

Section 2

Water Resource Overview and Current Issues

Providing adequate water resources to meet the diverse range of water demands in California is a challenging endeavor. Much of the state's supply originates in northern California, while the majority of use occurs in southern California. The competition for water is increased by new and expanding demands on existing resources. Periods of drought additionally magnify the challenge of meeting water needs.

California is the nation's most populous state, increasing in population by 11 percent over the past ten years to more than 33 million residents. The population is projected by the Department of Finance to increase an additional 30 percent between 2000 and 2020. Large urban areas continue to attract the most new residents, however, rural counties are experiencing a significant percentage growth in population. During the past ten years, Butte County's population increased over 11 percent to an estimated 204,000 residents (California Department of Finance, 2001). The state's continuing population growth will require additional water to meet demand, with much of the new demand for water originating in Southern California. Water planning will focus on conservation, reuse and identification of additional supplies.

In addition to the demands from an increasing population, the competition for water continued to expand beginning in the early 1990's as changes in water management resulted in increased environmental water use. Actions such as the Bay-Delta Accord, Central Valley Project Improvement Act, and the implementation of CALFED result in increased dedication of water for environmental purposes. Changes in legislation and program management associated with environmental water needs reduce water supplies historically available to agricultural and urban water users. As a result, additional efforts to improve water supply reliability will focus on existing water management practices and implementation of new water management programs.

Water management issues are magnified during periods of drought. New or accelerated practices may be implemented in response to drought, often times with little time for planning. The Governor's Executive Order W-3-91 in 1991 directed DWR to implement a water purchase and allocation program, known as the drought water bank. In Butte County, additional water was made available by land fallowing, pumping groundwater in lieu of using surface water, and purchase of water from reservoir storage. Impacts to third parties and the environment were a subject of concern in Butte County during the operation of the 1994 water bank.

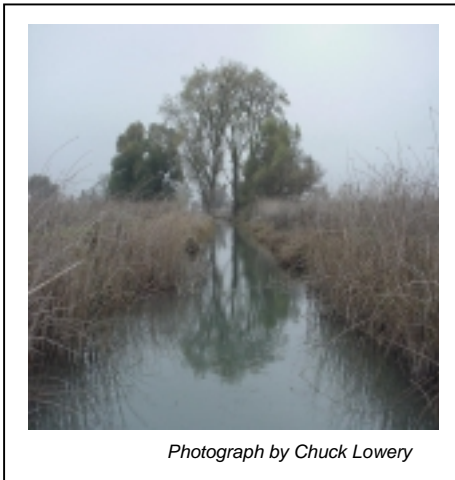
Historic water resources development in Butte County focused on local needs associated with agricultural irrigation and urban development. As local and statewide competition for the resource has increased over time, state and federal actions now play a much larger role in water resource management decisions. Many of these actions are discussed in the following sections. The water inventory was triggered by

the events and actions described within this section, wherein local policy-makers discovered the need to understand the technical information as well as the political climate. When the information discussed in this section is considered in conjunction with the water inventory results discussed in Section 5, water resource stakeholders are presented with a summary of both current issues and an inventory of how the county's water resources are currently allocated. This information provides valuable tools to assist in planning for future water resource management.

2.1 Development of Water Resources in Butte County

As with many California counties abutting the Sierra Nevada, the lure of gold resulted in the first organized use of the county's water resources. With the population growth that followed, other demands for waters within the county quickly developed. Today, Butte County's water resources are utilized for a wide range of activities, including mining, agriculture, urban, hydroelectric, and environmental demands. Today's water managers meet many varying water resource needs by optimizing use of the resource. As an example, the same water can be used to

generate power, then be applied to crops, and then assist in meeting environmental water needs.



Photograph by Chuck Lowery

Mining companies in Butte County began constructing ditches for hydraulic mining as early as 1860. Examples include the Powers Ditch, which used water from Little Butte Creek, and the Cherokee Ditch, which used water from Big Butte Creek and the West Branch of the Feather River.

Prior to 1870, only a few farmers experimented with irrigating their lands with water from wells or streams—as noted by the statistic that only 12,000 acres were irrigated within the Sacramento Valley in 1869. Many of the pioneer

farmers that made their way to the Sacramento Valley were from the Midwest and practiced “dry farming.” However, Butte County's farmers soon began tapping the Feather River as the first source of irrigation water for their farmland.

Rice, as a commodity crop, made its first appearance in the Sacramento Valley in the early 1900s. The United States Department of Agriculture was interested in the potential for rice growth in Butte County and performed several experiments with different rice strains to discover what could grow in the area. The results were excellent and triggered the expansion of the rice industry in Butte County. The rapid growth in the agriculture industry resulted in a corresponding growth in irrigation systems.

As the agricultural industry expanded in Butte County, local water districts began to look for more secure water supplies. Several districts constructed upstream reservoirs

to capture heavy winter and spring flows for use during the irrigation season. Other areas of the county, without access to surface water supplies, began to become increasingly dependent on groundwater as a reliable source of water. Section 4 contains additional historical details for regions within the county.

