Nation contends those sales were confined to the surface, and that all minerals beneath those lands are held in trust for them by the United States. And, they claim, since water is a mineral, they are entitled to collect royalty payments like those paid for oil and gas.

To muddle the water issue even more, the Osages want the county recognized as an Indian reservation, which they believe will help people better understand their claims.

In the southeast, the Chickasaws and Choctaws have asserted they own the water within their original tribal boundaries. The declaration was made when the OWRB began working toward a lease of surplus water from Sardis Reservoir and the Kiamichi Basin to the North Texas Municipal Water District.

Indeed, Indian water rights claims can be convoluted, not to be settled without effort.

These questions concerning water rights remain. Is water a mineral? Would a mineral reservation held in trust for Native Americans include water or rights to enough water to enjoy the minerals? Does the State of Oklahoma have the right to regulate water on lands the Native Americans claim as their own?

Flows, continued from page 1

average discharge is 23,711,000 acre-feet.

The recorded total for water year 1992 was 61,783,264 acre-feet, compared to a total average discharge of 35,796,732 acre-feet. The total outflow exceeded the recorded average by 25,986,532 acre-feet. Data are for the USGS Water Year 1992, October 1, 1991 through September 30, 1992.



Environmental Conference Set

The Governor's Conference on Environmental Quality will be held in Oklahoma City at the Marriott Hotel April 12-13. The conference will address a wide range of environmental topics including regulations and poli-

cy, waste minimization, pollution prevention and coalition building for effective environmental quality management.

The meeting is jointly sponsored by the Governor's Council on Environmental Quality and the Institute of Environmental Management of the OU College of Public Health.

Registration is open until April 1 and costs \$75. For further information and registration forms, call Kay Holladay, OU College of Public Health, (405) 271-2232.

Condon Named to EQB

OWRB Member Frank Condon was named by Governor Walters to the 13-member Environmental Quality Board on March 1. The EQB will serve as the citizen oversight panel for the new Department of Environmental Quality.

Condon, a resident of Valliant, is a chemical engineer with wide experience in environmental affairs. He is employed as a technical director for the Weyerhaeuser Company. Condon was appointed to the Water Resources Board in April 1989 by Gov. Henry Bellmon.

Other members of the Environmental Quality Board include Bill D. Bridwell, Ponca City; Dr. Chet Bynum and Herschel J. Roberts, Norman; Joel K. Smith, Edmond; Eugene Brown, Duncan; Jim Schellhorn, Catoosa; Roger Miner, Cheryl Cohenour Martin, Liddy Doenges and Lee W. Paden, Tulsa; Linda Walker, Bartlesville.

All names will be submitted to the Oklahoma Senate for confirmation.

According to Secretary of Environment Patty Eaton, this is the first step toward formation of the Department of Environmental Quality, mandated by HB 2227 of the last legislative session. The Environmental Quality Board is charged with hiring and setting the salary of the department's executive director.

Lakes Symposium April 13-16

The Oklahoma Clean Lakes Association, a state chapter of the North American Lake Management Society, will host a symposium April 13-16. The meeting will be held at the Lake

Texoma Resort in Kingston.

The program will feature a dam safety workshop and tour of Denison Dam on Tuesday, April 13, presentation of papers and posters on Wednesday and Thursday, and a citizens' lake monitoring workshop on Friday.

For more information, call OCLA President Joanne Kurklin at (405) 231-4256.

Sierra Club Asks Nominations

The Oklahoma Sierra Club invites nominations for its annual Conservation Journalism award to be presented April 17 in Oklahoma City. Individuals or organizations using print or

electronic media to promote conservation and/or protect the environment are eligible.

Deadline for nominations is March 29. For more information, call Danette Swanson at (405) 525-8822.

Write for an Annual Report

The report is available describing activities of the Oklahoma Water Resources Board during calendar year 1992. It explains the structure of the agency, its statutory duties and programs and events of the past year.

