

Rivers, Reservoirs & Canals



Tuolumne River



Don Pedro Reservoir

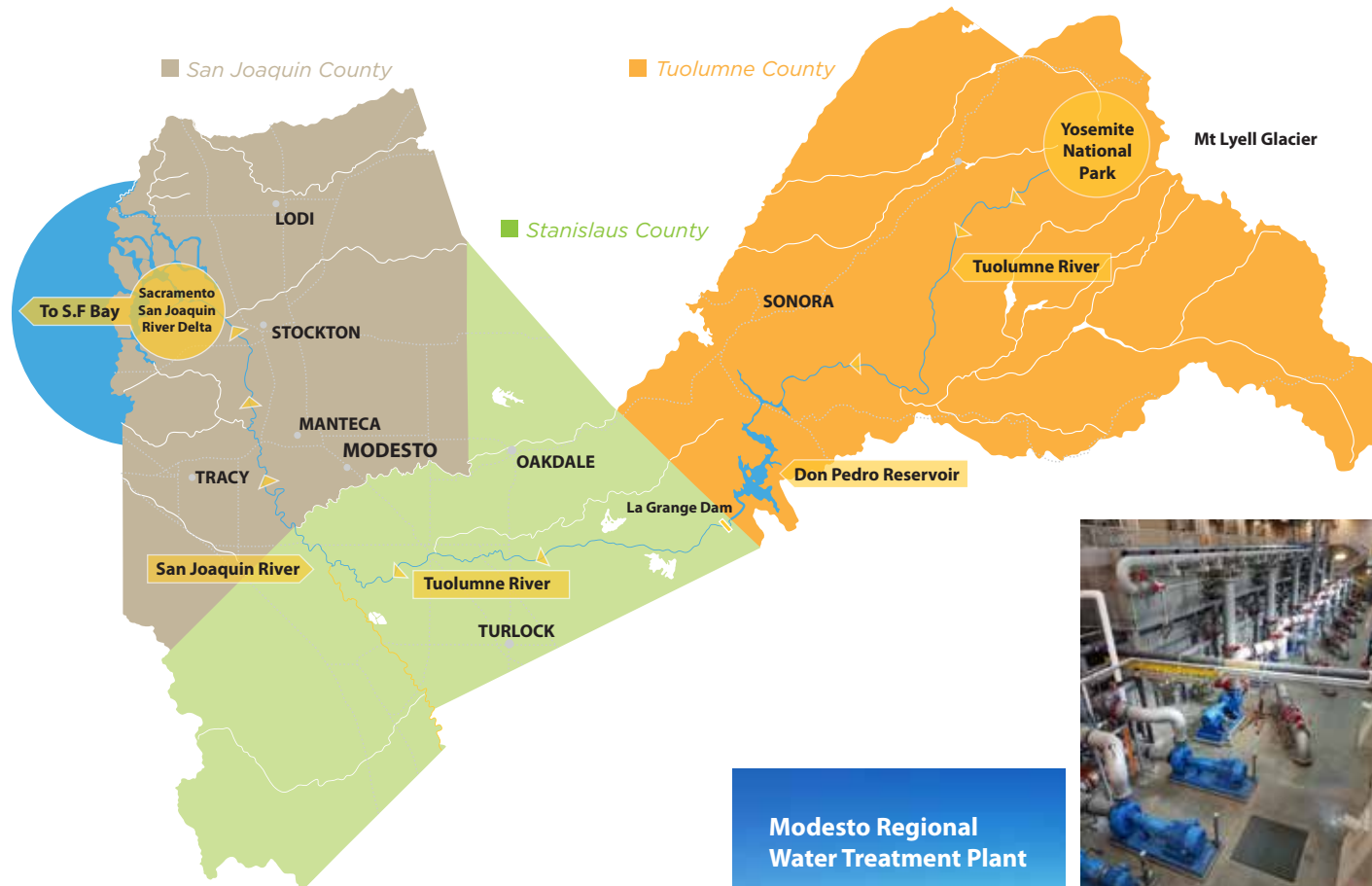


Irrigation Canal



Where does the Tuolumne River end?

Below La Grange Dam, the water that remains in the Tuolumne River continues to flow downhill the way it has for thousands of years. More than 158 miles from where it begins as melted snow, the Tuolumne River empties into the San Joaquin River. Then the water flows more than 100 miles further, through the Delta, all the way to the Pacific Ocean.



