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A PUBLICATION OF THE **KINGS RIVER WATERSHED PARTNERSHIP**

KRWP FINDS PERMANENT HOME IN GRANDVIEW HOTEL

Alexander Viridon and Sandra Doss, the new owners of the Grand View Hotel on the Berryville square, are bursting with big ideas for their new acquisition. The energetic couple's plans for the building include studios for digital film production and pottery, as well as a bed and breakfast, art gallery, and vintage ice cream parlor with Internet access. These generous folks have also decided to include the Kings River Watershed Partnership in their master plan by donating a permanent office space on the ground floor of the soon to be renovated hotel.

To date the KRWP has been primarily operated out of the homes of volunteers and watershed planner, Shawna Miller. The new office space is going to be a phenomenal asset for both the Partnership and the community. The office will house a library of water related information including everything from scientific studies to copies of all regulations impacting resources and their use. The space will also act as the homebase for the Partnership's exciting educational curriculum, water quality testing program, and watershed mapping and restoration activities.

Alexander and Sandra donated the office space because of their passion for the local water resources. According to Alexander, "I believe that your group is doing the most important work. If you protect the water, than you can protect everything else."

As many of you may have guessed, much work still needs to be done on the Hotel before all of its rooms will be opened. On December 3, the KRWP Board began the process of readying the office by clearing out the space and consequently filling a 30 yard dumpster. The Partnership still needs both volunteers and some office supplies in order to get the space usable and open to the public. If you would like to help out, please contact Shawna Miller (contact info on back page).



ANNUAL MEETING SLATED FOR JANUARY 19

Woodstoves are operating full tilt, dogs are whining to come inside, and volunteers for water testing are a little hard to come by....it could only mean one thing. Winter is finally upon us, and the KRWP annual meeting is just around the corner!

Please join us at 6:00 pm on Thursday, January 19 at the Carroll Electric Pioneer Room in Berryville for an event that is sure to spring you out of the holiday doldrums. The meeting will start out with the yearly election of board members. Please don't hesitate to send in your annual membership dues, for only paid up members will be allowed to vote in the election. Sam Davis will offer an update on the water quality testing results and a discussion of the facts

concerning phosphorus in our waterways. Shawna Miller will speak briefly about progress on the watershed plan. Board members will also give a "year in review" of the Partnership's actions for 2005 and goals for 2006.

Following the presentations will be a drawing for some excellent door prizes and an array of snacks and drinks.

Come out to see your watershed neighbors, get a free bite to eat, win a prize, and learn a little bit more about protecting our precious resources.

See you there!



WATER QUALITY MONITORING REPORT



The Bald Eagles are Back!

Thank you Pat Milam for this wonderful close up of a bald eagle on the Kings River. For about four months every year the Kings and other area lakes and streams become a haven for bald eagles escaping from the northern winter cold. For more details see story on page 4.

	Month	Stream Depth (ft)	Dissolved Oxygen (mg/L)	Nitrates (mg/L) NO ₃ -N	Phosphorus (mg/L) Reactive	Total Dissolved Solids (ppm)
Site 1- Upper Osage @ CR 705['] above Berryville	Sept	3.3	9.0	0.5	0.49	113
	October	3.7	7.4	0.6	0.24	123
	Nov	3.9	10.3	1.1	0.50	143
Site 2- Lower Osage @ CR 306 below Berryville	Sept	1.3	7.3	1.0	1.37	300
	October	1.6	9.6	1.0	1.27	334
	Nov	1.8	12.2	1.0	0.36	189
Site 3- Kings R. just above Osage confluence	Sept	0.8	7.6	0.6	0.19	120
	October	0.8	10.1	1.0	0.33	137
	Nov	0.9	11.5	0.6	0.13	121
Site 4- Upper Kings, Hwy 74 bridge south of Kingston	Sept	2.0	6.9	0.6	0.62	85
	October	2.0	8.6	0.8	0.18	80
	Nov	2.8	10.2	1.1	0.48	40
Site 5- Kings R. at Stoney Pt. below Grandview	Sept	2.6	7.6	0.3	0.53	173
	October	2.0	8.6	0.7	0.57	173
	Nov	2.1	10.5	1.0	0.44	192
Site 10- Keel's Ck. .5 miles above Kings R. Confluence. CR 329	Sept	No data				
	October	available				
	Nov					
Site 11- Kings R. at Rockhouse Access	Sept	0.8	9.8	0.5	0.31	116
	October	0.7	10.4	1.7	0.13	123

