

2003 Annual Report

Oklahoma Water Resources Board



OWRB

It is with great pride we present to you the 2003 Annual Report of the Oklahoma Water Resources Board.

The primary goal of this agency is to manage and protect Oklahoma's surface and groundwaters in a manner that ensures plentiful supplies for future generations. Consistent with that objective and recognizing the importance of water to the state's economic past, present, and future, Board programs are administered specifically to utilize those resources for the common good of all Oklahomans.

Especially noteworthy in 2003 were the two outstanding ratings issued by Standard and Poor's to our Bond Loan Program (AA+) and Drinking Water State Revolving Fund (DWSRF) Program (AAA). Also a highlight of the year, largely through the efforts of the Arkansas River Compact Commission, the States of Oklahoma and Arkansas entered into an agreement that will help resolve emerging phosphorus problems in the Illinois River Basin and other scenic rivers.

From initiation of the Arbuckle-Simpson study to establishment of consistent funding for our invaluable Beneficial Use Monitoring Program (BUMP), it is evident that the Water Board was again tremendously productive in 2003. We encourage all Oklahomans to review these and other accomplishments from 2003.



*Grady Grandstaff, Chair
Oklahoma Water Resources Board*



*Duane Smith, Executive Director
Oklahoma Water Resources Board*

Grady Grandstaff



Duane A. Smith



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Oklahoma Water Resources Board (2003)



Glenn Sharp (Grove, Vice Chairman) is a civic leader and public relations/marketing specialist. He is a graduate of the University of Tulsa with a B.A. in History and Political Science. Mr. Sharp represents recreational water use interests.



Grady Grandstaff (Oklahoma City, Chairman) is co-owner and operator of an independent energy production company and a wholesale grocery distributing firm. He is a member of the Oklahoma County Election Board. Mr. Grandstaff represents municipal interests.



Ervin Mitchell (Balko, Secretary) is a cattleman/farmer who serves on the Oklahoma Farm Bureau's Board of Directors. He has served on the Balko School Board, Oklahoma State School Boards Association, and Beaver County Conservation District Board. Mr. Mitchell represents soil conservation.



Harry Currie (Oklahoma City) is owner of a local bag manufacturing firm. He also served two terms as mayor of Del City and is an active member in many civic groups and boards. He is an Oklahoma State University graduate and owns farming and ranching interests. Mr. Currie represents agricultural water use.



Lonnie Farmer (Oklahoma City) is a bank president and former mayor of Davidson. A founder and Board member of the Oklahoma Rural Water Association (ORWA), he drove formation of the Tillman County Water Development Authority. Mr. Farmer represents irrigation interests.



Jack W. Keeley (Ada) served as Director of Research for EPA's Kerr Environmental Research Lab (1984-1988). Keeley is a member of the Harvard Engineering Society and National Water Well Association. He earned a Master of Science degree from Harvard and a B.S. in Civil Engineering from OU. Mr. Keeley represents municipal interests.



Richard McDonald (Walters) is a banker, farmer, cattleman and independent oilman. He is a graduate of the University of Central Oklahoma with a degree in marketing. Mr. McDonald represents industrial interests.



Bill Secrest (Broken Arrow), former Broken Arrow City Manager, is a founder of Wagoner County RWD #5 and managed Wagoner RWD #4 until his retirement. He is an OSU graduate and serves on Boards of the ORWA and National Rural Water Association. Mr. Secrest represents rural residential interests.



Richard Sevenoaks (Tulsa) is an auction company owner and member of the Tulsa Metropolitan Utility Authority, Tulsa Utility Board, and Regional Metro Utility Board. He is a graduate of the University of Arizona. Mr. Sevenoaks represents industry.

