

3.1 PLANNING INFLUENCES AND CONSIDERATIONS

Planning for the Yolo Bypass Wildlife Area encompasses issues that cross regional, local, and project area boundaries. This section identifies the federal, state, county, and local agency policies and other planning influences that affect the function and management planning of the Yolo Bypass Wildlife Area.

The Yolo Bypass Wildlife Area is unique in that a community-based organization, the Yolo Basin Foundation, recognized from the beginning that there is a complex web of policies and other influences that needed to be reconciled. The success of the Wildlife Area is based on this premise and management activities will continue in this mode into the future.

3.1.1 SACRAMENTO RIVER FLOOD CONTROL PROJECT



Flooding in the Yolo Bypass

Management of the Yolo Bypass Wildlife Area must be considered in the context of the Sacramento River Flood Control Project (SRFCP). The U.S. Army Corps of Engineers (USACE), in conjunction with the State of California, developed a flood control plan for the Sacramento River as part of the SRFCP, which included levee construction, channel improvements, and reservoir flood storage.

The Sacramento River levees were constructed by the USACE as part of the SRFCP. Construction and repair of the existing levees along the Sacramento River has been undertaken by the USACE over the years as part of its ongoing efforts to improve the regional protections provided by the SRFCP. “Project” levees in California must

meet the standards for design and construction specified by the USACE in Engineering Manual 1110-2-1913 (U.S. Army Corps of Engineers 2000).

The Reclamation Board enforces appropriate standards for the construction, maintenance, and protection of flood control facilities in the Central Valley. The Reclamation Board must review and approve any activity that may affect “project works,” or physically change the “designated floodway” to ensure that the activity maintains the integrity and safety of flood control project levees and floodways and is consistent with the flood control plans adopted by The Reclamation Board and the California legislature. “Project works” are the components of a flood control project within The Reclamation Board’s jurisdiction that the Board or the legislature has approved or adopted. Project works include levees, bank protection projects, weirs, pumping plants, floodways, and any other related flood control works or rights-of-way that have been constructed using state or federal funds. Project works also include flood control plans. Rules promulgated in Title 23 of the California Code of Regulations (CCR Title 23, Division 1, Article 8 [Sections 111 through 137]) regulate the modification and construction of levees and floodways to ensure public safety. The flood season for the Sacramento River is November 1 through April 15.

Levee and floodway operation and maintenance are overseen by the California Department of Water Resources (DWR), which inspects the levees and issues a biannual report. The report covers the general condition of the levee, vegetation control, rodent control, and flood preparedness. The DWR, Division of Flood Management, Flood Operations Branch is responsible for the gathering, analysis, and dissemination of flood and water-related information and coordinates flood operations of Fremont and Sacramento Weir spills into the Yolo Bypass (see below).

STATE-FEDERAL FLOOD OPERATIONS CENTER

The mission of the Division of Flood Management is to prevent loss of life and reduce property damage caused by floods and to assist in recovery efforts following any natural disaster. The State-Federal Flood Operations Center (FOC), located in Sacramento, is a component of the Division's Flood Operations Branch. Year-round the FOC is the focal point for the gathering, analysis, and dissemination of flood and water-related information. During flood conditions the FOC provides a facility from which DWR can centrally coordinate operations and emergency response (California Department of Water Resources 2005).

As major storm systems approach California forecasters from the National Weather Service (NWS) and DWR forecast the location, amount, and timing of expected precipitation and make initial river forecasts. Once the storm arrives and runoff begins forecasts are updated and issued as necessary. Reservoir operators adjust flood control releases as inflows increase or downstream channels swell with runoff. Additionally, FOC personnel make high water notification calls to appropriate local flood system maintenance and emergency response agencies. Maintaining agencies are required to patrol their levees on a 24-hour basis as long as the water level is at or above monitor stage and until no threat remains to the levees.



Fremont Weir

FREMONT WEIR

Fremont Weir was completed in 1924. It is the first overflow structure on the river's west side (right bank), and its two-mile overall length marks the beginning of the Yolo Bypass. It is located about 15 miles northwest of Sacramento and eight miles northeast of Woodland. South of this latitude the Yolo Bypass conveys 80 percent of the system's floodwaters through Yolo and Solano counties until it rejoins the Sacramento River a few miles upstream of Rio Vista. The weir's primary purpose is to release overflow waters of the Sacramento River, Sutter Bypass, and the Feather River into the Yolo Bypass. The project design capacity of the weir is 343,000 cfs (California Department of Water Resources 2003).



Sacramento Weir

SACRAMENTO WEIR AND BYPASS

The Sacramento Weir was completed in 1916. It is the only SRFCP weir "opened" or "closed" – all others overflow by gravity on their own. It is located along the west levee (right bank) of the Sacramento River approximately 4 miles upstream of the Tower Bridge, and about 2 miles upstream from the mouth of the American River. Its primary purpose is to protect the City of Sacramento from excessive flood stages in the Sacramento River channel downstream of the American River. The weir limits flood stages (water surface elevations) in the Sacramento River to SRFCP design levels

through the Sacramento/West Sacramento area. The project design capacity of the weir is 112,000 cfs (California Department of Water Resources 2003).

The Sacramento Weir is 1,920 feet long and consists of 48 gates that divert Sacramento River and American River floodwaters to the west down the mile-long Sacramento Bypass to the Yolo Bypass. Each gate has 38 vertical wooden plank "needles" (4 inches thick by 1-foot wide by 6 feet long), hinged at the bottom and retained at the top by a hollow metal beam. The beam is manually released using a latch. Flood forecasters

provide the necessary predictive information to weir operators who manage the number of opened gates in order to control the river's water surface elevation (California Department of Water Resources 2003).

DWR operates the weir according to regulations established by the USACE. The opening and closing criteria have been optimized to balance two goals: (1) minimize sediment deposition due to decreased flow velocities in the river channel downstream from the weir to the mouth of American River; and (2) to limit the flooding of agricultural lands in the Yolo Bypass only until after they have been inundated by floodwaters over Fremont Weir (California Department of Water Resources 2003).

The weir gates are not opened until the river reaches 27.5 feet at the I Street gage with a forecast to continue rising. This gage is about 1,000 feet upstream from the I Street Bridge, and about 3,500 feet downstream from the mouth of the American River. The number of gates to be opened is determined by the NWS/DWR river forecasting team (until all are opened) to meet either of two criteria: (1) to prevent the stage at the I Street gage from exceeding 29 feet, or (2) to hold the stage at the downstream end of the weir to 27.5 feet. Once all 48 gates are open, Sacramento River stages from Verona to Freeport may continue to rise during a major flood event. Project design stages are 41.3 feet at Verona, 31.5 feet at the south end of the Sacramento Weir, and 31 feet at the I Street gage (California Department of Water Resources 2003). Prior to water spill or release into the Bypass, the State-Federal Flood Operations Center (FOC) makes notification calls to entities with operations in the Bypass including the Yolo Bypass Wildlife Area (see below).

As discussed in Section 2.4.1, "Legal Constraints and Existing Agreements," the DFG, DWR, The State Reclamation Board, and USACE have a management agreement (in lieu of an encroachment permit) that allows for project modifications (e.g., wetland or other restoration projects) as long as they are compatible with flood control. Under this agreement, DFG assumes responsibility for all claims of damage or liability. DFG is responsible for the maintenance of lands within the boundaries of the project modification. This maintenance must be consistent with the purposes of public safety and is detailed in the USACE Operating Manual. Under the agreement, "DFG will endeavor to manage the Project Modification in a manner that will be compatible with flood control" (U.S. Army Corps of Engineers 2003).

3.1.2 CALFED BAY-DELTA PROGRAM

In 1995, the State of California and the federal government initiated a collaborative effort among state and federal resource management agencies and representatives from urban, agricultural, and environmental interests to attempt to resolve numerous water-related issues associated with the Sacramento River-Sac Joaquin River Delta and San Francisco Bay. The program was titled the CALFED Bay-Delta Program (CALFED). The mission of CALFED is to create a long-range, implementable solution for the Bay-Delta that focuses on four major problem areas: drinking water supply, water quality, levee system integrity, and environmental restoration. As part of CALFED, each of these issues has an established program and staff (CALFED Bay-Delta Program 2000a and 2000b).

In 1996, regional interested parties and CALFED staff developed overall objectives for CALFED that include achievement of ecosystem quality, water quality and supply reliability, and levee system integrity in the Bay-Delta and its watersheds. As part of this process, the Ecosystem Restoration Program (ERP) was created to identify a long-range set of specific ecosystem-related objectives and methods for implementation of those objectives. The result of that development process was the CALFED Ecosystem Restoration Program Plan (ERPP). The ERPP is a far-reaching document that outlines and describes a multitude of ecological improvement targets and actions intended to be implemented over the next several decades. It also delineates the area (known as the CALFED Study Area) where most of the prescribed CALFED ecologically based actions would occur. The Yolo Bypass Wildlife Area is included in the CALFED Study Area in what is known as the Yolo Basin Ecological Management Zone.

