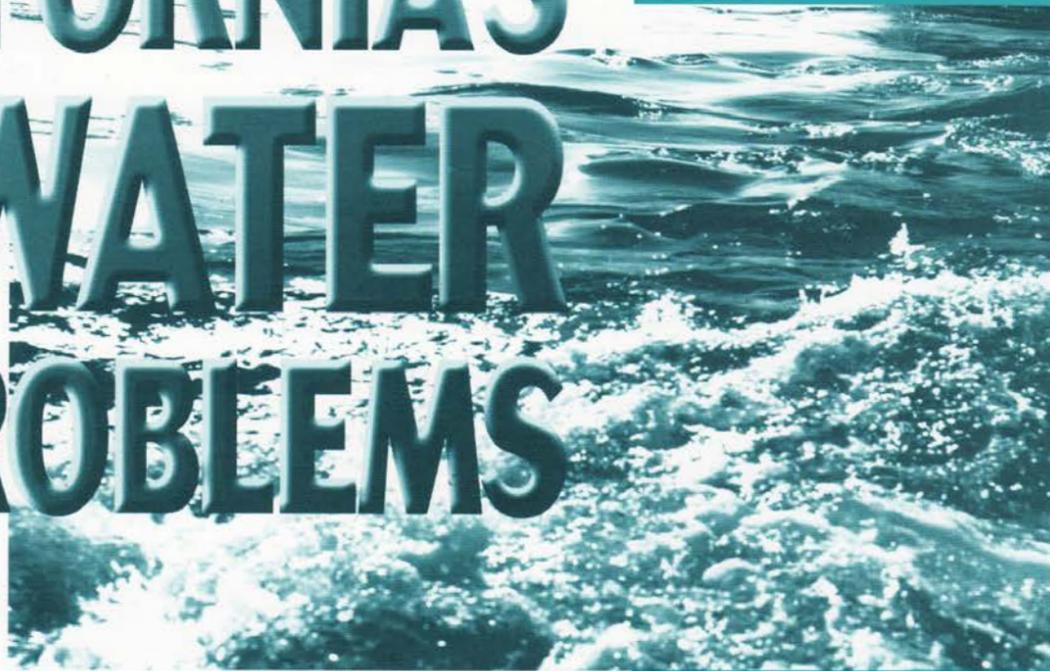


# CALIFORNIA'S WATER PROBLEMS



*4 water education  
role-playing strategies*

## Research Estuaries

- Why are phytoplankton important to the rest of the wildlife in an estuary?
- What kinds of foods come from San Francisco Bay and the Pacific Ocean just outside the Bay?
- Why is the level of flow of fresh water through the Delta important to salmon and Delta smelt populations?

### Interview:

- Wildlife or fisheries biologist.

### Role

SENIOR RESEARCHER,  
THE BAY INSTITUTE OF SAN FRANCISCO

The Bay Institute is an environmental organization focusing on the needs of the Bay-Delta estuary. It sponsors, produces and publicizes scientific, legal, engineering and economic investigations concerning the Bay's problems. The Institute also represents the Pacific Coast Federation of Fishermen's Associations. The senior researcher feels that the health of the Bay-Delta estuary has decreased as California's water resources have been developed. The Institute claims the fish and wildlife industries of the San Francisco Bay area brings in between \$932 million and \$1.5 billion annually and is responsible for 73,000 to 118,000 jobs. It wants spring flows of water to be high to promote phytoplankton production and to flush toxins out of the Bay.

In general, the Bay Institute is pleased with the new Delta Accord standards that contain many positive factors for the environment. Especially important is the increase in fresh water flows during the fish spawning and migration period from February through June. The Institute's scientists believe the critical factor in restoring the health of the estuary is the new salinity standards for Suisun Bay. This place, where salt water carried inland by the rising tide runs into the fresh water flowing to the ocean from the rivers, is an extremely productive biological area. This area is home to many species that form the basis for the food web in the estuary. The increased flows will keep this productive band in the broad, shallow Suisun Bay where plankton can grow in great numbers; the flows also will help the migration of salmon to the ocean.

However, the Institute is worried that high rates of pumping allowed at certain times of the year will pull some outmigrating salmon from the Sacramento River to the pumps, which push water south for agriculture and cities. These pumps have screens and fish collected are trucked back to

the river, but many fish can be destroyed in the screening and transport process. It also wants to see the mitigation program, largely funded by water users, adopted for such purposes as screening additional places where water is diverted from the river to prevent trapping fish.



**The Bay Institute**  
OF SAN FRANCISCO

### Role

MANAGER, CENTRAL VALLEY PROJECT  
WATER ASSOCIATION

The Central Valley Project Water Association (CVPWA) represents all water users who have long-term contracts for water from the federal CVP. Most are associated with agriculture, but some represent municipal and industrial users from north of the Delta, throughout the Central Valley, and in the East Bay area. They believe decisions about how much water flows out into the Bay should take into consideration the economic and social needs of the whole state, not just the area surrounding the Bay and Delta. Rather than flushing toxins out through the Bay with increased water flows, this group believes pollution problems should be dealt with directly at the source.

Many pollution problems come indirectly from chemicals used by agriculture for fertilizing crops or pesticides. Some pollution comes directly from industry or municipal water treatment.