OWRB Financial Assistance Programs Achieve AA+ and AAA Ratings in 2003

In June, the Water Board's Bond Loan Program was issued an AA+ rating by Standard & Poor's, making it the highest rated, uninsured state bond program in Oklahoma. The rating, higher than that achieved by the State of Oklahoma or even the largest municipalities in the state, reflects the program's excellent 18-year history of borrower repayment, strong financial management and oversight, and sound underwriting standards. The result of such high standards has been consistent and reliable water and sewer system financing for Oklahoma's cities, towns, and rural communities. Since inception of the program, more than \$600 million in bonds have been issued without a single default in OWRB bond repayments.

At the Water Board's July 8 meeting, state legislators, financing partners, and other supporters of the agency's financing program gathered to congratulate the OWRB on its milestone rating. House Speaker Larry Adair, Rep. Danny Hilliard, Rep. Jari Askins, Rep. Jack Bonny, and Sen. Bruce Price all provided words of encouragement for the agency in its efforts to address the frequent water problems encountered by Oklahoma's cities and towns.

"The gap between what the OWRB can do for a municipality and what they can do on their own has never been wider."

Chris Cochran, Capital West Securities

Further extolling the Board's financing exploits, in October Standard & Poor's, Fitch, and Moody's assigned an AAA rating to the OWRB's \$125 million Series 2003 Drinking Water State Revolving Fund (DWSRF) revenue bonds. This rating, the highest ever achieved by an uninsured state entity that issues revenue debt in Oklahoma, enables the Board to provide an extremely competitive interest rate on loans for community drinking water projects, leading to even more savings for citizens who rely so much upon dependable water supply. In all, Water Board loan and grant programs have provided more than \$1.2 billion in financing for Oklahoma water and sewer infrastructure projects.



Sequential Batch Reactor (SBR) under construction in Miami, Oklahoma, a project funded by the OWRB's Bond Loan Program

Develop broad-based coalition support to ensure continued funding for the OWRB's State Financial Assistance Program, especially the Drinking Water State Revolving Fund Loan Program, to ensure that the FAP can continue to meet the water and wastewater system needs of Oklahoma communities.

--OWRB Strategic Plan (2004-08)

Financial Assistance Accomplishments in 2003

- The OWRB implemented an integrated priority point system for the Clean Water SRF to allow ranking of potential non-point source pollution projects.
- In cooperation with the Oklahoma Department of Environmental Quality (ODEQ), the OWRB established the Infrastructure Assessment Program to obtain comprehensive information on Oklahoma's water and wastewater facilities. The program enables more efficient monitoring of security collateral for outstanding OWRB loans and the infrastructure needs of Oklahoma communities.
- The agency installed loan and grant project tracking software to improve financial oversight and information management.



OWRB Closes CWSRF Loan to Department of Tourism/Recreation

On October 22, the OWRB closed on a \$7,195,000 Clean Water State Revolving Fund (SRF) loan to the State Department of Tourism and Recreation that will fund much-needed wastewater system improvements at Tenkiller, Texoma, and Sequoyah State Parks. The loan, enabled through passage of legislation early in 2003, represents the first-ever Water Board loan issued to another state agency.

Approved Loans/Grants (2003)

FAP Loans	16	\$ 66,040,000.00
CWSRF Loans	12	40,565,784.44
DWSRF Loans	7	8,936,325.24
Emergency Grants	11	621,696.94
REAP Grants	37	3,796,426.57
TOTAL:	83	\$119,960,233.19

In 2003, the OWRB closed 13 FAP Loans totalling \$44,055,000, 11 CWSRF Loans totaling \$38,847,953, and 8 DWSRF Loans totalling \$20,555,347.

"In many cases, the FAP is the only financing option for community water and sewer projects, especially those smaller towns that have limited resources to draw upon. The program will become even more valuable in light of the state's anticipated 20-year water/wastewater system demand of approximately \$3.4 billion."

