8 Operations, Maintenance and Monitoring

The purpose of this chapter is to describe the staffing and other resources necessary to perform the operations and maintenance associated with existing ongoing operation of the Preserve, and the future implementation of this Management Plan. This Plan proposes to manage the Preserve's habitat and public use areas at or above existing conditions and levels; therefore, the implementation of this Management Plan will require changes in staff organization, and additional staffing and financial resources. This Management Plan is intended to help the Partners develop long- and short-term priorities via preparation of annual work plans. This Management Plan does not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisitions.

8.1 EXISTING STAFF

Staff resources for the Preserve are currently provided by BLM, TNC, GJUESD, DFG, and Sacramento County. Although the total number of staff supporting the Preserve varies from year to year, typical Preserve staff positions are listed in Figure 8.1. Individual Partner staffing responsibilities are outlined in the 1996 Cooperative Management Agreement, as amended.

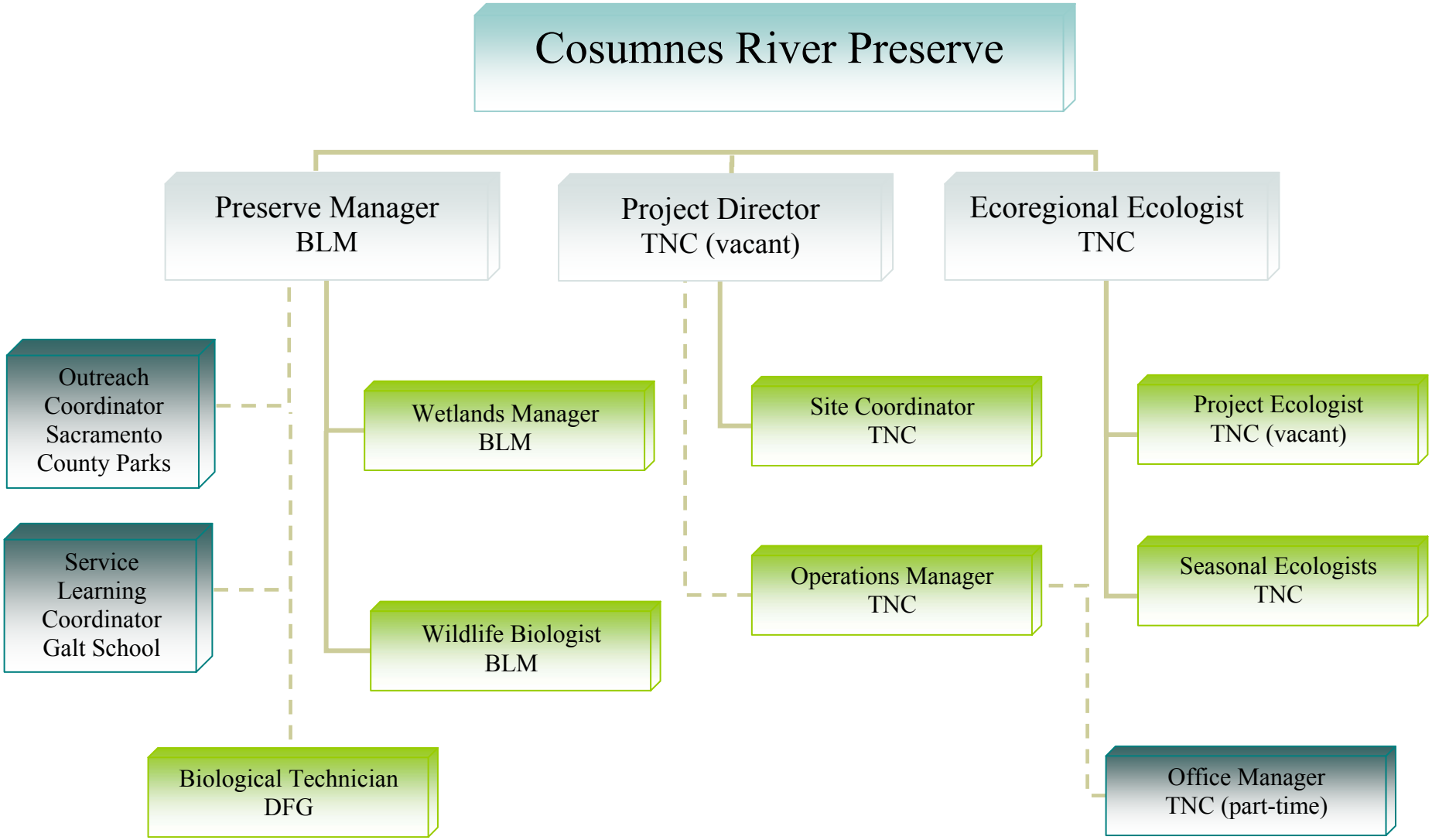
Seasonal employees, as described in Chapter 5, provide staff support to the Preserve. In addition to the staff shown on the organization chart (Figure 8.1) below, most of the Partners contribute specialized expertise from their parent organizations on an as-needed basis. For example, BLM's Folsom Field office has experts on cultural resources, geology, and computer services. Ducks Unlimited staff contribute expertise in wetland development and management. DFG's pesticide experts have supported the Preserve. TNC has staff members with expertise in diverse areas, such as water resources, geographic information systems (GIS), and various scientific disciplines. Additionally, TNC has three full-time staff with the California Water Program who assist with Delta policy and work from the Sacramento office. All Partners typically provide legal and financial support positions to their staff as well. TNC attorneys provide legal support for all land-related deals on the Preserve, for all Partners. Consultants and contracts are retained by the Partners on a periodic basis to support specific projects. The availability of these types of specialized expertise from the Partner organizations is a benefit to the Preserve.

The Partners' funding of staff and related expenses to support restoration, public use, management, improvements, research, and monitoring is significant.

8.2 ADDITIONAL PERSONNEL NEEDS TO IMPLEMENT PLAN

Table 8.3 summarizes actions identified throughout this Management Plan and the estimated labor required to implement them. As shown in this Table, a combination of additional site management, technical expertise, public use staff, and maintenance staff is needed to fully implement this Management Plan. It is anticipated that the continuation of the seasonal employee program will also be needed.

FIGURE 8.1: ORGANIZATION CHART



In addition to the existing positions previously described, it is anticipated that several new staff positions will be needed in the future. Preserve staff have suggested that the following potential future positions would be necessary in order to manage the Preserve for the long term:

TABLE 8.1: POTENTIAL FUTURE STAFF POSITIONS

Title	Role	Partner	Status
Supervisory Biologist, other	Assistant Preserve Manager	BLM, DFG	FT
Wildlife Biologist, Field Representative, other	Land Stewardship and Project Management	DFG, TNC, DU	FT

8.3 CAPITAL EQUIPMENT AND MAINTENANCE

In addition to proposed staffing resources, operation and maintenance of the Preserve requires capital equipment, materials, and supplies. Examples of capital equipment necessary to implement this Management Plan include, but are not limited to, work vehicles, tractors, mowers, backhoes, graders, bulldozers, common hand and power tools, office equipment and supplies, and field supplies.

The Preserve's barn, Visitor Center, farm center, vehicles, tools, trails, boat launch, fences, gates, parking areas, and kiosks are the primary facilities and property that need to be maintained. Wetland pumps, water control structures, and Preserve-owned roads and levees also require ongoing routine maintenance. Agricultural operators work with Preserve staff to maintain farm pumps, water troughs, irrigation systems, and other agricultural infrastructure as part of their farming or grazing leases. Major levee maintenance and repair is an ongoing challenge and often requires a substantial investment in capital improvements (*e.g.*, Staten Island, McCormack-Williamson Tract, Denier II).

8.4 OPERATIONS AND FINANCE

Currently, the Partners contribute financially to the operations and maintenance of the Preserve through the allocation of funding for staff, maintenance, contractors, vehicles, field and office supplies, and tools to support management of the Preserve. Typical land-management expenses include purchase of fuel for vehicles and equipment, parts and repairs, replacement of worn or damaged equipment, replacement of field supplies, purchase of pesticides for control of invasive species, garbage collection, contracted maintenance, etc. Costs for materials and supplies can be considerable for some tasks, such as the eradication of extensive invasive species or the repair of levees and pumps. The budgeting procedure for the Partner organizations varies and, although existing funding sources are anticipated to continue, they are not guaranteed in the future. Funding levels could change at any time.

In addition to the "base" funding that is provided by the Partner organizations, the Preserve also generates a substantial amount of its own income through its agricultural and grazing operations,

especially through the organic rice operations. The farm and grazing leases, therefore, are essential to the continued operation of the Preserve, as most Partner budgets are not expected to increase over time.

8.4.1 Funding Sources

Sources of funding for the Preserve are derived primarily from the Partner organizational budget allocations at this time; specifically the BLM, TNC, Sacramento County, and GJUESD. Staff has indicated that complete dependence on agency/organization annual budget allocations is not reliable because these budgets are highly variable and are unlikely to be sufficient to serve in the long term. For example, federal funding of the Preserve through BLM is typically dependent on the annual congressional allocations to the BLM in any given fiscal year. Private funding through non-profit partners such as TNC and DU varies with philanthropic donations to foundations, grant funding, and other sources. To some extent the capacity of these sources varies with the overall economy. In addition, as partners like TNC continue to expand their geographic reach into other areas, current funding and staffing levels are expected to be responsible for those areas as well. This will stretch the same amount of staff and funds over a larger area.

The Preserve has been very successful in obtaining grant funding in the past. While it is hoped that grant funding will continue, significant dependence on grant funds is not a viable, long-term solution to providing funding for the Preserve in perpetuity. Grant funds are sometimes available for preserves to purchase new properties; however, grant funding for major restoration projects, major capital improvements, or to "jump-start" new programs is very limited and often not available for operations and maintenance. Moreover, the grant application and management process requires the commitment of staff time to administer. Given that future financial needs of the Preserve will likely focus on operations and maintenance, it is anticipated that few grant opportunities will be available. Private foundations have funded small public-use improvements over the past decade, and those funds are likely to continue to be available to non-profit partners such as TNC and DU.

As the Preserve's management emphasis shifts from start-up expansion to one of long-term management of existing parcels and routine operations and maintenance, it is anticipated that funding sources will shift from grants to other more sustainable sources, such as endowments and general government funds. To help reduce funding constraints, several management actions are proposed on the following pages. The most important of these actions is to explore the feasibility of establishing an endowment or foundation for the Preserve. Successful implementation of this action will take a concerted effort by the Preserve Partners.

A list of potential funding sources from public funds, private foundations, and other private sources is provided in Table 8.2 below. These funding sources may be available for capital improvements, restoration, and enhancement projects within the Preserve. However, each of these funding sources has application constraints and is highly competitive. Additional research would be needed to determine the applicability of these potential funding sources to the Preserve, given timing and other application constraints.

TABLE 8.2: POTENTIAL PUBLIC AND PRIVATE FUNDING SOURCES

- USFWS Programs (*e.g.*, State Wildlife Grant Program, Federal Aid in Wildlife Restoration Program)
- CBDA Ecosystem Restoration Program (*e.g.*, through public solicitation process or submittal of an unsolicited proposal)
- Central Valley Project, Wildlife Habitat Augmentation Plan
- California Wildlife Conservation Board, Habitat Acquisition and Restoration Program
- Department of Fish & Game programs (*e.g.*, Comprehensive Wetlands Program)
- DWR grants available for mitigation of water projects and levee maintenance activities
- U.S. Environmental Protection Agency grant programs
- National Fish and Wildlife Foundation grant programs (*e.g.*, Bring Back the Natives [BBN], Five Star Restoration Challenge Grants)
- North American Wetland Conservation Act (NAWCA)
- Wetlands Conservation Fund
- IRWMP-DWR Bond fund
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Farm Bill programs
- Central Valley Project, Wildlife Habitat Augmentation Plan
- Wildlife Conservation Board Inland Wetlands Conservation Program
- Funding from Sacramento County HCP/NCCP
- Ducks Unlimited, Wetland Restoration Program
- The James Irvine Foundation (www.irvine.org)
- Resources Legacy Fund (www.resourceslegacyfund.org)
- Intel Community Grants (www.intel.com/intel/intel-in-your-community.htm)
- David and Lucile Packard Foundation (www.packard.org)
- Richard and Rhoda Goldman Fund (www.goldmanfund.org)
- The Pew Charitable Trusts (www.pewtrusts.com)

8.5 ADMINISTRATION OF THE PRESERVE

PROGRAMS

The Preserve has successfully implemented many innovative projects, programs, and concepts; including its wetlands management program, migratory bird program, volunteer program, education program, restoration projects, and the Wetland Reserve Program (WRP) (monitored by NRCS). One of the Preserve's greatest achievements to date is the establishment of the Partnership and the CMA. At this Preserve, government agencies and private organizations with differing priorities and constraints work together in a private/public venture towards the common mission of establishing and maintaining the Preserve and protecting the river. Similar partnerships are rare and the partnerships established at this Preserve have served as a model for others. Both the number of participating organizations and the significant leadership roles that

TNC and BLM have assumed are particularly noteworthy. The support and respect the Preserve has received from within the public community—from neighboring landowners and from within each Partner organization—has been remarkable. The Preserve has achieved these successes by having a committed and dedicated staff and by having Partners that are fully committed to the Preserve's mission. A large financial commitment was required to realize the Preserve's current level of success. The financial contributors include numerous donations, grants, TNC, CALFED, BLM, and many others. The early success of several of the Preserve's restoration projects helped garner attention from the scientific and regulatory community, which in turn fostered additional funding used to restore even more habitat. Building on this past success, this Management Plan describes several actions to enhance existing habitat, to add more parcels to the Preserve, and to expand the public-use programs.