At the state level, California voters approved \$1.75 billion for construction of the State Water Project in 1960, and the Department of Water Resources (DWR) started construction of Oroville Dam in 1961. Oroville Dam created Lake Oroville, a 3.5 MAF storage reservoir. Oroville Dam is on the Feather River, which has a drainage area above Oroville that encompasses approximately 3,600 square miles. Above Oroville, the mean seasonal runoff of the stream is approximately 4.5 million acre-feet (MAF), varying between 1.2 and 9 MAF. The dam was completed in 1968 and at 770 feet is the tallest earthfill dam in the United States.

Land and water use within Butte County was impacted by the construction of Oroville Dam. Existing facilities for water suppliers within the county were flooded, and the upstream migration of fish was halted at Oroville. As a part of the construction of the dam, Thermalito Forebay and Afterbay were also built to regulate the temperature of the water before it is released into the Feather River. If the water is too cold, it has the potential to damage rice production.

To mitigate the impacts of the dam on fisheries, DWR built a fish hatchery, the Feather River Salmon and Steelhead Hatchery, at the base of the dam, representing an early effort to mitigate the environmental effects associated with development of water resources within the county. As the salmon or steelhead swim upstream to spawn, they are diverted from the river into the hatchery with a diversion dam. The hatchery artificially spawns the fish, and then rears the young hatchlings until it is safe to release them into the wild.

Although the majority of high quality cropland is currently in production and irrigated agricultural lands are generally fully developed, some additional agricultural lands are being developed in the northern part of the county and are being reviewed in certain areas in the southern part of the county. Regardless, changes in crop types and irrigation practices will continue in response to evolving markets, and may increase water demands for agriculture within the county. Additional demands for the county's water resources will likely be associated with a growing population and environmental water demands in addition to agricultural build-out in these other areas.

2.2 Recent Events in California Water

In addition to the development of agricultural land and the growth in population, many actions have been pursued on a statewide and local level resulting in increased competition for available water resources. This section focuses on identifying many of those actions that potentially impact water management in Butte County. Included in

the discussion is state and federal legislative actions, state and federal programmatic actions, programs associated with the San Francisco Bay and Sacramento-San Joaquin Delta, and interstate water issues. The discussion focuses on actions that have occurred since the 1976/77 drought because they are the most relevant to current water resource practices.

2.2.1 Legislative

Selected state and federal legislation impacting water resource management is summarized below. Many of these legislative actions provide state or federal funding for water resources actions to encourage local areas to complete projects that they previously found cost prohibitive. By offering financing to help with water resource issues, the government is raising awareness of these issues while helping to work towards solutions.

State Statutes

Local Water Supply Reliability

Three bills were passed to emphasize local long-term water planning to help ensure reliability during all types of water years. Two of the bills (Statutes of 1995, Chapters 330 and 854) require local water agencies to assess the reliability of their water supplies. The other bill (Statutes of 1995, Chapter 881) requires consultation with local water agencies to determine if an adequate water supply is available to accommodate pending land use planning decisions.

Proposition 204

Proposition 204 (the Safe, Clean, Reliable Water Supply Act) was passed in 1996. It authorized \$995 million for water and environmental restoration. Of the \$600 million approved as the state share of costs associated with projects to benefit the Bay-Delta and its watersheds, \$390 million is allocated to implement CALFED's ecosystem restoration program of the Bay-Delta. A portion (\$117 million) of Proposition 204's total was designated for water supply reliability projects.

Proposition 218

In 1996, the California voters passed Proposition 218, which requires a local vote to increase any fees that are "incident of property ownership." This category of fees includes several water-related fees, such as meter charges, acreage-based irrigation charges, or standby charges.

Proposition 13

The 2000 Water Bond (the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act) authorized \$1.97 billion for water projects. The following types of work received allocations:

- | | |
|---|---------------|
| ■ Supply, reliability, and infrastructure | \$630 million |
| ■ Watershed protection | \$468 million |

- Clean water and water recycling \$355 million
- Flood protection \$292 million
- Water conservation \$155 million
- The Safe Drinking Water Program \$70 million

The State Water Resources Control Board (SWRCB) is allocated \$695 million under Proposition 13. SWRCB projects under the 2000 Water Bond Program include:

- Southern California Integrated Watershed Program: \$235 million for a variety of water quality activities, including basin water banking; contaminant and salt removal processes; water conservation; stormwater management; flood control; and wastewater discharge abatement
- Watershed Program: \$90 million for grants to local watershed organizations or public agencies to develop and implement local watershed management plans
- Nonpoint Source Pollution Control: \$100 million to public agencies and nonprofit organizations to fund nonpoint source pollution control projects
- Clean Water Program: \$100 million for grants and low-cost loans for capital improvement and upgrades to wastewater treatment facilities throughout the state
- Other programs totaling approximately \$170 million for water recycling, coastal nonpoint source control, joint watershed management and seawater intrusion control.