Modesto Regional Water Treatment Plant

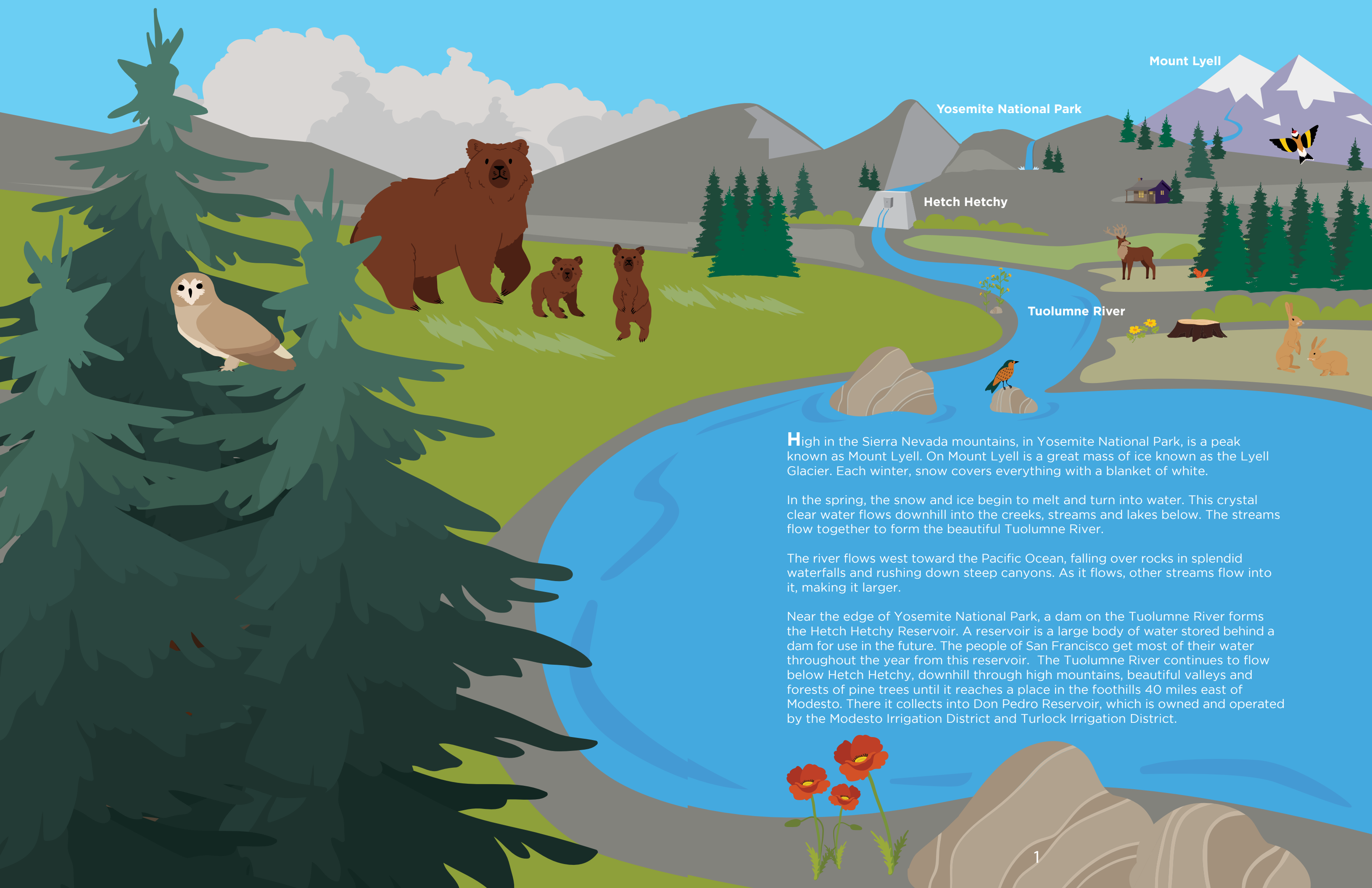


Where does the water we drink come from?

The Tuolumne River is also the source of water for the Modesto Regional Water Treatment Plant, which is owned and operated by MID. At the Modesto Reservoir, water enters the plant's state-of-the-art treatment facility, which supplies high-quality drinking water for Modesto-area residents.

The plant delivers up to approximately 67,000 acre-feet of treated drinking water per year to the City of Modesto, which meets roughly half of its water needs. This partnership with the city continues to provide great value for our community.