Joe Freeman, OWRB

EPA Approves Phosphorus Standard

In December, the U.S. Environmental Protection Agency approved Oklahoma's new 0.037 milligram per liter water quality standard for phosphorus in northeast Oklahoma's Illinois River and the other five designated Scenic Rivers in the state. EPA's approval also validated the science used by OWRB water quality specialists to establish specific criteria that is both protective of Oklahoma's Scenic Rivers and sufficiently addresses the expanding phosphorus problem, especially in northeast Oklahoma's Illinois River.



Illinois River northeast of Tahlequah

"Oklahoma's total phosphorus criterion of 0.037 mg/L for its Scenic Rivers is sufficient to protect the designated uses of the affected rivers and is consistent with the requirements for water quality standards established by the [federal] Clean Water Act."

Miguel Flores, EPA Region 6 Director of Water Quality Protection

EPA Region 6 Director of Water Quality Protection, Miguel Flores, commended the Board's provision allowing point source dischargers 10 years (until 2012) to come into compliance with effluent limitations based on the phosphorus standard. The compliance schedule incorporates a "tiered approach" that requires the larger municipal dischargers in the Illinois River watershed to obtain federal discharge permits with an initial 1 mg/L phosphorus limit. Also in December, environmental officials from Oklahoma and Arkansas entered into an agreement that directs both states to work together to coordinate monitoring and develop joint watershed plans, including both voluntary and mandatory measures, to substantially reduce phosphorus and achieve other water quality goals in the Illinois watershed by 2012. Officials hope to develop similar nutrient reduction agreements with poultry integrators and smaller cities in Arkansas who reside and do business in the basin.

2003-2004 Proposed Standards Revisions

During the fall of 2003, the OWRB held a series of informal meetings that resulted in several proposed revisions to Oklahoma's Water Quality Standards (Chapter 45) and their implementation rules (Chapter 46). Topics included the following:

- Development of a new section to house general criteria requirements
- Development of new Use Support Assessment Protocols
- Development of Biocriteria for the Central Oklahoma-Texas Plains ecoregion
- Site-specific criteria for Heavener Utilities Authority
- Designation of Tenkiller Reservoir as a High Quality Water

Continue to develop and improve the effectiveness of Oklahoma's Water Quality Standards and their implementation through enhanced research and input from technical workgroups, stakeholders, and the public. Priorities include establishment of standards for state groundwaters and continued development of biological threshold procedures, use attainability assessment protocols, and Nutrient Limited Watershed impairment determinations.

--OWRB Strategic Plan (2004-08)

Online Well Search and Well Filing Programs Launched

On October 1, the OWRB launched two new and beneficial Web site programs: an online well search feature for the public and a well log filing program that allows water well drillers and pump installers to remotely submit their information.



Drilling a well in Logan County

“This is just one of many useful Web site applications we have planned to better serve the citizens of Oklahoma. In 2004, we hope to implement an Internet map server to provide online geographic mapping services to the public.”

Duane Smith, OWRB Executive Director

Both applications were funded through the Oklahoma Well Drillers Indemnity Fund.

The online well search program allows the public to search the agency’s extensive database of Oklahoma water wells (some 60,000 records of historical and existing wells) by ID number, county, or legal description. Also available is current and historical water well level information gathered through the Board’s statewide groundwater level measurement program, initiated in the early 1970s, which measures the depth to water for more than 1,000 wells each year. Search results can be printed out or downloaded directly into many spreadsheet or database programs.

The second component provides a mechanism for Oklahoma’s water well drillers to submit online logs of their individual water well drilling operations. The easy-to-use application, which is available to all licensed drillers requesting a user account, was designed to ensure the accuracy of well log data. In fact, in many instances, the program will flag wells that fail to meet state well construction standards, which could lead to potential pollution of groundwater resources.

Establish the OWRB as the state’s premier water information source by providing comprehensive, reliable, and easily accessible data that enables agency customers to make fully-informed water quality and quantity decisions. This effort will hinge upon expansion and improvement of the OWRB’s Web site and related attempts to enhance the public’s ability to access and utilize agency data and other water-related information.