The Department of Water Resources (DWR) is allocated \$1.16 billion under Proposition 13. DWR projects under the Program include:

- Bay-Delta Multipurpose Water Management Program: \$250 million to fund projects identified in the CALFED environmental document (EIS/EIR) as Stage 1 actions
- Groundwater Storage Program: \$200 million for grants for feasibility studies, project design, and construction of facilities for conjunctive use projects
- Interim Water Reliable Supply and Water Quality Infrastructure and Management Program: \$180 million for grants to local agencies in the Delta export service area for programs and projects designed to increase water supplies, enhance water supply reliability or improve water quality
- Watershed Protection Program: \$103 million to fund water and watershed educational programs and to fund the River Parkway Program for the acquisition

and restoration of riparian habitat and riverine aquatic habitat, and for development of trails along rivers

- Flood Protection Programs: \$272 million to fund a variety of flood protection, mitigation, and cleanup projects
- Infrastructure Rehabilitation Program: \$60 million for grants to develop infrastructure rehabilitation projects in economically disadvantaged areas and for financing feasibility study grants for projects potentially eligible for the grant program
- Urban and Agricultural Water Conservation Programs: \$65 million to fund loans for water conservation projects and for financing feasibility study grants for projects potentially eligible for the loan programs
- Groundwater Recharge Facilities Program: \$30 million to fund loans for the construction of groundwater recharge facilities and for financing feasibility study grants for projects potentially eligible for the loan program.

The Department of Fish and Game has been allocated \$25 million under Proposition 13 for projects to protect, restore, acquire, and enhance salmon habitat.

The Department of Health Services has been allocated \$70 million under Proposition 13. \$68 million of this will be used as the state match to access approximately \$340 million in federal capitalization grant funds to be used for public water system infrastructure improvements. \$2 million will be used for providing technical assistance to public water systems including disadvantaged communities.

The Sacramento Area Flood Control Agency has been allocated \$20 million under Proposition 13 as a one-time appropriation to pay the state's share of the nonfederal costs of the flood management project authorized by the federal government to improve flood protection in the Sacramento region.

Federal Statutes

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), passed in 1974, is the initial federal legislation passed to ensure the quality of drinking water. In 1996, the SDWA was amended with changes emphasizing sound science and risk-based standard setting, small water supply system flexibility and technical assistance, community-empowered source water assessment and protection, public right-to-know, and water system infrastructure assistance. Required by the amendments, California became the first state to receive unconditional approval of its source water assessment program. Implemented by the Department of Health Services, California's *Drinking Water Source Assessment and Protection Program* will evaluate contamination threats to over

16,000 public supply wells. The Department of Health Services is responsible for the completion of all assessments by May 2003.

Clean Water Act Reauthorization

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set up the basic structure for regulating discharges of pollutants to waters of the United States. Both point and nonpoint source discharges to surface water are regulated by the CWA. Additionally, wetland protection is addressed under the CWA.

Endangered Species Act Reauthorization

Passed in 1973, the Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found.

Reclamation, Recycling, and Water Conservation Act

The Reclamation, Recycling, and Water Conservation Act was passed in 1996. It authorized 25 percent federal cost-sharing for higher level wastewater treatment plants. Higher level wastewater treatment plants treat the water to a higher standard so it can be used in reclamation or recycling projects.

2.2.2 State and Federal Programmatic Actions

In addition to funding certain types of work, the state and federal governments have been initiating programs to help with water and resource issues. These programs have significant impacts on water and resource management.



Photograph from DWR

SWP Monterey Agreement Contract Amendments

The SWP Monterey Agreement is a contract between DWR and various SWP contractors. The agreement allows for flexible operation of SWP facilities, permanent transfers of contractual entitlement between contractors, and transfer of land to certain contractors in exchange for entitlements from the SWP. The agreement serves as an amendment to existing SWP contracts. The amendment was signed in December 1994. Some of the more important provisions include:

- ***Drought Supplies.*** The agreement states that available supplies during droughts are distributed in proportion to original contract amounts. The original contracts required an initial reduction to agricultural users.
- ***Permanent Transfers.*** Agricultural contractors can permanently sell portions of their entitlement back to the SWP to reduce SWP's total commitment or to urban agencies.

- *Wheeling.* Wheeling is a term used to describe the transfer of water through a facility that does not belong to the buyer or seller. The agreement established a method for SWP contractors to transfer non-SWP water through project facilities.
- *Turnbacks.* Before the agreement, no credit was given to contractors who did not use their full SWP allotment, and the water could not be sold to anyone else. The “Turnback Pool” is a method developed by the DWR, which allows for the sale of unused supplies back to other SWP contractors or the SWP itself. DWR established this pool to encourage contractors to identify any unused water early in the season, when placing their water year supply order in October of the year proceeding the water year.

The Planning and Conservation League, a statewide environmental group, filed suit challenging the adequacy of the Environmental Impact Report (EIR) prepared for the Central Coast Water Authority, which serves as the lead agency for the Monterey Agreement. An appellate court decision challenged the adequacy of the EIR, and the California State Supreme Court has refused to hear the case, thereby upholding the appellate court decision forcing the EIR to be re-done.

The county currently holds entitlement to 27,500 acre-feet of SWP water captured in Lake Oroville, representing mitigation granted the county for housing the dam. The size of the entitlement was based on forecasted future demands, but was too expensive (compared to other sources) for the county to use immediately. After the dam was built, the county participated in an Entitlement Reduction Program so that they would not need to pay for the entire entitlement when they could not utilize the water. By participating in the Monterey Agreement, the county has been able to reduce its required purchase through the year 2000 to 1,200 acre-feet without losing its right to the full entitlement at a later date. The county has since negotiated an allocation of 3,500 acre-feet until the issues surrounding the Monterey Agreement and amendments are settled.

CVPIA Implementation

The Central Valley Project Improvement Act is a federal law that was passed on October 30, 1992. Resulting changes place fish and wildlife mitigation and restoration on par with water supply needs of agricultural and urban users.