Mount Lyell

Yosemite National Park

Hetch Hetchy

Tuolumne River

High in the Sierra Nevada mountains, in Yosemite National Park, is a peak known as Mount Lyell. On Mount Lyell is a great mass of ice known as the Lyell Glacier. Each winter, snow covers everything with a blanket of white.

In the spring, the snow and ice begin to melt and turn into water. This crystal clear water flows downhill into the creeks, streams and lakes below. The streams flow together to form the beautiful Tuolumne River.

The river flows west toward the Pacific Ocean, falling over rocks in splendid waterfalls and rushing down steep canyons. As it flows, other streams flow into it, making it larger.

Near the edge of Yosemite National Park, a dam on the Tuolumne River forms the Hetch Hetchy Reservoir. A reservoir is a large body of water stored behind a dam for use in the future. The people of San Francisco get most of their water throughout the year from this reservoir. The Tuolumne River continues to flow below Hetch Hetchy, downhill through high mountains, beautiful valleys and forests of pine trees until it reaches a place in the foothills 40 miles east of Modesto. There it collects into Don Pedro Reservoir, which is owned and operated by the Modesto Irrigation District and Turlock Irrigation District.

Why was Don Pedro Dam built?

Farmers of the Modesto and Turlock irrigation districts need water to grow their crops. Putting water on farms is called irrigation. Because of irrigation, our farmers are able to grow almonds, peaches, walnuts, corn and many other crops. These crops grow in the summer when it is hot and dry.

Since little rain falls during the growing season, farmers must have another source of water. The water that falls as rain and snow in the winter must be captured and stored until farmers need it for irrigation.

That's why MID and TID built Don Pedro Dam. Because of the dam and the reservoir it created, the districts can keep large amounts of water available during the dry parts of the year when crops are growing. Water is released from Don Pedro Reservoir as the farmers need it. Water is also released for the benefit of fish and wildlife along the Tuolumne River.

Another benefit of the reservoir is that it provides flood control. Don Pedro Dam holds back water that might otherwise cause flooding further down the Tuolumne River.

At the bottom of the dam is a powerhouse, where water is used to produce electricity. Some of the electricity you use at home or school comes from there. After the water leaves the powerhouse, it continues on its way down the river.



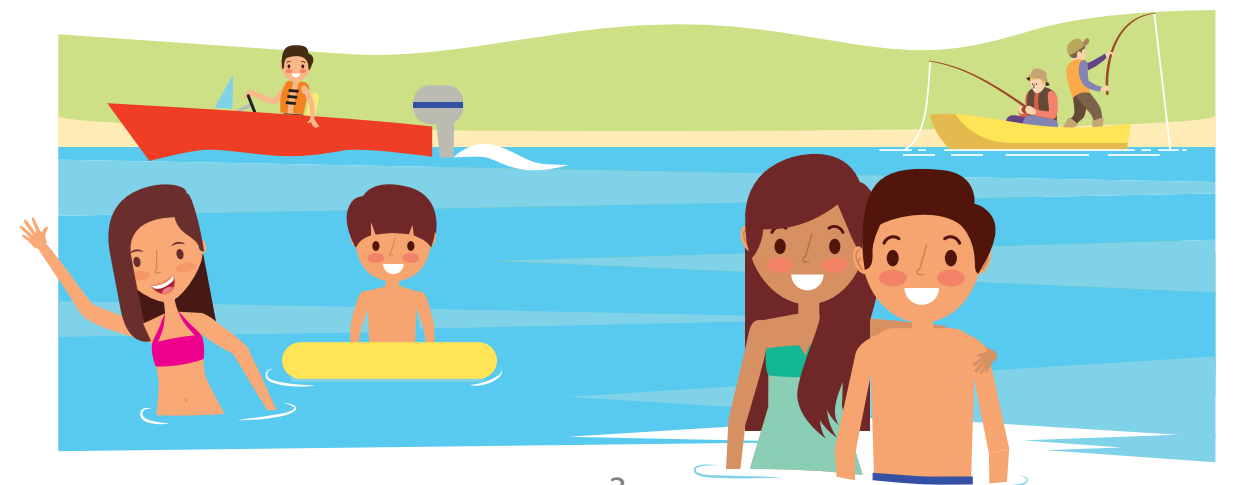
How big is Don Pedro Reservoir?