As discussed in Chapter 1, “Introduction,” this LMP is based on an ecosystem approach to habitat management consistent with the principles of the CALFED ERP. Yolo Bypass Wildlife Area-related targets and programmatic actions from the CALFED ERPP are presented verbatim in Appendix B. Additionally, the ERP’s goals and objectives (CALFED Bay-Delta Program 2000a and 2000b) are to:

- ▶ achieve recovery of at-risk native species dependent on the Delta and Suisun Bay to establish large, self-sustaining populations of these species, support similar recovery of at-risk native species in the Bay-Delta estuary and the watershed above the estuary, and minimize the need for future endangered species listings by reversing downward population trends of native species that are not listed;
- ▶ rehabilitate natural processes in the Bay-Delta estuary and its watershed to fully support, with minimal ongoing human intervention, natural aquatic and associated terrestrial biotic communities and habitats in ways that favor native members of those communities;
- ▶ maintain or enhance populations of selected species for sustainable commercial and recreational harvest, consistent with the other ERP goals;
- ▶ protect or restore functional habitat types in the Bay-Delta estuary and its watershed in support of ecological and public values (such as species, biotic community, and ecological processes), health, recreation, aesthetic quality, and scientific research;
- ▶ prevent the establishment of additional nonnative invasive species and reduce the negative ecological and economic impacts of established nonnative species in the Bay-Delta estuary and its watershed; and
- ▶ improve or maintain water and sediment quality conditions that fully support healthy and diverse aquatic ecosystems in the Bay-Delta estuary and watershed and eliminate (to the extent possible) toxic impacts on aquatic organisms, wildlife, and people.

CONSISTENCY OF THE LAND MANAGEMENT PLAN WITH THE CALFED FINAL PROGRAMMATIC EIS/EIR RECORD OF DECISION

In launching “the most complex and extensive ecosystem restoration project ever proposed” (CALFED Bay-Delta Authority 2000a and 2000b), the CALFED Final Programmatic Environmental Impact Statement and Environmental Impact Report (CALFED Final PEIS/EIR) recognized that the Preferred Program Alternative could have potentially significant effects on biological resources and agricultural land and water use. This LMP has been developed to meet CALFED Program objectives (see Chapter 1 and Appendix B) and to be consistent with applicable mitigation strategies adopted as part of the Record of Decision (ROD) for the approval of the CALFED Program.

The CALFED Final PEIS/EIR also identified potential effects to special-status wildlife species and/or important wildlife use areas and developed mitigation strategies to avoid these impacts. A review of Section 6.2 of the CALFED Final PEIS/EIR, “Vegetation and Wildlife,” resulted in identification of one mitigation strategy that has been incorporated into the LMP:

- ▶ Mitigation Strategy 9: Avoid construction or maintenance activities within or near habitat areas occupied by special-status wildlife species or in important wildlife use areas when species may be sensitive to disturbance.
- ▶ All construction and maintenance activities at the Yolo Bypass Wildlife Area are designed and timed to avoid potential disturbances to habitat areas occupied by special-status wildlife species or in important wildlife use areas when species may be sensitive to disturbance. Because construction or maintenance activities identified in the LMP (i.e., tasks) will be directed to avoid these potential impacts, the proposed LMP is consistent with Mitigation Strategy 9.

The CALFED Final PEIS/EIR specifically identified potential effects of converting Prime, Statewide Important, and Unique Farmland to project uses. It also identified potential conflicts with local government plans and policies and potential incompatibilities with adjacent land uses. As a result, the CALFED Program developed mitigation strategies to reduce potential impacts to agricultural land and water use. A review of Section 7.1, “Agricultural Land and Water Use,” resulted in identification of five mitigation strategies (described below) that have been incorporated into the LMP:

- ▶ Mitigation Strategy 4: Involve all affected parties, especially landowners and local communities, in developing appropriate configurations to achieve optimal balance between resource effects and benefits.

The Yolo Bypass Working Group, initiated and facilitated by the Yolo Basin Foundation (Foundation), provides a focused forum and opportunity for farmers, landowners, and agencies with a role in the Yolo Bypass to discuss Bypass related issues, as well as provide guidance and opinions on such issues. DFG is a regular and important participant in the Working Group and the meetings have been a primary forum to gather stakeholder input towards the development of this LMP (see Chapter 1 for additional information on the Yolo Bypass Working Group). Therefore, this proposed LMP is consistent with Mitigation Strategy 4.

- ▶ Mitigation Strategy 10: Focus habitat restoration efforts on developing new habitat on public lands before converting agricultural lands.

This proposed habitat restoration project would develop new habitat on public lands in DFG ownership; therefore, it is consistent with Mitigation Strategy 10.

- ▶ Mitigation Strategy 11: If public lands are not available for restoration efforts, focus restoration efforts on acquiring lands that can meet ecosystem restoration goals from willing sellers where at least part of the reason to sell is economic hardship (i.e., lands that flood frequently or where levees are difficult to maintain).

The public lands which make up the Yolo Bypass Wildlife Area were acquired from willing sellers where at least part of the reason for selling was economic. Therefore, the proposed LMP is consistent with Mitigation Strategy 11.

- ▶ Mitigation Strategy 18: Minimize the amount of water supply required to sustain habitat restoration acreage.

Lands in the Wildlife Area (including potential future restoration projects) are managed to minimize water use through maximum use efficiency. Therefore, the proposed LMP is consistent with Mitigation Strategy 18.

- ▶ Mitigation Strategy 19: Develop buffers and other tangible support for remaining agricultural lands. Vegetation planted on these buffers should be compatible with farming and habitat objectives.

The Yolo Bypass Wildlife Area is managed with extreme consideration to be respectful of neighboring public and private properties that together support a wide range of wildlife species and provide for economic vitality through agricultural production. Integration of agriculture with habitat management is a primary objective for management at the Yolo Bypass Wildlife Area. The LMP identifies goals and tasks including continued effective communication with neighbors (through the Yolo Bypass Working Group and other means), working with farmer lease tenants (directly and through Dixon RCD), and to conform to standards such as, vector control and maintenance of flood flow conveyance that are outlined in the LMP. Additionally, the Yolo Bypass Wildlife Area is extremely supportive of surrounding agricultural land uses and operations. Therefore, the LMP is consistent with Mitigation Strategy 19.

3.1.3 SACRAMENTO AND SAN JOAQUIN RIVER BASINS CALIFORNIA COMPREHENSIVE STUDY

The Sacramento and San Joaquin River Basins California Comprehensive Study (Comprehensive Study) was a joint effort by The Reclamation Board and the USACE, in coordination with federal, state, and local agencies, groups, and organizations in California's Central Valley. Responding to the flooding of 1997, the California Legislature and the U.S. Congress directed USACE to develop a comprehensive plan for flood damage reduction and environmental restoration purposes for the Sacramento and San Joaquin River Basins. The effort was conducted in cooperation with The Reclamation Board. The Comprehensive Study is not a regulatory program per se, but consistency with its goals and objectives is important for any project affecting flood control in the Sacramento and San Joaquin River basins.

In December 2002, an interim report was released by the Comprehensive Study team (U.S. Army Corps of Engineers and State of California Reclamation Board 2002). The report identified the comprehensive plan as an approach to developing projects in the future to reduce damages from flooding and restore the ecosystem in the Sacramento-San Joaquin River basins. As described in the report, the comprehensive plan has three parts: (1) a set of principles to guide future projects, (2) an approach to develop projects with consideration for systemwide effects, and (3) an organization to consistently apply the guiding principles in maintaining the flood management system and developing future projects.

The Comprehensive Study has proposed a set of guiding principles to govern implementation of projects that propose modifying the Sacramento or San Joaquin River flood control systems. These principles have been developed to ensure that projects proposed to be implemented are consistent with the objectives established by USACE and The Reclamation Board. The following are the Comprehensive Study's guiding principles:

- ▶ recognize that public safety is the primary purpose of the flood management system;
- ▶ promote effective floodplain management;
- ▶ promote agriculture and open space protection;
- ▶ avoid hydraulic and hydrologic impacts;
- ▶ plan system conveyance capacity that is compatible with all intended uses;
- ▶ provide for sediment continuity;
- ▶ use an ecosystem approach to restore and sustain the health, productivity, and diversity of the floodplain corridors;
- ▶ optimize use of existing facilities;
- ▶ integrate with the CALFED Bay-Delta Program and other programs; and
- ▶ promote multi-purpose projects to improve flood management and ecosystem restoration.

The Yolo Bypass lies in the Lower Sacramento River Region of the Comprehensive Study.

3.1.4 CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

Pursuant to section 303(d) of the Clean Water Act, the Central Valley Regional Water Quality Control Board (RWQCB) is developing a Total Maximum Daily Load (TMDL) for methyl and total mercury in the Sacramento-San Joaquin Delta (Central Valley Regional Water Quality Control Board 2005).

The Delta methylmercury TMDL development and implementation is a two-part process: TMDL development and Basin Plan amendment.