"Prescribed Burn" – Photo ***courtesy of Preserve Photo Library***

PARTNER ROLES

The Cooperative Management Agreement (CMA) defines the goals, roles, and responsibilities of the signatories for managing and administering all portions of lands currently owned, in fee or in easement, by the Partners. The Partners recognize that their respective interests in those lands are subject to different authorities and policies, but that the CMA is intended by the Partners to define an administrative process and facilitate cooperation among them to the greatest extent possible.

The CMA is updated every five years; however, the last update occurred in December 2005 via a brief letter indicating consensus to extend the agreement as written previously. The next CMA update process has already begun and the updated agreement is anticipated to be finalized in July 2008. It is anticipated that at that time, two new signatories to the CMA will be added: The NRCS, which owns several easements on the Preserve, and the GJUESD.

The role of the Preserve Partners is changing and is anticipated to change even more in the future. In the past, the focus of the Preserve has been on growth, acquisition, and research. For the first 20 years, the Preserve was in a "start-up" mode, and the original acquisition of Preserve properties required expertise in real estate, grants, law, finance, science, and restoration. As most of this expertise was provided by TNC, it was logical that TNC played the most significant leading role. However, as the Preserve transitions from an acquisition focus to more emphasis on operations, management, maintenance, and monitoring, the roles of each Partner will also change. This transition may result in a shift from TNC's expertise in acquisitions and science to the agencies' expertise in long-term land management. Regardless of the transitions, all Partners will continue to have a valuable role at the Preserve and to pursue their organizations' goals as they relate to management of the Preserve.

The role of specific Partners is variable but each Partner plays an important role. For example, some Partners focus on the provision of funding, such as DWR funding an easement on Staten Island. Daily land management duties may be less of a role for some Partners.

COOPERATIVE PARTNERS

In addition to the land-owning Partners (referred to as the "Preserve Partners"), several important programs at the Preserve are dependent on other agencies that may not own land or be involved in day-to-day management activities but are nonetheless critical to the Preserve's success. These Partners are called Cooperative Partners and are described briefly below.

- GJUESD sends thousands of children to visit the Preserve as part of their educational careers. GJUESD has successfully obtained many grants to support the work of the Preserve's Education Coordinator position. Details are provided in Section 5-4 of Chapter 5. As mentioned above, GJUESD is likely to become a formal Preserve Partner when the CMA is updated in 2008.
- University of California, Davis, has taken the lead in research and science activities at the Preserve for many years. See Section 5-3, Public Use: Research, for details.
- NRCS routinely provides technical advice to local farmers and ranchers. They provide funding for numerous land-improvement projects through the WRP and EQIP programs and they provide helpful technical advice to the Preserve and its farm lessees. They also hold conservation easements across two Preserve properties totaling approximately 6,292 acres. As mentioned above, NRCS is likely to become a formal Preserve Partner when the CMA is updated in 2008.
- Sacramento Valley Conservancy (SVC) administers an agricultural easement on a portion, 180 acres, of the Valensin property.

SUPPORTERS

Several organizations and agencies support the Preserve's mission because they have similar missions and goals. In this case, the term "supporter" indicates that the organization promotes the interests or cause of stewardship at the Preserve. Examples of Supporter organizations are Save Our Sandhill Cranes (SOS Cranes), Point Reyes Bird Observatory (PRBO), the California Department of Boating and Waterways, Stone Lakes National Wildlife Refuge, Sacramento Regional County Sanitation District's Bufferlands project, the Lodi Sandhill Crane Festival, International Crane Foundation, the Elk Grove School District, the Galt Historic Society, and the California Native Plant Society. In the upper watershed, organizations that the Preserve will likely work with include land-owning stakeholders such as BLM, U.S. Forest Service (El Dorado National Forest), and American River Conservancy. The Bureau of Reclamation and El Dorado Irrigation District manage Sly Park Reservoir on the North Fork Cosumnes River. These supporters contribute to the long-term success of the Preserve by offering technical advice, assistance in achieving overall stewardship goals, grants, and/or contributions to scientific research that ultimately leads to improved land-management practices.

PARTNERSHIPS WITH NEIGHBORS

The support of neighboring landowners has been critical to the past success of the Preserve. Sometimes neighbors may be reluctant to work with governmental agencies or environmental organizations because of perceived differences in ideals or long-term visions of land stewardship. However, the Preserve's neighbors have made an effort to learn more about the Preserve and its mission and goals. Many of the Preserve's neighbors have made a concrete commitment to the Preserve's goals by selling conservation easements to the Preserve Partners. Others support research and monitoring efforts for Preserve researchers to better understand the land. Working together, the Preserve's neighbors have helped the Preserve make great strides in achieving stewardship goals.

POTENTIAL NEW PARTNERS

As the Preserve expands and management roles change, the Preserve may find other organizations and agencies with similar missions that might be potential new partners. These include state agencies such as California State Parks and CALTRANS (who funded an easement on the Valensin property), local agencies such as Sacramento County's HCP/NCCP program, and local non-profits such as land trusts. The Cities of Galt and Elk Grove are important local partners and they have referenced the Preserve in their General Plans.

The Preserve's primary challenge is to broaden the base of support for the Preserve. This entails broadening support among the Preserve Partners, Cooperative Partners, Supporters, neighboring landowners, and potential new partners. The management actions listed within this Management Plan are intended to help the existing Partners in this endeavor.

8.6 IMPLEMENTATION AND MONITORING CONTINGENCIES

Once the Management Plan is finalized, the implementation phase of the planning process begins. Implementation of this Management Plan is anticipated to occur over a 10-year period, at which time the Management Plan will be updated. The Preserve Partners will assume responsibility for implementing this Management Plan with assistance from any new partners, neighboring landowners, Preserve volunteers, and the public at large. The Preserve Partners will make every effort to implement the planned actions by the agreed-upon schedule (Table 8.3). However, implementation of the actions is contingent upon a variety of factors, including:

- Updating existing plans that tier off of this Management Plan (*e.g.*, Weed Management Plan, five-year Wetlands Management Plan, etc.).
- Completing new focused studies and assessments (*e.g.*, assessment of needed recreation facilities).
- Funding and staffing.
- Compliance with local, state, and federal regulations.
- Partnerships.
- Adaptive management actions resulting from continued research and monitoring.

Each of these factors is described briefly below.

UPDATING EXISTING FOCUS PLANS

This Plan outlines the need to update several existing planning documents that the Preserve has relied upon in the past but have become outdated due to new acquisitions, management techniques, and scientific understanding. Updating these plans (*e.g.*, Weed Management Plan) will provide the additional planning details necessary to implement future management actions.

COMPLETING NEW FOCUSED STUDIES AND ASSESSMENTS

Many of the proposed actions within this Management Plan require more in-depth planning and analysis than the Management Planning process was designed to provide. This Management Plan outlines the need to complete a few new assessments to ascertain the feasibility of proceeding with the anticipated actions. In addition to the needed assessments, a new comprehensive monitoring plan is proposed as part of this Management Plan.

FUNDING AND STAFFING

In order to maintain the Preserve's management at or above its current level, a certain amount of staffing, equipment, facilities, and supplies are needed. Some of these expenses may require an initial capital outlay; for example, for new recreation facilities. Others currently require, and will continue to require, recurrent operations, maintenance, and staffing expenses. These expenses are detailed above in Section 8.3.

COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS

This Management Plan outlines numerous activities that will require compliance with local, state, and federal regulations. CEQA and NEPA documents will soon be prepared to evaluate the potential environmental effects of this Management Plan. However, future implementation of some of the actions described herein will be subject to further regulatory and legal review that will be undertaken and accomplished prior to the implementation of the planned activity.

PARTNERSHIPS

Management of the Preserve is dependent upon a wide array of Partners, including the land-owning Partners, Cooperative Partners, Supporters, and neighboring landowners and communities. The Preserve will continue to rely on these and other partners in the future to help implement this Plan and to provide input into future Plan updates. This Management Plan identifies many actions that provide new opportunities for existing and new partners. There is great potential for more public participation and assistance in the management and interpretation of the Preserve's natural resources.

8.7 ADAPTIVE MANAGEMENT

This Management Plan provides for adaptive management of the Preserve. Used internationally, "adaptive management" is defined by some as "a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs" (Nyberg 1998). The Preserve will continually review its management tools, actions, and objectives and make modifications as necessary based on the results of ongoing monitoring activities, new scientific information, and other new studies. These periodic evaluations and course corrections will be used to better achieve the Preserve's goals and vision. Since monitoring is an essential component of adaptive management, we have integrated specific monitoring strategies into this Management Plan whenever possible.

MONITORING ELEMENTS

The Preserve will monitor certain areas for specific monitoring elements. The initial year of monitoring will be undertaken to establish baseline data for those elements that currently lack such data. After the first year of baseline data gathering, staff will compare results to the initial surveys. Ideally, monitoring data will be compiled over a several-year period to identify trends (either negative or positive). Should monitoring results indicate a significant change in environmental conditions (*e.g.*, target species or habitat not meeting goals); the Preserve will implement more intensive or different management strategies.

8.8 SEVERABILITY

If any provisions of this Management Plan or its application to any person or legal entity or parcel of land or circumstances is held invalid, the remainder of the Management Plan, or the application of the provisions to other persons or legal entities or parcels of land or circumstances, shall not be affected.

TABLE 8.3: IMPLEMENTATION TIMELINE FOR MANAGEMENT PLAN

Cosumnes River Preserve Management Plan
Action Implementation Table for Ecological Actions

CHAPTER 3 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Monitor public policy regarding water supply and flood management	All																	■	
1.1.2	Engage, as necessary, in public policy to prevent construction of dams or significant increases in surface water diversion.	All																		■
1.1.3	Map the Preserve's flooding and levee breaches in a comprehensive way. Update this data set on an annual basis.	All																	■	■
1.2.1	Map land-use patterns and change in the lower watershed every 2 years using available GIS data and aerial photos.	All		■		■		■		■		■		■		■		■		
1.2.2	Participate in regional land use planning and floodplain management efforts (e.g., South Sacramento County HCP, City of Elk Grove General Plan, county general plans, LAFCO decisions) that may affect Preserve resources (e.g., habitat destruction, degradation or fragmentation) or complement conservation goals (e.g., open space and wildlife corridors among other natural lands).	All																		■
1.2.3	Coordinate regional land management with other natural lands managers (e.g., Stone Lakes NWR, DFG Woodbridge ecological reserve, Sacramento Valley Conservancy) and with guidance from regional natural resource plans (e.g., Central Valley Joint Venture, Riparian Habitat Joint Venture). Review plans and provide comments and technical assistance where appropriate.	All																		■
1.2.4	Secure funding to protect surrounding lands that support Preserve biota and provide linkages to other natural lands, working with willing sellers and available resources.	All with leadership from TNC																	■	
1.2.5	Assess availability and needs for linkages and migration corridors for targets (e.g., giant garter snake, vernal pool species).	All with leadership from DFG			■															
1.2.6	Assess habitat values of different land uses. Develop and conduct standardized site assessments to identify areas that have high ecological value for the Preserve, using existing information.	All			■															
1.2.7	Determine habitat needs (amount, type, landscape ecology) of indicator species whose life history needs cross Preserve boundaries (e.g., sandhill cranes and Swainson's hawks).	All			■															
1.2.8	Promote landscape-scale linkages and corridors along the Cosumnes River and tributaries (e.g., from Delta to headwaters), among vernal pool sites, and among protected areas (e.g., Stone Lakes NWR, Deer Creek Hills).	All																	■	
1.2.9	Update and implement the overall weed control plan every 5 years to address Preserve-wide invasive species threats and priorities.	TNC and BLM					■					■					■			
1.2.10	Ensure wildlife-friendly agriculture on the Preserve's farmlands, and promote these practices on surrounding lands (e.g., annual crops, pasture, rangeland, truck crops).	All																	■	
1.2.11	Update the Preserve Management Plan every 10 years and implement.	All										■								
1.2.12	Conduct feasibility study of potential Cosumnes River meander scenarios and implement river meandering scenarios as funding allows	All										■							■	
1.3.1	Engage in public policy forums to improve regional groundwater management (e.g., Central Sacramento County Groundwater Forum, South Area Water Council).	All																	■	
1.3.2	Design and implement next phase of groundwater-surface water studies, in collaboration with research partners, in order to refine understanding of groundwater-surface water status and relationships and to determine groundwater and surface flow requirements of riparian and aquatic species. This includes locating groundwater levels that enhance river baseflow.	TNC and CDFG			■															
1.3.3	Design and implement experimental flow releases and other measures to recharge local groundwater levels and enhance surface flows for salmon migration (potential sources of water and/or funding include AFRP and CVPIA, b2 Program.)	TNC and CDFG			■															
1.4.1	Support conservation of lone chaparral by Partners working to implement CDFG's CAPP in order to protect, manage, and restore at least three geographically dispersed populations, totaling at least 400 acres of high-quality lone chaparral habitat.	CDFG and TNC																		■
1.4.2	Promote protection of blue oak woodland habitat (particularly along the river corridor), by Partners and on protected Preserve lands where present. Ensure viability of protected oak habitat through proper management and early detection and control of invasive species.	CDFG and TNC																	■	
1.5.1	Track and, if warranted, participate in the 22 planning efforts identified above and in new efforts that begin in subsequent years.	All																	■	
2.1.1	Identify and prioritize key parcels necessary to secure remaining unprotected 7,450 riparian core acres within the riparian corridor.	All with leadership from TNC			■															
2.1.2	Acquire unprotected key parcels remaining in the riparian corridor between McCormack-Williamson Tract and Highway 99 (5,150 riparian core acres remaining within corridor) by 2018, on a willing-seller, as-available basis.	All with leadership from TNC																		■