The major areas of change to the CVP cited by the U.S. Bureau of Reclamation are as follows:

- 800,000 acre-feet of water dedicated to fish and wildlife annually;
- Tiered water pricing applicable to new and renewed contracts;
- Water transfers provisions, including sale of water to users outside the CVP service area;

- Special efforts to restore anadromous fish population by 2002;
- Restoration fund financed by water and power users for habitat restoration and enhancement and water and land acquisitions;
- No new water contracts until fish and wildlife goals are achieved;
- No contract renewals until completion of a Programmatic Environmental Impact Statement;
- Terms of contracts reduced from 40 to 25 years with renewal at the discretion of the Secretary of the Interior;
- Installation of the temperature control device at Shasta Dam;
- Implementation of fish passage measures at Red Bluff Diversion Dam;
- Increased flow in the Trinity River, which decreases water availability to power and water users;
- Curtailment of SWP and CVP pumps in the Delta during the April-May period because of striped bass;
- Firm water supplies for Central Valley wildlife refuges; and
- Development of a plan to increase CVP yield.
(<http://www.mp.usbr.gov/regional/cvpiamain/index.html>)

FERC Relicensing



Photograph from DWR

The Federal Energy Regulatory Commission (FERC) licenses all non-federal hydroelectric plants. The Federal Power Commission (FPC), FERC's predecessor, licensed the Oroville facilities on February 11, 1957, for a period of 50 years. The major features of the Oroville facilities include Oroville Dam and Reservoir, the Edward Hyatt Powerplant, Thermalito Forebay and Afterbay, and associated recreational, fish, wildlife, and enhancement facilities. The Oroville facilities are scheduled to be relicensed in 2007, and DWR is planning to file a Notice of Intent to reapply by 2002 and file the application by 2005.

A FERC license establishes operational parameters for the facility, including conditions such as instream flow requirements and fishery protection measures. An important element of the application is a full environmental analysis of the impacts of the facility. When FPC first licensed hydroelectric facilities, environmental issues had not achieved the same level of awareness as they currently have. It is possible that the

relicensing could alter operations, depending on FERC's interpretation of the environmental analysis.

FERC recently approved the Alternative Application Process (AAP) submitted by the DWR. Through the AAP, the DWR has started a public involvement process to accompany the relicensing application in 2005. The DWR is taking this approach in hopes of eliminating or reducing conflicts in the application itself.

Mono Lake Decision

In 1940, Los Angeles was allowed to divert water from four of the seven tributaries feeding Mono Lake. The diversions caused a reduction in the lake's water level by 40 feet (over a period of 40 years), jeopardizing the unique bird and shrimp population. Efforts to lessen diversions began in 1979, culminating in a victory for area-of-origin and environmental rights in a court case against the Los Angeles Department of Water and Power in 1994. Since then, Los Angeles has been restricted to 16 TAF per year of water diversions until the lake rises 20 feet from 1994 levels, with the hopes of restoring the lake and its tributary creeks. When the lake reaches the designated level, Los Angeles can increase diversions to approximately 31 TAF per year, which is about one third of historic diversion levels. Today, more importance is placed on environmental issues and area-of-origin rights.

The case against Los Angeles was based on the public trust doctrine, which provides the state with authority to protect all navigable waters of the state because they are a public resource. The case charged that the state must protect Mono Lake from environmental damage caused by Los Angeles' diversions. The California Supreme Court decided that protecting wildlife habitat is a part of the state's obligation under the public trust doctrine to protect commerce, navigation, and fishing.

The hydrologic conditions and environmental setting of Mono Lake are much different than those in Northern California. However, some the basic concerns regarding water exports from the area-of-origin and the protection of public trust resources are similar.

2.2.3 San Francisco Bay and Sacramento-San Joaquin Delta

The unique position of the San Francisco Bay and Sacramento-San Joaquin Delta has been recognized in recent years. Many people within the State of California, including the majority of SWP and CVP contractors, receive water from the Delta. The Delta is also a productive estuary system that provides environmental benefits to fish and wildlife. In recent years, several actions have been taken to try to protect all beneficial uses of the Bay-Delta region.

CALFED

CALFED is a cooperative effort of 15 state and federal agencies to address the problems in the Bay-Delta. Efforts started in 1994 with the signing of the Framework

Agreement, which committed these agencies to develop water quality standards, coordinate SWP and CVP operation, and develop long-term solutions to the Bay-Delta's problems. The program objectives are to:

- Restore the ecological health of a fragile and depleted Bay-Delta estuary;
- Improve the water supply reliability for farms and growing cities that draw water from the Delta and its tributaries, including 7 million acres of the world's most productive farmland;
- Protect the drinking water quality of the 22 million Californians who rely on the Delta for their supplies; and
- Protect the Delta levees that ensure its integrity as a conveyance and ecosystem.

In June 2000, CALFED published "California's Water Future: A Framework for Action" to address its program objectives. This document described actions for ecosystem restoration, watersheds, water supply reliability, storage, conveyance, environmental water account and ESA commitments, water use efficiency and conservation, water quality, water transfers, levees, science, governance, and a regional approach to ecosystem/water management. The Framework document described the larger vision for where CALFED needs to move in the future, but did not give details about each recommendation. CALFED also published a Final Programmatic EIS/EIR in July 2000, with a Final Record of Decision (ROD) following in August.