--OWRB Strategic Plan (2004-08)

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Arbuckle-Simpson Aquifer Study Underway

The multi-year hydrologic investigation of the Arbuckle-Simpson aquifer was initiated in 2003 under the close scrutiny of the State Legislature, public, and the many stakeholders who rely so much on benefits provided by that valuable south central Oklahoma water resource. A \$5.2 million cost-share effort between the Water Board and Bureau of Reclamation, the study represents the most comprehensive and complex water resource investigation ever undertaken by the State of Oklahoma and will be the first to focus on the multifaceted interaction of surface and groundwaters. A technical peer review team, consisting of state and federal water experts and facilitated by the Water Board, will review the study's scope of work and provide advice to ensure the use of sound science and appropriate methods.

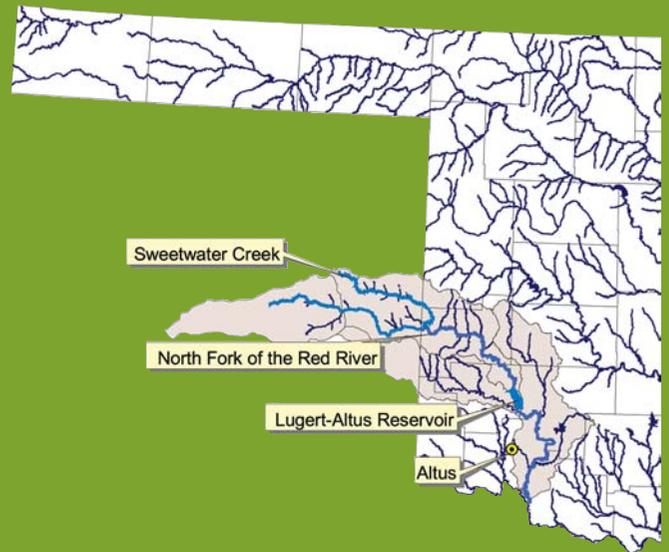
The vast Arbuckle-Simpson aquifer--the principle source of water for cities, towns, industries, farms and ranchers in the region--has been identified as a potential source of future water supply for the central Oklahoma region. Local citizens are concerned about depletion



An Arbuckle-Simpson landowner with OWRB staff members Bob Fabian (center) and Kelly Self (right). This abandoned well is one of many wells that are being evaluated for installing water level recorders. Periodic water level measurements will also be taken in other existing wells across the aquifer.

North Fork of the Red River Study

The OWRB and U.S. Bureau of Reclamation continued their initial cooperative assessment of water quality, quantity, and base flow hydrology on Sweetwater Creek and the North Fork of the Red River watersheds, including Lugert-Altus Reservoir. The second phase of the study will determine the potential effects of groundwater withdrawals in the basins and include development of models to evaluate potential augmentation of Lugert-Altus Reservoir's dependable yield. Lugert-Altus is a crucial source of irrigation water in southwest Oklahoma.



and other potential impacts such a plan could have on the aquifer and related water resources. As a result of passage of Senate Bill 288 in 2002, a moratorium is in effect on the issuance of temporary groundwater permits for municipal or public water supply use outside of any county that overlays a sensitive sole source groundwater basin. (The Arbuckle-Simpson aquifer is the only groundwater basin designated as such in Oklahoma.) The moratorium will remain in effect until the OWRB completes its study.

Utilizing updated water supply and demand forecasts and reevaluation of crucial water issues facing the state, the update of the Water Plan will be facilitated through establishment of regional planning groups to produce sensible plans of water development that ensure water for all Oklahomans throughout the foreseeable future.

