

Monday, April 20, 2015
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Protecting Cavefish, Allowing Development are Aims of New Study

By [Christie Swanson](#), [Ron Wood](#)

Posted: April 12, 2015 at 1 a.m.



NWA Democrat-Gazette/J.T. WAMPLER Dewayne Richardson of Springdale bends steel rebar Wednesday while preparing a footer for a house under construction in the Brentwood development in Cave Springs. A recent study on the Cave Springs recharge area recommends new development standards in what it calls environmental vulnerability zones. The 19-square mile area is home to Ozark blink cavefish, listed as threatened on the federal Endangered Species List, and endangered gray bats. Cities will have to decide if they are going to adopt the new standards, but they will not apply to existing structures.

A new study says the endangered Ozark cavefish and residential development can co-exist in the Cave Springs area if steps are taken to protect water flowing underground where the fish live.

The Cave Springs recharge area is more than 12,500 acres of land where Cave Springs, Lowell, Springdale and Rogers come together. The ground underneath is porous karst, which allows water to flow through and form the Cave Springs spring. Developers haven't built much in the area largely because of concerns about harming the cavefish habitat, but the recharge area contains a lot of prime real estate for westward expansion of the metropolitan area.

On the Web

For Cave Springs Karst Study comments or questions the contact telephone number is 479 -202-1825 or the web address is www.cavespringskarststudy.com. The website contains the data collected and used for the study and recommendations, maps and other information.

Source: Staff reports

The new study recommends local cities enact regulations to allow development and protect the spring and cavefish.

"We can have both," said Tom Aley with Ozark Underground Engineers, who worked on the study. "To begin with, we're dealing with pretty good quality water. If it wasn't, we would not have the cavefish there anymore."

Springs are underwater streams that work like a pipe, allowing water to move from one place to another and occasionally rise to the surface, Aley said. Water goes in one place and comes out in another.

[Interactive map](#)

Surface water going in, runoff from rainfall for example, needs to be filtered by plants and soil so the underground spring doesn't get contaminated.

"In karst settings, ground water is very sensitive to what's going on on the surface," Aley said.

"Once contaminated water gets in the springs, we can't do much about it. The only way to effectively take care of ground water is to protect the water quality on the surface."

The recharge area is broken into an indirect area of about 10.6 square miles, or 6,813 acres, and a more critical direct recharge area of about 8.9 square miles, or 5,702 acres. A lot of the direct recharge area immediately around Cave Springs is either already developed with residential subdivisions or cannot be developed because of flood plains and steep terrain.

The most critical portion of the direct recharge area is about 1.8 square miles, or 1,167 acres, near the Cave Springs Cave where geologic features allow water to go directly into the springs.

Aley said the study recognizes differences between the direct recharge area and the indirect recharge area and puts forth a strategy for how best to deal with water quality in each. It identifies places that need more intense management practices and those where less restrictive measures will suffice.

"It focuses on the places we can do the most good as simply as possible," Aley said.

The study comes with some recommendations, including the use of buffer areas along sensitive streams and features such as runoff detention ponds along Interstate 49 and Arkansas 264, piping sewage out of the area and best management practices for development.

I-49 roughly bisects the recharge area while Arkansas 264 runs right through some of the highly vulnerable area.

Streams and creeks that directly recharge the Cave Springs spring would require buffering of differing degrees along both sides. The regulations would tell developers how wide the buffers need to be.

There would be a maximum outer buffer width on both sides of center line of stream channels and a minimum inner buffer width. The outer buffer width could be adjusted based on development criteria and management practices being met.

Grading, striping or other soil-disturbing work would be prohibited or restricted in buffer areas as would filling or dumping, ditching or other systems used to drain buffer areas. Other prohibited uses would include the storage or application of pesticides or herbicides, fueling facilities, the storage or operation of motor vehicles, buildings or impervious surfaces and the land application of biosolids.

"Taking care of cavefish is about the direct recharge area," said Tom Hopper, chairman of Crafton Tull, the Rogers engineering firm tasked with overseeing the study and compiling the recommendations. "We tried to take a logical approach. There will be some people that disagree with what we've done, but I hope they understand the logic of how we got there and how it can work for all parties."

Hopper said Cave Springs, Springdale, Lowell and Rogers are being asked to adopt a common development ordinance, based on an Rogers ordinance, for the recharge area. Cave Springs would see the most impact from regulations because the most critical areas lie within the Cave Springs city limits.

Mayor Travis Lee said he's concerned the regulations could limit commercial development, particularly along Arkansas 264, leaving the city without an adequate tax base to take care of an influx of new residents.

"I want everybody to think long-term and make sure we're making the right decisions for Cave Springs," Lee said. "The water quality and the cavefish and the landowners are all very important so we've got to come to a happy medium to make sure we're sustainable."

Cavefish and another endangered animal, the gray bat, call the springs home. Cave fish are listed as threatened and gray bats are listed as endangered by the federal government.

Cavefish are considered to be the water quality version of the canary in the coal mine. If cavefish are adversely affected, federal officials could come in and limit or shut down development in the area. Federal environmental officials review all projects that receive federal money.

Mitch Wine, a karst biologist with the U.S. Fish and Wildlife Service, said officials became concerned after an earlier study showed some of the sensitive micro-invertebrates, cavefish food, were being replaced in the springs by more pollution-tolerant species.

"That's half the known population of cavefish so, if we were to lose that population of the species, the probability of recovery for the Ozark Cavefish would be greatly diminished if not taken completely off the table," Wine said. "At this point the science is telling us that what we're doing here should be enough to protect the species."

Wine said Fish and Wildlife asked that protections be based on rigid scientific process rather than opinions or speculation.

"We wanted the maximum buffer width supported by science," Wine said. "That will tell us the amount we will need in order to have the water relatively cleaned up by the time it hits the streams, based on the slopes and the soil characteristics."

Delia Haak, of the Illinois River Watershed Partnership, said her environmental protection group is comfortable with the recommendations because the science behind them appears sound and reliable. The partnership owns the land where the Cave Springs spring gushes out of the cave where the cavefish live. The springs form Lake Keith and become part of the Illinois River headwaters.

"I think they are reasonable for both protecting the water quality and the endangered species in the cave as well as being sensitive to land owners in the recharge area," Haak said.

Wine said no final decisions will be made about implementing development regulations until the public and stakeholders have their say, which could lead to some adjustments.

"I think that's a very good facet of the project, to get those buy-ins, so it's not a surprise for folks," Wine said. "We will give our blessing that we think it's enough."

Mark Dunaway, Rausch Coleman Northwest Arkansas division manager, said the new study should not impact plans to build up to 400 homes in phase two of Lakewood Crossing because it is not retroactive. Construction is set to begin soon on the subdivision that extends from Janie Darr Elementary School on Mount Hebron Road south to Arkansas 264.

"Lots of different things play a part when you look at the marketability of a property. We have to determine if we can sell them and make up any extra costs," he said.

Clay Carlton, one of the owners of Buffington Homes of Arkansas, said Buffington Homes has 90 vacant lots it is building on in the Brentwood subdivision along Arkansas 264 in Cave Springs. The neighborhood already has 25 homes.

"We will be keeping our eyes on it," he said of the study and recommendations.

Carlton said Cave Springs should be in a good position to grow since it has its own waste water system that drains outside the recharge area.

"That is a positive for Cave Springs going forward," he said.

NW News on 04/12/2015

