

The Highland Lakes Through Flood and Drought

Managing the lower Colorado River

Central Texas, known as “Flash Flood Alley,” is home to frequent, sudden heavy rains and flooding.

The region also is subject to severe droughts.

By building the six dams that created the Highland Lakes, LCRA made it possible to manage floodwaters and store water for use during droughts.

LCRA operates the lower Colorado River and the Highland Lakes together as one system to manage the region’s water supply.

Storage reservoirs: Lakes Buchanan and Travis are water supply reservoirs that store water for communities, industries, agriculture and the environment.

- Together, the two lakes can hold about 650 billion gallons of water.
- Water levels can fluctuate significantly on lakes Buchanan and Travis – going up during floods and down during droughts.

Pass-through lakes: Lakes Inks, LBJ, Marble Falls and Austin are pass-through lakes.

- There’s no room for additional storage in these lakes, so water that comes in, must go out.
- Though these lakes are generally operated within a range of about a foot, the levels can fluctuate, especially during a flood. They are not constant-level lakes.

Providing water during droughts: During droughts, customers draw from the water stored in lakes Travis and Buchanan.

- Water can be taken directly from these lakes or released through the series of dams for customers downstream.
- The levels of these lakes go down as water is used by customers, is released for the health of the river, as required by LCRA’s Water Management Plan, or evaporates. This is the way the lakes were designed to operate.

Managing floods: Mansfield Dam is the only dam in the Highland Lakes chain designed to hold back floodwaters.

- During flooding, water is passed from the lakes upstream of Lake Travis through a series of dams down into Lake Travis.
- Water is stored temporarily in the Lake Travis flood pool until LCRA can release it downstream in a controlled manner.



May 2023

The Highland Lakes Through Flood and Drought

How long is the Colorado River in Texas?

About 862 river miles. LCRA's water service area includes roughly the lower 600 miles of the river from the Hill Country to the Texas Gulf Coast. This is not the same Colorado River that flows through the Grand Canyon.

How big is the lower Colorado River watershed?

About 18,300 square miles – about the size of Maryland and Massachusetts combined.

When did LCRA build the dams and lakes?

1935 through 1951.

How much water can lakes Travis and Buchanan hold?

About 2 million acre-feet, or about 650 billion gallons.

What is an acre-foot?

An acre-foot is the amount of water it would take to cover 1 acre 1 foot deep. An acre-foot of water is equal to 325,851 gallons of water.

- Floodwaters below Lake Travis flow along the Colorado River to Matagorda Bay.

Water inflows

- Water flowing into the Highland Lakes from the Colorado River and its tributaries is called inflows.
- Heavy rain in the Highland Lakes watershed can cause the Colorado River and its tributaries to swell, sending inflows into the lakes and causing lake levels to rise.
- In dry times, the amount of water flowing into the Highland Lakes decreases significantly, causing lake levels to fall as communities and industries use water stored in the lakes.

Water uses

- The lower Colorado River supplies water for more than a million Texans, industries, agriculture and the environment.
- Matagorda Bay, on the Gulf Coast, depends on the river to maintain a healthy habitat for fish and other aquatic life.
- Together, the dams along the Highland Lakes can produce more than 295 megawatts of hydroelectricity. LCRA uses the hydroelectric generators when passing water through the dams to meet downstream water needs, during flood operations or during a power emergency.

Water Management Plan

- LCRA's Water Management Plan governs the operation of lakes Travis and Buchanan.
- During drought, the plan requires the curtailment of Highland Lakes water for interruptible agricultural customers to help ensure water will be available for the basic needs of firm customers such as cities and industries.

Planning for the future

- LCRA is taking proactive steps to expand the water supply.
- LCRA installed new groundwater wells to serve the Lost Pines Power Park in Bastrop County. The wells can supply as much as 10,000 acre-feet per year under certain conditions.
- LCRA is seeking permits to drill up to eight wells in Bastrop County to produce up to 25,000 acre-feet of groundwater when the need arises to meet demands in eastern Travis, Bastrop and Lee counties.
- LCRA is building a reservoir in Wharton County that could add up to 90,000 acre-feet of water to the region's supply. The Arbuckle Reservoir is projected to become operational in 2024. The new reservoir will help reduce the amount of water otherwise required to be released from the Highland Lakes to serve downstream demands, including industrial and agricultural customers.
- LCRA also is exploring additional water strategies for Central Texas, including using surface water, treated effluent and groundwater.