TMDL development is currently underway and involves the technical analysis of methyl and total mercury sources, fate and transport of each, development of a proposed mercury fish tissue water quality objective and an aqueous methylmercury goal, and a description of the amount of reduction necessary to attain the proposed objective. A report produced for the TMDL development step was completed in August of 2005. This report contains preliminary implementation options for the control of mercury but does not formally propose regulations. Implementation options for the control of mercury include the following objectives:

- ▶ Reduce total mercury loads entering the Delta by at least 110 kilograms/year (kg/yr).
- ▶ Require responsible parties for point and non point sources of methylmercury to characterize their discharge by measuring methylmercury concentrations and loads. If their discharge concentrations are determined to be greater than the recommended aqueous goal, then responsible parties could be required to develop control measures to reduce their loads. (Wetlands are identified as a source of methylmercury.)
- ▶ Reduce methylmercury exposure to the fish eating public.

The Basin Plan Amendment focuses on the development of a Basin Plan amendment and a staff report for RWQCB consideration. The Basin Plan amendment staff report will propose a site-specific water quality objective for the Delta and an implementation plan to achieve the objective, all based on the foundation provided by the TMDL analysis. The Basin Plan amendment staff report will propose regulations to reduce mercury and methylmercury discharges. Potential amendments to the Basin Plan regarding methylmercury and wetlands could affect management of the Yolo Bypass Wildlife Area. Additional discussion on the methylmercury TMDL for the Delta is provided in Chapter 3, “Environmental Setting.”

3.1.5 SACRAMENTO AREA FLOOD CONTROL AGENCY

The Sacramento Area Flood Control Agency (SAFCA), a “joint powers agency” of City of Sacramento, County of Sacramento, County of Sutter, American River Flood District, and Reclamation District 1000, has been coordinating regional flood control since its creation in 1989.

In March 2002, SAFCA entered into a Memorandum of Understanding (MOU) with the State Reclamation Board, DWR, the cities of Sacramento and West Sacramento and the counties of Sacramento, Yolo and Sutter to form the Sacramento River Corridor Planning Forum (Forum). Membership on the Forum is open to the public. The Forum’s mission is to develop a Sacramento River Corridor Floodway Management Plan containing recommendations on flood management goals and policies, with guidelines for riparian habitat protection, public access and recreation, and riverfront development. The plan would also include recommendations for assessing and mitigating impacts of proposed projects. The Forum is looking at the Yolo Bypass with respect to proposals and studies to enhance the flood control system through its study area reach, which comprises the Sacramento River corridor from Fremont Weir south to the town of Courtland.

3.1.6 YOLO COUNTY GENERAL PLAN

The Yolo County General Plan designates the Yolo Bypass Wildlife Area lands as A-P (Agricultural Preserve). Zoning for Agricultural Preserve states that “the purpose of the Agricultural Preserve Zone shall be to preserve land best suited for agricultural use from the encroachment of nonagricultural uses. The A-P zone is intended to be used to establish agriculture preserves in accordance with the California Land Conservation Act of 1965, as amended. Uses approved on contracted land shall be consistent and compatible with the provisions of the Act” (Yolo County 1983).

Principal uses (allowable with only site plan review and approval of facilities, infrastructure, health and safety issues) include:

- ▶ Agriculture (not dairies, stockyards, slaughterhouses, hog farms, fertilizer works, or plants for the reduction of animal matter);
- ▶ One single-family dwelling;
- ▶ Parks, publicly owned, and
- ▶ Rural recreation (defined as the shooting of skeet, trap, and sporting clays; archery; gun, hunting, or fishing clubs; dude ranches; health resorts, incidental and dependent upon primary agricultural use, and/or directly dependent upon a unique natural resources feature; the use of public or private lands or structures for commercial staging of rafting, hiking, backpacking, bicycling, and/or touring excursion).

The Yolo County General Plan also includes several other goals and policies related to management and planning at the Yolo Bypass Wildlife Area including the following:

GENERAL PLAN GOALS AND POLICIES

- ▶ REC 1. Recreation Basic - Yolo County acquires, maintains and provides a variety of park, open and natural areas for recreational and leisure pursuits at the regional, community and neighborhood level through means of California statute, established land use controls, regulations, real property transfer, and the advice, guidance and cooperation of other jurisdictions and through coordination with other elements of this General Plan, as amended.

It shall be the basic recreation policy of the County to:

1. Protect and preserve as many of the County’s recreational and scenic resources as possible;
2. Maintain diversified regional-type recreation facilities and programs;
3. Assist in preserving the open space resources of the County;
4. Cooperate with special districts, cities, adjacent counties, and state and federal agencies in the acquisition, development and administration of recreation facilities, resources and programs for joint use and mutual advantage;
5. Cooperate with and encourage private individuals and organizations in the preservation, acquisition and administration of recreation resources;
6. Assist local rural communities in obtaining a basic level of recreation service;

7. Encourage and assist in the development of bicycle and hiking trails in and to County parks and recreation areas;
8. Encourage greater understanding of the park system and the resources it protects by development of an interpretive program.
 - Pedestrians – Yolo County shall promote and ensure the provision of facilities and routes, where appropriate, for safe and convenient use by pedestrians including sidewalks, pedestrian access to all public facilities and transit stops, and to public areas in the community including waterfront projects and recreation hiking trails.
 - Bicycle Routes and Facilities – Encouragement and establishment of bike routes along trails, on levees, along railroad levees, along drainage canals, and along transmission right-of-ways where feasible.
 - Bikeways and Pedestrian Ways – Yolo County shall plan and promulgate adequate, safe bikeways and pedestrian ways, integrated with other transit modes and coordinated with all forms of development.
 - Physically Impaired (formerly Handicapped) – Require designs of buildings, sidewalks, and all other public facilities and transit/transportation modes to facilitate use by the physically impaired, including those in wheelchairs.

3.1.7 COLUSA BASIN DRAIN

The Colusa Basin watershed comprises nearly 1,620 square miles of mostly agricultural land in the north Sacramento Valley, and encompasses approximately 255 square miles in Yolo County. The Colusa Basin Drain is a man-made channel designed to convey irrigation return drainage to the Knights Landing outfall that discharges to the Sacramento River. Thirty-two ephemeral streams, seven of which lie in the Dunnigan Hills of Yolo County, supply the channel. The capacity of the Colusa Basin Drain is approximately 12,450 cfs and primarily conveys water from the Tehama-Colusa Canal (Yolo County Water Resources Association 2004).

The Tehama-Colusa Canal is 110.9 miles long and flows south from the Red Bluff Diversion Dam through Tehama, Glenn, and Colusa counties into Yolo County, terminating about 2 miles south of Dunnigan. The initial capacity of the canal is 2,530 cubic feet per second, diminishing to 1,700 cubic feet per second at the terminus in Yolo County (U.S. Bureau of Reclamation 2006). The water is used for irrigation by Central Valley Project (CVP) contractors, including the Dunnigan Water District. The Knights Landing Ridge Cut Canal was constructed to improve flow conditions during high flow events. All waters from the Colusa Basin Drain are directed through the Ridge Cut Canal into the Yolo Bypass during high flows in the Sacramento River. The Colusa Basin Drain is listed as a water quality impaired water body due to a number of agricultural pesticide-related pollutants (Central Valley RWQCB 2002; Smalling et al. 2005). A recent proposal has been developed by groups representing Sacramento River water users to divert additional water from the Colusa Basin Drain into the Yolo Bypass on a more continuous year-round basis. This proposal is currently being evaluated for potential effects related to water quality and hydrology in the Yolo Bypass. Additional discussion on the Colusa Basin Drain and potential water quality implications is provided in Section 3.4, “Geomorphology, Hydrology, and Water Quality.”

3.1.8 DELTA PROTECTION COMMISSION

The Delta Protection Commission (DPC) was created by the State Legislature in 1992 with the goal of developing regional policies for the Delta to protect and enhance the existing land uses in the Primary Zone: agriculture, wildlife habitat, and recreation. Working closely with local communities and local governments, the DPC adopted

its Land Use and Resource Management Plan for the Primary Zone of the Delta (regional plan) in 1995. Local government incorporation of the policies in the DPC regional plan was completed in 1998. In 2000, the DPC became a permanent state agency. The policies in the regional plan were adopted as regulations in 2000 and approved by Office of Administrative Law on May 8, 2001. A large portion of the Yolo Bypass Wildlife Area is within the Primary Zone of the Delta.