The OWRB 1992 Annual Report is free and is available by calling Librarian Susan Birchfield in the Oklahoma City office at (405) 231-2553

Coming Soon to the Financial Assistance Division



As of July 1, these five members of the State Health Department Water Quality Services Division will transfer to the OWRB Financial Assistance Division. Visiting the OWRB on March 3 were Paul Hodge, Sammie Wagner, Marc Hullinger (seated), Tiger Feng and Stan Halley. The move brings into the Water Resources Board OSDH personnel who worked in prioritizing wastewater projects for funding.

FINANCIAL ASSISTANCE PROGRAM UPDATE Approved at March Board Meeting

Grants		Loans (3.572%; 30-year maximum term)	
Paoli MA	\$25,000	Paoli MA	\$ 120,000
Pittsburg C. RWD #5	40,000	Pittsburg Co. RWD #5	110,000
Okmulgee Co. RWD	50,000	Foirt Gibson UA	840,000
Ottawa Co. RWD #3	25,000	Choctaw UA	565,000
Tri-County DA	25,000	Valley Brook PWA	215,000
Wakita	25,000	Canton PWA	230,000
Picher	12,500	Muskogee MA	3,670,000
Billings	50,000	Guymon UA	220,000

SRF Loans

Muskogee MA	2,141,969.36	Guymon UA	118,680.00
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Totals as of 3/9/93

	FAP Loans	FAP Grants	SRF Loans
Approved Amount	122	296	11
Funded Amount	\$129,090,000	\$17,183,104	\$49,610,729.03
	103	266	9
	\$106,205,000	\$15,518,545.37	\$47,350,079.67

THE FLOOD CURRENT

MARCH-APRIL 1993

Officials Address East Cache Creek Flooding

Complaints by local residents and landowners of flooding south of Lawton have prompted local governments and federal and state officials to seek a permanent solution to the problem.

According to Harold Springer, OWRB chief engineer, while residents and landowners around East Cache Creek point to upstream Lake Ellsworth as the source of repeated episodes of inundation, the problem is primarily a result of increased urbanization in the area.

"Over the past 50 years, the construction of streets, parking lots and buildings has gradually limited the access of runoff to permeable soil," Springer pointed out. "As a result, the volume of runoff has increased, leading to a greater magnitude and fre-



Walters resident uses boat to herd cattle out of harm's way during a May 1987 flood.

quency of flooding." Springer also alluded to problems within the creek, such as sedimentation and the gradual accumulation of brush and other debris which has reduced the stream's water-carrying capacity.

Individuals from a multitude of agencies and organizations—including the OWRB, Association of South Central Oklahoma Governments, Soil Conservation Service, Corps of Engineers, Cotton and Comanche County Boards of Commissioners, City of Lawton and local tribal governments—have gathered to identify likely solutions to the historic flooding problem.

"The piece-meal implementation of flood control projects is not the answer. Only a comprehensive and dedicated basin-wide approach can ultimately mitigate future flooding," Springer said.

Recent meetings on the flooding issue have determined that potential solutions must embrace channelization and other upstream flood control/retention projects; land-use planning; maintenance; reservoir

management and planning; and flood-warning systems.

The East Cache Creek problem also will be a major focus of the Oklahoma Floodplain Managers Association Spring Technical Workshop scheduled for May 13 at the Howard Johnson's Motor Lodge in Lawton. The theme of the workshop is "Training Exercise, Multi-Objective Analysis of Floodplain Management: Case Study—East Cache Creek." For details, contact Greg Scheffe, of the OWRB's Woodward Office, at 256-1014.



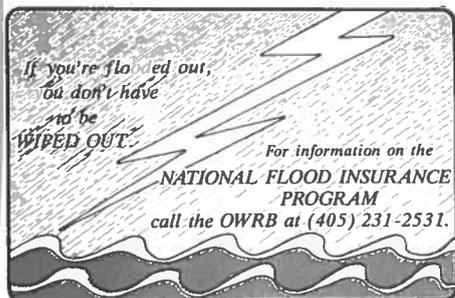
An unidentified youngster, oblivious to this East Cache Creek flood, is taken to higher ground.