Cosumnes River Preserve Management Plan

Action Implementation Table for Ecological Actions

CHAPTER 3 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
2.1.3	Acquire or protect key parcels in the riparian corridor between Highway 99 and Wilton Road (2,300 riparian core acres remaining within the corridor) by 2028, on a willing-seller, as-available basis.	All with leadership from TNC																		■
2.2.1	Develop standardized vegetation classification and conduct habitat mapping (similar to scale of CDFG mapping) of existing and restored habitats to monitor status and guide management.	All with leadership from CDFG			■															
2.2.2	Assess condition of habitats within the riparian core area by evaluating vegetation cover and successional trajectory of all sites (existing and restoring habitats) every 3 to 5 years.	All with leadership from TNC				■				■				■				■		
2.2.3	Develop and implement restoration and management actions (e.g., planting, re-contour, weed control) as necessary to enhance development of a diverse riparian-wetland mosaic (i.e., successional stage, physical structure, species composition) and to maintain population levels of native species.	All																		■
2.2.4	Evaluate the response of special status species and indicator species to riparian and floodplain restoration and management actions (e.g., valley elderberry longhorn beetle; Riparian Habitat Joint Venture focal bird species such as yellow-billed cuckoo, song sparrow, Swainson's hawk, ringtail cats, and other state and federal protected species).	All																	■	
2.2.5	Conduct and support research to evaluate factors potentially limiting floodplain-river connectivity, forest recruitment and survival (e.g., water table levels, soil conditions, stream channel incision, levees).	All																		■
2.2.6	Conduct and support other research as necessary to guide management of the Preserve.	All with leadership from UC Davis																		■
2.2.7	Increase cottonwood/willow between Accidental Forest and Tall Forest to support cuckoos, willow flycatchers, least bell's vireos, and other neo-trops.	All																		■
2.3.1	Locate, map, and evaluate invasive plant species in targeted riparian habitats along the Cosumnes River (annual effort rotated among sites, with most areas visited at least once every three years).	All with leadership from UC Davis																		■
2.3.2	Implement control programs (treatment and monitoring), as necessary, to maintain desired species composition and population levels of native species.	All																		■
2.3.3	Conduct and support research to evaluate threats from invasive animal species (e.g., black rat, cowbirds) and techniques for control (e.g., trapping, baiting).	All with leadership from TNC and UC Davis																		■
2.3.4	Conduct and support research to evaluate threats from invasive plants (e.g., perennial pepperweed, Himalayan blackberry) and techniques for control (e.g., prescribed fire, grazing, herbicide treatments, mowing, disking, and weed mat tarping).	All with leadership from TNC and UC Davis																		■
2.4.1	Restore ~500 acres of seasonally flooded riparian habitat on the Preserve's Denier II property by completing and implementing plans to restore a natural flooding regime and to plant native riparian vegetation. Incorporate experimental design to test approaches that could be applied to restoration of other upstream sites (e.g., Castello).	TNC					■													
2.4.2	Develop and implement restoration plans for an additional 500 acres of riparian-floodplain habitat.	TNC					■													■
2.4.3	Investigate opportunities to restore river-floodplain connectivity and create 300 acres of seasonally flooded habitat (long-duration flooding to support fishes and aquatic food web) to offset any losses due to succession of previously restored habitat. Site assessment includes elevations, hydrology (flooding extent, frequency, duration, depth and velocity), and sediment supply.	All									■								
2.5.1	Work with local irrigation districts and water managers to manage surface flows in the river to support the natural variability and frequencies of specific flood types and water year types as outlined in Booth et al.	All																		■
2.5.2	Focus water and flood management activities on maintaining the hydrologic connectivity between surface and subsurface waters, while recognizing that periodic connection and disconnection of the floodplain within the river channel is vital to the functioning of the floodplain.	All																		■
2.5.3	Manage floodplains to ensure that multiple, repeated inundation events occur with a two-to-three year period from at least early January through early May.	All																		■
2.5.4	Work with property owners to minimize flooding of residences in the lower Cosumnes River area.	All																		■
3.1.1	Annually evaluate status of land protection and conversion in the vernal pool grassland region (rangeland and uplands of south and east Sacramento county).	TNC																	■	
3.1.2	Annually monitor vernal pool grassland easements for compliance with easement terms and conditions.	TNC																	■	
3.1.3	Participate in the South Sacramento County Habitat Conservation Planning Process to ensure consistency with USFWS Vernal Pool Recovery Plan and Preserve goals.	TNC																		■
3.1.4	Identify and prioritize key parcels necessary to secure remaining unprotected 3,417 acres vernal pool habitat.	TNC			■															
3.1.5	Protect key parcels by 2012, on a willing-seller, as-available basis.	All with leadership from TNC					■													■
3.2.1	Continue fire management activities in vernal pool grassland habitat in partnership with local landowners and agencies (e.g., fire staff from California Department of Forestry and Fire Protection, BLM, and USFWS Refuges) to burn at least 500 acres of vernal pool grassland per year.	TNC, BLM																	■	

Cosumnes River Preserve Management Plan

Action Implementation Table for Ecological Actions

CHAPTER 3 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
3.2.2	Conduct field surveys and data anlysis to assess the status of biodiversity in vernal pool and grassland habitats as a baseline for future evaluation.	TNC																	■	
3.2.3	Assess effects of grazing on vernal pool plant and animal community by: • Continuing data collection and analyze data from Howard Ranch grazing study to determine long-term grazing impacts on native and non-native plants as well as vertebrate/invertebrate taxa. • Participating in TNC statewide grazing study.	TNC																	■	
3.2.4	Assess effects of fire on vernal pool plant community by: • Completing analysis of fire effects data from the Howard Ranch and Valensin Ranch to determine an appropriate fire management regime for these sites. • Continuing data collection and analyze data from study of goat grass control using prescribed fire	TNC																	■	
3.3.1	Conduct field surveys to evaluate extent of invasion of *Glyceria declinata* in vernal pools on the Preserve. Use results of surveys and other information to develop and implement a weed control plan for vernal pools.	TNC																	■	
3.3.2	Evaluate extent of *Aegilops triuncialis* invasion in grasslands.	TNC																		■
3.3.3	Perform periodic weed surveys to document new outbreaks or spread of existing weeds in vernal pool grasslands (at least once every three years).	TNC			■			■			■			■			■			
3.4.1	Develop a map showing grassland restoration potential on Preserve lands.	All with leadership from TNC			■															
3.4.2	Study use of native forb species and best methods for establishment in grassland restoration plantings.	All					■													
3.4.3	Document best practices for grassland restoration with guidelines for the best methods and species.	All					■													
3.4.4	Implement best practices on Preserve lands and encourage their use by others.	All					■													
3.5.1	Develop a classification system for annual grasslands on the Preserve, in collaboration with the California Native Plant Society (CNPS) and other botanical experts.	All					■													
3.6.1	Map the Preserve's fire history in a comprehensive way. Update this data set on an annual basis.						■													
4.1.1	Evaluate needs for seasonal wetland habitat every 3 years, based on regional waterbird and waterfowl populations and habitat availability, in coordination with other natural lands managers (e.g., Stone Lakes NWR, DFG Woodbridge, SVC), and with guidance from regional natural resource plans (e.g., CVJV) and adjust CRP wetland restoration and maintenance goal to support.	All with leadership from BLM			■			■			■			■			■			
4.1.2	Annually evaluate condition of managed ponds, and develop and implement plans to maintain desired mosaic of physical habitat using flooding schedule and/or vegetation treatments (e.g., mowing, discing, or spraying).	BLM																	■	
4.1.3	Develop and implement an annual wetlands operations plan for all Preserve properties (e.g., waterfowl ponds, Staten Island, Grizzly Slough and agricultural lands) that provides for roosting and foraging habitat throughout the migratory and winter season for migratory and wintering waterfowl, sandhill cranes, shorebirds, and waterbirds.	All with leadership from BLM																	■	
4.1.4	Manage fall flood-up schedules that maximize the temporal and spatial habitat values across all of the managed wetlands and rice fields (e.g., July/August flooding for shorevird migrations, August/September for early arriving cranes, etc.).	BLM																	■	
4.1.5	Maintain approximately 15 percent of managed wetland ponds as brood habitat for waterfowl (currently 111 acres), consistent with wetland BMPs for waterfowl and wildlife.	BLM																	■	
4.1.6	Coordinate management of CDFG mitigation land on the DWR-owned Grizzly Slough property.	CDFG and DWR			■															
4.2.1	Work with tenant farmers to create and maintain at least 750 acres of seasonally flooded rice on the Preserve.	All with leadership from BLM					■													
4.2.2	Work with Staten Island farm managers to create and maintain 2,300–3,000 acres of seasonally flooded agriculture.	All with leadership from TNC					■													
4.3.1	Develop a restoration plan for McCormack-Williamson Tract to create up to 1,600 acres habitat mosaic (tidal wetlands, seasonal wetlands, floodplain, and riparian habitat) by breaching levees to restore tidal inundation. Work cooperatively with stakeholders (e.g., DWR North Delta Group, CALFED) to develop, fund and implement the plan.	All with leadership from TNC and DWR										■								
4.4.1	Assess the feasibility of restoring tidal wetlands along slough channels (e.g., Tihuecheme Slough, near Lost Slough). Develop and implement a restoration plan if feasible.	All					■													
4.5.1	Restore approximately 140 acres of managed freshwater wetlands on the Preserve's Wong property.	TNC																	■	
4.5.2	As funding becomes available, evaluate the potential to restore freshwater wetlands on other Preserve properties.	All																		■
4.6.1	Maintain greater sandhill crane roosts on managed and natural wetlands in proximity to foraging habitat (within 1–2 miles), minimize disturbance from other land uses, and reduce sources of mortality (e.g., power lines).	BLM																	■	

Cosumnes River Preserve Management Plan

Action Implementation Table for Ecological Actions

CHAPTER 3 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
4.6.2	Maintain and restore perennial wetland habitat in the Badger Creek watershed for giant garter snake (see also Objectives 5.2–5.5)	All with leadership from CDFG					■													
4.7.1	Locate, map, and annually evaluate invasive plant species in wetland habitats along the Cosumnes River (e.g., perennial pepperweed, water primrose, water hyacinth).	All																	■	
4.7.2	Implement control (i.e., grazing, burning, herbicides, and other mechanical control methods) and post-treatment monitoring as necessary to maintain desired species composition and population levels of native species.	All																	■	
4.7.3	Conduct and support research to evaluate threats and control techniques (e.g., prescribed fire, grazing, herbicide treatments, mowing, disking, and weed mat tarping) for controlling target invasive plant and animal species in wetland habitats.	All																	■	
4.8.1	Work cooperatively with vector control to reduce mosquito production in a manner that is consistent with the pond flooding schedule.	All																	■	
4.8.2	Monitor for occurrence of avian diseases (e.g., botulism, cholera, West Nile Virus, etc.) and implement control measures as appropriate and in coordination with National Wildlife Refuges.	All with leadership from BLM																	■	
4.8.3	Develop an avian disease rapid response plan to facilitate immediate and appropriate management response to an outbreak of avian diseases (*e.g.,* immediate flooding, scaring birds, etc.).	All with leadership from BLM																		■
4.9.1	Engage in water quality policy forums as necessary to track measures and regulations that affect wetlands management (e.g., CVRWQCB, Agricultural waiver program).	All																		■
4.9.2	Implement best management practices as appropriate to maintain and enhance water quality.	All																	■	
4.9.3	Support research on potential impacts and management of methyl mercury.	All																	■	
5.1.1	Conduct monitoring studies of Snake Marsh every 5 years to document status of population.	All with leadership from CDFG					■					■					■			
5.1.2	Survey suitable habitat east of Hwy 99 to detect new population expansion, if funding available or in preparation for potential repatriation (Objective 5.5).	All with leadership from CDFG					■													
5.2.1	Map habitat and characterize vegetation of Snake Marsh, including extent of water primrose.	All with leadership from CDFG					■													
5.2.2	Characterize the seasonal hydrology, water sources, and water needs of the Snake Marsh and Badger Creek system. Determine whether changes in hydrology are adversely impacting the Snake Marsh population.	All with leadership from TNC					■													
5.2.3	If water supplies are inadequate, develop and implement plan to provide water, including supplementation if necessary (e.g., surface flow augmentation, wells). Coordinate with local partners in conjunction with regional groundwater and surface water planning efforts (e.g., S. Sacramento County Groundwater Plan).	All with leadership from TNC and Sacramento County																		■
5.3.1	Map extent of water primrose in Snake Marsh and upstream sources in Badger and Willow Creeks.	All with leadership from CDFG					■													
5.3.2	Assess whether changes in vegetation are adversely impacting the GGS population in Snake Marsh.	All with leadership from CDFG																	■	
5.3.3	Review and test control methods for water primrose. Develop and implement control plan if feasible.	All with leadership from TNC and UC Davis					■													
5.4.1	Assess status of upland refugia (burrows for summer, aestivation sites for winter) and potential disturbances (e.g., vehicles, livestock, agriculture).	All with leadership from CDFG					■													
5.4.2	Minimize disturbances of aestivation sites during winter (Oct–Mar) along railroad grade at Snake Marsh and other potential high-ground sites (if GGS population spreads).	All																	■	
5.5.1	Evaluate habitat potential (physical and hydrological) of Badger Creek watershed east of Hwy 99. Characterize the seasonal hydrology, water sources, and water needs.	All					■													
5.5.2	Develop and implement plan to maintain sufficient water supply to restore perennial wetlands east of Hwy 99 (Horseshoe Lake, SF and/or NF Badger Creek), in conjunction with regional groundwater and surface water planning efforts (e.g., South Sacramento County Groundwater Plan).	All with leadership from CDFG and TNC																	■	
5.5.3	Ensure connectivity between Snake Marsh population and area east of Hwy 99.	All with leadership from CDFG																	■	
5.5.4	Restore perennial wetland habitat on NF and SF Badger Creek (e.g., channelized reaches on Bjelland and George Dairy properties). Provide aestivation sites above winter flooding adjacent to any habitat restored for GGS.	All with leadership from TNC					■													
5.5.5	Implement weed control measures as necessary to minimize impact of invasive water primrose.	All																	■	
5.5.6	Assess opportunities to repatriate giant garter snakes to suitable habitat on the Preserve if recolonization does not occur within 10 years of habitat restoration. Work with USFWS to develop, fund and implement a restoration and repatriation plan according to Draft Recovery Plan (FWS 1999) goals and guidelines.	All																		■
6.1.1	Secure, monitor, and adaptively manage releases of water from Folsom South Canal to pre-wet the stream channel in early fall (as per February 2005 MOA of the Central Sacramento County Groundwater Forum).	All with leadership from TNC																	■	