LAND USE AND RESOURCE MANAGEMENT PLAN FOR THE PRIMARY ZONE OF THE DELTA

The DPC's Land Use and Resource Management Plan for the Primary Zone of the Delta (Delta Protection Commission 1995) include the following policies and recommendations applicable to the Yolo Bypass Wildlife Area LMP:

- ▶ **Environment Policy P-1:** The priority land use of areas of prime soil shall be agriculture. If commercial agriculture is no longer feasible due to subsidence or lack of adequate water supply or water quality, land uses which protect other beneficial uses of Delta resources and which would not adversely affect agriculture on surrounding lands, or viability or cost of levee maintenance, may be permitted. If temporarily taken out of agricultural production due to lack of adequate water supply or water quality, the land shall remain reinstatable to agricultural production for the future.
- ▶ **Environment Policy P-3:** Land managed primarily for wildlife habitat shall be managed to provide several interrelated habitats. Delta-wide habitat needs should be addressed in development of any wildlife habitat plan. Appropriate programs, such as "Coordinated Resource Management and Planning" and "Natural Community Conservation Planning" should ensure full participation by local government and property owner representatives.
- ▶ **Environment Recommendation R-1:** Seasonal flooding should be carried out in a manner so as to minimize mosquito production. Delta-wide guidelines outlining "best management practices" should be prepared and distributed to land managers.
- ▶ **Environment Recommendation R-4:** Feasible steps to protect and enhance aquatic habitat should be implemented as may be determined by resource agencies consistent with balancing other beneficial uses of Delta resources.
- ▶ **Environment Recommendation R-5:** Publicly-owned land should incorporate, to the maximum extent feasible, suitable and appropriate wildlife protection, restoration and enhancement as part of a Delta-wide plan for habitat management.
- ▶ **Environment Recommendation R-6:** Management of suitable agricultural lands to maximize habitat values for migratory birds and other wildlife should be encouraged. Appropriate incentives, such as conservation easements, should be provided by nonprofits or other entities to protect this seasonal habitat through donation or through purchase.
- ▶ **Environment Recommendation R-7:** Lands currently managed for wildlife habitat, such as private duck clubs or publicly owned wildlife areas, should be preserved and protected, particularly from destruction from inundation.
- ▶ **Land Use Policy P-2:** Local government General Plans and zoning codes shall continue to strongly promote agriculture as the primary land use in the Primary Zone; recreation land uses shall be supported in appropriate locations and where the recreation uses do not conflict with agricultural land uses or other beneficial uses, such as waterside habitat.
- ▶ **Land Use Policy P-8:** Local government policies regarding mitigation of adverse environmental impacts under CEQA may allow mitigation beyond County boundaries, if acceptable to reviewing fish and wildlife

agencies, for example in approved mitigation banks. Mitigation in the Primary Zone for loss of agricultural lands in the Secondary Zone may be appropriate if the mitigation program supports continued farming in the Primary Zone.

- ▶ **Land Use Recommendation R-1:** A program by non-profit groups or other appropriate entities should be developed to promote acquisition of wildlife and agricultural conservation easements on private lands with the goal of protecting agriculture and wildlife habitat in the Delta.
- ▶ **Land Use Recommendation R-2:** Public agencies and non-profit groups have or propose to purchase thousands of acres of agricultural lands to restore to wildlife habitat. The amount, type, and location of land identified to be enhanced for wildlife habitat should be studied by wildlife experts to determine goals for future acquisition and restoration. Lands acquired for wildlife habitat should also be evaluated for recreation, access, research and other needed uses in the Delta. Habitat restoration projects should not adversely impact surrounding agricultural practices. Public-private partnerships in management of public lands should be encouraged. Public agencies shall provide funds to replace lost tax base when land is removed from private ownership.
- ▶ **Land Use Recommendation R-3:** Multiple use of agricultural lands for commercial agriculture, wildlife habitat, and, if appropriate, recreational use, should be supported, and funding to offset management costs pursued from all possible sources. Public agencies shall provide funds to replace lost tax base when land is removed from private ownership.
- ▶ **Agriculture Policy P-1:** Commercial agriculture in the Delta shall be supported and encouraged as a key element in the State's economy and in providing the food supply needed to sustain the increasing population of the State, the Nation, and the world.
- ▶ **Agriculture Policy P-2:** Local governments shall identify the unique qualities of the Delta that make it well suited for agriculture. These qualities include: rich soil, ample supplies of water, long growing seasons, mild climate, and proximity to packaging and shipping infrastructure. The unique physical characteristics of the Delta also require that agricultural landowners maintain extensive levee systems, provide flood control, and have adequate drainage to allow the lands to be farmed.
- ▶ **Agriculture Policy P-8:** Encourage management of agricultural land which maximize wildlife habitat seasonally and year-round, through techniques such as sequential flooding in fall and winter, leaving crop residue, creation of mosaic of small grains and flooded areas, controlling predators, controlling poaching, controlling public access, and others.
- ▶ **Agriculture Recommendation R-1:** Programs to educate California and the U.S. about the value and diversity of California agriculture should continue. Education should provide information about various crops and about the different agricultural regions, such as the Delta.
- ▶ **Recreation and Access Recommendation R-2:** Support a scientifically-valid study of the carrying capacity of the Delta waterways for recreation activities without degradation of habitat values which minimize impacts to agriculture or levees.
- ▶ **Recreation and Access Recommendation R-6:** State and federal projects in the Primary and Secondary Zones should include appropriate recreation and/or public access components to the extent consistent with project purposes and available funding. State and federal agencies should consider private or user group improvements on publicly owned lands to provide facilities.
- ▶ **Water Policy P-1:** Local governments shall ensure that salinity in Delta waters allows full agricultural use of Delta agricultural lands, provide habitat for aquatic life, and meet requirements for drinking water and industrial uses.

- ▶ **Water Policy P-2:** Local governments shall ensure that design, construction, and management of any flooding program to provide seasonal wildlife habitat on agricultural lands shall incorporate “best management practices” to minimize mosquito breeding opportunities and shall be coordinated with the local vector control districts.
- ▶ **Water Recommendation R-3:** Programs to enhance the natural values of the State’s aquatic habitats and water quality will benefit the Delta and should be supported.
- ▶ **Water Recommendation R-4:** Programs to regulate agricultural drainage in the Delta should be accompanied with education programs, be implemented over time, and should, where needed, provide financial assistance such as grants and interest-free loans to ensure compliance. Any regulation of Delta agricultural discharges must recognize that a) dischargers must be permitted to discharge back to the channels any dissolved solid loads that were derived from the channels in irrigation diversions and seepage inflows, and b) any net addition of dissolved carbon compounds must be compared to the addition of such compounds that would occur with any other land use option that would provide equal protection of the land and channel configuration and would consume no more water.
- ▶ **Water Recommendation R-5:** Water for flooding to provide seasonal and year-round wildlife habitat should be provided as part of State and federal programs to provide water for wildlife habitat.

DELTA COLLABORATIVE

In response to the Central Valley Regional Water Quality Control Board’s development of a Total Maximum Daily Load (TMDL) value for mercury in the Delta, the Delta Protection Commission has convened a collaborative group to provide coordinated input into the Board’s Delta mercury TMDL process. To date, the Collaborative has expressed a desire for integration of the Commission’s Land Use and Resource Management Plan for the Primary Zone of the Delta (Plan), several “Delta visioning” processes and programs being undertaken by other entities, multi-species HCP/NCCPs, and other prominent Delta activities, into the process. To date, the Collaborative includes representatives from: CALFED Bay-Delta Authority, DFG, DWR, U.S. Department of Agriculture, Contra Costa Water Agency, Yolo County Planning, Resources, and Public Works, Sacramento County Sanitation District, San Joaquin County Public Works, San Joaquin County RCD, Yolo NCCP Joint Powers Agency, Foundation, The Nature Conservancy, Ducks Unlimited, HART Restoration, DCC Engineering, KSN Engineering, Environmental Justice Water Coalition, and Delta landowners/stakeholders.

DELTA RECREATION PLAN

The Delta Recreation Plan is currently under development. A draft aquatic-based component of the plan has been completed and consists of inventory and policy-level goals for aquatic-based recreational resources within the Delta (Delta Protection Commission 2006). Completion of the plan is subject to current funding limitations.

3.1.9 NORTH AMERICAN WATERFOWL MANAGEMENT PLAN

The North American Waterfowl Management Plan (NAWMP) was signed on May 14, 1986, by the Secretary of Interior for the United States and the Minister of Environment for Canada. The NAWMP provides a broad framework for waterfowl conservation and management in North America through the year 2000. Population objectives for key species were identified in it and habitat goals to sustain these populations were established. Although the 1986 agreement was originally only between the United States and Canada, a subsequent memorandum of understanding for the conservation of migratory birds and wetlands was signed by the national conservation agencies’ directors of Canada, Mexico, and the United States on March 16, 1988. This international memorandum of understanding will also contribute to achievement of the international goals defined in the overall NAWMP.

On December 13, 1989, President Bush signed the North American Wetlands Conservation Act (NAWCA), which obligates annual appropriations for the implementation of the NAWMP. Funding for NAWCA includes interest from obligations held by the U.S. Treasury as part of the Federal Aid in Wildlife Act (Pittman-Robertson) (16 U.S.C. 669b) of September 2, 1937; Migratory Bird Act-related fines, penalties, and forfeitures; and direct appropriations.

The NAWMP seeks to restore and maintain the diversity, abundance, and distribution of waterfowl that occurred during 1970–79. Population objectives for 20 species of ducks, 18 species or subspecies of geese divided into 27 management populations, and 2 species of swans are identified. The NAWMP further seeks to assure sufficient habitat to support 62 million breeding ducks, a fall flight of 100 million ducks, and 6 million wintering geese and swans. Updating of the NAWMP will occur at five-year intervals beginning in 1990.