The Flood Current is supported by funding through the Federal Emergency Management Agency Cooperative Agreement No. EMT-92-K-0230 as part of the Community Assistance Program—State Support Services Element of the National Flood Insurance Program. The contents do not necessarily reflect the views and policies of the federal government.

Flood Awareness Observed

For the third consecutive year, Governor Walters has proclaimed March "Flood Awareness Month" in Oklahoma.

"This proclamation is important because it helps us to inform and educate Oklahomans on the availability of affordable flood insurance, floodplain management techniques and flood safety procedures," said Ken Morris, State NFIP Coordinator. Between 1978 and 1990, more than 11,000 Oklahoma citizens were victims of flood damage, yet had no flood insurance protection, he added.



As part of Flood Awareness Month, the OWRB and FEMA are sponsoring flood insurance/floodplain management workshops throughout the state. Dates and locations were March 16, Idabel; March 23, Miami; March 24, Woodward; and March 25, Altus. Government officials were on hand to review new regulations and update local floodplain administrators on compliance requirements.

Weather Pattern to Continue

A continuation of the unpredictable weather phenomenon known as El Nino will increase the need for flood insurance throughout much of the U.S. this year, according to the National Weather Service (NWS).

El Nino, or "The Child," appears every three to five years for a period of 12 to 18 months. Sporadic warming of the Eastern Pacific Ocean and disruption of the jet stream caused by El Nino normally spawn increased flooding and drought activity worldwide. As a result, now more than ever, national and state floodplain officials encourage eligible citizens—especially those residing in the south-east, Gulf states and southern California—to purchase federal flood insurance.

Personal Impact of Flooding Described

Presented here is an account by Roy Sedwick, executive director of the Texas Floodplain Management Association, of the Christmas floods of 1991. This story, which was originally printed in Texas' Summer 1992 Floodplain Management newsletter, brings home the personal devastation of flooding suffered by thousands each year.

When the level of Lake Travis rose 16.7 feet in 24 hours, many residents were facing an important decision. I was among those lakeshore dwellers trying to decide if I should remove my home's contents. The decision was made for us. New projections indicated the lake would crest at 710 feet, just four feet below the spillway.

My home was built by my father in 1961, long before FEMA maps were published showing the 100-year flood level of Lake Travis to be 716 feet. The deed records did show that the lot was below the lake's spillway, but many (like my father) simply elevated several feet above the historical flood level of 707 feet. When I obtained the house in 1973, the downstairs was remodeled to include a den, one bedroom, an office, bathroom and triple garage. **Major mistake!**

Late December 21st, I began calling around for a moving van. It took almost an hour before I located what I believe was the last van in Austin. By the time I made the 80-mile round-trip, darkness had fallen, but an army of friends were waiting to help with the evacuation. By 11:30 p.m., the van was full and I walked out of the house, closed the doors and shut off the power. By morning, water was two feet over the lower floor.

I continued to monitor the lake level over the next day or two, worried about all of my possessions on the second floor. When new predictions indicated that the lake might reach spillway level, I decided to evacuate my second story. On Christmas Eve, using a small barge, the remaining furniture was removed. Thank God for good neighbors and family and for a day without rain.

On Christmas Day, the level of Lake Travis crested at 710.5 feet, a new record. It was a Christmas I will never forget as I stood on the road staring helplessly at my home with several inches of water over the carpets on the second floor. Water would not leave my home until several days into the new year.

During my career with Texas' water agencies, I have worked with FEMA in more than 20 flood disasters. I have been in many flooded homes, so I thought I knew what to expect. But, when I opened the garage door for the first time, I was not prepared for the sight that greeted me. Clean-up has been slow and mold is growing at a rapid rate. I am considering opening my home to the local school for a science project.

