

Oklahoma

Water
News

MONTHLY NEWSLETTER OF THE OKLAHOMA WATER RESOURCES BOARD

Growth in Catfish Culture Calls for New Water Quality Guides

Catfish earned farmers \$9.2 million in 1987

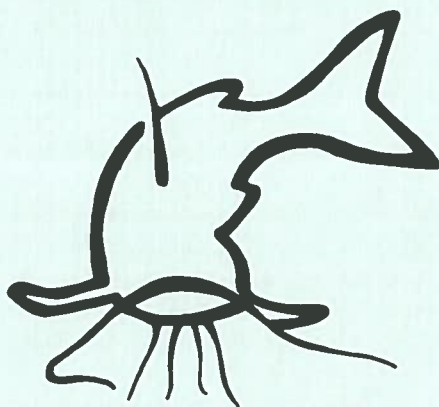
On February 17 more than 300 members of Catfish Farmers of Oklahoma gathered to swap fish stories at their annual meeting at the Lincoln Plaza Hotel in Oklahoma City. Some of them supplement a sagging farm income with a few catfish ponds; others make a fulltime business of tending 50 acres or more of stocked ponds.

Today, the state boasts nearly 200 such ventures, most of them in eastern Oklahoma where good water is plentiful, says Joy Barnes, general manager of CFO. According to Oklahoma catfish culturists, consumption of fish increased in the U.S. 20 percent every year between 1982 and 1986 to 14.7 pounds per person a year. And the fish farmers count on continued growth in their industry at the rate of 10 percent a year.

Cholesterol and calorie concerns account for the recent popularity of channel catfish on the menu. Nutritionists point out that, when compared to other meats, fish is high in protein, low in polyunsaturated fats and low in calories. Pound-for-pound, catfish has about half the calories of chicken and 11 grams of fat compared to 92 grams of fat in chicken; one-third the calories of beefsteak (115 grams of fat) and slightly more

than a quarter the calories of pork (148 grams of fat.)

CFO members believe there's gold in them there gills if a fulltime fish farmer owns the land on which he builds his 50 acres or more of ponds and has enough family to supply all the labor necessary to run a high-intensity management operation. They compare the labor requirements to those of a dairy farmer.



It is the waste discharges from this proliferation of catfish farming operations that concern the Oklahoma Water Resources Board. Regulations the OWRB has in place for industries are not designed for catfish farming operations, OWRB Water Quality Division Chief Dave Dillon told the Catfish Farmers of Oklahoma. He

explained the Water Board is responsible for protecting the waters of the state from pollution by writing waste discharge permits which specify the amount of wastewater an industry may discharge, as well as the constituents of that waste.

Developing a streamlined application and waste disposal permit appropriate for fish farming operations is a project in which the OWRB encouraged CFO members to participate. Bill Swain of the OWRB Water Quality Division gathered a committee from the CFO, Department of Wildlife Conservation, Langston University Agricultural Research Service, fish

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Theophilus Inslee, owner of Inslee Fish Farm near Connerville, reduces the discharge from his catfish ponds by piping the nutrient-rich water to his greenhouse for hydroponic gardening.

Catfish, continued from page 1

hatcheries, RedArk Development Authority and a grain company researching catfish feed. Swain, asked the committee for suggestions on simplifying the application form and solicited their guidance on parameters to be included in the permit.

"The committee's draft accomplishes OWRB goals, helps the catfish farmers' operations and protects the waters of Oklahoma," said Dillon. "Our suggestions, based on best management practices, include the use of settling ponds, water reuse, land application of water and sludge, controlled releases of waste water and maintaining a high-quality effluent free from organic wastes for discharge into receiving streams," he pointed out. "It's the last fifth of the water in the ponds that concerns us most, so run it through a settling lagoon or a marsh to let the organic material settle out before you discharge it."

Dillon also said he hopes the Board will have the streamlined permitting procedures in place by summer. "Then, except for discharges into waters which receive additional protection such as designated scenic rivers, we look forward to issuing an authorization for discharge as quickly as a week after we receive your completed application," he said.

Since open-water culture has been favored by state catfish farmers, OWRB attention has focused on those operations. Permitting for caged fish culture and raceway operations (raising high densities of fish in tanks flushed with large volumes of water) will come under scrutiny later.

Dillon also reminded CFO members that if their aquaculture requires use of water diverted from a stream or pumped from a well, the law requires a water use permit from the OWRB.