--OWRB Strategic Plan (2004-08)

Floodplain Management News

- To help break the lengthy cycle of repair and rebuild in Oklahoma's floodplain areas, in 2003 the OWRB began updating the inventory of repetitive-loss structures in the state. This effort is a critical aspect of Oklahoma's overall hazard mitigation strategy. Preliminary estimates indicate more than 700 repetitive loss properties in Oklahoma.
- The Federal Emergency Management Agency's Map Modernization Plan, directed in Oklahoma by the OWRB, is a comprehensive effort to upgrade the nation's 100,000 panel flood map inventory. Primary goals of the effort are to update flood hazard data, convert existing maps/data to digital format, integrate community and state partners into the mapping process, improve the map update process, and improve customer service.



2003 Governor's Water Conference: All Things Water

The 2003 Governor's Water Conference was highlighted by the opening day's Arbuckle-Simpson Symposium on November 4, which featured two panels of individuals involved in resolving issues related to the ongoing aquifer study and developing a plan to manage the aquifer while protecting area springs. One panel explored "Local Water Management Issues" in both the Arbuckle-Simpson region and in central Oklahoma. The second panel consisted of technical experts from the United States Geological Survey (USGS), U.S. Environmental Protection Agency (EPA), Oklahoma Geological Survey, and OWRB.

Day two of the Conference featured remarks by Governor Brad Henry and discussion of pertinent water issues by state and federal agency representatives. U.S. Coast Guard Public Service Awards, honoring those individuals who helped rescue victims of the Memorial Day barge accident and I-40 bridge collapse on the Arkansas River at Webbers Falls, and Oklahoma Water Pioneer Awards were presented during the luncheon program. The Conference concluded with a state legislative update and a rousing address by featured speaker, former Governor George Nigh.

Weather Modification Research

In FY-02 and FY-03, Congress appropriated \$5.5 million for the states of Oklahoma, Texas, and North Dakota to implement a multi-year, regional research program to determine the effectiveness and applicability of cloud seeding in mitigating severe weather events. The program, coordinated in Oklahoma by the OWRB, will utilize research scientists and agencies of the Oklahoma Weather Center in Norman. Funding for the OWRB's operational weather modification program was relinquished in 2001, yet the technology remains a potentially viable water management and hazard mitigation strategy in Oklahoma.

Identify and secure a reliable funding source with which to identify, assess, and evaluate critical water resource issues in Oklahoma, as they arise.

--OWRB Strategic Plan (2004-08)