Cosumnes River Preserve Management Plan

Action Implementation Table for Ecological Actions

CHAPTER 3 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
6.1.2	Evaluate purchases of additional water rights to provide ecological flows for key targets such as Chinook salmon, giant garter snake, and riparian forest. Investigate opportunities for funding and implementation (e.g., Anadromous Fish Restoration Program [AFRP]).	All																		
6.2.1	Monitor passage status in river and to maintain river free from physical passage barriers (culverts, road crossings, seasonal impoundments). Work with the Fisheries Foundation and others to complete this action.	All																		
6.3.1	Support Fisheries Foundation and/or CDFG in monitoring spawning activity (redd counts in fall/winter) in the Cosumnes River.	All with leadership from CDFG																		
6.3.2	Support local partners (e.g., Fishery Foundation, NRCS, local RDs, Cosumnes River Task Force) in efforts to evaluate causes of spawning habitat degradation upstream of the Preserve (erosion, scour, and/or siltation) and to develop strategies to improve conditions (e.g., gravel augmentation, erosion control).	All																		
6.4.1	Map every 3 years extent of seasonal open water floodplain habitat (long-duration floods during January–March).	All with leadership from TNC																		
6.4.2	Adaptively manage floodplain habitat and if necessary plan restoration of additional seasonal open water habitat to maintain 300 acres (to offset succession of seasonal open water habitat to riparian forest, maintain mosaic of habitat types, and to support any changing levels of salmon production). Obtain funding and implement restoration plan (Action 2.4.2).	All with leadership from TNC																		

Cosumnes River Preserve Management Plan

Action Implementation Table for Agricultural Stewardship

	CHAPTER 4 – ACTIONS	Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Assess all of the existing Preserve properties for their potential to contribute to accomplishing the Preserve's overall mission and goals through the implementation of agricultural and/or grazing practices.	All with leadership from BLM						■												
1.1.2	Implement agriculture and grazing on all Preserve properties where implementation is deemed suitable and complementary to the Preserve's overall mission and goals.	All with leadership from BLM						■												
1.1.3	Conduct outreach regarding the importance of agriculture to the Preserve's overall goals.	BLM																	■	
1.1.4	Collaborate with adjacent landowners and tenants regarding common land-management issues.	All with leadership from BLM																		■
1.1.5	Continue to communicate and collaborate with agricultural agencies and organizations by attending meetings, conferences, and workshops sponsored by entities such as NRCS, the local RCDs, CCA, FSA, CFBF, etc.	BLM																	■	
1.1.6	Continue to communicate and collaborate with policymakers to ensure that local and regional agriculture remains viable, as reflected in documents such as County General Plans, the South Sacramento County HCP, etc.	All with leadership from TNC																		■
1.1.7	Continue to promote wildlife-friendly farming approaches and organic farming methods to local farmers and the general public.	All with leadership from NRCS																	■	
1.1.8	Address water quality issues by supporting efforts to research and collect site-specific data on aquatic parameters, including production of methyl mercury.	All with leadership from UC Davis						■												
1.2.1	Use grazing strategies and other land-management tools to maximize native plant biodiversity while minimizing and controlling invasive plant species infestations.	All																	■	
1.2.2	Minimize the impact of grazing on sensitive habitats such as riparian areas and vernal pools (e.g., design livestock infrastructure systems such as exclusionary fencing and gates, stock water placement).	All																		■
1.2.3	Maintain approximately 1,000 acres of organic rice operations, in rotation, on the Preserve in order to supplement the managed wetland program's habitat availability.	BLM																		■
1.2.4	Manage grazing and agricultural lands (especially Howard Ranch, Valensin Ranch, and irrigated pastures), as necessary, in order to support and maintain viable populations of federal-listed vernal pool species and state-listed wildlife species such as the Swainson's hawk.	All																	■	
1.2.5	Continue to utilize economically viable agricultural and grazing as a land management tool to support federal- and state-listed species and overall biodiversity. For example, Staten Island agriculture supports greater sandhill crane.	All																	■	
1.2.6	Use a range of agricultural practices and land-management tools, as necessary and appropriate, to supplement wildlife-friendly farming and grazing techniques.	All																	■	
1.3.1	Maintain and replace, as necessary, the Preserve's agricultural infrastructure, including pumps, water control structures, roads, levees, etc.	All with leadership from BLM																		■
1.3.2	Require all agricultural and grazing lessees to maintain the leased agricultural infrastructure as a term and condition of their lease.	BLM																	■	
1.3.3	Maintain the Preserve Partners' existing State water rights.	BLM																		■
1.3.4	Examine the feasibility of water conservation practices and equipment on the Preserve, especially for agricultural operations (e.g., recycle, recapture).	All with leadership from BLM																	■	

Action Implementation Table for Public Use: Recreation, Volunteers, Research, and Education

	CHAPTER 5 – ACTIONS	Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Collect, compile, and evaluate data on visitor use and experiences at the Preserve.	Sacramento County																	■	
1.1.2	Determine the future recreational carrying capacity of the Preserve based on the information gathered through the recreational monitoring activities.	Sacramento County					■													
1.1.3	Apply adaptive management techniques to recreation programs and facilities, which may be negatively impacting natural resources.	Sacramento County																	■	
1.2.1	Continue to design, construct, install, and maintain interpretive signs throughout the Preserve (e.g., for the wetlands area, sandhill cranes, trails, etc.) as needed.	All with leadership from Sacramento County																	■	
1.2.2	Continue to design and distribute high quality public use/educational brochures (e.g., driving tour, walking tour, paddling guide, etc.) and update them as necessary.	All with leadership from Sacramento County																	■	
1.2.3	Continue to provide safety information to visitors on current conditions (e.g., floods, fires, mountain lions, etc.) within the Preserve.	Sacramento County																		■
1.2.4	Continue to provide a minimum of 12 guided walks led by the Volunteer Naturalists per year.	Sacramento County																	■	
1.2.5	Maintain existing paddling routes.	All																	■	
1.2.6	Maintain the existing boat dock.	All																	■	
1.2.7	Improve coordination and scheduling with the commercial paddling companies.	Sacramento County																	■	
1.2.8	Increase the number of commercial paddling companies program with secured permits.	BLM and Sacramento County				■														
1.2.9	Provide information about existing fishing opportunities, parking, and safety hazards (e.g., mercury levels in fish).	All																	■	
1.2.10	Continue to monitor the existing geocaching sites along on-trail locations. Expand geocaching activities in the future if deemed necessary and appropriate.	Sacramento County																	■	
1.2.11	Continue to provide existing hunting opportunities at the current, existing level unless that level is determined to be incompatible with the mission and goals of the Preserve.	All																	■	
1.2.12	Study the potential to allow additional tightly defined specialty hunts based on a limited permit approach in a comprehensive manner using consistent criteria for all Preserve parcels. Consistent parcel-based criteria should be used.	All		■																
1.2.13	Implement additional limited-entry hunting opportunities if and when possible to meet the management objectives of a particular property.	All			■															
1.3.1	Design of new recreation facilities should be consistent with the natural landscape of the Preserve and utilize materials with natural colors that blend in with surroundings.	All																		■
1.3.2	Conduct a facilities need assessment to ascertain the anticipated future needs for new recreational facilities. This assessment will also include an analysis of the feasibility of these facilities, consistent with Objective 1.6. Potential future facilities considered in this assessment could include the following: • Additional boat launching at Willow Slough. • Additional wildlife viewing platforms. • Portable photography blinds. • Trails described in the McFarland Ranch Master Plan. • Permanent or portable photography blinds in key wildlife viewing locations.	All with leadership from Sacramento County				■														
1.3.3	Explore potential for improvement and/or expansion of paddling routes upstream at Wood Duck Slough, Cosumnes River as needed. An example of a possible improvement is to remove overgrown brush from the paddling route along the river or slough.	All with leadership from Sacramento County		■																
1.3.4	Encourage CALTRANS, Sacramento County, and San Joaquin County to develop an implementation plan for the construction of road pullouts near the Preserve, that allow visitors to view wildlife and habitat.	BLM and Sacramento County		■																
1.3.5	Participate in discussions with Sacramento County and other Preserve Partners regarding the potential for future regional trails, including one to connect Stone Lakes Refuge to the Preserve.	All																	■	
1.4.1	Assess possible locations for additional recreation activities, and implement if compatible and feasible.	Sacramento County				■														
1.4.2	Examine the feasibility of developing and implementing a wetlands/rice operations driving tour route similar to routes established at National Wildlife Refuges. If feasible, design and construct a route and implement an "auto tour route" program in coordination with all applicable agencies, counties, etc.	BLM and Sacramento County					■													
1.5.1	Evaluate current trail maintenance practices and assess practices for effectiveness. • Provide new maintenance standard for trails. • Secure resources to implement new standard (volunteers, funding, equipment). • Ensure accessible trails and viewing platforms continue to meet ADA standards.	BLM and Sacramento County					■													
1.5.2	Recruit YCC, CCC, and/or other service groups to help maintain trails.	BLM and Sacramento County																	■	
1.5.3	Continue to work with county work crews to help maintain trails.	BLM and Sacramento County																	■	
1.5.4	Hire landscapers or other contractors, as needed.	All																	■	
1.6.1	Add new security features to the Preserve Visitor Center, parking lots, trails, and other facilities, as necessary (e.g. security cameras, security signs, gates, alarms, etc.).	All			■															

	CHAPTER 5 – ACTIONS	Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.6.2	Increase law enforcement presence or patrols (e.g., game wardens, Sacramento County Rangers, DFG, etc.) the entire Preserve by working cooperatively and/or cost-sharing a position with local, state and federal law enforcement officials.	All			■															
1.6.3	Improve tracking and recording of security events to analyze and determine any patterns of the violations occurring on the Preserve.	BLM and Sacramento County		■																
1.7.1	Provide educational outreach (e.g. brochures, presentations, etc.) to various user groups that contribute to inappropriate use (e.g., poachers, OHV riders, etc.).	BLM and Sacramento County																	■	
1.7.2	Install and maintain signage, gates, fences, barricades, K-rails, etc. at sites with high incidences of inappropriate use and throughout the Preserve as necessary.	BLM and Sacramento County																	■	
1.7.3	Update and implement the Preserve's Sign Plan, as needed.	BLM and Sacramento County																		■
1.7.4	Limit visitors to authorized trails in order to reduce the potential spread of invasive species.	All																	■	
1.7.5	Restore those areas of the Preserve that are damaged by inappropriate uses	All																	■	
1.7.6	Increase law enforcement presence (e.g. game wardens, Sacramento County Rangers, DFG, etc.) throughout the entire Preserve to assist staff with the management of inappropriate uses.	All	■																	
1.7.7	Improve recording of violations and illegal uses occurring on the Preserve.	All	■																	
1.7.8	Analyze and determine any patterns of the violations and illegal uses occurring on the Preserve; focus law enforcement patrol in these areas.	Sacramento County		■																
1.8.1	Work with Preserve Partners to assess annual budgets, farm revenue, grant opportunities, and potential for establishment of an endowment or other financing tool that can be used to support the staff and facilities necessary to meet recreational demands at the Preserve.	All	■																	
1.8.2	Maintain sufficient levels of staffing and funding to actively manage existing and future visitor use and to minimize inappropriate use of facilities and habitats.	All																	■	
1.8.3	Assess the feasibility of charging visitors a vehicle parking fee similar to the State Parks System (e.g., $6 per car and $100 per bus). Implement if the action is determined to be feasible.	All	■																	
1.8.4	Seek funding for the construction and maintenance of any needed new recreation facility.	All								■										
1.8.5	Conduct a review of best practices among similar preserves, parks, or refuges to ascertain how they charge, fund, and determine recreational use.	All	■																	
2.1.1	Ensure that the Preserve's Volunteer Program continues to serve a variety of functions and ongoing programs, including, for example, the following: • Outreach ◻ Volunteers staff the Visitor Center on the weekends as a minimal threshold. ◻ Volunteers help staff booths for special events (e.g., Earthfest, Walk on the Wild Side, Salmon Festival, Davis Duck Days, Crane Festival). • Habitat protection and restoration. • Habitat Restoration Team has a minimum of 12 work days a year. • Recreation • Maintain trails annually as needed. • Education (e.g., guided walks and paddling tours and/or school activities). • Research as covered by the Biological Inventory Team. • Monitoring (e.g., research, easement, mitigation, and biological). {Monitoring Plan (not yet written) will provide details on what the volunteers will be monitoring.}	Sacramento County																	■	
2.1.2	Staff provides appropriate training, direction, and communication to volunteers.	Sacramento County																	■	
2.1.3	Hold an annual meeting with the Volunteers to share how their efforts contribute to the CRP's Monitoring Plan, Research Agenda, Management Plan, and other Preserve Programs.	Sacramento County																	■	
2.1.4	Develop and implement a volunteer commitment process designed to balance the level of training provided to volunteers and time donated by volunteers.	Sacramento County																	■	
2.1.5	Include a section in the CRP annual work plan that focuses HRT efforts on accomplishing goals of the Management Plan and research agenda.	All with leadership from TNC																	■	
2.1.6	By 2010, establish a training session for dedicated volunteers to become team leaders of various volunteer programs.	Sacramento County			■															
2.1.7	Provide annual Volunteer Naturalist Training, including updated training materials and maps.	Sacramento County																	■	
2.1.8	Provide volunteers effective recognition and incentives (e.g., certificates of merit, media highlights, and social networking activities).	Sacramento County																	■	
2.1.9	Provide enrichment activities, such as a series of scientifically oriented lectures (e.g., natural history of local species, conservation biology, etc.) twice per year.	All																	■	
2.1.10	Inform volunteers about CRP activities, updates, future goals, suggestions, and achievements through newsletters, meetings, and social networking activities.	Sacramento County																		■
2.1.11	Develop additional volunteer opportunities or programs (e.g., Junior Naturalist Program, K–12 education, High School Summer School/Spring Break Program, Adopt-an-Acre Program, etc.) as needed and if staff and financial resources are sufficient.	Sacramento County																		■