"A streamwater right protects your water supply from any other water user who may later claim all the available water in the basin. And although Oklahoma Statutes recognize groundwater as the property of the landowner, you'll need to file a water right to use it for purposes other than domestic—your household needs, ir-

rigating your garden or orchard or watering a few head of stock," he explained.

Glen Gebhart of Langston University's Agricultural Extension Service reminded fish farmers they also need an aquatic culture license from the Oklahoma Department of Wildlife Conservation. His interest is in helping the catfish farmers produce healthy, good quality channel catfish at a profit. Gebhart, a fisheries specialist with nine years experience at Langston's ag extension service, points out that channel catfish are ideal for Oklahoma aquaculture and the technology is better developed for raising them.

The market is good and the chan-

anced ration and watched carefully for signs of stress, parasites and disease.

Gebhart says the Langston Ag. Extension Service encourages newcomers to open-water culture to start small, and build seinable, drainable ponds four to seven feet deep. Deeper waters stratify by temperature, and cool, low-lying waters contain too little oxygen to support the fish. Gebhart explained another advantage of building new ponds is that existing farm ponds usually cannot be drained and refilled easily, nor can they be seined efficiently. With a seinable/drainable operation, fish can be harvested, the ponds drained and the

Inslee inspects fingerling catfish with his son, Donald (left) and Bill Swain of the OWRB who is developing a special permit for fish farmers.



nel catfish is hardy. According to Gebhart, catfish are unfinicky eaters and their ratio of protein per pound is higher than that of any other animal. He says they're fairly bonefree, having only one row of bones, compared to two rows in bass and bluegill.

"A one-acre pond can yield enough to feed the family with some to share with the neighbors," says Gebhart. "Our climate makes it possible to stock the ponds with 6- to 8-inch fingerlings in April (when the water temperature is 60 to 68 degrees F.) and harvest table-size fish in October," Gebhart said.

While the yield in open-water operations may be 2000 to 5000 pounds per acre, the yield in caged fish culture averages 1000 pounds per acre of water in larger ponds. Gebhart emphasizes he doesn't recommend it, but 10,000 pounds is possible in open water, if the water is aerated frequently and the fish are fed a bal-

nutrient-rich water removed to settling ponds or used for irrigation.

Although southeastern Oklahoma's abundant water supply has attracted most of the fish farming efforts, it is spreading westward, confirmed Joy Barnes of CFO. And Gebhart would like to see it spread to waters deeper than four to seven feet. He and his staff at Langston are now researching culture of caged fish in the deeper waters of strip pits.

But no matter in which direction the industry moves, it seems certain that low-calorie, low-fat fish will hold its own in the hearts of Oklahomans. Joy Barnes and the members of CFO will continue making the industry bigger. Glen Gebhart and his associates at Langston will make it better. And Dave Dillon and Bill Swain and the Water Resources Board will continue being supportive of an industry with gold in them there gills.



OGWA Honors Duane Smith

At their annual meeting in Enid on February 24–25, the Oklahoma Groundwater Association presented a Water Dipper Trophy to OWRB Groundwater Division Chief Duane Smith. Gary Glover accepted the award on behalf of Smith, who was unable to attend.

The plaque recognizes "significant contributions to the awareness, protection, promotion and development of groundwater."



Gary Glover, OWRB hydrologist, (left) assists Duane Smith in hanging an award presented to Smith by the well drillers.

Board Approves Standards

In the first step to becoming state law, the 1988 revision of the Oklahoma Water Quality Standards was unanimously approved February 14 by the nine-member Water Board.

Dave Dillon, OWRB Water Quality Division chief, pointed out that the triennial revision process made use of extensive public participation—including four informal public meetings and two rulemaking hearings held in Oklahoma City and Tulsa. Such forums solicit input from those interested in protecting the quality of Oklahoma waters. OWRB staff responded to written and oral comments from more than 300 citizens and groups.

According to Dillon, changes in the proposed Standards seek to satisfy Clean Water Act guidelines and EPA mandates by developing numerical limits and narrative criteria for many

toxic substances. Other key amendments seek to improve beneficial use designations and strengthen Oklahoma's Anti-degradation Policy. Also, three classes of protection were created to protect waters in the state which are of an exceptional nature.

One important proposal concerns Big Lee's Creek, a designated scenic river in eastern Oklahoma and western Arkansas which is the controversial site of a proposed reservoir to serve Fort Smith and Sequoyah County. If approved, the amendment would have cleared the way for Phase I construction of the project. But a resolution submitted to the legislature by Rep. Cal Hobson just hours before

the vote urged the Board to delay that change until Fort Smith agrees to purchase water from eastern Oklahoma sources, if feasible, and to obtain approval from Oklahoma before seeking enlargement of Lee Creek reservoir. The Board delayed action on that amendment until the issue is resolved by the legislature.