CALFED is also developing a Water Management Strategy to improve water supply reliability that recognizes the variability of water supply and demand in California. The objective of the Water Management Strategy is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.

To evaluate the appropriate role of storage in the Water Management Strategy, CALFED initiated the Integrated Storage Investigation (ISI). Through ISI, existing storage investigations by individual CALFED agencies and CALFED-initiated storage evaluations are being coordinated. The ISI is evaluating the relationship between various types of storage and the utility of storage as part of the Water Management Strategy. The ISI also is analyzing the proper mix of groundwater and surface storage facilities, evaluating reoperation of certain hydroelectric power reservoirs, and providing a comprehensive assessment of prioritization of capital fish migration barriers for modification or removal.

One element of ISI is the Surface and Groundwater Conjunctive Management program. The goal of this program is to assist local agencies with improving regional water supply reliability by increasing the coordinated use of surface water and

groundwater. Working cooperatively, local agencies, basin stakeholders, and DWR on behalf of CALFED, are conducting a technical, economic, social, and environmental feasibility evaluation of possible conjunctive management projects within each basin. Full-scale project development and implementation will proceed in basins that demonstrate local approval of feasible alternatives, subject to funding availability. The program has the following principles:

- Local planning process
- Local control of proposed projects
- Voluntary implementation of projects
- Priority for in-basin water needs
- Compensation for out-of-basin transfers
- Basin-wide planning and monitoring

Butte County is receiving financial and technical assistance as part of the ISI Surface and Groundwater Conjunctive Management program.

To partially address water supply reliability, the Governor's Advisory Drought Planning Panel was established under CALFED. The panel members represent local government, water agencies, environmental interests, and other stakeholders. The panel was tasked with development of a *Water Shortage Contingency Plan* focusing on water banking and transfers, groundwater programs, and local partnerships. The document was completed on December 29, 2000.

Water Quality Control Plan

In 1995, the State Water Resources Control Board (SWRCB) published a Water Quality Control Plan for the Bay-Delta, also known as D-1485. This decision includes flow objectives that must be met to ensure water quality in the Bay-Delta. Because there is very little extra water in the Bay-Delta system, there are significant challenges to meeting the flow objectives. Water users throughout the state have expressed concern regarding the potential of water being diverted to meet Bay-Delta water-quality standards to the detriment of their historical use.

The SWRCB published D-1641 in December 1999 to establish policies regarding the responsibilities of water rights holders to meet Bay-Delta standards. D-1641 covered all areas except for the Sacramento Valley. Hearings to receive evidence regarding the course of action in the Sacramento Valley (also known as the SWRCB Phase 8 Hearings) had been scheduled to start on August 8, 2000. However, the SWRCB encourages local parties to develop negotiated settlements independently and bring these settlements to the board. The Phase 8 Hearings were postponed to allow parties

to negotiate independently. Public meetings to be held in early 2001 are intended to establish a timeframe for continuance of the Phase 8 Hearings.

2.2.4 Interstate Issues

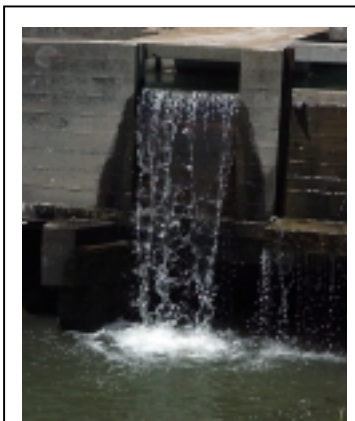
Most interstate issues do not affect Butte County's management of water resources. However, action taken on the Colorado River has the potential to affect the county by increasing water demand on the State Water Project and therefore altering Oroville operations or jeopardizing the county's SWP supply.

Colorado River

The Colorado River flows through seven states in the southwest before entering Mexico and ending at the Gulf of California. The Colorado is both a significant source of water and controversy. The Colorado is divided into an upper basin (New Mexico, Utah, Wyoming and Colorado) and a lower basin (California, Nevada, and Arizona), and both basins have an allocation of 7.5 MAF per year. Conflicts on water allocations within the lower basin have been a constant source of struggle, and have resulted in interstate compacts, a U.S. Supreme Court decision, a treaty with Mexico, and state and federal legislation.

Of the 7.5 MAF annually allocated to the lower states, California has rights to 4.4 MAF of water, plus half the surplus water that is still in the river after traveling through the other states. For many years, California has annually taken up to 800 TAF of water above its 4.4 MAF allocation, which was possible because several upstream states were not using their full allocation. However, population increases in Arizona and Nevada will result in loss of surplus water in California.

While California recognizes the need to reduce use of Colorado River water to 4.4 MAF annually, a grace period of 15 years to gradually lessen dependence has been proposed. The water is shared by several Southern California water districts, including Imperial Irrigation District, Palo Verde Irrigation District, Metropolitan Water District of Southern California, Los Angeles Department of Water and Power, San Diego County Water Authority, and Coachella Valley Water District. These districts will need to find ways to decrease demand through conservation and recycling or find sources of additional water. It is possible that the reduced dependence on Colorado River water will result in a greater dependence on SWP water that is conveyed from Lake Oroville and other sources through the Delta to southern California.