In the NAWMP, broad recommendations are made for wetland and upland habitat protection, restoration, and enhancement, as well as duck harvest, overall waterfowl population management, subsistence hunting and research. The major focus, however, is on ducks and their habitat. Two of the NAWMP's seven habitat objectives relate to the general maintenance or rehabilitation of 34 major waterfowl habitats. Five of the seven priority objectives are specifically focused on seven habitat areas (six in the US; one in Canada) of the highest international priority. These seven areas are the focus of initial joint ventures that will receive priority planning and funding.

The Central Valley is one of the seven priority areas. Within the priority areas, mallards, northern pintails and American black ducks receive special attention where appropriate. The major strategy for implementing the NAWMP is to establish specific habitat joint ventures where agencies and private organizations collectively pool their resources to address waterfowl habitat problems. Each joint venture will develop implementation plans to address specific needs of each area.

CENTRAL VALLEY HABITAT JOINT VENTURE

The California Central Valley Habitat Joint Venture (recently renamed the Central Valley Joint Venture [CVJV]) was formally established by a working agreement signed in July, 1988. An Implementation Board comprised of representatives from the California Waterfowl Association, Defenders of Wildlife, Ducks Unlimited, National Audubon Society, Waterfowl Habitat Owners Alliance, and The Nature Conservancy guides the CVJV. Technical assistance and advice is provided to the Implementation Board by the DFG, U.S. Fish and Wildlife Service (USFWS), California Department of Food and Agriculture, and other organizations and agencies.

Upon completion of the CVJV objectives, the Central Valley will support 4.7 million wintering ducks, including 2.8 million pintails. The goal of the CVJV is to “protect, maintain, and restore habitat to increase waterfowl populations to desired levels in the Central Valley of California consistent with other objectives of the NAWMP.” Six objectives were developed by the Implementation Board to achieve this goal (Central Valley Habitat Joint Venture 1990):

1. Protect 80,000 additional acres of existing wetlands through acquisition of fee-title or perpetual conservation easements.
2. Secure an incremental, firm 402,450 acre-foot water supply that is of suitable quality and is delivered in a timely manner for use by National Wildlife Refuges (NWR), State Wildlife Areas (WA), and the Grasslands Resource Conservation District (GRCD).
3. Secure Central Valley Project (CVP) power for NWRs, WAs, GRCD, and other public and private lands dedicated to wetland management.
4. Increase wetland areas by 120,000 acres and protect these wetlands in perpetuity by acquisition of fee-title or conservation easement.

5. Enhance wetland habitats on 291,555 acres of public and private lands.
6. Enhance waterfowl habitat on 443,000 acres of agricultural lands.

The CVJV recently updated the Implementation Plan (Central Valley Habitat Joint Venture, in prep.). The new plan include goals and accomplishments for the conservation of breeding and wintering waterfowl, breeding and wintering shorebirds, grassland and riparian birds, and other waterbirds. Specific habitat objectives for the Yolo Basin with primary opportunity areas in the vicinity of the current Yolo Bypass Wildlife Area include:

1. Increase wetland areas in the Yolo Basin by 11,558 acres and protect these wetlands in perpetuity by acquisition of fee-title or conservation easement.
2. Achieve seasonal wetland area objectives in the Yolo Basin of 713 acres/year (enhancement objectives will increase to 963 acres/year when wetland restoration objectives are met for the Basin).
3. Secure 57,790 acre-feet of water when wetland restoration objectives in the Basin have been met.
4. Achieve agricultural enhancement objective of 11,000 acres, of which 8,000 is assumed to be corn with the remaining 3,000 acres assumed to be flooded rice. (Agricultural enhancement objectives are currently exceeded for the basin.)

Creation and management of the Yolo Bypass Wildlife Area is a key component of the CVJV's habitat restoration goals and accomplishments for the Yolo Basin.

3.1.10 YOLO COUNTY HABITAT CONSERVATION PLAN/NATURAL COMMUNITY CONSERVATION PLAN

In the mid-1990s, Yolo County initiated development of a Habitat Conservation Plan (HCP). The purpose of this plan was to guide future development, agriculture, other land use, and natural resource conservation activities throughout the county in such a way that incidental take of special-status species resulting from development and land-use changes would be minimized and mitigated in accordance with the Section 10 of the federal Endangered Species Act. If approved by USFWS, this HCP would grant Yolo County the authority to implement all planned actions in the county without further USFWS consultation regarding special-status species.

A "final" HCP for Yolo County was published in 1996, but was subsequently tabled for further revision. A revised draft HCP was published in January of 2001, and was also tabled in favor of pursuing a joint Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP), which, if approved, would be a combined agreement between the county, USFWS, and DFG, and would include coverage under both the federal and state Endangered Species Acts. This HCP/NCCP is currently under development. The Yolo County Joint Powers Agency received USFWS funding in October 2005 to complete Phase II of the plan, to develop conservation strategies and designate areas for preservation. The Joint Powers Agency currently expects to finish Phase II in the spring of 2007 and complete the HCP/NCCP by 2008 (Yolo County Habitat/Natural Communities Conservation Plan Joint Powers Agency 2005).

It is hoped that the lands protected by the Yolo County HCP/NCCP will compliment the conservation efforts underway at the Yolo Bypass Wildlife Area. One important way it can do this is by insuring the long-term presence of agriculture on lands between the Davis city limits and the Yolo Bypass south of Interstate 80 (I-80). Yolo Bypass Wildlife Area staff will continue to communicate with the Joint Powers Agency and staff as the HCP/NCCP is developed.

3.1.11 AGRICULTURAL/IRRIGATED LANDS CONDITIONAL WAIVER PROGRAM

The California Water Code (Section 13269) authorizes the State Water Resources Control Board (SWRCB) and RWQCBs to conditionally waive waste discharge requirements (WDR) if that is in the public interest. The RWQCBs have issued waivers for over 40 categories of discharges over the years. Senate Bill 390, signed into law on October 6, 1999, required the RWQCBs to review their existing waivers and to renew them or replace them with WDRs. To comply with SB 390, the RWQCBs adopted waivers to regulate most of the categorical discharges.

The Central Valley RWQCB has adopted conditional waivers for agricultural discharges. The agricultural waivers use different regulatory models, are conditional, and comply with SB 390. The RWQCBs are making extensive enrollment, education, and public outreach efforts in these regions.

On July 2003, the Central Valley RWQCB adopted a Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Conditional Waiver for Irrigated Lands) Resolution No. R5-2003-0105 (Discharges of water from managed wetlands in the Sacramento River watershed are also exempt from WDRs under the July 2003 Central Valley RWQCB conditional waiver covering “discharges from irrigated lands”. Irrigated Lands includes managed wetlands by definition). In January 2004, the SWRCB amended Resolution No. R5-2003-0105 and provided important guidance to move forward. The regulations provide for a watershed approach focused on a regional monitoring program to measure compliance with the waivers’ terms and conditions and rely on a locally driven outreach program to enhance and improve water quality. The conditional waivers were set to expire on December 31, 2005. In response to the pending expiration, the RWQCB provided a 6-month renewal of the waiver. The Central Valley RWQCB revisited the issue of adopting a revised conditional waiver at its June 2006 Board meeting. Minutes from the June meeting have not been posted so specifics regarding adoption of the revised conditional waiver are uncertain at this time. Refer to website: <<http://www.waterboards.ca.gov/centralvalley>> for additional information and future meeting minutes.

SACRAMENTO VALLEY WATER QUALITY COALITION

Water quality coalitions have been formed throughout the Central Valley in response to Conditional Waiver of WDR passed on July 11, 2003 by the RWQCB. Viewed by many as the most economical way to comply with the regulations, the coalitions’ goals are to represent farmers with irrigated cropland within a regional watershed so they do not need to file individual reports with the RWQCB. Coalitions can also minimize filing fees and monitoring requirements by individual farmers and land managers.

The Sacramento River watershed is the northern most hydrologic basin included in the Central Valley Conditional Waiver for Irrigated Lands Program and is represented by the Sacramento Valley Water Quality Coalition (SVWQC). The SVWQC was formed in 2002 to enhance and improve water quality in the Sacramento River watershed, while sustaining the economic viability of agriculture, associated values of managed wetlands and sources of safe drinking water. The SVWQC is comprised of more than 200 agricultural and wetland interests that have joined with local governments throughout the region to improve water quality for northern California farms, cities and the environment. The DFG is a participant in the SVWQC.

The SVWQC is dedicated to working with the RWQCB in developing a comprehensive approach to managing water quality on irrigated lands at the watershed level. This regional effort provides the framework necessary to meet water quality goals, help local subwatersheds meet regulatory requirements, and ensure that watershed management practices are broadly implemented through sustainable economic management measures.

In June 2003, the SVWQC submitted a Regional Plan for Action to the SWRCB and the Central Valley RWQCB. The plan was resubmitted in October 2003 as the General Report for the SVWQC with a Notice of Intent (NOI) to meet the newly adopted water quality regulations and obtain coverage under the Conditional Waiver for Irrigated Lands. More than 200 organizations throughout the Sacramento River watershed support the plan and are

committed to implementing a regional strategy to address water quality. The SVWQC will evaluate a range of water quality parameters for the entire watershed rather than focusing only on specific water quality constituents, and will manage the region to meet the objectives in the Porter-Cologne Water Quality Control Act (Water Code 13000 et seq.).

