2005 CALIFORNIA ENVIROTHON CURRENT ISSUE SCENARIO

Restoration of the Upper San Joaquin River from Friant Dam to the Mendota pool and the reach of the lower river between the Mendota Pool and the mouth of the Merced Fiver

Background Information

In the Californian Climatic Province precipitation is both erratic and unpredictable. Abnormal is the normal rainfall pattern. The San Joaquin Valley is located in the heart of the Californian Climatic Province. Annual weather follows a relatively extreme pattern, extreme wet during winter and spring, extreme dry and hot through summer and fall. In addition, periods of drought often extend beyond five years. Periods of drought are often ended by a season of heavy rain with flood-producing storms bent on inundating the entire valley floor (Figure 1).

Before the development of manmade water resource improvements, the annual pattern of water availability was one of too wet during winter and spring then too dry during summer and fall. After spring runoff, the valley suffered during a period when no water at all flowed from the hills and mountains. In the years 1862 and 1868 the San Joaquin Valley was a continuous 30-mile wide, 290-mile long lake. In between, 1864 was one of the driest years on record.

Bountiful spring runoff from the mountains, thousands of acres of some of the best soils in the world, and perfect temperature conditions for growing a wide variety of crops made the valley an attractive garden to pioneer settlers. Early settlers began building check-dams and canals as early as the 1850s. It was soon apparent, however, that irrigation systems without foothill water storage, could not meet the demand of summer growing crops.

> By the turn of the 20th century, it was evident California not only needed a special system for water storage and delivery, but also for protection from periodic floods. (*Central valley Project,* U.S. Bureau of Reclamation).

The Federal government authorized the Central Valley Project in 1935.

World War II interrupted construction of the Central Valley Project. Friant Dam began holding back the San Joaquin River in 1945. Shortly thereafter water began flowing north in the Madera Canal and south in the Friant Kern Canal (Figure 2). Flooding on the San Joaquin River was still common, however, until the 1960s when the Eastside Bypass (Figure 3) and its concurrent levee system were built. After the bypass and levee system, portions of the main river channel remain dry through spring and summer, during periods of drought, and sometimes the entire year. In addition, a portion of the old river channel in central Merced County, 21.2 miles, has been entirely bypassed.

At this time, the courts mandated restoration of the riparian corridor from Friant Dam to the Merced River (Figure 4). Questions remain as how this is to be done and where restoration water can be found.

For study purposes the river has been divided into five study reaches. The natural and cultural condition of each reach presents unique restoration questions.

Your Role

You are consulting firm hired to develop a restoration plan for the Upper San Joaquin River (Friant Dam to Mendota Pool) and the Lower River reach from Mendota Pool to the mouth of the Merced River. Your team consists of the following people:

1. A biologist with experience in wildlife ecology, botany, and valley floor riparian forestry.
2. A hydrologist with experience in river hydrology below large dams.
3. A soil scientist with experience in dry floodplain and wetland soils.
4. A public affairs specialist to obtain public input and develop a marketing plan
5. A lawyer representing a coalition of farms adjacent to the river.

Your Task

Your task is to select one of the four **Alternatives for Acquiring Restoration Water**, and select one of the three **Proposals for Restoration** of the San Joaquin River. You will present your team's recommendation at a joint meeting of the Boards of Supervisors of Fresno, Madera, and Merced Counties. You must explain your proposal and the rationale for its selection, including how public input influenced your decision, and present a marketing plan designed to obtain public support. You must include in your proposal an estimate of the positive and negative impacts it will have on the cultural and natural landscape of the San Joaquin Valley.

Alternatives for Acquiring Restoration Water

Note: Figure 1 diagrams the use of San Joaquin River water during 26 years (1976-2001). It shows the average annual flood release during that period to be 455,000 acre-feet. The following alternatives have been discussed for providing water for restoration purposes:

1. Construct a canal from the California Aqueduct across the southern end of the valley to replace water that now flows south from Millerton Lake in the Friant Kern Canal. This would free water from Millerton Lake for restoration use.
2. Cut water allotments from commercial, residential, and agricultural users to free water from Millerton Lake for restoration use.
3. Construct additional storage facilities (Dam/s) above Friant Dam to impound surplus water that is now discharged during high water years.
4. Raise Friant Dam to impound surplus water that is now discharged during high water years.

Proposals for Restoration (this assumes restoration water is available)

1. Provide spawning gravel below Friant Dam and release high river flows during spring and fall for the purpose of restoring historic native anadromous fish.
2. Provide steady year-round releases from Millerton to promote dispersal and germination of seed of several species of native trees, replenish the ground water aquifer, clean the river channel, and supply fresh water to the delta during the dry period of the year.
3. The floodplain of the lower San Joaquin River is now restricted by a levee system to about four percent of its historic area. With this four percent of the River's flow, restore a reduced riparian aquatic and terrestrial habitat within the restricted floodplain that simulates historic conditions. This would require check dams to flood portions of the floodplain to simulate historic flooding and the excavation of deep holes in the main channel to simulate historic conditions before water resource development.

Note: Alternatives 2 and 3 are based on the idea that aquatic and terrestrial wildlife would adapt to stable year-round conditions.