CVPWA is in disagreement with groups holding rights to the river water upstream from the Delta. Upstream water rights holders believe the state and federal water projects should bear the burden of giving up water to meet the environmental requirements of the Bay-Delta Accord, but CVPWA members feel that all water users, large and small, above and below the Delta, should share in this responsibility. Water released for fish or to flush toxins from the Delta and Bay is water that cannot be used for farm irrigation or for urban uses. These two interest groups are trying to compromise by looking at the entire watershed of each river and deciding how much water is in each one. The State Water Resources Control Board will make the ultimate decision about which water users will have to give up water and where the water will come from to meet water quality standards and protect the environment.



## Research Toxics in Water

- Where do toxic pollutants come from?
- What pollutants are present in California river water?
- What are some methods of preventing toxins from getting into our water supply?
- How are toxins removed from drinking water?

### Interview:

- Chemist, local water district.

## Research Groundwater Recharge

- What is recharge?
- What is a spreading basin?
- What is percolation?
- Where is water stored in an aquifer?

### Interview:

- Hydrogeologist from Groundwater Resources Association or Department of Water Resources; or public affairs person, Three Valleys Municipal Water District.

### Role

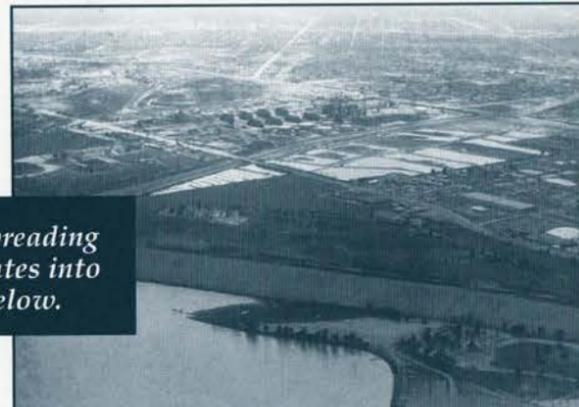
BOARD MEMBER, THREE VALLEYS MUNICIPAL WATER DISTRICT

The water districts in the San Gabriel Valley Groundwater Basin are interested in seeing that the contamination in the aquifer is cleaned up. This agency sells water to several cities in the basin and wants its customers to be satisfied that the quality of their water is good and safe for drinking.

The Three Valleys Municipal Water District has released a draft Environmental Impact Report (EIR) for a proposal to build wells, pipelines and a treatment plant that would remove pollutants from pumped groundwater. This water would then be piped to the Metropolitan Water District of Southern California (MWD) for delivery to consumers. Water exported from the San Gabriel Basin would be replaced by water available during the winter from northern California, water that MWD has rights to. This water could be stored in the cleaned aquifers of the San Gabriel Valley basin by releasing it into spreading grounds, a series of shallow basins where the water can percolate or seep into the ground.

This plan was agreed upon after several meetings in the community to get input from citizens, businesses and local government agencies. The board of the water district feels that this plan will give the district access to a dependable local source of water, provide increased protection against drought and offer good quality drinking water to its customers. The board member thinks this project will protect the quality of water supplies and relieve people's concerns about the valley being a Superfund site. This worry has had a negative impact on economic growth in the area.

The project will be financed by a grant from the U.S. Bureau of Reclamation, private companies who have been identified as potentially liable for groundwater cleanup costs, MWD and the sales of water produced by the project. The board member feels very strongly that the cost to consumers should not go up, but that the polluters should pay.



Water in a spreading basin percolates into the aquifer below.

### Role

CITY COUNCIL MEMBER, CITY OF BALDWIN PARK

This city council member is extremely frustrated at the length of time that has passed since the pollution of the valley's groundwater aquifers was discovered. After 15 years of shutting down wells due to contamination, EPA investigations of local businesses and the designation of the area as a Superfund cleanup site, the resulting downward economic spiral in the area has caused the council member great concern. New businesses don't want to move to an area where drinking water is questionable and local businesses are being asked to clean up after pollution that may not even be theirs. Plumes of contamination can move over the years, resulting in positive tests for contamination on a business owner's property that he may not have caused.

After listening to citizens and business leaders complain about the slow pace of the cleanup project, the city council member has lost faith that the EPA will be able to solve the groundwater problems with its Superfund and the process of identifying the parties responsible for the pollution. The city council is considering taxing all water users in the city so that they won't have to wait for EPA to identify the polluters and make them pay. The council is afraid the businesses accused of polluting will tie up the cases for years in court and prevent the start of the cleanup process. It thinks that by charging everyone who uses water, some funds will be available to begin the cleanup process.

Many business people have come to the city council and told them they feel their treatment by EPA has been unfair. They have been asked to pay for expensive tests of the groundwater under their businesses, and even if the tests are negative, EPA has not given them an "all clear" so they can get loans or sell their businesses. The business owners feel they are being treated like criminals when the pollution may have occurred at a time when the businesses did not know they were doing anything wrong, and when there were no regulations about how to dispose of solvents. This negative climate has been bad for business and growth because new companies don't want to move into an area where they might have to pay for this expensive groundwater cleanup process.

## Research

## The Economy and the Environment

- How can the environmental factors in a community affect the economy of that community?
- What requirements do people have of their communities?
- What kind of services should be provided for citizens and businesses in a community?
- Should everyone pay to maintain good quality groundwater?

### Interview:

- Local city council member.