Photograph by Chuck Lowery

2.3 Butte County Water Management Organizations and Plans

Water management within the county involves numerous stakeholders with various interests. As part of the water

inventory process, the objectives and issues of concern of many of the stakeholder groups within the county are described in this section. Additionally, many of the water management tools currently in use are described, including various water management plans and ordinances intended to provide guidance in water resource management.

2.3.1 Butte County Water Management Organizations

Local water resource stakeholders range from Butte County, to water purveyors, to water user groups and watershed conservation organizations. The mission and issues of many of the groups are described in the following sections.

County Agencies

Butte County Department of Water and Resource Conservation

In recognition of the growing number of issues associated with water, the Board of Supervisors voted to elevate the Water Division to a stand-alone department of the county. Through a unanimous vote of the Board of Supervisors, Butte County's Department of Water and Resource Conservation was formed on July 1, 1999. The mission of the DW&RC is to manage and conserve water and other resources for the citizens of Butte County. DW&RC is currently involved in a wide range of activities, including:

- Providing support to the Butte County Water Commission in the implementation of Chapter 33 of the Butte County Code, which is the codified version of the Groundwater Protection Ordinance passed by majority vote at the November 1996 election;
- Developing and expanding the well-monitoring grid for evaluating groundwater levels to avoid third-party impacts;
- Managing Butte County's State Water Project entitlement of 27,500 acre-feet and the contract with the California Department of Water Resources (including the county's water supply contracts with Del Oro Water Company and California Water Service Company);
- Creating an inventory and analysis of Butte County's water resources, including supplies and demands for urban, agricultural, and environmental water now and into the future;
- Providing information for the development of a Butte County Resource Conservation District as proposed by the Board of Supervisors;
- Participating in watershed planning activities with local watershed groups;
- Participating in the DWR's Integrated Storage Investigation (ISI) stakeholder process;

- Maintaining the Butte Basin Water Users Association groundwater flow model under a lease agreement with the Association.

The Department is currently staffed by three employees; future plans are to add a watershed coordinator position through grant funding to coordinate the numerous watershed management efforts underway in the county.

Butte County Department of Public Works

Flood control issues have recently been assigned to the Butte County Department of Public Works, Drainage Section. The Office of Emergency Services provides flood control support to the Public Works Department. The general goal of the flood control program is to obtain the optimum use of water resources of the county while protecting life and property. In addition to the inherent values of flood protection and water conservation, the Public Works Department works to correlate water control projects with urban development plans and protection of prime agricultural lands. The department is currently focusing on flood issues associated with Rock Creek/Keefer Slough in north Chico, the Butte Basin Overflow Area, and the Feather River.

Butte County Water Purveyors and Users

Butte County's water purveyors and users are an integral part of water resource management within the county. The water purveyors of the county provide water for urban, agricultural, and environmental water use. Water purveyors in Butte County are discussed in detail in Section 4. Recognizing that water resources boundaries are not aligned with property and political boundaries, many of the county's stakeholders have formed water management associations to better manage the resource. A description of the largest organization, the Butte Basin Water Users Association, follows.

Butte Basin Water Users Association

Butte Basin Water Users Association (BBWUA) was formed in 1992, in response to the following issues:

- The 1987-92 drought;
- The failure to build additional state and federal water storage facilities to accommodate the state's rapid population growth;
- The publicly expressed opinion that Butte Basin groundwater basin was an underutilized resource; and
- The need to manage Butte Basin's surface water and groundwater resources to ensure that water transfers in or outside the basin do not adversely impact other water users.

The main purpose of the BBWUA is to keep its membership informed of current and potential future changes in local, state, and federal policies that could affect water supplies.

BBWUA was formed by a Memorandum of Understanding between various water suppliers and users in the Butte-Sutter area, which provides an open forum for discussion of mutual concerns regarding water-related issues. Current members of the BBWUA include:

- Biggs-West Gridley Water District
- Richvale Irrigation District
- County of Butte
- California Water Service Company
- Western Canal Water District
- Butte-Sutter Basin Area Groundwater Users Corporation
- City of Biggs
- City of Gridley
- Durham Mutual Water Company

BBWUA contracted with a consulting firm, Hydrologic Consultants, Inc. (HCI), to develop a groundwater model for the service area of the membership. The intended use of the model is to assess the basin groundwater resources, quantify the resources of the basin, and to assess the hydrologic impacts on the groundwater system for various water management alternatives (Hydrologic Consultants, Inc., 1996).

Watershed and Other Environmental Groups

Recent policy and programs encourage local organizations to participate in the identification of concerns and development of solutions for water resource issues in the local community. Following is a description of a cross section of local organizations currently working to manage and enhance the use of water resources within the county. Although these groups have no regulatory power, the Board of Supervisors has chosen to work with them in hopes of generating ideas about alternative ways to manage the resources. The land use and decision-making authority, however, still lies with the Board of Supervisors under the police powers bestowed upon them in the Constitution.

The Big Chico Creek Watershed Alliance

The mission of the Big Chico Creek Watershed Alliance is to “seek to establish a local community-stakeholder partnership effort to develop a unified watershed management process that will promote the protection, enhancement, and stewardship of Big Chico Creek and its tributaries and to provide educational and informational benefits to all interested parties.” (Big Chico Creek Watershed Alliance, 2000.)