Action Implementation Table for Public Use: Recreation, Volunteers, Research, and Education

	CHAPTER 5 – ACTIONS	Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
2.2.1	Maintain a diverse overall Volunteer Program at sufficient number of active volunteers to staff all volunteer programs. Recruit new volunteers as needed.	Sacramento County																		■
2.2.2	Through the Preserve Work Plan, annually evaluate the number of volunteers and the work that they accomplish to ensure that we are balancing quantity and quality (i.e., skill level of work).	Sacramento County																		■
2.2.3	Expand and improve the Vernal Pool Tour Program at the Howard Ranch Trail by developing a sufficient number of vernal pool docents over the next five years.	TNC and Sacramento County					■													
2.2.4	Pursue opportunities to coordinate, communicate, and collaborate on volunteer programs, activities, scheduling, and outreach with other local land managers (e.g., Stone Lakes National Wildlife Refuge, Delta Meadows State Park, SMUD, Yolo Bypass, etc.).	All																	■	
2.3.1	Develop a permanent funding source to carry out the Volunteer Program (e.g., establishment of a foundation or similar endowment).	All with leadership from Sacramento County		■																
2.3.2	Obtain grants to support the volunteer program.	All																	■	
2.3.3	Update the volunteer database.	Sacramento County																	■	
2.3.4	The Volunteer Coordinator will prepare an annual report that documents the activities of the Volunteer Program.	Sacramento County																	■	
3.1.1	Evaluate the feasibility of establishing a research institute at the Preserve to provide place-based research on a variety of scientific and ecological topics, including flooding and floodplain management. As part of the evaluation process, assess the possibility of affiliation with an academic organization such as LTER or UC Natural Reserve Site.	All with leadership from TNC and UC Davis								■										
3.1.2	Utilize the Preserve's Goals, Objectives, and Actions to: • Assist in directing the research efforts of the Preserve Partners and serve to guide future proposals. • Serve as a basis for developing collaborative research proposals between Partners and other institutions that can be submitted to a variety of funding sources. • Alert scientists to important but relatively neglected research areas.	TNC																	■	
3.1.3	If any manipulative studies are conducted on Preserve lands, the following guidelines are recommended: • The area should be mapped so that future research conducted on previously manipulated sites can take into account the effects of past manipulations. • Research that implements long-term markers for manipulated sites will be removed when study is complete. • Sites should be surveyed with GPS and entered in a GIS. Paper maps of manipulated sites should be archived.	TNC																	■	
3.1.4	Develop a strategy to obtain funding to help meet ecological research needs as identified in the goals, objectives, actions, and monitoring noted in Chapter 3, Natural Resources Stewardship.	All with leadership from TNC																	■	
4.1.1	Maintain existing Preserve programs that provide educational and volunteer stewardship opportunities at the Preserve.	Sacramento County and GJUESD																	■	
4.1.2	Evaluate the need to institute additional programs that provide educational and volunteer stewardship opportunities at the Preserve (e.g., biological monitoring, Adopt-an-Acre Program, etc.) and institute those programs that are feasible.	Sacramento County and GJUESD																	■	
4.1.3	Develop and distribute outreach materials to educate a diverse public about the importance of the Preserve, its Partners and their missions, and citizen participation in environmental stewardship.	Sacramento County and GJUESD																		■
4.1.4	Utilize Volunteer Naturalists to provide education to the public.	All with leadership from Sacramento County																	■	
4.1.5	Beginning in 2008, host at least two science-related presentations for the general public annually.	All with leadership from Sacramento County																	■	
4.1.6	By 2010, obtain at least one grant to support translation of interpretative signs, brochures, displays, and/or educational/classroom materials into several languages.	All with leadership from Sacramento County			■															
4.1.7	By 2009, update the Preserve's media distribution list to include bilingual media outlets from a variety of geographic areas, including small towns and the larger cities of Stockton and Sacramento.	Sacramento County and GJUESD		■																
4.2.1	By 2009, develop and implement a formalized Cosumnes River Preserve Environmental Education Program based on the institutional model that best fits the Preserve's needs, including a permanent, sustainable funding source for the Education Program.	All	■																	
4.2.2	Prior to 2012, evaluate the feasibility of developing an environmental education center at the Preserve. Implement if feasible.	All					■													
4.2.3	Continue Service Learning activities at the Preserve at least at current levels (e.g., provide opportunity for students in local school districts to visit the Preserve at least three times during K–12).	GJUESD																	■	
4.2.4	Improve quality of the field trip experience by lowering the ratio of students to teacher/volunteer. A ratio of 15 students to 1 teacher/volunteer is ideal.	GJUESD					■													
4.2.5	Update the Preserve's teaching resources as needed to be consistent with state standards and grade-level specific topics and activities.	GJUESD																	■	

Action Implementation Table for Public Use: Recreation, Volunteers, Research, and Education

CHAPTER 5 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
4.2.6	Annually provide at least four on-site teacher training workshops.	GJUESD with assistance from Sacramento County																	■	
4.2.7	Annually provide at least eight off-site teacher trainings.	GJUESD																	■	
4.2.8	Increase the number of teachers participating in each on-site workshop up to a maximum of 25 teachers per workshop.	GJUESD with assistance from Sacramento County								■										
4.2.9	Develop an education program database to accurately track educational activity at the Preserve.	GJUESD				■														
4.2.10	Develop and begin implementation of a plan to upgrade existing facilities and/or provide new facilities (e.g., new drinking fountain, bathrooms) as needed to support the educational program by 2009.	All		■																
4.3.1	Participate in local community events on an ongoing basis by hosting exhibit booths, providing literature, leading tours, and/or making presentations to the public at large.	All with leadership from Sacramento County																		■
4.3.2	Make presentations to City and County leaders (e.g., at public meetings, tours) on an ongoing basis.	All																		■
4.4.1	Develop additional outreach materials that are specific to the Preserve and its mission, as needed, in order to provide additional information to neighboring landowners.	All with leadership from BLM																		■
4.4.2	Attend a minimum of two agriculture-related meetings (e.g., Farm Bureau, Calif. Cattlemen's Assoc., Calif. Rice Growers Assn., RCD) per year.	BLM																	■	

Cosumnes River Preserve Management Plan

Action Implementation Table for Cultural and Visual Resources

	CHAPTER 6 – ACTIONS	Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Incorporate, as appropriate, information about Native American Indian tribes and early settlers into the Preserve's interpretative programs and materials as they are updated in the future.	Sacramento County																		
1.1.2	Provided that it does not adversely affect the Preserve, continue to permit Native Americans physical access to plants to carry out practices such as pruning, digging, sowing, burning, and selective harvesting to create plant growth characteristics conducive to supplying basket weaving materials.	BLM																		
1.1.3	Establish a productive relationship with persons or organizations interested in cultural resources protection at the Preserve (e.g., California Basket Weavers Association.)	All																		
1.2.1	Assist, as needed and able, in the implementation of the Master Plan for the McFarland Living History Ranch by working with Sacramento County and the Galt Historical Society.	All																		
2.1.1	Manage BLM lands in the Preserve to achieve VRM Class III classification. The other Partners should follow suit to a similar standard, using their own visual classification system.	All																		
2.1.2	Coordinate with the utility companies and other entities to relocate or underground existing and future power lines crossing the Preserve. This will enhance the visual resources as well as reduce collision impacts to sandhill crane and other birds.	All																		
2.1.3	As improvements are made to roads and other infrastructure, ask Project proponents not only to reduce the level of impact but also to take steps to improve the aesthetic quality of the project area.	All																		
2.1.4	As new development projects proposed around the Preserve, either in close proximity or in nearby urban areas, undergo environmental review (CEQA), ensure that project proponents to consider potential effects on visual resources at the Preserve, including the effects of outdoor nighttime lighting.	All																		
2.1.5	When vegetation is removed, altered, or restored, ensure that it is done in a manner consistent or complimentary to the previously existing or historical visual condition (e.g., valley oak trees are replaced with same species or similar, not non-native dissimilar trees).	All																		
2.2.1	Review any new outdoor lighting proposed on the Preserve to ensure it meets the following characteristics: • High quality design that is consistent with natural setting of Preserve. • Controlled and shielded to shine down. • Timed to ensure that there is light is there only when needed. • Minimum amount (intensity) of light (i.e., wattage) is used to accomplish the light's purpose. • Energy efficient. • Installed only where absolutely necessary.	All																		

CHAPTER 7 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Update the Preserve's Weed Management Plan (2001) to include the entire Preserve, including, Staten Island and MW Tract.	All																		
1.1.2	Track pesticide use via a variety of mechanisms including the WIMS database, annual reports of pesticide use submitted to the State, etc.	All																		
1.1.3	Ensure that at least one Preserve staff person is licensed with DPR as a Qualified Applicator, and one person is licensed as a Federally certified pesticide applicator.	TNC																		
1.1.4	Ensure that all farm and grazing lease agreements reiterate the policies associated with pesticide use on Preserve-owned lands. This includes ensuring that lessees following all state, federal, and local laws regarding the use of pesticides on Preserve-owned lands.	All																		
1.1.5	Acquire, maintain, and replace, as necessary, the equipment needed to support the Preserve's land-management capacity (*e.g.*, tractors, mowers, graders, etc.).	All																		

Cosumnes River Preserve Management Plan

Action Implementation Table for Operations and Maintenance

CHAPTER 8 – ACTIONS		Partners Responsible	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Annually	As Needed
1.1.1	Identify and secure a variety of funding sources (from grants to other sources) that will provide more financial stability for the Preserve in the future.	All																		
1.1.2	Pursue the establishment of an endowment or foundation to fund the continued maintenance and stewardship of the Preserve in perpetuity.	All																		
1.1.3	Pursue increases in annual and regular funding from state and federal agency Partners.	All																		
1.1.4	Pursue increases in annual funding from private, non-profit conservation organization partners.	All																		
1.1.5	Continue to generate revenue from the Preserve's agricultural and grazing leases, provided that the generation of that revenue is consistent with the overall goals in this Management Plan.	All																		
2.1.1	Plan for and document changes in Preserve leadership, staffing, and Partners' roles via the renewal of the Cooperative Management Agreement, annual work plans, and individual agreements between Partners.	All																		
2.1.2	As applicable, enter into new management agreements with existing and/or new Partners.	All																		
2.1.3	All Partners will work cooperatively to staff and fund the positions necessary to implement the Management Plan.	All																		
2.2.1	Develop and implement activities, presentations, one-on-one conversations, and other outreach actions to recruit new partners and/or support for the Preserve. Consider adding new partners as signatories to the CMA (e.g., local school districts, local land trusts, and/or NRCS).	All																		
2.2.2	Maintain ongoing communicate with neighboring landowners, Partners, and other potential supporters by contacting them on a one-on-one basis, organizing annual gatherings, etc. to share information about ongoing activities and future planned projects at the Preserve.	All																		

Goals, Objectives, Actions, and Monitoring

OVERARCHING GOAL II: COMPATIBLE USES IMPROVE STEWARDSHIP OF THE LANDS IN THE COSUMNES RIVER WATERSHED.

Operations, Management and Monitoring Sub-goal #1: The Preserve will be financially sustainable.

Objectives	Actions	Monitoring Elements
1.1 Recognize that the Preserve is undergoing shifts in management emphasis and Partner roles, which may result in shifts in financial resources.	**1.1.1** Identify and secure a variety of funding sources (from grants to other sources) that will provide more financial stability for the Preserve in the future. **1.1.2** Pursue the establishment of an endowment or foundation to fund the continued maintenance and stewardship of the Preserve in perpetuity. **1.1.3** Pursue increases in annual and regular funding from state and federal agency Partners. **1.1.4** Pursue increases in annual funding from private, non-profit conservation organization partners. **1.1.5** Continue to generate revenue from the Preserve's agricultural and grazing leases, provided that the generation of that revenue is consistent with the overall goals in this Management Plan.	**1.1.1** Number of funding sources explored and number secured each year. **1.1.2** Endowments or foundations established. **1.1.3** Amount of increase in annual "base" funding per year. **1.1.4** Amount of increase in annual budget allocations from non-governmental partners. **1.1.5** Amount of revenue received each year from agricultural and grazing leases.

Operations, Management and Monitoring Sub-goal #2: The Partners will work together to counteract future challenges (*e.g.*, dwindling financial and staffing resources, etc.).

Objectives	Actions	Monitoring Elements
2.1 Transition the Preserve's management emphasis from acquisition and research to more long-term operations and maintenance in a logical and strategic manner.	**2.1.1** Plan for and document changes in Preserve leadership, staffing, and Partners' roles via the renewal of the Cooperative Management Agreement, annual work plans, and individual agreements between Partners.	**2.1.1** Cooperative Management Agreement, Annual Work Plans, Management Plan updates, individual agreements between partners, etc.