On February 10, 2004, the Regional Board issued a Notice of Applicability (NOA) to the SVWQC verifying the NOI was complete and approved with conditions. The NOA required the SVWQC to submit a watershed evaluation report and a monitoring and reporting program plan for the Sacramento River watershed by April 1, 2004. To implement the plan and to meet the Conditional Waiver for Agricultural Lands requirements, the SVWQC has prepared and is submitting the following documents that will serve as the foundation for a phased water quality management program: (1) Sacramento River Watershed Evaluation Report; and, (2) Sacramento River Watershed Monitoring and Reporting Plan.

The quantitative data and analysis presented in the above-mentioned reports is designed to provide a consistent and comprehensive approach to watershed management. This approach will support farmers and wetland managers in meeting water quality goals and regulatory requirements. Together these plans satisfy the requirements of the Conditional Waiver for Irrigated Lands.

The reports will change as new information is developed during the interim program and throughout the 10-year implementation program proposed for the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands. This long-term planning horizon supports an “adaptive management” approach at the local level, by allowing the time to evaluate options in order to make optimal decisions with limited resources to achieve desired results.

For purposes of compliance with the July Waiver, the DFG has joined the SVWQC. DFG continues to participate in the Coalition process and provides annual funding based on acres of managed wetlands at the Yolo Bypass Wildlife Area.

3.1.12 NATURAL RESOURCES CONSERVATION SERVICE PROGRAMS

WETLANDS RESERVE PROGRAM

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Wetlands Reserve Program (WRP) is a voluntary program to restore wetlands. Participating landowners have the opportunity to establish conservation easements in perpetuity or for a 30-year duration. Landowners also have the option to enter into restoration cost-share agreements where no easement is involved. In exchange for establishing a permanent easement, the landowner receives payment up to the agricultural value of the land and 100 percent of the restoration costs for restoring the wetlands. The 30-year easement payment is 75 percent of what would be provided for a permanent easement on the same site and 75 percent of the restoration cost. The voluntary agreements are for a minimum of 10-year duration and provide 75 percent of the cost of restoring the involved wetlands. Easements and restoration cost-share agreements establish wetland protection and restoration as the primary land use for the duration of the easement agreement. In all instances, landowners continue to control access to their land. Wetland restoration activities implemented in the Los Rios WRP Unit of the Yolo Bypass Wildlife Area were conducted through a perpetual WRP easement acquired by Los Rios Farms prior to acquisition by the State.

There is a 153-acre WRP restoration on the Yolo Bypass Wildlife Area that was constructed in 2005. This property is adjacent to Putah Creek and includes 11 acres of riparian restoration. The restoration plan underwent hydraulic analysis prior to construction and received an encroachment permit from the Reclamation Board. The management of this unit has been turned over to DFG.

CONSERVATION SECURITY PROGRAM

The Conservation Security Program (CSP) is a voluntary program that provides financial and technical assistance to promote the conservation and improvement of soil, water, air, energy, plant, and animal life, and other conservation purposes on Tribal and private working lands. Working lands include cropland, grassland, prairie land, improved pasture, and rangeland, as well as forested land that is an incidental part of an agriculture operation. The program provides equitable access to benefits to all producers, regardless of size of operation, crops produced, or geographic location. The Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) (Pub. L. 107-171) amended the Food Security Act of 1985 to authorize the program. CSP is administered by USDA's NRCS.

One CSP enhancement activity in particular was developed on the Yolo Bypass Wildlife Area. Wildlife Habitat Management Enhancement, "EHM17-#11 Manage Fallow Cropland Areas for Shorebird Habitat" was developed on site and submitted to NRCS, who incorporated this practice into the CSP. This practice provides \$125 per acre to manage fallowed cropland fields for winter shorebird migration by flooding from July 20 through September 15 to a depth of 3 inches. Additional information on managing shorebird habitat is provided in Section 3.5, "Biological Resources"

DIXON RESOURCE CONSERVATION DISTRICT

Formed as independent local liaisons between the federal government and landowners, resource conservation districts (RCDs) have always worked closely with the USDA NRCS. RCDs address a wide variety of conservation issues such as water quality, wildlife habitat restoration, soil erosion control, drainage, conservation education, and much more. The Dixon RCD covers over 114,000 acres and is involved in the operation and maintenance of an extensive drainage system, water quality issues, and assisting local farmers. Each district has a locally elected or appointed volunteer board of directors made up of landowners in that district. The DFG has an agreement with Dixon RCD to manage agricultural leases and other agriculture-related activities occurring in the Yolo Bypass Wildlife Area (see Appendix D). Dixon RCD staff has made invaluable contributions towards DFG's goal of integrating agriculture into the long-term management of the Wildlife Area.

3.1.13 YOLO BYPASS FISH PASSAGE AND FISH HABITAT IMPROVEMENT PLANNING

Several studies and planning efforts have been conducted to examine the feasibility of managing a portion of the Yolo Bypass to improve passage and habitat for aquatic species, particularly native fishes such as Chinook salmon, Sacramento splittail, and sturgeon (U.S. Army Corps of Engineers and the CALFED Bay-Delta Program 2002; Kirkland et al. 2005). Other recent planning efforts that have focused on Delta-wide fisheries and aquatic food web issues include: the Delta Smelt Action Plan (Resources Agency 2005), and the Pelagic Fish Action Plan (Resources Agency 2007). Ideas and concepts that have been developed for the Bypass range from modifying the hydrology of the Yolo Bypass to yield system-wide changes, to modifying a small portion of the Yolo Bypass topography to produce localized changes, to simply improving fish passage at physical impediments.

The most recent studies and planning efforts have been directed towards fish passage improvements at Fremont Weir and on Putah Creek in a way that is not intended to harm existing agricultural and/or managed wetlands operations at the Yolo Bypass Wildlife Area. Modifications to Fremont Weir, whether for fish passage or for fish habitat source flow, are outside the boundaries of the Yolo Bypass Wildlife Area and beyond the scope of this LMP. However, there is great concern that modifications to Fremont Weir to achieve managed spring floodplain inundation conditions could adversely affect existing agricultural, public use and managed wetland operations at the Yolo Bypass Wildlife Area. There is also concern that smaller flows which might be associated with providing multi-species fish passage at Fremont Weir could adversely affect existing agricultural and/or managed wetland operations and/or public use at the Yolo Bypass Wildlife Area. The Wildlife Area personnel would not take a lead role in improving fish passage beyond its northern and southern boundaries, but DFG would support

fish passage improvement plans if they do not unduly interfere with other existing or planned functions of the Yolo Bypass Wildlife Area.

A Yolo Bypass Interagency Working Group (YBIWG) has been formed which will develop priorities for fisheries projects within the Yolo Bypass. This group includes representatives from National Oceanic and Atmospheric Administration, national marine Fisheries Service (NMFS), DWR, DFG, and USFWS. The agreed upon prioritized fishery opportunities have been developed are included in the following document:

YOLO BYPASS CONCEPTUAL AQUATIC RESTORATION OPPORTUNITIES

The following describes potential northern Yolo Bypass (above Little Holland Tract) aquatic restoration opportunities. The CALFED Ecosystem Restoration Program Implementing Agencies (DFG, USFWS, NMFS) in cooperation with the DWR, are evaluating the feasibility of implementing the following opportunities. These opportunities were developed through consultations with participating agencies of the Yolo Bypass Interagency Working Group. The YBIWG acknowledges key issues, interests, and concerns raised during previous discussions with stakeholders and evaluates potential restoration opportunities with these issues in mind.

The primary goal of the YBIWG is to improve conditions for native fish species (particularly State and federal Threatened and Endangered fish species and species of special concern) in the Yolo Bypass, thereby enhancing populations and recovery efforts while minimizing land management impact.

This document focuses, at a conceptual level, on the sequential development of potential restoration opportunities in the northern Yolo Bypass. The set of potential restoration opportunities is provided to foster discussion among public entities and stakeholders interested in the northern Yolo Bypass.

The YBIWG has identified the following potential restoration opportunities for further evaluation:

- ▶ **Putah Creek** – Lower Putah Creek stream realignment and floodplain restoration for fish passage improvement and multi-species habitat development on existing public lands.
- ▶ **Lisbon Weir** – Improve agriculture and habitat water control structure for fish and wildlife benefits.
- ▶ **Additional multi-species habitat development** – Identify areas of opportunity within the Yolo Bypass Wildlife Area, or other appropriate areas that could provide for controlled localized seasonal inundation on more frequent intervals.
- ▶ **Tule Canal Connectivity** – Identify passage impediments. Evaluate the feasibility of improving fish passage or removing fish passage impediments.
- ▶ **Multi-species fish passage structure** – Evaluate the feasibility of constructing a multi-species fish passage structure at the Fremont Weir.

Biological monitoring will be implemented as necessary and may be used to guide future actions and adaptive management.