OSAGE CREEK TMDL DRAFT COMPLETED

The draft TMDL report for Osage Creek, the largest tributary to the Kings River, has been completed and submitted for review to EPA Region 6. This total maximum daily load (TMDL) report is intended to locate the sources of phosphorus (the primary pollutant), calculate how much each source contributes, and outline a plan to reach the established water quality standards for the impaired reach. If the draft is approved in its current form, it will do little to effect the current or potential land use by folks living within the Osage Creek watershed and it sets no new regulations regarding the Berryville wastewater treatment plant.

For the purpose of this TMDL, the guideline of 0.1 mg/L Total Phosphorus was used as the target concentration, or endpoint for the creek. This guideline value was present in Arkansas Regulation No.2 when Osage Creek was labeled as impaired because of total phosphorus in 2002, although it has since been removed. According to ADEQ's water monitoring data for Osage Creek from 1983 to 2004, the average total phosphorus load above Berryville was 0.050 mg/L, while the average load below Berryville was 1.049 mg/L.

In order to develop this TMDL, the engineers first calculated how much phosphorus the creek can assimilate. They did this by multiplying the target concentration by the total flow in the

stream. They found that Osage Creek could "handle" 96.64 lbs/day total phosphorus without exceeding the 0.1 mg/L target. All TMDLs must also include a margin of safety, so 10% or 9.66 lbs/day was subtracted from the allowable load of phosphorus.

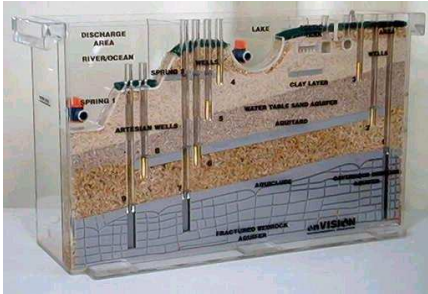
The report then calculates the allowable loads of phosphorus from point sources in the watershed. For the Berryville wastewater treatment plant, the TMDL reinforces an already existing regulation. In Arkansas Regulation No. 6, Chapter 4, it is stated that "No permit for discharge of domestic wastewater to Osage Creek or its tributaries, by the City of Berryville, shall authorize more than 1.0 mg/L Total Phosphorus based on a monthly average." Compliance with this regulation is required by 2012. The calculations show that the City of Berryville will be allowed to release 20.02 lbs/day total phosphorus, which amounts to an 85% reduction from today's releases. The only other point source that was analyzed was Bedford Falls Mobile Home Park, which was considered too small to necessitate reduced loads. At target effluent levels, the point sources plus the margin of safety only equal 32.1 lbs/day total phosphorus load.

Please continue story on following page.....

KRWP RECEIVES GRANT FOR KARST EDUCATION

The Carroll County Community Foundation, in affiliation with the Arkansas Community Foundation, offers grants for projects that will benefit county citizens. This year the KRWP was one of several beneficiaries of this active philanthropic organization.

The KRWP received funds to purchase an Envision 3000 Groundwater Flow Simulator for use in public education programs. This one of a kind simulator models the movement of surface and groundwater within a karst geologic system as well as the possible avenues for groundwater contamination. The simulator is a hands-on visual aid that makes difficult groundwater concepts understandable for all ages. The Ozarks Plateau has an extremely unique geologic structure, resulting in features such as springs, caves, and sinkholes.



This geology, called karst, creates a high susceptibility to groundwater pollution and is often misunderstood by the public. Groundwater, commonly used as drinking water, is easily contaminated in karst systems because water on the surface can travel rapidly into underground aquifers, where it may be carried long distances.

The Partnership will use the model for demonstrations in local schools, civic organizations, city and county government, and other local groups that express an interest. This model will be the first step in creating a comprehensive karst education tool kit. Eventually it will be coupled with web-based interactive software, handouts for further activities and reading, water quality monitoring, and onsite demonstrations including field trips to local karst features.