Objectives	Actions	Monitoring Elements
	2.1.2 As applicable, enter into new management agreements with existing and/or new Partners. **2.1.3** All Partners will work cooperatively to staff and fund the positions necessary to implement the Management Plan.	**2.1.3** Monitor the result of new agreements. New organization chart, number of positions filled, amount of staff funding provided annually, etc.
2.2 Broaden the base of support for the Preserve among Preserve Partners, Cooperative Partners, Supporters, and neighboring landowners and communities.	**2.2.1** Develop and implement activities, presentations, one-on-one conversations, and other outreach actions to recruit new partners and/or support for the Preserve. Consider adding new partners as signatories to the CMA (*e.g.*, local school districts, local land trusts, and/or NRCS). **2.2.2** Maintain ongoing communication with neighboring landowners, Partners, and other potential supporters by contacting them on a one-on-one basis, organizing annual gatherings, etc. to share information about ongoing activities and future planned projects at the Preserve.	**2.2.1** Number of activities, etc. developed and implemented annually. Types of organizations or entities contacted. **2.2.2** Number of contacts or events annually.

Operations, Maintenance, and Monitoring Sub-goal #3: This Management Plan will be fully implemented and will use an adaptive management approach.

Objectives	Actions	Monitoring Elements
3.1 To be a role model in the use of Adaptive Management.	**3.1.1** Use adaptive management to continually assess environmental and social conditions, analyze and respond directly to specific site conditions, and build upon these efforts to continue to actively manage the Preserve.	**3.1.1** Management actions that are supported by available data. Evaluate management tools used.

	3.1.2 Using adaptive management, this Management Plan may be subject to ongoing minor modifications, subject to consensus of the Partners. Such modifications may include updates to the MS Access database, the geodatabase, and the text of this Plan. **3.1.3** Conduct a major update to this Management Plan within the next 10 years (*i.e.*, 2018), consistent with Action 1.2.11 in Chapter 3.	
3.2 Fully implement this Management Plan by 2023.	**3.2.1** Complete the actions in accordance with the timeline and responsibilities outlined in Table 8.2.	

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Nyberg, J.B. 1998. Statistics and the practice of adaptive management. Pages 1–7 in: Statistical methods for adaptive management studies. Sit, V. and Taylor, B., editors. British Columbia Ministry of Forests, Research Branch, Victoria, BC. Land Management Handbook 42.

9 Summary of Comments Received and Responses to Comments

This section of the Cosumnes River Management Plan addresses oral and written comments received on the Public Review Draft Management Plan. The Draft Management Plan was released to the public on December 10, 2007, for a 30-day public-review comment period. A total of 81 comments were received from a variety of sources, including State agencies, private non-profit conservation organizations, and private landowners and other citizens. During the 30-day public-comment period the Preserve hosted five public meetings to present the Draft Plan to the public and receive oral and written comments. The meetings were held in Elk Grove, Galt, and at the Preserve Visitor Center. The primary method of sharing the Draft Management Plan with the public was by posting it on the Preserve's website, the Bureau of Land Management's (BLM) Folsom Field Office website, and by sending public notices to neighboring landowners and other interested parties. News releases were also published by the BLM and in local newspapers in Galt and Elk Grove.

The BLM prepared an Environmental Assessment that considered potential impacts and alternatives to the Plan, consistent with NEPA. A copy of the Environmental Assessment is available from BLM's Folsom Field Office website and from the Preserve Manager.

Undergoing concurrent public review was the associated CEQA document, prepared by the California Department of Fish & Game. The Initial Study/Negative Declaration (IS/ND) was circulated for public review and comment for a period of 30 days beginning on January 28, 2008. The public comment period closed on February 25, 2008. The Draft Management Plan and the associated IS/ND were made available to the public on the California Department of Fish & Game website. Additionally, hard copies of the documents were provided during normal business hours at the following locations: Cosumnes River Preserve Visitor Center, Department of Fish & Game in Stockton, and the Yolo Bypass Wildlife Area Headquarters in Davis.

The oral and written comments received on the Draft Management Plan are summarized below in Table 9.1 A copy of all the comments received are available for public review upon request during normal business hours at the Preserve's Visitor Center.

Some of the comments received provided clarification of factual information, goals and objectives, and redundancy noted in the document. Other comments provided opinions, alternate views of appropriate goals and objectives, and similar commentary. All comments received were responded to either through the incorporation of clarifying text and/or additional information directly into the Final Cosumnes River Preserve Management Plan. Those comments not requiring revision to the document were addressed via the written responses below in Table 9.1. Because the Plan was prepared in collaboration by the Preserve Partners, comments were addressed by the most qualified Partner.

TABLE 9.1. SUMMARY OF PUBLIC COMMENTS RECEIVED ON DRAFT COSUMNES RIVER PRESERVE MANAGEMENT PLAN.

#	COMMENT	RESPONSE
1.	One commenter stated that the Plan should address the need for fish screens on diversions in the Cosumnes River.	No change made to the Plan. While fish screens have been proven to help out-migrating salmon and other fish species, they are not a focus of the Preserve's efforts to increase salmon populations in the Cosumnes River. The CVPIA Fish Screen Program and other screening programs cover that need for listed fish species.
2.	One commenter stated that the Plan should address the need for more hunting opportunities for the general public, not just special groups.	Additional text was included in Section 5.1.1 to address this comment.
3.	One commenter stated that the Plan should address the need for more leadership to address Delta and sea-level rise over the next 25, 50, and 100 years.	No change made to the Plan. Preserve staff will continue to be involved in policy discussions regarding that issue and we will adapt our management as needed to protect lands within the Preserve.
4.	One commenter stated that the Plan should address the need for more public involvement at the Preserve so that local communities take "ownership."	No change made to the Plan. The Plan currently addresses this point in regards to our desire to have community involvement, our desire to continue our public use program, and our environmental education program. To date, the Preserve has been very successful at working with the local communities and so there is already a great deal of "ownership" by local citizens at the Preserve.
5.	One commenter stated that the Preserve should create a 5–10 page "glossy" version of the Plan that can be handed out to public officials, etc.	Excellent idea; no change made to the Plan. Preserve staff will explore the possibility of creating such a document after the Plan is finalized.
6.	One commenter stated that all the habitat acreage numbers should be double-checked.	Completed as part of finalizing Plan. Document changed if errors were discovered.

#	COMMENT	RESPONSE
7.	One commenter stated that the Plan should include a notation about the impact of flooding on local residents and structures. Past floods have caused damage.	Text revised to include language about past structural damage.
8.	One commenter strongly supported the continuing overt statement about additional acquisitions being from willing sellers on an as-available basis.	No change made to the Plan.
9.	One commenter suggested that an additional action is needed under Objective 2.5: "Work to minimize flooding of residences in the lower Cosumnes River area." Alternatively, Action 2.5.3 could be modified to include this.	Action 2.5.4 was added to Sub-goal 2, Objective 2.5, to include this action.
10.	One commenter strongly supported Action 4.3.1 regarding intentions to breach Mc-Cormack-Williamson Tract levees.	No change made to the Plan.
11.	One commenter strongly supported Action 1.1.4 regarding continued collaboration with adjacent landowners regarding common land-management issues.	No change made to the Plan.
12.	One commenter strongly supported Action 2.2.2 regarding the Preserve's desire to continually communicate with neighboring landowners.	No change made to the Plan.

#	COMMENT	RESPONSE
13.	One commenter stated that overall the Plan does not address what flood control projects are planned for Staten Island; perhaps it should.	No change made to the Plan. Flooding regimes for Staten Island are dictated in part by the easement held by the Department of Water Resources and in part by the land-management strategies employed by Conservation Farms and Ranches to manage the property as a working agricultural landscape that supports wintering waterbirds, such as the threatened greater sandhill crane. Other planning efforts such as the North Delta EIR will address more fully any future plans for flooding issues in the Delta, including Staten Island. The Preserve's plan for Staten Island is to continue its current agricultural operations in a manner that continues to support wintering waterfowl and other waterbirds.
14.	One commenter stated that the Plan should address urban sprawl in Locke and Walnut Grove.	No change made to the Plan. Urban sprawl is identified in the Plan as a major challenge for the Preserve, and staff will remain engaged in that issue as it affects the long-term management of the Preserve. However, it is not the focus of the Management Plan to address urban sprawl in all of the surrounding communities.
15.	What specific actions will we take to increase paddling visitors?	No change made to the Plan. The plan does not specify "new recruiting strategies" specific to paddling since paddling is not the focus of the public use program. The Plan states that we will promote recreational opportunities at the Preserve, including paddling, provided that the recreational use does not adversely affect our ability to achieve the natural resource goals.
16.	What acres are included in the Eco-Reserve designation?	A new map is being included in the plan to identify those parcels.
17.	One neighboring landowner is concerned about trespassers, especially paddlers, crossing his land to launch their watercrafts.	No change made to the Plan. The Plan identifies illegal activities such as trespass as a major challenge. While the Preserve cannot control all trespass, part of the land management strategy is to continue our efforts to combat as much illegal activity as possible, including trespass.

#	COMMENT	RESPONSE
18.	Denier II property plans. What if the levee breaches naturally; will you fix it?	No change made to Plan. We identify the Denier II property as a place where we will restore riparian habitat. If a levee breaches there naturally, we will evaluate the effects of that breach at that time and take the most appropriate action in consultation with neighboring landowners and the appropriate regulatory agencies. There will be substantial time for neighboring landowners to participate in our Denier II project planning process as we develop the appropriate environmental documents to implement the project.
19.	One commenter was under the impression that the Preserve did not oppose a major dam on the Cosumnes River.	No change made to Plan. One action in the Plan clearly states our intentions to remain involved in policy decisions regarding future plans for major hydropower facilities on the Cosumnes River.
20.	One commenter was concerned about any increase in the amount of public use near his property line.	No change made to the Plan. The Plan identifies new and existing activities with respect to public use, but none of those public uses would be implemented in a manner that would affect neighboring landowners without first pursuing their input on the decision.
21.	One commenter was concerned about the proximity of the marijuana gardens to his property line.	No change made to the Plan. The Plan identifies illegal activities such as marijuana cultivation as a major challenge. While the Preserve cannot completely control this activity, the commenter is aware of our previous successes to combat this problem and to coordinate with him and other neighbors that are affected by it. We will continue to coordinate with all neighboring landowners affected by illegal activities that occur on Preserve lands. The Plan specifically states our desire to do so.
22.	One commenter stated that he thought the number of shorebird species was incorrect.	Species number was checked and changed per the commenter's suggestion.
23.	One commenter was concerned that the Preserve provide as much habitat as possible for shorebirds.	The Draft Plan already contained an action that included shorebirds. However, we agree with the commenter on the importance of this issue. Action 4.1.4 has been modified to include management direction for shorebirds.

#	COMMENT	RESPONSE
24.	Will the Preserve offer horseback-riding opportunities?	No change made to the Plan. It is unlikely that the Preserve will offer horseback-riding opportunities due to the impact that horses and their trails have on the habitat. However, horseback riding was not explicitly excluded as a public use option at the Preserve.
25.	One commenter stated that he thought the acres for blue oak woodland were too high.	The acreage numbers were double-checked as part of finalizing the Plan.
26.	One commenter stated that he thought hand-planted acorns grew too slowly and/or they were assessed too early to determine their success. Soil disturbance seemed to be an issue.	This was addressed by inserting additional text in section 3.2.1 regarding adaptive management. We would also like to point out that this issue is adequately addressed in the proposed actions, specifically Action 1.4.2.
27.	One commenter suggested that we add an action to increase the number of cottonwood and willow trees between the Accidental Forest and the Tall Forest for cuckoos, willow flycatchers, and other neotropical migrant songbirds that use that type of habitat.	Action 2.2.7 was added to the Natural Resources Stewardship Sub-goal 2.
28.	Willow Slough Trail and Tall Forest birding survey dates are reversed.	The dates were double-checked and changed as appropriate.
29.	One commenter suggested that the Plan include an action to determine the feasibility of building a causeway on Twin Cities Road to allow the Cosumnes River and Laguna Creek to meander and flood appropriately.	Action 1.2.12 was added to conduct a feasibility study of potential Cosumnes River meander scenarios, and to implement scenarios as appropriate.
30.	One commenter suggested that the Preserve introduce Tule elk.	No change made to the Plan. Reintroducing elk is an issue that is up to the California Department of Fish & Game, not up to the Preserve. However, given the urban-wildland interface issues, it may be a difficult task to accomplish.

#	COMMENT	RESPONSE
31.	One commenter suggested that we should include an action to address long-term management of oak trees (*e.g.,* harvesting oaks when there become too many).	No change made to the Plan. This Plan is a 10-year plan and at the current restoration and reproductive rate of oaks, there is no need for such an action. Future revisions of the Management Plan may address this issue.
32.	How do we plan to help salmon? What about dams to help salmon?	No change made to the Plan. The Plan specifies that salmon are one of our targets and there are a series of actions listed in Chapter 3 that address our plans to help these species. Chapter 3 also addresses our plans to be involved in policy decisions regarding the construction of dams on the Cosumnes River.
33.	Will the Freeport Water Diversions provide any water to the Cosumnes River?	No change made to the Plan. It is possible that upstream urban use will result in some kind of flow back to the Cosumnes River, but the long-term result of those diversions is unknown. The Preserve is not planning on receiving any benefit from the diversions.
34.	One commenter felt that the Plan was well-thought-out and ambitious and that it would result in a diverse landscape that benefits a myriad of wildlife and plant species.	Comment noted. No change made to the Plan.
35.	One commenter was encouraged to see that the Plan had the foresight to address locally breeding ducks as well as wintering species by providing brood habitat and maintaining wood duck boxes.	Comment noted. No change made to the Plan.
36.	One commenter encouraged the Preserve to restore additional seasonal wetlands based on the 2006 Central Valley Joint Venture Implementation Plan goal of 19,000 additional acres.	The acreage figures for the managed wetlands portion in Chapter 3 were double-checked and adjusted if appropriate. Additionally, the Preserve's Wetland Program will continue to look for opportunities to restore additional freshwater managed wetlands on an ongoing basis.