Multi-species restoration opportunities discussed here are presented in a sequential order of completion. For the full value of the proposed restoration opportunities in the Yolo Bypass to be realized, the following ordered scheme should occur.

Step 1 – Putah Creek

Evaluate and develop a plan for the realignment and restoration of lower Putah Creek. The area proposed for restoration is within existing public lands. The realignment has the potential to create 130 to 300 acres of shallow

water habitat. Benefits would include improved salmonid immigration and emigration to and from Putah Creek, an increase in avian (shorebird and waterfowl) habitat, increased aquatic and riparian habitat for other native species, as well as a significant enhancement to existing fish habitat in and around Putah Creek. Any potential actions would be consistent and coordinated with the Putah Creek Water Accord.

Goals:

- ▶ Improve passage, rearing, and emigration of adult and juvenile salmon and steelhead in Putah Creek
- ▶ Provide diverse aquatic and riparian habitats for shorebirds, ground nesting birds, waterfowl, plants, invertebrates, plankton, and spawning and rearing of native fish species

Step 2 – Lisbon Weir

Modify or replace Lisbon Weir to provide better fisheries management opportunities in Putah Creek and the Toe Drain, while improving the reliability of agricultural diversions and reducing maintenance requirements. A conceptual example of the synergistic benefits of these proposed restoration actions is the idea that improving Lisbon Weir's reliability for agricultural diversions could increase flexibility in water distribution, thereby allowing for greater attraction flows to be released down the realigned Putah Creek.

Goals:

- ▶ Improve irrigation water distribution system to benefit fish and wildlife
- ▶ Improve likelihood of adult fall-run Chinook immigration to Putah Creek
- ▶ Reduce delay and possible stranding of adult steelhead, Chinook salmon and sturgeon, when passable conditions to the Sacramento River exist
- ▶ Reduce delay of juvenile salmonid emigration within the Toe Drain

Step 3 – Additional multi-species habitat development

Expand existing shallow water habitat for various species including juvenile native fish. Additional multi-species habitat could be developed through the excavation of a low shelf along a limited portion of the Toe Drain and through small scale setback levees, or by other unidentified means. Restoration opportunities for the development of additional seasonal shallow water habitat, where opportunities exist, may occur on: 1) undeveloped lands within the Yolo Bypass Wildlife Area; 2) other undeveloped public lands within the Yolo Bypass; and 3) private lands where cooperative agreements between the implementing agencies and the landowners provides mutual benefits.

Goals:

- ▶ Increase rearing habitat available to juvenile steelhead, Chinook salmon, and splittail
- ▶ Increase shallow water habitat availability for multiple species (fish, wildlife, plankton, and others)

Step 4 – Tule Canal connectivity

Identify areas of stranding adjacent to the Fremont Weir. Evaluate the feasibility of improving connectivity between the Fremont Weir, the Fremont Weir scour ponds, and the Toe Drain to reduce stranding of adult and juvenile fish. Identify seasonal road crossings and agricultural impoundments in the northern Yolo Bypass that

impact wetted habitat connectivity, immigration, and emigration of fish species utilizing the Yolo Bypass. Develop conceptual approaches for the modification of crossings and impoundments.

Goals:

- ▶ Reduce delay and stranding of adult steelhead, Chinook salmon, and sturgeon immigrating within the Yolo Bypass
- ▶ Reduce delay and overall losses of juvenile Chinook salmon and steelhead emigrating within the Yolo Bypass

Step 5 – Multi-species fish passage

Evaluate the feasibility and appropriateness of providing fish passage improvements in and along the Fremont Weir. Appropriate operational constraints would guide plan development and would ensure: 1) continued maintenance of flood conveyance capacity; 2) no substantial changes in timing, volume, and/or duration flow; and 3) minimal disturbance to existing land use and agricultural practices.

Restoration opportunities may include the addition of a new, controlled multi-species fish passage structure at the eastern edge of the Fremont Weir. Additionally, restoration opportunities may include improvements along the existing weir face and apron to facilitate sturgeon passage along the length of Fremont Weir without introducing any additional flows. Conceptual designs for this option could include rock ramps that would provide a gradual slope up the face of the weir. In addition to the installation of new fish passage structures, the existing fish ladder will be analyzed to determine if modifications could allow for a greater range of fish species passage.

Goals:

- ▶ When present in the northern Yolo Bypass, improve immigration and emigration (reduce delay and stranding) of adult and juvenile fish (steelhead, Chinook salmon, and sturgeon).

The YBIWG identified potential restoration opportunities with consideration given to the elimination or minimization of potential negative impacts to the following areas of concern:

- ▶ Flood control
- ▶ Agricultural operations
- ▶ State and federal wildlife area infrastructure investments
- ▶ Public and private waterfowl management operations
- ▶ Wildlife management operations
- ▶ Water quality
- ▶ Educational activities
- ▶ Recreation
- ▶ Vector control
- ▶ Welfare of selected fish species at various life stages.

The intent of the YBIWG is to keep all users and interest whole. Conceptual restoration opportunities were developed to be implemented with minimal impact to Yolo Bypass users. Restoration opportunities that significantly changed the timing and/or duration of flow, or that resulted in substantial new regulation of the Yolo Bypass, were eliminated from further consideration.

3.1.14 SACRAMENTO AREA COUNCIL OF GOVERNMENT’S REGIONAL BICYCLE, PEDESTRIAN, AND TRAILS MASTER PLAN

The Sacramento Area Council of Government’s (SACOG) Regional Bicycle, Pedestrian, and Trails Master Plan is intended to guide the long-term decisions for the Bicycle and Pedestrian Funding Program, adopted by the SACOG Board of Directors in September 2003. The focus of both the Master Plan and the Funding Program is to provide facilities for walking and biking in the cities and towns of the region, and provide connections between cities and towns. The goal is to integrate local plans to create a seamless regional bicycle and pedestrian system. This approach prioritizes local projects by their contribution to the regional network, providing key connections and access between communities, counties and jurisdictions.

Specific goals identified for capital projects that relate to the Yolo Bypass Wildlife Area include:

1. Provide bicycle/pedestrian connections
 - a. Between, through, and within all cities and towns of the six-county region.

It may be possible for bike paths to connect through or adjacent to the Yolo Bypass Wildlife Area at the Causeway Unit; however, the once proposed Union Pacific Rail Trail (old Southern Pacific east/west mainline in the Causeway Unit) through the Yolo Bypass to the I Street Bridge (in the City of West Sacramento) has been identified in the Regional Master Plan as: “Low Priority Rails-to/with-Trails.”

3.1.15 CITY OF DAVIS

The City of Davis has several plans and programs related to public access at the Yolo Bypass Wildlife Area including the General Plan, Open Space Program, and City Bike Plan. Planning work within the Putah Creek watershed by the City of Davis has contributed synergistic support for the creation of the Yolo Bypass Wildlife Area. The City’s policies support continued coordination. Bikeways connecting Sacramento and Davis are also goals of Davis planning efforts and will likely require coordination with the Yolo Bypass Wildlife Area and Bypass stakeholders.

The City of Davis also values habitat and wildlife preservation and as such is a continuing partner in support of the Yolo Bypass Wildlife Area and Pacific Flyway Center.

GENERAL PLAN

- **Policy POS 1.1** - Use systematic and comprehensive planning to guide the development, operation and allocation of resources for all City parks, facilities, and recreation programs.

- Actions

Emphasize joint planning and cooperation with all public agencies as the preferred approach to meeting the parks, open space and program needs of Davis residents.

- **Policy POS 1.2** – Provide informal areas for people of all ages to interact with natural landscapes, and preserve open space between urban and agricultural uses to provide a physical and visual edge to the City.

- Actions

Incorporate existing habitat areas, including Putah Creek, Dry Slough, and Willow Slough, into the open space network, while maintaining the emphasis on wildlife and habitat preservation in these areas.

Within urban open space areas, provide habitat elements (e.g., roosting trees, nesting trees, etc.) for birds, such as songbirds, hawks, owls, and for other wildlife as appropriate.

Develop criteria regarding the types of locations where the City would like to establish new resource preservation, education and recreation areas and programs.

Establish criteria for location and design of natural habitat areas accessible to the public, including criteria for natural habitat areas that can complement and accommodate other open space uses such as viable wildlife habitat.

Set policies and criteria for the establishment of trails and picnic areas in natural open space areas.

► **Policy POS 3.3** - Implement specific projects to augment the existing greenbelt/open space system.

- Actions

Develop, maintain and improve a trail, and other greenbelt type amenities, if possible, in the Second Street/I-80 Corridor.

COMPREHENSIVE BICYCLE PLAN

The purpose of the Bicycle Plan is to improve and encourage bicycle transportation in the City of Davis. This is an update of the 1993 Bikeway Plan, and is part of an effort to maintain a document that is current and meaningful to the city. Additionally, this Plan meets the requirements contained in Section 891.2 of the California Streets and Highways Code. A goal of the Bicycle Plan is to coordinate and cooperate with surrounding jurisdictions such as University of California at Davis, and Yolo and Solano counties, to create a continuous and interconnected bikeway network.