The Alliance published a watershed management strategy for the watershed in November 2000. The strategy includes the alliance goals, as well as management strategies and recommended actions to meet the goals.

The Butte Creek Watershed Conservancy

The Butte Creek Watershed Conservancy was formed in September 1995 to address headwater issues. It covers the area from the source of Butte Creek, in Lassen National Forest, to Hwy 162. The Lower Butte Creek Project covers the area downstream to the confluence with the Sacramento River on the valley floor. The impetus for formation was the competition for use of the many resources in the watershed and the stakeholder concern that all these benefits should be maintained for enjoyment and use in the future.

The mission statement includes these goals: “The Butte Creek Watershed Conservancy was established to protect, restore, and enhance the cultural, economic, and ecological heritage of the Butte Creek watershed through cooperative landowner action.” (Butte Creek Watershed, 2000)

The Conservancy published its *Watershed Management Strategy*, which was available for public comment from September 13 to November 15, 2000. This document is the result of a cooperative approach between various stakeholders to minimize resource conflicts and develop a future management strategy for the watershed.

Little Chico Creek Watershed Group

The Little Chico Creek Watershed Group was formed to look at the water quality issues associated with agricultural and urban use of the creek. This group is working with the county to develop Phase I of their Existing Conditions Report, which includes sections on a stream survey, a fish survey, a land use review and a management plan review. The funding for this project was secured under Proposition 204, Delta Tributaries. The Little Chico Creek Group is also looking to secure funding under Proposition 13 to perform additional water quality monitoring.

Butte Environmental Council

Founded in 1975, the Butte Environmental Council (BEC) is a non-profit corporation devoted to environmental education and information referral services and advocacy. The organization’s current water resource focus centers on responsible land use and development coupled with preservation of the environment.

BEC is currently involved with a number of water resource issues within Butte County. Current water quality issues include pesticides in surface waters and groundwater contamination in the Chico area associated with nitrates, solvents, and hydrocarbons. At the local level, BEC is promoting watershed management techniques and assurance of water supply for the local environment and rural domestic water users. On the state level, BEC actively promotes water conservation by all water users within the state (L. Barris, 2000).

Cherokee Watershed Group

The Cherokee Watershed Group began in 1995 with a few farmers in the lower section of the Cherokee Watershed following the 1994 Drought Water Bank. The group formed in order to have a voice in local water issues and to gather and disseminate information more effectively. Cherokee Watershed Group is mainly concerned with water quality, water quantity/supply, protection from groundwater overdraft, and the environmental impacts of mining. The Cherokee Watershed Group feels that the main water resource issue facing Butte County today is CALFED. They are concerned that Butte County and Northern California will bear the burden of Bay/Delta solutions, with potential impacts to aquifers, water supply, and the existing groundwater extraction infrastructure. (G. Cole, 2000)

Durham Library Group (California Communities for Water Protection)

The Durham Library Group (also known as California Communities for Water Protection) is composed of citizens around the areas of Durham, Dayton, and Chico. The Group started meeting in 1997 to address what they considered to be two important issues: 1) an under-consideration of citizens and farmers in water issues and 2) their vision of an unbalanced representation of the public as a whole on the Butte County Water Commission. Durham Library Group concerns itself mainly with issues relating to groundwater and domestic wells. The Group feels that the main water resource issues facing Butte County are the preservation (and discovery) of groundwater recharge areas, the protection of groundwater as a resource for farmers, towns, etc, water quality, and the protection of watersheds. The Group is also concerned that factual and accurate data is used in decision-making, which affects the fate of Butte County water use. (R. Cartwright, 2001)

Sacramento River Conservation Area

The Sacramento River Conservation Area Advisory Council was formed as a part of Senate Bill 1086, which spurred the development of a management plan for the Sacramento River and its tributaries to protect, restore, and enhance fisheries and riparian habitat. The council includes local landowners, state, federal, and local government officials, environmental interests, water suppliers, and representatives of commercial and sports fishery organizations.

In 1989, the council produced the *Upper Sacramento River Fisheries and Riparian Habitat Management Plan*, which included specific actions to improve Sacramento River fisheries and a conceptual plan for riparian habitat. To further develop the riparian

plan, the council published the *Sacramento River Conservation Area Handbook* in 1998; this handbook contained action-oriented plans for riparian habitat in the conservation area (approximately 210,000 acres).

Under the Handbook, a Non-profit Organization (NPO) was developed comprised of 1 landowner and 1 public interest representative from each county within the conservation area, as well as 1 public interest representative appointed by the Secretary of Resources. There are seven counties within the conservation area, and Butte County's representatives are Jane Dolan and Shirley Lewis. There is also a Technical Advisory Committee (TAC) made up of agency representatives appointed by the NPO. (California Department of Water Resources, 1998)

Sacramento River Preservation Trust

The Sacramento River Preservation Trust (SRPT) is a non-profit organization, incorporated in 1984. The organization was formed in response to the Bank Protection project with the purpose of promoting an ecological approach to river preservation. SRPT has since then been working to protect the natural values of the Sacramento River ecosystem. SRPT is a dues-paying organization with 750 members and an elected board. The organization's main water resource areas of interest include wildlife issues (both aquatic and terrestrial), groundwater issues, and water quantity/supply. Within Butte County SRPT has worked with the Butte Creek Watershed project, but the focus of the organization is more regional in scope. SRPT feels that the understanding and proper application of the relationship between surface water and groundwater is the main water resource issue facing Butte County. (J. Merz, 2001)