#	COMMENT	RESPONSE
37.	DWR commented that the portions of the project area may encroach within the designated floodway and an encroachment permit may be needed from the Central Valley Flood Protection Board prior to initiating any activities.	No change made to the Plan. Much of the project area is within the floodplain for the Cosumnes River and upper Sacramento/San Joaquin River Delta (see Chapter 7 for property level maps). Prior to initiating any ground-disturbing activity for actions identified in Chapter 8, the Central Valley Flood Protection Board, the Reclamation Board, and the California Department of Fish & Game will be consulted to determine whether a permit is required. Activities will not begin until all required permits are obtained.
38.	Caltrans commented that portions of the project lie within the SR99 and Interstate 5 corridors and requested more detailed and magnified mapping of Preserve areas and waterway features near the freeways.	No change made to the Plan. Please refer to the property-level maps beginning with Figure 7.4 through Figure 7.47.
39.	Caltrans commented that the portions of the project area may encroach within the State right-of-way for SR99 and Interstate 5 corridors. An encroachment permit may be needed from Caltrans prior to initiating any restoration activities within the right-of-ways.	No change made to the Plan. Prior to initiating any ground-disturbing activity for actions identified in Chapter 8, Caltrans will be consulted to determine whether a permit is required. Activities will not begin until all required permits are obtained.
40.	Caltrans stated that drainage projects located within highway rights-of-way can impact State drainage, traffic, and future highway projects; therefore, Caltrans should be notified when the locations of proposed culvert replacement improvements are planned within the right-of-way.	No change made to the Plan. Prior to initiating any ground-disturbing activity for actions identified in Chapter 8, including but not limited to culvert replacement improvements, Caltrans will be notified of the location and provided copies of work plans to determine whether the design criteria is appropriate to meet Caltrans standards, and to determine whether a permit is required. Activities will not begin until all required permits are obtained.
41.	List the known species of concern that are dependent on and/or users of the Preserve (as well as adjacent habitat?). This would provide a quick reference for subsequent planning.	No change made to the Plan. Species of concern are listed in the Lower Cosumnes River Watershed Assessment (RBI 2006) available on the Preserve's website (www.cosumnes.org).

#	COMMENT	RESPONSE
42.	Relative to active-versus-passive restoration of riparian (page 3-6), a map showing the relative proportion and type of habitats to date for each approach would be interesting. The commenter expressed concern that oak regeneration may not be occurring rapidly enough with passive restoration, although it was noted that it may be because of the lack of early successional growth of other species, *e.g.,* willows.	No change made to the Plan. The relative merits of different restoration techniques are discussed in detail in the numerous scientific studies prepared by the Cosumnes Research Group at UC Davis and posted on the website: http://baydelta.ucdavis.edu
43.	Objective 1.2 – "Ecologically functional landscape" does not provide a target; what land-use designations, conditions, or specific conditions would allow the Preserve to achieve this status? This might be addressed by subsequent objectives, but then this objective (1.2) is not needed. This information is important to allow participation in land-use planning, coordination with other land management, and to secure funding for acquisitions.	Changed the wording of this objective to read: "Maintain a landscape that supports the natural processes and habitat for the Preserve's focal conservation targets consisting of natural lands and suitable agriculture at and surrounding the Preserve (100-year floodplain up to Sacramento County's Urban Services Boundary)." Ecologically functional landscape refers to the ability of an area to support ecosystem components. This definition has been added to the Plan glossary. A target refers to one of the six specific species described as target species in Chapter 3.
44.	Objective 1.2 – Is "surrounding" defined as the 100-year floodplain? Does it include only adjacent areas to the Preserve? If other than this, are there specific conditions that are higher priorities? (This kind of relates to previous comment re: the target)	No change made to Plan. "Surrounding" is defined in the wording of the objective. See above response.

#	COMMENT	RESPONSE
45.	Action 1.2.4 – What criteria are used to identify lands for protection? Have needs (linkages and migration corridors) been defined yet, and what are the relative priorities of actions for identified targets? (Adaptive management allows change, so don't avoid starting with something.)	No change made to Plan. We evaluate protection opportunities based on habitat quality and contribution to protection goals for the conservation targets (species and communities) that are set in the Plan. Since we only protect land on an as-available, willing-seller basis, we try to remain open to all available opportunities and evaluate them when they arise.
46.	Action 1.2.5 should be with the associated targeted objectives, and is there some level of identified need?	No change made to Plan. Linkages and corridors are addressed for each target where relevant. It is highlighted here because it is also a general planning principal and something that needs to be considered for many of the species that did not rise to the level of focal targets.
47.	Action 1.2.6 – Is there a current assessment of habitat values of different land uses for evaluation of CRP properties and properties adjacent to CRP? What are the relative priorities of these habitat values? Was this not the purpose of the planning process?	No change made to Plan. The purpose of the planning process is defined in Chapter 1 of the Management Plan to document existing conditions, identify and prioritize needs, and describe future desired conditions for the Cosumnes River Preserve over the next 10 years. It also provides the Preserve Partners with a framework for determining budget and personnel required to implement long-term management of the Preserve over the next 10 years. Habitat values vary depending upon the species being considered, as each species has different needs. Assigning habitat values for each of these species is beyond the scope of this Plan. The Plan does provide maps of land-cover types for use in further analysis. Land cover is a generalization of vegetation types in an area. Habitat values are much more complex than the simplified land-cover maps presented in this Plan.
48.	Action 1.2.8 – What is meant by "promote," other than what has already been mentioned (buying, coordination, participation)?	No change made to Plan. Promote means to encourage other groups (agencies, non-profit organizations, cities, and counties) to build on the existing network of protected lands in an effort to create larger protected areas and strong corridor linkages.

#	COMMENT	RESPONSE
49.	Action 1.2.9 – Is there a weed control plan now? Does it have priorities and criteria for establishing priorities? What and where are the "high threat species" (and why?) How does this relate to 2.3?	No change made to Plan. As stated in Section 7.2.1, the Preserve currently has a Weed Management Plan that will be updated.
50.	Action 1.2.10 – What are the specific outcomes and specific actions of "wildlife-friendly agriculture" that you will be promoting? Or perhaps some criteria to define such? (What does "#10" mean; probably left from early drafts).	No change made to Plan. Wildlife-friendly agriculture includes a set of agricultural practices that provide habitat or foraging value to target wildlife species. Examples include flooding rice fields during the winter for duck habitat and planting certain crops for Swainson's hawk foraging value. Specific actions for various species are refined under the objectives and actions that are relevant to those targets.
51.	Are Actions 1.3.4 and 1.3.2 essentially the same?	They are very similar and have been combined into a single action that reads: "1.3.2: Design and implement next phase of groundwater-surface water studies, in collaboration with research partners, in order to refine understanding of groundwater-surface water status and relationships and to determine groundwater and surface flow requirements of riparian and aquatic species. This includes locating areas favorable for the development of perched aquifers and mounded regional groundwater levels that enhance river baseflow."
52.	Are Actions 1.3.2 and 1.3.3 more participation versus actually doing the study and releases (from CRP perspective)?	No change made to Plan. These studies will be conducted by researchers from UC Davis using funding provided by the Preserve Partners.
53.	Objective 1.4. – Anything to address the lack of new growth/recruitment of blue oak; protection of existing may not be enough.	No change made to Plan. Several studies are available that address recruitment limitation in blue oak woodlands, but much of the management implications are site-specific. Since the Preserve does not currently manage any lands that have blue oak woodland habitat, so there are no immediate plans to study this.

#	COMMENT	RESPONSE
54.	Objective 1.5 is a given for any plan and including this distracts the reader from what this Plan is focusing on.	Comment noted. No change made to Plan.
55.	Are Actions 2.1.2 and 2.1.3 subsets of Action 2.1.1, which is just a repeat of Objective 2.1?	No change made to Plan. No. The separate actions were broken down geographically to delineate the differing habitat protection needs associated with the different types of riparian habitat along these sections of the river.
56.	Objective 2.2 – What is the "mosaic" target (local, regional distribution, etc.) that would then allow mapping to "guide management"? Perhaps a range? What does maintain a mosaic mean, and is Objective 2.4 just a specific of this objective?	No change made to Plan. Mosaic means a mixture of communities as opposed to a single dominant community. A mosaic can be maintained through the introduction of disturbance (fire, flooding, mechanical thinning) to maintain some areas in early-successional stages while allowing others to mature to later successional stages. This is based on the hypothesis that greater habitat diversity begets greater species diversity. Preserve ecologists will work to further define what the mosaic of communities will be for the riparian habitat on the Preserve.
57.	Action 2.2.3 suggests that we don't have a list of actions yet; but some of that is within the other objectives. It was hoped that would come out of this "Plan" subject to adaptive management.	No change made to Plan. Some data is available on a few native species (*e.g.,* migratory songbirds) and this data is used to inform management and restoration actions in riparian areas. As more data becomes available, additional management and restoration actions will be evaluated.
58.	Action 2.2.3 includes to "maintain population levels" Of what species and what are the targets for those species?	No change made to Plan. See answer to above comment
59.	Action 2.2.4 – Is this just a generic monitoring for response or is there some level of criteria for "successful response"?	No change made to Plan. It is important to monitor for both positive and negative responses to restoration and management actions.

#	COMMENT	RESPONSE
60.	Action 2.3.2 - What is the "desired" species composition and population level? (This is too obvious).	No change made to Plan. These would be site-specific and based on baseline conditions.
61.	Actions 2.3.2, 2.3.3, and 2.3.4 – Are we not at the point of presenting a set of "control programs" for defined threats? Can we list what those threats are, and the relative risks? (This kind of gets to criteria if one is afraid of presenting specific actions.)	No change made to Plan. Since many of the threats originate outside of the Preserve (*e.g.,* habitat loss, water quality, air quality, etc.) and are introduced by parties that do not include the Partners, reducing the effect that many of the stressors have on species is beyond the scope of the Preserve and this Management Plan. A list of stressors for many species on the Preserve is currently being developed by DRERIP. As this list (and similar lists) goes through the peer-review process and becomes public information, the Partners may utilize this information (in an adaptive management context) to create future restoration actions.
62.	Should Action 3.6.2 be part of this Sub-goal 2?	Yes. The flooding portion of this action was inappropriately included in the vernal pool section and will be moved to Sub-goal 1 as Action 1.1.3.
63.	Priority is Denier for restoration. But that is really just the objective, not the action. The action appears to be to put a plan together (more planning…) and without specific desired outcomes ("mosaic").	No change made to Plan. The restoration plan for this property will describe the details of this project.
64.	Is Objective 2.5 really to ensure periodic floodplain inundation (as indicated in Action 2.5.3) that would have several sub-objectives to discuss how would one accomplish this? (*e.g.,* working with locals to manage water, periodic levee work, slope control, Action 3.6.2, etc.?)	No change made to Plan. The Preserve does not have the ability to implement flood management on lands outside the Preserve but can encourage others to manage their land in a way that provides benefits for native species and communities.

#	COMMENT	RESPONSE
65.	Action 2.5.2 – Grammatical – delete "should focus"?	Changed to read "Focus water and flood management activities on maintaining the hydrologic connectivity between surface and subsurface waters, while recognizing that periodic connection and disconnection of the floodplain within the river channel is vital to the functioning of the floodplain."
66.	Objective 3.2 –What is the desired "overall native biodiversity and target species"?	No change made to Plan. This will depend on the site and the specific management actions. The details of what will be monitored on various properties will be addressed in the Cosumnes River Preserve Monitoring Plan, which is currently being prepared by Preserve staff.
67.	Action 3.2.3 – Can it be assumed that you are going to continue to allow grazing with various control conditions (which would be identified as an action) that will then be assessed?	No change made to Plan. Yes. See answer to comment 66.
68.	Objective 3.3 –What is the desired "diversity" of native species to be restored? Are there any specific actions yet ("appropriate methods")?	No change made to Plan. See answer to comment 66.
69.	Objective 4.1 –What is the expected/desired beneficial outcome of the 850 acres of wetlands. Wet or more than that? For example, what conditions, specific needs, what populations and/or habitat availability, usage, success criteria (brood rate, growth of fledglings, mortality, etc.).	No change made to Plan. See answer to comment 66.

#	COMMENT	RESPONSE
70.	Objective 4.7 – What invasives are critical threats and why? At least a first shot or some criteria (related to the impact of the to-be-established desired outcome of the wetlands).	No change made to Plan. That information is too detailed to be included in the Preserve Management Plan. However, these details are discussed in the Weed Management Plan.
71.	Objective 4.8 – Would a risk-management plan be appropriate to have *a priori* to an outbreak of avian diseases (*e.g.,* immediate flooding, scaring birds, etc.) ?	No change made to Plan. This is a good suggestion and will be incorporated into our action items for this target.
72.	Objective 5.2 – Restore to what conditions? Is it, or can it be, stated what conditions are important for GGS recovery (as later referenced – an upland need of burrows, what kind of water levels/conditions).	No change made to Plan. The Preserve is currently seeking funding for a study to answer these questions.
73.	Objective 5.5 – Expansion by what year?	No change made to Plan. We don't have a target date for the expansion. This will depend on when conditions in other parts of the system are suitable to support the population expansion.
74.	Objective 5.5 – Somehow over words to delete "(Action 6.2.2)"	Removed (Action 6.2.2) from text.
75.	Objective 5.5.6 is part of plan review in 5 years.	No change made to Plan. Comment noted.
76.	Objective 6.1 – What are the key limiting factors with and threats to restoring the populations, and how do those factors related to actions within CRP's grasp (this gets to priorities).	No change made to Plan. Objective 6.1 addresses one of the largest threats, lack of water in the river during migration.
77.	Is Action 6.1.1 a CRP responsibility or a larger group for which CRP is a participant?	No change made to Plan. Although it is true that this action is not the responsibility of the Preserve alone, it is a critical factor affecting the salmon population that no other group is addressing.