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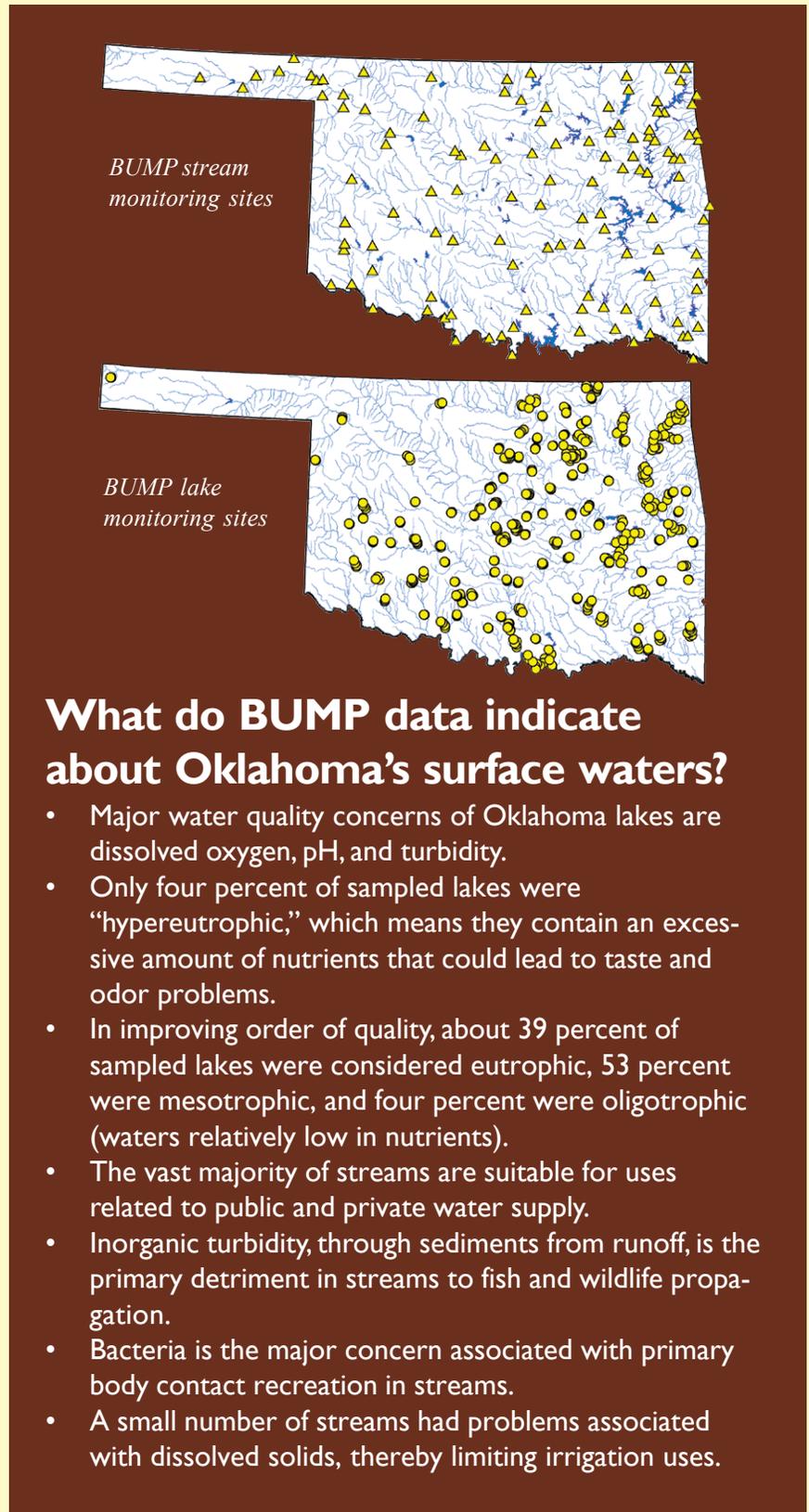
OWRB Beneficial Use Monitoring Program

The OWRB's Beneficial Use Monitoring Program (BUMP) received a resounding validation of its value in 2003 as the State Legislature included \$1 million for the program in the agency's base appropriation (beginning in FY-04). For the foreseeable future, BUMP has secured a dependable funding source to ensure the future protection of Oklahoma's water resources.

Data gathered through BUMP—Oklahoma's first comprehensive, statewide water quality monitoring network—is critical to the development and implementation of sound water quality standards by state decision-makers, as well as in the accurate identification of impaired waters in Oklahoma. Also, development of use support assessment protocols (USAPs), a process that utilizes BUMP data, has greatly facilitated water quality management in Oklahoma.

Historically focusing on surface water quality, future plans call for incorporation of a BUMP groundwater monitoring component, as additional funds become available. An annual report of program data is submitted each year to the State Legislature and is available on the OWRB's Web site at www.owrb.state.ok.us.

With EPA approval of Oklahoma's new water quality standard for phosphorus (0.037 mg/L for Oklahoma's scenic rivers), BUMP data will be crucial to environmental officials in Oklahoma and Arkansas in verifying implementation by point source dischargers.



Refine and expand the Oklahoma's Beneficial Use Monitoring Program (BUMP) as a comprehensive and stable state water quality monitoring effort, including the pursuit of opportunities related to groundwater and biological monitoring.

