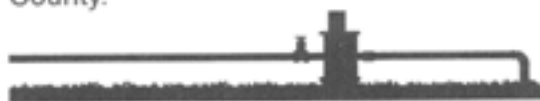


Water Use in Lake County

For a county named for its large and numerous lakes, water is a scarce resource in Lake County. The main reason for this scarcity is that much of Lake County's surface water is controlled by out-of-county entities. For example, the Yolo County Flood Control and Water Conservation District has priority on water stored in Clear Lake above its natural rim. In years when the lake fills completely, the amount of water Yolo County receives from Clear Lake is about double the total water use in Lake County.



Agriculture, which accounts for around 85% of water use in Lake County, relies primarily on well water pumped from ground water aquifers. Domestic water use, including residential and commercial use, is provided by both surface and ground water sources.

Agricultural demand for water is likely to remain fairly constant as conversion to more efficient irrigation and frost protection systems offsets increases in irrigated acreage from vineyard plantings. Population projections suggest that the county's population, and therefore domestic water demand, may triple by the year 2040.

This leaflet discusses water supply, water quality, and water rights issues so that farmers and their non-farming neighbors better understand key factors related to improved water management in Lake County.

Water Supply

In Lake County, **ground water** aquifers are relatively small and rely on winter rains to re-fill (recharge) them. During drought periods, ground water levels may drop until water quality is impaired and wells go dry. Substantial drawdown of aquifers can cause overlying land to subside, thereby reducing aquifer capacity. This has happened in Scotts Valley and Big Valley. These two areas, and the area around Upper Lake, are approaching the capacity of their ground water resources.

Most **surface water** in Lake County has been appropriated, meaning that there are legal claims to it. During above average rainfall years it may be possible to increase surface water supplies if additional water storage facilities are built.

Options to increase the water supply or decrease water use in Lake County include:

Water Conservation

Replacing old plumbing and

appliances with low-flush toilets, shower and faucet flow restrictors, and low water use appliances can significantly reduce domestic water use. More efficient irrigation systems and management can reduce agricultural water use. Use of sprinkler and drip irrigation systems in place of flood irrigation is already common in Lake County.

Increased Water Storage

Reservoirs and ponds can store winter run-off for frost protection, irrigation, ground water recharge, and domestic consumption. Small ponds may be more cost effective than traditional, large-scale dams. Controlled burns or grazing can increase run-off for water storage, but erosion from these practices must be controlled. Effects on fish and wildlife, downstream ground water recharge, and prior water rights need to be considered when increasing water storage.

Water Purchases

Water stored in Clear Lake can be purchased from the Yolo County Flood Control and Water Conservation District, and using current treatment technology, high quality drinking water can be produced. Due to lack of an irrigation water distribution system and high boron levels which may injure crops, Clear Lake water is a less feasible option for agriculture.

Ground water recharge projects include ponds, low dams, and reservoirs that are operated to increase ground water supplies. Projects are usually paid for by beneficiaries in the area affected. Because this is a form of increased water storage, it may require water rights agreements.

Water Quality

Clear Lake is a naturally nutrient rich system, which has supported abundant algae, fish, and water fowl for thousands of years. Scientists have found evidence of increased nutrient loads to the lake starting in the 1930s. These increased levels are mainly attributed to sediments from soil erosion caused by human activity, for example road building. Potential pollutants of Clear Lake and other water sources are described below.

Soil erosion occurs naturally in steep areas and may be accelerated after fires, or when land is disturbed by logging, road building, construction, over-grazing, land preparation for new vineyards or orchards, or agricultural tillage operations. Scientists attribute the major cause of nuisance algae blooms in Clear Lake to accelerated soil erosion from human activities, rather than fertilizer or sewage.

Wetland restoration is one way to trap sediments before they reach Clear Lake. With proper management, soil erosion can be greatly reduced. The local Natural Resources Conservation Service office provides information on practices to control soil erosion.

Agricultural pesticides have not been found in Lake County ground water during ten years of monitoring by the state Department of Pesticide Regulation.

Fertilizer can cause nitrate pollution in ground water. In Lake County nitrate levels in water provider wells remain far below state health limits.

Locally, **livestock** is raised mainly on pastures and rangeland. Ranchers are voluntarily complying with the federal Clean Water Act by adopting new practices to prevent soil erosion and stream damage. There are no large dairies, feedlots, or poultry production facilities with the potential for significant localized water pollution.

Non-agricultural water pollutants include mercury from past mining and natural sources; household, commercial, and industrial chemicals; sewage, and septic system leaching. As local communities grow, many septic systems will be replaced by waste water treatment plants.

Water Rights Issues

Formation of **local ground water management programs** is being encouraged by the State of California. These programs are important to ensure local control of ground water and avoid state regulation of ground water use. Scotts Valley has a local ground water management district, and one is being formed in Big Valley. Functions of local districts could include monitoring ground water levels, mitigating overdrafts, and reviewing land use plans which may create a risk of ground water contamination.



Increasing **water storage** may also affect water rights. When this storage may reduce water availability to those with senior water rights, agreements with senior rights holders are necessary. For example, when there is insufficient winter run-off to fill Clear Lake, those diverting water upstream of Clear Lake might be required to pay the Yolo County Flood Control and Water Conservation District for the diverted water.

Additional Resources

Agencies and Organizations

Lake County Department of Public Works Flood and Lake Management Programs
255 N. Forbes Street
Lakeport, CA 95453
(707) 263-2341

U.S.D.A. Natural Resources Conservation Service
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-4180

Lake County Department of Environmental Health
922 Bevins Court
Lakeport, CA 95453
(707) 263-2222

Lake County Department of Agriculture
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-0217

University of California Cooperative Extension
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-6838

References

Lake County 1987 Resource Management Plan Update. Lake County Flood Control and Water Conservation District.

Lake County Factbook, U.C. Cooperative Extension.

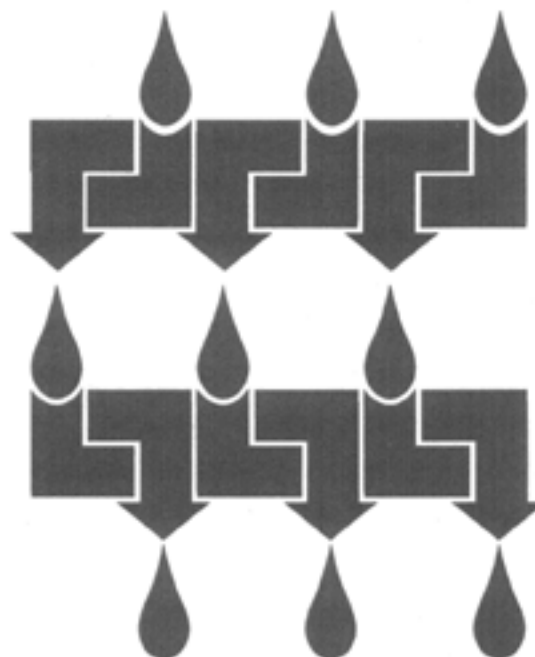
The Causes and Control of Algae Blooms in Clear Lake. Lake County FCWCD, California State Water Resources Control Board, and U.S. EPA.

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Agriculture in

Lake County, California

Water Use Issues



Produced by the Lake County Farmers and Neighbors Planning Committee, dedicated to ensuring continuation of agriculture as part of Lake County's economic and cultural future.