#	COMMENT	RESPONSE
78.	Are Actions 6.1.2 and 6.1.3 the same as Actions 1.3.2 or 1.3.3?	Actions 6.1.2 and 6.1.3 are duplicative and will be deleted.
79.	Objective 6.4 – Is 300 acres what CRP has now or new?	No change made to Plan. This acreage includes current floodplain and potential additional floodplain habitat.
80.	Action 6.4.2 is the same as Actions 3.62 and 3.1.3, so should the focus really be on how the flooding might be benefiting the salmon (growth rate, survival, or other health measures?) or at least changes in conditions within the floodplain and those effects on salmonids.	No change made to Plan. The needs of the target species/ habitat will dictate the details of this action. In other words, flooding for juvenile salmon recruitment in one part of the floodplain may differ from flooding needed to encourage riparian tree regeneration.
81.	Are there any other actions that CRP could consider for salmon – reducing human disturbance of beds, sediment control, toxic runoff, competitive species… ?	No change made to Plan. The Preserve Partners own, manage, and monitor terrestrial landscapes. Because of the relationship between the watershed and the river, the Partners felt it important to include Chinook salmon as a conservation target. Although the Partners do not have direct control over the aquatic portion of the fish habitat, they do collaborate with others to ensure that salmon have sufficient quantity and quality of water in the Lower Cosumnes River. Actions to protect this conservation target are listed in Sub-goal 2. As an anadromous species, Chinook salmon have a fairly complex life cycle and the success of this species is dependent on numerous spatial and temporal factors. To address the complexities associated with this species, DRERIP is currently preparing a conceptual model for Chinook salmon. As this model completes peer review and is released to the public, the Partners may utilize the information contained therein to develop additional restoration actions along the Preserve for this species.

APPENDIX A

ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations

ADA	American Disabilities Act
BDAC	Bay-Delta Advisory Council
BLM	Bureau of Land Management
CALTRANS	California Department of Transportation
CARA	California Rivers Assessment
CCC	California Conservation Corps
CDFG	California Department of Fish and Game
CEDR	California Center for Environmental Design Research
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CMA	Cooperative Management Agreement
CNPS	California Native Plant Society
COE	Army Corps of Engineers
CSC	California Species of Special Concern
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	California Waterfowl Association
DLMSP	Delta Levees Maintenance Subvention Program
DU	Ducks Unlimited
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ERPP	Ecosystem Restoration Program Plan
ESA	Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
GIS	Geographic Information Systems
GJUESD	Galt Joint Union Elementary School District
IEP	Interagency Ecological Program

MAF	Million Acre-Feet
NEPA	National Environmental Policy Act
NMF	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
RCD	Resource Conservation District.
SB-34	Delta Flood Protection Act of 1988
SFCP	Special Flood Control Projects
STATE PARKS	California Department of Parks and Recreation
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousand Acre-Feet
TDS	Total Dissolved Solids
TNC	The Nature Conservancy
UGB	Urban growth boundary
ULL	Urban limit line
USA	Urban service area
USB	Urban service boundary
USBR	United States Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
YCC	Youth Conservation Corps

APPENDIX B

GLOSSARY

Glossary

ACRE-FOOT	The volume of water that would cover 1 acre to a depth of 1 foot, or 325,851 gallons of water. On average, 1 acre-foot could supply one to two households with water for a year. A flow of 1 cubic foot per second for a day is approximately 2 acre-feet.
ACTIONS	The individual projects, studies, or work elements that implement the objective and can be useful as an aid in staff and budget allocation at the Preserve. Actions are written in a specific format to describe who will do what and when.
ADAPTIVE MANAGEMENT	A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.
ALTERNATIVES	Different ways to resolve issues, achieve Plan purposes, and meet Preserve goals. Alternatives provide different options to respond to major issues identified during the planning process.
"NO ACTION ALTERNATIVE"	The current management direction. With this alternative, no change from the current management practices would be implemented.
"PREFERRED ALTERNATIVE"	A proposed action in the NEPA document for the Management Plan identifying the alternative that the Partners believes best achieves planning unit purposes, vision, and goals; helps fulfill the Preserve System mission; maintains and, where appropriate, restores the ecological integrity of each Preserve and the Preserve System; addresses the significant issues and mandates; and is consistent with principles of sound management.
ANADROMOUS FISH	Fishes that spend a part of their life cycle in the sea and return to freshwater streams to spawn.
AQUIFER	Underground layer of porous rock, sand, etc. that contains water.
B(2) WATER	Statutory mandate to manage the water dedicated to fish and wildlife purposes pursuant to Section 3406(b)(2) of the CVPIA.
BAY-DELTA	The entire estuary system of the San Francisco Bay, Sacramento-San Joaquin Rivers, and Delta.

BIOLOGICAL DIVERSITY
The variety of life forms and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

BIOLOGICAL INTEGRITY
Biotic composition, structure, and functioning at the genetic, organism, and community levels consistent with natural conditions, including the natural biological processes that shape genomes, organisms, and communities (USFWS, 602 FW 1.6).

BIOLOGICAL SUB-GOALS
Measures to sustain, restore, and enhance biological diversity and ecological functionality. A fundamental approach used for setting biological goals was the Conservation Action Plan (CAP) approach. This approach focused on using representative samples of ecosystems or ecological communities (course filter) as well as individual species (fine filter) as an "umbrella" to serve as a shield for many additional species. These representative samples are called conservation targets. See Chapter 3 for details.

CALFED BAY-DELTA PROGRAM
A consortium of 15 State and Federal agencies with management or regulatory responsibilities in the Bay-Delta.

CALIFORNIA ENDANGERED SPECIES ACT (CESA)
California legislation that prohibits the "take" of plant and animal species designated by the CDFG as either endangered or threatened. Take includes hunting, pursuing, catching, capturing, killing, or attempting such activity. CESA provides the CDFG with administrative responsibilities over the plant and wildlife species listed under the State act as threatened or endangered. CESA also provides CDFG with the authority to permit the take of State-listed species under certain circumstances. See Fish and Game Code Section 2050-2116.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
California legislation that requires State, regional and local agencies to prepare environmental impact assessments for proposed projects that will have significant environmental effects and to circulate these documents to other agencies and the public for comment before making decisions. CEQA requires that the lead agency make findings for all significant impacts identified in the environmental impact report. The lead agency must propose mitigation to reduce environmental impacts to a less-than-significant level unless the mitigation is infeasible or unavailable and there

are overriding considerations that require the project to be approved. See Public Res. Code Sections 21001.1, 21002, 21080; Guidelines 15002(c).

COMPATIBLE USE A proposed or existing use that, because of its characteristics and manner of operation will promote the Ecological and Cultural Goals listed in this Management Plan. In judging compatibility, defined criteria shall be used as listed in the Management Plan.

CONCEPTUAL MODEL An explicit description of the critical cause-and-effect pathways in ecosystem function. A conceptual model includes a summary of current knowledge and hypotheses about ecosystem structure and function, and highlights key uncertainties where research might be necessary. Alternative or competing conceptual models illustrate areas of uncertainty, paving the way for suitably-scaled experimental manipulations designed both to restore and explore the ecosystem. Conceptual models also help to define monitoring needs, and the basis for quantitative modeling.

CONVERSION Land cover is altered from one type to another. For example: When native vegetation is cleared or scraped to convert the land to agriculture or vice versa. Sometimes referred to as "land use conversion."

CULTURAL RESOURCES Fragile nonrenewable properties, including any district, site, building, structure, or object significant in American history, architecture, archaeology, engineering, or culture. These resources are significant for information they contain or the associations they have with past people, events, or ways of life.

DELTA The Delta lies at the confluence of the Sacramento and San Joaquin Rivers and serves as the major hub for the operations of the SWP and CVP.

ECOSYSTEM A dynamic and interrelated complex of plant and animal communities and their associated non-living environment.

ENVIRONMENTAL ASSESSMENT A concise public document that provides a sufficient analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact. It also aids an agency's compliance with NEPA when no EIS is necessary.

ENDANGERED SPECIES Any species of plant or animal defined through the federal or state Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range. Federal species are published in the *Federal Register*.

EMERGENT A plant rooted in shallow water that has most of its vegetative growth above water.

ENDEMIC SPECIES A native species or subspecies confined naturally to a particular, and usually restricted, area or region.

ENVIRONMENTAL IMPACT REPORT A detailed written report, required by the CEQA, analyzing the environmental impacts of a proposed action, adverse effects that cannot be avoided, alternative courses of action, and cumulative impacts.

ESTUARY A water body passage where ocean water mixes with river water.

EXTIRPATION The localized extinction of a species that is no longer found in a locality or country, but still exists elsewhere in the world.

HYDROGRAPH A chart or graph showing the change in flow over time for a particular stream or river.

INSTREAM FLOWS Year-round flows in rivers and streams.

MANAGEMENT PLAN A working document that guides and facilitates all aspects of a preserve's operation, administration, and use. It is a planning tool that serves as a roadmap for the management and use of a preserve's natural resources, and the development of staffing, funding, facilities, equipment, and programs needed to support that management and use.

NATIONAL NATURAL LANDMARKS PROGRAM The National Natural Landmarks Program is administered by the National Park Service to recognize and encourage the conservation of outstanding examples of our country's natural history. It is the only natural areas program of national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership. National Natural Landmarks (NNLs) are designated by the Secretary of the Interior, with the owner's concurrence. See www.nature.nps.gov/nnl for details.

NATIVE SPECIES

A species, subspecies, or distinct population that occurs within its natural range or natural zone of potential dispersal (*i.e.*, the geographic area the species occupies naturally or would occupy in the absence of direct or indirect human activity or an environmental catastrophe). This definition recognizes that ecosystems and natural ranges are not static; they can and do evolve over time. Thus a species may naturally extend its range onto (or within) a Preserve and still be considered native.

NAVIGABLE WATERS

Under Federal law, for the purpose of determining ownership of submerged lands beneath inland water bodies not reserved at the date of statehood, navigable waters are waters used or susceptible to being used in their ordinary condition as highways of commerce over which trade and travel are or may be conducted in the customary modes of trade and travel on water. In situations where navigability and the ownership of submerged lands are disputed, the final authority for determining navigability rests with the Federal courts.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

This act, promulgated in 1969, requires all Federal agencies to disclose the environmental effects of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and must prepare appropriate NEPA documents to facilitate better environmental decision-making (from 40 CFR 1500). The law also established the Council on Environmental Quality to implement the law and to monitor compliance with the law.

NON-NATIVE SPECIES

A species, subspecies, or distinct population that has been introduced by humans (intentionally or unintentionally) outside its natural range or natural zone of potential dispersal.

OBJECTIVE

A concise statement of intended results of management actions. Objectives tier off the goals and can be measurable or can be in the form of a policy statement.

ORDINARY HIGH WATER MARK

The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area (33 CFR 328.3[e]).

OVERARCHING GOALS

Describe broad and long-term aspirations and form the 2nd tier (after the Vision Statement) in the Plan hierarchy. The Preserve's overarching goals are:

I. Native biological communities and the resident and migratory species dependent on them are restored and maintained to sustainable conditions and population levels.
II. Compatible uses improve stewardship of the lands in the Cosumnes River Watershed.

OVERDRAFT

The condition, over the long-term, when more water is withdrawn from a groundwater basin than is recharged.

PERENNIAL PLANT

A plant that grows for more than one season; it winters in a dormant condition and resumes growth the following season.

PALENTOLOGICAL RESOURCE IMPORTANCE

Reflects the potential productivity of a formation or exposure and the importance of the particular fossils located in the formation or exposure.

PARTNERS

Two types of partnerships are formed at the Preserve. Land-owning partners refers to the land-owning partners that signed the CMA, including U.S. Bureau of Land Management, the California Department of Fish and Game, Ducks Unlimited, the Sacramento County Department of Parks and Recreation, The Nature Conservancy, and the California Department of Water Resources. Program partners are agencies and organizations that work with the Preserve to carry out mutually beneficial programs and includes Galt Unified School District, NRCS, and RCD.

PUBLIC INVOLVEMENT

A process that offers affected and interested individuals and organizations opportunities to become informed about, and to express their opinions on, Partners' actions and policies. In the process, these public views are studied thoroughly and are thoughtfully considered in shaping decisions for Preserve management.

REHABILITATE

Providing nature with a helping hand by returning a physical or ecological process or by replanting native vegetation.

RESTORATION

Sometimes referred to as "ecological restoration." Characteristics of a site are returned to conditions that are similar to pre-1850s and usually includes the addition of native vegetation.

SPECIAL USE PERMIT	A Bureau of Land Management authorization required for certain uses of BLM-owned land within the Preserve. These permits are typically issued from the BLM's Folsom Field Office.
SMOLT	A young salmon that has assumed the silvery color of the adult and is ready to migrate to the sea.
STEWARDSHIP	The careful and responsible management of land, water, air, and biodiversity to ensure we have healthy ecosystems for present and future generations of people to experience.
THREATENED SPECIES	Those plant or animal species likely to become endangered species throughout all of or a significant portion of their range within the foreseeable future. Defined in both state and federal statutes. Federally threatened plant or animal species are identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.
TROPHIC CASCADE	Trophic cascades occur when predators in a food chain suppress the abundance of their prey, thereby releasing the next lower trophic level from predation (or herbivory if the intermediate trophic level is an herbivore). Trophic cascades are associated with the green world hypothesis which is is credited with bringing attention to the role of top-down forces (*e.g.,* predation) and indirect effects in shaping ecological communities.
VEGETATION	Plants in general, or the sum total of the plant life in an area.
VEGETATION TYPE	A category of land based on potential or existing dominant plant species of a particular area.
VERNAL POOL	Seasonally ponded landscape depressions in which water accumulates because of limitations to subsurface drainage and that support a distinct association of plants and animals.
WATERSHED	The entire land area that collects and drains water into a stream or stream system.
WETLAND	Areas such as lakes, marshes, bogs, and streams that are inundated by surface or ground water for a long enough period of time each year to support, and that do support under natural conditions, plants and animals that require saturated or seasonally saturated soils.