—OWRB Strategic Plan (2004-08)

Other Monitoring News in 2003

- The Oklahoma Water Watch volunteer monitoring program facilitated two Section 319 (Clean Water Act) Grants to accomplish volunteer monitoring on Lakes Eucha and Carl Blackwell.
- The OWRB received an EPA grant to develop a probability sampling network for all Oklahoma streams to document ecological health.
- The OWRB coordinated a cooperative effort with the Oklahoma Department of Environmental Quality (ODEQ) to conduct monitoring to support the Total Maximum Daily Load (TMDL) process and document water quality impairments. Data collection by the OWRB is used by ODEQ to develop TMDL models, as well as for Use Support Assessment Protocols (USAP) and Oklahoma Water Quality Standards.
- The OWRB approved a contract with the Oklahoma Department of Agriculture, Food, and Forestry (ODAFF) to continue monitoring waste lagoons surrounding licensed managed feeding operations (LMFOs) in the state. OWRB staff provide ODAFF with an annual report containing water quality data from over 800 monitoring wells.



Collecting data from an licensed managed feeding operation (LMFO) monitoring well

Thunderbird Focus of Water Quality Studies

Due largely to eroded banks and excess sediment contributed through upstream tributaries, Lake Thunderbird has been included on Oklahoma's 303(d) list as impaired by suspended solids. Subsequently, this sediment decreases the lake's volume and future water supply potential for the City of Norman and other area communities who depend upon Thunderbird as their primary source of water supply.

To address the lake's widespread sedimentation problem, during 2003 OWRB staff installed hundreds of feet of breakwater structures and more than 1,000 aquatic plants along a 450-foot area of the lake's southern shoreline. It is expected that the breakwaters will help settle out sediments and promote the establishment of beneficial shoreline vegetation. Plant roots bind the soil and keep it in place, further reducing the contribution of sediment to the lake body. A two-year monitoring program is now underway.

In a related effort to improve water quality in Lake Thunderbird, the OWRB and the Central Oklahoma Master Conservancy District (COMCD) began their fourth year of monitoring chlorophyll and nutrient



Coir roll breakwaters held in place by wooden stakes

concentrations in the watershed. Several management alternatives, recommended by the OWRB, have already greatly improved the lake's algae and chlorophyll problems.

OWRB FY 2003 Expenditures/FY 2004 Budget

Fund Description	FY-00 Actual	FY-01 Actual	FY-02 Actual	FY-03 Actual
Constitutional Reserve	1,232,460	49,809	75,143	67,432
General Appropriations	3,653,022	3,534,986	3,655,872	3,357,046
205 Weather Modification	1,139,977	1,087,787		
210 Drillers & Pump Installers	34,374	23,711	8,282	24,303
225 Rural Economic Action Plan	24,022	1,055,503	1,177,606	1,643,265
240 OWR Revolving Fund	272,120	282,896	278,353	261,822
245 Drillers & Installers Regulation Fund			8,799	17,313
420 USGS Cooperators	187,850	129,680	118,435	223,885
443 Reimbursement	1,273,621	1,141,932	1,289,555	1,157,333
444 Drinking Water Loan Administration Fund	58	353	12,369	171,363
445 Wastewater Facility Construction Fund	446,834	490,343	464,641	588,111
472 State Revolving Fund - Operations	2,403	220,546	141,035	128,365
Total Revolving Funds	3,381,258	4,432,751	3,499,075	4,215,760
400 Federal Funds	895,722	476,126	1,064,723	1,071,802
410 Federal Water Quality Management	4,768,211	3,756,478	3,343,020	4,034,206
Expenditure Totals	14,271,414	12,533,864	11,562,690	12,678,814
Activity				
Administration	2,167,943	1,991,875	2,398,540	2,073,221
Water Quality	2,030,039	1,827,910	2,027,235	2,166,694
Financial Assistance	1,153,636	1,358,849	1,298,484	1,675,741
Planning & Management	2,698,435	2,136,693	2,328,164	2,576,367
Weather Modification	1,100,327	1,087,787	0	0
Secretary of Environment	3,780,469	5,121,035	4,130,750	4,186,791
TOTAL	14,271,414	12,533,864	11,562,690	12,678,814

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