

Watershed Activity Procedure

Background Information

The areas in and around Mammoth Lakes have a unique hydrologic story. Due to the topography of the Eastern Sierra Mountains, water either ends up traveling west towards the San Francisco Bay or east to Los Angeles. The hydrologic divide, which can be seen at the Minaret Vista, is the imaginary line that separates the two flows. Water that falls in the town of Mammoth Lakes goes east while water that falls in Devils Postpile National Monument heads west.

The middle fork of the San Joaquin River (SJR) starts at Thousand Island Lake and continues south where it passes through Devils Postpile National Monument. Later the middle fork converges with the north and south forks continuing roughly northwest to the Central Valley. Most of the surface water in the upper (SJR) is stored and diverted at Millerton Lakes' Friant Dam, near Fresno. From Friant Dam, water is pumped north through the Madera Canal and south through the Friant-Kern canal to irrigation districts and other water retailers, which then delivers the water to end users in the southern portion of the watershed. Water flowing in the (SJR) rarely ends up all the way to the San Francisco Bay because there is such a need in the Central Valley, specifically for crop irrigation. The 400-mile-long Central Valley supplies fully one-quarter of the food that America eats.

Water that falls into the Owens River draining into Crowley Lake flows through Owens Valley, the arid basin between the eastern slope of the Sierra Nevada and the Inyo and White Mountains. The Owens Valley watershed consists of several sub-watersheds (Mono Basin, Upper Owens, Owens Gorge, Middle Owens, Lower Owens, and Owens Lake). The river, until recently, terminated at Owens Lake due to the diversion of the LA aqueduct to Los Angeles to help provide essential drinking water to southern California residences. The first LA aqueduct was completed in 1913 and the second in 1970. In winter 2006, the Los Angeles Department of Water and Power restored 5% of the pre-aqueduct flow to the river, by court order, allowing the Owens River Gorge, the river bed in the valley, and Owens Lake to contain a small amount of water.

Both watersheds are essential not only to the residences of Mammoth Lakes or to California as a whole, but to the entire United States because of its agricultural purpose. Both watersheds are also examples of things that can go wrong when all or most of the water is depleted. Devastation especially to fish and amphibian populations are two of the many side effects that can be observed from water diversion. Wetlands provide many natural services from a rest spot for migratory birds to acting as a sponge, cleaning river water as it flows by. Humans should strive to find a balance between meeting the needs of the people and of the habitat so that neither one suffers.

Procedure

Have students follow along with you as you label all of the points. Spend some time on each one giving them some background information. By connecting the pictures of mountains together, they create the hydrologic divide. Have them highlight this line using a marker or highlighter.

Point Labels:

1. Thousand Island Lake
2. Devils Postpile National Monument
3. Middle Fork of the San Joaquin River
4. Owens River
5. Crowley Lake

After labeling all points and tracing the hydrologic divide, students will be able to see the two watersheds in this area and understand where each one flows to.