OPEN SPACE PROGRAM

Highlights of the City's activities include:

- Wildlife habitat lands acquisition and site development program which includes the South Fork Preserve natural area on Putah Creek and the Davis Wetlands Project associated with the city's water pollution control plant. The City's activities on Putah Creek will eventually and directly interface with public use programs on the Wildlife Area.
- Active pursuit of state and federal grant funds, cooperative partnerships and other creative funding arrangements that have brought over twelve million new dollars to City of Davis open space projects over the last eight years.
- Open space components of the City's internal network of greenbelts, parks and street corridors.

3.1.16 CITY OF WEST SACRAMENTO

The City of West Sacramento has plans and programs related to natural resources adjacent to and public access at the Yolo Bypass Wildlife Area including the General Plan and Access and Bike Plan. The City's policies support coordination and values habitat and wildlife preservation.

GENERAL PLAN

Section V, Recreational and Cultural Resources, Goal E: To provide a network of pedestrian and bicycle pathways connecting parks and open space areas with other destination points within and beyond the city of West Sacramento.

Policies:

1. The City shall develop a system of pedestrian and bicycle pathways linking City parks, neighborhood shopping areas, and major open space areas with one another and with nearby residential areas.
3. The City shall develop and implement a Bicycle Route Master Plan to link parks, scenic areas, the riverfront, schools, the Central Business District, public facilities, and neighborhoods.
5. The City shall coordinate with SACOG and surrounding jurisdictions to ensure that bicycle pathways within the city connect with existing and planned facilities outside the city.

Section VI, Natural Resources Goals and Policies, Goal C: To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento.

Policies:

7. The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands; Bee Lakes and associated riparian woodlands; riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal; and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.
12. Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.

ACCESS AND BIKE PLAN

The City of West Sacramento is currently updating the 1995 Pedestrian and Bicycle Master Plan. The new Bicycle, Pedestrian, and Trail Master Plan will identify ways to enhance and expand the existing network of pedestrian and bike travelways and recreational trails, connect gaps in the system, and improve problem areas. It may be possible for bike paths to connect through the Yolo Bypass Wildlife Area at ground level in the Causeway Unit.

3.1.17 LOWER PUTAH CREEK WATERSHED MANAGEMENT ACTION PLAN

The Lower Putah Creek Watershed Management Action Plan (WMA) represents a three-phase program for enhancing watershed resources in the lower Putah Creek watershed (Lower Putah Creek Coordinating Committee 2005). The WMA is a science and community based comprehensive approach to the protection and enhancement of resources in the lower Putah Creek riparian corridor, including tributaries, extending from Lake Berryessa to the Yolo Bypass. It is one of the first actions initiated by the Lower Putah Creek Coordinating Committee (LPCCC), through funding by a grant from the CALFED Bay-Delta Program. The LPCCC serves as the watershed group joining several primary stakeholders together to oversee implementation of the Putah Creek Accord and to begin planning for the enhancement and protection of Putah Creek's resources.

The goal is to develop a dynamic WMA that landowner stakeholders can use as a framework and that will be updated with new information and new ideas to improve the watershed. Importantly, it is intended to provide

landowners and management entities with a blueprint for actions to protect and enhance resources in the lower Putah Creek watershed in a manner that is compatible with and respectful of landowner priorities, interests and concerns.

Development and implementation of the WMAP is divided into three phases. Phase I, completed in 2005, includes comprehensive biological, physical, and cultural resource assessments. Phase II, completed in 2006, is the landowner stewardship component. It includes a summary of goals, objectives, and project ideas for management of the lower Putah Creek watershed, based primarily on Landowner Stewardship meetings and coordination. The final WMAP, anticipated to be completed in 2008, will be a result of both the information from the resource assessments and landowner guidance. It will include a set of landowner interests and concerns; and resource enhancement goals and objectives; and an implementation plan containing a prioritized set of restoration and enhancement actions. Phase III is the implementation phase of the WMAP. Implementation will follow the recommended goals, objectives, and project ideas in the WMAP and will depend on funding, stewardship actions, permits and regulatory approvals, and the support of resource agencies and other stakeholders.

A copy of Phase 1 of the WMAP can be found on the Lower Putah Creek Watershed Portal at the following web address: <http://www.watershedportals.org/lpccc/viewDoc_html?did=2898>.

3.1.18 YOLO COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

The Water Resources Association of Yolo County is using Proposition 50 funds to develop the Yolo County Integrated Water Management Plan (IRWMP) with intentions to adopt this plan in 2007. The IRWMP will serve as a planning document to help guide water actions within Yolo County. These actions include programs, policies and projects which are divided into five areas:

1. Water supply and drought preparedness
2. Water quality
3. Flood and storm water management
4. Recreation
5. Riparian and aquatic ecosystem enhancement

A draft list of actions in all five areas listed above has been developed and will eventually be prioritized through a watershed based stakeholder developed work plan. There are also integrated projects. The Yolo Bypass Wildlife Area related actions are part of the Yolo Bypass Integrated Project. The implementation strategy for the integrated projects is currently being developed by the WRA Technical Advisory Committee. It is anticipated that various agencies will take the lead on specific actions as appropriate within the context of the integrated project. DFG may seek funding for Yolo Bypass Wildlife Area Land Management Plan related actions through the Yolo County IRWMP implementation process.

3.1.19 YOLO COUNTY WEED MANAGEMENT AREA

The Yolo County Weed Management Area (YCWMA) was formed in 1999 by federal, state, county and city agencies, private industry, and landowners that are concerned about the explosion of invasive plant species in Yolo County. The YCWMA promotes and coordinates efforts toward the management and control of the County's noxious weeds through education and cooperation with landowner's, agencies, organization, and the general public. The YCWMA uses an integrated approach in weed control and eradication. The DFG, through employees of the Yolo Bypass Wildlife Area have been an active partner since the inception of the Yolo County WMA.

Herbicides, hand removal, mechanical removal, mowing, burning, grazing, mulching, biological control, and revegetation are all methods employed to various extents on a project by project basis to achieve the most biologically sound, environmentally friendly, and cost effective, long-term weed control possible.

3.1.20 CALIFORNIA'S WILDLIFE ACTION PLAN

California's Wildlife Action Plan was prepared by the UC Davis Wildlife Health Center for DFG and published in 2007. This was written as a requirement to received funding from the State Wildlife Grants Program authorized by Congress in 2000. A number of conservation actions are identified in this plan. These are intended to restore and conserve wildlife. These actions are categorized as either Statewide Conservation Actions or Regional Conservation Actions. In this plan, the Yolo Bypass Wildlife Area is located within the Central Valley and Bay-Delta Region.

Below is a listing of conservation actions pertinent to the Yolo Bypass Wildlife Area LMP.

RECOMMENDED STATEWIDE CONSERVATION ACTIONS

Statewide conservation actions are those actions that are important across most or all regions. The following are recommended statewide conservation actions:

- c. The state should develop policies and incentives to better integrate wildlife conservation into state and regional transportation planning. Wildlife considerations need to be incorporated early in the transportation planning process.
- d. State and federal agencies should work with cities and counties to secure sensitive habitats and key habitat linkages.
- e. State and local agencies should allocate sufficient water for ecosystem uses and wildlife needs when planning for and meeting regional water supply needs.
- f. Federal, state, and local agencies should provide greater resources and coordinate efforts to eradicate or control existing occurrences of invasive species and to prevent new introductions.
- g. Federal, state, and local agencies and nongovernmental conservation organizations, working with private landowners and public land managers, should expand efforts to restore and conserve riparian communities.
- h. Federal, state, tribal, and local agencies and nongovernmental organizations, working with private landowners, should expand efforts to implement agricultural and rangeland management practices that are compatible with wildlife and habitat conservation.
- j. The state and federal governments should give greater priority to wildlife and natural resources conservation education.
- k. The state should strengthen its capacity to implement conservation actions and to assist local agencies and landowners with planning and implementation of wildlife and habitat restoration and conservation efforts.
- n. To address habitat fragmentation and avoid the loss of key wildlife corridors, federal, state and local agencies, along with nongovernmental organizations, should support scientific studies to identify key wildlife habitat linkages throughout the state.

RECOMMENDED REGIONAL CONSERVATION ACTIONS

The following are Central Valley and Bay-Delta Regional conservation actions to restore and conserve wildlife:

- c. Public land managers need to continue improving wildlife habitat for a variety of species on public lands.

- e. Public agencies and private organizations need to collaboratively protect and restore habitat connectivity along major rivers in the Central Valley.
- j. Water management agencies need to reestablish and maintain more natural river flows, flooding patterns, water temperatures, and salinity conditions to support wildlife species and habitats.
- l. Public agencies and private organizations should conserve and restore water dependent habitats (including wetland, riparian, and estuarine) throughout the region. Design of these actions should factor in the likely effects of accelerated climate change.
- m. Water management agencies, state and federal wildlife agencies, and other public agencies and private organizations need to collaboratively improve fish passage by removing or modifying barriers to upstream habitat.
- n. To support healthy aquatic ecosystems, public agencies and private organizations, in collaboration with the California Bay-Delta Authority, need to improve and maintain water quality in the major river systems of this region.