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Canyon Lake Alum Treatments Prove Success in Managing Water Quality

Recent study reports results from lake study on alum applications

Canyon Lake, CA – Residents of Canyon Lake recently witnessed the sixth application of alum to the main body, coves and north causeway of the lake. With the support of the Lake Elsinore and Canyon Lake Total Maximum Daily Load (TMDL) Task Force who are seeking to significantly improve water quality and ecology in Canyon Lake, the applications have proven successful in minimizing algae growth.

Being that Canyon Lake is located near the end of the watershed, it receives high levels of nutrients, such as nitrogen and phosphorus, as a result of water runoff. These nutrients encourage algae growth. By adding alum to the water, it immediately binds to the phosphorus, causing it to neutralize and become inactive. This process was chosen as a means to improve lake quality due to its proven effectiveness in lakes throughout the country. Recently, a 3-D model of the lake was developed to better capture the complex hydrodynamics and water quality observed. The study has been monitoring the effectiveness of the alum treatments since 2013. Results, recently announced, demonstrate that levels of phosphorus have been consistently lower in the main body of the lake following alum treatments, as compared to 2009-2012.

Dr. Michael Anderson, University of California, Riverside associate dean, responsible for conducting lake testing shares, “Control of phosphorus via alum has shown meaningful progress, although continued in-lake controls along with watershed best management practices are needed to further improve water quality. New 3-D modeling for Canyon Lake will provide greater understanding of relationships and unique water qualities of the distinct north, main and east basins.”

Since 2000, the Lake Elsinore & San Jacinto Watersheds Authority have been conducting field studies, laboratory measurements and long-term computer simulations to provide new insights into the complex ecosystems and hydrology of the lake. In 2014, a two-day hydroacoustic survey was conducted to provide an assessment of the lake capacity. The survey illustrated that substantial sedimentation has lowered the capacity of the lake compared to 1993. The complex hydrology of Canyon Lake poses unique challenges in water quality and ecology management. Continued study and alum applications in the lake will take place in order to meet water quality targets.

Funding for the alum applications have been provided by a State grant, the Santa Watershed Project Authority - One Water One Watershed (OWOW), and by the Lake Elsinore and Canyon Lake Total Maximum Daily Load (TMDL) Task Force, which consists of cities, the County of Riverside, agriculture and dairy coalitions and other organizations in the San Jacinto River watershed. Implementation of the alum project is being coordinated by the City of Canyon Lake, the Elsinore Valley Municipal Water District, LESJWA, the TMDL Task Force and the Canyon Lake Property Owners Association.

2015 Canyon Lake Alum Application video - <https://youtu.be/D0iUtkTVGnc>

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