Valley Water Protection Association

The Valley Water Protection Association (VWPA) began in 1994 after the Drought Water Bank. At that time many were either dependant upon groundwater or saw it as critical and felt that there was no advocate in the area for groundwater. The organization formed in order to be that voice. The VWPA is concerned mainly with water supply and the environmental, political, geographical, and economic impacts of water decisions. Since their organization the VWPA has written many letters of support/concern for various water-related projects like CALFED and other Environmental Impact Reports involving local development. They also played a critical role in petitioning for Measure F, the alternative Groundwater Protection proposition on the ballot in 1996. (L. Cole, 2000)



Photograph from DWR

2.3.2 Water Management Plans

Within Butte County, water ordinances have been approved by county voters, and management plans under state legislation have been prepared to support planning and use of water resources. The following sections describe current ordinances and management

plans within the county.

Local Ordinances

Butte County Groundwater Protection Ordinance (Chapter 33)

In November 1996, Butte County voters approved a groundwater conservation ordinance intended to provide groundwater conservation through local regulation of water transfers outside of the county with a groundwater component. A permit is now required for both exportation of groundwater outside the county and groundwater pumping as a substitute for surface water exported outside the county. A permit for water transfer outside of the county would be denied if the proposed activity would:

- Cause or increase an overdraft of the groundwater underlying the county;
- Bring about or increase saltwater intrusion;
- Exceed the safe yield of the aquifer or sub-basins underlying the county;
- Result in uncompensated injury to overlying groundwater users or other users; or
- Cause subsidence.

Conservation Element of Butte County General Plan

Butte County's General Plan includes a Conservation Element that emphasizes the importance of Butte County's natural resources, and outlines methods to protect these resources. The Conservation Element includes information on the following resources:

- Water, including water conservation, flood control, and water pollution;
- Air pollution;
- Soils, including conservation and erosion;
- Urban encroachment on soils, fisheries, and wildlife;
- Wildlife; and
- Fisheries.

Butte County Well-Spacing Ordinance (Chapter 23B)

This legislation provides minimum procedures for the proper construction of water wells and for the proper destruction of abandoned wells within the county in order to ensure that water obtained from wells within the county of Butte will be suitable for use and will not cause pollution or impairment of the quality of the groundwater within the county.

In addition, this section is intended to reduce potential well interference problems to existing wells and potential adverse impacts to the environment, which could be caused by the construction of new wells or the repair or deepening of existing wells.

Groundwater Management Plans (AB 3030)

Assembly Bill AB 3030 (Groundwater Management Act) was passed in September 1992 and became law in January 1993. The law was enacted because of the lack of coordinated groundwater management in California. Participation in this voluntary program allows local public agencies greater management authority over local groundwater issues.

Groundwater management is defined in DWR's Bulletin 118-80 as:

- "Protection of natural recharge and use of artificial recharge;
- "Planned variation in amount and location of pumping over time;
- "Use of groundwater storage conjunctively with surface water from local and imported sources;
- "Protection and planned maintenance of groundwater quality."

An AB 3030 plan is a groundwater management plan for local agencies whose service area includes all or part of a groundwater basin. The plan outlines the agency's management activities and encourages coordinated management of the groundwater basin.

In Butte County, the following agencies have AB 3030 plans:

- Biggs-West Gridley Water District,
- Butte Water District,
- Richvale Irrigation District, and
- Western Canal Water District.

Urban Water Management Plans (AB 797)

The Urban Water Management Planning Act, passed in 1983, requires urban water agencies to prepare a management plan if they serve more than 3,000 customers, or more than 3,000 acre-feet of water per year. The management plan is a tool for water management planning and must identify water supplies and demands, as well as potential additional supplies to meet future demands. Plans are completed every 5 years. The most recent plans were due on December 31, 2000. A 20-year projection of

demand is included in the plan. The following urban water agencies are required to submit Urban Water Management Plans:

- California Water Service, Chico;
- California Water Service, Oroville;
- Del Oro Water Company;
- Paradise Irrigation District;
- Thermalito Irrigation District; and
- Oroville Wyandotte Irrigation District.

Agricultural Water Management Plans (AB 3616)

The California Agricultural Water Management Planning Act of 1986 (AB 1658) and the Federal Reclamation Reform Act of 1982 historically governed agricultural water management. The Reclamation Reform Act of 1982 required federal water contractors to prepare Water Conservation Plans. AB 1658 focused on opportunities to conserve water or reduce the quantity of saline or toxic drainage water through improved irrigation water management within districts delivering over 50,000 acre-feet of water per year.

Enactment of AB 3616 in 1990 formed a committee that resulted in the development of a list of Efficient Water Management Practices (EWMPs) for agricultural water supplies. Approximately 29 practices have been considered, focusing on irrigation management, physical improvement, and institutional adjustments. The AB 3616 process replaces that contained in AB 1658. Governor Wilson charged the AB 3616 committee with developing a Memorandum of Understanding similar to the urban water management planning process. Water management plans developed under AB 3616 identify water conservation opportunities and set a schedule for implementation. DWR cooperates with many local agencies to implement measures that are potentially included on the list of EWMPs.