This Christmas season, give the gift that keeps giving.....



Clean Water!

If you support the mission of the KRWP, please consider becoming a member today. You will be helping to insure high quality streams and drinking water for generations to come. Simply call Shawna Miller at (479) 981-1172 for a membership form and more information. Thank you.

TMDL CONTINUED.....

According to the report, the remaining phosphorus loads in the watershed can be attributed to non-point sources, such as streambank erosion, on-site wastewater systems, and application of poultry litter to pastures. In order to calculate if reductions were needed for these non-point source loads, the engineers had to calculate if the existing loads were exceeding the remaining allowable load, which was 64.54 lbs/day. The existing load from non-point sources in the watershed was determined by multiplying the average stream flow by the mean concentration of total phosphorus found at ADEQ's monitoring station upstream of the waste treatment plan. This yielded an existing load of 47.3 lbs/day, which is smaller than the remaining allowable load of 64.54 lbs/day. Using these calculations, the engineers determined that no reductions of phosphorus from non-point sources in the watershed is needed at the present time to reach the target concentration, provided that the City of Berryville meets its effluent goals.

One question that has been raised by watershed residents concerns the long term pertinence of this TMDL and other state water quality regulations. To date, Missouri has not set a numeric water quality standard for waters flowing from out of state. Eventually they will write their own TMDL for Table

Rock Lake. This TMDL will locate existing sources and approximate desired loads of phosphorus in the lake's watershed, including those from the Kings River. If their TMDL finds that water flowing in the Kings needs to have a total phosphorus concentration less than 0.1 mg/L in order for their water quality standards to be maintained, than they do have the right to set that standard at the state line. In addition, should Arkansas decide to set its own numeric criteria for phosphorus, this TMDL could change accordingly.

All of this can seem a bit overwhelming to local residents and business owners trying to keep track of the status of the local water resources. The least convoluted solution for watershed residents is to continue to voluntarily monitor and manage non-point source pollution at a local level. In this manner our amazing water resources will remain intact, regardless of state or national policy changes or shifting water quality standards. The Partnership will attempt to keep you notified of any further changes, but feel free to contact your local officials or Shawna Miller for more information.

The KRWP would like to thank the Carroll Electric Cooperative for printing this newsletter free of charge. This publication would not be possible without their generous gift.



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The Kings River Watershed Partnership is a cooperative effort, organized exclusively for charitable, scientific, and educational purposes; more specifically to protect the health, purity, and economic viability of the Kings River watershed, now and for future generations.

Founded in 2001, the Partnership strives to represent a broad range of watershed stakeholders, primarily utilizing voluntary management improvements and collaborative agreements to protect and enhance water resources.

In October of 2004, the Kings River Watershed Partnership became a certified 501 (c)(3) non-profit organization. Feel free to give generously; your gifts are now tax-deductible!

Looking for more information?

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BALD EAGLE POPULATIONS SOAR DURING WINTER SEASON

Between November and March the Kings River becomes prime territory for bald eagles migrating from northern states. Arkansas ranks in the top 10 states in the number of winter bald eagle sightings, with over 1,000 eagles counted each winter. Although no official numbers exist for eagle populations on the Kings, several residents have reported sighting as many as 90 eagles during a three hour canoe trip.

Watching bald eagles will allow you to see some very interesting behaviors. Certain perch sites are favorites for eagle populations, so don't assume that it is the same eagle sitting there day after day. Eagles are not sedentary once they enter the state. They tend to move every 2-3 days between the

various lakes and rivers. As early as December, bald eagles will start gathering branches for building nests. By February, many will be incubating eggs. Sitting on the same perch for 4-5 hours is completely normal behavior for eagles that are either in hunting mode or digesting a big meal.

In flight eagles can be identified by their flight pattern. Bald eagles and many hawks soar with their wings extended flat, while vultures hold their wings in a V shape. Eagles are much bigger than vultures, hawks, or owls. Eagle nests are at least 5 feet wide while hawk nests are about 2 feet wide.

Take advantage of the winter beauty on the Kings and please enjoy these majestic creatures from a safe distance!