In retrospect, I wonder why my family was put through this ordeal. Perhaps I needed to experience a flood first-hand to truly understand the emotions and feelings of flood victims. Many in my profession feel that people who live in floodplains deserve what they get. Believe me, no one deserves to go through such a living hell. Many have asked me how I am doing. Physically, I am okay, but emotionally, I will never be the same. I compare my feelings to those of a mugging victim. Just as a crime victim feels that he or she has been physically violated, my home, my center of stability, was violated by muddy floodwaters. I can never look at my home again and feel the comfort and safety it once offered.

I continue to promote flood insurance, but no amount of money will ever compensate me for the loss of my home. The only thing that really counts is the love and support of family, friends and neighbors. Without this support, flood victims will never survive the ordeal and the only reality is—**If you live in the floodplain, you will be flooded.**

**STORAGE IN SELECTED OKLAHOMA LAKES & RESERVOIRS
AS OF MARCH 8, 1993**

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (acre-feet)	PRESENT STORAGE (acre-feet)	PERCENT OF STORAGE		PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (acre-feet)	PRESENT STORAGE (acre-feet)	PERCENT OF STORAGE	
			conservation	flood				conservation	flood
SOUTHEAST					EAST CENTRAL				
Atoka	124,100	124,074	99.9	N/A	Eufaula	2,314,600	2,314,600	100.0	11.9
Broken Bow	918,070	918,070	100.0	4.8	Tenkiller	654,100	654,100	100.0	8.2
Hugo ¹	187,603	187,603	100.0	5.4	Wister ¹	58,601	58,601	100.0	1.3
McCree Creek	113,930	113,930	100.0	1.1	NORTHEAST				
Pine Creek ¹	73,346	73,346	100.0	2.0	Birch	19,200	19,166	99.8	0.0
Sardis	274,330	274,330	100.0	3.7	Copan	43,400	42,930	98.9	0.0
CENTRAL					Eucha	79,600	79,600	100.0	N/A
Arcadia	27,520	27,520	100.0	0.5	Fort Gibson	365,200	365,200	100.0	2.1
Hefner	75,400	74,843	99.3	N/A	Grand	1,672,000	1,672,000	100.0	6.0
Overholser	15,900	13,795	86.8	N/A	Heyburn	7,105	7,105	100.0	1.4
Stanley Draper	100,000	93,350	93.4	N/A	Hudson	200,300	200,300	100.0	1.2
Thunderbird	119,600	119,600	100.0	0.3	Hulah	31,160	31,160	100.0	0.9
SOUTH CENTRAL					Oologah	553,400	553,400	100.0	11.0
Arbuckle	72,400	72,400	100.0	6.4	Skiatook	322,700	322,700	100.0	0.2
Texoma ¹	2,740,000	2,740,000	100.0	16.7	Spavinaw	30,590	30,590	100.0	N/A
Waurika	203,100	203,100	100.0	6.1	NORTH CENTRAL				
SOUTHWEST					Kaw	428,600	428,600	100.0	15.0
Altus	132,830	132,830	100.0	2.3	Keystone	557,600	557,600	100.0	8.3
Ellsworth	72,490	62,723	86.5	N/A	NORTHWEST				
Fort Cobb	80,010	80,010	100.0	0.4	Canton	111,310	100,491	90.3	0.0
Foss	178,410	172,456	96.7	0.0	Fort Supply	13,900	13,900	100.0	0.2
Lawtonka	58,327	58,311	100.0	N/A	Great Salt Plains	31,420	31,420	100.0	5.4
Tom Steed	88,970	88,970	100.0	0.0	STATE TOTALS	13,151,122	13,114,724	99.7	4.0

¹ Seasonal pool operation

N/A—not applicable; no flood storage allocation.

Data courtesy of the U.S. Army Corps of Engineers, Bureau of Reclamation, Oklahoma City Water Resources Department, City of Tulsa Water Superintendent's Office and City of Lawton.

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