Now the Standards will undergo Legislative review, certification by the Office of the Attorney General, then review by EPA.

Reilly Tapped for EPA Post

Following Congressional confirmation February 8, environmental moderate and land use advocate William K. Reilly is the new Administrator of the U.S. Environmental Protection Agency.

Reilly previously served as president of the World Wildlife Fund and the Conservation Foundation where he promoted greater understanding

and cooperation between environmental and economic interests. With the Foundation, he supervised the creation of two "state of the environment" reports which provided the most comprehensive examination of environmental issues ever prepared by a private group.

Reilly has also served as executive director of the Task Force on Land Use and Urban Growth and as senior staff member of the President's Council on Environmental Quality. In addition, he was associate director of the Urban Policy Center, Urban America, Inc. and the National Urban Coalition. A Yale graduate, Reilly holds a law degree from Harvard and a master's degree in planning.

ORWA Meets March 21–22

Gene Whatley, director of the Oklahoma Rural Water Association, announced the Association's 19th Annual Meeting will be held March 21–22 in Oklahoma City at the Lincoln Plaza Forum, 4345 Lincoln Boulevard.

The business meeting, technical conference, awards luncheon and banquet will be held on Tuesday, March 21; training sessions for ORWA board members, bookkeepers and operators will be held on Wednesday, March 22.

For more information, call ORWA at (405) 672-8925.

New Flood Coverage Offered

Ken Morris of the OWRB Engineering Division, who coordinates the National Flood Insurance Program with Oklahoma communities, announced new coverage is available from the Federal Insurance Administration. Morris said the FIA now offers more affordable policies to owners of properties in low-risk areas and increased coverage to condo owners.

The NFIP offers Preferred Risk policies for one- to four-family residences in zones designated on flood hazard maps as B, C and X—zones of moderate-to-minimal risk. Coverage of \$20,000, \$30,000 and \$50,000 is available on buildings; \$5,000, \$8,000 and \$12,000 on contents. Annual

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premiums cost from \$100 to \$150 on buildings with basements; \$75 to \$125 on those without basements.

The second new policy option is the Condominium Association Master Policy to insure high-rise residential

buildings. Its main feature is higher insurance limits to protect the association from losses resulting from flooding. The NFID will allow the purchase of coverage up to the actual cash value of the building or to the total number of units multiplied by

the maximum insurance available to a single unit, whichever is less.

Morris said additional information is available by calling the Water Resources Board at (405) 271-2533 or the National Flood Insurance Program at 1-800-638-6620.

**ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS
AS OF MARCH 6, 1989**

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY	PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY
SOUTHEAST			Wister	63,250	100.0 ³
Atoka	106,549	86.3	Sardis	302,500	100.0
Broken Bow	918,100	100.0	NORTHEAST		
Pine Creek	77,700	100.0 ³	Eucha	79,567	100.0
Hugo	157,600	100.0 ³	Grand	1,366,480	91.6
McGee Creek	109,800	100.0	Oologah	544,240	100.0
CENTRAL			Hulah	30,594	100.0
Thunderbird	105,925	100.0	Fort Gibson	365,200	100.0
Hefner	67,120	89.1	Heyburn	6,600	100.0
Overholser	15,705	98.6	Birch	19,200	100.0
Draper	86,140	86.1	Hudson	200,300	100.0
Arcadia	25,877	94.5 ¹	Spavinaw	30,000	100.0
SOUTH CENTRAL			Copan	43,400	100.0
Arbuckle	59,750	95.5	Skiatook	238,356	74.6
Texoma	2,521,600	95.6	NORTH CENTRAL		
Waurika	203,100	100.0	Kaw	426,863	99.6 ³
SOUTHWEST			Keystone	616,000	100.0
Altus	100,522	83.2	NORTHWEST		
Fort Cobb	78,364	99.9	Canton	90,656	93.0
Foss	168,315	69.0	Fort Supply	13,756	99.0
Tom Steed	78,367	88.1	Great Salt Plains	31,400	100.0
EAST CENTRAL			STATE TOTALS	12,316,096	95.8
Eufaula	2,329,700	100.0			
Tenkiller	627,500	100.0			

1. In initial filling stage
2. Conservation storage lowered for project modification
3. Seasonal pool operation

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

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