Don Pedro Reservoir is the sixth-largest body of water in California. It is 26 miles long with 160 miles of shoreline. The water it holds could cover one million football fields to a depth of two feet!

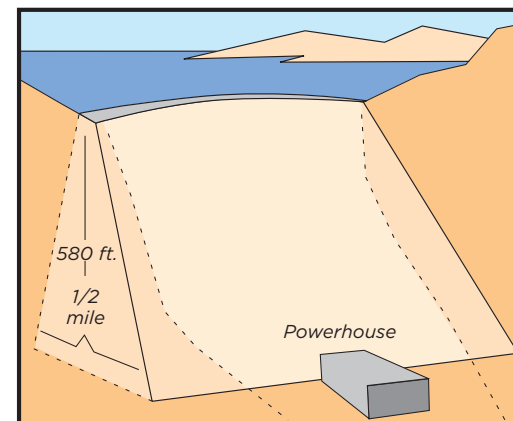
To create Don Pedro Reservoir, a huge dam was built of dirt and gravel. This caused the river valley to fill with water, much like a bathtub fills when you put in the plug.

Forty gigantic dump trucks hauled dirt and rock 24 hours a day, six days a week, for a year and a half to build it. In all, the trucks carried 250,000 loads of dirt and rock to the dam site. While Don Pedro was originally built in 1923, the Don Pedro we see today was completed in 1970.

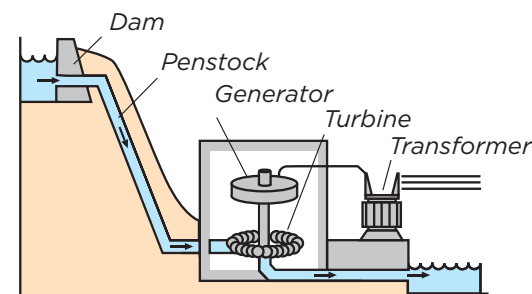
Don Pedro Reservoir is popular for recreation. People enjoy many different activities there like boating, fishing and swimming.



Don Pedro Dam



Don Pedro Dam is more than 580 feet high. The bottom is a half mile thick!



Inside the dam is a large pipe called a penstock. Water enters the pipe at the top of the dam and drops swiftly to the power plant. There it turns a wheel called a turbine. The turbine is connected to a generator that produces electricity.

What dam is more than 125 years old?

About two miles down river from Don Pedro Dam is La Grange Dam. La Grange Dam was completed in 1893. It is more than 125 years old!

On each side of the river, near the dam, is a tunnel. When the water rises nearly as high as the level of the dam, it flows into each of the tunnels.

The water flows through the tunnels into two large canals. One of the canals carries water to the farmers in the Modesto Irrigation District and the other carries water to farmers in the Turlock Irrigation District. These two large canals divide into smaller canals. Water flows downhill in these canals to farmers throughout the Turlock and Modesto irrigation districts, making it possible for them to grow food for the people all over America.

La Grange Dam is very small compared to Don Pedro. However, when it was built, it was the highest dam of its kind in the world. Don Pedro Dam had not been built, so there was no reservoir to store the water for the farmers. A lot of the water flowed over the top of La Grange Dam into the river below, creating a giant waterfall.



In the early days, La Grange Dam was known as the "Niagara Falls of the West." People came by horse and buggy from as far away as San Francisco to watch the water plunge over the top of the dam.

When canals made water available, farmers began growing many different things. Today, our farmers grow almonds, walnuts, grapes, peaches, corn, melons and other good things to eat.

Other farmers grow alfalfa, oats and corn to feed to dairy cows. The cows give us milk. Some of the milk is made into cheese, butter and ice cream.



What makes the water move?

Water always flows downhill because it is pulled by gravity. Gravity is the force that keeps your feet on the ground. It makes things fall when you drop them, and it makes water flow downhill. The water in the Tuolumne River begins at 10,000 feet of elevation and it flows downhill all the way to the Pacific Ocean.

The water in canals flows downhill, too. Although the land in the Central Valley looks quite flat, it actually slopes gently downhill toward the ocean. The people who dug the canals had to be sure that no canal traveled uphill at any point. This was not an easy task, since most of the canals were dug more than 100 years ago! There were no machines to help with the work. All the digging was done by men with shovels and scrapers pulled by horses. The workers did a great job. The canals they dug in the late 1880's are still in service today.



MID has more than 200 miles of canals and pipelines in its service area.

