By Dennis Schwartz, President, KRWA

Reservoirs' future depends on today's actions

Photo by Harland J. Schuster

A blue heron stands near the shoreline on Perry Reservoir in northeast Kansas on a foggy fall morning. Perry has lost 18 percent of capacity due to sedimentation. Other losses range from 10 percent for Cheney, Hillsdale and Webster reservoirs to more than 30 percent for Tuttle Creek, Kanopolis, Toronto and John Redmond reservoirs.

As a photographer, I've always been captivated by the image of morning fog over Kansas' beautiful lakes. That fog is fleeting, and more often than not, will yield to a bright Kansas day. As a water resource professional and member of the Kansas Water Authority, I realize, however, that the fog could also symbolize the slow, but steady loss of storage capacity of the 24 federal reservoirs and numerous multi-purpose small lakes and municipal impoundments. Without the sunshine of protective measures in the lakes' contributing watersheds, the lakes' value as part of the state's water supply infrastructure will diminish. The symbolism could also apply to the need for additional financial resources to pay for storage space currently in use and for storage to meet future needs.

Just as each of us strives to maintain our homes, and our farms, and prepare for the future, we must collectively strive to protect and restore our vital water resource infrastructure.

The problem: sedimentation

The physical problem is sedimentation, soil that erodes from streambanks, fields and construction sites. As sediment accumulates, reservoirs' capacity to store water is reduced. While erosion is a natural process, it may be accelerated by urban expansion, agricultural practices and changes to riparian and wetland areas.

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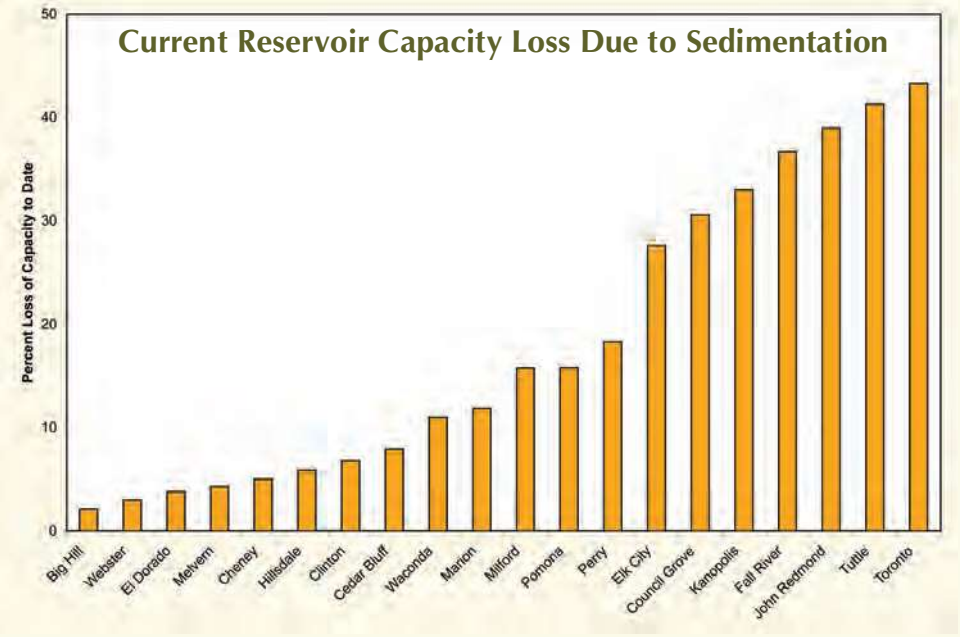
Sedimentation does more than reduce reservoir capacity. Pollutants attached to eroded sediments can be transported, accumulated, and released into the reservoirs. As lake depth and overall volume decreases, eutrophication (increase in concentration of nutrients resulting in excess plant growth and decay) increases. The excessive plant growth also degrades water quality making it less suitable for recreation and more costly for water utilities to process water. Excessive sediment loading in aquatic ecosystems also causes loss or impairment of fish, macroinvertebrates, and other aquatic organisms.

While the rate of sedimentation in the 24 federal reservoirs built from 1948 to 1963 varies, it's critical that actions to slow the rate of sedimentation be taken now.

I'm often asked how soon before the reservoirs fill. The better and more important question is how long before we run out of water during a drought. Given a drought as severe as that experienced in the 1950s and the reduced storage capacity due to sedimentation, water supply in the Neosho River basin would be insufficient to meet needs as early as 2012. John Redmond is the reservoir most threatened by drought. Additional information on other Kansas reservoirs and their supply and demand estimates may be found on the Kansas Water Office web site www.kwo.org.

As to the sediment side of the equation, lost storage capacity caused by sedimentation ranges from 10 percent for Cheney, Hillsdale and Webster reservoirs to more than 30 percent for Tuttle Creek, Kanopolis, Toronto and John Redmond reservoirs. About 18 percent of the original multipurpose pool of Perry Reservoir, one of the largest reservoirs in Kansas, has been lost to sedimentation since it was built in 1969. The chart on this page shows the percentage of lost capacity at federal reservoirs throughout the state.



What's next?

Is anything being done? Certainly. The Kansas Water Authority in 2008 endorsed the natural resource agencies' efforts to secure, protect and restore the future of our water supply reservoirs. These efforts are encompassed in the Reservoir Sustainability Initiative. The initiative was launched as the start of an awareness campaign of the reservoirs' physical and fiscal condition and included current conditions and plans for the future. The Authority recognized and is promoting the fact that the reservoirs and their watersheds are as much a part of the state's vital infrastructure as are roads and bridges.

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Early in the 2009 Legislative Session, several Kansas natural resource agencies presented the Reservoir Sustainability Initiative to the newly created Vision 2020 Committee. The committee was formed to evaluate issues with the potential to span multiple legislative years. Presentations made to the Vision 2020 Committee highlighted the reservoirs condition, actions underway and the need for long-term commitment to the state's public water supply infrastructure.

The Kansas Water Authority, at the request of the committee, is developing a comprehensive report referred to as the "Reservoir Roadmap." It will better quantify the sedimentation problem and needed statutory and financial changes to make a positive difference. More detailed information will be collected on at least one basin, leading to projects and operational changes. The report will be presented to the Kansas Legislature in 2010.

The Water Authority has had a chance to review the first two volumes of the Reservoir Roadmap. The first volume includes a statewide overview of current conditions and future impacts to water supply areas currently or potentially served by reservoirs. The second addresses monetary and statutory issues. Information in the third volume will highlight the ways to address future supply and demand needs in the Neosho basin.

It is exceedingly important for those of us that are charged with public water supply responsibilities to appreciate the critical role that our reservoirs play in meeting the long- term water needs of our state. It is highly likely that we will see a time when our supplies may have difficulty meeting our demands. We must all be supportive of those efforts that can lessen or delay any water supply emergencies. Stay tuned to the on-going State Water Planning process to offer your input and stay abreast of the latest developments.

Dennis Schwartz is the current President of KRWA and is a member of the Kansas Water Authority. He has been General Manager of Shawnee RWD 8 since 1976. Dennis has also been a director for National Rural Water since 1992, a member of the Water Industry Coordinating Council from 1996-2002 and EPA's National Drinking Water Advisory Council from 1999-2005.